A nationwide consortium of scientists at 20 institutions, led by HSCI Principal Faculty member Ole Isacson, PhD, has used stem cells to take a major step toward developing personalized medicine for the treatment of Parkinson’s disease. “This is the first comprehensive study of how human neuronal cells can be models of Parkinson’s, and how it might be treated,” said Isacson.

In part supported by the Harvard Miller Consortium for the Development of Neurosystem Therapies, the team of scientists used induced pluripotent stem cells (iPS cells) that had been obtained from the skin cells of patients carrying genetic mutations implicated in Parkinson’s disease, and used those cells to derive neural cells, providing a platform for studying the disease in human cells outside of patients.

In a paper published in the journal Science Translational Medicine, the researchers report that although approximately 15 or so genetic mutations are linked to different forms of Parkinson’s, many seem to affect the mitochondria, the cell units that produce most of a cell’s energy.

The researchers determined that certain compounds or drugs could reverse some signs of disease in the cultured cells with specific genetic mutations and not in cells with other types of mutations, making real the concept of developing specific drugs for specific patient populations.

The study was launched with federal stimulus funding provided by the National Institutes of Health (NIH) and was continued with funding from HSCI through the Miller Consortium.

“These findings suggest new opportunities for clinical trials of Parkinson’s disease, wherein cell reprogramming technology could be used to identify the patients most likely to respond to a particular intervention,” Margaret Sutherland, PhD, a

Opening a New Door to Parkinson’s Disease

HSCI Experts Comment on Nobel Prize

HSCI Co-Director David Scadden, MD, and Principal Faculty Kevin Eggan, PhD, were among leading experts asked by the media to provide perspective on the 2012 Nobel Prize in Medicine that was awarded for work in stem cell biology. Please visit the HSCI website (http://www.hsci.harvard.edu) to see the interview with Scadden on the PBS Newshour and for a link to hear the interview with Eggan on Boston Public Radio.
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program director at NIH’s National Institute of Neurological Disorders and Stroke (NINDS), said in a press release.

The new research indicates that compounds that previously have shown promise in treating Parkinson’s in animal studies have differing levels of effectiveness on different genetic forms of Parkinson’s, and the hope is that such findings can be the basis for more specific drugs for individuals with sporadic forms of Parkinson’s. As Isacson explained in an interview, this latest study points the way to screening patients with Parkinson’s for their particular variation of the disease, and then treating them with drugs shown to work on that specific variation, rather than trying to treat all patients with the same drugs, as is generally done now.

“We believe that using human stem cells to study the disease is the correct way to go,” Isacson said. “If we have the cell type most vulnerable to the disease in a dish, we can study those cells and compare them to the least vulnerable cells. Traditionally in neurology,” he said, “all patients with the same disease get the same drugs, but they may have the disease for different reasons. This gives us a way to tease out those different reasons and find different ways to treat them.”

Isacson’s colleagues in the consortium project are HSCI faculty Kevin Eggan, PhD, Paola Arlotta, PhD, and Amy Wagers, PhD. Each has made significant stem-cell-related discoveries in recent years. All three were co-investigators on HSCI’s first Junior Faculty award that studied cellular reprogramming.

In addition to barbecue, music, and a cake decorated with an image of the three, there was a dunk tank — not exactly the thing that comes to mind when you hear “Harvard professor,” but entertaining nonetheless. HSCI Co-Directors and SCRB Co-Chairs Douglas Melton, PhD, and David Scadden, MD, presided over the festivities, congratulating the trio on their achievements and welcoming them to the tenured ranks.

In mostly lighthearted (and brief) comments, Scadden talked about some of the quirky features of the job, and shared the results of a Google search for the term “professor.” “Surveys, however, don’t capture everything,” Scadden said. “They don’t talk about the deep satisfaction that comes with a job dedicated to creating new knowledge, to mentoring young people, and that makes you part of a community that deeply cares about the world.”

Of the three new professors only Eggan braved the dunk tank, climbing onto the seat and daring anyone to try to dump him in the water. A dripping Eggan later said that the tenure decisions of all three coming close together was particularly gratifying, because they all arrived at Harvard at roughly the same time and have worked together and come to know each other well. Eggan said the celebration was part of belonging to a scientific community that has grown since the founding of HSCI in 2004 and of the department in 2007.

