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Commencement 6/5/98 Intro: Hacks and Ho.

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001a. fax cover sheet	Home Phone Number. [partial] (1 page)	05/26/1998	P6/b(6)
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COLLECTION:

Clinton Presidential Records
Speechwriting
Jeff Shesol
OA/Box Number: 18762

FOLDER TITLE:

Commencement 6/5/98 - Intro: Hacks & Ho [David]

2006-0467-F

vz200

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

Freedom of Information Act - [5 U.S.C. 552(b)]

P1 National Security Classified Information [(a)(1) of the PRA]
P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
P3 Release would violate a Federal statute [(a)(3) of the PRA]
P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

b(1) National security classified information [(b)(1) of the FOIA]
b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
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b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY
HARVARD-MIT DIVISION OF HEALTH SCIENCES AND TECHNOLOGY
45 CARLETON STREET, E25-519
CAMBRIDGE, MA 02142

FAX: (617) 253-7498

FAX COVER SHEET

TO: Jeffrey Shesol
NAME Special Asst. to the President

COMPANY NAME _____

PHONE (202) 456-5709
FAX _____

FROM: Cynthia LaBien
NAME HST

PAGES (INCLUDING COVER) 6 DATE _____

IF YOU DO NOT RECEIVE ALL PAGES, PLEASE CALL _____

COMMENTS:

Dr. Daniel Shannon, whom you met at Boston graduation, asked me to send you this information:

HST overview

Dr. David Ho's CV

You will receive information on our medical informatics activities from Robert Greenes.

Contact info for Dr Shannon:

tel (home)

(bus.)

fax

617 726 5576

617 726 1036

P6(b)(6)

[001a]

THANK YOU

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617 726 1036

[001b]

THANK YOU

In 1971, Harvard and MIT joined forces in a remarkable effort to focus modern science and technology on human health needs. Working together, faculty at both institutions began the cooperation that became the Division of Health Sciences and Technology. Future leaders must effectively bridge the cultures represented by medicine, science, and engineering. HST brings physicians, engineers, and scientists together to solve medical problems. The focus of HST research and education is to have an impact on health care, to bring the science and engineering "from bench to bedside" and clinical experience from the "bedside to bench."

Although it has existed for just over a quarter century, HST has a tremendous track record. It runs the premier research-oriented MD training program, and has the largest biomedical engineering program in the nation. HST has the only NIH-funded PhD training program in speech and hearing sciences, with an unprecedented combination of Harvard and MIT faculty. World-class neuroscience, classical physics, and modern systems analysis are applied to the quantitative understanding of human communication. The HST Clinical Research Center has launched an innovative clinical investigator training program involving the FDA and industry that transfers fundamental research at MIT to the bedside, directly affecting human health. Just last year, NASA established the National Space Biomedical Research Institute, a seven university consortium, that will conduct over the next twenty years the focused biomedical research necessary to support human health in the exploration and development of space. HST leads the Harvard and MIT members of the consortium.

Details of selected HST graduates:

Dennis Choi, HST '78, Professor and Chairman of the Department of Neurology, Washington University, St. Louis - is the leading authority on the excitotoxic action of glutamic acid in injury to the central nervous system.

Gilbert Chu, HST '80, Associate Professor of Medicine and Biochemistry, Stanford - studies how cells recognize and respond to damaged DNA and the roles of proteins that bind to damaged DNA in the repair and recombination of the nucleic acids, important issues in carcinogenesis.

Richard J. Cohen, HST '76, Professor, HST- developed a noninvasive means of identifying individuals at risk for sudden cardiac death, the cause of 400,000 deaths per year in the U.S. In 1993, MIT licensed four of Dr Cohen's technologies, including this technique, to a company founded by Dr. Cohen, Cambridge Heart, Inc. of Bedford, MA.

Elazer R. Edelman, HST '83, Associate Professor, HST- has found a means to keep arterial disease in check with endovascular implants. Cardiovascular disease causes more than 1 million deaths and more than 100 million hospital days each year in the U.S., with 1.5 million procedures performed for attempted relief of the complications.

Shai N. Gozani, HST '94, Founder, CEO and Chairman of NeuroMetrix, Inc. - brings together neuroscience, computer science, and medicine to understand chronic health problems. NeuroMetrix is a medical technology company developing next generation neuromuscular diagnostics.

Martha L. Gray, HST '86, Professor of Medical and Electrical Engineering, MIT; and CoDirector, HST- examines the composition and functional integrity of cartilage. Using magnetic resonance imaging (MRI), she can identify lesions in intact joints and explants. This technique provides an unprecedented opportunity to nondestructively monitor disease progression and evaluate therapeutic efficacy.

David D. Ho, HST '78, Professor of Medicine, the Rockefeller University; and the Scientific Director and CEO, Aaron Diamond AIDS Research Center - is an international leader in HIV virology, recently recognized as TIME Magazine Man of the Year for his work in establishing protease inhibitor cocktails for treatment of AIDS.

Karen Hsiao, HST '82, Associate Professor of Neurology, University of Minnesota - reported the development of transgenic mice over-expressing amyloid protein, associated with pathologic and biochemical abnormalities similar to those seen in human Alzheimer's disease.

Bruce Rosen, HST '84, Visiting Associate Professor of Nuclear Engineering, MIT; and CoDirector, Massachusetts General Hospital NMR Center - is well known for his contributions in the area of "functional" imaging, magnetic resonance images of the brain in which areas having some functional activity (e.g. visual cortex) are highlighted by virtue of the fact that they receive increased blood flow.

W. Mark Saltzman, HST '87, Professor, Cornell University - has done groundbreaking work in the area of drug delivery and tissue engineering. Recent examples include the use of polymeric drug delivery systems to administer drugs and natural biomolecules to specific organ sites to treat diseases such as brain tumors and neurodegenerative diseases, and to deliver vaccines for reproductive health.

Joseph A. Sorge, HST '79, Founder, Chairman and CEO of Stratagene Inc., La Jolla, CA - is a researcher, educator, and entrepreneur. Stratagene is a biotechnology company that produces innovative products for life science research, meeting the needs of researchers in fields such as neurobiology, cell biology and genetic toxicology. Founded in 1984, Stratagene is a privately owned company that employs approximately 275 people in facilities in the United States, Germany, Switzerland, and the United Kingdom.

Cynthia Sung, HST '88, a member of Senior Staff of the Biomedical Engineering Program at NIH - has developed analytical and experimental models to address problems in effective delivery and clearance of therapeutic agents used in oncology. She has made major contributions to the planning and effective implementation of clinical trials of new chemotherapeutic agents with emphasis on brain and micrometastatic disease.

Jose Venegas, HST '84, Assistant Professor of Anesthesia and Bioengineering at Massachusetts General Hospital - has made many major contributions in pulmonary medicine, including developing a theoretical understanding of high-frequency ventilation techniques, and pioneering novel positron emission methods for evaluating the coordination of blood and gas flow in the lung. These techniques are being used in understanding and optimizing gas exchange associated with novel respiration therapies such as partial liquid and nitric oxide ventilation.

Joseph T. Walsh, HST '88, Associate Professor of Biomedical Engineering,

BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
Ho, David D.	Director and Professor

EDUCATION	DEGREE	YEAR CONFERRED	FIELD OF STUDY
California Institute of Technology	B.S.	1974	Biology/Physics
Harvard Medical School	M.D.	1978	Medicine

POSITIONS HELD

1990-present	Director, Aaron Diamond AIDS Research Center
1996-present	Professor, The Rockefeller University
1994-1996	Director, Center for AIDS Research, NYU School of Medicine
1990-1996	Professor of Medicine and Microbiology, NYU School of Medicine
1990-1993	Co-Director, Center for AIDS Research, NYU School of Medicine
1989-1990	Associate Professor of Medicine in Residence, UCLA School of Medicine
1986-1989	Assistant Professor of Medicine in Residence, UCLA School of Medicine
1985-1986	Instructor of Medicine, Harvard Medical School & Mass. General Hospital
1982-1985	Research Fellow in Medicine, Harvard Medical School & Mass. General Hospital
1978-1982	Resident and Chief Resident, Cedars-Sinai Med. Ctr. & UCLA School of Medicine

SELECTED PUBLICATIONS

1. Ho DD, Schooley RT, Rota TR, Kaplan JC, Salahuddin SZ, Gonda MA, Hirsch MS. HTLV-III in semen and blood of a healthy homosexual man. *Science* 1984; 226:451-453.
2. Ho DD, Rota TR, Schooley RT, Kaplan JC, Allan JD, Groopman JE, Resnick L, Felsenstein D, Andrews CA, Hirsch MS. Isolation of HTLV-III from cerebrospinal fluid and neural tissues of patients with neurologic syndromes related to the acquired immunodeficiency syndrome. *N. Engl. J. Med.* 1985; 313:1493-1497.
3. Ho DD, Sarngadharan MG, Resnick L, diMarzo-Veronese F, Rota TR, Hirsch MS. Primary human T-lymphotropic virus type III infection. *Ann. Intern. Med.* 1985; 103:880-883.
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5. Ho DD, Sarngadharan MG, Hirsch MS, Schooley RT, Rota TR, Kennedy RC, Chanh TC, Sato V. HTV neutralizing antibodies recognize several conserved domains on the envelope glycoproteins. *J. Virol.* 1987; 61:2024-2028.
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7. Cortes E, Detels R, Aboulaia D, Li XL, Moudgil T, Alam M, Bonecker C, Gonzaga A, Oyafuso L, Tondo M, Boite C, Hammershlag N, Capitani C, Slamon D, Ho DD. HIV-1, HIV-2 and HTLV-I infection in high risk groups in Brazil. *N. Engl. J. Med.* 1989; 320:953-958.
8. Ho DD, Moudgil T, Alam M. Quantitation of human immunodeficiency virus type 1 in the blood of infected persons. *N. Engl. J. Med.* 1989; 321:1621-1625.
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10. Ho DD, McKeating J, Li XL, Moudgil T, Sun NC, Holton D, Robinson JE. A conformational epitope on gp120 important in CD4 binding and HIV-1 neutralization identified by an human monoclonal antibody. *J. Virol.* 1991; 65:489-493.
11. Daar ES, Moudgil T, Meyer RD, Ho DD. Transient high levels of viremia in patients with primary human immunodeficiency virus type 1 infection. *N. Engl. J. Med.* 1991; 324:961-964.

