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Employment and Disability Policy Institute

October 18-19, 2001

Washington, DC

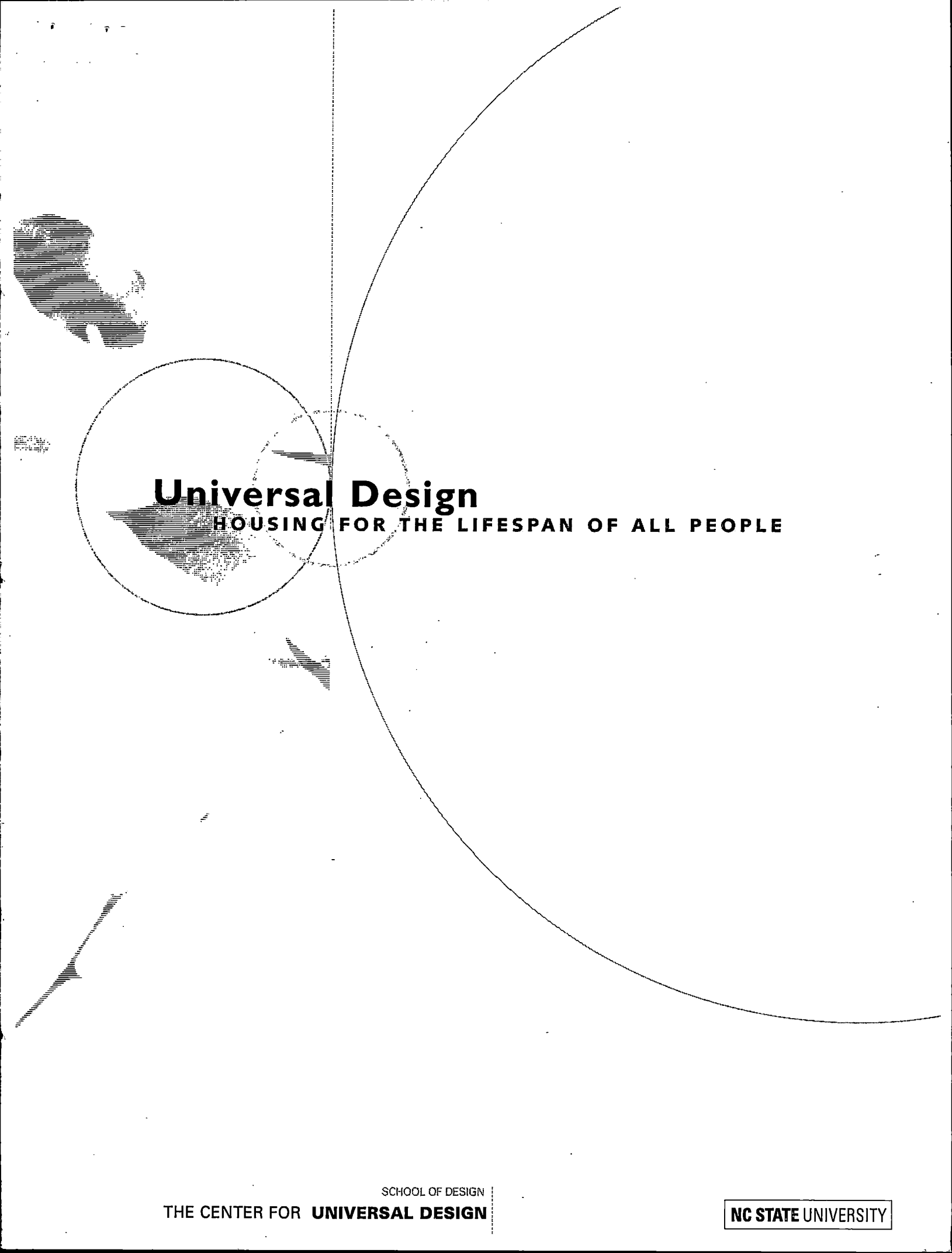
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An abstract geometric design featuring a large circle on the left, a smaller circle overlapping its right side, and a large arc spanning from the top right to the bottom right. A vertical line passes through the center of the circles. Several small, dark, irregular shapes are scattered around the main geometric elements.

Universal Design

HOUSING FOR THE LIFESPAN OF ALL PEOPLE

"Too often older or disabled people live limited lives or give up their homes and neighborhoods prematurely because standard housing of the past cannot meet their needs. While a truly universally usable house is a goal for the future, many features in houses today already are or easily can be made universally usable. The universal design concept increases the supply of usable housing by including universal features in as many houses as possible, and allows people to remain in their homes as long as they like."

Ronald L. Mace, FAIA
Architect and Product Designer

UNIVERSAL: applicable or common to all purposes, conditions, and situations **a definition**

The intent of the universal design concept is to simplify life for everyone by making more housing usable by more people at little or no extra cost. Universal design is an approach to design that incorporates products as well as building features and elements which, to the greatest extent possible, can be used by everyone. While accessible or adaptable design requirements are specified by codes or standards for only *some* buildings and are aimed at benefiting only *some* people (those with mobility limitations), the universal design concept targets *all* people of *all* ages, sizes, and abilities and is applied to *all* buildings.

What is a universal feature? Any component of a house that can be used by everyone regardless of their level of ability or disability. Universal features are generally standard building products or features that have been placed differently, selected carefully, or omitted. For example, standard electrical receptacles can be placed higher than usual above the floor, standard but wider doors can be selected, and steps at entrances can be eliminated to make housing more universally usable. Examples of other universal features in housing are:

- ☐ handles for doors and drawers that require no gripping or twisting to operate—such as louver or loop handles;
- ☐ living space on one floor or stair landings big enough to accept lifts;
- ☐ audible and visual alarm systems
- ☐ storage space within reach of both short and tall people.

Some products and design elements are already universal. Others can be made so. Manufacturers and builders who use the universal design concept will design their products and buildings to be as usable as possible by a larger population including children, older people, and people with disabilities.

"The universal design concept considers those changes that are experienced by everyone as they grow from infancy to old age. Problems related to temporary or permanent disabilities are incorporated into the concept as well. Because all groups are placed within the context of normal expectations of the human condition, trying to justify the importance of each vulnerable population group becomes unnecessary."

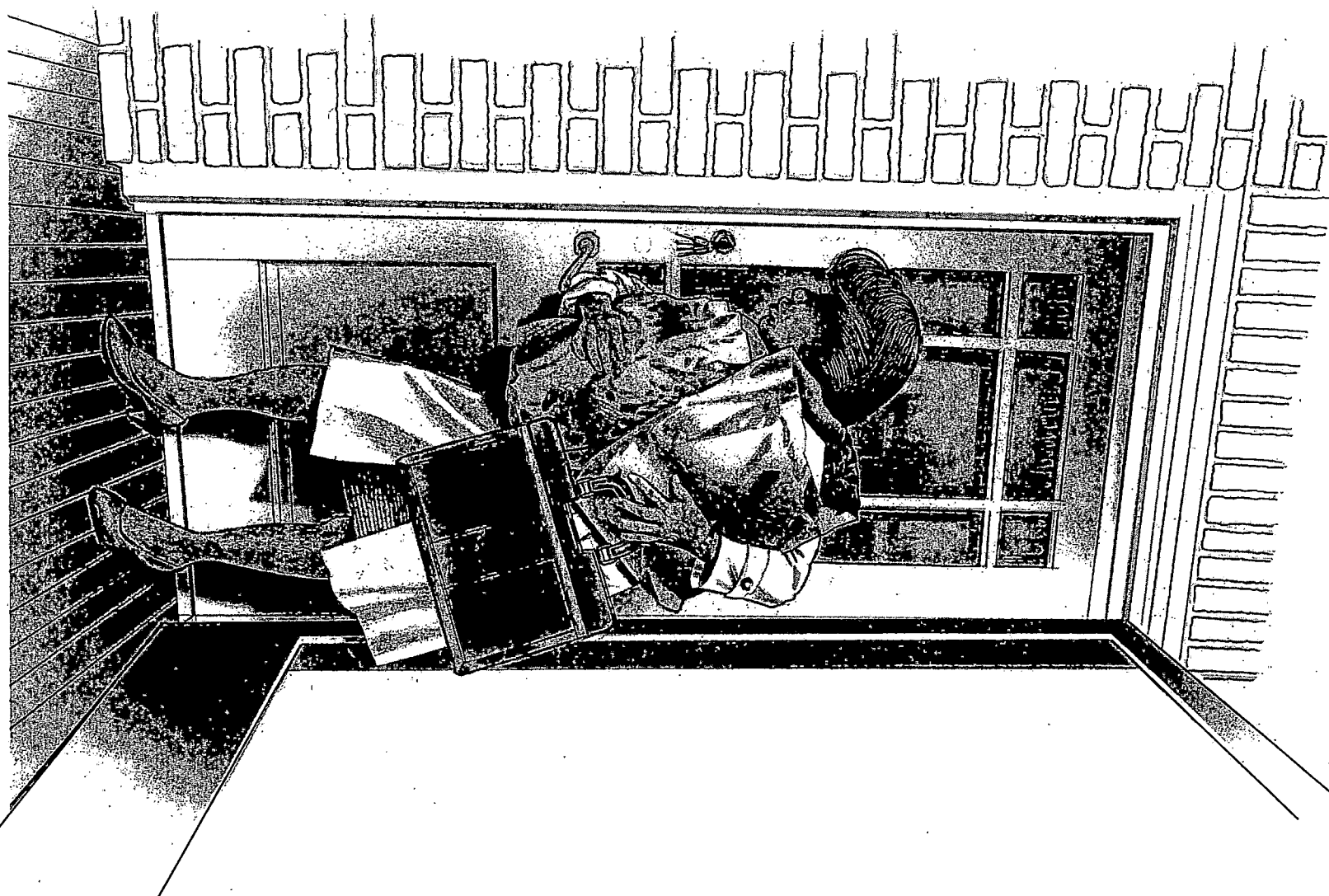
Leon A. Pastalan, Ph.D.
Gerontologist and Urban Planner

Living spaces have long been designed for use by one "average" physical type – young, fit, male, and adult. The fact is that only some of us fit that description, and none of us can be described that way for a lifetime. As children, as older adults, or as physically disabled people, millions are never average. Many millions more, because of a broken limb, serious illness, or pregnancy, know how unsettling it is to try to function in an environment that no longer meets their needs.

The point is, no "average" actually represents the majority because too many people have vastly differing requirements. The composition of our population is changing. Many people are surviving permanently disabling accidents and illness and even more are living longer. It would seem logical that the spaces built to accommodate this population must, by necessity, change also.

The building and design industries have responded to this need for change by producing special products and spaces for special groups. But "special" is often synonymous with "expensive". Specialization leads to complicated building standards and products which, in the end, seldom meet the needs of more than a fraction of those they were meant to help and often seem to stigmatize and separate them further from other people.

Universal design succeeds because it goes beyond specialization. The concept promotes designing every product and building so that everyone can use them to the greatest extent possible – every faucet, light fixture, shower stall, public telephone, or entrance. Universal design is a revolutionary but practical leap forward in the evolution of building and design procedures. When designers and manufacturers seize this concept, universal design will become common, convenient, and profitable.



THE FRONT DOOR

UNIVERSAL DESIGN

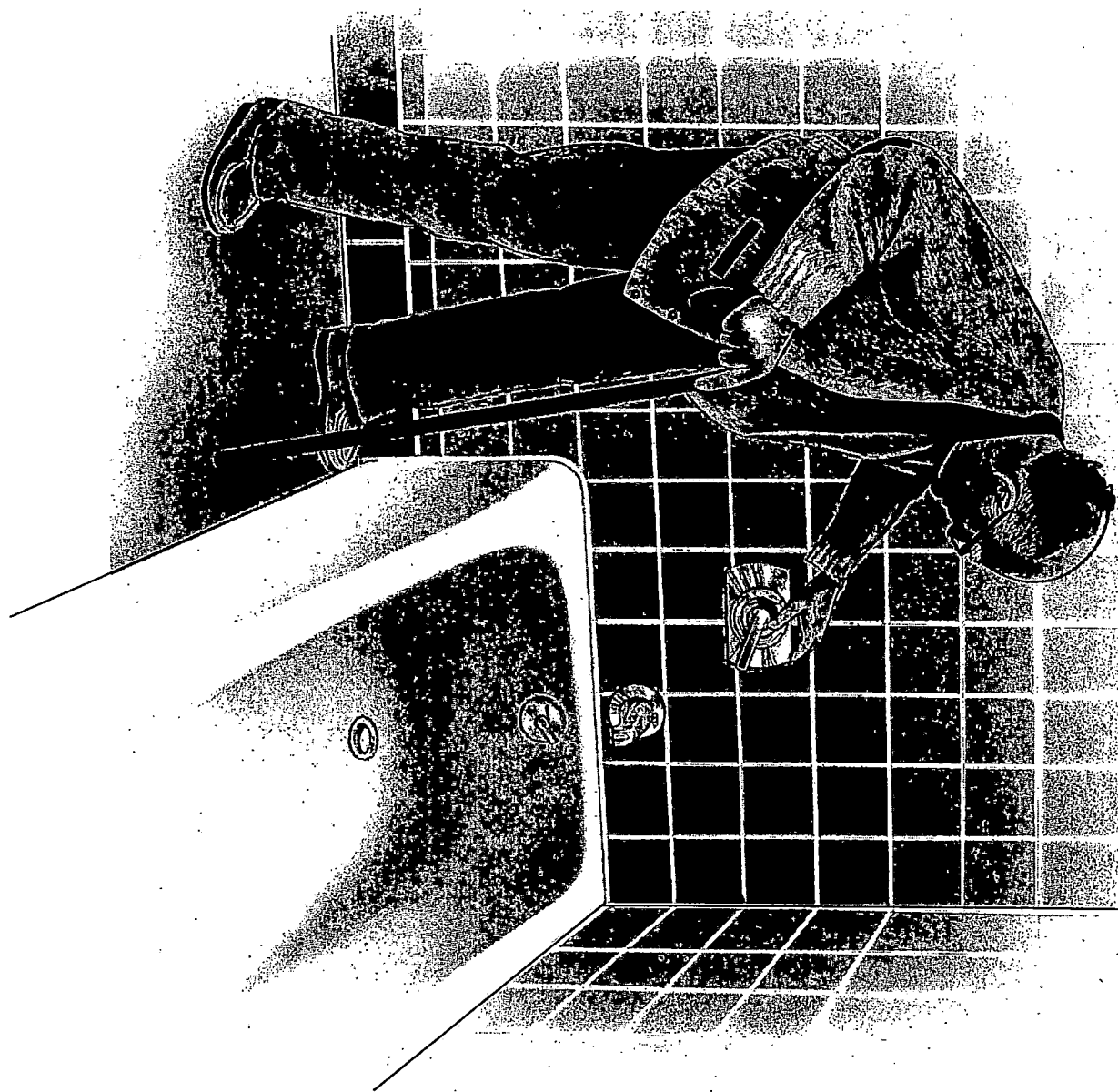
T H E F R O N T D O O R *invisible solutions*

A walk through a house with universally designed features shows that they are simple and often almost invisible.

The front door to the house is made easier for everyone to open by one simple change – a lever handle in place of the traditional knob. This is appreciated by anyone returning home with hands and arms full of parcels, a briefcase, grocery bags, a baby and a diaper bag, or a cane. Small children can manipulate a lever more easily than a knob, as can those with arthritis or other physical disabilities that limit a full range of movement.

COST

While commonly available in Europe, lever handles were once used in this country as expensive hospital hardware to benefit busy people moving quickly from room to room with trays and medicines. Today, levers are popular and stylish. Available from local hardware stores and building supply houses in a variety of materials, colors, and prices, they can be used anywhere. For no additional cost, in new construction, lever handles with locksets and other safety features can replace less usable hardware of the same quality. In fact, an inexpensive non-locking lever hardware set for a passage door may cost as little as \$15.



THE BATHROOM

UNIVERSAL DESIGN

T H E B A T H R O O M *invisible solutions*

The bathroom wall above the tub appears conventional, but it is actually reinforced with blocking. Built into the wall itself, blocking allows the wall to accept grab bars when, and if, they are needed by the residents.

The bathtub faucet is located close to the outside rim of the tub making it easy for everyone to reach. Wheel-chair users and other mobility impaired people need to have the controls in this offset position. Non-disabled people will discover that what is a necessity for some can be an added convenience for others.

COST

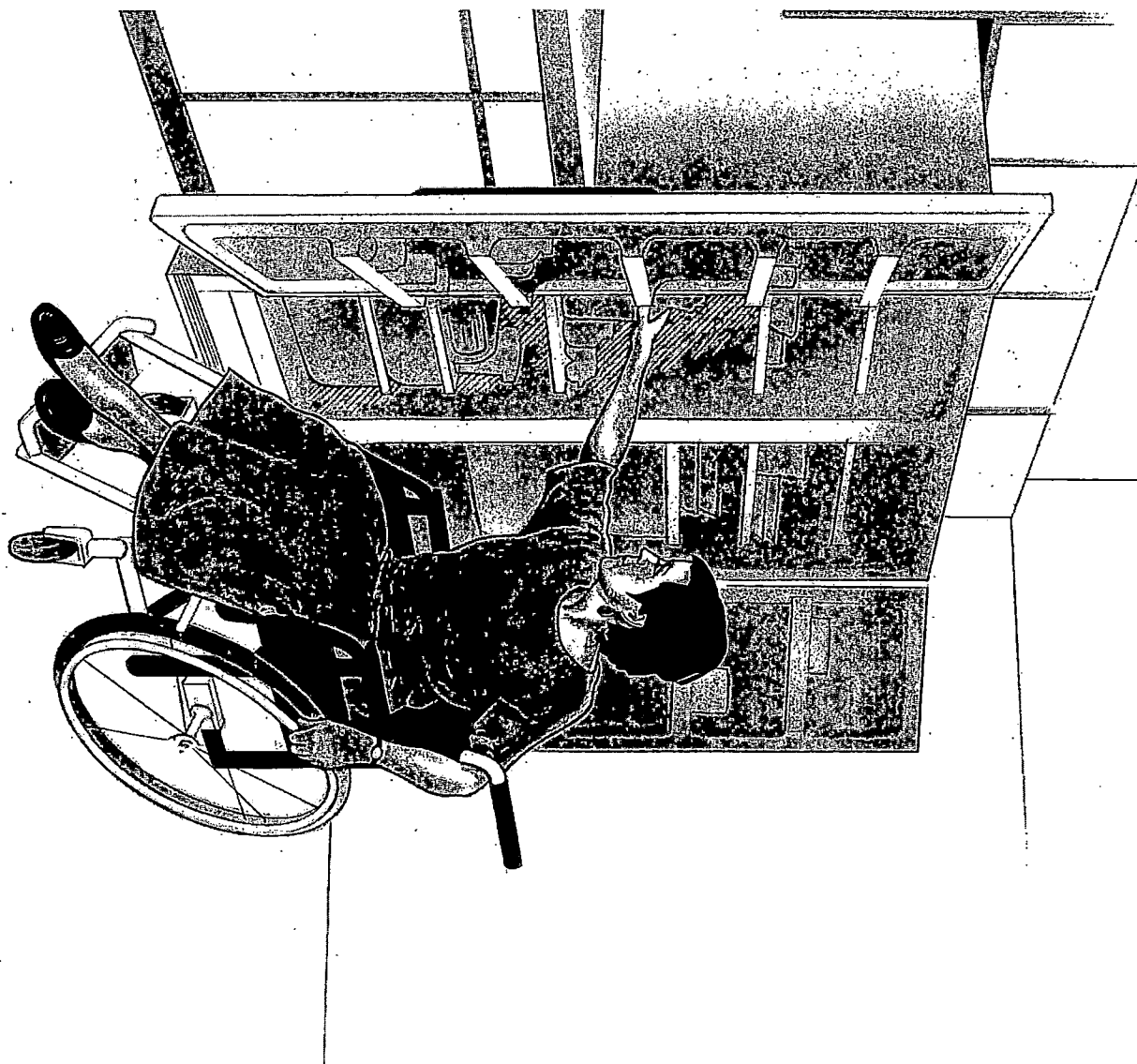
The universally designed bathroom is slightly larger than a conventional bathroom to accommodate wheelchair users: The extra space allows more than one person to occupy the bathroom at the same time so that, for example, a parent can help a child brush his teeth, or provides space for furniture or additional storage.

The offset tub control requires only about six inches of additional supply pipe. Since the additional cost of materials and labor should not be any more than \$5 to \$20 per tub, offset tub controls could easily become standard features in all housing.

The extra space in a larger bathroom need not increase the overall square footage of the house. The required inches can usually be "borrowed" from a closet or utility space. Although it is not always possible to increase the bathroom size without increasing the overall square footage, any additional cost could be balanced by the greater market for the universal home and its extended lifetime occupancy for older owners.

"The overwhelming preference of older persons is to age in place; that is, to remain in their homes as they grow older. It is essential that residences be designed to be safe, comfortable, and accommodating to persons of all ages but particularly to those who are faced with diminishing physical abilities which make daily domestic routines difficult to manage. Universal design is a concept that will enable older people to remain in their homes as they would wish"

Cyril F. Brickfield
Former Executive Director of AARP



THE KITCHEN

T H E K I T C H E N

UNIVERSAL DESIGN
invisible solutions

The kitchen has the usual appliances – oven, stove, and refrigerator. However, the refrigerator is a standard side-by-side refrigerator/freezer and the stove has front or side mounted controls; both can be used by a greater number of people. The advantage of the side-by-side refrigerator/freezer is that it places both the freezer and refrigerator compartments within reach of everyone, even children.

The cabinets also look and function like conventional cabinets. The difference is that the counters can be adjusted to any level to suit users of different heights.

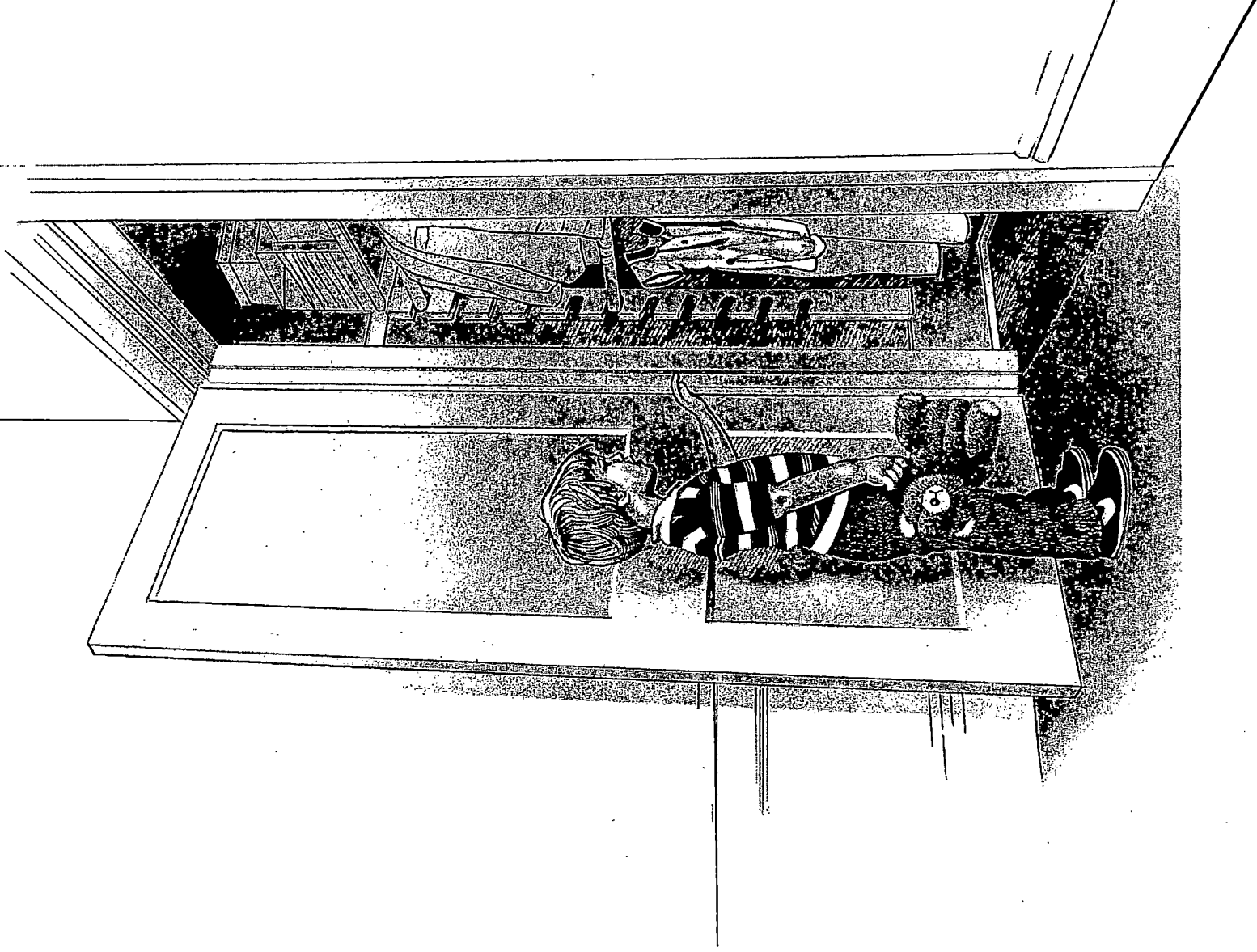
COST

Although more expensive than other models, the side-by-side refrigerator/freezer is a universally usable product that is already on the market. A medium priced side-by-side refrigerator/freezer will cost approximately \$150 more than a medium priced over-under refrigerator/freezer*. For those who can afford it, the side-by-side expands the universality of a home which already has other universal features that are no-cost or low-cost.

Adjustable height counters could become a universal feature. While in most states they are only required in accessible housing for disabled people, New York and California have incorporated them as adaptable features in multi-family housing. Although innovative, low-technology approaches exist for providing adjustable height counters, no manufacturer has yet mass produced them. The manufacturer who chooses to do so could reduce the cost of the counters, and find a growing and profitable market for this product.

*Prices will vary regionally. The price quoted here is valid only in the southeastern United States.

THE BEDROOM



UNIVERSAL DESIGN

T H E B E D R O O M **invisible solutions**

The bedroom clothes closet rods appear to be standard. The difference is in the way rods are mounted. Notched mounting blocks on either wall allow the rods to be lowered or raised to accommodate people of all heights and ages. Children's closets can "grow" with them. People temporarily restricted to wheelchairs can lower rods to be within their reach.

A wider passageway door leading from the hallway to the bedroom is another universal feature that is invisible until furniture movers or wheelchair users discover its advantage.

COST

The adjustable closet rod detail may cost the price of two pieces of 1" x 4" and the time it would take a carpenter to cut the notches in each. If individually custom made by a competent carpenter, they should cost no more than \$20 to \$30 a pair, much less if mass produced. Manufactured and sold through building suppliers these brackets and rods would cost no more than fixed hardware and could be a profitable item to the manufacturer. Clearly, this universal feature could be made standard in all housing.

Wider doors do not increase construction costs because the extra cost of the wider door is offset by the higher cost of the wall area it replaces. Introducing the one-size door by making 2'-10" wide passage doors standard also eliminates the additional costs of planning, ordering, stocking, and coordinating numerous door sizes for every job.



UNIVERSAL DESIGN

a low-cost solution

UNIVERSAL DESIGN

Many universal features are no-cost options. Others are low-cost solutions that can become no-cost with widespread use. In our society, mass production is used to keep costs low and to produce products that are widely marketable. Because universally designed products make as little as possible "special", make as much as possible "standard", mass producing design that is both usable and attractive to everyone can become a practical reality.

"Today's architects address the life cycle of buildings. It is time that they began to address the life cycle of people as well. Universal design is considerate of the human lifespan and the continuum of abilities of all individuals."

Ruth Hall Lusher, D. Arch. Candidate

"Specifying different features for different groups of people

will always cost more and require massive coordination and

selective judgment about who should be accommodated

and where. All of these impossible issues are eliminated by

the universal design concept."

Edward Steinfeld, D. Arch.

Architect and Gerontologist



Include universal features in your home for easier living throughout your lifetime. Include universal design features in speculative housing for increased profits, expanded markets, and better housing for all.

UNIVERSAL DESIGN

Universal design benefits the public and the entire building industry. For builders, the benefits are less construction coordination, lower costs, and manufactured rather than custom-built features; for designers, less design time, fewer compliance and liability problems, and features that can become standardized. For manufacturers and suppliers, the advantages are larger volumes of fewer products. For building owners, the benefits are rentable units that are attractive to everyone. Finally, the advantage to the consumer is comfortable surroundings that suit a lifetime of changing needs.

Statistics derived from such benefit programs as social security, disability payments, and Medicaid suggest a disabled population of 46 million. Since most affluent disabled people are not listed on the rolls of government programs, many industry people place this number much higher. For example, the manufacturers of support devices and medical equipment estimate that there are 80 million disabled people. Researchers in the disability field include the families and friends of disabled and elderly people among those who benefit from accessibility (and therefore universal design) and arrive at a figure just over 100 million people involved in, or directly affected by, disability issues.

No matter which figure is used, it is clear there is a growing market for universal design in housing and an increasing body of how-to-do-it information. The simplicity of the concept, the subtle, non-obtrusive, almost invisible features required, and the potential profits are generating opportunities for creative innovation among those who produce and market housing.

For more information contact the people and organizations listed on the back of this brochure.

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617-695-1225 (V/TT)

American Association of Retired Persons
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Washington, DC 20049

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The Center for Universal Design
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UNIVERSAL DESIGN

IN HOUSING

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UNIVERSAL DESIGN: The Definition

Universal design is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

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Universal design succeeds because it goes beyond specialization. The concept promotes designing every product and building so that everyone can use them to the greatest extent possible – every faucet, light fixture, shower stall, public telephone, or entrance. Universal design is a revolutionary but practical leap forward in the evolution of building and design procedures. When designers and manufacturers seize this concept, universal design will become common, convenient, and profitable.

Excerpted from Universal Design: Housing for the Lifespan of all People, by Ron Mace for the U.S. Department of Housing and Urban Development, 1998.

UNIVERSAL

BENEFITS OF UNIVERSAL DESIGN TO ALL USERS

ENTRANCES

Accessible route and level entrance

- Easier to move furniture and appliances in and out on moving day.
- Great for baby strollers and bicycles.
- Easier to bring in groceries and packages.
- Usually on an easier route from parking.
- Less hazardous when wet or icy.
- Easier to clear snow, ice, and leaves.
- Easier to repair and maintain than steps.

Covered entry

- Provides protection from the elements while opening the door.
- Provides a safe and dry space while waiting for the carpool or school bus.
- Provides sheltered space for pizza or package delivery.
- Less weather leakage and damage to door finish.

Full length side light at entry door

- Allows all occupant to see who is at the door before opening it.
- Increases natural light in foyer.

GENERAL INTERIOR

32" minimum clear door openings

- Improves circulation, especially with many visitors, such as at parties.
- Reduces damage to door jambs when moving large furniture or appliances, equipment, ladders.

Lever door handles

- Easier to use by everyone.
- You can open the door with an elbow or knee if your arms are full.
- Adds an elegant touch at little or no additional cost.

Adjustable height closet rods

- Makes closets usable by children.
- Increases storage by doubling up on hanging space.

Light switches at 44 to 48"

- More accessible to children.
- Easier to reach with hands full (e.g., with elbow).

Electrical receptacles at 18" above floor

- Easier to reach without bending.
- Easier to locate receptacles.
- Easier to keep cord clutter off of floor.
- Users are less likely to unplug appliances by pulling on the cord.

View windows with 36" or less sill height

- Can look out from a seated position.
- Longer length windows add more natural light and elegance to rooms.
- Less reaching to open, close, and lock windows.
- Windows can be opened easier by a child.
- Everyone has a better view.

KITCHENS

Knee space under the sink and cooktop

- Provides a space to store a serving cart or recycling bins.
- Permits sitting on a stool to work at the sink or cooktop.
- Easier access for cleanup.
- Eliminates common pest hiding areas.

Lever type water controls

- Easier to adjust water temp and volume.
- Can operate with a single hand or elbow.
- Single lever controls have fewer parts and are less costly to repair and maintain.
- Fewer crevices to keep clean.

Variable height work surfaces

- Lets the whole family help with meal preparation.
- Makes it easier to designate space for different functions.
- Provides a built in "desk" in the kitchen.
- Makes it easier to provide greater leverage for heavy tasks and close-up support of precise work.

Contrasting border treatment on counter tops

- Makes it easier to detect the edge and reduces likelihood of spills.
- Makes it easier to repair damaged edges without matching entire countertop.

Pull-out shelves in base cabinets

- Easy to reach items stored in cabinets.
- Easier to maneuver large items in and out of cabinet.

Pantry cabinet with full length shelves

- Reachable storage at all heights.
- Provides maximum storage capacity.

BATHROOMS

Grab bars in the tub or shower

- Not just reinforcement to add bars later, everyone benefits from bars that make it easier to get into and out of the tub or shower.
- Grab bars also double as towel bars but are much more durable.

Mirror to backsplash behind sink

- Children and persons seated can use mirror while at sink.
- Reduces water damage to finish wall behind sink.
- Makes it easier to clean behind faucet.
- Makes room seem more spacious.

Offset controls in tub/shower

- Easy to operate controls without reaching into tub/shower.
- Avoid getting soaked because someone left the valve set to shower!
- More usable by those who have trouble reaching or have a short reach.

Adjustable height shower head.

- Can be adjusted to the height of each user.
- Helps avoid wetting hairstyle, bandages, casts.
- Can be used for back massage, rinsing hair, washing the dog, etc.

Mixer valve with pressure balance and hot water limiter.

- Prevents scalding.
- Saves hot water.