“This is something you look forward to your entire professional life,” said Eggan, who came to Harvard in 2003 as a junior fellow of the Society of Fellows. Wagers found out about the tenure decision while in Japan at a stem cell conference. Melton broke the news during a Skype call one morning, and, later that day, Wagers chased the sun home through multiple time zones. “I flew back, so the day I got tenure was the longest day of my life,” Wagers said. “I’ve wanted to be a scientist since I was 10.”

Hochedlinger, who came to Harvard from the University of Vienna via MIT, said he was relieved to find out he had survived the review process when Scadden sent him a text message saying, “Congratulations, Professor.”
2012 Annual HSCI Malkin Retreat

“Innovating Stem Cell Research” was the theme for the Seventh Annual HSCI Malkin Retreat held on the Harvard campus on Friday, May 18, 2012. Faculty co-chairs David Breault, MD, PhD, (BCH) and Bernhard Kuhn, PhD, (BCH) selected the theme to remind the audience that the forward trajectory of research is dependent on innovation. The HSCI community clearly agreed…over 400 members registered.

Mark Fishman, MD, President of the Novartis Institutes for Biomedical Research, delivered the morning’s keynote. With a perspective developed from years within academia and industry, his talk entitled “Is Harvard perfect? Hints from the hinterland,” struck a chord with the attentive audience. Espousing the view that collaboration is a vital component of innovation since no single organization has all the resources needed, he reminded people to keep channels of communication open and be constantly attentive to items or issues (workflow, organizational culture, etc.) that impede progress or problem resolution.

Fishman’s exhortations segued into Eva Guinan’s, MD, remarks on the need for multi-disciplinary skills and metrics to generate alternative research hypotheses and evaluate innovative solutions. A co-director of the Harvard Catalyst Innovation and Implementation program, she develops empiric experiments to understand how industry-based innovation techniques and novel concepts in team formation can be effectively applied to academic biomedical science, and used the example of a recent Harvard-wide project in scanning for new ideas for solutions for diabetes.

The topic of imaging – and better means of “imagining” – live cells was the theme for the closing keynote delivered, appropriately enough, by a scientist from another scientific discipline. Xiaowei Zhuang, PhD, Professor of Chemistry and Chemical Biology and Physics, captivated the audience with her presentation on the emerging technology of single-molecule and super-resolution fluorescence microscopy. Her innovation in microscopy using the STORM method has been adopted worldwide and generated important insights into cellular sub-structures.

The day-long event was punctuated by presentations from HSCI faculty George Daley, MD, PhD, on the role of Lin28/Let-7 regulation and Richard Lee, MD, on a new cross-disciplinary, cross-institutional project. 2010 Seed Grant recipients provided concise reviews of their projects and 38 posters were presented at lunch and during the closing reception. HSCI is deeply grateful for the continuing support of Tony and Shelley Malkin for this important annual event.

Stem Cells at School

On the evening of April 24, HSCI Executive Director Brock Reeve moderated the final HMS Longwood Seminar of the year, featuring HSCI Principal Faculty members Chad Cowan, PhD, and Fernando Camargo, PhD, on the topic of stem cell science and regenerative medicine.

The Longwood Seminars Mini-Med School classes are a series of four free “mini-med school” classes sponsored by Harvard Medical School for the general public. At the end of the seminar series, participants who attend three out of the four sessions receive a certificate of completion. Topics are selected for their appeal to a lay audience and have covered a broad range of topics such as Alzheimer’s disease, the human genome, nutrition, sleep dynamics and health care access. Faculty from Harvard Medical School and Harvard-affiliated hospitals volunteer their time to present these lectures to the community.

After an overall introduction by Reeve, Cowan introduced the basic science of stem cells to the audience. As the leader of HSCI’s Diabetes Program, he then went into more detail regarding stem cell research in diabetes with an emphasis on metabolic disease, which he is studying through fat and liver cells. Camargo built upon Cowan’s presentation with a discussion of the differences between adult and embryonic stem cells. He also expounded on the role of stem cells and developmental pathways in the determination and regulation of organ growth.

An open Q&A with the audience followed the presentations. A video of the entire session is available at: http://hms.harvard.edu/content/video-archive.
Caloric Restriction and Muscle Regeneration

Can less be more? Apparently the answer is “yes” when the link between dietary intake and muscle regeneration is examined.

Harvard Stem Cell Institute Executive Committee member Amy Wagers, PhD, and her lab team have long been studying how stem cells function throughout life to maintain, repair and regenerate cells and tissues. “We know,” Wagers said, “that healing is much less effective in older individuals than younger individuals, but we don’t know why that’s so.”