12. Ho DD, Fung MSC, Cao Y, Sun C, Chang TW, Sun NC. Second discontinuous epitope on gp120 important in HIV-1 neutralization identified by a monoclonal antibody. *Proc. Natl. Acad. Sci. USA* 1991; 88:8949-8952.
13. Connor RI, Mohri H, Cao Y, Ho DD. Increased viral burden and cytopathicity correlate temporally with CD4+ T-lymphocyte decline and clinical progression in HIV-1-infected individuals. *J. Virol* 1993; 67:1772-1777.
14. Ho DD, Cao Y, Zhu T, Farthing C, Wang N, Gu G, Schooley RT, Daar ES. Idiopathic CD4+ T-lymphocytopenia (ICL): immunodeficiency without evidence of human immunodeficiency virus infection. *N. Engl. J. Med.* 1993; 328:380-385.
15. Zhu T, Mo H, Wang N, Nam D, Cao Y, Koup R, Ho DD. Genotypic and phenotypic characterization of HIV-1 in patients with primary infection. *Science* 1993; 261:1179-1181.
16. Koup RA, Safrit JT, Cao Y, Andrews CA, Wu Y, McLeod G, Borkowsky W, Farthing C, Ho DD. The initial control of viremia during primary HIV-1 syndrome is temporally associated with the presence of cellular immune responses. *J. Virol* 1994; 68:4650-4655.
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33. Kostrikis L, Shin S, Ho DD. Genotyping HIV-1 and HCV strains by a combinatorial DNA melting assay. *Nature* 1997; in press.

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TO: Jeffrey Shesol
NAME Special Assistant to the President

COMPANY NAME _____

PHONE (202) 456 5709
FAX _____

FROM: Cynthia LeBien
NAME HST

PAGES (INCLUDING COVER) 2 **DATE** _____

IF YOU DO NOT RECEIVE ALL PAGES, PLEASE CALL _____

COMMENTS:

Dr Shannon mentioned that you might be interested in attending the reception for Dr. Ho. Here is a copy of the invitation for you. HST would be delighted if you could join us.

THANK YOU

THE HARVARD-M.I.T. DIVISION OF HEALTH SCIENCES AND TECHNOLOGY
REQUESTS THE PLEASURE OF YOUR COMPANY
AT A RECEPTION IN HONOR OF



DAVID D. HO, M.D., HST CLASS OF 1978
PROFESSOR AND PHYSICIAN
THE ROCKEFELLER UNIVERSITY
SCIENTIFIC DIRECTOR AND CEO
AARON DIAMOND AIDS RESEARCH CENTER, NEW YORK CITY



4:30 TO 6:30 P.M.
ON FRIDAY, THE FIFTH OF JUNE
NINETEEN HUNDRED AND NINETY-EIGHT
AT THE ST. BOTOLPH CLUB
199 COMMONWEALTH AVENUE
BOSTON, MASSACHUSETTS

R.S.V.P.

HARVARD-MIT DIVISION OF HEALTH SCIENCES AND TECHNOLOGY
RECEPTION FOR DAVID D. HO, M.D., HST CLASS OF 1978

I WILL _____ / WILL NOT _____ ATTEND THE RECEPTION.

NAME OF GUEST _____

RETURN BY MAY 25 OR FAX TO 253-7498
OR REPLY BY E-MAIL TO: BJASKELA@MIT.EDU

HARVARD MEDICAL SCHOOL

BRIGHAM AND WOMEN'S HOSPITAL

ROBERT A. GREENES, M.D., PH.D.

Professor of Radiology

Office: (617) 732-6281

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Boston, Massachusetts 02115

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FAX MEMORANDUM

Page 1 of 3

May 26, 1998

TO: Jeffrey Shesol
Special Assistant to the President
Fax: (202) 456-5709

From: Robert A. Greenes, M.D., Ph.D.
Tel: (617) 732-6281
Fax: (617) 732-6317

Subject: Background Material for President Clinton's Visit to MIT

I am writing at the suggestion of Dr. Dan Shannon, whom I understand that you met recently at Brown University's commencement. Dr. Shannon told me that you might find some material about information technology development at MIT of use in preparing President Clinton's remarks for his MIT commencement address.

The material enclosed is primarily related to information technology in health care, which is a major focus area of the Division of Health Sciences and Technology (HST), a joint division of MIT and Harvard Medical School.

If you need any further information, please let me know. For some examples of health care information technology research and development currently underway, you may find our Web site useful: <http://dsg.harvard.edu>.

Yours truly,

A handwritten signature in cursive script that reads "Robert A. Greenes".

Enclosure

**INFORMATICS ACTIVITIES
IN THE DIVISION OF HEALTH SCIENCES & TECHNOLOGY (HST):
A MODEL FOR COLLABORATIVE RESEARCH AND EDUCATION**

Robert A. Greenes, M.D., Ph.D.

May 26, 1998

The Division of Health Sciences & Technology (HST) recognizes the central role of information technology in many aspects of public health, health care, and biomedical research. This is reflected in HST's academic mission: "Health and biomedical informatics" is one of its primary focus areas, in terms of both its educational and investigational activities.

The national need for this focus is quite apparent, as illustrated by the following examples.

- New discoveries in biomedical research require increasingly sophisticated modeling of molecular phenomena and processes, access to large data banks, and complex analytical methods.
- Advances in health care also depend on improved capture of clinical data, unambiguous representation of it, and the ability to collect and analyze such data to determine cost-effective health care practices. Data collection and analysis, and access by both providers and researchers must be done in a secure manner that protects patients' privacy and confidentiality.
- In view of the constant change in medical knowledge, physicians must be able to engage in life-long learning, ideally having useful information delivered "just-in-time" at the point of need, where it is most relevant.
- The general public needs to be a major participant in its own health maintenance, as well as in management of health care problems. Access to reliable, trusted health and health care advice, continuity of access to one's own health care record, and facilitated access to health care services and resources are desirable.
- The information technology infrastructure for many of our enterprises must adapt to new needs such as the above:
 - Biomedical and health care research increasingly needs to be done collaboratively across institutional and geographic boundaries, along with the establishment of "virtual laboratories", or "collaboratories". This is required because of the need to access specialized information resources, skills, techniques, and tools that are widely distributed.
 - Health care services and resources are being organized into patient-centered integrated delivery networks (IDNs). Information technology goals are to provide more efficient and cost-effective ways of utilizing clinical expertise, projecting it at a distance (i.e., telemedicine, "telehealth", computer-based decision support, etc.), facilitating access to needed resources, improving workflow, and increasing guidance and the ability to monitor use of services.

HST faculty are involved in innovative research and development programs in each of the above areas as well as many others. With 25 primary informatics faculty and 40 affiliated

faculty at MIT, Harvard, and 5 affiliated hospitals and medical centers, HST's informatics focus provides national as well as world leadership.

Concomitant with its research and development, HST has a major commitment to education and training of information technology professionals for careers in health and biomedical informatics. This includes:

- A coordinated research training program for predoctoral and postdoctoral fellows at both MIT, Harvard, and affiliated health care centers, with more than 30 students
- Active participation by fellows in research projects in areas such as cited above
- A core curriculum and a growing number of specialized courses for concentration in specific areas of informatics
- A Masters degree and tracks leading to Ph.D. degrees in two other cooperating departments (at MIT and at Harvard School of Public Health)

We believe that the nation's future progress in health care delivery and in biomedical research depends on leadership that is well trained in:

- (a) the basic knowledge of computer science and decision science
- (b) the engineering skills, tools, and methods needed to apply this knowledge
- (c) an understanding of the problems, issues, and challenges of the domain in which they are to be applied.

HST is uniquely positioned to carry out this mission, at MIT and through its strong set of relationships with Harvard and affiliated institutions. The very organization of HST as a focus for collaborative research and education serves as a model for the way we believe such activities need to be conducted in an information-oriented future.

20TH STORY of Level 1 printed in FULL format.

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The Boston HeraldMay 10, 1994 Tuesday FIRST EDITION

SECTION: NEWS; Pg. 005

LENGTH: 271 words

HEADLINE: Wacky MIT kids elevate hacking to new heights

BYLINE: ANN E. DONLAN

BODY:

A Massachusetts Institute of Technology dome was transformed yesterday into a pedestal after daring pranksters perched a replica of a campus police cruiser on the building's rooftop.

'Driven' by a doughnut-toting dummy and decorated with an 'I brake for doughnuts' bumper sticker, the car was dismantled piece by piece by MIT workers yesterday morning and lowered by ropes in front of a cheering crowd.

'This is one of the better hacks I've seen,' said senior Coleen Kaiser, 21. It definitely took some innovative methods to get that up there.

In MIT's long history of hacks - or high-tech pranks - yesterday's stunt ranked high on a list that dates back to the 1870s. Aloft at 116 feet, the car atop the Richard C. Maclaurin Building revived memories of the telephone booth, giant pumpkin face and cow statue that have adorned its rooftop over the years. Students at the college newspaper 'The Tech' were alerted of the prank via computer about 4 a.m. yesterday.