UNIVERSAL DESIGN FEATURES IN HOUSING

FEATURE	STRUCTURAL	NONSTRUCTURAL
Entrances		
Accessible route from vehicle drop off or parking	■	
Maximum slope of 1:20 to entry door	■	
Covered entryway	■	
5 x 5 foot minimum maneuvering space	■	
Package shelf or bench to hold parcels, groceries, etc.		■
Full length sidelight at entry door	■	
Movement sensor light controls		■
Ambient and focused lighting (at keyhole)		■
High visibility address numbers		■
General Interior		
5 lb. maximum force to open doors		■
32-inch minimum clear door opening width	■	
18-inch minimum space at latchside of door	■	
Flush threshold (maximum of 1/2-inch rise)	■	
Lever door handles		■
Adjustable height closet rods and shelves		■
Accessible route (42-inch minimum) throughout	■	
Light switches at 44/48-inch maximum height	■	
Electrical receptacles at 18-inch maximum height	■	
View windows at 36-inch maximum sill height	■	
Crank operated (casement) windows	■	
Loop handle pulls on drawers and cabinets		■
High contrast, glare free floor surfaces and trim		■
5 x 5 foot maneuvering space in all rooms	■	

UNIVERSAL DESIGN FEATURES IN HOUSING

FEATURE	STRUCTURAL	NONSTRUCTURAL
Bathrooms		
Toilet centered 18 inches from sidewall	■	
30 x 48 inch area of approach in front of all fixtures	■	
Grab bar blocking in walls around toilet	■	
Grab bars in tub or shower		■
32-inch minimum lavatory counter height	■	
Knee space under lavatory	■	
Lever-type faucets		■
Mirror to backsplash at lavatory		■
18-inch maneuvering space at both ends of tub or shower	■	
Offset controls in tub or shower	■	
Integral transfer seat in tub or shower	■	
Adjustable height shower head		■
Mixer valve with pressure balancing and hot water limiter		■
Kitchens		
Knee space under sink and near cooktop	■	
Lever type faucets		■
Variable height work surfaces 28" - 45"	■	
Contrasting border treatment on countertops		■
Stretches of continuous counter for sliding heavy objects	■	
Full-extension pull-out drawers		■
Pull-out shelves in base cabinets		■
Adjustable height shelves in wall cabinets		■
Full height pantry cabinets for up and down storage	■	
30 x 48 inch area of approach in front of all appliances	■	
Front-mounted controls on appliances		■
Cooktops with staggered burners to eliminate dangerous reaching		■
Glare-free task lighting		■

BOOKS, MANUALS, GUIDES

ACCESSIBLE AND UNIVERSAL DESIGN IN HOUSING

Items marked with ➔ are highly recommended.

HOUSING DESIGN

Accessible Housing

Leon A. Frechette, McGraw-Hill, 1996, 386 pp., \$50.00 + state sales tax +s/h
ISBN 0-07-015748-0

Written by a construction expert, this book includes information on federal guidelines and codes for accessibility, marketing tips for builders, techniques for home modifications, and resources.

Available from: McGraw-Hill, Order Services, P.O. Box 545,
Blacklick, OH 43004, 1-800-722-4726, www.bookstore.mcgraw-hill.com

➔ ***The Accessible Housing Design File***

Barrier Free Environments, Inc., Van Nostrand Reinhold, 1991, 213 pp.,
\$80.00 + state sales tax, + \$5.00 s/h
ISBN 0471 28436x

This comprehensive accessible design manual presents design solutions for sites, entrances, doors and doorways, kitchens, bathrooms and bedrooms via room layouts, floor plans, and detailed illustrations of accessible features.

Available from: John Wiley & Sons, 1 Wiley Street,
Somerset, NJ 08875 1-800-225-5945, www.wiley.com

➔ ***Adaptable Housing: Marketable Accessible Housing for Everyone***

Barrier Free Environments, Inc. for the U. S. Department of Housing and Urban Development, 1987, 77 pp., \$10.00.

A "how-to" manual presenting various methods and designs for implementing adaptability in housing. Fully illustrated with line drawings.

Available from: HUD USER, P.O. Box 6091, Rockville, MD 20850
1-800-245-2691 or 301-251-5154, www.huduser.org
Publication #: HUD-1124-PDR

Beautiful Universal Design

Cynthia Liebrock, with James Evan Terry

\$75.00 + state sales tax + s/h

ISBN 0471 293067

Written for designers, this book provides a variety of visually attractive barrier-free design options for both commercial and residential space.

Available from: John Wiley & Sons, 1 Wiley Street,
Somerset, NJ 08875, 1-800-225-5945, www.wiley.com

→ *Building for a Lifetime: The Design and Construction of Fully Accessible Homes*

Margaret Wylde, Adrian Baron-Robins, and Sam Clark, Taunton Press, 1994,

295 pp., \$44.94 + \$4.98 s/h

ISBN 1-56158-036-8

A reference book for builders and designers that offers guidance on accessible design solutions for home interiors and exteriors. It includes illustrations and photographs as well as listings of building products and appliances.

Available from: The Taunton Press, 63 South Main Street, P.O. Box 5506,
Newtown, CT 06470-5506, 1-800-926-8776, www.taunton.com

A Consumer's Guide to Home Adaptation

Adaptive Environments Center for the Massachusetts Housing Partnership, 1989,

52 pp., \$12.00

A guide to adapting the home environment to suit an individual's needs, this book includes evaluation checklists and illustrated construction plans.

Available from: Adaptive Environments Center, 374 Congress Street, Suite 301,
Boston, MA 02210, 1-617-695-1225, www.adaptenv.org

Homes for Everyone: Universal Design Principles in Practice

Steven Winters Associates, Inc. for the U.S. Department of Housing and Urban Development, Office of Policy Development Research, 1996, 87 pp., \$10.00

Sixteen single-family dwellings that exemplify the principles of universal design are showcased in this book. Includes color photographs and drawings.

Available from: HUD USER, P.O. Box 6091, Rockville, MD 20850
1-800-245-2691
Pub #HUD-1592-PDR www.huduser.org

Directory of Accessible Building Products

NAHB Research Center, produced yearly, 95 pp., \$5.00 + \$5.00 s/h

A directory that addresses and identifies accessible and universal products for aging homeowners. Photos of products and company contact information included.

Available from: NAHB Research Center, Upper Marlboro, MD 20774
1-800-638-8556, www.nahbrc.org

→ *Residential Remodeling and Universal Design: Making Homes More Comfortable and Accessible*

NAHB Research Center and Barrier Free Environments for the U.S. Department of Housing and Urban Development, 1996, 114 pp., \$15.00

A guidebook for remodeling kitchens, bathrooms, laundry areas, and more. It provides fully illustrated problems and accessible remodeling solutions.

Available from: HUD USER, P.O. Box 6091, Rockville, MD 20850,
1-800-245-2691, www.huduser.org
Pub #HUD-1604-PDR

Universal Bathroom Planning: Designs that Adapt to People

Mary Jo Peterson, National Kitchen & Bath Association, 1996, 285 pp., \$50.00
ISBN 1-88712-701-1

Universal design in the bathroom is presented in this illustrated guide. Also included are the NKBA's 41 design guidelines of bathroom planning.

Available from: National Kitchen & Bath Association, 687 Willow Grove Street,
Hackettstown, NJ 07840, 1-800-THE-NKBA, www.nkba.com

Universal Kitchen Planning: Design that Adapts to People

Mary Jo Peterson, National Kitchen & Bath Association, 1995, 287 pp., \$50.00
ISBN 1-88712-700-3

Universal design in the kitchen is presented in this fully illustrated book.

Available from: National Kitchen & Bath Association, 687 Willow Grove Street,
Hackettstown, NJ 07840, 1-800-THE-NKBA, www.nkba.com

STANDARDS

ANSI/CABO A117.1-1998

American National Standard Accessible and Usable Buildings and Facilities.
Revision of ANSI A117.1-1998, \$40.00 + \$12.00 s/h

Available from: Global Engineering Documents, 15 Inverness Way East,
Englewood, CO 80112, 800-854-7179, www.global.ihs.com

Uniform Federal Accessibility Standards (UFAS)

U.S. Architectural and Transportation Barriers Compliance Board, 1997, Free

Available from: U.S. Access Board, 1331 F Street, N.W., Suite 1000,
Washington, DC 20004-1111, 1-800-872-2253 (V/TTY)

REGULATIONS/GUIDELINES

ADA Accessibility Guidelines (ADAAG)

U.S. Architectural and Transportation Barriers Compliance Board, 1992-93, Free

Titles II and III ADAAG available from:

U.S. Department of Justice, Civil Rights Division, Public Access Section,
P.O. Box 66738, Washington, DC 20035-6738,
ADA Hotline 1-800-514-0301 (V) or 1-800-514-0383(TTY)

or

U.S. Access Board, 1331 F Street, NW, Suite 1000, Washington, DC 20004-1111,
1-800-872-2253 (V/TTY)

To obtain other ADA design materials, you may call 800-949-4ADA

Fair Housing Accessibility Guidelines

Final Design Guidelines for Accessible/Adaptable Dwellings
U.S. Department of Housing and Urban Development
March 6, 1991

Single copy available from: U.S. Department of Housing and Urban Development,
4517 7th Street S.W., Washington, D.C. 20410
800-767-7468, www.hud.gov/fhefhag.html

Home Modification and Universal Design Websites

Adaptive Environments Center
<http://www.adaptenv.org>

The American Association of Retired Persons
<http://www.aarp.org>

The American Occupational Therapy Association
<http://www.aota.org>

The Center for Inclusive Design & Environmental Access
<http://www.arch.buffalo.edu/~idea>

Center for Rehabilitation Technology
<http://www.arch.gatech.edu/crt/crthome.htm>

The Center for Universal Design
<http://www.design.ncsu.edu/cud>

The Department of Housing and Urban Development/Fair Housing Guidelines
<http://www.hud.gov/fhefhag.html>

Disability Resources on the Internet
<http://www.disabilityresources.org>

Institute on Independent Living
<http://www.independentliving.org>

The National Association of Home Builders Research Center
<http://www.nahbrc.org>

The National Kitchen and Bath Association
<http://www.nkba.com>

The National Rehabilitation Information Center
<http://www.naric.com>

The National Resource Center on Supportive Housing and Home Modification
<http://www.homemods.org>

Trace Research & Development Center
<http://www.trace.wisc.edu>

The U.S. Access Board , ADA-related issues and technical assistance
<http://www.access-board.gov>

WEBSITES:

RESOURCES WITH UNIVERSAL DESIGN FLOOR PLANS/FEATURES

1. WWW.UDHOMES.COM
2. WWW.ARCHITECTURALDESIGNS.COM
3. WWW.DESIGNBASICS.COM
4. WWW.UNITEDDESIGN.COM
5. WWW.ADAPARCH.COM
6. WWW.HOMEPLANS.BHG.COM
7. WWW.SOUTHERNLIVING.COM/HOUSEPLANS/
8. WWW.FINEHOMEBUILDING.COM
9. WWW.HOMESTYLES.COM
10. WWW.B4UBUILD.COM

ATTACHMENT B: RESUMES OF KEY PERSONNEL

<i>Institution</i>	<i>Collaborators</i>	<i>Institution</i>	<i>Collaborators</i>
Abt Associates	Glazier, Raymond	Univ. Mass Medical	Banks, Steven
		Univ. Mass Medical	Dembe, Allard
Boston University	* Boden, Les	Univ. Mass Medical	Henry, Alexis
		Univ. Mass Medical	* Himmelstein, Jay
Brown University	Buchinsky, Moshe	Univ. Mass Medical	Fisher, William
		Univ. Mass Medical	Sweet, Charles
Cornell University	* Abowd, John		
Cornell University	Avery, Rosemary	University of Michigan	Bound, John
Cornell University	* Burkhauser, Rich	University of Michigan	Cullen, Julie
Cornell University	Butler, J.S.	University of Michigan	Ward-Batts, Jennifer
Cornell University	* Buyère, Susanne	University of Michigan	Verbrugge, Lois
Cornell University	Hutchens, Robert		
Cornell University	Golden, Thomas	University of Washington	Franklin, Gary
Cornell University	Jakubson, George		
		Univ. of Wisconsin-Stout	Menz, Fredrick
Lewin	Alecxi, Lisa		
Lewin	Dennen, Taylor	Upjohn Institute	Hunt, Allen
Lewin	* Livermore, Gina		
Lewin	* Stapelton, David	Urban Institute	Bell, Stephen
Lewin	* Wittenburg, David	Urban Institute	Garrett, A. Bowen
		Urban Institute	Favreault, Melissa
Liberty Mutual Center	Pransky, Glen	Urban Institute	Johnson, Richard
		Urban Institute	Loprest, Pamela
Mathematica	Agodini, Roberto	Urban Institute	Maag, Elaine
Mathematica	Needles, Karen	Urban Institute	Sammartino, Frank
Mathematica	Rangarajan, Anu	Urban Institute	Smith, Karen
Mathematica	Smith, Ken	Urban Institute	Tilly, Jane
Mathematica	Thornton, Craig	Urban Institute	Waidman, Tim
		Urban Institute	Wiener, Joshua
MEDSTAT	Burwell, Brian		
MEDSTAT	Crown, William	Rand	Battacharayar, Jayanta
MEDSTAT	Gage, Barbara	Rand	Beegle, Karen
MEDSTAT	Jackson, Mary	Rand	* Reville, Robert
MEDSTAT	Mark, Tami	Rand	Panis, Constantijn
MEDSTAT	Neslusan, Cheryl		
MEDSTAT	Smith, Mark	Virginia Commonwealth Univ	* Kregel, John
		Virginia Commonwealth Univ	Wehman, Paul
Michigan State Univ	Biddle, Jeff	Virginia Commonwealth Univ	Dean, David
MIT	Angist, Joshua	WBGH	Flynn, Bruce
MIT	Gruber, Jon		
		WESTAT	Elinson, Lynn
NRH Center for Health & Dis	DeJong, Gerben	WESTAT	Frey, William
		WESTAT	Hesse, Bradford
Syracuse University	Wolf, Doug	WESTAT	Maffeo, Carla
		WESTAT	Moran, Garrett
Univ. of Iowa College	Chrischilles, Elizabeth	WESTAT	Nieva, Vernica
Univ. of Iowa College	Wallace, Robert		
		Yale University	Rust, John

* Résumé or CV follows. Otherwise résumé or CV is included in supplementary materials.

Budget justification narrative

The budget for the DRI is adequate and cost-effective to accomplish the proposed project objectives through its mix of SSA support, Cornell University contributions, cost-effective contractual agreements in the first year with UMASS, RAND, Boston University, VCU, and Michigan State University, as well as their individual contributions, and the Cornell contribution of facilities, equipment, library services, and Internet connections. The budget has been developed in accordance with Federal Guidelines and the mission and objectives of the DRI. The Director and members of the Executive Committee have strong histories of efficient and economical management of past major projects involving multi-disciplinary research teams across several universities.

Personnel

The Director of the DRI will be David Stapleton. Stapleton has committed 40 percent of his time in the first year to the DRI. Stapleton will assume overall responsibility for all activities of the DRI. Stapleton will head the executive committee of the DRI. Stapleton will directly supervise Livermore and Wittenburg in their core activities. A post-doctoral student, who will be based in Washington, will work under Stapleton's supervision. Stapleton will be the direct link between the project and SSA. In addition to these administrative tasks Stapleton will be Co-PI on three substantive projects in the first year.

Richard Burkhauser (10 percent of his time, 5 percent donated) is on the executive committee and will be Director of the Behavioral Science research for the DRI.

John Abowd (10 percent of his time, 5 percent donated) is on the executive committee and will be Director of Data Archiving and Analysis and will lead the DRI data team. Abowd

will directly supervise a second or third year graduate student who will be directly responsible for all data including restricted access data held by the DRI.

Jay Himmelstein (25 percent of his time, 5 percent donated) is on the executive board and will be Director of Clinical Science research. In addition Himmelstein is the CO-PI on one substantive project in the first year.

Susanne Bruyère (10 percent of her time) is on the executive board of the DRI and will be Director of Dissemination, Training and Education. Bruyère will directly supervise Golden and Fisher and a TBA Web Assistant who will assist in the training, dissemination and education mission. The executive committee as a whole will monitor all activities of the DRI and set its intellectual agenda. The Executive committee will collectively recommend research proposals to SSA for all subsequent years.

Gina Livermore (25 percent of her time) will act as Assistant Director of the DRI center in Washington. She will work directly under Stapleton and be directly responsible for developing all responses to SSA with respect to short-term research. In addition, Livermore is Co-PI on two substantive projects in the first year.

Wittenburg (40 percent of his time) will facilitate the linking of all DRI research activities with restricted access data in Washington. He will work directly under Stapleton but will work with Abowd and with each of the projects that require the use of Washington based restricted access data. In addition, Wittenburg is Co-PI on one substantive project in the first year.

Golden (10 percent of his time) will coordinate field training and dissemination and Fisher (8 percent of her time) will provide administrative support. The Web Assistant (50 percent time) will have direct responsibility for creating and maintaining a DRI website and for

working with all DRI researchers to disseminate their work on the web. An undergraduate student will assist with the dissemination project for library research.

One post-doctoral fellow TBN, at 100% effort will work on project activities in year one. The Washington based person will work directly under Stapleton and will work with DRI project leaders in Washington on their research activities as well as on short term projects proposed by SSA. It is expected that a substantive amount of the post-doctoral fellows' time will be devoted to his or her own research but that research will focus on DRI research objectives.

Four graduate students will work on project activities in year one. The tuition support for all the students is cost shared by the University. Two will work with the Washington based team and two will work with the Cornell campus based team. As mentioned earlier one of the graduate students will work directly with Abowd. The two based in Washington will be under the direction of Stapleton and the research projects that will influence their research.

The rest of the funding for personnel will be allocated through sub-awards (recommended by the executive committee) to the five organizations that will have researchers performing specific research activities.

In subsequent years the percentage of time devoted to administrative duties by Stapleton is budgeted at 15 percent. We have budgeted another 15 percent of his time to research projects, to meet the minimum 30 percent requirement. As with all of the executive committee members, his time in later years might exceed that budgeted, depending on his participation in research projects. The exact allocation of all DRI member's time on specific research projects will be decided by which projects the executive committee and SSA choose. Time of executive committee members also reflects minimum time allocation for administrative activities. It is expected that Burkhauser, Abowd, and Himmelstein will all work on specific projects in the out

years. The increase in time for Bruyère, Golden and Fisher reflects increased training and dissemination activities in the out years. The total amount of time for these activities is also subject to negotiation with SSA.

Fringe Benefits

Fringe benefits are at a negotiated rate of 33% for the endowed personnel and 31.30% for the statutory personnel.

Equipment

\$9,600 is requested for the purchase of 3 Dell PIII 600K GX1 desktop computers. The amount of data and personnel producing research on this project will require computers that will be able to hand analyzing project data.

Travel

\$5000 is requested for one trip to Baltimore by executive board members to confer with SSA is planned in each year. The cost included round trip airline ticket (\$500 ea.), lodging for three nights (\$100 a night for ea.), meals for four days (\$37.50 a day for ea.) and ground travel (\$50 ea.). Funds are requested for Stapleton, Livermore, and Wittenburg travel from Washington to Baltimore to confer with SSA is also included at a cost of \$780 it is estimated that one trip every two weeks will be needed (this expense shows under the other category).

Supplies

\$12,000 is requested for communications cost. The funds will cover telephone equipment cost, long distance cost, ISDN lines for videoconference meetings and phone cost associated with the sending of facsimile.

\$6,000 is requested for the purchase of software (SPSS, SAS and other data analysis packages), disk media and backup tape for research data.

\$2,800 is requested for the postage, which includes the mailings of policy briefs, official correspondence between consortium members and Cornell University, and other information that will need to be sent through this form of correspondence.

\$2,000 is requested for the printing cost of the policy briefs, which includes set up and layout of document, paper and production.

Contractual

In the first year the following funds will be used for subcontracts. \$357, 197 will be awarded to Umass Medical School, \$89,000 will be awarded to RAND, \$20,000 will be award to Boston University, and \$40,000 will be awarded to Virginia Commonwealth University. For the specifics on the research projects they will accomplish in the first year see section on First-year projects starting with page III-31.

Other

\$6,000 is in request for funds for honorarium for the advisory committee meeting that will be held during the first year. We are also requesting funds for a consultant in the amount \$2,000 to assist in training for the dissemination portion of the research. The individual will be available for one week of training on the Cornell campus. \$86,000 is being requested to support the Washington center, this cost includes, rent of office space, phone and T1 line, IDSN for video conferencing, computer supplies and office supplies.

Out year funding request

Funds will be requested in the out years in a distribution that will assume approximately \$700,000 (direct and indirect) on research topics as prescribed by SSA, advisory committee and other members of this consortium, \$200,000 (direct and indirect) to dissemination and \$100,000 (direct and indirect) to administration.

FORM SSA-96-BK (4-94)
Destroy Prior Editions

Internal Revenue Service
Washington, DC 20224

Date:

In reply refer to:

FEBRUARY 11, 1972

CORNELL UNIVERSITY
ITHACA, NEW YORK 14850

Gentlemen:

Based on the information you recently submitted, we have classified your organization as one that is not a private foundation as defined in section 509(a) of the Internal Revenue Code because you are an organization described in the following Code Section:

☒ Sec. 509(a)(1)

☐ Sec. 509(a)(2)

☐ Sec. 509(a)(3)

☐ Sec. 509(a)(4)

This classification is based on the assumption that your operations will continue as stated in your notification. All changes in your purposes, character, or method of operation must be reported to your District Director so he can consider their effect on your status.

Sincerely yours,

J. J. J.
Chief, Rulings Section
Exempt Organizations Branch

CORNELL UNIVERSITY

Office of the
University Counsel and
Secretary of the Corporation

607 255-5124
Edmund Ezra Day Hall
Ithaca, NY 14853-2801

November 14, 1989

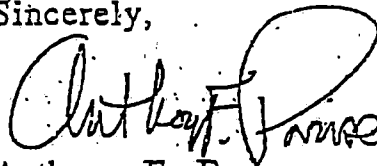
RE: TAX EXEMPT STATUS

To Whom It May Concern:

Cornell University is a tax-exempt organization as described in Section 501(c)(3) of the Internal Revenue Code, to which contributions may be made within the contemplation of Section 170 of the Code. It has further been determined that Cornell University is not a private foundation. The determination letters with respect to Cornell University's tax status were received several years ago, and there has been no change in the purpose, character or method of operation subsequent to the issuance of applicable determination letters received from the Internal Revenue Service. I am pleased to enclose copies of these letters for your information.

If there is any further information that you would like with respect to Cornell University's tax status, may I suggest that you direct your inquiry to my attention.

Sincerely,



Anthony F. Parise
Associate University Counsel

AFP:vld
Enclosures

2 - Cornell University

Requests, legacies, devises or transfers, to or for your use are deductible in computing the value of the net estate of a decedent for estate tax purposes in the manner and to the extent provided by sections 812(a) and 861(a)(3) of the Code. Gifts of property to you are deductible in computing net gifts for gift tax purposes in the manner and to the extent provided in section 1004(a)(2)(B) and 1004(b)(2) and (3) of the Code.

In the event you have not filed a waiver of exemption certificate in accordance with the provisions of section 1426(1) of the Code, no liability is incurred by you for the taxes imposed under the Federal Insurance Contributions Act. Tax liability is not incurred by you under the Federal Unemployment Tax Act by virtue of the provisions of section 1607(c)(8) of such Act.

It will not be necessary for you to file the annual return of information, Form 990A, generally required of organizations exempt under section 101(6) of the Internal Revenue Code, as you come within the specific exceptions contained in section 51(f) of the Code.

On the basis of the information submitted as to the proposed plan for the construction and operation of group living accommodations it is the opinion of this office that such plan, if consummated in the manner represented in your letter of July 11, 1951, will be considered to be one of your activities. Accordingly, the plan, if engaged in as set forth, will not affect your tax-exempt status under section 101(6) of the Code and it follows that contributions made to you for the purpose of carrying out the plan will constitute allowable deductions by the donors on their Federal income tax returns.

It is the further opinion of this office that you will not be subject to income tax on net income derived from the operation of the housing units, if constructed and operated as proposed, since the construction and operation of such housing units will be considered to be substantially related to the performance of your educational purposes constituting the basis for your tax-exempt status under section 101(6). However, this ruling letter does not involve an expression of opinion as to whether or not any so-called business activity, if engaged in by you, will be considered to be an unrelated business as that term is defined in section 422 of the Code with respect to taxable years beginning after December 31, 1950.

The collector of internal revenue for your district is being furnished with a copy of this letter.

By direction of the Commissioner.

Very truly yours,

F. J. Mc Larney
Deputy Commissioner



WASHINGTON 25

OFFICE OF
COMMISSIONER OF INTERNAL REVENUE

ADDRESSES REPLY TO
COMMISSIONER OF INTERNAL REVENUE
AND ACKN TO

IT:P:ER
MAP

OCT 12 1951

Cornell University

Ithaca, New York

Gentlemen:

Attention: Robert B. Neigs, Secretary

Reference is made to the information submitted for use in further considering your status for Federal income tax purposes under the provisions of section 101(6) of the Internal Revenue Code. Reference is also made to a letter of July 12, 1951 and to attached papers submitted in your behalf by Charles S. Reilly, Attorney, concerning your proposed plan to construct and control group living accommodations for your men and women students and thereby afford your students the educational and social advantages associated with group living. It is requested in your behalf that a ruling be issued to the effect that (a) the plan, if consummated as proposed, will not jeopardize your tax-exempt status under section 101(6) of the Code; (b) amounts received by you from contributions and other receipts, including rents and charges from the operation of the housing units, will not constitute taxable income under the Revenue Act of 1950; and (3) contributions made to you under the plan for its uses and purposes will be deductible by the donors in the manner and to the extent provided by section 23(o) and (q) of the Code.

On the basis of all the information before the Bureau in your case, it is held that you are entitled to exemption from Federal income tax under the provisions of section 101(6) of the Code as it is shown that you are organized and operated exclusively for educational purposes. Bureau ruling of November 18, 1937, wherein it was held that you are exempt from Federal income tax under the provisions of section 101(6) of the Revenue Act of 1936 and corresponding provisions of prior revenue acts is hereby affirmed.

Accordingly, you will not be required to file income tax returns unless you change the character of your organization, the purposes for which you were organized, or your method of operation. Any such changes should be reported immediately to the collector of internal revenue for your district in order that their effect upon your exempt status may be determined.

Contributions made to you are deductible by the donors in computing their taxable net income in the manner and to the extent provided by section 23(o) and (q) of the Code.

INSTITUTION:
Cornell University

AGREEMENT DATE: July 8, 1999

SECTION III: GENERAL

A. LIMITATIONS:

The rates in this Agreement are subject to any statutory or administrative limitations and apply to a given grant, contract or other agreement only to the extent that funds are available. Acceptance of the rates is subject to the following conditions: (1) Only costs incurred by the organization were included in its facilities and administrative cost pools as finally accepted; such costs are legal obligations of the organization and are allowable under the governing cost principles; (2) The same costs that have been treated as facilities and administrative costs are not claimed as direct costs; (3) Similar types of costs have been accorded consistent accounting treatment; and (4) The information provided by the organization which was used to establish the rates is not later found to be materially incomplete or inaccurate by the Federal Government. In such situations the rate(s) would be subject to renegotiation at the discretion of the Federal Government.

B. ACCOUNTING CHANGES:

This Agreement is based on the accounting system purported by the organization to be in effect during the Agreement period. Changes to the method of accounting for costs which affect the amount of reimbursement resulting from the use of this Agreement require prior approval of the authorized representative of the cognizant agency. Such changes include, but are not limited to, changes in the charging of a particular type of cost from facilities and administrative to direct. Failure to obtain approval may result in cost disallowances.

C. FIXED RATES:

If a fixed rate is in this Agreement, it is based on an estimate of the costs for the period covered by the rate. When the actual costs for this period are determined, an adjustment will be made to a rate of a future year(s) to compensate for the difference between the costs used to establish the fixed rate and actual costs.

D. USE BY OTHER FEDERAL AGENCIES:

The rates in this Agreement were approved in accordance with the authority in Office of Management and Budget Circular A-21 Circular, and should be applied to grants, contracts and other agreements covered by this Circular, subject to any limitations in A above. The organization may provide copies of the Agreement to other Federal Agencies to give them early notification of the Agreement.

E. OTHER:

If any Federal contract, grant or other agreement is reimbursing facilities and administrative costs by a means other than the approved rate(s) in this Agreement, the organization should (1) credit such costs to the affected programs, and (2) apply the approved rate(s) to the appropriate base to identify the proper amount of facilities and administrative costs allocable to these programs.

BY THE INSTITUTION:

Cornell University

(INSTITUTION)

(SIGNATURE)

Yoke San Reynolds

(NAME)

Vice President for Fin. Affairs &

(TITLE) Univ. Controller

July 8, 1999

(DATE)

BY THE COGNIZANT AGENCY

ON BEHALF OF THE FEDERAL GOVERNMENT:

DEPARTMENT OF HEALTH AND HUMAN SERVICES

(AGENCY)

(SIGNATURE)

Vincent J. Bamundo

(NAME)

DIRECTOR, DIVISION OF COST ALLOCATION

(TITLE)

July 8, 1999

(DATE) 0942

HHS REPRESENTATIVE: Michael Leonard

Telephone: (212) 264-2069

INSTITUTION:
Cornell University

AGREEMENT DATE: July 8, 1999.

SECTION II: SPECIAL REMARKS

TREATMENT OF FRINGE BENEFITS:

The fringe benefits are charged using the rate(s) listed in the Fringe Benefits Section of this Agreement. The fringe benefits included in the rate(s) are listed below.

TREATMENT OF PAID ABSENCES:

Vacation, holiday, sick leave pay and other paid absences are included in salaries and wages and are claimed on grants, contracts and other agreements as part of the normal cost for salaries and wages. Separate claims for the costs of these paid absences are not made.

1. The rates in this Agreement have been negotiated to reflect the administrative cap provisions of the revisions to OMB Circular A-21 published by the Office of Management and Budget on May 8, 1996. No rate affecting the institution's fiscal periods beginning on or after October 1, 1991, except rates for DOD contracts and subcontracts, contains total administrative cost components in excess of that 26 percent cap.
2. Extraordinary electrical costs for the Laboratory Of Nuclear Studies and extraordinary electrical costs, telecommunications costs and chilled water costs of the Theory Center program associated with, but not including normal utility costs for building maintenance are excluded from the modified total direct cost base. In addition, the electrical costs of the NAIC Arecibo radio telescope site in Puerto Rico are also excluded from the modified total direct cost base. The exclusion of these costs from the MTDC base does not represent an agreement that these exclusions are accepted for subsequent negotiation of future years' rates.
3. In addition to the fringe benefits listed in the Fringe Benefits Section of this agreement, the following fringe benefits are included in the full benefit rates: life insurance, long term disability, employee tuition, employee wellness and assistance program and childcare.
4. Effective 7/1/99 tuition support for dependents of Cornell University employees is no longer an allowable fringe benefit expense and is not included in the approved rates.
5. Equipment means an article of nonexpendable, tangible personal property having a useful life of more than one year, and an acquisition cost of \$500 or more per unit for computer equipment and artwork and \$1,500 or more per unit for all other equipment.

INSTITUTION:
Cornell University

AGREEMENT DATE: July 8, 1999

SECTION I: FRINGE BENEFITS RATES**

RATE TYPES: FIXED		FINAL	PROV. (PROVISIONAL)	PRED. (PREDETERMINED)	
TYPE	EFFECTIVE PERIOD FROM TO		RATE(%)	LOCATIONS	APPLICABLE TO
FIXED	07/01/99	06/30/00	35.0	Endowed Coll	(1)
FIXED	07/01/99	06/30/00	20.8	Endowed Coll	(2)
FIXED	07/01/99	06/30/00	10.3	Endowed Coll	(3)
FIXED	07/01/99	06/30/00	31.3	Statut. Coll	All Employees
PROV.	07/01/00 UNTIL AMENDED		Use same rates and conditions as those cited for fiscal year ending June 30, 2000.		

(1) Full benefit employees, see special remarks section for additional benefits covered.

(2) Applicable to summer faculty with retirement, visiting academicians with health insurance and postdoctoral associates. Includes benefits listed in #3 below.

(3) Applicable to visiting faculty, summer faculty without retirement, Executive Education faculty appointments, non-benefit eligible temporary employees, summer students (if not registered) and bonus payments. Includes mandated benefits such as Social Security, Worker's Compensation, Disability and Unemployment.

**DESCRIPTION OF FRINGE BENEFITS RATE BASE:
Salaries and wages.

COLLEGES AND UNIVERSITIES RATE AGREEMENT

ORIGINAL

EIN #: 1150532082A4

DATE: July 8, 1999

INSTITUTION:
Cornell University
341 Pine Tree Road
Ithaca

NY 14850-

FILING REF.: The preceding
Agreement was dated
NONE

The rates approved in this agreement are for use on grants, contracts and other agreements with the Federal Government, subject to the conditions in Section III.

SECTION I: FACILITIES AND ADMINISTRATIVE COST RATES*

RATE TYPES: FIXED FINAL PROV. (PROVISIONAL) PRED. (PREDETERMINED)

TYPE	EFFECTIVE PERIOD		RATE(%)	LOCATIONS	APPLICABLE TO
	FROM	TO			
FIXED	07/01/98	06/30/99	62.6	On-Campus	Endowed Research
FIXED	07/01/98	06/30/99	26.0	Off-Campus	Endowed Research
PRED.	07/01/99	06/30/03	57.0	On-Campus	Endowed Research
PROV.	07/01/03	UNTIL AMENDED	59.0	On-Campus	Endowed Research
FIXED	07/01/98	06/30/99	61.6	On-Campus	Statutory Research
FIXED	07/01/98	06/30/99	26.0	Off-Campus	Statutory Research
PRED.	07/01/99	06/30/03	59.0	On-Campus	Statutory Research
PROV.	07/01/03	UNTIL AMENDED	59.0	On-Campus	Statutory Research
FIXED	07/01/98	06/30/99	50.3	On-Campus	Geneva Research
FIXED	07/01/98	06/30/99	24.5	Off-Campus	Geneva Research
PRED.	07/01/99	06/30/03	53.7	On-Campus	Geneva Research
PROV.	07/01/03	UNTIL AMENDED	54.0	On-Campus	Geneva Research
FIXED	07/01/98	06/30/99	60.1	On-Campus	Statutory ESA
FIXED	07/01/98	06/30/99	23.0	Off-Campus	Statutory ESA
PRED.	07/01/99	06/30/01	63.0	On-Campus	Statutory ESA
PRED.	07/01/01	06/30/03	62.5	On-Campus	Statutory ESA
PROV.	07/01/03	UNTIL AMENDED	60.0	On-Campus	Statutory ESA
FIXED	07/01/98	06/30/99	13.1	Off-Campus	All NAIC Programs
PRED.	07/01/99	06/30/02	5.2	Off-Campus	All NAIC Programs
PRED.	07/01/02	06/30/03	9.5	Off-Campus	All NAIC Programs
PROV.	07/01/03	UNTIL AMENDED	9.5	Off-Campus	All NAIC Programs
PRED.	07/01/99	06/30/03	26.0	Off-Campus	All Progs(excl.NAIC)
PROV.	07/01/03	UNTIL AMENDED	26.0	Off-Campus	All Progs(excl.NAIC)

*BASE:

Modified total direct costs, consisting of all salaries and wages, fringe benefits, materials, supplies, services, travel and subgrants and subcontracts up to the first \$25,000 of each subgrant or subcontract (regardless of the period covered by the subgrant or subcontract). Modified total direct costs shall exclude equipment, capital expenditures, charges for patient care, tuition remission, rental costs of off-site facilities, scholarships, and fellowships as well as the portion of each subgrant and subcontract in excess of \$25,000.