In looking for mechanisms that might be relevant to restoring regenerative potential in older skeletal muscle, Wagers, who was recently promoted to a full professorship in Harvard’s Department of Stem Cell and Regenerative Biology, said, “I thought about mechanisms that had been studied for a long time evolutionarily as regulating life span and longevity, and particularly those that regulate the health of animals that live a long time. And it turns out,” she noted, “that in a large number of organisms, reduced calorie intake – in the absence of malnutrition — has been shown to extend life span, particularly healthy lifespan.”

Not only that, but animals that are kept on low calorie diets have a lower incidence of diabetes, cancer, and other chronic diseases and conditions. So Wagers and her team wondered whether the same kind of dietary intervention might affect stem cells in tissues. And what they found was pretty amazing.

“Just a short intervention — 12 weeks of a reduced calorie diet, which in a mouse is equivalent to a 40 percent reduction in the normal caloric intake, or for a person you can think of it as eating a meal and a half a day instead of three meals a day — has a positive effect,” Wagers said. “In this context when these animals were challenged with muscle damage, they responded more vigorously and they repaired that damage more rapidly and more effectively. We could link this directly to changes in the stem cell population itself by isolating the cells and asking them to develop into muscle cells in culture.” And they were more effective in doing that if they came from animals that had been on the reduced calorie diet, she explained.

“That led us to a next question,” Wagers said. “Would we be able to use this as a mechanism for harnessing the regenerative potential of stem cells in a transplant setting? Transplantation is used quite extensively in the blood system to reconstitute blood cells after a bone marrow transplant, but it’s not used widely in other tissue systems.”

Wagers explained, “we had shown previously, with financial support from HSCI, that we were able to transplant muscle cells into mice with muscular dystrophy, and they were able to graft, reconstitute the muscle, and provide a therapeutic benefit in that the muscles contracted with greater force.” But it was difficult to get the cells in sufficient numbers to transplant.

So then the Wagers team asked whether caloric restriction also would increase the transplant potential of stem cells, and “what we found was that we got about twice as many fibers out of the transplanted cells. That says we can use this relatively simple dietary intervention as a way of getting a ‘more for less’ transplant strategy.”

A Two-Pronged Strategy for Spinal Muscular Atrophy

Few diseases are more devastating than spinal muscular atrophy (SMA), both in terms of the disease’s progression and outcome, and who its victims are. Like Lou Gehrig’s disease (amyotrophic lateral sclerosis - ALS), SMA causes muscle wasting and loss of motor control, leading to death. But unlike ALS, SMA is a childhood disease, and is, in fact, the leading genetic cause of mortality in infants and toddlers.

Until now it has generally been believed that the “chicken” of neuronal deterioration and death preceded the “egg” of muscle deterioration, that SMA was purely a spinal cord neuron disease. But new work by HSCI Executive Committee members Lee Rubin, PhD, and Amy Wagers, PhD, turns that disease model on its head.

As Rubin explains, he and Wagers set out to test the hypothesis that SMA was essentially a motor neuron disease. “We isolated stem cells that give rise to muscle and found that there is a separate defect from the motor neuron defect. In mouse cells, both in vitro and in vivo, the muscle stem cells have a separate defect from that in the motor neurons,” Rubin said.

This new research shows that the muscle stem cells “stop proliferating and prematurely start trying to make muscle, but they fail somewhere in the process.” Rubin said. “The muscles are smaller because they fail to mature completely.” And as Wagers has previously found, aging muscle has a very similar defect to SMA.

While it had long been known that children with SMA had small muscles, it had been believed that was attributable to the neuronal disease. But the new finding sent Rubin and Wagers in a new direction, and “in a separate study,” Rubin said, “we carried out a screen to look for drug-like molecules that can correct the defect seen in both SMA muscle and aging muscle. That screen was very successful, and we’re putting together a paper now to report on it.”

What the researchers now know, is that the muscle defect in SMA occurs prior to the motor neuron defect. What was thought to be the “egg” may, in fact, be the “chicken.” “This is the opposite of what the disease was thought to be — a motor neuron disease that causes muscle problems; it may be, at least in part, that it’s a muscle disease that leads to motor neuron problems,” Rubin said.