On the last day of classes, a group of unknown hackers hoisted the shell of a car attached to a wooden frame - equipped with flashing blue lights - on top of the dome undetected under the cover of night.

Students teased campus police officers yesterday, yelling to them, 'Hey, where's your cruiser?' said MIT spokesman Robert DiIorio.

Police Chief Anne Glavin said the 55-member department took the ruse in stride.

'There is a fine for being on top of MIT academic rooftops, and we do levy that fine,' Glavin said. 'But where hacks are concerned, very rarely does anyone leave a calling card. They got by us on this one.'

LOAD-DATE: March 08, 1995

37TH STORY of Level 1 printed in FULL format.

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The Boston Globe

April 17, 1991, Monday, City Edition

SECTION: METRO/REGION; Pg. 13

LENGTH: 864 words

HEADLINE: Of hacks and Smoot;
MIT students have engineered campus pranks since 1876

BYLINE: By Judith Gaines, Globe Staff

DATELINE: CAMBRIDGE

BODY:

"HACKITO ERGO SUM," says a makeshift banner that once adorned the main entrance to the Massachusetts Institute of Technology. Meaning: "I HACK, THEREFORE I AM.."

If the august institute is a place of serious intellectual pursuits, it is also the home of high-class, high-tech high jinks: April Foolery in a refined form.

According to Brian Leibowitz, an MIT graduate who has studied the topic extensively, hacks differ from normal college stunts because they require careful planning, engineering and finesse and reflect "underlying wit and inventiveness."

 Definition

As early as 1876, MIT's John Freeman sprinkled iodide of nitrogen, a mild contact explosive, on the floor just before an assembly began. Leibowitz says the MIT annals have been full of hackery ever since.

In 1958, fraternity pranksters rolled undergraduate Oliver R. Smoot end over end across the Harvard Bridge, creating the "Smoot" as a unit of measurement. The Smoots were so popular that when bridge reconstruction threatened to eliminate the Smootmarks, students recalled the alumnus and Smooted the new bridge.

And in 1982, MIT students planted a weather balloon and an inflating device on the 46-yard line at the Harvard-Yale game. At the end of the first quarter, a balloon with the words "MIT wins the Harvard-Yale game" grew to a 6-foot diameter and then burst in a cloud of talcum powder.

These and many more hacks are celebrated in "Crazy After Calculus: Humor at MIT," an exhibit opening today at the institute's Compton Gallery. The opening coincides with publication of Leibowitz's "Journal of the Institute for Hacks, Tomfoolery & Pranks," a history of MIT's most stunning stunts.

As the exhibit and the journal make plain, the institute's great dome, which rises 150 feet above the Barker Engineering Library, has been a beacon for creative modifications. Throughout the years, it has been made to resemble the Great Pumpkin, a giant screw, "the great breast of knowledge (Mamma Maxima Scientiae)," and more. In October 1979, the top of the dome was converted into

The Boston Globe, April 1, 1991

a pasture for Ferdi, a fiberglass steer "borrowed" from the Hilltop Steak House, according to Joan Loria, the exhibit's curator.

Pranks frequently have been designed to provide inventive answers to campus problems.

In September 1986, a small house was erected on the dome top "to help alleviate crowding in the dormitories," hackers said. To call attention to the difficulty of finding a parking place, students in 1987 parked a car in a classroom.

In September 1988, three round windows in the Health Services Center were painted red, yellow and green "to help direct pedestrian traffic," Leibowitz says.

Some of the most unusual pranks have been perpetrated by a mysterious character known as James E. Tetazoo. In February 1973, a freshman found that "well-wishers" led by Tetazoo had installed a brick well, complete with pennies, in his dorm room.

Late one night in 1979, the USS Tetazoo was added to MIT's Hart Nautical Galleries. This dime-store version of a model aircraft carrier allegedly was designed as a replica of "the only official floating still in the US Navy," Loria said.

And in March 1985, Tetazoo offered aesthetic commentary on the first exhibit at MIT's List Galleries, a show of contemporary art. His unsolicited addition, entitled "No Knife," consisted of a dinner place setting without a knife sitting on a cafeteria tray atop an overturned trash can. Tetazoo's accompanying text observed, "The sterile lateralism of the grouped utensils (sans knife), conveys a sense of eternal ennui, framed within the subtle ambience of discrete putrefaction."

Staff members of Voo Doo, a campus humor magazine from 1919 to 1976, also claimed responsibility for many stunts. To publicize its "Pseudo-Scientific American" issue, Voo Doo purportedly programmed a time machine to bring back the first Boston city planner. Noting that the city streets began as cow paths, Leibowitz says the machine produced a calf.

Other student publications have included "Can," a 44-page literary magazine, each copy in its own 16-ounce can; "Thursday," a periodical published almost every day but Thursday; and "Tic Toc," a response to the official weekly, "Tech Talk."

In 1982, Avon Books published a parody of L.L. Bean's catalog, featuring edible moccasins, cheddar-cheese-flavored tongue depressors and sheepskin-lined cases for canned tuna. A MIT hacker responded by ordering "a building cozy" in preshrunk gingham to help keep students warm and protect the institute's Green Building.

Also in 1982, student leaders at MIT responded to apparent confusion in Harvard's student government by claiming Harvard "as an MIT colony."

And for no apparent reason, some engineering students hoisted a live brown-and-white cow onto the roof of a five-story dormitory. The prank was

The Boston Globe, April 1, 1991

discovered when a policeman caught four students picking grass to feed the
stranded cow.

Such stunts may seem silly, but they serve an important function, said associate provost and humorist Jay Keyser. "This can be a very difficult, unrelenting place," he observed. "Humor is a way of protecting yourself from that - and making it all bearable."

LANGUAGE: ENGLISH

LOAD-DATE: April 5, 1991

2ND STORY of Level 1 printed in FULL format.

Copyright 1998 Globe Newspaper Company
The Boston Globe

April 2, 1998, Thursday, City Edition

SECTION: ECONOMY; Pg. C4

LENGTH: 393 words

HEADLINE: OK, which computer geek/pranksters stuck ears atop the Great Dome? At this institution of higher (?) learning, a tradition lives on - this time with a high-tech twist and classic theme song.
M-I-T K-E-Y M-O-U-S-E

BYLINE: By Hiawatha Bray, Globe Staff

BODY:

Not content with owning the TV network ABC, Walt Disney Co. will spend \$6.9 billion to buy MIT. The startling news was announced yesterday on the World Wide Web site of the Massachusetts Institute of Technology, a school famed for its strict standards, intellectual integrity - and love of a good April Fools' Day joke.

Some clever eggheads broke into the server computer housing MIT's home page. They adorned the page with a picture of the school's famous dome decorated with giant Mickey Mouse ears, along with a phony press release announcing the deal with Disney.

According to the release, Disney plans to dismantle its new prize brick by brick and rebuild it in Orlando, Fla., near the site of Walt DisneyWorld. "Student morale will be improved by nightly parades down the Infinite Corridor, followed by firework displays over the Great Dome," the statement said, while offers of Disney stock options will help attract a strong faculty.

The relocated MIT will feature the School of Imagineering, the Scrooge McDuck School of Management, and the Donald Duck Department of Linguistics. MIT president Charles Vest will take on a new title - Disney's vice president of nerd education.

MIT officials reveled in the prank. "I knew it was a hack as soon as I saw the price," said MIT spokesman Ken Campbell. "Only \$ 6.9 billion? Much too cheap." But Campbell said MIT would leave the phony Web page on its server for all the world to see, in honor of the school's tradition of practical jokes.

It's a tradition that dates back to 1876, when a student got ahold of a low-grade explosive that would detonate under pressure. He sprinkled a batch of it on the floor in a student assembly hall. In 1982, MIT students raided the annual Harvard-Yale game and set up a weather balloon that sprinkled spectators with talcum powder.

Many of the pranksters' greatest hits have featured the Great Dome that towers over Memorial Drive in Cambridge. The dome has inspired daring gags that make yesterday's Web page hack look, well, kind of Mickey Mouse. MIT students have covered the dome with cloth to simulate a jack-o'-lantern and festooned the top with many strange objects, including an upright piano and a giant plastic

The Boston Globe, April 2, 1998

COW.

The fact that pranksters are resorting to their computer skills suggests MIT may be breeding a new strain of super-geek.

GRAPHIC: PHOTO

LANGUAGE: ENGLISH

LOAD-DATE: April 2, 1998

16TH STORY of Level 1 printed in FULL format.

Copyright 1994 Boston Herald Inc.
The Boston Herald

November 19, 1994 Saturday SECOND EDITION

SECTION: SPORTS; Pg. 044

LENGTH: 67 words

HEADLINE: MIT up to old tricks

BODY:

Invaders from MIT performed more tomfoolery at Harvard yesterday. In preparation for today's Harvard-Yale football game, MIT pranksters painted the Harvard insignia at midfield in blue and burned the word "Yale" in an end zone.

The high jinks pales in comparison to recent pranks. MIT students one year
buried a large balloon under the Harvard Stadium field and inflated it during
The Game.

LOAD-DATE: November 28, 1994



Interesting Hacks To Fascinate People: The MIT Gallery of Hacks

The word **hack** at MIT usually refers to a clever, benign, and "ethical" prank or practical joke, which is both challenging for the perpetrators and amusing to the MIT community (and sometimes even the rest of the world!). Note that this has nothing to do with computer (or phone) hacking (which we call "cracking").