PART III: PROGRAM NARRATIVE

A. Background

Over the last two decades, there has been a paradigm shift in policymaker goals for working-age persons with severe disabilities. In the past, the mainstream view was that such individuals could not work, and the chief objective of public policy was to take care of such individuals, by providing them with income and in-kind support. Today, the mainstream view is that such individuals have a right to work, and even have a responsibility to work if they reasonably can. Individuals with disabilities themselves have been in the vanguard of this change, demanding the right to work and other civil rights, and seeking policy changes that will enable them to work, participate in other social activities, live independently, and have control over their own lives. Advances in technology and medicine, which have mitigated the disabling effects of health conditions and impairments in a variety of ways, and changes in the nature of work have been driving forces behind the paradigm shift. The 1990 passage of the Americans with Disabilities Act (ADA) was a watershed event in this shift. It has been reflected in many other changes in public policy, including the recently enacted Work Incentives Improvement Act (WIIA). The Second Report of the Presidential Task Force on Employment of Adults with Disabilities clearly articulated the sweeping transformation that is impacting all parts of society—"shifting the organization of our systems and how [people with disabilities] participate as workers in our world" (Task Force, 1999, p. 5).

The Social Security Disability Insurance (DI) and Supplemental Security Income (SSI) programs originated under the old paradigm; their main statutory function is to provide income support to individuals who are so disabled that they "cannot work." These programs and the Medicare and Medicaid benefits that are linked to them are thought to discourage work and

encourage dependency; many who meet the programs' medical eligibility criteria are believed to be capable of work. Policymakers and the Social Security Administration (SSA) face the challenge of reforming these programs to reflect the paradigm shift in a way that is both fiscally responsible and promotes the well-being of its target population.

The challenge faced by policymakers is a formidable one, for several reasons. First, we have limited fundamental knowledge about how individuals with disabilities and others will respond to specific policy changes. This is in part because individuals with disabilities are heterogeneous, with respect to their disabling condition as well as other characteristics; good research cannot treat them as a homogenous group, but data seldom support adequate recognition of their heterogeneity. Another reason for limited fundamental knowledge is that we rarely have opportunities to observe the dynamics of the behavior of individuals with disabilities in survey data, and it is very difficult to draw inferences about behaviors from cross-section data alone. Second, changes in technology, medicine and the workplace are complex and continual. It is a major challenge to design a public policy that can respond to such a dynamic environment. Finally, the SSA programs are just one component of a broader set of programs and policies that affect working-age people with disabilities. Changes in any of these programs have ramifications for the others, and the challenge of understanding and navigating the interactions among these programs is itself an impediment to employment and self-sufficiency for those with disabilities. In the text that follows, we provide a necessarily brief overview of the trends and policy developments that are relevant to the proposed research.

The magnitude of the challenge that policymakers face is underscored by the recent trends in program participation and employment of people with disabilities. After experiencing stable, and even declining, caseloads of just under three million disabled workers during the

1980s, the DI program grew to 4.8 million disabled workers by 1998. The SSI disability rolls also grew from approximately three to five million over the same period (SSA, 1998); much of the growth was for those participating in both programs. Some of this growth has been attributed to the aging of the baby boom generation, but even after adjusting for age DI incidence rates increased, from 3.99 per thousand in 1988 to 5.43 in 1995 (SSA, 1999).

More recently, the number of new awards for both programs has stabilized or declined, but the rapid growth experienced during the early 1990s has been accompanied by changes in the age and impairment distributions of disability program participants that have budgetary implications which are as significant as the rising caseloads themselves. There has been a substantial increase in the number of individuals applying for and obtaining benefits on the basis of mental illnesses. Those with mental illnesses now represent about 25 percent of DI disabled workers and about 30 percent of SSI disability recipients (SSA, 1998). As a group, those with mental impairments are considerably younger and physically healthier than other beneficiaries, and, therefore, have the potential to remain on the disability rolls for a very long time. The number with musculoskeletal impairments has also experienced a significant increase, and these beneficiaries also tend to be younger than those with other impairments. Overall, the average age of DI beneficiaries has been steadily declining, with those under 45 now representing nearly 30 percent of the rolls. The declining age of beneficiaries combined with longer life expectancies have contributed to declines in DI termination rates, as most terminations are due to death or conversion to the retirement program (SSA, 1998). These trends, along with the continued aging of the baby boom generation, threaten the solvency of the DI trust fund in the future.

Recent employment trends of people with disabilities are also cause for concern. While there were large employment and earnings gains by people without disabilities from 1989 to

1997, employment and earnings by people with disabilities actually fell (Burkhauser, Daly, and Houtenville, 1999). From 1989 to 1997 (two periods of similar macroeconomic conditions), the employment rates and real median family income levels of men with disabilities fell by fifteen and eight percent, respectively. Over the same period, the employment rates of men without disabilities remained unchanged, while their median family incomes increased by over 40 percent. The patterns are similar for women, though less negative for women with disabilities. These patterns suggest that people with disabilities actually lost ground during one of the most vigorous economic expansions in US history.

While there are a variety of explanations for these trends, they are poorly understood. A better understanding is needed if policymakers are to address their causes. Aging of the baby boom is one explanation, but significant trends remain after adjusting for this factor. Another possible explanation is measurement error in disability status, but this seems likely to be only a partial explanation at best, and cannot explain the growth in program participation. Future studies using data from SSA's National Study of Health and Activity (NSHA) are likely to provide information on the validity of the self-reports of disability, the basis for the trend estimates of employment.¹

The 1990-91 recession clearly contributed to program growth (Stapleton, Dietrich, Furman, and Lo, 1995), and data on program terminations show no sign that those who entered during the recession are exiting during the current strong expansion (SSA, 1999). One explanation for the disappointing growth in employment of those with disabilities during the recovery is that they find it more difficult than others to return to work following a downturn, and resort to use of the disability programs as a result. A related explanation is job loss due to

¹ See Bound and Burkhauser (1999) for a review of the link between SSA's disability programs and employment.

structural change in the labor force. As some jobs disappear, to be replaced by others, workers with disabilities who lose their jobs might have special difficulties transitioning to new jobs. These explanations suggest a need for short-term unemployment insurance (UI) and return-to-work (RTW) programs tailored to workers with disabilities.

Some hypothesize that the ADA itself has discouraged employment of workers with disabilities by imposing costs on their employers, contrary to its intent. Limited evidence suggests that, if there has been a negative effect, it has been on hiring workers with disabilities, not retention (Acemoglu and Angrist, 1998; DeLeire, 1997). One potential explanation for this finding is that hiring practices are more difficult to monitor and employers will try to avoid added costs of accommodation through reduced hiring of people with disabilities.

Growing health care costs, cost-driven declines in access to health insurance, and the links between the disability programs and public health insurance are another explanation of program growth. Evidence from SSA administrative data is consistent with the hypothesis that SSI recipients who participate in Section 1619(b) work incentive programs restrain their earnings to maintain Medicaid coverage and the option of returning to benefit receipt should their earnings fall (Stapleton, Livermore, Scrivner, Tucker and Wittenburg, 1998). Provisions in the Balanced Budget Act of 1997 (BBA97) and in the WIIA address this issue by giving states the option to eliminate all income, assets, and resource limitations for workers with disabilities who buy into Medicaid. States may continue to offer the Medicaid buy-in to workers with disabilities, with sliding-scale premiums, even if they become ineligible for DI or SSI due to medical improvement. The WIIA also extends the post-DI period of extended eligibility for premium-free Medicare Part A coverage from four years to eight and one-half years.

The relationship between impairment and ability to work is always changing and is significantly more complex today than it was when the disability programs began. This is a major reason why it is so difficult to design a program that supports and encourages work among those who can, and provides a safety net for those who cannot. The definition of medical eligibility for the programs is "unable to engage in any substantial gainful activity (SGA) by reason of any medically determinable physical or mental impairment expected to result in death or that has lasted or can be expected to last for a continuous period of at least 12 months" (SSA, 1998). SGA is currently operationalized as ability to earn \$700 per month (\$1,170 for those who are blind). SSA relies heavily on explicit medical criteria for determining medical eligibility (the Listing of Impairments), but also relies on direct evidence of work or similar activities and vocational factors (age, education, and work history). Some people – perhaps many – who satisfy the medical eligibility criteria but who are not in the programs do work above the SGA level. One objective of the NSHA is to determine how many people are in this group, and to learn how they are able to work. It might also be that many program participants could work above SGA, even though they satisfy the medical eligibility criteria. Just the perception that this is true can undermine public support for the program.

Concern about divergence between the medical eligibility criteria and the statutory definition of disability, and about consistent and timely decisionmaking at all levels of the adjudication process, has been the impetus behind SSA's Disability Process Redesign initiative. SSA is in the process of implementing a number of changes to address these concerns. Among these include: joint training of adjudicators at all levels of the process, streamlining and improving the determination process (the Prototype model), reassessing how decision quality is assured, and updating medical and vocational guidelines for determining disability.

Several recent program reforms have also addressed eligibility concerns. Legislation passed in 1994 and 1996 first imposed program restrictions on those whose drug abuse or alcoholism (DA&A) was material to their disability, then eliminated eligibility entirely (Stapleton, Wittenburg, and Tucker, 1998). The thinking behind these reforms was that such individuals could work, and that the programs were supporting their habits and allowing them not to work. Legislation passed in 1996 de-linked the medical eligibility criteria for SSI children from those for adults, and required SSA to conduct re-determinations using the adult criteria for SSI child recipients when they reach age 18 (RAND, 1998). Among other things, this legislation responded to the concern that major expansions in child eligibility and, consequently, the number of child recipients in the early 1990s would lead to additional growth in SSI participation among young adults, including many who could work above the SGA level. Legislation passed in 1994 mandated that SSA review cases of 100,000 SSI disabled beneficiaries and at least one-third of SSI beneficiaries reaching 18 annually from 1996 to 1998. This legislation was also motivated by the concern that many on the rolls were capable of work, in part because SSA had fallen behind on continuing disability reviews (CDRs) due to overwhelming workloads in the earlier part of the decade.

A substantial share of our proposed research focuses on interactions between SSA's programs and other programs that provide support for persons with disabilities. We have already mentioned public and private health insurance. Another obvious one is Old Age and Survivor's Insurance (OASI). Many reforms have been proposed to address the projected imbalance of the OASI trust fund, and some of these would have an impact on DI – mostly through changes in the eligibility age (Wittenburg, Stapleton, Scrivner, and Hobbie, 1999) or through changes in their common benefit formula. For instance, reforms that partially replace the current program with

individual private accounts might significantly reduce benefits received by DI beneficiaries, who have less opportunity to accumulate private account balances, unless offsetting provisions are included.

Vocational Rehabilitation (VR) is a major Federal/State program designed to assist individuals with disabilities to work and become self-sufficient. Historically, VR has had minimal success in assisting SSA beneficiaries to obtain employment and exiting the benefit rolls. Despite a long established reimbursement program, relatively few SSA beneficiaries are ever referred to VR. Many of those referred are never accepted for services. Only a tiny fraction of those accepted ever obtain sufficient employment to enable them to leave the disability rolls. Traditionally, VR has been least successful serving individuals with psychiatric disabilities, a population of particular importance to SSA. At the same time, though, some VR programs serve large numbers of SSI/DI beneficiaries. For example, SSI/DI beneficiaries comprise 65 to 75 percent of all individuals served by VR funded supported employment programs.

Recently, a number of reforms have been initiated to increase the effectiveness of the VR program. The most recent reauthorization of the VR program in 1998 loosened eligibility requirements for SSI/DI beneficiaries, promoted collaboration with One-Stop Career Centers and other programs funded through the Workforce Improvement Act, and emphasized the importance of self-employment for individuals with disabilities. The WIIA established a Ticket to Work program to increase service capacity and promote competition among public and private service providers.

VR is but one of a multitude of employment services and supports available to SSA beneficiaries. Efforts to assess the effectiveness of VR must take into account the employment services and supports provided through State Employment Security agencies, Workforce

Investment Boards, mental health, welfare-to-work, and related agencies. Many states have incorporated special services, such as employment supports, to assist people with disabilities in their programs. SSA's State Partnership Initiative (SPI) of 1998 further augmented these efforts for people with disabilities. SPI provided cooperative agreements to 12 states to develop innovative projects to assist adults with disabilities to reenter the workforce. Examples of some of the on-going state projects include extending the period of eligibility for Medicaid for SSI recipients, using vouchers to pay for employment supports, and establishing a network of peer consults to provide SSA beneficiaries immediate access to employment counseling.

Long-term private disability insurance (PDI) benefits are coordinated with DI benefits; DI benefits received usually reduce PDI benefits paid dollar-for-dollar, thereby reducing the insurer's benefit cost and, ultimately, premiums. In effect, DI subsidizes the more generous PDI benefits. From the worker's perspective, it is the PDI benefit, not the DI benefit, that is relevant in making the work decision, yet research on this decision has focused on the DI benefits. One possible explanation of trends in employment and program participation is expansion of PDI coverage and aggressive insurer efforts to help their beneficiaries obtain DI benefits. At the same time, though, private disability management (DM) programs, which are increasingly offered along with PDI coverage, might have the opposite effect, as vendors intervene early to prevent disability or help newly disabled workers return to work.

Over 97 percent of the American workforce is covered by state or federal Workers' compensation (WC) insurance (National Academy of Social Insurance, 1999) providing medical care and a percentage of lost wages to injured and ill workers. On an annual basis, approximately two million privately employed workers lose time from work as a result of a work-injury, and a substantial number of these will suffer a permanent impairment that limits their ability to work.

Unlike the situation with PDI benefits, DI benefits are only subject to reduction if the beneficiary also receives WC and the combined benefits exceed 80 percent of previous earnings (Nelson, 1992). Mont, Burton and Reno (1999) report that 7.3 percent of DI beneficiaries and dependents are WC eligible, but work-related injuries or exacerbation of health conditions might be a far more important contributor to DI participation. A number of WC program features and policies might have a substantial impact on the incidence of referrals to the DI program and deserve investigation, positive or negative: aggressive referral of WC cases by insurers to the DI program, insurers' refusal to accept responsibility for WC indemnity payments, aggressive disability management and retraining of impaired/disabled workers, support for job accommodations to WC recipients, and support for ergonomic designs that meet OSHA's proposed standards (www.osha.gov CFR 1910.900 amended).

The replacement of Aid to Families with Dependent Children (AFDC) by Temporary Assistance for Needy Families (TANF) might increase the already considerable flow of low-income mothers and children on to SSI (Stapleton, Wittenburg, Fishman, and Livermore, 1999), as those with disabilities seek to avoid TANF time limits and work requirements. Because of the high prevalence of disability among welfare recipients, there is considerable overlap between TANF and SSI target groups. TANF programs often refer individuals with disabilities to SSI and VR, and some states require recipients to apply for benefits that receive federal funding (e.g. SSI/DI and UI) as an eligibility requirement for state welfare benefits.

Some workers with disabilities are covered by UI, but those who are employed intermittently or part-time might not be in many states. As mentioned earlier, tailoring UI benefits to the special needs of workers with disabilities might promote more rapid return to work following job loss from a recession or job restructuring.

B. Research and Evaluation Prospectus

1. Overview

We have designed our research prospectus to address the many information needs that policymakers have as they struggle to develop fiscally responsible programs and policies that better support the employment, independence, and general wellbeing of people with disabilities. In our effort to design a prospectus that addresses the three priority areas in the Request for Applications (RFA), we found it useful to first consider three distinct research objectives: (1) to improve understanding of the work, program and policy environment, and how that environment affects behavior; (2) to improve understanding of how clinical conditions and medical care allow individuals with disabilities to participate in that environment; and (3) to improve understanding of how disability determinations can be designed to support SSA's objectives better.

We have divided our specific research proposals into five categories. The first three reflect our objective of better understanding the environment and how it impacts behaviors. Category A projects focus on the work environment, Category B projects focus on the SSA program and policy environment, and Category C projects focus on the non-SSA program and policy environment. Category D projects focus on the clinical conditions and their treatment, to address our second objective, and Category E projects focus on disability determinations. These five categories are mapped to the RFA's three priority areas in *Exhibit 1*. Each of the categories includes a set of projects that will capture several of the priority areas.

EXHIBIT 1: Crosswalk between Project Categories and Priorities

	Priority 1			Priority 2				Priority 3			
	(a)	(b)	(c)	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)
	Trends in nature of disability and the disability population	Changes in technology, the labor market, and the nature of work	Programs to sustain maximum independence	Relationship of treatment to return-to-work	Employment strategies	Support services, motivation, work availability, and SSDI/SSI	Effectiveness of VR	Measuring function and comparisons to work requirements	Occupational demand constructs to replace the DOT	Characteristics of those with severe impairments who work	Barriers to employment for people with mental impairments
Research Categories											
A. The Work Environment	✓	✓		✓	✓	✓				✓	✓
B. The SSA Program and Policy Environment	✓	✓	✓		✓	✓	✓	✓		✓	✓
C. The Non-SSA Program and Policy Environment			✓			✓	✓			✓	✓
D. Clinical Conditions and Medical Treatment	✓			✓			✓	✓		✓	✓
E. Disability Determinations	✓					✓		✓	✓		

In the remainder of the research and evaluation prospectus, we present our proposed projects by category. Each category begins with a brief overview and a summary table that shows the priority areas covered by individual projects. These are followed by abstracts for the projects listed in the table. For all categories combined, we have included 10 three-page abstracts for projects we propose to perform in the first year, six one-page abstracts for projects that are designated as first-year alternates, and 33 half-page abstracts for possible projects in years two through five. Longer versions of the first-year alternatives and year two through five abstracts appear in *Attachment D*. We do not include these longer abstracts as a formal part of our Part III Program Narrative, but provide them in the Attachment as a convenience to SSA. We would be pleased to add any of the first-year alternatives to our first-year work, or to substitute them for the projects that we propose to fund, provided that sufficient financial support can be obtained. The projects proposed for years two through five should be viewed as a set of ideas. During the

first year, we will work with SSA staff to develop more specific plans for the remaining years, and we expect that many additional ideas will emerge as we do.

We also understand that we are to provide support for SSA's own research and evaluation activities – comment on plans, critique research products, perform statistical policy analyses, and conduct other quick-response activities. We have allocated limited resources to this effort, as the RFA did not specify the extent of such activities. We discuss how we will provide this support in *Section F*. We can expand this support as needed if additional funds are available or if we make offsetting reductions in our research effort.

Before turning to the projects themselves, we conclude this overview by highlighting methodological themes that run through the proposed projects. The first is the use of SSA administrative data. Our understanding is that SSA would like to increase the availability of the administrative data to responsible researchers, while maintaining strict confidentiality requirements, and that the Institute should play a significant role in that effort. Our investigators whole-heartedly support that effort, and toward that end have proposed numerous studies that would use these data in creative ways. These include studies that would use: the Master Beneficiary Record (MBR), the Supplemental Security Record (SSR), the Social Security Earnings (SSE) data, the 831 File, the Health and Retirement Survey (HRS) matched to SSA records, the Survey of Income and Program Participation (SIPP) matched to SSA records, and a variety of state-level administrative data sets matched to SSA records. Other administrative databases are from a variety of Medicaid, VR, WC, UI, PDI, and education sources. Several of the investigators on our team are involved in the conduct of the NSHA, and we would be very pleased to assist SSA in the possible matching of NSHA data to administrative records, the possible creation of public use files, and the development and execution of a research program

using the NSHA data. A few of our proposed projects for later years would use the NSHA data. We fully understand that there are severe restrictions on using these data, and that these will need to be addressed before we can conduct all the proposed research (*Section E*).

We expect that many of our projects will receive partial support from other organizations because of the many public and private organizations that have an interest in promoting disability research, and because of what they might learn from analyses of the SSA data. This is reflected in the number of our first-year projects, several of which have substantial support from other entities. Some of this support comes from organizations that own some of the non-SSA administrative data.

Most of our studies focus on the dynamic experiences of individuals with disabilities, and we expect that most future studies will as well. This takes advantage of the longitudinal nature of the administrative data, and of some survey data (especially the HRS and SIPP). Most of the proposed studies also explicitly recognize the heterogeneity of people with disabilities and their environments – again taking advantage of a feature of the administrative data. This includes heterogeneity of health conditions or impairments, as well as socioeconomic, demographic and employment heterogeneity. Several of our studies recognize that labor market conditions and program support systematically vary by race and gender, and that this variation exists within the population with disabilities. Hence, when sample size permits, we will explore the degree that our results vary across race and gender categories. Some studies would focus on specific sub-populations. Much of the research focuses on individuals that are in the low-income population, particularly those served by SSI and Medicaid.

Finally, a number of the proposed projects involve multi-disciplinary and multi-institutional collaboration. We think that the Institute can play a critical role in facilitating

appropriate collaboration of this sort. We anticipate that collaboration will increase in the projects for years two through five, beyond the level of collaboration that is evident in the proposed projects (see *Section F*).

2. Category A: The Work Environment

EXHIBIT 2: Research Projects on the Work Environment

#	Project Title and Principal Investigators	Priority 1			Priority 2				Priority 3			
		(a)	(b)	(c)	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)
Year 1												
A1	Aging, Disabling Occupational Injuries, and Postinjury Employment in California - Reville	✓					✓					
A2	Evaluation of a Program Subsidizing Reemployment of Disabled Workers - Boden and Biddle	✓				✓	✓					
A3	Job Hazards, Work-Related Injuries, and Illnesses as Predictors of Social Security Benefits Utilization among Older Workers - Dembe, Banks, and Butler	✓										
Years 2 – 5												
A4	Progression of Disability Benefits - Wehman and Kregel	✓				✓	✓					
A5	The Effects of Employers on DI Participation and Employment – Abowd, Stapleton and LEHD project staff at the Bureau of the Census	✓				✓					✓	
A6	Data Sources to Support the Study of the Relationship Between Employer-Sponsored, Worksite-Based Disability Management Programs and DI/SSI Utilization – Himmelstein, Dembe, and Flynn						✓	✓				
A7	Substitution Between Workers' Compensation Permanent Disability Benefits and SSA Benefits - Biddle, Boden, and Reville						✓					
A8	Relationship Between Workers' Compensation and Social Security Disability Programs – Franklin and Pransky					✓	✓					
A9	Physical and Cognitive Work Demands and the Onset of Disability – Johnson	✓									✓	✓
A10	Race and Gender Differences in Employment, Earnings, and Benefit Utilization after Workplace Injuries – Boden and Dembe	✓									✓	
A11	The Influence of Occupational Injuries and Illnesses and Exposure to Workplace Hazards in Subsequent Applications for SSI/DI Benefits Among Younger Workers – Dembe, Banks, and Butler	✓										

Studies in the work environment category address the nature of work and the labor market, and how these factors affect employment of people with disabilities, their personal and family well-being, and program outcomes (*Exhibit 2*). A number of these studies focus on how the nature of work affects health and disability, the effects of occupation-related injuries and

illnesses on return-to-work and program participation, and how various employer-based programs, policies and interventions mitigate or exacerbate those impacts (A1 - A4 and A7 - A11). These studies take advantage of the extensive expertise of our investigators in the areas of occupational medicine, workers' compensation, private disability insurance, and disability management, as well as of their access to WC and PDI data. Other studies will examine cyclical and structural changes in the economy, how they affect employment of people with disabilities, and how various interventions mitigate or exacerbate those impacts (A5 and A6), using micro data for both individuals and firms. In general, studies in this category address issues in *Priority 1* related to changes in technology, the labor market, and the nature of work; issues in *Priority 2* related to the effect of the availability of work and employer-based interventions (employer accommodations, disability management, WC, PDI, private health insurance); and/or issues in *Priority 3* related to the characteristics of those with severe or near severe impairments who work, labor market barriers to employment, or occupational demand constructs.

a. First-year Projects

A1. Aging, Disabling Occupational Injuries, and Post-injury Employment in California --

R. Reville

Objectives and Background: A large percentage of disabled individuals either acquired their disability at work, or aggravated conditions of aging while at work. Many employees who are disabled by injuries at work, particularly older workers, never reenter the workforce, or leave it shortly after their return (Butler, Johnson and Baldwin, 1995; Reville, 1999). Ultimately, many of these workers will receive DI and/or SSI. In this project, I propose to examine the post-injury employment patterns of workers with disabling workplace injuries in California and the change in the likelihood of non-employment as workers age. The project will identify the disabilities

most likely to result in subsequent non-employment and the industries in which disabling injuries occur. In so doing, this study will address Priority 1, specifically with regard to how recent trends in the industrial composition of the workforce and in injury rates by industry will affect future trends in the disability population and participation in SSI/DI. The analysis will also examine the extent to which preinjury earnings, economic conditions, and various attributes of the employer (including size, injury rate, and the percentage of injured workers retained) mitigate the impact of disability on subsequent non-employment. This can improve targeting of programs and provide information about the impact of the availability of work on employment patterns of disabled workers (Priority 2).

Data: This project will expand upon a linked employee-employer administrative database of California WC permanent disability claims matched to longitudinal earnings data for the injured workers and a set of uninjured comparison workers. The creation of this database has been funded by the California Commission on Health and Safety and Workers' Compensation (CHSWC), which has also agreed to fund the costs that may be incurred by California agencies from linking the data to SSA data. RAND has previously linked earnings and claims data on 70,000 claims and 350,000 comparison workers. In continuing work for CHSWC, RAND is expanding these data in early 2000 to include 467,881 claims from the database maintained by the Disability Evaluation Unit (DEU) of the California Department of Industrial Relations (DIR). The DEU data include detailed impairment/disability information from medical-legal reports submitted by doctors on injuries involving claims of permanent disability. The longitudinal earnings data are quarterly earnings reported by employers to the California Employment Development Department (EDD) for the administration of Unemployment Insurance. Earnings data are available for first quarter 1991 through fourth quarter 1998. The comparison workers,

also drawn from the EDD data, are working at the same firm at the time the injured worker was injured, with approximately the same earnings. The resulting database is the largest and most detailed database of labor market and medical information available for likely SSI/DI claimants. Letters of support for the federal-state data link from the directors of EDD, DIR, and CHSWC are attachments to the proposal.

For this project, I propose to link the WC database to the Social Security Numident file to provide information on age and gender for both injured workers and controls (since these data are not available from the California databases). Because many disabling injuries are more likely to occur later in life, the age and gender information allows more meaningful comparisons across injuries; it distinguishes between injury-related non-employment and other age-related non-employment (particularly retirement). The Numident link is only the first of several SSA administrative database links that would be useful for these data.

Methodology: I will estimate the increase in non-employment associated with a disabling workplace injury by comparing the group of disabled workers without reported UI earnings to their comparison workers over the seven years after the injury. The comparison group will capture non-disability increases in non-employment, such as retirement. The inspiration for this approach comes from the training program evaluation literature (see for example, Heckman and Hotz, 1989; Heckman et al., 1997; Holland, 1986; Lalonde, 1986). The data will be stratified by detailed injury type, age, and gender. By comparing within firm to workers of similar age, gender and earnings, it is likely that the problem of selective retirement (that the injured workers are more likely than uninjured workers to retire early or to spend time out of work) will be reduced. I will also compare the pre-injury labor force participation and earnings of the injured workers and the comparison workers to evaluate the quality of the

comparison. Reville (1999) showed that the within-firm controls had very similar pre-injury labor force participation and earnings. However, when stratifying by injury type, this match is not always as sound, particularly for injuries related to age or gender. I expect that the Numident file match and the improved controls that result will eliminate this problem. Finally, controlling for age and injury composition, I will examine the industries in which the injuries occurred, and at-injury firm characteristics associated with increased levels of disability-related non-employment. .

A2. Evaluation of a Program Subsidizing Reemployment of Disabled Workers -- L. Boden and J. Biddle

Objectives: This study will evaluate the impact of an employer subsidy program on the duration of work after injury, subsequent employment, and the eventual use of SSA disability and retirement benefits. The study will address Priority 2, as it measures the impact of a program designed to return injured/disabled people to work; and Priority 1, as it describes the relationship between SSA benefit use and personal, employer, and job characteristics. Results will likely be relevant to non-occupational injuries and illnesses as well.

Background: Studies of workplace injuries have shown that large groups of injured workers have substantial lost earnings and increased non-employment. Analysis of data from a survey of people with work-related back injuries (Boden, unpublished) suggests that those who lost at least one month's work or who received permanent disability benefits were more likely than others to be receiving SSI/DI benefits six years post-injury (odds ratio=1.90 in a multivariate logistic regression). Studies also have shown that, when the preinjury employer rehires the injured/disabled worker, time lost from work is reduced substantially and the employment trajectory is improved (Burkhauser, Butler, and Kim 1995; Galizzi and Boden

1996). The Oregon Employer-at-Injury Program (EAIP), introduced in 1993, provides wage subsidies to employers offering modified or light-duty jobs to get injured workers back to work before they have fully recovered. This increases the likelihood that workers will be rehired by the preinjury employer, which eliminates job search time for those who otherwise would not have been rehired and avoids the loss of firm-specific human capital (Galizzi and Boden 1996).

Data: We have data on 61,000 occupational injuries eligible for compensation in Oregon in 1992 and 1993 – the year before and the year that the EAIP was introduced. This has been linked with 1988-1997 UI wage data on the injured workers and all uninjured workers who worked at the injured workers' firms in the calendar quarter of the injury and to labor market information data on their employers. We will use workers in the State of Washington as a comparison group. For Washington, we have data on all compensable injuries from the beginning of 1993 through mid-1994 and all unemployment insurance wage data from 1989 through 1997, and we propose to add data for 1992 for the purpose of this project. The WC data include Social Security number, worker, injury, and employer characteristics, and WC benefit information. For Oregon, they include duration on EAIP and amount of EAIP subsidy paid. We also propose to match SSA information on disability and retirement benefit utilization and add SSA age and gender information about matched controls to the data. The most useful SSA data source will be the Master Beneficiary Record. If data from the Master Earnings File could also be made available, we would be able to examine the effect on Social Security earnings and payroll taxes and would also be able to follow the employment experiences of those who emigrate from Oregon and Washington to other states or who report self-employment earnings.

Methodology: The “natural experiment” of the introduction of the EAIP offers the opportunity to determine the impact of this program on long-term earnings and employment

outcomes. The overall design is to compare lost-time, employment rates, lost earnings, and benefit utilization on two dimensions. First, we will compare these outcomes among workers injured in 1992 with those injured in 1993 and 1994 in each state, controlling for available covariates, including WC replacement rates and local economic conditions, as measured by county unemployment rates. Next, we will compare our findings in Oregon with those in Washington, where no similar change occurred. This comparison will help distinguish between program effects and the effects of factors that might differentially affect disabled and non-disabled workers, like economic fluctuations and secular trends.

To measure the impact of the EAIP on initial time off work, we will use survival analysis, differentiating between injuries in the pre-program period and the post-program period in Oregon. This will involve a Weibull specification that allows for unobserved population heterogeneity. We also will estimate logistic models for non-employment at one-year intervals after return to work as the dependent variables, again differentiating between pre-introduction and post-introduction injuries. We will study benefit utilization using survival analysis to determine the hazard of becoming a recipient of DI, SSI, or retirement benefits. This would be supplemented with a logistic regression analysis of benefit utilization within six years of injury.

Two methods would be used to measure lost earnings: The first would use wage histories of workers at the same firm as the injured worker in the quarter of injury with similar pre-injury incomes. Other important labor-market variables are absent from the unemployment insurance wage data. To generate a better match, we plan to obtain age and gender from SSA and match on them. We would also use regression methods, with very short-term injuries as the comparison group (Boden and Galizzi 1999). Regression methods allow for more complete matching but use an injured group as the comparison group.

A3. Job Hazards and Work-Related Injuries and Illnesses as Predictors of Social Security Benefits Utilization among Older Workers – A. Dembe, S. Banks, and J. S. Butler

Objectives: This study will evaluate the importance of experiencing a work-related injury or illness on subsequent application and admittance onto SSI/DI program for older workers. It will determine the degree that these outcomes are exacerbated and mitigated by individual characteristics (e.g. age, gender, race, ethnicity, education, expected earnings, wealth, employment history and work experiences, physical health and functioning, and type and extent of disabilities), the characteristics of the workplace, and employer behavior (accommodation). These issues are primarily relevant to Priority 1, which deals with the relationship between work requirements, and subsequent work disability and SSI/DI participation.

Background: No previous studies have been conducted linking workplace injuries or exposure to job hazards as potential determinants of utilization of DI benefits. Focus groups conducted in 1994 by NASI (Mashaw and Reno 1996) found that a surprisingly large proportion of DI beneficiaries with musculoskeletal conditions reported that their condition was caused by work, and that they had been unsuccessful in securing benefits through workers' compensation insurance. Mont, Burton, and Reno (1999) found that 7.3 percent of DI beneficiaries and dependents have workers' compensation eligibility. Zwerling et al. (1996, 1998) have used the Health and Retirement Survey (HRS) to investigate risk factors for occupational injuries among older workers including the impact of physical impairments and disabilities on the likelihood of sustaining a job injury. They detected an annual rate of about 5.0 occupational injuries per 100 employed persons in the HRS cohort. However, they did not examine the occurrence of workplace injury on subsequent application and acceptance onto the SSI/DI rolls. Unpublished information from surveys of injured workers in Wisconsin (Boden, 1999) indicated that workers

with serious work-related injuries have a 1.8 odds ratio of utilizing DI benefits in the 6th year following their injury.

Data: The HRS is a nationally representative longitudinal data collection begun in 1992 and provides information about the health and employment experiences of a population of Americans of pre-retirement age (51-61 years old at baseline). The HRS collects information concerning respondents' family composition, employment status and job history, job demands and requirements, work disability and functional limitations, health status (including occurrence of work-related injuries and illnesses), physical and role functioning, disease history, medical care and expenditures, and health insurance coverage. Zwerling et al (1996) found that 7,089 out of the 9,756 (72.7 percent) respondents aged 51-61 in the 1992 cohort were employed during the year preceding the interview. Of this group, 5.0 percent had at least one occupational injury during 1991-1992 (354 injuries), and 6.7 percent had one during 1992-1994. We will use survey data from four waves of the HRS ('92, '94, '96, and '98). Depending on the extent of overlap (subsequent injury to the same individual) between each reporting period, we estimate that 10 to 23 percent of the original cohort will have at least one job injury during the 7 years of study (1991-1998), resulting in about 500-1150 individuals for analysis. The referent group will be other, comparably employed persons without a history of occupational injury, resulting in a substantially larger sample. Within both groups, we will look for evidence of subsequent SSI/DI utilization. According to SSA actuarial data, the average rate of awards for SSDI benefits among individuals aged 50-64 is 13.8 per 1,000 insured workers per year. The final allowance rate after appeals is about 55 percent, so the annual rate of SSDI applications among employed adults of the age covered in the HRS is approximately 25.1/1000 workers. With at least 5,000 employed individuals remaining through all 4 HRS waves; we'd expect at least 125 SSI/DI applicants per

year for a total of about 875 between 1991-1998. This should provide a sufficient number of persons to support our analyses.