He continued, “So it becomes important for us to correct the muscle problem. In a separate study that Amy and I have done together, we’ve tried to find drug-like molecules that can make the muscle grow better. These are molecules that are designed to make the muscle stem cells proliferate without differentiating, so there’ll be the correct number of them, and they can help create more muscle.” The next step will be to see what effect those molecules have on in vitro and in vivo models of the disease.
Translational Research Workshop

On June 25th, HSCI hosted its final Translational Research Workshop of the year moderated by John McNeish, PhD, the GlaxoSmithKline manager responsible for the HSCI-GSK collaboration. The topic, “Case Studies in Translational Medicine: Gaps and Opportunities for Academia-Industry Partnerships,” was designed to help individuals from academia and industry understand what it takes to build successful partnerships to accelerate the movement of research from the lab into the market.

The first speaker, Jason Gardner, PhD, Head of Regenerative Medicine Discovery Performance Unit at GSK R&D, talked about an academic-industry partnership wherein they are bringing gene therapies to market. Similar to its relationship with HSCI, GSK joined forces with the San Raffaele Telethon Institute for Gene Therapy (HSR-TIGET) to develop gene therapies against rare genetic disorders. The product from this alliance is in the pre-registration phase for the lead indication; two indications are in clinical trials and four more indications are in preclinical development. The partnership’s success points to the positive future of the HSCI-GSK relationship as more of our joint discovery programs move into clinical development.

The second speaker, Julian Jenkins, PhD, VP of GSK’s Center for Clinical Study Excellence, talked about the journey of the drug Eltrombopag from screening assays to a marketed product at a much higher-than-average speed. This experience highlighted the importance of good science, open and extensive academic collaborations, and solid judgment in the success of this drug against thrombocytopenia.

The final speaker was HSCI Executive Committee member Lee Rubin, PhD, who not only reviewed the applications and limitations of stem cells in the drug discovery and development process, but also shared advances from two of his screening programs against Amyotrophic Lateral Sclerosis (ALS) and Spinal Muscular Atrophy (SMA). The presentation sparked an engaging discussion on how best to advance his screening hits towards potential therapeutics, a process where the academic lab will have to rely on commercial partners.

HIP (HSCI Internship Program) 2012

In 2012, for the eighth consecutive year, HSCI hosted undergraduates in a 10-week, lab-based internship program within HSCI labs. This summer’s cohort featured 19 Harvard undergraduates and 24 others from colleges and universities such as King’s College London, Hunter College, Oberlin, College of Wooster, Notre Dame and Texas A & M. As it did in 2011, the HIP program incorporated four HHMI EXROP (Exceptional Research Opportunities Program) interns, providing them with access to the top stem cell research labs in the country.

As an example of success achieved by our interns, Nada Anzak, from King’s College London, who interned in the Dong Feng Chen Lab at Schepens Eye Research Institute, was awarded a travel grant by Britain’s Royal College of Ophthalmologists in recognition of the work she was performing this summer.

M. William Lensch, PhD, Faculty Director of HIP, developed the curriculum for the companion course/seminar series which is the cornerstone of this program and provides the interns a unique classroom experience in addition to their lab work. Lensch tapped members of HSCI’s Principal Faculty to deliver seminars in conjunction with the classes and also brought in outside speakers to discuss public policy and industry perspectives.

The internship concluded with a final symposium in which each student delivered both an oral and a poster presentation on their summer’s work. One presenter concluded with the statement that “this was the best summer” of her life.

In reviewing a survey of past years’ interns, approximately 250 in number, Lensch saw evidence of highly encouraging trends. A third of the interns participated as “rising sophomores,” a period critical to decision-making regarding their choice of major. Most critically, the respondents unanimously reported that the HIP experience positively influenced their plan to pursue an advanced degree and, for three quarters of them, to remain in the sciences. Impressively, 22 percent of the respondents received research paper co-authorship as a result of their HIP experience, approximately two-thirds of whom were non-Harvard students.

The survey shows the tremendous value of the HIP experience for both Harvard and non-Harvard students alike. In a White House report on identifying elements crucial for successful STEM (Science, Technology, Engineering and Mathematics) programs, HIP hit on 14 out of 17 elements for “intellectually and personally engaging students.” As we continue to evaluate our program and curriculum, HSCI remains committed to support and train the next generation of stem cell researchers and to help create a scientifically literate public.
StemBook – Expanding the Platform

StemBook (http://www.stembook.org) is a freely available, open-access, online review of stem cell biology published by HSCI. From its inception in 2008 with 12 review chapters, StemBook has grown to include over 50 original, invited peer-reviewed chapters covering a range of topics germane to stem cell biology as well as professionally written news and commentary pieces. StemBook is a continually growing and evolving resource for the stem cell research community, as evidenced by that fact that chapters are indexed by PubMed and the content is available on the NCBI Bookshelf.