Recent News

[5/18/98] A huge "Monopoly[tm]" board labelled "Aramark featuring Monopoly" appeared hanging above the central stairwell of the Stratton Student Center. Aramark currently holds the contract to run all of the dining halls on campus. Photos will be available shortly.

[4/1/98] Hackers changed the main MIT web page in the spirit of April Fools Day. A snapshot of the hacked version is being archived here.

[3/25/98] This web site has moved to <http://hacks.mit.edu/Hacks/>. Please change any bookmarks or links you may have to reflect this change.

[3/24/98] To commemorate the closing of historic Building 20, hackers hung a large, red "deactivated sticker" on the building.

[3/24/98] The lights on the MIT Green Building were turned on and off in the form of an Oscar[tm], supposedly to celebrate *Good Will Hunting* winning an academy award. Reports indicate that the story was covered on Channel 5. This practice of putting images on the Green Building in lights is called "greenspeak".

[1/21/98] A huge "paper airplane" (about 15 or 20 feet long) was hung in the middle of Lobby 7. A note nearby claims that the structure is an entry for the upcoming IAP Paper Airplane Contest. Photos and more information will be available shortly.



The Gallery of Hacks



By Year



By Location



By Topic



Best of the
Gallery

Miscellany



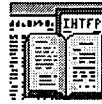
Frequently
Asked
Questions



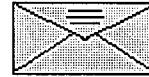
What's New



Administrivia



Books &
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For more information about MIT, go to the MIT home page.

Since November 24, 1997, the web counter on this page has been accessed **120021** times.

***Journal of IHTFP* a joyful account of MIT hacks**

POSSIBLE HED:

THE JOURNAL OF THE
INSTITUTE FOR HACKS,
TOMFOOLERY,
AND PRANKS AT MIT.

By Brian M. Leibowitz '82.

The MIT Museum, 158 pp., \$19.95.

By PRABHAT MEHTA

MY BRIEF CAREER IN HACKING began and ended during Residence/Orientation Week my freshman year. One night, towards the end of rush, I embarked upon a surreal journey of sorts -- the spelunkers' tour. Under cover of the night, I joined about 20 other wide-eyed freshmen and a couple of guides to criss-cross the forbidden catacombs and roofs of the Institute. We would all later be rounded up by Campus Police officers while on top of the Great Dome over Lobby 10.

Sleepy, with stuff still in the corners

of my eyes, I showed up at the Campus Police station the next morning at 7 am to pick up my ID. I was slapped on the wrist; told that if I got into any more "trouble," I would actually have to pay the requisite \$50 fine; and sent back to consider the ramifications of my delinquency. At the time, I was worried that my record would be tarnished. Needless to say, my hacking days were behind me.

But my will proved indefatigable, and as the atmosphere of MIT began to penetrate my soul later that year, I gladly took a job which my advisor, MIT Museum Director Warren A. Seamans 'HM, offered me in the collections department. My mission: to organize the piles of information the museum had collected over the years on hacking at MIT. The information, I was told, would be used for slide presentations and, possibly, a book. For the next four months, I sifted through piles of photographs depicting everything from coed streakers running across Kresge Oval to mischievous Senior House residents brewing their own spirits during the darkest days of Prohibition.

And so when Brian M. Leibowitz '82 came by *The Tech* a couple weeks ago with the final version of his hack book before it was to be printed, I took an eager preview, and anxiously awaited the arrival of the review copy. I wasn't disappointed. From beginning to end, *The Journal of the Institute for Hacks, TomFoolery, and Pranks at MIT* (IHTFP!) proves to be a joyful ride through our school's rich history of good, clean fun. It moves thematically through the biggest capers of MIT's only real tradition (the first recorded hack took place in the mid-1870s, Leibowitz notes

in the introduction), with an emphasis

on showing the reader what actually happened with big, truly memorable photographs.

It is perhaps with the photographs that this books marks its greatest success. Photographs of hacks are generally of poor quality. This, Leibowitz says, is because of the "clandestine" nature of the activity. But the photographs used in this book have been carefully chosen from the museum's collection, which contains many third-hand reproductions. The cover photograph of the "Great Pumpkin" hack -- in which the Great Dome was dressed up to represent the Jack-O-Lantern of *Peanuts* character Linus' dreams -- was masterfully retouched by an artist who poured the appropriate color of paint into each crack. The result is a beautiful red-orange depiction of the Institute coming to life on Halloween night, 1962.

The "Great Pumpkin" hack is just one of the wonderful photographs in the "Buildings" chapter, which I consider to be the best. Like the pumpkin, other hacks on MIT buildings have attempted

to give them personalities or alternate purposes. My favorites include the 1972 "George" hack on the Small Dome -- in which the entire structure was covered by black polyethylene sheeting. Two eyes are painted to give the impression of a scared little giant peering over the 77 Massachusetts Ave. entrance to the Institute. Others might prefer the "nipple" hacks -- in which structures were placed on the tops of the domes to depict "Mamma Maxima Scientiae" (Great Breast of Knowledge) -- but I found it to be uncomfortably realistic. (Imagine the Institute as your mother. . . .) Of course, building hacks have not been limited to the domes. One classic caper which took place in the Infinite Corridor was the 1985 "Massachusetts Toolpike," which included road signs, yellow lines, and even a car parked in Lobby 10.

Other sections of this book cover the freshman picnic, Hahvahd, and the now nearly defunct humor magazine *Voo Doo*. The Hahvahd chapter includes the infamous Harvard-Yale game hack of 1982. Leibowitz interestingly points out that the media attention focused on Delta Kappa Epsilon's balloon hack neglected two other MIT hacks that day. The MIT marching band managed to get onto the field and spell the letters "MIT," and placards that unknowing Harvard fans raised in hopes of spelling "BEAT YALE" in the fourth quarter in fact spelled out "MIT." There can be no doubt who really won that game.

There is so much more to be said about this book, so many moments of sheer MIT brilliance to discuss. But I have neither the space nor desire to keep telling you about them. You'll just have to go out to the museum or the MIT Museum Shop on the first floor of the Stratton Student Center and buy the book for yourself. Flipping through one last time as write this review, though, I can't help but tell one final story. "As you read *The Journal* . . . you will see that even the president of this august institution is not immune from the hacker's thrust," writes President Paul E. Gray '54 in the "nextword."

I wondered what he meant for a while until I reached a photograph on page 71 of two young men on one of the roofs of East Campus. Nothing special, except that both are on a car, and one would go on to become the 10th president of MIT. He was the late James R. Killian Jr. '26, hacker extraordinaire.

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Volume 110, Number 40
The story began on page 9 and jumped to page 10.

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Other stories in this issue



The Green Building Light Meter

The Boston Pops musical performance on the Esplanade is traditionally topped off by a dazzling display of pyrotechnics. This year (1993) the performance was accompanied by a sound meter which was designed specially for the event.

In observance of Independence Day, MIT hackers decided to convert the top of the Green Building (MIT building 54) into the world's largest sound meter. The sound meter is composed of nine 6x4 feet apertures, almost 250 times the size of an ordinary stereo sound meter. The total output of the meter is over 5,000 watts.

The sound meter automatically switched to sequences of interesting display patterns to better complement the fireworks following the concert.

106TH STORY of Level 1 printed in FULL format.

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Time

December 30, 1996

SECTION: SPECIAL DOUBLE ISSUE/MAN OF THE YEAR; MAN OF THE YEAR; Pg. 56

LENGTH: 4401 words

HEADLINE: THE DISEASE DETECTIVE;
AS THE AIDS EPIDEMIC UNFOLDED, DR. DAVID HO HAD A KNACK FOR ASKING JUST THE
RIGHT QUESTIONS

BYLINE: CHRISTINE GORMAN, REPORTED BY ALICE PARK/NEW YORK AND DICK THOMPSON/
WASHINGTON

BODY:

Dr. David Ho doesn't look like a gambler. With his boyish face and slender build, he could more easily pass for a teenager than for a 44-year-old father of three--or, for that matter, for a world-renowned scientist. In fact, when he was an undergraduate at the California Institute of Technology back in the 1970s, Ho hung around the blackjack tables in Las Vegas, tilting the odds in his favor by memorizing each card as it was played. He got so good at counting cards that he was thrown out of several casinos.

Today Ho is still something of a gambler, though in a very different field and for much bigger stakes. ~~The director of the Aaron Diamond AIDS Research Center in New York City, he has come up with a daring strategy for flushing out the virus that causes AIDS.~~ As he explained at the 11th International Conference on AIDS in Vancouver, Canada, last summer, Ho (like more and more doctors) is ~~using powerful new drugs called protease inhibitors in combination with standard antiviral medications. But unlike most doctors, he gives the so-called combination therapy to patients in the first few weeks of infection.~~

Already the HIV in his patients' blood has dropped so low it can no longer be measured. Because he is attacking early and not waiting for full-fledged AIDS to develop, Ho told the conference, there is a good chance that within two or three years the virus could be completely eliminated.

Eliminated. Just a few months ago, no one in the AIDS community and no reputable scientist would presume to imagine such a thing. Journalists, activists and researchers peppered Ho with questions at the podium. Had he found the cure? Could people stop worrying about AIDS? Could they throw away their condoms?

No, no and no. What he had done, Ho explained, was begin an experiment that might, under the right circumstances, eliminate the virus from a small group of men caught within three months of infection. He couldn't offer the same hope to the estimated 100,000 patients in later stages of infection who in the past year have begun taking the same antiviral "cocktails"--often with encouraging results--but whose AIDS is probably too far advanced for them to expect a long-term recovery.

Like so many promising HIV treatments, Ho's strategy could fail. It could even backfire if it is mistakenly touted as a kind of "morning after".