Methods: We will first use the HRS data to provide a descriptive analysis of the incidence of work-related injury and subsequent application and enrollment in SSI/DI. We will then use hazard modeling to determine factors affecting application for and admittance to the SSI/DI rolls. The ages at which survey respondents apply for and are approved for SSI/DI benefits will be analyzed using life event history analysis. Initially this will be done using Cox proportional hazards model (Cox, 1972). This will allow us to measure the importance of covariates that affect the age in which a respondent enrolls for SSI/DI benefits. Covariates can be fixed, such as gender and ethnicity, or time-dependent. Because the Cox model does not account for unmeasured heterogeneity, unmeasured factors (e.g. motivation to work or attachment to a job) we will then turn to more elaborate hazard models (Butler, Anderson, and Burkhauser, 1989). By doing so, we will control for unmeasured heterogeneity and thus avoid time dependence bias caused, for instance, by the fact that workers less likely to stay on the job leave more quickly (Lancaster, 1990). To examine the hypotheses that work-related injuries are related to application and enrollment into SSI/DI programs, the occurrence and number of work related injuries each year will be included as time-dependent covariates.

b. Projects for Years Two through Five

A4. Progression of Disability Benefits -- P. Wehman and J. Kregel

VCU and the UNUM/Provident have developed a database of 115,438 short-term disability (STD) claims filed from 1994 through 1996 that includes information on whether or not the claimants were insured for long-term disability (LTD). Preliminary analyses explored claimant and employer characteristics and described their relationship to the likelihood of

progression to SSA program participation. For this project, we will obtain DOT codes on each of the jobs held by respondents. This will allow us to examine the nature of work changes on program participation, specifically by investigating the flows of people from companies, jobs, or industries that experienced major structural changes during the 1994-96 period. We will also link these data to SSA disability and earnings data. We will examine the impact of STD and LTD status on SSA program participation. We will also examine how disability management programs affect the benefits progression, potentially generating savings to SSA.

A5. The Effects of Employers on DI Participation and Employment - J. Abowd, D. Stapleton, and LEHD project staff at the United States Bureau of the Census

Employers can influence DI applications and awards through: lay-offs that are responsive to general economic downturns or economic restructuring; health and disability benefit design; disability management, etc. This study will assess the overall importance of employers' roles in determining DI participation and future employment and DI participation of their disabled employees. This project will use data created as a part of the Census Bureau's new Longitudinal Employer-Household Dynamics (LEHD) project. The data permit measurement of: the individual's employment history in great detail including time spent with each employer, the employer's identity and earnings from employment (annually) over the duration of an employment period; and employer outcomes. With these data, analyses can control for individual heterogeneity in work history as well as unobserved employer heterogeneity in benefit design, etc. We will use these microdata to investigate the differential impacts of layoffs due to restructuring or economic downturns on subsequent employment and DI participation of workers with disabilities.

A6. Data Sources to Support the Study of the Relationship Between Employer-Sponsored, Worksite-Based Disability Management Programs and DI/SSI Utilization -- J. Himmelstein, A. Dembe, and B. Flynn

Disability management (DM) programs, as well as workplace-based rehabilitation and retraining, may delay application for DI/SSI benefits. Despite the rapid growth of DM programs, research into their effect has been limited by a lack of credible data describing them and their relationship to SSI/DI. This study will compile and evaluate available data sources covering workplace-based DM programs and analyze their impact on the progression from private (i.e. employer-sponsored) sources of disability income to DI/SSI. Each data source will be assessed and categorized, and a table of data elements will be compiled. A variety of organizations and agencies will be canvassed for input into this project, including industry trade associations, labor organizations, government agencies, WC agencies, and disability organizations.

A7. Substitution Between Workers' Compensation Permanent Disability Benefits and SSA Benefits -- J. Biddle, L. Boden, and R. Reville

Many workers who experience an occupational injury receive WC permanent disability (PD) and eventually DI or SSI benefits. This project will examine the influence of PD program characteristics on application for Social Security benefits. Three kinds of variation will be examined: differences in SSA benefit claims for different injuries that lead to different PD benefit amounts but similar average postinjury losses; changes in PD benefits in California for serious injuries that occurred after 1993; and across state variation in the proportion of WC-PD benefits. The analysis will use administrative data from the State of California, Washington, Florida, New Mexico, Oregon and Wisconsin on WC-PD claims linked to earnings data before

and after injury from the quarterly earnings file. These data will be linked to SSA benefit data from the MBR and the Supplemental Security Record.

A8. Relationship Between Workers' Compensation and Social Security Disability Programs - G. Franklin and G. Pransky

The relationship between SSA benefits and WC will be studied using two unique databases, in conjunction with the SSA database: Liberty Mutual's files on WC claimants; and the Washington State Department of Labor and Industries dataset, which covers WC benefits to approximately two thirds of Washington workers. Linking data from these datasets with SSA data will allow the natural history of the transition from WC to DI to be quantified and modeled. The time between initiating a WC claim and receiving DI (potentially right censored) will be examined using duration and hazard models. Important covariates will include the outcome of the WC claim, and time-dependent covariates regarding medical procedures.

A9. Physical and Cognitive Work Demands and the Onset of Disability -- R. Johnson

This project will examine the relationship between work requirements and labor supply for a sample of older workers using the first four waves of the HRS. The HRS has information on both physical and cognitive work demands, and detailed information on employment history, hours of work, health status, functional impairments, indicators of emotional health, and medical histories. We will use maximum likelihood techniques to determine whether workers in demanding jobs are more likely to move from full-time work to part-time work, change jobs, or withdraw from the labor force over the course of the survey than those in less demanding jobs. We will also combine job demands with selected variables, such as health status, which will enable us to examine whether workers in jobs with relatively low physical demands are more likely to remain at work when their health declines than those in jobs with higher demands. We

will also investigate the impact of work requirements and health status on the likelihood that individuals report having a health problem that limits work and on application for DI.

A10. Race and Gender Differences in Employment, Earnings, and Benefit Utilization after Workplace Injuries --L. Boden and A. Dembe

This study will examine whether the post-injury employment and earnings experience of injured workers differ by sociodemographic characteristics; and whether observed racial/ethnic differences in post-injury employment are related to the physical effects of the injury, employer characteristics, employee characteristics, or other factors, including discrimination. We will investigate how the demand for DI is affected by these factors, including employment discrimination and the degree to which lost earnings are replaced by WC benefits. We will use State of Florida WC system data on all 143,000 compensable occupational injuries in 1990 and 1991 linked with labor market data on employers, 1988-1994 unemployment insurance quarterly wage data on injured workers, and data on all uninjured workers employed at the injured workers' firms in the calendar quarter of the injury. Information about SSI/DI program utilization will be determined by linking the Florida data to SSA information on disability and retirement benefit utilization.

A11. The Influence of Occupational Injuries and Illnesses and Exposure to Workplace Hazards in Subsequent Applications for SSI/DI Benefits Among Younger Workers - A. Dembe, S. Banks, and J.S. Butler

As a follow-up to our proposed first-year study of older workers that uses data from the HRS, we will attempt to generalize our findings by conducting analyses in data sets covering a wider range of employees including those between 18-55; these are the Medical Expenditure Panel Survey (MEPS) and the National Health Interview Survey (NHIS). Because a large

proportion of applications for SSI/DI disability benefits (over 30 percent) occur within the first two years after the onset of disability, a significant amount of data should be available to analyze the relationship between occupational injuries, job exposures, and subsequent disability.

3. Category B: The SSA Program and Policy Environment

Studies in Category B focus on the SSA program and policy environment, how it affects employment, economic independence and well-being of people with disabilities (*Exhibit 3*). Several studies examine the dynamics of participation in SSI and/or DI, including use of the work incentive programs (B1, B4, B6, B8, B9, B14). Three studies consider the role of families in employment and participation in SSI/DI (B3, B11, B12). Two studies examine the employment and well-being of individuals who are known to be medically eligible for SSI/DI, but who are not participants (B2 and B4). Three studies consider the relationship between SSI child benefits and adult employment and program participation outcomes for children with disabilities and/or employment of their parents (B7, B8 and B15). Five studies consider how adjustments to DI or SSI program features affect one or more of several program outcomes (well-being of the disability insured, applications and awards, and exits) (B5, B9, B10, B13 and B14). One study examines a variety of explanations for program growth (B16). In general, studies in Category B address issues in *Priority 1* regarding both trends in the composition of the disabled population and how the SSA programs could be changed to help the target population maintain maximum independence; issues in *Priority 2* related to factors that affect the work patterns and strategies of the target population; and/or issues in *Priority 3* related to the characteristics of those with severe or near severe impairments who work, and the effect of SSA program features on work outcomes.

EXHIBIT 3: Research Projects on the SSA Program and Policy Environment

#	Project Title and Principal Investigators	Priority 1			Priority 2				Priority 3				
		(a)	(b)	(c)	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)	
Year 1													
B1	Longitudinal Analysis of Participation in SSI Work Incentive Programs - Stapleton and Livermore			✓								✓	
B2	State Program Clients Who Appear to Meet SSA's Medical Eligibility Criteria, but Are Not Receiving SSA Benefits - Sweet and Pransky			✓			✓	✓				✓	
B3	Analysis of DI Participation by Parents - Stapleton and Wittenburg *	✓					✓					✓	
B4	The Dynamics of SSI/DI Participation by Persons Who are Known to be Medically Eligible: The Case of Deaf College Students - Burkhauser and Butler*											✓	
B5	Disability Benefits as Social Insurance: Evaluating the Role of DI Program Parameters – Bound, Cullen, and Waidmann*	✓									✓		
Years 2 – 5													
B6	Longitudinal Analysis of DI Beneficiary Use of DI Work Incentive Programs – Stapleton and Livermore			✓									
B7	The Impact of SSI Child Benefits on Labor Force Participation - Klerman and Reville	✓					✓						
B8	Transitions to Adulthood by SSI Children - Klerman	✓					✓						
B9	Lifetime Models of Disability Insurance Applications: Econometric Models and Microsimulation Projections - Wolf, Burkhauser, and Butler	✓									✓		
B10	Effect of Benefit Generosity on DI Applications - Bound and Solon	✓									✓		
B11	Analysis of SSI Participation by Parents - Stapleton and Wittenburg	✓					✓						
B12	Disability and the Family - Favreault, Sammartino, and Bell	✓		✓								✓	
B13	Long-term Financial Consequences of a Disability Spell – Panis			✓			✓	✓					
B14	Determinants of Exit Rates from DI - Jakubson	✓	✓					✓				✓	
B15	The Implications of Welfare Reform for Child SSI Recipients in Foster Care - Avery and Butler	✓		✓			✓						
B16	State-Based Explanations of SSA Program Operations and Declines in Income among Persons with Disabilities – Bell	✓	✓				✓					✓	
B17	State Program Clients Who Appear to Meet SSA's Medical Eligibility Criteria, but Are Not Receiving SSA Benefits – Extension to Other States - Sweet, Pransky, and Fitzpatrick						✓			✓			

*Alternative proposals for the first year.

a. First-year Projects

B1. Longitudinal Analysis of SSI Recipient Participation in SSI Work Incentive Programs -

- D. Stapleton and G. Livermore

Objectives: We will study the dynamics of use of SSI work incentive programs [Section 1619(a) and (b) programs, the Plan to Achieve Self Support (PASS) program, and Impairment Related Work Incentives (IRWE)] by award cohorts of SSI recipients. We will estimate the number who ever use these programs, examine the dynamics of usage, assess the characteristics of users, examine users' earnings and incomes, and analyze variation in usage over time and across states.

This project addresses Priority 1 by studying features of the SSI program designed to provide SSI recipients with continued SSI assistance while they develop the ability to sustain a maximum level of independence. It also addresses Priority 3, by examining characteristics of individuals with severe mental and physical impairments who work. The project is relevant to recent legislation designed to increase work incentives for SSI recipients: the Balanced Budget Act of 1997 and the WIIA. Partial de-linking of Medicaid benefits from SSI under the recent legislation might have a substantial impact on use of the work incentive programs. This study will provide a baseline against which the effectiveness of the recent policies might be assessed in the future. It will also provide information on: the causes of temporal and cross-state variation in use of the incentives; demand for SSI that is induced by the existence of the benefits; interactions between the DI and SSI work incentive programs for SSI recipients; and how the benefits might be modified to serve recipients better.

Background: Historically, the proportion of SSI (blind and disabled) recipients participating in the SSI work incentive programs in any given month has been low. In September

1998, only 1.5 percent of roughly 3.7 million recipients participated in the 1619(b) program (SSA, 1998). Evidence indicates that the percentage of recipients who participate in the 1619(b) program during at least one month of their SSI tenure is likely on the order of three time larger (Stapleton, Livermore, Scrivner, Tucker and Wittenburg, 1998). The proximate reason is that recipients move in and out of the 1619(b) program frequently, but the reasons for this "churning" are not known. There is also large variation in monthly participation rates across states. In September 1998, section 1619(b) participation ranged from about one percent in West Virginia to over seven percent in Iowa (SSA, 1998).

Existing studies and SSA reports describe participation in the SSI work incentive programs and the characteristics of participants. However, these studies are descriptive in nature and present a point-in-time snapshot of the programs and recipients who use them (see for example, the quarterly reports issued by SSA (SSA, 1998); Andrews, et al., 1988; and SSA, 1986). To our knowledge, no studies other than Stapleton et al. (1998) have examined longitudinal patterns of participation in the SSI work incentive programs. That study exploited the inter-temporal variation in 1619(b) income limit increases across states, associated with differential growth in Medicaid expenditures for adult SSI disability recipients, to estimate how the earnings of those in the 1990 recipient cohort we followed changed as the limit increased.

Data: This study will require the construction of a large longitudinal file of several SSI award cohorts. SSA currently has monthly 1-Percent and 10-Percent Samples from the SSR, which might be sufficient for some purposes. The 1 percent sampling rate might, however, be too small to study use of the work incentive programs, especially at the state level. Our understanding is that the 1-Percent Sample has monthly files going back to 1982 in the Characteristic Extract Record (CER) format, while the 10-Percent Sample has monthly files in

the CER format going back only to April 1992 (before April 1992, the 10-Percent Sample was produced semi-annually). We would conduct some initial analysis using the 1-Percent Sample, then proceed to the construction of a special longitudinal SSR sample that would be more suitable to our needs. We tentatively plan to select a set of award cohorts, including ones that cover periods before and after major legislative changes. This will allow us to assess relationships between participation in the work incentive programs and major changes in program policy, such as the 1985 Mental Listing of Impairments and other changes resulting from the 1984 Amendments; and elimination of benefits for those whose drug abuse or alcoholism were material to eligibility. The SSR extract would need to be linked to Summary Earnings Records (SER) to obtain Social Security earnings data. While this would be highly desirable, especially to observe pre- and post-SSI earnings, without the SER we would still be able to examine reported earnings as long as the individual is a recipient. Ideally, we would also like to obtain data on use of DI work incentive programs by concurrent recipients, from the Master Beneficiary Record.

Methods: The description of longitudinal participation patterns is challenging because longitudinal patterns of participation can be so varied. Another complicating factor is that we will not observe complete spells for many recipients because they will still be receiving SSI at the end of the sample period. We will initially produce statistics such as: percent using each program in each year after award; percent using each possible set of multiple programs in each year; months of use in each year among those who participate; reported earnings, SSI payments, IRWEs, and PASS per month each year and during months of usage. We will use these statistics to detect usage patterns (e.g., starting immediately after award vs. delayed start; stable participation over long periods vs. intermittent usage; growing earnings and eventual program

exit vs. stable earnings vs. declining earnings). We will group users by their usage patterns, and compare characteristics (age, sex, state, urban/rural residence, living arrangements, primary impairment, pre-SSI earnings, earnings while on SSI, DI participation, DI benefits, and use of DI work incentive programs) of all users, users in each group, and non-users. To the extent feasible, the study will use multivariate methods (regression, logistic regression, event history analysis) to study the relationship between individual characteristics at the time of award and usage patterns, holding other characteristics constant (e.g., to determine the relationship between impairment type and usage of each program holding age at award constant). For each award cohort in the sample, we will: produce state-level statistics to the extent they can be supported by sample sizes; identify substantial differences across cohorts and states; and assess possible causes of these differences. A future project would examine the DI work incentive programs (B6).

B2. State Program Clients Who Appear to Meet SSA's Medical Eligibility Criteria, but Are Not Receiving SSA Benefits -- C. Sweet and G. Pransky

Objectives: This study will analyze the population applying for Massachusetts state disability-based benefit programs who meet SSA's medical eligibility criteria for SSI and DI but who are not receiving SSA benefits. The study will follow this cohort to determine who is subsequently approved for SSA benefits; who reapplies for state benefits and continues to meet SSA qualifications but do not receive SSA benefits; and who leaves public assistance, by returning to a higher level of function or returning to work. We will determine how these groups differ from the general population of SSA benefit recipients and what medical, vocational, demographic and social factors characterize each of these outcomes.

Information about individuals with impairments as severe as those on SSI/DI will enable SSA to anticipate potential growth in SSA benefits. The nature of one significant group – those

using State services for residents with disabilities and who meet SSA's medical eligibility criteria, but do not receive SSI or DI benefits -- will be characterized for the first time. Understanding the impact of vocational factors such as minimal past work experience, limited education and limited language proficiency on disability will allow SSA to prioritize programs to promote work and independence. This study will address Priority 1, by providing information about public assistance programs that help them to sustain independence; Priority 2, by providing information about support services and VR services that affect SSI/DI outcomes; and Priority 3, by providing information about the characteristics of individuals with borderline and severe mental impairments who are not SSI/DI recipients, and their employment success.

Background: The client-population served by the UMass Medical School Disability Evaluation Services Program (UMass-DES) is composed of applicants for Massachusetts disability-based benefits. These programs include Medical Assistance, Transitional Assistance for Needy Families TANF and Emergency Assistance (EA). Qualification for Medical Assistance benefits is based on an evaluation that uses SSA's medical eligibility regulations and procedures. Many of the applicants for the Medical Assistance program are working or have worked. Our preliminary review of data shows that they are likely to have had continuity of medical care and often can provide medical records to UMass-DES at the time of application. Seventy-six percent attend medical examinations scheduled by UMass-DES. Approximately 60 percent of these clients meet SSA qualifications for disability.

TANF and EA benefits are based on state medical criteria and vocational standards, which parallel the SSA process. However, UMass-DES performs an SSA review on all applicants. EA recipients must follow through on application for SSI to continue receiving the state benefit. Preliminary data show that applicants for TANF and EA have less continuity of

medical care; are more likely to be homeless, lack English-language proficiency, or lack significant education; and are less likely to have significant past work experience compared to the Medical Assistance applicants. They are less likely to attend scheduled medical examinations. Forty-five percent of EA and 16 percent of TANF clients meet the SSI level of disability. Approximately five percent become approved for SSI benefits within nine months of application to UMass-DES for state programs.

UMass-DES is the keeper of the records for the state agencies for whom we conduct reviews. Our data include medical, demographic, and vocational information. We also have access to the state database that contains information on approval for state and SSA benefits. Many clients under review by UMass-DES have simultaneous applications for SSA benefits under review by the state SSA review program conducted by the Massachusetts Rehabilitation Commission.

Data: We will identify clients who apply for state programs and are disabled based on SSA's medical eligibility criteria, then track them for subsequent approval for SSA benefits or reapplication for state programs. Data will be collected on medical and psychiatric impairments, demographic factors, and vocational factors such as language proficiency, education and past work. UMass-DES estimates that out of 16,000 cases evaluated in the first six months, 7,500 are likely to be determined medically eligible for SSI/DI. Data will come from the UMass-DES database, UMass-DES paper records (secondary impairments, language, and past work), and the Massachusetts MMIS database available to UMass-DES. SSA medical eligibility determined by the Massachusetts Rehabilitation Commission will be obtained from the MMIS database or a comparable SSA data source available through the DRI. As the data collection and entry

requirements are anticipated to be significant, we propose to select a sample of 3,500 cases for the first-year study.

Methodology: We will describe the populations who have applied for state benefits and been found to meet SSA medical eligibility criteria. We will examine the characteristics of the groups approved and not approved for SSA benefits during the follow-up period using a Cox proportional hazards model (Cox, 1972). The time until receiving SSA benefits will start when an individual begins the process of UMass-DES evaluation, which leads to a medical determination by UMass-DES. Covariates will include reapplication for state programs, demographic, vocational, medical and other characteristics of the 3,500 individuals. In the future, we might replicate this study in two other states.

B3. Analysis of DI Participation by Parents (alternate) -- D. Stapleton and D. Wittenburg

The objective of the proposed analysis is to understand better the SSI/DI participation patterns of young DI beneficiaries who are parents of minor children, particularly unmarried women. We propose to produce and analyze trends in DI awards to parents, by sex and marital status, and compare them to trends for non-parents, focusing on those who are under age 40 at the time of application. To the extent feasible, we will also examine trends at the state level and assess variation in the trends across states. Ideally, we would also produce similar trends for SSI participants, but administrative data are not available on the parental status of SSI awardees. The DI data will, however, allow us to examine DI parents who are concurrently awarded SSI. Further, we will conduct additional analysis for SSI parents, using the SIPP/SSA data. This analysis will address Priority 1, by providing information on the composition of, and changes in the number of, DI recipients; and Priority 2, by informing potential return-to-work strategies. It will provide information on: how many young DI awardees are unmarried parents; how the

characteristics of young DI parents compare to other DI recipients in the same age group; how the distribution of DI parents varies across states and over time; whether fluctuations in DI participation by parents are correlated to federal or state policy changes; and the need for return-to-work strategies to address the special needs of parents (e.g., child care). A future project might examine SSI parents(B11).

B4. The Dynamics of DI Participation by Persons Who are Known to be Medically Eligible – The Case of Deaf College Graduates (alternate) -- R. Burkhauser, J.S. Butler, and D. Wittenburg

We will use a unique data set -- the Rochester Institute of Technology (RIT), National Technical Institute for the Deaf (NTID) Graduate Data Set -- to analyze the decision to apply for DI benefits by a population of men and women who are known to meet SSA's medical eligibility criteria: deaf college graduates. Almost all of these graduates enter employment immediately following graduation, but many leave work and obtain DI benefits after a few years. This data set provides an excellent opportunity to learn how economic and institutional factors affect the decision to apply for benefits because, unlike in other data sets, we know that these individuals are medically eligible before they apply. We will also be able to examine deaf RIT drop-outs and applicants to RIT who were denied admission. This project will address Priority 3, concerning the characteristics of individuals who are both severely disabled and employed.

B5. Disability Benefits as Social Insurance: Evaluating the Role of DI Program Parameters (alternate) -- J. Bound, J. Cullen, and T. Waidmann

This project will integrate and supplement the existing theoretical and empirical literature on how changes in the design of DI affect welfare. We will first consider the willingness of workers, at the margin, to pay for more benefits. We will then consider the validity and

reliability of medical screening and whether workers are willing to trade less generous benefits for a less stringent screen (or the reverse). We will develop a simulation model and use it to examine the welfare effects of changes in program generosity and the stringency of screening. This is relevant to Priority 3, regarding current and future methods of measuring function, because the validity and reliability of function measures have an impact on the optimal program design.

b. Projects for Years Two through Five

B6. Longitudinal Analysis of DI Beneficiary Use of DI Work Incentive Programs -- D.

Stapleton and G. Livermore

This is a continuation of a first-year project that will examine use of SSI work incentive programs by SSI recipients. This project would be a similar study for DI, examining the use of Trial Work Periods, the Extended Period of Eligibility, and extended Medicare benefits. This would require construction of longitudinal files for DI award cohorts from the MBR and Social Security earnings records.

B7. The Impact of SSI Child Benefits on Labor Force Participation -- J. Klerman and R.

Reville

We propose to estimate the effects of several childhood disability and age-18 reforms on the labor force participation of the terminated children and their parents, using SSA administrative data. Specifically, we will examine the work and earnings of both the children and their parents before and after changes in SSI eligibility status caused by changes in Childhood SSI program rules. We can use similar age transitions from earlier periods to control for maturation effects and use non-terminated children to control for time-period/business cycle effects.

B8. Transitions to Adulthood by SSI Children -- J. Klerman

Relatively little is known about the number of children poised to make the transition from SSI child benefits to adult benefits, the frequency with which they make the transition, the prevalence of work (for those who do and do not enter the adult SSI program), and the effects of the PRWORA reforms on these outcomes. By using SSA data on SSI payments, we will explore the number and characteristics of children poised to make the transition from the childhood SSI program to the adult SSI program and the frequency with which they do so. This will take advantage of, and expand, a database we have built as part of RAND's ongoing analyses of the effects of the PRWORA reforms on the childhood disability program.

B9. Lifetime Models of Disability Insurance Applications: Econometric Models and Microsimulation Projections -- D. Wolf, R. Burkhauser, and J.S. Butler

In their current work on DI application and in proposed work funded by SSA, Burkhauser, Butler and Wolf assume the onset of a health condition that triggers the decision to apply for DI is exogenous. In the proposed project, we will extend these models by making the onset and continuation of disability endogenous; that is, dependent on occupation, industry, education, marital and family status, and behavioral risk factors (e.g. smoking, alcohol usage). We will also allow for correlations between unmeasured factors influencing the onset of disability and other endogenous variables in the model, including earnings, nonwage income, and DI application. We will use the estimated models to conduct microsimulations for illustrative individuals and cohort samples. This work will use data from the HRS and NSHA.

B10. Effect of Benefit Generosity on DI Applications -- J. Bound and G. Solon

This project will estimate the effect of program generosity on applications for DI. Mandated increases in replacement rates that occurred during the late 1960s and early 1970s

were particularly dramatic for those with low earnings, and were virtually non-existent for higher earners. As a result, it should be possible to measure the impact of benefit levels on application rates by comparing changes in application rates for high versus median versus low earners using the Continuous Work History Sample, utilizing a difference-in-differences methodology. This will represent a significant improvement over previous research that has used either aggregate time series or cross-sectional data.

B11. Analysis of SSI Participation by Parents -- D. Stapleton and D. Wittenburg

We propose to explore the SSI participation of parents of minor children, especially unmarried women, following the same general approach we have proposed for studying DI participation by parents in year one. We understand from SSA's Mary Barbour and Charles Scott that SSA might link records from the Master SSI Claim System (MSSICS) to the SSR, allowing the addition of family background information on SSI claimants that can be used to identify parents. Evidently, the data have been collected since 1994, although complete files might only be available from 1997.

B12. Disability and the Family -- M. Favreault, F. Sammartino, and S. Bell

We propose three separate but related projects to investigate the extent to which family support arrangements help people with disabilities remain economically independent, using HRS and SIPP data matched to SSA data. Once completed, we will explore whether the results can be integrated into existing dynamic microsimulation models (e.g., Urban's DYNASIM and SSA's MINT).

(a) Family Support, Social Networks, and Workforce Attachment -- We propose to investigate the impact of family support arrangements and social networks on the probability that a disabled person is able to continue working. We will use self-reported health status information

and, where possible, diagnostic information from administrative records to consider whether perceptions of and responses to disability onsets (e.g., time to application for some form of public benefits) vary based on marital status, spouses' characteristics, kin availability, and other measures of social support and social integration.

(b) Disability and Divorce -- We propose to analyze whether the onset of a disability alters family structures through divorce. We will estimate a model of divorce that measures the impact of a disability on the marital status of disabled adults and also on the marital status of caregivers such as parents of disabled children and children of elderly disabled parents.

(c) The Long-Term Effect of Disability on Family Economic Resources -- We will examine the long-term effect of a disability on total family income and wealth. Although the most important of these is the loss of earnings of the disabled person when that person is a primary wage earner, a disability also can reduce or increase the earnings of non-disabled workers if they spend time caring for a disabled spouse, child, or elderly parent. The family can also suffer a loss in future earnings-related retirement income.

B13. Long-Term Financial Consequences of a Disability Spell -- C. Panis

The poor health of workers who receive DI is often associated with reduced earnings prior to the onset of a disability, very low or no earnings during DI receipt, and reduced earnings after recovery. This project will create a comprehensive measure of the long-term financial consequences of a spell period of disability receipt. It will consider the , incorporating not just reduced own earnings of the recipient, but also as well as spousal (caregiver) earnings, out-of-pocket medical expenses, SSI receipt, and the value of continued Medicare coverage. Special attention will be given to the experiences and selectivity of the 11 percent of DI claimants that terminate DI due to medical or work recovery. We will use 1990-1993 SIPP data, matched to

SSA program data on earnings, benefits, and health. The resulting financial impact measure is of interest in its own right and will help to understand the effectiveness of SSI/DI work incentives and employer accommodation requirements.

B14. Determinants of Exit Rates from DI – G. Jakubson

This project will examine the determinants of exits from DI: whether they fluctuate over time in response to program changes, the extent to which they vary by type of disability, and the effectiveness of interventions such as VR on increasing exits. Matching the 831 records with the Continuous Work History File will enable me to look at the effects of the patterns of past work experience on both entry in and exit from the DI program. Further matches with the SIPP and/or CPS will allow me to consider the effects of demographics, and matches with EIN based data should allow me to consider regional and industry variation in these responses.

B15. The Implications of Welfare Reform for Child SSI Recipients in Foster Care -- R. Avery and J.S. Butler

This study will use national state-level data from the Adoption and Foster Care Analysis and Reporting System (AFCARS) to examine the impact of welfare reform on the foster care SSI population during the period of welfare reform implementation (1990-2004). The study will examine changes in the number of SSI eligible children, the nature of child disabilities by category, and other sources of financial support received by these children. Urban Institute data will be used to determine changes in state SSI eligibility definitions during the study period. Aggregated state-level data on the number of SSI eligible children, the nature of child disabilities, and other sources of children's financial support during the period of welfare reform implementation (1990-2004) will be investigated using regression analysis with state and time

fixed effects, state-level demographic and political characteristics, macroeconomic policy and results, and SSI eligibility policies.

B16. State-Based Explanations of SSA Program Operations and Declines in Income among Persons with Disabilities -- S. Bell

This project would focus on the recently discovered national decline in income among people with disabilities during the 1990s. It seeks to discover how state actions influence the economic well-being of Americans with disabilities and, in the process, SSA's disability programs and trust funds. Two micro-databases will be used: SSA administrative records and the National Survey of America's Families (NSAF). I will examine previously-reported national declines in income among persons with disabilities in an independent national database, using comprehensive income data and a range of disability measures from the NSAF. Analysis by state will determine if this national pattern varies. Income measures from the survey (e.g., welfare benefits, total income) and SSA administrative records (e.g., DI and SSI payments, earnings) will then be related to state-level economic and policy variables and individual characteristics.

B17. State Program Clients Who Appear to Meet SSA's Medical Eligibility Criteria, but Are Not Receiving SSA Benefits -- C. Sweet, G. Pransky, and R. Fitzpatrick

In the first year, we will have examined a cohort of individuals not receiving SSI/DI benefits but who applied for Massachusetts disability-based benefit programs and were found by the UMMS-DES to meet SSA's medical eligibility criteria. We will continue to follow this cohort (approximately 3,500 individuals) to determine who is subsequently approved for SSA benefits, who reapplies for state benefits, who continues to meet SSA medical eligibility criteria but do not receive SSA benefits, and who leaves public assistance (by returning to a higher level of function or returning to work). We also plan to expand the study to two other jurisdictions

with which we have cooperative agreements. We will pursue links with external databases that contain data on SSA-funded VR services and employment.

4. Category C: The Non-SSA Program and Policy Environment

Studies in Category C focus on a broad range of non-SSA programs and policies that are used by people with disabilities (*Exhibit 4*). Five proposed studies focus on VR (C1, C4, C5, C6 and C9), and focus on Medicaid or other health insurance programs (C3, C7, C8, C10 and C11). Several of these studies touch on other programs as well, and one study examines all programs used by SSI/DI applicants and new awardees (C2). Two types of supports are captured in other categories: studies that focus primarily on employer-based supports are in Category A, and medical services are covered in Category C. Numerous studies in the other sections also touch on some aspect of non-SSA programs. In general, studies in Category C address: issues in *Priority 1* related to trends in non-SSA program utilization, or to programs to sustain maximum independence; issues in *Priority 2* related to support services or the effectiveness of VR; and/or issues in *Priority 3* related to the use of supports by those with severe impairments who work.

EXHIBIT 4: Research Projects on the Non-SSA Program and Policy Environment

#	Project Title and Principal Investigators	Priority 1			Priority 2				Priority 3				
		(a)	(b)	(c)	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)	
Year 1													
C1	Long-term Impact of VR on Earnings and Benefits - Kregel, Wehman and Dean							✓					
C2	The Dynamics of Employment and Program Participation by SSI/DI Applicants - Stapleton and Wittenburg		✓					✓					
C3	Caseload Dynamics: Transitions from Medicaid Only to SSI in Massachusetts - Himmelstein and Fisher							✓					
C4	Changes in SSI/DI Benefits and Employment of Persons Served Through Comparable VR Programs - Menz and Niederloh*												
C5	Employment and Use of VR Services Among SSI/DI Recipients with Serious Mental Illness - Henry, Fisher, and Livermore*							✓			✓	✓	
Years 2 – 5													
C6	Evaluating the Long-Term Impact of Vocational Rehabilitation Interventions - Wehman, Dean and Kregel		✓					✓	✓				
C7	Impact of the Massachusetts CommonHealth Program on SSI/DI Recipient Return to Work - Glazier and Himmelstein		✓					✓					
C8	Transition of Medicaid Adults onto SSI - Burwell and Himmelstein							✓					
C9	Comparative Impact of Community-based Employment and Training Services: Cross-validation of Outcomes and Benefits – Menz		✓					✓	✓				
C10	The Effects of Medicare Eligibility on Participation in DI - Bhattacharya, Schoenbaum, and Waidmann		✓								✓		
C11	Transitions of Disabled Medicaid Children to SSI - Burwell		✓										

*Alternative proposals for the first year.

a. First-year Projects

C1. The Long-Term Impact of VR on the Earnings and Benefits Status of Individuals with Disabilities -- J. Kregel, P. Wehman, and D. Dean

Objectives: We propose to construct a database from multiple Virginia sources to measure the long-term impact of various types of VR services on the earnings and SSA program participation on a population of SSI/DI recipients. The proposed investigation will address Priority 2, regarding the effects of rehabilitation and other support services on employment and participation in SSI/DI.

Using a sample of approximately 2,500 individuals, the investigation would involve a series of analyses focusing on the differential impact of various VR services on the earnings and SSI/DI participation of individuals with varying demographic characteristics. Analyses will focus on relative effectiveness of VR services (e.g. transitional employment, supported employment, etc.), success of these services relative to disability diagnoses, and the interaction of VR and Unemployment Insurance Benefits.