The most recent addition to StemBook is a methods and protocols section created in collaboration with the National Institutes of Health Center for Regenerative Medicine (NIH CRM) and the University of Massachusetts Cell Bank and Registry. This endeavor enlists the stem cell core facilities and the stem cell research community at large in collecting, validating, and publishing protocols; creating for the first time a vetted, centralized collection of stem cell protocols. Additionally, an important feature of this new section is that readers will be able to contribute their comments and participate in editor-moderated discussions, allowing researchers to share their experience and expertise, further enhancing the utility of the published protocols.

In addition to the new methods and protocols section, StemBook is undergoing a redesign of its entire website (see screen shot). The new design will make the site even easier to navigate for the readers, as well as introduce several new features including “Papers of the Week,” which will connect StemBook to relevant primary literature and create an outlet for researchers to discuss the papers. The site will link to the stem-cell-related papers that have been published in the primary literature and a subset of those papers will be featured as a springboard for editor-moderated discussions with experts in the field along with reader input.

For such a highly interdisciplinary scientific domain as stem cell research, the creation of an interactive nexus, like StemBook, for researchers in the field provides opportunities for learning, interaction, synergy and community building.

New Analytic Capability at BIDMC Core

In order to study the molecular and cellular features of stem cells, scientists need to be able to physically separate stem cells from other types of cells in the body. For example, to understand how blood stem cells form in the body and how this process can go wrong in diseases such as leukemia, it is important to study the different types of blood cells.

A Fluorescence-Activated Cell Sorting (FACS) machine is a specialized device that does exactly that by using the specific light scattering and fluorescent characteristics of each cell type to sort heterogeneous mixtures of cells. The cell sorting machine provides fast, objective and quantitative recording of fluorescent signals from individual cells of interest enabling the separation and study of selected cell populations.

Until recently, this process of identification and separation of distinct cellular populations was complex, time consuming and expensive due to the limitations of the instruments available which only allowed for the separation of a limited number of cell populations at a time. Recently HSCI’s FACS Core Facility at the Beth Israel Deaconess Medical Center (BIDMC) has moved one step further as a result of its purchase of a new instrument, the Beckman Coulter Astrios.

The Astrios is a highly sophisticated machine which makes it easier to identify, isolate and purify any particle, even as small as a micron, suspended in a liquid medium. This new instrument is equipped with seven lasers which allow the simultaneous separation of six distinct populations of live cells, significantly simplifying the sorting process while maintaining cell viability.

In the case of scientists studying the blood system for example, the Astrios allows the identification, isolation and purification of a larger number of blood stem cell populations simultaneously than was possible before. In particular, scientists are now able to separate multiple types of progenitor cells (e.g., common myeloid progenitors, granulocyte-macrophage progenitors, and megakaryocyte-erythroid progenitors), as well as the different types of mature blood cells.

Over the last six years, increased access to FACS instruments and to the technical expertise needed to operate them, has made a significant impact on the quality and speed of stem cell research within the HSCI community. The new instrument at BIDMC, by providing more extensive data faster and more efficiently will help scientists accelerate their understanding of the role and function of stem cells in both normal and disease conditions.
2012 Sternlicht Fellows

The Harvard Stem Cell Institute is pleased to announce the 2012 Sternlicht Director’s Fund Award recipients: Chaiyaboot (Tee) Ariyachat, Jose Rivera-Feliciano, PhD, and Richard Sherwood, PhD. Sternlicht Director’s Fund Award recipients are selected by a review committee consisting of HSCI’s senior scientific leaders and represent promising Harvard graduate students and postdoctoral researchers working in the field of type 1 diabetes research.

Chaiyaboot (Tee) Ariyachat is a third-year graduate student working in the laboratory of Quao Zhou, PhD, Assistant Professor in the Department of Stem Cell and Regenerative Biology. The Zhou Laboratory focuses on the reprogramming of cells from adult organs into new identities and functions. As part of this effort, Tee is simultaneously pursuing research on reprogramming liver cells into beta cells and on creating cell lines that can be used to test the ability of heterologous cells to convert to beta cells in vivo.

Jose Rivera-Feliciano is a postdoctoral researcher in the laboratory of Douglas Melton, PhD, Xander University Professor and Co-Director of the HSCI. He is currently investigating novel signals discovered in cells in the pancreatic lineage. These signals potentially play an important role in not only pancreatic differentiation, but directed differentiation of stem cells generally. Rivera-Feliciano is eager to apply concepts from the fields of engineering, genetics, and regenerative biology to the design of novel stem-cell-based therapies for diabetes.