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treatment that allows people to relax their guard and engage in risky sexual behavior. By desensitizing the virus to medications, it could jeopardize a patient's ability to respond to future treatments. Worse yet, it could inadvertently create a mutant strain of virus resistant to all currently available drugs--a kind of super HIV--that could lead to a second, even more devastating AIDS epidemic.

There are other problems. Even if the treatment works, it isn't practical. HIV-positive patients would have to start taking the drugs immediately after infection, before they realize they're sick. And even if the drug cocktails can be made to work in the later stages of infection, they are far too expensive to do much good for the 20 million people in the developing world who are infected with HIV. In the long run, scientists believe, only an AIDS vaccine will stop the global epidemic.

Still, it's easy to understand the tentative sense of hope and excitement that has spread across the AIDS community in the months since the Vancouver conference. Ho's speech, for all its caveats, provided the first concrete evidence that HIV is not insurmountable. After 15 years of horror, denial and disappointment, the pendulum may at long last be swinging against AIDS.

A TEAM EFFORT

David Ho would be the first to say that he cannot take all the credit. It was an immunologist from Los Angeles named Michael Gottlieb who in 1981 reported the first cases of what was then called gay pneumonia. It was the U.S. Centers for Disease Control that alerted doctors to the gathering epidemic and established that the infection was transmitted through blood transfusions, tainted needles, and unprotected sex. It was Dr. Luc Montagnier's laboratory at the Pasteur Institute in Paris that first isolated the killer virus in 1983. It was Dr. Robert Gallo and his colleagues at the National Cancer Institute in Bethesda, Maryland, who made it grow in the lab, which allowed for the development of an antibody test. It was the National Institutes of Health that funded the basic research on HIV and AIDS. It was the big drug companies like Burroughs Wellcome and Merck that brought a growing list of anti-HIV drugs to market.

is this a model for pub-pro partnership?

But Ho, working alone or in concert with others, fundamentally changed the way scientists looked at the AIDS virus. His breakthrough work in virology, beginning in the mid-1980s, revealed how HIV mounts its attack. His tenacious pursuit of the virus in the first weeks of infection helped show what the body does right in controlling HIV. His pioneering experiments with protease inhibitors helped clarify how the virus ultimately overwhelms the immune system. His work and his insights set the stage for an enormously productive shift in the treatment of AIDS away from the later stages of illness to the critical early days of infection.



Once, not so long ago, researchers believed that nothing much happened after HIV gained entry into the body. The virus simply hunkered down inside a few of the immune system's T cells--the linchpins of the body's defensive forces--for anywhere from three to 10 years. Then something, no one knew what, spurred the microbial invader to awaken. In this picture, the AIDS virus spent most of its life hibernating before starting its final, deadly assault.

In the past two years, Ho and his colleagues have demonstrated that this picture of the virus is wrong. There is no initial dormant phase of infection.

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Ho showed that the body and the virus are, in fact, locked in a pitched battle from the very beginning. At first many AIDS researchers found this hard to accept; it challenged some of their most cherished assumptions. If Ho was right, doctors would have to radically alter the way they treated AIDS.

It wasn't the first time that Ho had overturned conventional wisdom. During the past 15 years, he has demonstrated an uncanny ability to ask questions that seem obvious only in retrospect and to probe key issues others have overlooked. It's a trait that does not endear him to some of his rivals. A few have accused Ho of being a publicity seeker who is giving AIDS patients false hope. Upon examination, however, most of the accusations appear to spring from professional jealousy. "David is the type of individual whom I feel particularly good about when he achieves success," says Dr. George Shaw, one of Ho's strongest competitors, who runs a state-of-the-art AIDS research laboratory at the University of Alabama in Birmingham. "He is a stellar scientist."

Ho has an extraordinary knack for being in the right place at the right time. Two years after he received his M.D. from Harvard Medical School, Ho witnessed the birth of the AIDS epidemic. He remembers how baffling it seemed.

The year was 1981, and Ho was chief medical resident at Cedars Sinai Hospital in Los Angeles. Across town at UCLA, Gottlieb had identified a new syndrome that seemed to target gay men. Each of the cases was different, but all had one thing in common: whatever was making the men sick had singled out the T cells for destruction. Eventually the body's battered defenses couldn't shake off even the most innocuous microbial intruder. The men were dying from what doctors termed opportunistic infections, such as *Pneumocystis pneumonia*, which attacks the lungs, and toxoplasmosis, which often ravages the brain.

Ho began seeing more and more of these patients in the intensive-care units at Cedars Sinai. Some doctors thought that poppers and other recreational drugs triggered the immune collapse. Others believed it was a bizarre allergic reaction from having too many sex partners. But Ho fell into the camp that suspected a virus. He quickly decided to specialize in AIDS research. "David was clearly a big thinker even then," says Dr. Mark Ault, who was a resident at Cedars Sinai at the time. "But that didn't stop us from kidding him about how he was always looking for gay men."

Ho ignored the gibes and in 1982 landed in Martin Hirsch's virology laboratory at Massachusetts General Hospital in Boston. A prominent scientist in his own right, Hirsch is known for cultivating talented young researchers.

Like many other ambitious young scientists, Ho wanted to be the first to isolate the virus that causes AIDS. Luc Montagnier and Robert Gallo beat him to it. (Ho came in fourth, after Jay Levy of the University of California, San Francisco.) Still, while working in Hirsch's lab, Ho became expert at detecting HIV in places where few were able to find it. He was the first to show that it grows in long-lived immune cells called macrophages and among the first to isolate it in the nervous system and semen. Just as important, he showed that there isn't enough active virus in saliva for kissing to transmit the infection. "David had the Midas touch," Hirsch recalls. "Whatever he did worked."

Unfortunately, Hirsch was not Midas, and he couldn't afford to pay his postdocs more than the standard \$ 18,000 yearly stipend. To support his family, Ho started moonlighting in Mass General's walk-in clinics. It turned out to be

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the right time to be in that place too. "The clinics are where you see the flus, the colds, the common illnesses," Ho says. In the mid-1980s, however, he started seeing gay men with what appeared to be an unusually severe flu. They always got over their illness without any of the hallmarks of AIDS. Still, he wondered, could there be a connection? Could these flu-like ailments be the signs of the men's very first exposure to HIV?

Sure enough, blood tests showed that the "flu" corresponded with the sudden appearance of HIV--and the total absence of any influenza viruses. Then, after a few weeks, the antibodies in the immune system would jump sharply while HIV disappeared from the circulation. It was the first evidence that HIV triggered an active infection. But not even Ho would recognize its significance until years later.

LEARNING FROM FAILURE

Despite rising casualties, Washington kept tight purse strings on funding for AIDS research for much of the 1980s. By 1987, though, even Ronald Reagan knew that AIDS was a serious threat. The plague had encircled the globe, stretching from Africa to Asia. The antibody test revealed the presence of HIV in the blood supplies of the U.S., France and Japan. The FDA approved use of the antiviral drug AZT in a record 14 weeks.

At that time, scientists across the U.S. were excited about a possible breakthrough treatment: soluble CD4. They knew that HIV does not infect T cells at random. It must first attach itself to a particular protein, called CD4, on the T cells' surface. Perhaps, researchers reasoned, if they flooded the bloodstream with free-floating CD4 molecules, the molecules would act as decoys and prevent HIV from infecting the T cells. Preliminary tests on viral samples grown under laboratory conditions showed that soluble CD4 worked beautifully.

Ho had taken a junior faculty position at UCLA and moved his family back to California. He contacted Dr. Robert Schooley of the University of Colorado Medical Center in Denver, and together they embarked on a clinical trial of soluble CD4 in two dozen patients, many of them in the later stages of AIDS. Unfortunately, Ho and Schooley wound up proving that soluble CD4 doesn't work. In the process, however, they discovered something very interesting--that there were tens of thousands of infectious viral particles in their patients' bodies, a lot more than anyone had expected.

It took Ho only a few weeks to figure out why soluble CD4 didn't work. The early tests on the treatment were done on weak strains of virus grown in the lab. Somehow wild viruses could tell which CD4 molecules were decoys. Ho and the rest of the AIDS scientists had just learned a valuable lesson. They would have to test all their potential treatments on viruses that infected real patients.

BACK TO BASICS

The experience with soluble CD4 showed Ho that there were significant gaps in science's understanding of the life cycle of HIV. He decided to revisit his earlier Boston work on the first stages of infection. By hanging out in hospital emergency rooms and talking to colleagues, he and his team at UCLA identified four young homosexual men suffering from the flu-like symptoms of a primary HIV infection. Ho used a newly available tool of genetic engineering--the PCR test used most famously in the O.J. Simpson trial--to measure the amount of virus

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in the blood. Once again, he was astonished.

By this time, most researchers agreed that people in the later stages of AIDS had large quantities of HIV in their blood. But the PCR test showed that millions of viral particles were coursing through Ho's patients' blood in the earliest weeks of infection as well--as many as could be found in someone with a full-fledged case of AIDS. Within a few weeks, the viral load plunged to low and in some cases undetectable levels. The patients recovered and seemed healthy.

Ho wasn't the only scientist who had observed this. Another team, headed by George Shaw, had seen the same spike in HIV particles followed by a precipitous drop. The two researchers learned of each other's work and decided to co-publish their findings in a 1991 issue of the New England Journal of Medicine. It was the beginning of a friendly but no less keen competition between the scientists.