Background: Traditionally, the Federal/State VR program has had minimal success in assisting SSA beneficiaries to obtain employment or return to work. However, relatively little is known about the experiences of SSI/DI beneficiaries seeking services through VR. Reliable information is needed regarding: which beneficiaries do or do not receive services through VR; the types, amounts and sequences of services received; and the long-term impact of these services on individuals' employment status and earnings. Furthermore, efforts must be initiated to investigate the effects of recent efforts to improve employment services for SSA beneficiaries, such as the Workforce Investment Act and the Work Incentive Improvement Act.

Data: The sample will be all SSI/DI recipients entering service status in the Virginia State VR system in FY 97. Five "data modules" will be constructed. The *Demographic Profile* will be derived from the Virginia State VR 911 data collection system. *VR Purchased Services* will be derived from the Virginia VR Information System (VRIS), which contains amount (cost) and type of service for 62 distinct rehabilitation services linked to specific clients. *Economic Environment* will be derived from Bureau of Labor Statistics and Census Bureau data for 23 Virginia Planning Districts, containing information on unemployment rate, per capita income, etc. *Earnings Crossmatch* will be derived from the Virginia Employment Commission (state unemployment insurance agency) and used to develop a longitudinal earnings file for the three

years before receiving VR services. *SSI/DI Participation* will be derived from the SSA's Master Beneficiary Record and Supplemental Security Record and will contain information on benefit status and amount, as well as use of work incentives, for three years prior to VR services. If feasible, it would also be useful to obtain earnings histories from the Masters Earnings File.

Methodology: The proposed investigation contains a number of unique design features to maximize the relevance of anticipated findings to SSA. First, the study will rely on quarterly earnings data provided by the State Unemployment Insurance agency. These data allow examination of a beneficiary's earnings relative to the SSA annual earnings ceiling; for example, is the individual working sporadically for the same employer (e.g., two quarters out of four) or continuously on a part-time basis? In addition, quarterly earnings are more useful for determining the duration of employment, and conversely, unemployment periods. It is particularly helpful for examining the phenomenon of "pre-program dip" in earnings. For example, an obvious target for investigation is the employment patterns of DI beneficiaries from disability onset to application for DI or VR services. What is the rate of deterioration in earnings? Do these earnings drop off precipitously, as would be expected with a traumatic injury, or is there a gradual decline in earnings as one falls temporarily off his or her lifetime earnings path?

A second key component of the investigation will be the development of an appropriate comparison group. The treatment group will be comprised of individuals who have been closed in VR closure status 26 (successful). The comparison group will consist of individuals who have been closed in VR closure status 30. These individuals normally receive very few services and can be regarded as "drop-outs." They are typically viewed as not rehabilitated. Previous research (Dean, Dolan, and Schmidt, 1999) has examined the statistical validity of using VR program

drop-outs (i.e., the Status 30 cohort) as a viable internal comparison group for gauging impacts of service provision. A series of tests are used to look for statistically significant differences in the changes in pre-VR earnings, for the periods two years and one year before VR application, between the treatment and comparison groups. In essence, these tests are looking for evidence of "selection bias" which taints the validity of any subsequent earnings impact estimates. If none is found, the dropouts can serve as a "counterfactual" for estimating service provision impacts on subsequent earnings. Analyses performed on a previous cohort of Virginia State VR clients have shown the validity of this approach as the basis for construction of a comparison group (Dean, Dolan, and Schmidt, 1999).

C2. The Dynamics of Employment and Program Participation by SSI/DI Applicants -- D. Stapleton and D. Wittenburg

Objectives: The objective of this study is to investigate the support services that people use before and after applying for SSI/DI. It will expand our work on the use of AFDC/TANF by SSI recipients (Stapleton et al., 1999). Other programs to be examined include UI, WC, PDI, Food Stamps, VR, public housing, and, of course, Medicare and Medicaid.

The analysis would address Priority 1, by providing information needed to design alternative support systems; and research Priority 2, concerning the interaction of other support services with SSI/DI. It would provide insights on: pathways that applicants take before and after their application for SSI/DI; use of other benefits during the application process; and changes in utilization once the determination is completed. This will include participation patterns for immediate family members. We will compare patterns for allowed applicants to those for denied applicants. We will also examine the extent to which family income increases resulting from the

SSI/DI award are offset by reductions in other federal or state benefits; that is, we will estimate the net effect of an award on family income, public transfers, and private transfers.

Background: There are several "pathways" people might take before and after applying for SSI/DI benefits. Some may choose to apply for benefits immediately following disability onset, whereas others may participate in a non-SSA transfer program, receive UI, WC or PDI, and/or remain at work. In previous work for the period just before TANF, we found that many young female SSI applicants received AFDC benefits before application, and many SSI recipients lived in families that received AFDC benefits for other members (Stapleton, et. al. 1999). In another study, we found that a significant portion of SSI/DI recipients between the ages of 25 and 60 received support concurrently from several other support programs (Burkhauser and Wittenburg, 1996).

When an award is made, awardees are likely to lose some portion (or all) of certain other benefits (e.g., AFDC/TANF, PDI, and WC) but become eligible for others (especially Medicaid for SSI awardees, and Medicare after 24 months for DI awardees). There might also be changes in earnings for either the recipient or family members.

Data: The matched SIPP/SSA data are ideal for this analysis because they contain the SSI/DI participation histories for nationally representative samples, as well as extensive information on participation in other programs during the (approximate) 2.5 year SIPP interview period by the individual and the family. Income and earnings of the applicant and other family members are also observed. As in our previous analyses, we will pool data from the 1990, 1991, 1992, and 1993 SIPP panels to obtain adequate sample size for the analysis. We hope to add the 1996 SIPP panel as well. We can use these data to estimate participation in other programs before, during, and after application.

Methodology: We will first produce descriptive statistics for the outcome variables: program participation, earnings and income for applicants and family members during the pre-application, post-application and post-decision periods. We will generate a separate sample for each period because the matched data are unlikely to yield a sufficient sample size to follow a single cohort through all three stages. For the pre-application analysis, we will select SIPP respondents who applied for SSI/DI benefits during the period from the start of the SIPP panel to two years following their final SIPP interview. For the post-application analysis, we will select SIPP respondents who had an application pending within the SIPP interview period. For the post-application analysis, additional SSA administrative data matches to the SIPP that contain information on the application process (from the 831 File) appear to be needed. For the post-decision analysis, we will select SIPP respondents who started receiving SSI/DI benefits during the period from two years before their first SIPP interview to their final SIPP interview. We will produce descriptive statistics for other applicant and applicant family characteristics for each of the three periods to assess whether the samples used for the three periods vary in a systematic way. We will then estimate multivariate models (regressions and logistical regressions) to assess the relationship between each characteristic and each outcome variable, holding other characteristics constant. If necessary, we could use the multivariate models to adjust for differences in characteristics that might explain differences in outcomes across the three samples. Finally, we will estimate the value of benefits received in each of the three periods, using a combination of benefit levels reported in SIPP and estimates from other sources; that is, we will estimate the value of income benefits and also attach a dollar value to in-kind benefits, such as Medicaid and Medicare. In addition, we will estimate the value of benefits and other income in the three periods, and changes in these variables post-application and post-decision.

C3. Transitions from Medicaid Only to SSI in Massachusetts – J. Himmelstein, W. Fisher, and D. Stapleton

Objectives: This study will examine transitions from Medicaid-only status in Massachusetts to SSI status. We will investigate the determinants of transitions and of the duration of Medicaid-only status prior to the transition. We will examine the role of diagnostic and medical expenditures, as captured in the Medicaid data, and will consider the role of socioeconomic factors. We will also examine transitions to SSI by those eligible for Medicaid via TANF.

This project addresses Priority 2, specifically the interactions of other support services with SSI. Future studies would replicate this study with data from other states (C8). Medicaid-only programs for people with disabilities are likely to be expanded substantially as an outcome of the Balanced Budget Act of 1997 and the WIIA. These studies are expected to provide information that can help SSA anticipate the effects of such expansions on SSI, and provide baseline information for evaluations of future expansions. They will also be valuable to evaluations of the impact of TANF.

Background: Prior research has shown that people who eventually are determined eligible for SSI often go through a period of Medicaid-only coverage, achieving their Medicaid eligibility through a variety of state-based systems for a transition period. Post-TANF, differences in the administration of state-disability criteria may have significant impact on the state-based disability Medicaid population and the dynamics of transitions to the SSI program. This is particularly relevant to individuals with mental illness, as these individuals make up the largest category of SSI participants. Over the last 20 years, state mental health authorities have engaged in activities to share the cost associated with the care of these persons. This has

included an emphasis on enrolling individuals with mental illness in Medicaid and accessing SSI benefits as soon as possible.

Analysis of the dynamics of transitions from state to federal disability programs may also be used to investigate the heterogeneity of the SSI population. Specifically, we will investigate the dynamics of transitions for various age, gender, and ethnic subgroups. If differences exist in the percentage and rate at which individuals with different demographic characteristics transition from Medicaid-only coverage to SSI disability status, system-level barriers might exist for subgroups of individuals. Alternatively, demographic subgroups may be associated with other variables, which are also related to transition from Medicaid-only to SSI. As an example, it has been shown that certain mental health services are related to demographic characteristics (Banks and Pandiani, 1998), and service utilization may alter the rate in which individuals transition from Medicaid-only to SSI. This study will investigate alternative explanations for any transition differences that exist for various demographic subgroups, such as disabling diagnosis and Medicaid resource utilization.

Data: Massachusetts Medicaid beneficiary data will be used for a three-year period (1996-1999). The data set will include demographic information (age, gender, ethnicity), disabling diagnosis, beginning date of Medicaid-eligibility, and Medicaid resource utilization. We propose to match Medicaid records to two SSA administrative files: the SSR and Social Security earnings histories. We would use the SSR to determine SSI application data, SSI status (to verify state Medicaid records), SSI payments, and primary impairment classification.

Methodology: We will begin by producing descriptive statistics for the sample, focusing on transitions to SSI, duration of Medicaid-only status prior to the transition, and the characteristics of individuals by time to transition. Some statistics will be stratified by

impairment. We will also compare diagnostic information from the Medicaid records to SSA's primary impairment code, and validate the SSI status indicated on the state Medicaid record.

Logistic regression will be used to examine the rate at which individuals with Medicaid only coverage between 1996 and 1999 and who have SSI benefits by the end of 1999. We will then go on to model the length of time an individual was in Medicaid-only status, using hazard/duration models, such as the Cox Proportional Hazards Model. Medicaid resource utilization will be modeled as a time dependent covariate. Analyses will be done separately for disabling diagnosis, and differences in coefficients will be tested.

C4. Changes in SSI/DI Benefits and Employment of Persons Served Through Comparable VR Programs: Cross-Validation of Findings of the National Results Council (alternate) --

F. Menz and W. Niederloh

The National Results Council (NRC) is a not-for-profit organization established to provide comparative outcome data on the effectiveness and efficiency of vocational programs provided through non-profit community rehabilitation programs (CRPs). The objectives of this study would be to use SSA administrative data to validate reported employment data, estimate effects of CRP services on receipt of SSI/DI benefits, and otherwise explore the usefulness of the SSA data in supplementing the NRC data. This study addresses Priority 2, with regard to measuring the effectiveness of VR.

C5. Employment and Use of Vocational Rehabilitation Services Among SSI/DI Recipients with Serious Mental Illnesses (alternate) -- A. Henry, W. Fisher, and G. Livermore

We propose to use SSA and Massachusetts databases to examine employment and the use of public VR services by SSI/DI recipients who have severe mental illnesses (SMIs). This study would address research Priority 3, concerning barriers to employment for persons with SMI and

characteristics of those with SMI who work. This study could be replicated in other states in future years.

b. Projects for Years Two through Five

C6. Evaluating the Long-Term Impact of Vocational Rehabilitation Interventions -- P. Wehman, D. Dean, and J. Kregel

This project would build on our first-year project. Employer-provided quarterly earning records matched to SSA records allow us to look at different types of program effects on work behavior. First, the quarterly earnings in our database will allow us to examine an SSI/DI recipient's earnings relative to the SSA annual earnings ceiling. We will investigate the degree that workers are sensitive to this SSA notch effect. Second, the quarterly earnings data are useful for determining the duration of employment and, conversely, unemployment periods. They are particularly helpful for examining the phenomenon of "pre-program dip" in earnings. An obvious example for investigation is the employment patterns of DI beneficiaries from disability onset to application for DI or VR services. Third, because we can identify employers, we can examine job mobility, both pre- and post-VR intervention, for DI beneficiaries. Quarterly earnings make it possible to determine whether two jobs in the same year are held concurrently or consecutively.

C7. Impact of the Massachusetts CommonHealth Program on SSI/DI Recipient Return to Work -- R. Glazier and J. Himmelstein

The WIIA expands States' ability to provide a Medicaid "buy-in" to individuals with disabilities who return to work. Massachusetts has a mature Medicaid buy-in program, CommonHealth, for working persons with disabilities that can inform implementation of this WIIA provision by the States. We will collect qualitative data on CommonHealth by using

telephone interviews with key program administrators and officials in appropriate offices and agencies, and by conducting focus groups with consumers with different disabilities in different parts of the state. We will also perform statistical analyses, both descriptive and econometric, of available program data, and, to the extent feasible, estimate program impacts. (UMMS has direct access to the program data.) We will then write a "case study" describing the consequences of implementing a Medicaid buy-in program for persons with diverse disabilities who return to work.

C8. Transition of Medicaid Adults onto SSI -- B. Burwell, J. Himmelstein

This study will extend a year one study in Massachusetts to four other states, using the MEDSTAT Medicaid data.

C9. Comparative Impact of Community-based Employment and Training Services: Cross-validation of Outcomes and Benefits -- F. Menz

This study will cross-validate and expand findings on comparative outcomes from employment and training services funded primarily by VR, mental health (MH), developmental disabilities (DD), and states' workforce development efforts (WFD). Field derived data (on individuals, services, and impact) for 1,800 persons and 90 programs would be combined with Social Security (SSA) data to validate findings on (a) changes in use of SSI/DI as a function of service and selected funding models; (b) labor force participation subsequent to VR services and over a period meaningful for program planning purposes (e.g., 9 months post-services); and (c) the degree to which self-report of subsidy, earnings, and workforce participation are in agreement with SSA and other earnings data. The results will help to understand better the utility of SSA data and applicants' outcomes, service, and costing instrumentation for evaluating the comparative impact of service models among targeted recipients of social services.

C10. The Effects of Medicare Eligibility on Participation in DI -- J. Bhattacharya, M. Schoenbaum, and T. Waidmann

DI awardees are eligible for Medicare after 24 months. Previous research has shown that access to health insurance is a major determinant of labor force decisions such as whether to retire or change jobs, especially among people in poor health. No research has evaluated the effects of DI's Medicare-eligibility provision on individuals' decisions to apply for DI or on the probability that individuals exit DI, although the passage of WIIA - which extends the period of Medicare eligibility after DI exit - suggests that policymakers believe it is important. We will study this issue by taking advantage of the recent post-DI extension of Medicare eligibility from four to six years, which will have different implications for individuals depending on their age and other characteristics. We will use the HRS as our initial source of data for this research. Other potential data sources include the NHIS and the CPS.

C11. Transitions of Disabled Medicaid Children to SSI -- B. Burwell

Previous research conducted by MEDSTAT showed that children with severe disabilities on the Medicaid program tend to be younger than children receiving SSI cash assistance (Burwell et al., 1997). The proposed study would continue this research by examining transitions of children with severe disabilities receiving Medicaid onto SSI. Data sources for the study would include Medicaid administrative data from states using MEDSTAT information systems, matched to SSI administrative data. The study would compare the characteristics of children in the study population receiving both Medicaid and SSI to those receiving Medicaid coverage only, then analyze transitions of the Medicaid-only group in two follow up years.

5. Category D: Clinical Conditions and Medical Treatment

Studies in Category D (*Exhibit 5*) focus on the clinical aspects of disability. Three consider the effects of specific interventions on employment, financial independence and wellbeing on people with severe mental illnesses (D1 – D3). The others provide a more general assessment of the medical conditions of individuals with disabilities, the medical care they receive, and its impact on employment, independence, and general wellbeing (D4 – D7); of these, two also focus on those with severe mental illness (D4 and D7). In general, studies in this area will address: *Priority 1*, related to trends in the nature of disability; issues in *Priority 2*, related to treatment and its effect on return-to-work; and/or issues in *Priority 3* related to clinical characteristics of those with severe impairments who work.

EXHIBIT 5: Research Projects on Clinical Conditions and Their Treatment

#	Project Title and Principal Investigators	Priority 1			Priority 2			Priority 3					
		(a)	(b)	(c)	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)	
Year 1													
D1	Use of Novel Antipsychotic Medications, VR, and Employment Among Persons with Schizophrenia and Schizoaffective Disorders – Henry, Fisher, and Livermore					✓							✓
Years 2 – 5													
D2	Replication of Massachusetts Novel Anti-Psychotic Research in Other States - Burwell and Henry					✓		✓				✓	✓
D3	Novel Anti-psychotics for Mood Disorders: A Multi-State Comparison - Henry and Burwell					✓		✓				✓	✓
D4	Adherence to Mental Health Treatment Guidelines: Impact on Vocational Outcomes for SSI Mental Health Patients - Henry and Himmelstein					✓		✓				✓	✓
D5	Analysis of Health Care Utilization by Massachusetts SSI Recipients - Himmelstein and Burwell					✓						✓	✓
D6	Describing the Clinical and Functional Characteristics of SSI Adults Using Linked SSI and Medicaid Administrative Data Sets - Burwell and Himmelstein					✓						✓	✓
D7	Mental Health Disability Dynamics - Banks, Fisher, and Himmelstein					✓		✓					✓

a. First-year Projects

D1. The Effects of Novel Antipsychotic Medications on Participation in Vocational Rehabilitation and Employment Among Persons with Schizophrenia and Schizoaffective Disorder – A. Henry, W. Fisher and G. Livermore

Objectives: We propose to examine the relationship of the use of novel antipsychotic medications to use of VR services among consumers with schizophrenia-spectrum disorders who receive publicly-funded clinical and VR/employment services in Massachusetts. Outcomes for those who have been treated with novel antipsychotics will be compared to outcomes for those treated with conventional antipsychotics, using a propensity score to control for differences in severity of the disease.

This project will address Priority 1, with respect to advances in medicine and the potential impact on work disability among persons with severe mental illness; and Priority 3, with respect to characteristics of persons with SMI who work and on barriers to employment for persons with SMI.

Background: The past decade has brought significant advances in the medications available to treat the debilitating symptoms of schizophrenia and schizoaffective disorder. A new class of antipsychotic medications (“atypical” or “novel” antipsychotics) have been shown to have many advantages over “conventional” medications (e.g. chlorpromazine, thioridazine, haloperidol) used to treat schizophrenia since the mid-1950’s.

Novel antipsychotic medications (clozapine, risperidone, olanzapine, and quetiapine) have been shown to be superior to conventional antipsychotics in the reduction of certain symptoms (e.g. hallucinations and delusions) among persons with schizophrenia-spectrum disorders (e.g. Breier and Hamilton, 1999; Buchannan, Breier, Kirkpatrick, Ball, and Carpenter,

1998). In addition, novel antipsychotics do not usually have the extrapyramidal side effects that commonly occur with the use of conventional antipsychotics (Keck and McElroy, 1997; Rosenheck, et al., 1997). Some novel antipsychotics may also be more effective in reducing negative symptoms of schizophrenia (e.g. affective blunting, impoverished speech, anhedonia, apathy) (Buchanan, et al., 1998; Keck and McElroy, 1997; Meltzer, 1999).

In addition to symptom reduction, persons treated with novel antipsychotics show improved cognitive functioning (particularly memory functioning) (Meltzer and McGurk, 1999) and report improved quality of life compared to those treated with conventional medications (Bobes, Gutierrez, Gibert, Conzalez, Herraiz, and Fernandez, 1998; Hellewell, Kalali, Langham, McKellar and Awad, 1999; Revicki, Genduso, Hamilton, Ganoczy, and Beasley, 1999). Some have argued that improvements in quality of life occur because these medications help persons with schizophrenia-spectrum disorders participate more fully in psychosocial treatments (Rosenheck, et al., 1998). Only a few studies have examined whether the positive effect of novel antipsychotics result in improved employment outcomes for persons with these disorders. Lindstrom (1994) reported a 40 percent employment rate among patients with schizophrenia treated for two years or more with clozapine, higher than that usually found for persons with schizophrenia who receive conventional treatment.

Data: We will extract data from three sources: 1) the Massachusetts Medicaid database; 2) publicly-funded VR service records, including the Massachusetts Rehabilitation Commission (MRC) database (RSA-911 [Case Service Reports]) and the Department of Mental Health (DMH)-funded employment service databases (the Clubhouse Coalition Employment Survey [CCES] and Services for Employment and Education Information System [SEEIS]); and, if feasible, 3) matched data from SSA's Master Beneficiary Record, the Supplemental Security

Record, and/or the Summary Earnings Record. The PI is currently collaborating with the Clubhouse Coalition and Supported Employment Programs in Massachusetts on other projects that involve accessing the CCES and the SEEIS. The MRC has agreed to participate with UMass in this endeavor. If SSA earnings data are unavailable, work force involvement and earnings will only be available for those individuals who participate in VR services, so the earnings analysis will be on this subset only.

Methodology: Initially, we will use the Medicaid database to identify persons with schizophrenia/schizoaffective disorder who have been treated with novel antipsychotic medications for at least one year. In addition, we will identify a comparison group of individuals who are being treated with conventional antipsychotics. The probability of an individual receiving novel antipsychotic medication will be predicted using methods described by Rosenbaum (1997). This score will be used to control for selection bias between individuals who use novel antipsychotics and those who do not. Other control variables of interest include client demographics, historical service utilization, geography, and, if SSA data are available, past earnings and program participation history.

Once the two groups of participants are identified, we will use SSN and DMH client identifiers to link study subjects to the VR databases (MRC and DMH) to determine if they use VR services. Finally, we will use SSN to link the participants to SSA database to determine employment status and wages earnings.

Analysis Methods: Once the control group has been constructed, participation in VR services will be modeled as a binary outcome, using logistic regression, with particular interest in the effect associated with taking novel antipsychotics. Following the methodology developed by Angrist, Imbens, and Rubin (1996), the propensity score will be used as an instrument to control

for selection bias. Other variables will be included as controls. In addition, two-stage models will be used to model work activity (with involvement in the work force modeled as a binomial variable) and earnings from work modeled as a Weibul distribution. In future years, this study could be replicated for other states (D2).

b. Projects for Years Two through Five

D2. Replication of Massachusetts Novel Anti-Psychotic Research in Other States-- B.

Burwell and A. Henry

For this project, we will replicate our first-year Massachusetts analysis using data for four additional states that are included in the MEDSTAT database. We will link individual records to state VR agencies databases (RSA-911 [Case Service Reports]), the MBR, SSR and possibly the SER.

D3. Novel Anti-psychotics for Mood Disorders: A Multi-State Comparison -- A. Henry and

B. Burwell

We would continue our inquiry into the relationship of use of novel anti-psychotic medications to use of VR services and employment outcomes among SSI/DI beneficiaries, this time investigating treatment of severe mood disorders, using data for the same five states.

D4. Adherence to Mental Health Treatment Guidelines: Impact on Vocational Outcomes

for SSI Mental Health Patients -- A. Henry and J. Himmelstein

This study would compare the medical utilization and vocational outcomes for SSI/DI beneficiaries with mental disorders who receive treatment according to APA practice guidelines to the outcomes for those who do not, using the Massachusetts Medicaid data linked to the MBR, the SSR, and possibly the SER.

D5. Analysis of Health Care Utilization by Massachusetts SSI Recipients -- J. Himmelstein and B. Burwell

This study would examine health care utilization by Massachusetts SSI recipients, focusing on those with mental and musculoskeletal disorders. We will use data from the Massachusetts Division of Medical Assistance (DMA), including data obtained from SSI's State Data Exchange (SDX). We will provide detailed information on the types of services and associated expenses for this population, and establish a procedure for evaluating the appropriateness of services received relative to the primary disabling diagnoses. We will also perform a longitudinal analysis to evaluate changes in the types of services used, given changes in the health care delivery systems offered to Medicaid beneficiaries (e.g. Managed Care and Managed Behavioral Health Services).

D6. Describing the Clinical and Functional Characteristics of SSI Adults Using Linked SSI and Medicaid Administrative Data Sets -- B. Burwell and J. Himmelstein

This study would expand on work we have proposed for Massachusetts by linking Medicaid data from the MEDSTAT information system to SSA data. The data would be used to develop detailed clinical and functional characteristics of adult disabled SSI recipients and to assess the adequacy of their treatment.

D7. Mental Health Disability Dynamics -- Banks, W. Fisher, and J. Himmelstein

By combining medical and VR services data in Massachusetts with SSA data, we will examine exits from SSI/DI by people with severe mental illnesses, using a Cox Proportional Hazards Model. Time dependent covariates for use of medical, psychosocial, and VR services, will be included in the model to investigate the impact of treatment and rehabilitation.

6. Category E: Disability Determinations

Category E projects focus on disability determinations (*Exhibit 6*). A number of these projects will take advantage of the capabilities of the University of Massachusetts Medical School's Disability Evaluation Service (UMass-DES). UMass-DES conducts disability determinations for applicants to all State programs, and applies SSA's medical eligibility criteria. Many of the applicants also apply for SSI/DI, and data are available for many individuals who receive essentially concurrent determinations from the State's DDS and the UMass-DES. The projects that use these data focus on "close-call" cases – those that are the most difficult to determine (E1, E4 and E5). These studies consider the characteristics of decisions under the current criteria, and how they might be improved. The other studies would take advantages of other databases in which medical eligibility information is available (E2, E3, E6 and E7). In general, studies in Category E will primarily address issues in *Priority 3*, related to measuring function and the relationship between the medical eligibility criteria and the inability to work.

EXHIBIT 6: Research Projects on the Disability Determinations

#	Project Title and Principal Investigators	Priority 1			Priority 2				Priority 3			
		(a)	(b)	(c)	(a)	(b)	(c)	(d)	(a)	(b)	(c)	(d)
Year 1												
E1	Sensitivity and Specificity of the Medical Determination Process: an Assessment of "Close Call" Cases - Sweet, Pransky, and Fitzpatrick										✓	
E2	Evaluation of SSA Classification Errors - Buchinsky and Rust*										✓	
Years 2 – 5												
E3	The Validity of Self-reported Health Measures in SSA's National Study of Health and Activity - Burkhauser, Butler, and Himmelstein	✓									✓	
E4	Sensitivity and Specificity of Medical Determinations: an Assessment of "Close Call" Cases- Sweet, Pransky, and Fitzpatrick										✓	✓
E5	Sources of Cross-state Variation in Allowance Rates - Banks, Sweet, and Himmelstein	✓									✓	
E6	Risk Prediction and Prognosis – Development and Application of a New Model to Work Disability - Pransky, Webster, and Volinn										✓	✓
E7	Special Studies Using SSA's National Study of Health and Activity – Hunt and DeRango	✓			✓		✓				✓	✓

*Alternative proposals for the first year.

a. First-year Projects

E1. Sensitivity and Specificity of the Disability Determination Process: an Assessment of "Close Call" Cases - C. P. Sweet, G. Pransky, R. Fitzpatrick and D. Stapleton

Objectives: This study will assess the sensitivity and specificity of the initial determination process. We will determine the extent and nature of "close call" cases -those that could reasonably be decided differently by different decision makers -- by comparing decisions made by the Massachusetts DDS to those made on the same individuals, using the same criteria, at the University of Massachusetts Disability Evaluation Service (UMass-DES). The impairment, demographic, and vocational factors associated with these cases will be identified. The study will describe the impact of universal application of the function-based vocational process upon the certainty of the determination by comparing the close-call rating of expert vocational reviews to the close-call rating of cases decided on the medical criteria alone.

This study will address Priority 3, specifically with regard to improving our understanding of current methods of measuring function in the disability determination process. Understanding factors that characterize close-call cases in the disability determination process is a priority for improving the quality of disability determination and for reducing the number of appeals in the current SSA disability determination process. Understanding the critical factors in close-call cases will allow disability determination programs to adopt interventions to reduce the number of close-call or variably determined cases. This will make the process more equitable and efficient. In addition, understanding close-call cases will be critical to the Redesign project. A follow-up study would use these findings to assess cross-state variation in DDS application of SSA's medical eligibility criteria.

Background: The current SSA disability determination process utilizes medical criteria to measure the severity of medical or mental impairment which is presumed to prevent engaging in substantial gainful employment. Individuals who do not meet the medical criteria are evaluated vocationally: the individual's residual functional capacity (RFC) is derived from the record and determination of ability to work is based on Federal standards that factor in RFC, age, education, past work and the job market. Cases allowed based on the medical criteria do not require a vocational review.

The SSA Advisory Board (1998) has highlighted the differences in disability determination rates between states and the significant proportion of "not disabled" determinations reversed on appeals. The Advisory Board specifically identified cases that are 'close call' -- ones "which could reasonably be decided differently by different decision makers" -- as a priority for quality assurance attention. SSA records indicate that only 62.8 percent of allowances result from the initial determination, meaning that over one-third of approvals occur

at some level of appeal – mostly at the administrative law judge level. In addition, the maximum difference between initial allowance rates for states was 27 percentage points in 1997 (Minnesota's 48 percent vs. West Virginia's 21 percent). Although there are many potential explanations, one cause for concern is that possible differences in state DDS implementation of initial determinations might substantially effect outcomes in close call cases.

The UMass-DES performs disability determinations for Massachusetts residents applying for state disability-based benefits, including Transitional Assistance for Needy Families (TANF), Massachusetts Emergency Assistance EA, and Medicaid. Medicaid benefits are based on SSA disability determination regulations and procedures. TANF and EA benefits are based on state medical criteria and vocational standards, but DES also performs an SSA disability determination on all applicants. UMass-DES is instituting a quality-assessment step for all cases, designed to identify close-call cases. This process will also determine whether the lack of clarity is related to limitations of the medical record, ambiguity of the standards, inter-examiner differences and training, and other factors.

Data and Methodology: In the pilot phase of the proposed study, expert reviewers will re-determine 100 cases with open-ended responses to establish categories of critical determination factors in close-call cases. UMass-DES expert reviewers will then re-determine a series of 1200 cases, representing six categories of impairments, as "gold standard" evaluators. We will select a random sample of 100 SSA disability process approvals and 100 SSA disability process denials for the six impairment categories under study. Comparing the expert findings to the UMass-DES conclusions will establish the sensitivity and specificity of the determination process for each category of impairment, and will lead to an identification of characteristics of

cases that are least reliably determined. These expert reviewers will also categorize the certainty of the decision and will identify the determining factors critical to the decision.

We will analyze the data for cases in which the reviewers had substantial confidence in their decision and those in which their confidence is less. The expert review will include both the list criteria and the vocational standards. The confidence of the review based on medical criteria compared to the review based on vocational criteria will be compared. We will analyze the importance for decision outcomes of factors such as ambiguity of the medical criteria, age, education, language skills, quality of medical information, and other factors identified in the pilot study.

E2. Evaluation of SSA Classification Errors (alternate) -- M. Buchinsky and J. Rust

This study will provide an "audit" of the multistage application and appeal process used by SSA to determine eligibility for disability benefits under its DI and SSI programs. We would estimate the magnitude of classification errors in both initial medical decisions and in the ultimate award decision, using data from the HRS matched to SSA administrative data. This study would address Priority 3, with respect to measurement of disability. In future work, we want to apply the model to data from the NSHA. Some respondents who will be given medical exams will move eventually through the DI or SSI evaluation system, and we will be able to test our model with a more conventional measure of true disability.

2. Projects for Years Two through Five

E3. The Validity of Self-reported Health Measures in SSA's National Study of Health and Activity -- R. V. Burkhauser, J. S. Butler, and J. Himmelstein

The NSHA will collect data on medical conditions, using extensive medical exams, as well as on self-reported health. Using the medical exams as a direct measure of the true medical

condition, we will estimate the objective validity of self-reported health by specific conditions, demographic groups, and economic and social conditions (such as for employed or single mothers). We will compare standard models of wages and other outcomes that use self-reported versus medically determined health measures as regressors. We will also estimate Multiple Indicator Multiple Cause Models, in which both measures are used as indicators of true health status, and assess the relative reliability of the two types of measures.

E4. Sensitivity and Specificity of Medical Determinations: an Assessment of "Close Call" Cases – Follow-up Study – C. Sweet, G. Pransky, and R. Fitzpatrick

This is a follow up to our first-year study. We would attempt to develop and assess methods to reduce the number of close-call cases, directed by results from the first-year findings. Subsequent re-determinations (with comparison to expert panel findings) will evaluate the success of this program in reducing the number of close-call cases. In addition, the work status and SSI/DI eligibility of reviewed individuals will be followed over 2 to 5 years using SSA databases. This will allow determination of medical, demographic, and previous work factors, which predict future disability or work.

E5. Sources of Cross-state Variation in Allowance Rates – S. Banks, C. Sweet, J. Himmelstein

Initial and final allowance rates vary substantially across states and over time. Although this can be explained by differences in the severity of disability among those who apply, another, more troubling, factor is non-uniformity in medical determinations (Social Security Advisory Board, 1998). This study would build on work we have proposed using matched Medicaid and SSI data in multiple states to investigate the extent to which cross-state differences in allowance rates can be attributed to differences in detailed applicant characteristics.

E6. Risk Prediction and Prognosis - Development and Application of a New Model to Work Disability – G. Pransky, B. Webster, and E. Volinn

We propose three studies designed to develop new information on predictive factors for outcome and persistence of musculoskeletal conditions. Each study will provide a specific model for risk prediction and a screening protocol with sensitivity and specificity characteristics appropriate for practical application. The first study will identify factors that may predict chronic musculoskeletal problems, based on available administrative information and a brief questionnaire collected at the time of the first visit for work-related low back pain. The second study will examine prognostic factors at the transition between acute and subacute disability in lower back pain and other WC diagnoses, based on information collected at the initiation of case management services in a WC system. The third study will examine prognostic factors for outcomes in group disability data and will develop a model that can be applied to SSA data.

E7. Follow-Up to the National Study of Health and Activity -- H. A. Hunt and K. DeRango

Allen Hunt is co-principal investigator for the NSHA, under contract to Westat, Inc. He is in charge of the analysis of the main survey, which is designed to answer the policy questions of the study. However, the schedule for the project allows only a minimal time for completion of the policy analyses. There will be a great many issues that will not be sufficiently investigated due to lack of time and the priority of other issues. He proposes to continue the analysis of these data under the auspices of the proposed Institute. The computer resources and data confidentiality procedures offered by Cornell University will provide an ideal environment for continued analysis of these data. This activity would commence after the end of the currently funded project in the fall of 2002. Other Institute investigators, particularly those involved in the

conduct of the NSHA (Burkhauser, Maffeo, and several others at Westat), would likely be involved.

C. Dissemination Prospectus

We propose a dissemination plan that will reach a broad audience of academics and researchers, policymakers, and the public. Our dissemination approach includes: web distribution; development of policy briefs for print and web distribution; development of research papers and presentations at appropriate disability and public policy research-related conferences and other events; publication of articles in academic and trade journals targeted to researchers and the public; development of conference proceedings and a possible academic text appropriate for publication; and publication in a variety of newsletters that will reach target audiences, such as SSA newsletters and other disability and rehabilitation practice newsletters. The proposed target audiences for dissemination include policy makers, service providers, beneficiaries, and contributors (taxpayers).

The strategies proposed have been selected to maximize the impact of research conducted. More specifically, we aim to inform those who need timely information to as they struggle with the task of adapting programs, policies, service delivery and other activities to the paradigm shift that has occurred with respect to public and private support for people with disabilities (see *Section III.A*). The desired outcome of the dissemination strategy proposed is to ensure that federal and state agencies, policy makers, an entire employment service delivery sector, their educators, and support and advocacy systems are equipped with the essential information that the Institute will produce.

SSA has a long-standing commitment to producing clearly understandable documents for the public (SSA 1997). SSA writing standards will be used in writing documents to the

reading/comprehension level of the proposed audiences. For example, public information materials and notices will be written in sixth to eighth grade level, that used in most newspapers. Technical/legal/research documents will be written at higher reading levels.

Consistent with SSA's priority, dissemination of research findings to contributors (taxpayers) will also be a part of the dissemination effort. Cornell will consult with SSA on the most appropriate dissemination vehicle for this outreach.

1. Web Distribution

We will develop both a dedicated web site for the Institute, and an extensive network with related web sites at Cornell University, nationally and internationally. Cornell currently serves as a Rehabilitation Research and Training Center (RRTC) for Economic Research on Employment Policy for Persons with Disabilities, funded by the U.S. Department of Education's National Institute on Disability and Rehabilitation Research. These efforts have resulted over the past year in a well-developed web site with national reach, devoted to employment and disability issues. The web site (<http://www.ilr.cornell.edu/RRTC>) includes information about the sponsoring organization and the research organizations funded by NIDRR (Cornell University and the Lewin Group), research papers and policy briefs downloadable from the web, and an extensive set of ready responses to frequently asked questions about employment and disability-related issues. A similar prototype will be used to develop a web site devoted to the Institute.

Among its own respective colleges and research institutes, Cornell offers an extensive network of nationally and internationally-recognized web-based resources. Examples are the RRTC web site described above, linked to other NIDRR-sponsored employment and disability resource institutes nationally, the School of Industrial and Labor Relations and College of Human Ecology's Policy Analysis and Management Department's web sites. Another example

is the Legal Information Institute of the Cornell Law School which has a series of collections of legal content now widely used by an large and diverse audience of practitioners, professionals, academics, public officials, and ordinary citizens both in the U.S. and abroad. These collections include the recent opinions of the U.S. Supreme Court and the New York Court of Appeals, the U.S. Code, a series of topical overviews of particular areas of law akin to a legal encyclopedia, and a number of current-awareness services.

Web-based dissemination will be designed with an attention to accessibility issues for persons with visual and auditory impairments, and checked for accessibility issues using such resources as "Bobby," and other web-related accessibility resources and state and federal guidelines. Cornell already has had extensive experience in making web-based products accessible to persons with communication impairments through its existing disability projects in the School of Industrial and Labor Relations Program on Employment and Disability.

2. Development of Policy Briefs for Print and Web Distribution

A product of the research projects of the proposed Institute will be a series of policy briefs, which will be developed in print and web downloadable formats. Approximately five briefs will be developed in Year Two, and this will increase to up to eight per year for Years Three through Five. The policy briefs will be made available on the web in multiple formats (PDF, Word, and text files, appropriate for accessible formats to persons with visual impairments). The Institute will make available as needed to SSA for it's own distribution multiple print copies (regular print and large print for persons with visual impairments) of each of the policy briefs. Additional copies of these briefs will also be distributed as seminars, training sessions, and conferences (see below under *Training and Education*).

3. *Research Papers and Conference Presentations*

Scholarly papers will be presented at professional conferences and other relevant events. For each study, the PIs are expected to present the findings to at least one conference. We expect at least five in Year Two and as many as ten or more in each subsequent year. Examples include conferences sponsored by SSA, the Presidential Task Force on Employment of Adults with Disabilities, the International Association of Psycho-Social Rehabilitation Services, Association of Persons in Supported Employment (APSE), the American Congress of Community Supports and Employment Services (ACCESS), National Association of Rehabilitation Professionals in the Private Sector, Association of Persons with Severe Handicaps, Autism Society of America, National Brain Injury Association, the Allied Social Sciences, Association of Public Policy Analysis and Management, the National Council on Rehabilitation Education, the National Rehabilitation Association, the American Psychological Association, and other conferences where information about medical, functional, and occupational factors related to disability, and disability determination are relevant to the professional functioning of the target audiences. With some exceptions, PIs will be expected to fund conference participation from other resources.

The research papers presented at conferences will be made available in downloadable, formats through the web. The Institute will make available as needed to SSA for its own distribution multiple print and electronic copies (regular print and large print and disk copies for persons with visual impairments) of each of the papers distributed through conference presentations. Research papers will also be distributed as seminars, training sessions, and conferences (see below).

4. Academic and Trade Journal Articles

We expect at least five submissions to refereed scholarly journals in Year Two, and as many as ten per year for the remaining three years. Scholarly papers will be submitted for publication in journals such as the *Social Security Bulletin*, *Journal of Disability Policy Studies*, *Milbank Quarterly*, *Journal of Human Resources*, *Journal of Labor Economics*, *Journal of Vocational Rehabilitation*, *Journal of Rehabilitation*, and others. We also expect substantial numbers of submissions to trade journals.

5. Development and Publication of Books

At least two book-length publications will evolve from the proceedings of the two major national conference targeted for Years Three and Five. An appropriate publisher will be sought to assist in the financing, editing, and dissemination of this publication. The Upjohn Institute has expressed a strong interest in publishing these books (letter of support attached). While it cannot accept the manuscript in advance, they would publish it without cost to the Institute. Another attractive publisher the PIs have worked with previously is the Urban Institute Press.

Depending upon time and funding, a textbook on employment and disability policy appropriate for graduate students, based on course/seminar material, might be developed over the five years of this project. A preliminary discussion with Cornell University Press as a possible publisher has already occurred. Cornell University Press is the oldest university press in the country. From its beginnings in 1869, it has grown to be a major scholarly publisher, offering 150 new titles a year in many disciplines, including anthropology, classics, cultural studies, history, literary criticism and theory, medieval studies, philosophy, politics and international relations, psychology and psychiatry, and women's studies. There is also a special division

devoted to workplace issues, and preliminary discussion has occurred with this division about the possible publication of a book evolving out of the proposed Institute's biennial conferences.

6. Newsletters and Popular Press

We will seek permission to publish synopses of research findings and announcements of Institute activities in such SSA publications as Disability Notes, SSA-Online, and others. Disability Notes is distributed by the Office of Disability to a wide variety of individuals with interest in SSA disability issues. We would like to distribute information on research findings relevant to SSA employees through the SSA employee newsletter, OASIS.

Efforts will also be made to distribute synopses of research findings in the newsletters of professional organizations related to rehabilitation and disability-related interests, such as the newsletters of: the National Academy of Social Insurance (NASI); Association of Persons in Supported Employment; National Association of Protection and Advocacy Services; the Association of Educators of Community Rehabilitation Professionals; National Association of Rehabilitation Professionals in the Private Sector; National Council on Rehabilitation Education; Association for the Severely Handicapped; and others.

Dissemination of information to contributors will be made by making synopses of research relevant to contributors available to the popular press. Cornell has an extensive network of public relations professionals who can contribute to this effort as a part of the in-kind match services for this project.

D. Training and Education

Training and education activities for the proposed Institute include: professional training for graduate and post-graduate students; training of existing scholars; training for policymakers; and training for providers and beneficiaries.

1. Professional Training of Graduate and Post-Graduate Students

Four graduate students would be placed between Cornell facilities each year (two on campus, two at the Director's office in Washington, DC, for a total of 20 across the five years of the grant). A few other graduate students will likely be supported by grants to consortium investigators at other institutions each year.

Because consortium PIs have degrees in a wide variety of disciplines, we anticipate that the graduate students will also come from a wide variety of disciplines (economics, sociology, demography, rehabilitation, occupational medicine, public health, policy/administration, physiology, and labor management). Many of these disciplines are represented in existing departments and course work at Cornell University and the University of Massachusetts Medical School.

2. Training of Existing Scholars

Training of existing scholars will include support of post-doctoral students, development of relevant graduate courses, and cross-disciplinary scholar training offered between the Institute on-campus and Washington, DC and SSA facilities in DC and Baltimore. Support for post-doctoral students will be competitively solicited in Years Three through Five (one to three a year, depending on availability of funds).

National recruitment for post-doctoral students will be conducted through: state and federal agencies; research organizations, and other educational institutions from departments of Economics, Public Policy, Occupational Medicine, Public Health, Rehabilitation, and others

University graduate instructional modules on disability policy will be designed and implemented incrementally in Years Two through Five as units imbedded in existing courses at

Cornell (in the policy and labor economics course in the College of Human Ecology and the School of Industrial and Labor Relations) and at the University of Massachusetts Medical Center

An optional activity that might be considered by SSA is a cross-university distance learning lecture series on Disability Policy that could be offered through distance learning for one semester in each of Years Three through Five. For example, individual investigators might present 1-3 lectures in their specific area of expertise. Instructors at other institutions could use these lectures within their own courses, as opposed to adopting the whole course (which seems less likely to happen). Over time, this might evolve into a full-fledge course.

Cornell is a leader in the development and delivery of distance learning. The resources available through the Cornell's Office of Distance Learning include state of the art distance learning facilities on campus, available to Cornell faculty free of charge. These include two world-class (34 seat and 68 seat) amphitheater/classrooms employing the highest level of teaching technology and automation designed specifically for distance learning. Cornell also has available video conferencing facilities and extensive web-based instructional technologies.

An optional activity may be development of a graduate text on disability policy, appropriate for multiple disciplinary use will be developed incrementally across Years Three through Five, and a complete manuscript developed the end of Year Five.

Optional one-day mini-courses or distance learning lectures targeted to SSA research personnel on selected Institute research methodology and findings, might be conducted at the Cornell Washington, DC location, and/or at SSA Baltimore/Washington facilities. These activities will depend upon SSA's interest in and financial support. They might also be open to other federal researchers, depending on SSA's preference. SSA's internal distance learning facilities could also be used to deliver this material.

3. Conference and Training for Policymakers and Others

Policy training efforts will be targeted at federal and state policy makers with interests in disability policy, such as: SSA Central Office and Regional/field staff; federal agency Departments of Labor, Education, Health and Human Services; selected state agency staff from departments of labor, vocational rehabilitation, developmental disability, health agencies, mental health agencies, and others.

We have budgeted for two two-day conferences to be held in Years Three and Five in Washington, DC. NASI and other entities will be sought as co-sponsors of these conferences. We propose to structure these conferences along the lines of the 1995 conference that Lewin conducted for SSA and the Department of Health and Human Services on the causes and implications of policy research/analysis. The first day would be devoted to presentation of research findings by the Institute PIs, and the second day would be devoted to panel discussion of policy implications.

There are many other training activities for policy makers that we could pursue. For proposal purposes, we have not committed to other training activities in this area, but instead propose to develop a training plan in consultation with SSA. How ambitious this plan is should depend to the level of funding for later years. These activities could be conducted at SSA's facilities in Baltimore or Washington, or at Cornell's Washington area location.

One idea would be to have the Institute conduct an annual seminar series (Years Three through Five) targeted to SSA and other federal policy makers on the Institute's research findings and methodological advancements could be offered. Another idea would be to have the Institute conduct one-day mini-courses targeted to SSA policy personnel on selected Institute findings.

4. Training for Providers, Beneficiaries, and Recipients

We propose to develop a plan for training providers, beneficiaries and recipients in consultation with SSA, with the level of effort dependent upon SSA's desire to spend Institute funds on these activities relative to others, and the availability of funds from other sources. We are fully capable of providing training for providers of rehabilitation services both in the public and private sectors, as well as for beneficiaries, recipients, and their family members. Approaches could include: training targeted to SSA's own service delivery staff, such as PASS Specialists and Employment Support Representatives; training to state VR personnel; training for employment specialists in private sector provider organizations; and training for beneficiaries, recipients, and family members through appropriate advocacy and other organizations.

Training targeted to SSA direct service staff such as PASS specialists and ESR personnel could include one training program each year on practice implications of research findings, conducted in Years Three through Five. Training might be conducted in either a one to three day program at the Baltimore/DC SSA facilities, or in blocks of two to three hours delivered through SSA's distance learning facilities in each state/region.

Training for providers from other related vocational rehabilitation service delivery networks, such as state VR, community rehabilitation programs, and private sector VR programs could be conducted either as full-day pre-conference workshops or multiple-day training programs collaboratively implemented at national conferences of member organizations and/or federally-sponsored continuing education programs related to the target groups. Examples of possible co-sponsors are the National Council on Rehabilitation Education, the Council of Administrators in State VR Agencies, the National Association of Rehabilitation Providers in the Public Sector, ACCESS, APSE, and others. Matching funds to implement these programs will be

sought from co-sponsoring organizations. Costs for participant attendance will be the responsibility of each program attendee, or their employing organization.

Training for disability beneficiaries and their family members could be implemented through the development of a training package covering the implications of research findings for the employment future of beneficiaries, appropriate for the target group(s). Training might best be delivered following a "train-the-trainer" model, to existing networks where there is a responsibility for beneficiary training. These include state and regional SSA office staff, state VR agencies, the National Council on Independent Living, Parent Training Information centers, and others.

Knowledgeable representatives from existing rehabilitation education and rehabilitation provider networks have agreed to work with us in this effort. Examples are Bruce Growick from the Ohio State University, who is a past president of the National Association of Rehabilitation Providers in the private sector, John Kosciulek, Associate Professor of the Department of Rehabilitation at the University of Missouri-Columbia, a current Board member of the National Council of Rehabilitation, and William Talley, the Director of the Region I Rehabilitation Continuing Education Program at Assumption College in Worcester, MA. Resumes for these individuals are included in *Attachment B*.

E. Facilitation of Data Usage

1. The Role of Confidential Data

The use of confidential data figures prominently in the research projects that are part of this proposal. In this section we discuss the policy and data security issues that surround the use of such data as a part of the Institute. In designing a research facility that makes regular, highly-visible use of confidential data, there are two related sets of issues one must address: (1) Privacy

concerns—are the data being used for an appropriate purpose consistent with the mission of the SSA and with the rights of the individuals and organizations who provided those data?; and (2) Confidentiality concerns—are there appropriate safeguards against the disclosure of the identities of the individuals and organizations? The Institute will only use data designed for the study of disability and related issues. All data sets will be screened for appropriate privacy protections in direct consultation with SSA. To the best of our knowledge none of the proposed research on confidential data uses information that was obtained without appropriate permission to perform statistical analyses that do not reveal the identity of the respondent individuals or organizations.

There are five types of confidential government data that are important for us. We discuss each of these below.

Social Security (Title 42): These are data over which the SSA has sole custodial responsibility. Such data include items collected as a part of establishing a Social Security Number, applying for, or receiving benefits. Protection of these data is accomplished by security protocols designed and administered by SSA. Access to these data is determined by the policy of the SSA. Finally, the disclosure safeguards for these data are administered exclusively by SSA. A number of our proposed studies would access data in this category, including the MBR, the SSR, and/or the 831 File.

Internal Revenue Service (Title 26): These are data over which the IRS has sole custodial responsibility. Such data include all information reported to the federal government as a part of the income tax system, including information return items that are part of SSA's administrative databases (e.g. earnings histories and other items derived from the W-2 or 941 income tax forms). Protection of Title 26 data is accomplished by security protocols designed by the IRS and administered by either the IRS or SSA. Access to these data is determined by the

policy of the IRS, as codified in Treasury Regulations. The disclosure safeguards for these data are administered exclusively by IRS. These data are critical to a few of our projects and would substantially enhance many others.

Bureau of the Census (Title 13): The Census Bureau has sole custodial responsibility for data collected as a part of its non-reimbursable statutory activities (Censuses of Population and Housing, Economic Censuses, demographic and economic surveys). Examples of such items include the non public use micro-data from the Decennial Census of Population and Housing, the Current Population Survey, the Survey of Income and Program Participation and the Annual Survey of Manufactures, as well as many other products. Protection of Title 13 data is accomplished by security protocols designed and administered by the Census Bureau. Access to these data is determined by the policy of the Census Bureau. Finally, the disclosure safeguards for these data are administered exclusively by the Census Bureau.

Other federal and state agency confidential data: Over 160 other federal agencies and a multitude of state agencies collect and produce statistical data. These include the Bureau of Labor Statistics, the National Center for Health Statistics, the Agency for Health Care Policy Research, the National Center for Education Statistics, state Employment Security Divisions and many others. Each of these agencies has its security protocols, access regulations, and disclosure review procedures. A substantial number of our proposed projects rely on data from state Medicaid, UI, VR, or WC agencies. The PIs for these projects already have access to these data, but many propose to link the state data to SSA data and, in some instances, IRS data.

Private sector data: A few of the proposed projects would use data from private organizations. These include the Provident/UNUM disability insurance data, Liberty Mutual's workers' compensation data, and might include other data in the future. The PIs for these

projects already have access to the private data, but they also propose linking their data to SSA and, potentially, IRS data.

Multiple custody data: When confidential data from two or more sources are combined the resulting product is under the joint custody of the cooperating agencies. Generally, the creation of such a data product requires a Memorandum of Understanding or Data Use Agreement between the agencies that describes the data to be combined and the uses each agency will make of those data. Some of the best-known examples of such data products are the Survey of Income and Program Participation (SIPP) linked to SSA disability and earnings data, which are under the joint custody of SSA, Census, and the IRS; the Continuous Work History Sample (CWHs), which is under the joint custody of SSA and IRS; and the Medical Expenditure Panel Survey (MEPS), which contains components under AHCPR and Census custody. A number of our projects would rely on the matched SIPP data, including several in the first year. Some later year projects would use the CWHs. Protection of multiple custody data is accomplished by mechanisms delineated in the agreement between the agencies—usually the protocols of one or several agencies. Access is governed by the data use agreement. Disclosure review procedures for all custodial agencies normally apply.

The proposed Institute, in conjunction with the Cornell Restricted-Access Data Center (CRADC), would facilitate researcher access to each of the types of confidential data discussed above. For data that are under the sole custody of SSA, we are prepared to design and implement security and access protocols that are fully compliant with SSA's existing procedures. Access to SSA sole-custody, confidential data at the CRADC would be governed by data use agreements negotiated between Cornell and SSA. Disclosure review procedures would also be governed by

the data use agreements. Cornell is prepared to undertake such agreements provided that the fundamental use of the confidential data is to perform research destined for scientific journals.

Joint custody data and data under the sole custody of the IRS present more difficult issues. Normally, such data products would be used for authorized research by SSA contractors on-site at SSA. There are several possibilities for facilitating usage of joint IRS custody data. The Institute will maintain Washington, DC offices. These offices will be used by researchers and research assistants who can commute to an appropriate authorized site in Washington or Baltimore to use joint custody data. As we discuss below, the information technology problems associated with secure remote access of such data have been solved; however, the policy issues associated with such access remain extremely difficult. The Institute is prepared to implement cost-effective remote access protocols when the cost of such protocols is below the costs associated with keeping all or part of the research team on-site at SSA. We believe that we can usefully participate in the design of policies that are appropriate for such access, but the primary responsibility for developing and implementing such policies must lie with the custodial agencies.

Some joint custody data products, for example, the SIPP-SSA data files, may also be used by SSA contractors and Census Special Sworn Status individuals at Census Bureau Research Data Centers (RDCs), including the Center for Economic Studies in Upper Marlboro, MD. Cornell is not currently an approved Census RDC. (John Abowd, a co-PI for the proposed Institute, performs his work as the Census Bureau's Distinguished Senior Research Fellow on-site at the Bureau's main offices in Suitland, MD.) Current Census policy limits the creation of RDCs to general purpose centers located in densely-populated areas that are relatively far from Washington, DC (Boston, Pittsburgh, and California, to date). If Census policy were to allow the

creation of small special-purpose RDCs, Cornell would be prepared to consider establishing such a facility, although the cost of an RDC is not a part of the Institute budget. The effectiveness of such a facility as an alternative to working in the Washington, DC area would depend upon the volume of research done in Ithaca as compared to Washington. The current proposal supposes that data products which are in the joint custody SSA, IRS and/or Census will remain at SSA and/or Census, and that researchers will travel as necessary to use them.

The Institute would facilitate the proposed linking of State agency and private data to federal data in three ways. First, we will work with SSA to develop and disseminate a protocol for linking, that specifies the various possible approaches to linking data and how to implement them. This protocol would serve to educate researchers, channel their interests into productive activities, and reduce demands on SSA staff time. This effort would likely require negotiations with the IRS, and possibly Census, to develop new MOUs or modify existing ones. We assume that the Retirement Research Centers would also have an interest in participating in this activity.

Second, Institute staff would work with individual investigators to help them better understand what data are available, the protocol, and how to prepare for use of the data. Third, when necessary, Institute staff would conduct the linking and the analysis with the linked data. When the federal data are under SSA's sole custody, we envision this occurring at the CRADC. When IRS data, or possibly Census data, are also involved, authorized Institute staff would conduct the linking and analysis at an appropriate federal site in the Washington-Baltimore area.

2. Information Technologies, Data Security, and Government Policy

Information technology problems associated with protecting confidential data are not difficult in the following sense—data can be made as secure in any given location as they are in the primary location. Duplicating the full data security system is very expensive; however,

remote access protocols have been designed and approved for the primary data products we expect to use (SSA, IRS and Census). As a matter of policy, researchers are not permitted to access these data remotely using these approved protocols. Instead, agencies have adopted a firewall-within-a-firewall approach to research access for the data. The first firewall consists of a secure data server within the computer firewall of the custodial agency. The second firewall consists of a physically secure area where research is performed using the confidential data under the supervision of a full-time employee of the custodial agency who is not doing the research. The employee's job is to monitor the uses made of the data and to prevent any unauthorized disclosure.

We do not propose that SSA reverse the policy of preventing remote research access to its data; however, the CRADC is prepared to work with SSA in implementing a limited remote-access procedure, fully-compliant with existing SSA protocols, if the Institute can better serve its purposes using such a procedure. The basic design of a remote-access protocol would include two parts: (1) installation of an approved encrypted link between the CRADC and an SSA computer site; and (2) establishment of physical protection and auditing protocols at the CRADC that provide the appropriate security at the location where the researcher accesses the link. The CRADC already possesses the means to develop and implement such a protocol and we are prepared to work with SSA if such a site is desired.

3. *The Cornell Restricted-Access Data Center*

The CRADC was created as a part of a \$4.1 million, five-year National Science Foundation Social Science Data Infrastructure grant awarded to Cornell in September 1999. The PIs for this grant are John Abowd, John Haltiwanger (U. Maryland) and Julia Lane (Urban Institue). Haltiwanger and Lane are not part of the proposed Disability Research Institute. The

majority of the funding from the NSF infrastructure grant will be used to develop longitudinal, linked data products at the U.S. Census Bureau. The CRADC was designed to house similar data from other countries and other restricted-access research data by agreement between Cornell University and the data owner.

The CRADC is a multipurpose site designed to provide appropriate data security while still allowing the analyst high-end computing resources. The access to appropriate computing power is important because the site was designed to be capable of supercomputer level data analysis of extremely large data files. For example, the CRADC currently houses longitudinal employment histories for a 1/25th sample of the French labor force from 1976 to 1995 (about 2.2 million people) as well as employer data for the universe of firms with at least 20 employees over the same period (about 1 million firms). Analysis is conducted using the Cornell Theory Center's 160-node IBM SP.² The analyst can simultaneously estimate millions of levels of several factors—a problem that cannot be attempted in restricted access data sites that limit the research to a single workstation.

The core of the CRADC facility is a secure data server that can be accessed by a compute server that includes the Cornell Theory Center's Velocity supercluster. Security on the data-server is designed to be U.S. Department of Defense C-2 level, which means that access to the data is through a secure firewall and that logs of accesses to all data areas are monitored daily. The operating system prohibits even the operator (unix superuser) from accessing the secure data without permission. The data server itself is a Dell enterprise cluster running Windows NT, which fully supports the C-2 security protocol. The data server can be accessed by a compute

² The decision to replace the CTC IBM SP with at Dell/Intel/Microsoft supercluster, made in August 1999 after the CRADC was designed, has necessitated a conversion to a compatible cluster. The specifications in this proposal concern the new design not the existing architecture.

cluster that includes Cornell Institute for Social and Economic Research's 8 x 4 SMP Dell cluster (32 processors, 32GB memory) and the Cornell Theory Center's 64 x 4 Velocity supercluster (256 processors, 256GB memory). Workstations instruct the compute server to use the restricted access data via secure links (ssh) from authorized locations. Currently, all authorized locations are in Caldwell Hall on the central Cornell campus. The workstation access area is always locked. Physical access is by control card with access logging. A full time Cornell employee maintains an office inside the CRADC.

The architecture of the CRADC permits us to customize the environment according to the specifications in the data use agreements.

F. Staffing and Organization

1. Institutions

Three Cornell University organizations will be involved in the Institute. The Institute will be attached to Cornell Institute for Social and Economic Research (CISER) for administrative purposes. Policy Analysis and Management (PAM), in the College of Human Ecology (CHE), and the Program on Employment and Disability (PED) in the School of Industrial and Labor Relations (ILR) will play significant roles.

Cornell is also in the process of establishing the Cornell Center for Policy Research (CCPR) in the Washington, DC area, as part of a long-range plan to increase the involvement of social science faculty and students in research on national policy issues. CCPR will be administered by CISER and funded by CHE, ILR and the Office of the Provost. David Stapleton, currently of the Lewin Group, has agreed in principle to accept a position at Cornell as the Director of the CCPR, and he would also be the Director of the Institute. Cornell's offer to Stapleton, and his acceptance, are not conditional on award of the Institute cooperative

agreement to Cornell. We expect Stapleton to join Cornell in April. Currently, Cornell and The Lewin Group are working with Stapleton to develop a transition plan.

The University of Massachusetts Medical School (UMass) is a partner to Cornell in this effort. The administrative home of the Institute at UMass will be the UMass Center for Health Policy and Research (CHPR). Other UMass organizations that will play a significant role are: the Center for Mental Health Services Research and UMass Disability Evaluation Services.

The Cornell, Lewin Group, and UMass staff proposed to lead the Institute have an established history of collaboration and have developed effective working relationships that will facilitate the start-up and ongoing activities of the Institute. Cornell and Lewin staff proposed for the leadership of the Institute are currently in their second year working together on disability and employment research projects through a five-year Rehabilitation Research and Training Center (RRTC) grant from the National Institute on Disability and Rehabilitation Research. The activities of the RRTC are very similar to those proposed for SSA's institute, encompassing research, training, data facilitation, and dissemination efforts. Cornell and Lewin are also collaborating on another NIDRR project to study the impact of the ADA on employer practices. Staff from UMass, through the Robert Wood Johnson Workers' Compensation Initiative, have worked with Lewin staff on a project for the State of New York (funded by RWJ) for the past two years. This same project used staff in Cornell's ILR school to conduct a survey of workers' compensation beneficiaries for the state.

Numerous investigators at other leading institutions have agreed to join our consortium. The affiliation of these institutions with the Institute is largely informal. Formal commitment from an institution will only be required when an investigator at the institution receives a grant from the Institute. Institute investigators are located at the following universities: Brown

University, Massachusetts Institute of Technology, Michigan State University, Syracuse University, University of Iowa, University of Washington, University of Wisconsin-Stout, Virginia Commonwealth University, and Yale University. Others are located at the following research and consulting organizations: The Lewin Group, Mathematica, MEDSTAT, RAND, The Urban Institute, and WESTAT. Several other non-profit institutions involved in disability and employment research and policy will also be affiliated with the proposed Institute, including: the National Rehabilitation Hospital; the Upjohn Institute for Employment Research; and the Washington Business Group on Health.

2. Executive Committee

Stapleton will be joined on the Institute's Executive Committee by four others. Richard Burkhauser, who is formally PI for the proposal, is Chair of the Department of Policy Analysis and Management (PAM) at Cornell. Once Stapleton joins Cornell, he will become PI, and Burkhauser will join the other Executive Committee members as a Co-PI. John Abowd is the Director of the Cornell Institute for Social and Economic Research (CISER) and a Distinguished Senior Research Fellow at the Census Bureau. Jay Himmelstein is the Assistant Chancellor for Health Policy at UMass and is the Director of Center for Health Policy Research. Susanne Bruyère is the Director of the Program on Employment and Disability in the School of Industrial and Labor Relations at Cornell. In general, the Executive Committee members will serve as advisors to the Director on all matters, be responsible for the overall direction of the Institute, and be the Institute's fiscal and policy authority.

Burkhauser will be the Director of Behavioral Science Research, Himmelstein will be the Director of Clinical Science Research, and together they and Stapleton will lead the Institute's Research Team. Abowd will be the Director of Data Archiving and Analysis, and will lead the

Institute's Data Team. Bruyère will be Director of Dissemination, Training and Education, and will work with Stapleton to lead Institute activities in those areas. We return later to the roles of these Directors and their teams.

3. Director's Office

The Director's Office will be located in the Washington, DC area, at the CCPR site. Currently, we are uncertain whether the CCPR will be located in Cornell space in the District, or in Lewin space in Falls Church, Virginia. Regardless of its physical location, the CCPR will be a Cornell University entity organized as a part of CISER. Cornell intends to offer CCPR positions to two of Stapleton's colleagues at Lewin, Gina Livermore and David Wittenburg. They will join Stapleton in the Director's Office, and Livermore will serve as the Institute's Assistant Director. They will be supported by a post-doctoral fellow and graduate research assistants.

The Director will be the primary point of contact with the SSA Project Officer (PO), the SSA internal Technical Assistance Panel formed for the Institute, and other SSA staff. He will: work with SSA staff and Abowd to plan the data archive and access architecture; work with SSA staff and the Institute Data Team (see below) to design, prepare, and document public use files; work with SSA staff and the Research Team to plan and implement the Institute's research agenda; work with SSA staff and the Dissemination, Training, and Education Team to develop and implement the dissemination, training, and education activities; and work with SSA staff to identify and recruit six nationally recognized scholars for the Institute's Advisory Board, and plan and implement Advisory Board meetings.

The Director will lead the provision of quick-response services to support SSA's research, program evaluation, and policy analysis. The Director and the staff of the Director's Office have substantial experience in conducting such work for SSA. In addition, they can draw

on the substantial experience and resources of the research team – particularly those in the consortium organizations that have provided such services to SSA in the past (Lewin, Mathematica, RAND, Urban Institute, and Westat). The Director will also supervise graduate interns and post-doctoral fellows who work on Institute projects at the CCPR. Finally, the Director will work with contract administrators at CISER to administer grants to scholars at other institutions.

4. Research Team

Stapleton, Burkhauser, and Himmelstein will lead the Research Team. They will be responsible for working with SSA to develop the research plan. We understand that SSA might want to revise the first-year plan after award. The Research Team leaders will work with SSA staff on this task. At the six-month point of each year, we would propose to discuss priorities for the remaining years of the agreement with SSA staff. Following this discussion, we would develop a draft prospectus for the coming year. Development of the prospectus would include a grant competition for members of the consortium.

In consultation with the Project Officer, we will develop and distribute a request for grant applications to all of the consortium investigators, describing the specific priorities for the coming year. We will review the applications received, request revisions as appropriate, and select those that best address the priorities. A similar process was used to develop the first-year prospectus. The prospectus will present the planned projects, and discuss how they address the priorities identified. We will work with the Project Officer to revise the draft prospectus as necessary.

As the Directors of Behavioral Science and Clinical Science Research, respectively, Burkhauser and Himmelstein will be responsible for promoting and facilitating inter-disciplinary

research. Disability research, by its nature, frequently requires both behavioral and clinical expertise. Within both broad areas, our consortium includes many potential PIs from many disciplines and institutions (see below). It is our intent to identify opportunities for productive collaboration between these investigators. During the process of writing this proposal, we have managed to link several investigators across both disciplines and institutions, and we expect to do substantially more as we develop a more comprehensive understanding of their many capabilities and interests.

The Research Team leadership will conduct internal reviews of Institute papers. Every paper will be reviewed critically by at least one of these individuals, or by an independent reviewer of their choice.

The Research Team leaders will work with SSA to plan the content for the two Institute conferences, and will be responsible for editing the conference volumes. We might edit the conference volumes ourselves, but will consider alternative editors as appropriate.

The other members of the Research Team are individuals who have agreed to participate in the consortium as lead investigators. All are potential Principal Investigators for Institute-sponsored research. They have been asked to join the Institute because of their relevant research expertise. All have completed significant research on disability issues, and many have used SSA administrative data for this purpose. Many of them are also capable of obtaining funding from other organizations for projects that might require SSA data. Their most significant role in the Institute will be as PIs for individual projects. Most have also agreed to serve as paid consultants to the Institute leadership, subject to availability, for purposes of: reviewing research proposals; conducting internal reviews; providing quick-response evaluation and analysis services to SSA;

participating as session chairs and discussants at Institute conferences; and preparing conference volumes.

There are 80 consortium investigators, including the Institute leadership staff. Of these, nine will be located at Cornell, 11 are from UMass, 20 are faculty at other universities, and 20 are senior researchers at other research organizations (*Exhibit 7*). The social science disciplines represented are: economics, public policy, sociology, population studies, demography, urban and regional studies, special education, and psychology. The clinical science disciplines represented are: rehabilitation education and counseling, psychiatric rehabilitation, internal medicine, occupational health and medicine, epidemiology, and biostatistics. We anticipate that other investigators will join the individuals listed as co-PIs for individual projects.

Consortium investigators will compete for Institute grants. Many of these investigators will obtain funding from other sources for projects that fall within the scope of the Institute and that require use of SSA data. For such projects, the Institute would facilitate access and analysis under SSA-approved protocols. Most consortium investigators have agreed, in principle, to serve as consultants to the Institute for: responding to SSA requests for short-term technical assistance; the development of the Institute's research agenda; the review of Institute papers written by other investigators; and dissemination, education and training activities. Due to space constraints, we provide biographical sketches only for those most likely to play a major role in Institute projects. These appear at the end of this section. We consider the following investigators to be key to the success of the Institute: Abowd, Bruyère, Burkhauser, Himmelstein, Livermore, and Stapleton. These individuals are the authors of this proposal. Project abstracts were written by their respective PIs, and revised in response to comments from Stapleton, Burkhauser, and Himmelstein.