It was also the beginning of a new phase in Ho's career. Philanthropist Irene Diamond had decided to found an AIDS research center in New York City and had chosen Ho as its director. He was 37 years old. "I took a bit of flak because everybody said, 'He's so young, he's unknown.'" she recalls. "I said, 'I don't want a star, I want a wonderful scientist.'" For his part, Ho considered the benefits of having more lab space and secure financial backing. "It was still a risky venture," he remembers. "Marty Hirsch said, 'You're crazy. This is New York City. The politics will eat you up.'" But for Ho, the chance to do what he wanted, and to attract top-level scientists to join him, was too good to pass up.

Ho and Shaw had proved that there are high levels of virus in the first few weeks of infection. Ho and Schooley had already shown that there is a lot more virus in the end stages of AIDS than anyone had thought possible. The next question was obvious: What is going on during those middle years, when patients are still in relatively good health? Ho suspected that the answer could dramatically change the way doctors treated their HIV-positive patients.

All the blood tests indicated that the viral load was close to zero throughout the middle years, though it would gradually increase as time went by. Both Ho and Shaw realized, however, that zero doesn't always equal zero in the world of HIV. For one thing, the virus might be hiding out in the lymph nodes, where it could be producing thousands or even millions of copies of itself every day. As long as the immune system cleared those infectious particles as quickly as they formed, blood tests would show no change in viral load. "It's like a person running on a treadmill," Ho explains. It doesn't matter how fast they run. To an observer, they appear to be staying in place.

Not even the greatest marathoner could keep up that pace forever. If the virus reproduced very quickly, it would eventually exhaust the body's defenses. At least that's what Ho and Shaw thought. The trick to proving their idea was to find some way to suddenly stop the treadmill. If you did that to a jogger, he would lurch forward. Similarly, if you stopped HIV's cycle of reproduction in the blood, the immune system should suddenly rebound. By measuring that rebound, the scientists hoped to figure out just how rapidly the virus had been reproducing.

Great idea, in theory. There was just one problem: no one knew how to stop HIV that quickly. AZT wasn't powerful enough to do it. The pharmaceutical companies, however, had just started looking at a new class of substances,

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called protease inhibitors, that might fit the bill. As it turned out, it took several years of testing to come up with a formula for a protease inhibitor that was effective against HIV.

REINFORCEMENTS

The year was 1994, and the new drugs were finally producing good results in the test tube. They worked against laboratory strains of the virus; they worked against viral samples taken from patients. Where AZT merely slowed viral reproduction, the protease inhibitors shut it down almost completely. Unfortunately, almost wasn't good enough. It often took less than a month for a few viral particles to mutate into a strain that was resistant to protease inhibitors. The new drugs were starting to look like another failure.

But a few weeks was all that Ho and Shaw needed to conduct their rebound experiments. The two laboratories raced to find the answer.

Ho chose 20 volunteers whose T cells had dropped from a normal level of about 1,000 cells per ml of blood to fewer than 500. The newest PCR tests showed that the viral load of these patients was holding steady at about 100,000 copies per ml of blood. Ho started treating his subjects with one of the new protease inhibitors being developed by Abbott Laboratories. As expected, the amount of virus that could be measured in the patients' blood practically disappeared. The treadmill had been stopped. But no one was ready for what happened next.

Preliminary calculations indicated that the immune system was rebounding faster than anyone had thought possible. The results showed that in every day of every year, in every infected person, HIV produced not thousands, not millions, but billions of copies of itself. And every day the body launched billions of immune cells to counter the threat. The wonder was not that the immune system eventually crashed. Given such intense fighting and heavy casualties, the wonder was that it lasted so long. Ho and Shaw came up with the answer at the same time and published their results in back-to-back articles in a 1995 issue of Nature.

Suddenly the entire picture of AIDS had changed. As long as doctors thought that the virus was not very active through the early and middle years of infection, it made sense to conserve forces and delay treatment so they would be ready for the virus when it emerged from hibernation. Now it was becoming clear that the immune system needed all the help it could get right from the start.

But where would that help come from? Boston's Martin Hirsch and other virologists had already started looking to cancer research for inspiration. Oncologists have learned that it is often better to combine the firepower of several different chemotherapeutic drugs than to rely on any single medication to destroy cancer cells. Too often, they have found, the one-drug approach allows a few malignant cells to survive and blossom into an even more lethal tumor. The AIDS researchers faced a similar problem with HIV. Whenever they prescribed a single drug, such as AZT, for their patients, a few viral particles would survive and give rise to drug-resistant HIV.

Now that the protease inhibitors had become available, doctors were eager to combine them with the old standby AZT and a third drug called 3TC. A couple of mathematical models--created by one of Ho's collaborators, Alan Perelson of the Los Alamos National Laboratory--suggested that HIV would have a hard time simultaneously undergoing the minimum three mutations necessary to resist

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combination therapy. He placed the odds at 10 million to 1. It was at least worth a try.

HOPE AT LAST

For once in the history of HIV, a strategy that ought to work seemed in fact to succeed. Within weeks of starting combination therapy, 7 out of 10 men and women with AIDS begin to get better. Blood tests show that in many of them, the viral load has dropped below detectable levels. Relieved of the burden of fighting HIV, their long-suffering immune systems can finally tackle the deadly fungal and bacterial infections that have taken hold in their lungs, intestines and brains. Fevers break; lesions disappear; energy returns.

With the virus under control in at least some AIDS patients, doctors are considering how to rebuild their battered immune systems. After a decade of fighting HIV, many of the body's defensive reserves have been thoroughly depleted and cannot be regenerated from within. Researchers plan to grow replacement cells in the laboratory for transplant into recovering patients. Before the advent of combination therapy, no one would have considered such a rescue effort because the unchecked virus would have rapidly destroyed the new implants.

It all sounds so hopeful. Why don't scientists say at the very least that they're close to the cure? For the same reason that Ho did not promise the crowd in Vancouver that he could eliminate HIV from people in the later stages of the infection. Researchers know that after years of infection, there isn't a hiding place in the body that the virus hasn't penetrated. A cure must do much more than clear HIV from the bloodstream. It must remove the virus from the lymph nodes, the brain, the spinal fluid, the male's testes and everywhere else it may be hiding. Today's combination therapies work in the blood, but they don't reach into the brain or the testes very well.

Chances are that people in the later stages of the disease will have to stay on combination therapy the rest of their lives--assuming they can tolerate the often excruciating side effects, which range from diarrhea and fatigue to spasms, kidney stones and liver damage. They also have to bear in mind that they are probably still infectious and that eventually--perhaps in a few years, perhaps longer--their immune systems will probably once again collapse.

But what if you could avoid all those problems, Ho wondered. What if you didn't wait until the end stages of the disease but started combination therapy during the first few weeks of the infection, before too many billion viral particles had formed, before resistance became inevitable, before too many billion immune cells had died in the body's defense? Would you have tilted the odds enough in the immune system so that it could wipe out whatever stragglers might be left, wherever they were hiding?

To find out, Ho and one of his team, Dr. Martin Markowitz, recruited two dozen men in the earliest stages of infection and placed them on combination therapy. All the men appeared healthy before treatment. For them, ironically, the first signs of illness have been the side effects of the drugs they are taking, not the virus. Three have dropped out because they couldn't take the nausea and cramping.

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Some of the men have been treated for more than a year. None of them show any trace of HIV in any of their blood. Ho has not forgotten, however, that zero does not always equal zero. He and Markowitz are looking for pockets of virus in the lymph tissue, the semen and the spinal fluid.

Ho believes that prospects for success are good. Assuming that nothing has been overlooked, combination therapy should burn the virus out of the body in two to three years, according to Perelson's latest mathematical models. Because treatment began so early, the men's immune systems should be able to replace any lost defensive cells. There is still a chance that bits of the virus, called proviral dna, are lodged in the chromosomes, beyond the reach of even the most powerful drugs. Ho has studied these vestigial snippets of genetic information and believes they are defective and cannot give rise to a new generation of HIV. Other scientists are not so sure. The only way to find out is to stop the medication and see if the virus comes back.

None of Ho's patients plan to take that step anytime soon. And he doesn't blame them. Just a few surviving viruses could manufacture enough copies to resaturate a body in a matter of days, forcing the patient to start the long treatment process all over again. But at least one of Ho's patients has agreed to stop taking his drugs in another year or two--after his doctors assure him that tests show no evidence of HIV in his lymph, semen, spinal fluid or elsewhere in his body. When he does, we will know, probably within a few weeks, whether the virus has returned or whether it is gone for good.

Even if the virus stages a comeback, that doesn't necessarily mean that combination therapy has totally failed. It may be that additional ingredients could eliminate the virus completely. Ho has already started using a combination of four drugs in another early-intervention trial. And he has access to new, experimental medications that can better penetrate the brain and perhaps the testes. These drugs may help patients in later stages of the disease whose infections have become resistant to current treatments.

There is still a long way to go, both in the quest for an effective treatment and in the search for a way to prevent infection in the first place. In the flush of the new optimism, some scientists are more hopeful about the prospects for gene therapy, which could possibly make the immune system impervious to HIV attack. Another promising line of research centers on a group of molecules called chemokines, which may one day be used to shield cells from HIV. Other scientists, including Ho, are intensifying their search for a vaccine. Two weeks ago, the nih increased its budget for AIDS-vaccine research 18%--to \$ 129 million--and named Nobel-prizewinning molecular biologist David Baltimore to head the effort.

It has taken the collaborative work of thousands of scientists and physicians to get this far. It will take even greater cooperation and well-funded coordination to overcome the remaining hurdles. But the worst fear--the one that seeded a decade with despair, the foreboding sense that the AIDS virus might be invincible--has finally been subdued.

--Reported by Alice Park/New York and Dick Thompson/Washington

For more information, visit our Man of the Year Website at time.com/moy

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GRAPHIC: COLOR PHOTO: PHOTOGRAPH FOR TIME BY GREGORY HEISLER. SCANNING, ELECTRON MICROGRAPH FROM NIBSC/SPL--PHOTO RESEARCHERS, COVER, MAN OF THE YEAR, DR. DAVID HO, AIDS RESEARCHER, [David Ho looking at enlarged image of a T cell infected with AIDS virus, which is reflected in his glasses]; COLOR PHOTO: GREG GIRARD--CONTACT FOR TIME, [David Ho--T of C]; COLOR PHOTO: PHOTOGRAPH FOR TIME BY GREGORY HEISLER, ON THE CASE, Ho in his headquarters at the Aaron Diamond AIDS Research Center in New York City [David Ho]; COLOR PHOTO: INSTITUT PASTEUR--CNRI/SPL/PHOTO RESEARCHERS, [Magnified image of retrovirus]; COLOR ILLUSTRATION: TIME DIAGRAM BY JOE LERTOLA, [Diagram illustrating life cycle of the AIDS virus and how it might be stopped]; COLOR PHOTO: MCINTYRE--PHOTO RESEARCHERS, [Bag of blood]; COLOR PHOTO: DENNIS BRACK--BLACK STAR, [Bottles in laboratory]; COLOR PHOTO: ALLAN TANNENBAUM--SYGMA, [Luc Montagnier and another man]; COLOR PHOTO: J.J. BERNIER--GAMMA LIAISON, [Rock Hudson]; COLOR PHOTO: JOHN SEAKWOOD--OUTLINE, [C. Everett Koop]; TWO COLOR PHOTOS: DENNIS BRACK--BLACK STAR (2), [Bottles of AZT; Liberace]; COLOR PHOTO: FRANK FOURNIER--CONTACT/THE STOCK MARKET, [AIDS protestors]; B/W PHOTO: CBS NEWS/60 MINUTES, [Gaetan Dugas]; COLOR PHOTO, [Box and bottle of AIDS drugs]; COLOR PHOTO: ALLEN MACWEENEY--OUTLINE, [Keith Haring]; COLOR PHOTO: MARY ANN CARTER--SIPA, [Ryan White]; COLOR PHOTO: HBO--ZUMA, [Arthur Ashe]; COLOR PHOTO: TED SOQUI--IMPACT VISUALS, [Magic Johnson]; COLOR PHOTO: JACK MITCHELL--OUTLINE, [Rudolf Nureyev]; COLOR PHOTO: JEFFRY D. SCOTT--IMPACT VISUALS, [Candles in painted paper bags in honor of World AIDS Day]; COLOR PHOTO: CHRISTOPHER LITTLE--OUTLINE, [Elizabeth Glaser]; COLOR PHOTO: MIKE POWELL--ALLSPORT, [Greg Louganis diving]

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SECTION: SPECIAL DOUBLE ISSUE/ MAN OF THE YEAR; MAN OF THE YEAR; Pg. 52

LENGTH: 688 words

HEADLINE: TURNING THE TIDE

BYLINE: PHILIP ELMER-DE WITT

BODY:

Some ages are defined by their epidemics. In 1347 rats and fleas stirred up by Tatar traders cutting caravan routes through Central Asia brought bubonic plague to Sicily. In the space of four years, the Black Death killed up to 30 million people. In 1520, Cortes' army carried smallpox to Mexico, wiping out half the native population. In 1918 a particularly virulent strain of flu swept through troops in the trenches of France. By the time it had worked its way through the civilian population, 21 million men, women and children around the world had perished--more than were killed in World War I.

Today we live in the shadow of AIDS--the terrifyingly modern epidemic that travels by jet and zeros in on the body's own disease-fighting immune system. More than 15 years after the first rumors of "gay plague" spread through the bathhouses of New York City and San Francisco, nearly 30 million people--gays and straights alike--have been infected by HIV, the virus that causes what has been, until now, an almost invariably fatal disease.

This year, for the first time, there is something that looks like hope. Early this summer AIDS patients taking therapeutic "cocktails" that combine protease inhibitors with other antiviral drugs began experiencing remarkable recoveries. Their viral loads fell. Their T-cell counts climbed. Their health improved--perhaps temporarily, but often dramatically. Hospices and AIDS clinics across the U.S. began to empty.

Then in July, at an international AIDS conference in Vancouver, a virologist named David Ho reported on a most promising experiment. By administering the protease-inhibitor cocktails to patients in the earliest stages of infection, his team seems to have come tantalizingly close to eliminating the virus from the blood and other body tissues. Mathematical models suggest that patients caught early enough might be virus-free within two or three years.

This is, as an AIDS expert puts it, hope with an asterisk. Even if Ho's treatment works, there is still no magic bullet for patients in late stages of the disease and no vaccine that will inoculate against HIV infection. The cost of the cocktails (up to \$ 20,000 a year) puts them beyond the reach of all but the best-insured patients--and out of the question for the 90% who live in the developing world.

Nevertheless, we have learned this year what may be the most important fact about AIDS: it is not invincible.

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This was not the work of one scientist alone. There is no Louis Pasteur of AIDS. Science today is too costly and too complex for that. Modern research, and especially AIDS research, is a richly collaborative effort. But in the shared achievement of the thousands of scientists and physicians who have helped bring AIDS this year to what seems to be a historic turning point, one name stands out.

Dr. David Ho was one of a small group of researchers who recognized from the start that AIDS was probably an infectious disease. He performed or collaborated on much of the basic virology work that showed HIV does not lie dormant, as most scientists thought, but multiplies in vast numbers right from the start. His insights helped shift the focus of AIDS treatment from the late stages of illness to the first weeks of infection. And it was his team's pioneering work with combination therapy, reported in Vancouver, that first raised hope that the virus might someday be eliminated.

Ho is not, to be sure, a household name--like Bill Clinton, who dominated the front page this year with his masterful comeback victory, or Bill Gates, who deftly extended the scope of his software empire into news, television and the Internet. But some people make headlines while others make history. And when the history of this era is written, it is likely that the men and women who turned the tide on AIDS will be seen as true heroes of the age.

For helping lift a death sentence--for a few years at least, and perhaps longer--on tens of thousands of AIDS sufferers, and for pioneering the treatment that might, just might, lead to a cure, David Da-i Ho, M.D., is TIME's Man of the Year for 1996.

GRAPHIC: COLOR PHOTO: PHOTOGRAPH FOR TIME BY GREGORY HEISLER; VIRUS:, SPL--PHOTO RESEARCHERS, TIME MAN OF THE YEAR, Dr. David Ho with a scanning electron micrograph of a cell infected by AIDS viruses (red) [Photograph of David Ho superimposed on photograph of magnified cell]; COLOR PHOTO: PAUL MARGOLIES--NAMES PROJECT FOUNDATION, [Sections of the AIDS quilt]

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SECTION: SPECIAL DOUBLE ISSUE/MAN OF THE YEAR; MAN OF THE YEAR; Pg. 69

LENGTH: 1298 words

HEADLINE: THE TAO OF HO;

HIS TENACITY AND LEGENDARY TRANQUILLITY BOTH SPRING FROM THE IMMIGRANT
EXPERIENCEBYLINE: HOWARD CHUA-EOAN, REPORTED BY DAN CRAY/LOS ANGELES, ALICE PARK/NEW YORK
AND DONALD SHAPIRO/TAICHUNG

BODY:

If you lean in close, conspiratorially, Sonia Ho may just let slip a secret she keeps about her son David. She will speak in a hush, as if to elude some spy's eavesdropping from behind the potted palm. But she badly wants to divulge her information. Thus, slightly abashed but nonetheless proud, she will confide, "He's kind of a genius, you know. I'm not supposed to say that, but it's true."

segue to
MIT
grads,
proud
parents

Mothers are allowed to say these things. But one doesn't have to be David Da-i Ho's mother to be aware of his brilliance. He lays forth clearly and succinctly some of the boldest yet most cogent hypotheses in the epic campaign against HIV; at the same time, he operates nimbly through the budgetary and political pitfalls of the enterprise. And though he is monumentally tranquil in demeanor, he has been known to fling the occasional hot one-liner against naysayers--once, "It's the virus, stupid!" to those who insist HIV is not the cause of AIDS.

Genius, however, is a word that originally referred to a guardian spirit. Ho cuts too slight a figure to qualify as a force of nature, but his spirit is startling: a fierce competitiveness that is manifested as a subtle calm, a passionate transcendence. It is evident in his gestures. His fine-fingered hands do not punch out arguments; rather they escort logic through tangles of confusion, gently prodding reason his way. Perhaps Sonia Ho is right to be hushed, for her son's genius emanates from the depths of his family's experiences, and it is not quite Asian to make a display of one's legacies. But she is also right to be proud, for this is America, and her son is an extraordinary American success story.

TIME's 1996 Man of the Year was born in Taichung, Taiwan, on Nov. 3, 1952. At birth, he was given the name Da-i, two Chinese ideograms that literally mean "Great One," a Taoist term of vast cosmological consequence. It is a name reflecting great expectations. Taichung, however, was a quiet town in the Taiwan boondocks, and the Ho family lived in a modest four-room house with a backyard ditch that served as a toilet and from which farmers collected fertilizer for their fields. To forge a better life for his family, Ho's father took ship in 1956, travelling 18 days on a freighter to America. For nine years, Da-i would know his father only through letters and parcel post.

For Da-i and his younger brother, the years of waiting were filled with long school days that included, after a quick stop at home for dinner, a 20-minute

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bike ride to a cram school for extra tutoring. As they rode home in the dark through the empty countryside, the eerie sounds of frogs and crickets would sometimes scare the brothers into frenzied pedaling. Street stickball was a welcome interruption. And whenever he could, Da-i would sneak off to the neighborhood store to leaf through comic books.