Exhibit 7: Institute Investigators

			Time Devoted to Year 1	Time Committed to	
Investigator	Affiliation	Field	Institute Activities	Other Activities	
Investigators Participating in Proposed Year 1 Activities					
John Abowd, PhD	Cornell U.	Economics	5%	75%	
Steven Banks, PhD	U. Mass Medical	Biostatistics	25%	45%	
Jeff Biddle, PhD	Michigan State U.	Economics		20%	
Les Boden, PhD	Boston U.	Economics	12.5%	77%	
Susanne Bruyère, PhD	Cornell U.	Rehab Counseling	10%	80%	
Rich Burkhauser, PhD	Cornell U.	Economics	5%	70%	
Brian Burwell	MEDSTAT	Public Policy		60%	
J.S. Butler, PhD	Cornell U.	Economics		30%	
David Dean, PhD	U. of Richmond	Economics	5%	15%	
Allard Dembe, ScD	UMass Medical	Occupational Health	20%	40%	
William Fisher, PhD	UMass Medical	Sociology	22.5%	55%	
Robert Fitzpatrick, MD, MPH	UMass Medical	Occupational Medicine	5%	5%	
Alexis Henry, ScD	UMass Medical	Psychiatric Rehab	35%	65%	
Thomas Golden, MS	Cornell U.	Rehab Counseling	10%	85%	
Jay Himmelstein, MD, MPH	UMass Medical	Occupational Medicine	25%	60%	
John Kregel, EdD	Virginia Commonwealth U.	Special Education	15%	55%	
Gina Livemore, PhD	Lewin Group	Economics	15%	50%	
Glenn Pranksy, MD, MOccH	UMass Medical	Occupational Medicine	10%	75%	
Robert Reville, PhD	RAND	Economics	15%	75%	
David Stapleton, PhD	Lewin Group	Economics	40%	50%	
Paul Wehman, PhD	Virginia Commonwealth U.	Rehabilitation	5%	79%	
David Wittenburg, PhD	Lewin Group	Economics	40%	50%	
Other Investigators					
Investigator	Affiliation	Field	Investigator	Affiliation	Field
Lisa Alecxih, MPA	Lewin Group	Public Policy	Robert Hutchens, PhD	Cornell U.	Economics
Joshua Angrist, PhD	MIT	Economics	George Jakubson, PhD	Cornell U.	Economics
Rosemary Avery, PhD	Cornell U.	Economics	Richard Johnson, PhD	Urban Institute	Economics
Kathleen Beegle, PhD	RAND	Economics	Mary Jackson, PhD	MEDSTAT	Medical Sociology
Steve Bell, PhD	Urban Institute	Economics	Lynn Karoly, PhD	RAND	Economics
Jayanta Bhattachary, MD	RAND	Health Economics	Jacob Klerman, PhD	RAND	Economics
John Bound, PhD	U. of Michigan	Economics	Pamela Loprest, PhD	Urban Institute	Economics
Moshe Buchinsky, PhD	Brown U.	Economics	Carla Maffeo, PhD	WESTAT	Sociology
Elizabeth Chrischilles, PhD	U. of Iowa College	Pharmacy	Tami Mark, PhD	MEDSTAT	Health Economics
William Crown, PhD	MEDSTAT	Urban/Regional Studie	Fredrick Menz,	U. of Wisconsin-Stout	Economics
Julie Cullen, PhD	U. of Michigan	Economics	Garrett Moran, PhD	WESTAT	Public Policy
Gerben DeJong, PhD	National Rehab Hospital	Public Policy	Karen Needels, PhD	Mathematica	Economics
Taylor Dennen, PhD	Lewin Group	Economics	Cheryl Neslusan, PhD	MEDSTAT	Economics
Lynn Elinson, PhD	WESTAT	Epi/Health Serv Res	Veronica Nieva, PhD	WESTAT	Psychology
Melissa Favreault, PhD	Cornell U.	Sociology	Constantijn Panis, PhD	RAND	Economics
Vicki Freedman, PhD	RAND	Epidemiology	Jeanette Rogowski, PhD	RAND	Economics
Mike Fishman, MPA	Lewin Group	Public Policy	John Rust, PhD	Yale University	Economics
Bruce Flynn, MS	WBGH	Industrial/Org Psych	Mark Smith, PhD	MEDSTAT	Economics
Gary Franklin, MD	U. of Washington	Medicine	Ken Smith, PhD	Mathematica	Population Studies
William Frey, PhD	WESTAT	Special Education	Gary Solon, PhD	U. of Michigan	Economics
Barbara Gage, PhD	MEDSTAT	Health Policy	Charles Sweet, MD, MPH	UMass Medical	Occupational Medicine
A. Bowen Garrett, PhD	Urban Institute	Economics	Craig Thornton, PhD	Mathematica	Economics
Raymond Glazier, PhD	Abt Associates	Public Policy	Lois Verbrugge, PhD	U. of Michigan	Population Studies
Jonathan Gruber, PhD	MIT	Economics	Tim Waidman, PhD	Urban Insititute	Economics
Steven Haider, PhD	RAND	Economics	Robert Wallace, MD	U. of Iowa College	Medicine/Epidemiology
Bradford Hesse, PhD	WESTAT	Social Psychology	Jennifer Ward-Batts, PhD	U. of Michigan	Economics
Allan Hunt, PhD	Upjohn Insititute	Economics	Douglas Wolf, PhD	Syracuse U.	Demography
Michael Hurd, PhD	U. of Michigan	Economics			

5. Data Team

The Data Team, under Abowd's direction and in consultation with Stapleton, will be responsible for developing and implementing the data archive and analysis plan. Abowd will be assisted by a full-time post-doctoral Assistant at the Cornell campus. In addition, Wittenburg and a second post-doctoral Assistant from the Director's Office will work with Abowd in implementing aspects of the plan that require a presence in Baltimore or Washington. This will be especially important in the first year, for purposes of facilitating first-year research and developing the data archive and analysis plan. We anticipate that the Research Assistant from the Director's Office will be tasked to work at either the Baltimore or Washington office of SSA for a significant share of the first year.

Steven Banks from UMass will also be a member of the Data Team, primarily for the purpose of facilitating UMass research that requires use of SSA data.

6. Dissemination, Training, and Education Team

The Dissemination, Training, and Education (DTE) Team, led by Bruyère, will work with the Director to develop and implement the dissemination, training and education plan. The DTE Team will: develop the Institute Website; archive Institute research papers, policy briefs and other official documents; write research synopses (in consultation with the PIs and the Research Team leadership) for dissemination via newsletters and other means; and plan the training activities, including the two conferences in Washington, DC. Bruyère and Stapleton will consult with Burkhauser and Himmelstein, the Project Officer, and any other appropriate Institute or SSA staff concerning the content of the training activities.

7. Advisory Board

In conjunction with SSA, we will establish an Advisory Board made up of six nationally recognized scholars and disability practitioners who are not affiliated with the proposed Institute. The role of the Advisory Board will be to review and provide objective input on the research, training, data facilitation, and information dissemination activities proposed by SSA and Institute staff for each year of the Institute's operation. Specifically, during each year of the Institute, the Advisory Board will be asked to assess the plans and objectives of the Institute and comment on: the methodological rigor and policy-relevance of the proposed short- and long-term research projects; the potential usefulness of the research findings to a wide range of policymakers and practitioners; the potential usefulness to researchers and practitioners of specific data to be maintained by the Institute, and how these data might be processed and made most readily accessible; the quality and objectives of the proposed training activities; and the utility and likely effectiveness of the proposed dissemination activities. The Advisory Board will also be consulted regarding their views on important emerging trends and issues in disability programs and policies that might warrant research consideration by the Institute. In the years following the first year of operation, the Advisory Board will also be asked to comment on the quality and usefulness of the research and other products of the Institute.

It is our understanding that the Advisory Board will be made up of six members, three to be selected by SSA and three to be selected by the Institute. Following award of the grant, we will confer with SSA staff regarding the selection of the Board members. We will compile a list and brief description of scholars and practitioners representing a range of disability-related fields from which we will propose three members. The list will include individuals such as: Marta Tienda, Robert Haveman, Barbara Wolfe, Walter Oi, Carolyn Weaver, Douglas Kruse, Judith

Cook, Lex Frieden, Allen Jensen, Becky Ogle, John Lancaster, representatives from state VR, DDS, and independent living agencies, and representatives from professional organizations such as the American Psychological and Psychiatric Associations. We will coordinate our selection with that of SSA to ensure that the final six members represent a range of perspectives and expertise.

Once the six members have been selected, we will be responsible for the logistics involved in recruiting and coordinating their participation. We have budgeted to cover the travel and other costs associated with a total of six one-day Advisory Board meetings over the five year period: one during the first year; two in the second year; and one during each of years three, four, and five. We propose to hold all meetings in the Baltimore/Washington area. Prior to each meeting, we will prepare and send the Board, SSA, and Institute participants in the meeting a packet of material for review and comment. The information will serve as the basis for the discussion during the meeting. Following the meeting, we will prepare and submit to SSA a summary of the meeting proceedings, and discuss with SSA any issues that need to be addressed by the Institute and the plan for addressing them.

8. Administration of the Cooperative Agreement

CISER's administrator will be responsible for overall administration of the cooperative agreement, under the joint supervision of Stapleton and Abowd. She will be the principal point of contact for administrators of other organizations of investigators who participate in the Institute. The administrator of CHPR at UMass will assume responsibility for the management of the award at UMass, under Himmelstein's supervision.

The administrators will oversee the fiscal management of the award, including project fund distribution and administration of indirect costs to participating departments. They will be

responsible for routine grants management matters, such as invoicing, annual renewals, and status reports.

9. Descriptions of Key Staff

Below, we briefly describe the qualifications of selected key Institute staff. We first present the qualifications of the proposed Institute's Executive Committee. We then present the qualifications of other selected principal investigators participating in the Institute consortium. Full resumes for all consortium participants are contained in *Attachment B*.

a. Executive Committee

John Abowd (Ph.D. Economics, U. of Chicago) is Professor of Labor Economics at Cornell University, Director of the Cornell Institute for Social and Economic Research (CISER), Distinguished Senior Research Fellow at the U.S. Bureau of the Census, Research Associate at the National Bureau of Economic Research, and Research Affiliate at the Centre de Recherche en Economie et Statistique (Paris, France). He has taught and done research at Cornell since 1987, including seven years on the faculty of the Johnson Graduate School of Management. His current research focuses on the creation and use of linked, longitudinal data on employees and employers. In his work at the Census Bureau he provides the scientific leadership for the Longitudinal Employer-Household Dynamics Project, which is creating research data linking demographic surveys, economic surveys and administrative data. His original and ongoing research on this subject uses data created at the Institut National de la Statistique et des Etudes Economiques, the French national statistical institute. His other research interests include international comparisons of labor market outcomes; executive compensation, again, with a focus on international comparisons; bargaining and other wage-setting institutions; and the econometric tools of labor market analysis. He is currently the PI for five multiyear grants and

contracts from the National Science Foundation, the Sloan Foundation, the Census Bureau, and the National Institute on Aging. He has published articles in the *American Economic Review*, *Econometrica*, the *Review of Economics and Statistics*, the *Quarterly Journal of Economics*, and other major economics and statistics journals. He was on the faculty at Princeton University, the University of Chicago, and the Massachusetts Institute of Technology before joining the faculty at Cornell.

Susanne Bruyère (Ph.D. Rehabilitation Counseling Psychology, U. Wisconsin-Madison) is the Director of the Program on Employment and Disability in the ILR School. She is directing several employment and disability-related studies for NIDRR, and is the Project Director for Cornell's RRTC on Employment and Disability. She serves on the editorial Board of the *Journal of Vocational Rehabilitation*, and in the past on the editorial boards of the *Journal of Rehabilitation*, and *Rehabilitation Education*. She currently serves on the Boards of the Commission on Rehabilitation Accreditation (CARF), the Globally Applied Disability Research Network (GLADNET), and the National Association of Rehabilitation Research and Training centers (NARRTC). Bruyère's professional experience includes a blend of research, clinical practice and administration of clinical services, and education and training. She has served as an Associate Professor in the Department of Rehabilitation at Seattle University, and the director of numerous U.S. Department of Education training projects which have reached almost 100,000 practicing rehabilitation professionals and advocacy organization personnel over the past 20 years.

Richard Burkhauser (Ph.D. Economics, U. of Chicago) is a Co-PI of the NIDRR Center at Cornell. Burkhauser is chair of PAM and the Sarah Gibson Blanding Professor of Policy Analysis in the College of Human Ecology at Cornell. He has published widely in the area of

U.S. and European social security retirement and disability policy. His most recent co-authored work, with John Bound, reviews the economic literature on disability in the *Handbook of Labor Economics* (1999). He is a member of the Panel Study on Income Dynamics Board of Overseers and on the editorial boards of *The Gerontologist*, *The Journal of Disability Policy Studies*, *The Review of Income and Wealth*, *Labor Economics*, *Research on Aging* and the *Journal of Applied Social Science Studies*. Not only is his research policy relevant but he has a long history of successfully completing government sponsored projects and of serving on government sponsored commissions. Most recently he was a member of the Technical Panel of the 1994-1995 Advisory Council on Social Security and the 1994-1996 National Academy of Social Insurance Panel of Disability Policy Reform. He has also testified before Congress on Social Security issues, most recently (February 1999) as a witness for the U.S. House of Representatives Ways and Means Committee. He discussed the consequences of returning the earliest age of social security retirement benefits to 65 based on his research using the Health and Retirement Study.

Jay Himmelstein (M.D., University of Maryland) is a board-certified physician with specialty training in Internal Medicine and Preventive Medicine/Occupational Health. He has extensive experience as a practicing physician, disability evaluator, health services researcher and a consultant to both legislative and executive branch policymakers at the State and National level. He is a nationally recognized leader on medical aspects of disability determination, has edited a book on the issue of medical decision making in relation to 'fitness for work' and has served as a consultant to the Equal Opportunities Employment commission on medical issues related to ADA cases, and to the Massachusetts Rehabilitation Commission. In his role as Director of the Center for MassHealth Evaluation and Research, he has worked closely with the state Medicaid program in designing and managing a number of projects related to people with

disabilities who are served by the Medicaid program. He was the founder of the New England Center for Occupational Musculoskeletal Disorders (NECOMD) and since 1995 has been co-principal investigator on the National Institute for Occupational Safety and Health (NIOSH) sponsored cooperative agreement entitled "Evaluation of Rehabilitation Programs for Work-Related Musculoskeletal Disorders. He currently serves as Director of the Robert Wood Johnson Foundation's Workers Compensation Health Initiative, a national \$6 million dollar grant program that has funded 18 demonstration and research projects around the country, many of which are focused on medical care and case management in order to maximize injured worker's function and minimize disability related to work-related injuries.

David Stapleton (Ph.D. Economics, U. of Wisconsin-Madison) is a Sr. Vice President at The Lewin Group and Director of its Applied Economics Practice. He has conducted research on employment and program participation of people with disabilities and has received support from the U.S. Department of Health and Human Services, SSA, and the Department of Education's National Institute on Disability and Rehabilitation Research. He has extensive experience with the design and implementation of quantitative evaluations for human service policies and programs, including evaluating the impact of programs and policies that affect employment and program participation outcomes for people with disabilities. This includes a recent evaluation of the impact of Medicaid eligibility expansions on the earnings of SSI recipients who participate in the SSI work incentive program. He and his staff currently collaborate with researchers at Cornell and WBGH on a NIDRR-funded project to investigate and improve employment practices covered by Title I of the ADA. He is Co-Principal Investigator for Cornell's Rehabilitation Research and Training Center for Economic Research on Employment Policy for Persons with Disabilities, which was recently established by a five-year grant from NIDRR.

Before joining Lewin in 1991, he held tenured faculty appointments at both Dartmouth College and the University of Maryland at College Park.

b. Other Key Investigators

Steven Banks (Ph.D. Biostatistics) recently joined UMass as a biostatistician. He has extensive experience with large state and national databases, and currently continues his work in a number of states investigating the relationship between mental illness and criminal justice involvement. Prior to coming to UMass, he was the Director of the Mental Health Statistics Unit for New York State for 10 years. He currently divides his time between UMass and the National Institutes of Health where he is a mathematical statistician.

Stephen Bell (Ph.D. Economics, U. of Wisconsin-Madison) is a Principal Research Associate at the Urban Institute specializing in job training and employment programs for disadvantaged workers, including people with severe disabilities. For four years he directed SSA's Evaluation of Project NetWork, an eight-site, return-to-work demonstration project for disabled SSI applicants and recipients and SSDI beneficiaries. His research team used SSR and MBR data to develop survey sampling frames and techniques for measuring the impact of expanded work incentives through a combination of microdata on DI and SSI receipt and specially-crafted participant surveys. Current research interests include the role of state employment and training policies in a devolved federal system and the refinement of econometric techniques for measuring the effects of employment programs in the face of selection bias.

Leslie Boden (Ph.D. Economics, Massachusetts Institute of Technology) has been on the faculty of Boston University's School of Public Health since 1985 and directs its Environmental Health doctoral program. Since 1985, much of his research has focused on studies of the

economic and human impacts of workplace injuries. His publications include articles on occupational safety and health regulation, workers' compensation, labor-management health and safety committees, worker involvement in occupational health and safety, workplace medical screening, the legal and public health use of scientific information, and other topics. From 1988-1997, he served on the Mine Health Research Advisory Committee of the Department of Health and Human Services, which he chaired for 6 years. He currently co-chairs a group advising the National Institute for Occupational Safety and Health on its research agenda on the social and economic consequences of workplace illness and injury.

John Bound (Ph.D. Economics, Harvard) has been affiliated with the Department of Economics at the University of Michigan since 1986 and is a faculty associate in labor studies and aging programs at NBER. Much of his research has focused on the effect of health on the labor force behavior of older working-aged men and women. He has previous experience working with researchers at the SSA. He was a member of the Technical Advisory Board for Project Network and has collaborated with David Stapleton on the growth of the Social Security's disability programs. He is currently devoting much of his research time to NIA-funded work that uses the HRS to study the effect of health and changes in health on the behavior of men and women as they near normal retirement age.

Brian Burwell (B.A. Russian Language and Literature, Dartmouth) is Vice President and Director of the Chronic Care and Disability group within the Research and Policy Division of The MEDSTAT Group. During his 15-year tenure with the company, he has directed over 30 studies for Federal and state agencies, with a focus on three primary areas of health policy: (1) Medicaid coverage policy for SSI recipients; (2) the financing and delivery of long term care services; and (3) managed care models for aged and disabled Medicaid beneficiaries. His

Medicaid policy research includes evaluations of Medicaid home and community-based waivers, analyses of utilization and expenditure patterns of children with severe disabilities, studies of Medicaid nursing home spend-down, analyses of Medicaid expenditure trends for long term care services, impacts of managed care on persons with disabilities, evaluations of managed long term care programs, evaluations of innovative models for supporting persons with development disabilities in the community, impacts of Medicaid estate planning practices on Medicaid eligibility, and the impact of Medicare legislative changes on Medicaid expenditures.

J.S. Butler (Ph.D. Economics, Cornell) a long time collaborator of Burkhauser, was hired in July 1999 as a full professor in PAM. Butler is an investigator on two project in the NIDRR center. He is a leading econometrics methodologist with a long term interest in public policy questions and a specific interest in retirement and disability issues. Burkhauser and Butler are investigators on the NSHD sponsored by SSA. They are funded to further develop the disability application models they first considered in the NIA project. When these DES data become available for public use we expect to use them in this project.

Allard Dembe (ScD. Work Environment Policy, University of Massachusetts) is Assistant Professor in the UMass Department of Family Medicine and Community Health and Senior Scientist at the CHPR. He has over twenty years of policy experience in the areas of occupational safety and health, disability prevention and compensation, and workers' compensation insurance. His recent research and publications include studies on the relationship between pain, function, impairment and disability; the social consequences of occupational injuries and illnesses; inequalities in access to medical care for work-related disorders; contract provisions to ensure quality of care; and a book examining the social context of physician

diagnostic decisions. He was formerly Assistant Vice President and Manager in the Loss Prevention Department of Liberty Mutual Insurance.

William Fisher (Ph.D. Sociology, Northeastern University) is currently Associate Professor, and the Center's Associate Director for the Public Sector. His major research interests include mental health policy, the delivery of services for persons with severe and persistent mental illness, legal and criminal justice implications of mental health system configuration, statistical methods and evaluative research. Among his current projects is an evaluation of Medicaid managed behavioral health care in Massachusetts, funded by the National Institute for Mental Health (NIMH). He has extensive experience in the use of large data sets for analyzing issues in mental health policy and service delivery.

Thomas Golden (M.S. Rehabilitation Counseling, Syracuse U.) is a Senior Extension Associate of Cornell's Program on Employment and Disability (PED), School of Industrial and Labor Relations. He serves as the Project Director of the Transition Training and Technical Assistance Center in the PED, directing projects focusing on school-to-work inclusion, person-centered transition planning, self-determination and transition systems change. In addition, he is a collaborator/consultant to the RRTC at Virginia Commonwealth University on projects focusing on research and utilization of work incentives with transition-aged youth and providing technical assistance support and training to states currently involved in SSA's and RSA's demonstration projects. He manages a subcontract with the NYWORKS Project, a state demonstration to remove disincentives and barriers to work for beneficiaries and recipients of SSA programs with psychiatric disabilities.

Alexis Henry (Sc.D. Psychiatric Rehabilitation, Boston University) is Research Assistant Professor of Psychiatry and directs the work of the Rehabilitation Research Core for CMHSR.

Research in this core focuses on factors and services that enhance the capabilities of persons with serious mental illness to participate fully in normal adult life roles, with an emphasis on worker and parenting roles. Current projects include: outcome evaluations of community-based transitional and supported employment service programs for persons with serious mental illness; a qualitative study of consumer and service provider perspectives on factors that both assist and hamper persons with mental illness in their efforts to obtain and maintain employment; and the development of resources and support services for parents with mental illness (funded by NIDRR). She previously worked with the Massachusetts Department of Mental Health (Central Office), developing outcome indicators for community-based psychiatric rehabilitation services.

H. Allan Hunt (Ph.D. Economics, U. of California-Berkeley) has been affiliated with the W. E. Upjohn Institute for Employment Research in Kalamazoo, Michigan since 1978, serving as its Assistant Executive Director since 1989. His research focuses on disability compensation programs, prevention of work-related disability, employment and training policy, and the impact of technological change on employment. His work has been supported by the National Academy of Sciences, National Commission for Employment Policy, Workers' Compensation Board of British Columbia, Victorian WorkCover Authority of Australia, International Labour Office, Workers Compensation Research Institute, U.S. Occupational Safety and Health Administration, and bureaus within the Michigan Department of Labor.

George Jakubson (Ph.D. Economics, U. of Wisconsin-Madison) is an Associate Professor of labor economics in the School of Industrial and Labor Relations at Cornell. He is an applied econometrician whose work has focused on the effects of government programs on the low income population. He has been a Faculty Research Fellow with the National Bureau of Economic Research and a consultant to several federal and international agencies, including the

U.S. Departments of Health and Human Services, Agriculture, and Veterans Affairs, and the World Bank.

John Kregel (Ed.D Special Education) is Professor of Special Education at Virginia Commonwealth University, where he serves as Director of Research and as Associate Director of the VCU Rehabilitation Research and Training Center. He is Principal Investigator of the SSA funded State Partnership Initiative Evaluation Project to evaluate outcomes of efforts in 18 states to promote employment of SSI, SSDI and TANF recipients. He is also Co-Director of Evaluation for National Supported Employment Consortium. In collaboration with the American Institutes of Research, he serves as Project Director to assist with multiple aspects of SSA redesign. He directs the VCU SSI Information Project, a national evaluation and information dissemination project. He serves as Project Director of the VCU Career Connections Project, a three-year demonstration project funded by the U.S. Department of Education to promote work experience and job placement services for students with disabilities in institutions of higher education in Virginia. He has published extensively on clinical and policy issues pertaining to the employment of individuals with significant disabilities. In 1993, he received the NARF Research Award from the American Rehabilitation Association.

Gina Livermore (Ph.D. Economics, U. of Wisconsin-Madison) has been a Senior Manager with The Lewin Group since 1994. Her work has focused on the economic aspects of welfare and disability. Research experience includes analysis of the impact of substance abuse and mental illness on labor force participation; design options for estimating the impact of welfare reform on persons with disabilities; assessing barriers to employment and employment supports used by persons with disabilities; study of the impact of health insurance availability on employment of persons with disabilities; assessing evaluation designs for two pilots of

innovations to SSA's disability determination process, and conducting the evaluation for one of the pilots. She is currently directing a project for SSA to design a demonstration to provide treatment to DI beneficiaries with affective disorders.

Pamela Loprest (Ph.D. Economics, Massachusetts Institute of Technology) is a labor economist conducting research in the areas of disability policy and work/welfare policy. She is currently studying barriers to work for adults with disabilities, welfare-to-work strategies for people with disabilities, and the economic status of welfare "leavers." Recent publications focus on the impact of state welfare-to-work policies on people with disabilities and profile the role of disabilities among families on AFDC. Other research interests includes the economic status of children with disabilities, including SSI recipients, and the services they receive. She has extensive experience in quantitative and econometric analysis utilizing large data sets, including the Health and Retirement Survey, the Survey of Income and Program Participation, and the National Health Interview Survey.

Carla Maffeo (Ph.D. Sociology) of Westat serves as a principal investigator on the SSA's NSHA. She has just been named in a 3-year appointment to the *American Statistical Society's Committee on Statistics and Disability*. The committee's charge will be to consider issues relating to the collection and reporting of data on persons with disabilities and the implications for use of those data in statistical analysis.

Glenn Pransky (MD, MOcCH) is a physician with over 10 years of research experience in the areas of fitness-to-work determinations, quality and outcome in workers compensation, and has written several articles on the Americans with Disabilities Act. He has conducted several studies of disability evaluations, and has worked closely with UMass-DES staff to develop and

refine quality evaluation and research strategies. He is intimately familiar with the UMass-DES data, eligibility determination process, and associated electronic and paper records.

Robert Reville (Ph.D. Economics, Brown U.) is Research Director for the RAND Institute for Civil Justice. His research interests include income distribution, income support programs, and the impact of disability on employment. He is the principal investigator for an evaluation of workers' compensation permanent disability for the State of California. In this evaluation, RAND is examining the relationship between the disability rating mechanism used in California to set permanent partial disability benefits and the postinjury earnings losses of disabled workers. The study will suggest ways to improve return to sustained work for injured workers based upon an empirical evaluation of the practices of California employers. He is also principal investigator of a study of workers' compensation permanent disability and return to work in New Mexico. He is investigator on a project funded by the National Institute of Occupational Safety and Health comparing the economic outcomes of workplace injuries across several states.

John Rust (Ph.D., Economics, M.I.T.) has been affiliated with the Department of Economics at Yale University since 1996 where he is a Professor of Economics. He is also a faculty associate in labor studies at NBER. He is co-editor of the Journal of Applied Econometrics and has published widely in the area of applied econometrics. He has also published substantive work in the retirement and disability literature. He currently has funding from the National Institute on Aging to look at transitions into the disability programs. Prior to coming to Yale, he was Professor of Economics at the University of Wisconsin-Madison.

Charles Sweet (MD, MPH) is a board-certified physician with specialty training and years of experience in the practice of Internal Medicine and Occupational Health. He is an

Associate Professor in the Department of Family Medicine and Community Health and has served for over two years as the Medical Director for UMass-DES. In this role, he has taken responsibility for quality improvement initiatives, has had a major role in development of the operational database and provided direction for research activities. His current work in the UMass-DES program will contribute a great deal to the Institute's themes of disability determinations for DI and SSI eligibility.

Craig Thornton (Ph.D. Economics, Johns Hopkins U.) is a Mathematica Policy Research Sr. Fellow and Associate Director of Health Research. He has substantial experience in the areas of disability policy, employment and training programs, the SSI and DI programs, and Medicaid and Medicare policy as well as his methodological experience in benefit-cost analysis and evaluation design. A current project includes evaluating SSA's State Partnership Initiative, which promotes work opportunities for disabled SSI and DI beneficiaries in 18 states. He also directs a project to develop a conceptual and empirical basis for assessing managed care programs for elderly Medicare beneficiaries with disabilities and chronic illnesses. Earlier work investigated two multi-site evaluations of employment programs for people with mental retardation, including a six-year follow-up of participants in SSA's Transitional Employment Training Demonstration; and developing a profile of persons with disabilities that included developing appropriate definitions of disability. He has advised the Department of Education, SSA, and NIDRR on employment support and research methodology.

Paul Wehman (Ph.D., U. of Wisconsin-Madison) is Professor at the Department of Physical Medicine and Rehabilitation, Medical College of Virginia, and Director of the Rehabilitation Research and Training Center on Supported Employment, Virginia Commonwealth University. He has been recognized for his service and scholarly contributions

in the fields of special education, psychology, and vocational rehabilitation, receiving the 1990 Joseph P. Kennedy, Jr., Foundation Award in Mental Retardation and the Distinguished Service Award from the President's Committee on Employment for Persons with Disabilities in 1992. He is author or editor of over 100 books, research monographs, journal articles, and chapters in the areas of traumatic brain injury, mental retardation, supported employment, and special education. He is Editor of *Journal of Vocational Rehabilitation*. Specific research interests include transition from school to work, supported employment, developmental disabilities, and brain injury.

David Wittenburg (Ph.D. Economics, Syracuse U.) has been a Sr. Associate with The Lewin Group since 1997. He has extensive experience with econometric and microsimulation models that utilize major survey and/or administrative data sources. His research interests include the employment of people with disabilities, welfare reform, changes in the normal retirement age and Medicare eligibility age, unemployment insurance, and job training. He has collaborated with many government and public-policy agencies, including the Social Security Administration, Department of Labor, American Association of Retired Persons, National Governors' Association, Rutgers University, Department of Education's National Institute on Disability and Rehabilitation Research, and the Office of the Assistant Secretary for Planning and Evaluation.

G. Organizational Experience

Below, we describe the experience of the organizations participating in the proposed Institute most relevant to the activities that will be conducted by the Institute. We first describe the organizational experience of the lead partners: Cornell University and the University of Massachusetts Medical School. We then describe the qualifications of the other organizations

participating in the proposed Institute. *Attachment A* contains brief descriptions and reference information for recent projects conducted by the proposed Executive Committee members (Abowd, Bruyère, Burkhauser, Himmelstein, and Stapleton) that further demonstrates the experience of the leadership organizations and staff proposed for the Institute. Letters of support from participating organizations and other individual researchers are provided in *Attachment C*.

The applicant for SSA's Disability Rehabilitation Institute is Cornell University. Founded in 1868, Cornell is one of the Ivy League institutions in the U.S. Northeast, and is based upon a unique integration of publicly and privately funded colleges. Cornell has 17,000 students and 1,500 faculty, engaged in 85 graduate level and hundreds of undergraduate level fields of study. As noted above, within Cornell University, there are three departmental entities that are combining resources in this application for the Disability Research Institute. The Department of Policy Analysis and Management, the Program on Employment and Disability in the School of Industrial and Labor Relations, and the Cornell Institute for Social and Economic Research. The activities of the faculty, students, and staff of each of these entities demonstrate Cornell's strong commitment to multi-disciplinary research on disability program and policy issues.

The mission of the **Department of Policy Analysis and Management (PAM)** is to be a nationally recognized leader through research, teaching and outreach in the areas of consumer, family and social welfare, health and human services in terms of policy analysis and its application through program planning, management, and evaluation. PAM offers an undergraduate program for students hoping to become advocates and leaders for social, political, and economic change. PAM uses theories and methods from economics, sociology, government, and psychology to critique society's values, laws, and actions. Values of social justice and equity are studied concurrently with strategic planning, human resources, supervision, and organization

development. Faculty are nationally recognized experts in the fields of public policy, applied economics and psychology, research methods, demography, health and human services, statistics, and program evaluation. PAM also draws upon Cornell's resources in social policy such as programs in government, hospital administration, urban planning, community development, and industrial and labor relations that add additional breadth and depth to the public policy major. The five-year grant from NIDRR to fund the RRTC for Economic Research on Employment Policy for Persons with Disabilities discussed below is an example of the type of policy-related research that is central to PAM.

PAM offers both MA and PhD programs. It is expected that PAM students will be used as Research Assistants on projects on campus at Cornell and in our project offices in Washington, DC. PAM students have worked with Stapleton on past Cornell/Lewin projects and we expect that in addition to project collaboration between faculty on campus and in Washington, DC we will also have PAM students working between these two locations. Burkhauser, Butler, and Rosemary Avery are among the PAM faculty that will play a role in the proposed Institute.

The **Program on Employment and Disability (PED)** has provided continuing education and technical assistance, nationally and regionally, on issues surrounding the workplace and disability since 1968. PED contributes to development of inclusive workplace systems and communities for people with disabilities through research, the development of training materials, dissemination of this information in training efforts regionally, nationally, and internationally, provision of technical assistance on related topics, and production of scholarly materials. The recent focus of efforts has been on: research on employment and disability policy; the Americans with Disabilities Act (ADA) and how this legislation interacts with small and large businesses,

union and labor organizations, and other covered entities; SSA disability and work incentive programs; supported employment; and school-to-work transition systems. PED is funded by a five-year grant from the U.S. Department of Education National Institute on Disability and Rehabilitation Research (NIDRR) as a Rehabilitation Research and Training Center (RRTC) for Economic Research on Employment Policy for Persons with Disabilities. The Center's research takes an economic approach to policy research, examining how environmental factors influence the work outcomes of people with disabilities. The focus is to improve the understanding of policy makers and other stakeholders about the role of the economy, public policies, and other environmental factors in the employment and economic self-sufficiency of persons with disabilities. NIDRR also funds a PED Research and Demonstration Project on "Improving Employment Practices Covered by Title I of the ADA," in collaboration with the Washington Business Group on Health, the Society for Human Resource Management, and The Lewin Group. This effort includes a national survey of businesses regarding their policies and practices in response to the ADA. Other current initiatives have focused on SSA work incentives training nationally. These have included the *National Short-Term Training and Materials Dissemination Project on Work Incentives* and several state-specific initiatives focusing on the development of in-state cadres of SSA disability and work incentive resource persons to assist SSA disability beneficiaries in returning to work. Since 1993, over 6,000 rehabilitation professionals nationwide have participated in disability and work incentive training conducted using a National Trainer's Curriculum designed and edited by Cornell staff under the sponsorship of SSA and RSA. These materials have been turned into on-line courses by several universities. Bruyère and Golden are among the PED staff that will play important roles in the proposed Institute.