When his father sent for the family, a seriousness came over Da-i. The 12-year-old packed his own bags and stayed awake throughout the flight to watch over his mother and his younger brother. They were traveling to a land they did not know and whose language they did not speak. It would be a place where they would receive new names and new identities. Their father, a devout Christian who now called himself Paul, had picked the boys' American names from the Bible. Thus it came to pass that Ho Da-i became David Ho and his younger brother became Phillip. For a few more years, Phillip would refer to David by the Chinese honorific for "older brother"; becoming American would take time.

The family initially settled in a black neighborhood of central Los Angeles, not far from the University of Southern California, where Paul Ho pursued a master's degree in engineering. A translator for U.S. troops in China during World War II, he instructed his wife that their sons were to stick to Taiwanese and Mandarin Chinese and not learn English until they got to America for a better chance of speaking it without an accent. As Sonia Ho recalls in careful but imperfect English, "When we first come to U.S., we don't know any words. David would come home from school and say, 'I don't know what they talking about.' I'd say, 'Oh, what are we going to do?'" Says David: "We hadn't even learned the ABC's. I remember being laughed at by classmates who thought I was dumb."

A diffident David did two things: he became an introvert and stuck close to the family, and he focused on school and achievement. Says Phillip, now a dentist: "He knew what it was he had to do." Sonia recalls, "If he got even one question wrong, he'd be very upset with himself." It was A's in everything, math, science--and English. Six months after starting school, David settled into the language, thanks to an English-as-a-second-language program and the miracle of TV. "We watched The Three Stooges," Phillip says. "We picked up a few phrases here and there and some mannerisms." When their parents' third son was born, Phillip and David got to choose the name. They skipped the Bible and picked Sidney, after a character in a Jerry Lewis comedy.

Medicine was David's second choice as a career. After high school, he attended M.I.T. and Caltech as a physics major. He never let up on himself, at work or play. Though short, he was an intense basketball player. At Caltech, he took up chess. Characteristically, the first time he entered a tournament, he won.

Ho soon realized that the most glittering prizes in science weren't in physics. Molecular biology was the cutting edge, gene splicing the hot technology. Medical research, says Ho, was much more "tangible." And so he made his way to Harvard Medical School. Soon enough, medicine provided the turning point of his career. His mother recalls, "He told me he saw a lot of young people die. He say that must be some disease, so he want to keep researching to find out why." Ho had met up with HIV.

As he pursued medicine and then the virus, Ho's introversion faded. "It took many years to reverse itself," Ho says. At the same time, his brothers say, he


went to
MIT but
didn't finish
there?

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grew less temperamental and developed his legendary tranquillity. When colleagues threw a tantrum, Ho gently offered advice from Chinese philosophers. One of his favorites is the Taoist sage Lao-tzu, who said, "The softest things in the world overcome the hardest things in the world."

The equanimity deepened as Ho carved out time for his family. Even at school, he acted as a second father to his brother Sidney, writing constantly with advice and encouragement. Says Sidney, who now works for David as operations manager at the Aaron Diamond AIDS Research Center: "He would take a late flight and get in past midnight, but he would always come to my room and wake me up for a brotherly chat." Ho became a father himself. He and his wife Susan Kuo, an artist, have three children: Kathryn, 18, Jonathan, 15, and Jaclyn, 10. Now and then, Ho sneaks away from his busy schedule to surprise his kids at school. This fall, after his picture appeared in TIME, he was invited to explain AIDS to Jaclyn's fourth-grade class.

As a child, Ho had his math tables drilled into him in Mandarin, and to this day he does his calculations in Chinese. "But," he says, "I wouldn't even have the vocabulary to give a scientific talk in Chinese." He plays down the importance of being Chinese to his success--but that is a very Chinese thing to do. Instead, he cites immigrant drive: "People get to this new world, and they want to carve out their place in it. The result is dedication and a higher level of work ethic." He adds, "You always retain a bit of an underdog mentality." And if they work assiduously and lie low long enough, even underdogs will have their day.

--Reported by Dan Cray/Los Angeles, Alice Park/New York and Donald Shapiro/Taichung

GRAPHIC: COLOR PHOTO: GREG GIRARD--CONTACT FOR TIME, THE OLD COUNTRY, Dr. David Ho three weeks ago at the school he attended in Taiwan; COLOR PHOTO, FAMILY TIES, Phillip and David in California in 1965; Sidney, David, Paul and Sonia Ho during their recent visit to Taichung [Phillip Ho and David Ho as children in 1965]; COLOR PHOTO: GREG GIRARD--CONTACT FOR TIME, [See caption above--Sidney Ho, David Ho, Paul Ho, and Sonia Ho]

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SECTION: SPECIAL DOUBLE ISSUE/MAN OF THE YEAR; TO OUR READERS; Pg. 41

LENGTH: 765 words

HEADLINE: TO OUR READERS

BYLINE: BRUCE HALLETT/PRESIDENT

BODY:

Choosing TIME's Man of the Year always gives us a chance to step back from the weekly surge of events and put the year in perspective. This year brought us a national election, but it also brought a medical breakthrough not nearly so well publicized: a significant advance in the battle against AIDS, pioneered by a scientist named David Ho. Says managing editor Walter Isaacson: "Dr. Ho did not make the most headlines, but he helped make history. We'll look back on 1996 as the year when we finally made progress against a plague that has been frightening the world for more than a decade."

The task of coordinating our report on this stage of the AIDS epidemic fell to assistant managing editor Christopher Porterfield, who relished having a wider canvas than weekly coverage usually affords. "We could balance out many points of view," he says. "It's a volatile time. This is a breakthrough, yes, but who knows if it will prove temporary?"

Porterfield adds that however brilliant Ho's work, the researcher is really "an emblem of a key moment, picked to represent the best work of all the AIDS scientists." Ho, a virologist who directs the Aaron Diamond AIDS Research Center in New York City, did not make it easy for our staff; he was concerned throughout the project that his work be put in the context of all that is happening in the field. It was only when science editor Philip Elmer-DeWitt laid out our comprehensive editorial plans that Ho realized what decision had been made. "Does that mean I'm Man of the Year?" he gulped. "That makes me very uncomfortable." Ho relaxed when convinced that his experiments with the new antiviral "cocktails" would not be touted as a "cure" and that we would also be profiling other prominent scientists.

The job of reporting and writing our package--which includes an update on the worldwide epidemic, a report on the impact of the new drugs on AIDS victims and an essay by playwright-screenwriter Paul Rudnick--went to a team of science journalists already highly informed, having produced a string of AIDS cover stories. Staff writer Christine Gorman, who wrote what she calls the "medical detective story," covered the first international AIDS conference for TIME in 1985. "Back then all the scientists and all the journalists could fit into one room," she recalls. She met Ho six years ago, and was immediately struck by his quiet confidence. "I thought that here was someone to pay attention to." Reporter Alice Park, who conducted the bulk of the interviews with Ho (by phone, E-mail and at his lab), was equally impressed: "I like his serenity and his logic."

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If our science staff is a well-run machine, the engine is assistant editor Andrea Dorfman. In addition to making sure all the elements involved--text, pictures, charts--progressed on schedule, she chose the material that makes up the six-page time line of the history of the epidemic. Working closely with her was associate art director Thomas M. Miller and photo editor Cristina T. Scalet, who helped set up the portrait shoots with the skittish Ho and his family, as well as Gregory Heisler's striking cover picture.

For a personal profile, we turned to senior editor Howard Chua-Eoan, who has much in common with Ho. Both are immigrants (Chua-Eoan from the Philippines, Ho from Taiwan) and eldest sons. They share two Chinese dialects (Fujian and Mandarin), and both still do math in their head in Chinese.

Senior writer Richard Lacayo's assignment was to look at how people with AIDS are coping with the new drugs. Lacayo's view is cautious. "It's a time of hoping to hope," he says, "a time of figuring out when it's time to retrieve optimism."

But the hope offered in developed nations is foreclosed to millions in the Third World. Toronto bureau chief Andrew Purvis, recently returned from a four-year posting in Nairobi, Kenya, drew on his African experience to write about those for whom the only cure will be a vaccine. "Most Africans have a completely different attitude toward illness," he observes. "They have an amazing capacity for making do."

"The purpose of Man of the Year is to fulfill TIME's basic mission of telling the history of our time through the people who make it," says Isaacson. "The choice of Dr. Ho is a perfect example."

Senior correspondent J. Madeleine Nash has won this year's American Association for the Advancement of Science award for magazine writing, one of the nation's most prestigious science-journalism prizes, for her cover story on "Evolution's Big Bang" (Dec. 4, 1995). It is TIME's fifth A.A.A.S. award.

GRAPHIC: COLOR PHOTO: TED THAI FOR TIME, MEDICAL SLEUTHS: Gorman and Park at Ho's lab [Christine Gorman and Alice Park]; COLOR PHOTO, July 4, 1983 [TIME magazine AIDS cover]; COLOR PHOTO, Aug. 12, 1985 [TIME magazine AIDS cover]; COLOR PHOTO, Nov. 3, 1986 [TIME magazine AIDS cover]; COLOR PHOTO, Feb. 16, 1987 [TIME magazine AIDS cover]; COLOR PHOTO, Aug. 3, 1992 [TIME magazine AIDS cover]; COLOR PHOTO, Feb. 12, 1996 [TIME magazine cover featuring Magic Johnson]

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SEND TO: GERNEY, ARKADI M.
WHO - COMMUNICATIONS
ROOM 308
OLD EXECUTIVE OFFICE BUILDING
WASHINGTON, DISTRICT OF COLUMBIA 20502