The **Cornell Institute for Social and Economic Research (CISER)** is a cross-disciplinary organization founded in 1981 to enhance the environment for social science research at Cornell. There are fifteen full-time professional staff members at CISER. John Abowd, the proposed Director of the Institute's data facilitation activities, is a member of the CISER staff. The faculty membership of CISER includes more than 400 social science faculty. CISER actively supports research on social and economic issues that are important to New York State and the Northeast region. CISER provides research services to faculty members and encourages collaborative research among Cornell's social scientists. CISER's research support services include a data archive, the New York State Information System, and computing support. CISER also helps investigators identify colleagues with similar research interest, issues publications supporting social science research, and organizes seminars and workshops. CISER currently has archived some of the databases being used in disability-related research conducted for the NIDRR RRTC, such as the Current Population Survey, Survey of Income and Program Participation, and the Health and Retirement Survey.

The CISER data archive has transformed from a group that provided primarily direct consultations and acquisitions to a group that supports a significant high-quality web-based archive. CISER continues to identify and champion acquisitions that strengthen Cornell researchers' ability to examine important questions with timely and correct data. The team is building a capability to examine data acquisitions campus-wide and implement cooperative arrangements and additional data purchases that provide the best value to the university. The archive has made significant progress toward improved access to data and data documentation. A prototype web-based server for electricity markets data has been installed, and HTML has been explored as a means of documentation for research projects. CISER plans to focus its

attention for the next few years on building the infrastructure that will support major sponsored research activities in the social sciences.

The **University of Massachusetts Medical School (UMass)** is collaborating as a key partner with Cornell for this project. Within UMass, there are three centers that will actively participate in the Institute: The UMass Center for Health Policy and Research, the UMass Center for Mental Health Services Research, and UMass Disability Evaluation Services. These UMass entities bring strong qualifications in the medical aspects of disability to the proposed Institute.

The **UMass Center for Health Policy and Research (CHPR)** was established in 1997 to serve as a resource to health policy and health services research activities on the UMass campus, to promote collaborative efforts between UMass and state health agencies, and to enhance and develop educational programs at the undergraduate and graduate level. The Center joined with the State Medicaid Agency (DMA) in 1997 to create the Center for MassHealth Evaluation and Research (CMER). Projects undertaken by CMER are designed to anticipate and target clinical and operational issues of policy relevance to the DMA, be consistent with the overall strategy and benefit plan goals of the DMA, leverage the resources of the State University System in clinical care, health policy and health services research, and involve joint participation between DMA and UMass staff. A number of these projects to date have focused on the medical and other support needs of people with disabilities and how this population's needs can better be served by the Medicaid Program. Key staff from CHPR who will be involved with the proposed Institute include Jay Himmelstein, Allard Dembe, and Steven Banks.

The **UMass Center for Mental Health Services Research (CMHSR)**, a Massachusetts Department of Mental Health Research Center of Excellence, is housed in the UMass Medical School Department of Psychiatry. The mission of the Center is to conduct state-of-the-art

research on services and systems affecting persons with severe mental illness, children with serious emotional disorders, and families with mentally ill members. The Center conducts research on the structure and outcomes of mental health services, mental health policy, factors affecting the involvement and functioning of persons with mental disorders, (both adults and children in various systems and settings), and the role of law, violence, substance abuse and other problematic behaviors on the course and outcomes of mental illness.

Center faculty are a multidisciplinary group, drawing expertise from the fields of psychiatry, sociology, clinical and research psychology, rehabilitation, statistics, social work and the law. Researchers in the core areas of child and family research, services and policy research, forensic services, mental health law, and violence, psychosocial rehabilitation, and multicultural research collaborate to elicit questions from the field and generate pragmatic answers. Center researchers have a long track record of addressing complex issues of mental health services utilization in "consumer-sensitive" and "agency-friendly" ways, and continually seek the input of all stakeholders, including providers, consumers, family members, policy-makers, and other researchers in the development and pursuit of the Center's research mission. Key staff from CMHSR who will be involved with the Institute include Fisher and Alexis Henry.

The University of Massachusetts Medical School established the **Disability Evaluation Services (UMass-DES)** program in late 1997 to conduct disability evaluations on behalf of the Massachusetts Division of Medical Assistance and the Department of Transitional Assistance (TANF and Emergency Assistance). The criteria and process utilized in the review model are defined by both SSA and state regulations. Currently, the UMass-DES conducts over 35,000 detailed eligibility evaluations each year, applying a variety of eligibility criteria to each case, including the statutory SSA medical and vocational criteria. Thus, the UMass-DES has extensive

experience in disability determination and functional assessment. The service includes a substantial quality focus, which utilizes quality improvement teams with universal staff participation as the engine for program development and optimization. These efforts provide an excellent laboratory for evaluation of the review process and for characterization of the poor and disabled population not receiving SSA benefits. The UMass-DES capacities include clinical, vocational and demographic data, sophisticated disability review expertise, and a quality improvement philosophy ideal for efficient, practical studies of the disabled population and assessments of disability review. Institute investigators from the UMass-DES include Sweet and Pransky.

Many of our investigators are from other research organizations that have extensive experience conducting disability program and policy research and evaluation services, often to SSA and other federal agencies. We highlight the qualifications of these organizations below.

The Lewin Group is a health and human services research and consulting firm based in Falls Church, VA. Specializing in economic, policy, technical, and regulatory analyses, Lewin has over 300 full-time staff including economists, public policy experts, and physicians from various fields of research. The staff proposed in this application, including the proposed Institute Director Stapleton and investigators Livermore and Wittenburg specialize in using statistical and econometric methods to evaluate programs and policies, modeling program participation, and designing and conducting evaluations that utilize both qualitative and quantitative data. Lewin staff have conducted numerous research projects related to SSA's disability determination process, disability program participation, and the employment of people with disabilities. They are very familiar with the measures of disability used by SSA and in national surveys, and knowledgeable about the wide range of federal and state programs and policies which affect the

work and program participation of persons with disabilities. The Lewin Group has worked extensively with SSA administrative databases, including the MBR, SSR, and the 831 extract, while conducting disability program/policy evaluations and analyses of DI and SSI caseload trends for SSA.

Mathematica Policy Research (MPR) is recognized nationwide for innovative research and analysis of public programs and policies. The company has played a leading role in major demonstrations and experiments that have tested existing and proposed social programs, and it has responded to client needs by conducting quick-turnaround assessments of policy initiatives. Its workforce of over 400 social scientists, computer systems professionals, support staff, and administrators is committed to providing the policymaking community with the information upon which better social welfare programs are built. MPR brings staff who have analyzed employment and disability issues from many different substantive and methodological perspectives and a long history of research into employment support programs for people with disabilities and other vulnerable populations. MPR staff conducted some of the earliest research into the effectiveness of supported employment. This included evaluations of a transitional employment program funded by the U.S. Dept. of Labor and the Transitional Employment Training demonstration funded by SSA. Other projects include studies of treatment for people with mental illness, AIDS, substance abuse disorders, and other disabling conditions. MPR is currently working on several projects for SSA: design of a survey of disabled children; and two projects studying SSA's State Partnership Initiative to promote work among disability beneficiaries.

The core business of **The MEDSTAT Group** is the provision of healthcare support systems and information for public- and private-sector organizations, including state and federal

agencies, insurance and managed care organizations, employers, provider organizations, and other entities with healthcare information needs. The Research and Policy Division of the company, which will manage MEDSTAT's participation in the Disability Research Institute, includes about 100 health care service researchers with training in health economics, econometrics, statistics, health and disability policy, pharmacoeconomics, computer science, and software development. Several researchers within the Research and Policy Division have direct first-hand experience in analyzing SSA administrative data, as well as in linking SSA administrative data with other data bases, such as state Medicaid data. In addition to the skill set and health policy expertise represented in our staff, MEDSTAT brings to the Disability Research Institute a portfolio of data assets that can potentially enhance the breadth and depth of analyses conducted by the Institute. These data assets include: Medicaid administrative data sets; MEDSTAT MarketScan® Select, Encounter, MedRx, and Medicare databases; and the Health and Productivity Management™ data. MEDSTAT is a leader in the development of integrated data sets that combine group health, disability, absenteeism, and workers' compensation data for large healthcare purchasers to take an aggregate view of employee productivity issues across the full spectrum of health and disability benefit programs.

The National Rehabilitation Hospital Research Center for Health and Disability Research (CHDR) provides national research leadership on major health services issues facing people with disabilities and the providers who render care to them. As part of its research leadership role, the Center seeks to foster the development of new directions for disability, health, and income policy. CHDR examines the role of disability income assistance programs and how they interface with sources of public and private health care coverage. The Center conducts studies on health insurance and work incentives, disability income policy for

individuals with mental impairments, and the health care experiences of individuals participating in the DI and SSI programs. The core CHDR staff include expertise in anthropology, economics, epidemiology, health policy, health administration, sociology, and related fields. The Center is supported primarily from grants provided by diverse sources such as the National Institutes of Health, the National Institute for Disability and Rehabilitation Research, The Robert Wood Johnson Foundation, the Centers for Disease Control, the National Institute on Aging, the National Council on Disability, and the U.S. Department of Defense.

RAND researchers operate on a uniquely broad front, assisting public policymakers at all levels, private sector leaders in many industries, and the public at large in efforts to strengthen the nation's economy, maintain its security, and improve its quality of life. They do so by analyzing choices and developments in many areas, including national defense, education and training, health care, criminal and civil justice, labor and population, science and technology, community development, international relations, and regional studies. RAND employs more than 600 research professionals; nearly 80 percent hold advanced degrees, most commonly the doctorate. RAND is one of the four ORES Task Order Contractors for SSA, and is currently funded to conduct an evaluation for the SSA titled "Policy Evaluation of the Effect of the 1996 Welfare Reform Legislation on SSI Benefits for Disabled Children." The study will evaluate how the 1996 welfare reform legislation affects SSI caseloads and costs, and how the law affects children and their families. The study includes analyses of SSA administrative data, nationally representative secondary databases, and case study interviews in four states.

The **W.E. Upjohn Institute for Employment Research** has been studying the problems of employment and unemployment for nearly 55 years, since its founding in 1945. In conformity with its charter, the Institute operates as an independent, non-profit organization devoting its

resources to finding and promoting solutions to employment-related issues. The broad objectives of the Institute's research and grant programs are to: 1) link scholarship, evaluation, and experimentation with issues of public and private employment and unemployment policy; 2) bring new knowledge to the attention of policymakers and decision makers; and 3) make knowledge and scholarship relevant and useful in their applications to the solutions of employment and unemployment problems. Each area of research is approached in an integrated manner, with a combination of internal research, grants for external research, and publications of research monographs.

Over the last two decades, the Institute has pursued an interest in work injury and disability compensation issues. Institute research projects have been conducted for the Social Security Administration, National Academy of Sciences, Workers' Compensation Board of British Columbia, Canada, Victorian Work Cover Authority of Australia, International Labour Office, Workers Compensation Research Institute, U.S. Occupational Safety and Health Administration, and three different bureaus of the Michigan Department of Labor. The Institute has also sponsored research in disability-related areas by several external scholars, such as John F. Burton, Jr., Monroe Berkowitz, Peter Barth, Charles Link, Peter Gottschalk, Julie Hotchkiss, and Terry Thomason through our competitive research grant program. Last, but not least, the Institute has published five books on disability policy subjects and many more relating to labor market issues of importance to persons with disabilities.

The Urban Institute investigates social and economic problems confronting the nation and analyzes efforts to solve these problems. The Urban Institute conducts research on a wide range of topics including, Medicare, Medicaid, retirement policy, child welfare, disability, and health care. Urban researchers are currently conducting a large-scale project to track the

experience of a large number of states under welfare reform. A recent Urban study examined how states were dealing with persons with disabilities who participate in their TANF programs. The Urban Institute is also one of the four ORES Task Order Contractors for SSA.

The **Rehabilitation Research and Training Center on Workplace Supports at Virginia Commonwealth University (VCU-RRTC)** is a unit of the VCU School of Education. The VCU-RRTC employs 50 staff members and annually receives approximately \$3.5 million dollars in Federal and State external support to conduct an array of research, training and dissemination activities designed to promote employment opportunities for individuals with disabilities. Staff members include physicians, psychologists, rehabilitation counselors, social workers, physical and occupational therapists, and special educators conducting research in a wide range of areas, including the Social Security State Partnership Initiative, disability management, supported employment, return-to-work, consumer self-determination, efficacy of the Federal/State vocational rehabilitation program, spinal cord injury and traumatic brain injury model systems, and transition from school to work.

Current research efforts at the VCU-RRTC are primarily sponsored by the U.S. Department of Education and the Social Security Administration. The Center is in its second year of a five-year, \$3.5 million Research and Training Center on Workplace Supports, the third year of a five-year, \$4.5 million effort to evaluate the efficacy of the national supported employment initiative, and the second year of a five-year, \$7 million effort to provide evaluation and technical assistance to 18 state projects promoting employment opportunities for SSA and TANF beneficiaries. The Center has extensive ongoing relationships with the U.S. Chamber of Commerce, the Washington Business Group on Health, the Society of Human Resource

Managers, the Council of State Administrators of Vocational Rehabilitation, and various advocacy and consumer organizations.

The **Washington Business Group on Health (WBGH)** is the only national non-profit organization devoted exclusively to the analysis of health policy and workplace disability issues from the perspective of large employers. WBGH is made up of approximately 175 corporate members whose health care and disability policies cover more than 39 million U.S. employees, retirees, and their dependents. WBGH has maintained the Resources Network on Accommodations for Employees with Psychiatric Disabilities since 1993, developed, with NIDRR funding, briefs on the ADA and psychiatric disability, and provides ongoing consultation for employers on reasonable accommodation and disability management issues.

Westat brings to the Institute a broad cross-section of research and analysis in the world of disability. Not only do Westat staff have considerable background in several substantive areas of disability (e.g., functional assessment, cognitive and mental disability, and childhood and youth disability), but they also have strong background in and understanding of the SSA disability determination process, occupational classification, and work requirements. Besides the methodologic and analytic expertise in analysis of studies with complex survey designs, Westat brings a social science and epidemiologic perspective, as well as knowledge and understanding of the NSHA instruments, data collection procedures, and analysis.

H. Budget Narrative

The Institute's budget was developed to provide SSA with significant research, training, dissemination, education, and data-facilitation programs by allowing for a set of core activities that provide services to all of these functions and a set of identifiable research projects that focus on particular issues. To achieve this objective, we put considerable infrastructure investment

into the first-year budget while still funding ten separate research projects. The first year budget requests \$1,250,000, which is allocated approximately 18 percent to core activities and 82 percent to project research and dissemination activities. In years 2 through 5 we propose to allocate between \$700,000 and \$800,000 (including indirect cost recovery) to specific research, dissemination, and training projects with the remainder of the \$1,000,000/year devoted to core activities. We have described the possibilities for these year 2 through 5 projects above, but we expect to select the actual projects in collaboration with SSA and we have made only a few commitments of funding in the out-years.

EXHIBIT 8 Allocation of First Year Direct and Shared Costs Between Activities and Institutions

<i>Institution</i>	<i>Core</i>		<i>Research</i>		<i>Total</i>	
	<i>Direct</i>	<i>Shared</i>	<i>Direct</i>	<i>Shared</i>	<i>Direct</i>	<i>Shared</i>
Cornell	78,000	20,000	441,000	71,000	519,000	91,000
UMass	77,000	47,000	153,000	87,000	230,000	134,000
RAND	0	0	52,000	5,000	52,000	5,000
Boston University	0	0	12,000	1,000	12,000	1,000
VCU/MSU	0	0	32,000	2,000	32,000	2,000
TOTAL	155,000	67,000	690,000	166,000	845,000	233,000

Exhibit 8 shows how the SSA-funded direct costs and the institution-provided cost sharing are distributed between the two main collaborators (Cornell and UMass) and the three additional collaborators who receive funding for first-year research projects.³ The exhibit also shows how the activities are divided between core and research.

It is not feasible to fully separate the resources devoted to dissemination, training and education because activities in these areas are largely integrated with the research effort and with each other. Cornell's budget includes explicit dissemination costs of \$37,000 in the first year, the great majority of which is allocated to labor and expenses associated with establishing the web

³ The direct costs shown in Exhibit 8 do not include any indirect cost recovery, whereas the subcontracts shown in the budget include the indirect cost recovery of the subcontracting institutions.

site. In later years, we anticipate that dissemination activities will cost \$60,000 or so per year, as the volume of material to disseminate increases substantially. About \$35,000 of this figure is direct labor expense, some of which also contributes to training and education activities. In addition to these explicit funds, each project's principal investigators are expected to present their findings at least once at a professional conference; most labor and other expenses for this dissemination activity are likely to be donated and do not appear in the budget at all. We anticipate that the costs of publishing the two conference volumes will be paid for by the publisher, most likely Upjohn Institute Press; therefore, this expense does not appear in the budget.

Training activities start in year 2. We have allocated about \$20,000 per year for non-labor expenses associated with training providers, beneficiaries, and contributors. In each of years 3 and 5, we have allocated approximately \$20,000 for expenses related to the two-day conferences in Washington, DC. These expenses do not include labor costs, which consist of small shares of time from each individual on the Executive Committee, as well of as varying shares of the \$35,000 per year or so in labor costs that are allocated to dissemination in the budget.

Education activities are fully integrated with the research and training activities. The budget will support one post-doctoral position at the Cornell site in Washington in the first year, plus four graduate assistantships and a work-study position. At current funding levels, we would support two post-doctoral positions in each of the later years, and continue with the four graduate assistantships and the work-study position.

Total first-year resources available to the Institute include the directly funded costs (\$845,000), the institution cost share (\$233,000), and the services provided through the indirect

cost recovery (\$405,000), for a total of \$1,483,000. The Institute's cost share is equal to 28 percent of direct costs, well above the 5 percent required by the RFA.

In what follows, we summarize how each of the specific resources identified in the budget will be used. Cornell and UMass have requested \$78,000 and \$77,000, respectively, for direct funding of core activities. These direct costs include five percent of the time of each member of the Executive Committee. Cornell has contributed an additional five percent of time for Abowd and Burkhauser to the core activities and UMass has contributed an additional five percent of Himmelstein's time. This will allow these three members of the Executive Committee to devote additional time to their research direction and data-archive direction activities. Cornell's requested direct funding for core activity includes funds for three computer workstations, funds to permit the Executive Committee to meet in Baltimore once each year with SSA staff, and funds to cover the operating costs of the basic telecommunications infrastructure between Cornell, UMass, the CCPR in Washington, and the other collaborators. The telecommunications facilities available at all locations will include video conferencing capability (H.320/PicTel protocol). The video equipment is fully compatible with facilities at SSA. We expect to control travel expenditures significantly by making use of these facilities on a regular basis.

The UMass direct funds for core activities include the time of a biostatistician (Banks) and a data base manager (to be hired) to assist all research projects based at UMass. The data base manager is required at UMass because they have already developed significant research data that will be analyzed on their own systems. The UMass cost share includes additional time for the biostatistician and data base manager, raising their total time commitments to the Institute to 25 percent and 75 percent, respectively.

Cornell University requests \$441,000 in direct costs to cover the activities of research projects B1, C2, and D1 (part); administration of the Institute (except for the Executive Committee); all year 1 dissemination activities; all year 1 training activities; and the year 1 data archive activities in Ithaca (CRADC), Washington (SSA, CCPR), and Baltimore (SSA). The resources to respond to occasional SSA-generated requests are also provided by this part of the budget. Cornell research projects B1 and C2 are expected to be completed by the end of year 1.

The primary direct costs in Cornell's request include 35 percent of Stapleton's time to establish and administer the Institute as its Director, to serve as PI for projects B1 and C2, to supervise one post-doctoral researcher and two graduate research assistants, to meet regularly with SSA personnel regarding Institute business, and to supervise the response to occasional SSA requests. We expect the general set-up activities associated with the Institute to occupy 20 percent of Stapleton's time. Another 5 percent of his time will be devoted to consultation with Institute investigators, allowing them to take advantage of his knowledge of SSA programs and data, as well as his methodological expertise. The remaining 10 percent will be devoted to the two research projects on which he is a co-PI. The post-doctoral researcher (100 percent) and the two graduate assistants to be supervised by Stapleton will assist on projects B1 and C2 and will provide the necessary assistance to identify appropriate data for first-year and out-year projects for all Institute collaborators. The primary direct costs also include 15 percent of Livermore's time. Livermore will act as Assistant Director of the Institute. About 5 percent of her time will be devoted to assisting Stapleton in the administration of the Institute, including consultation with investigators, allowing them to take advantage of her knowledge of SSA programs and data. About 9 percent will be devoted to project B1 and about 1 percent will be devoted to project D1..

The primary direct costs include 40 percent of Wittenburg's time. About 15 percent of his time is budgeted for project C2. The remainder is budgeted for the data activities described below.

The Cornell direct research costs include \$86,000 for expenses associated with maintaining the CCPR. These are the pro-rated shares of rent and other office expenses associated with the Washington, DC location of the CCPR. The prorated amount is based on the percentage of time the Washington-based Cornell employees spend on Institute activities as compared to other research conducted at CCPR. During year 1 we anticipate that 64 percent of the salary activity at the CCPR will be due to the Institute. Thus, the \$86,000 represents 64 percent of the expected annual office expense of the CCPR. Cornell University charges only a 26 percent indirect cost recovery on off-campus facilities such as CCPR. The indirect cost provides for library, information technology, and administrative services to the CCPR. The direct office expenses of the CCPR are expected to be lower than the additional indirect cost recovery that Cornell would receive if the facility were located in Ithaca.

Cornell's cost sharing includes the tuition for the graduate students located in the CCPR in Washington.

Cornell's direct research costs in year 1 also include two graduate research assistants located in Ithaca. These graduate students will work under the supervision of Abowd and Burkhauser to facilitate the creation and use of SSA and other confidential data in the CRADC. These graduate students will also work closely with Wittenburg to facilitate the use of confidential data that must be analyzed on-site in the Washington area. Virtually all of the proposed and alternate first-year projects, as well as a substantial majority of the potential out-year projects, anticipate the use of confidential data. Locating and/or acquiring the appropriate data, designing research extracts, and establishing an acceptable access protocol (either on-site or

at the CRADC) will require substantial year-one investments. This team is funded in the first year to make those investments. Cornell's cost share includes the tuition payments for the two graduate assistants employed in Ithaca.

By employing four Cornell graduate assistants during the first year of the Institute's existence, we expect to be able to support significant doctoral research by these students in the out-years. Developing early familiarity with the Institute's research goals, methods, and data is an important factor in promoting high-quality doctoral research. Thus, it is extremely important to begin this part of the Institute's training mission in the first year.

Cornell's direct cost budget also includes \$36,000 to conduct the year-one dissemination activities. Five percent of Bruyère's time is budgeted to supervise these activities. A web assistant (50 percent), administrative assistance for the dissemination team, and a field trainer (10 percent) are also included. The dissemination budget is expected to increase in the out-years, especially when the Institute sponsors major conferences in years 3 and 5. Publication of conference results will be greatly aided by the Upjohn Institute's expressed willingness to publish the volumes at no cost to SSA.

UMass's direct research budget for year 1 is \$153,000. Its cost share contribution for the first year's research projects is \$87,000. These two sums contribute to the Institute's research plan as follows. The direct research sum includes 15 percent of Himmelstein's time to serve as principal investigator on project C3 and to administer the UMass part of the Institute, which houses projects A3, B3, C3, D1 and E1. Himmelstein will manage the resources of the UMass research core and serve as the Director of Clinical Science Research for the entire Institute. As we noted for Stapleton's role at the CCPR site of the Institute, we consider the bulk of Himmelstein's time to be a research expense because so many of the clinical projects depend

upon the activities of the UMass site. Thus, we expect Himmelstein to devote most of his time to facilitating the inter-disciplinary clinical research proposed by the UMass team and its collaborators. For completeness, we note that overall 25 percent of Himmelstein's time will be provided to the institute: 5 percent funded to core, 5 percent contributed to core, and 15 percent funded to research activities.

UMass's direct research costs include the time of the principal investigators of the five projects located at this site. Direct research costs include 13.5 percent of Fisher's time to serve as a principal investigator on projects C3 and D1. UMass will cost share an additional 9 percent of Fisher, raising his total time commitment to the Institute to 22.5 percent. Direct research costs include 21 percent of Henry's time to serve as a principal investigator on project D1. UMass will cost share an additional 14 percent of Henry, raising her total time commitment to 35percent. Direct research costs include 10 percent of Sweet's time to serve as principal investigator on project E1. UMass will cost share an additional 20 percent of Sweet, raising his total commitment to 30 percent. Direct research costs include 5 percent of Fitzpatrick's time to serve as a principal investigator on project E1. UMass requests 19 percent of Dembe's time to serve as a principal investigator on project A3. UMass will cost share an additional 1 percent of Dembe raising the total time commitment to 20 percent. UMass will contribute 10 percent of Pransky's time to serve as a principal investigator on project B2. Direct research costs include salary for other professionals to assist on the UMass research projects. UMass also provides significant cost sharing on this component of the Institute's activities.

The UMass research projects A3, B2, C3, D1, and E1 are expected to be completed by the end of year 1.

The Institute's other first-year collaborators include RAND (project A1), Boston University (project A2), Michigan State University (project A2) and Virginia Commonwealth University (project C1). The funds provided to these institutions are all used for the indicated research projects. The RAND project will be completed at the end of year 1. Project A2 involves significant expenses in year 2, after which it will be completed.

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PART IV: ASSURANCES

PART IV ASSURANCES

OMB Approval No. 0348-0040

Note: Certain of these assurances may not be applicable to your project or program. If you have questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant I certify that the applicant:

1. Has the legal authority to apply for Federal assistance, and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States, and if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. §§ 4728-4763) relating to prescribed standards for merit systems for programs funded under one of the nineteen statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. §§ 1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. §§ 6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§ 523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. 290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Act of 1968 (42 U.S.C. § 3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.
7. Will comply, or has already complied, with the requirements of Titles II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally assisted programs. These requirements apply to all interests in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply with the provisions of the Hatch Act (5 U.S.C. §§ 1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§ 276a to 276a-7), the Copeland Act (40 U.S.C. § 276c and 18 U.S.C. §§ 874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§ 327-333), regarding labor standards for federally assisted construction subagreements.

10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection-Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§ 1451 et seq.); (f) conformity of Federal actions to State (Clear Air) Implementation Plans under Section 176(c) of the Clear Air Act of 1955, as amended (42 U.S.C. § 7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended, (P.L. 93-523); and (h) protection of endangered species under the Endangered Species Act of 1973, as amended, (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. §§ 1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. 2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. §§ 4801 et seq.) which prohibits the use of lead based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act of 1984.
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations and policies governing this program.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL <i>Danell Smith</i>	TITLE Grants and Contract Officer	
APPLICANT ORGANIZATION Office of Sponsored Programs Cornell University 120 Day Hall		DATE SUBMITTED 1/11/00

PART IV ASSURANCES (Continued)

PRIVACY ACT

The Privacy Act of 1974 (5 U.S.C. 552a) gives individuals the right of access to information concerning themselves and provides a mechanism for correction or amendment of the records. The Privacy Act also provides for protection of information pertaining to an individual, but it does not prevent disclosure of such information if required to be released under the Freedom of Information Act. The Privacy Act requires that a Federal agency, advise each individual whom it asks to supply information of the authority which authorizes the solicitation, whether disclosure is voluntary or mandatory, the principal purpose or purposes for which the information is intended to be used, the use outside the agency which may be made of the information, and the effects on the individual, if any, of not providing all or any part of the requested information.

SSA is requesting the information called for in this application pursuant to its statutory authority for awarding grants. Provision of the information requested is entirely voluntary. The collection of this information is for the purpose of aiding in the review of applications prior to grant award decisions and for management of SSA programs. A lack of sufficient information may hinder SSA's ability to review applications, monitor grantee performance, or perform overall management of grant programs.

This information will be used within the Department of Health and Human Services, and may also be disclosed outside the Department as permitted by the Privacy Act, including disclosures to the public as required by the Freedom of Information Act, to the Congress, the National Archives, the Bureau of the Census, law enforcement agencies upon their request, the General Accounting Office, and pursuant to court order. It may also be disclosed outside the Department, if necessary, for the following purposes:

1. To the cognizant audit agency for auditing.
2. To the Department of Justice as required for litigation.
3. To a congressional office from the record of an individual in the response to an inquiry from the congressional office made at the request of that individual.
4. To qualified experts not within the definition of Department employees as prescribed in the Department regulations (45 CFR, Part 5b.2) for opinions as a part of the application review process.

5. To a Federal agency, in response to its request, in connection with the letting of a contract, or the issuance of a license, grant, or other benefit by the requesting agency, to the extent that the record is relevant and necessary to the requesting agency's decision on the matter.
6. To individuals and organizations deemed qualified by SSA to carry out specific research related to the review and award processes of SSA.
7. To organizations in the private sector with whom SSA has contracted for the purpose of collating, analyzing, aggregating, or otherwise refining records in a system. Relevant records will be disclosed to such a contractor. The contractor shall be required to maintain Privacy Act safeguards with respect to such records.
8. To the grantee institution relative to performance or administration under the terms and conditions of the award.

FREEDOM OF INFORMATION ACT

The Freedom of Information Act and the associated Public Information Regulations (45 CFR Part 5) of the Department of Health and Human Services require the release of certain information regarding grants requested by any member of the public. The intended use of the information will not be a criterion for release. Grant applications and grant related reports are generally available for inspection and copying except that information considered to be an unwarranted invasion of personal privacy will not be disclosed. For specific guidance on the availability of information, refer to 45 CFR Part 5.

PUBLIC REPORTING BURDEN

Public reporting burden for this collection of information is estimated to average 14 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to the Social Security Administration ATTN: Reports Clearance Officer 1-A-21 Operations Bldg., Baltimore, MD 21235 and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

ADDITIONAL ASSURANCES

CERTIFICATIONS

1. CERTIFICATION REGARDING DRUG-FREE WORK-PLACE REQUIREMENTS

The undersigned (authorized official signing for the applicant organization) certifies that it will provide a drug-free workplace in accordance with the Drug-Free Workplace Act of 1988, 45 CFR Part 76, subpart F.

The certification set out below is a material representation of fact upon which reliance will be placed when SSA determines to award the grant. If it is later determined that the grantee knowingly rendered a false certification, or otherwise violates the requirements of the Drug-Free Workplace Act, SSA, in addition to any other remedies available to the Federal Government, may take action authorized under the Drug-Free Workplace Act. False certification or violation of the certification shall be grounds for suspension of payments, suspension or termination of grants or governmentwide suspension or debarment.

The grantee certifies that it will or will continue to provide a drug-free workplace by:

- (a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;
- (b) Establishing an ongoing drug-free awareness program to inform employees about--
 - (1) The dangers of drug abuse in the workplace;
 - (2) The grantee's policy of maintaining a drug-free workplace;
 - (3) Any available drug counseling, rehabilitation, and employee assistance programs; and
 - (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;
- (c) Making it a requirement that each employee to be engaged in the performance of the grant be given a copy of the statement required by paragraph (a) above;
- (d) Notifying the employee in the statement required by paragraph (a), above, that as a condition of employment under the grant, the employee will:
 - (1) Abide by the terms of the statement; and
 - (2) Notify the employer in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction;
- (e) Notifying the agency within ten calendar days after receiving notice under subparagraph (d)(2), above, from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to every grant officer or other designee on whose grant activity the convicted employee was working, unless the Federal agency has designated a central point for the receipt of such notices. Notices shall include the identification number(s) of each affected grant;

- (f) Taking one of the following actions, within 30 days of receiving notice under subparagraph (d)(2), above, with respect to any employee who is so convicted--
 - (1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
 - (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement, or other appropriate agency;
- (g) Making a good faith effort to continue to maintain a drug free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f), above.

The grantee certifies that, as a condition of the grant, it will not engage in the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance in conducting any activity with the grant.

2. CERTIFICATION REGARDING LOBBYING

Title 31, United States Code, Section 1352, entitled "Limitation on use of appropriated funds to influence certain Federal contracting and financial transactions," generally prohibits recipients of Federal grants and cooperative agreements from using Federal (appropriated) funds for lobbying the Executive or Legislative Branches of the Federal Government in connection with a SPECIFIC grant or cooperative agreement. Section 1352 also requires that each person who

requests or receives a Federal grant or cooperative agreement must disclose lobbying undertaken with non-Federal (non-appropriated) funds. These requirements apply to grants and cooperative agreements EXCEEDING \$100,000 in total costs (45 CFR Part 93).

The undersigned (authorized official signing for the applicant organization) certifies, to the best of his or her knowledge and belief, that:

- (a) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- (b) If any funds other than Federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure of Lobbying Activities," in accordance with its instructions. (If needed, Standard Form-LLL,

"Disclosure of Lobbying Activities," its instructions, and continuation sheet are included at the end of this application form.)

- (c) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure."

3. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, AND OTHER RESPONSIBILITY MATTERS

NOTE: In accordance with 45 CFR Part 76, amended June 26, 1995, any debarment, suspension, proposed debarment or other governmentwide exclusion initiated under the Federal Acquisition Regulation (FAR) on or after August 25, 1995, shall be recognized by and effective for Executive Branch agencies and participants as an exclusion under 45 CFR Part 76.

(a) Primary Covered Transactions

The undersigned (authorized official signing for the applicant organization)

certifies to the best of his or her knowledge and belief, that the applicant, defined as the primary participant in accordance with 45 CFR Part 76, and its principals:

- (1) are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency;
- (2) have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (3) are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and
- (4) have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State, or local) terminated for cause or default.

Should the applicant not be able to provide this certification, an explanation as to why should be placed under the assurances page in the application package.

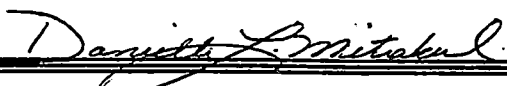
(b) Lower Tier Covered Transactions

The applicant agrees by submitting this proposal that it will include, without modification, the following clause titled "Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion -- Lower Tier Covered Transaction"

(Appendix B to 45 CFR Part 76) in all lower tier covered transactions (i.e., transactions with subgrantees and/or contractors) and in all solicitations for lower tier covered transactions:

Certification Regarding Debarment, Suspension, Ineligibility, and Voluntary Exclusion -- Lower Tier Covered Transactions

- (1) The prospective lower tier participant certifies by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

SIGNATURE OF AUTHORIZED CERTIFYING OFFICIAL 		TITLE Grant and Contract Officer
APPLICANT ORGANIZATION Office of Sponsored Programs Cornell University Ithaca, NY 14853		DATE SUBMITTED 1/11/00