Richard Sherwood is a postdoctoral researcher in the laboratory of Richard Maas, PhD, Chief of Genetics at Brigham and Women’s Hospital. Sherwood’s research focuses on the integrated application of genomic techniques and the problem of generating embryonic stem-cell-derived pancreatic islet cells. He is also currently collaborating with researchers at M.I.T. as part of a group investigating pancreatic islet engineering. The support provided by the Sternlicht Award will help Sherwood continue his work on de novo generation of pancreatic islet cells for eventual therapeutic use.

Now in its fifth year, the Sternlicht Director’s Fund was established in 2007 with a $1 million gift from Barry Sternlicht. Mr. Sternlicht is an alumnus of Brown University and Harvard Business School, and chairman and CEO of Starwood Capital Group. Along with his wife, Mimi, Sternlicht has raised millions of dollars on behalf of the Juvenile Diabetes Research Foundation, and has been honored with that organization’s prestigious Man of the Year Award, as well as its Living and Giving Award.

In April, award notifications for 10 Seed Grants were sent to the following investigators, who were selected from a pool of many highly-qualified applicants:

- Susan Dymecki, MD, PhD, Harvard Medical School
- Stephen Haggarty, PhD, Massachusetts General Hospital
- Bernhard Kuhn, MD, Boston Children’s Hospital
- Rohit Kulkarni, MD, PhD, Joslin Diabetes Center
- Cammie Lesser, MD, PhD, Massachusetts General Hospital
- Michael Mannstadt, MD, Massachusetts General Hospital
- Thomas Serwold, PhD, Joslin Diabetes Center
- Matthew Steinhauser, MD, Brigham and Women's Hospital
- Clifford Tabin, PhD, Harvard Medical School
- Tracy Young-Pearse, PhD, Brigham and Women's Hospital

2012 Seed Grants Announced

Now in its eighth consecutive year, HSCI’s Seed Grant Program provides two years of critical early funding ($180,000 per grant) to scientists throughout the HSCI community who are engaged in stem cell research. Highest priority is given to those projects that would be difficult to fund from other sources because they are early stage, high risk, or lack sufficient preliminary data. For the second year in a row, HSCI provided a separate category for translational awards in order to help foster efforts to move scientific discovery toward clinical application.

In 2007, the Millipore Foundation made a generous gift of $500,000 to the HSCI Seed Grant Program to support one recipient per year for the next five years. 2012 Seed Grant recipient Tracy Young-Pearse, PhD, of Brigham and Women’s Hospital has been named HSCI’s final Millipore Foundation Seed Grant Fellow.
“Clinical Outlooks for Regenerative Medicine”

With the broader BIO 2012 Convention in Boston as the backdrop, HSCI co-sponsored with the Alliance for Regenerative Medicine a more focused meeting: “Clinical Outlooks for Regenerative Medicine.” The June event at the Schepens Starr Center featured a noon keynote by HSCI Executive Committee member George Daley, MD, PhD, and was attended by approximately 150 members of the pharmaceutical, biotech, disease foundation, venture capital and scientific research communities.

Of great attraction to the attendees was the breadth of the program. Panels on ophthalmology, metabolic, neurodegenerative, cardiovascular and tissue engineering topics presented the latest research trends and data on clinical applications for cellular therapies. While the promise for such therapies is great, caution was advised — in each disease sphere — while trials proceed and efforts to increase scalability are advanced. Indeed, in his keynote remarks, George Daley offered a sobering reflection on the dangers of stem cell tourism and the need for a balanced, pragmatic approach to both drug and cellular therapies.

Participants also lauded the program for its focus on the smaller players in the biotechnology community — in fact, one guest noted that his company felt “lost” at the massive BIO convention but that this program was perfectly suited to his company’s needs. The organizers capitalized on the significant clinical talent in the HSCI community to attest to the value and utility of the therapeutic efforts currently in or nearing trial phase.

HSCI is pleased to partner with organizations seeking to advance the efforts of our research community in order to speed discoveries to therapeutic application. The Alliance for Regenerative Medicine (www.alliancerm.org) is a Washington, DC-based organization that promotes legislative, regulatory and reimbursement initiatives necessary to facilitate access to advances in regenerative medicine and works to increase public understanding of the field.

Presidential Early Career Award

HSCI Affiliate Faculty Biju Parekkadan, PhD, was one of 96 young scientists honored by President Obama this summer as a recipient of a Presidential Early Career Award for Scientists and Engineers. Parekkadan is Assistant Professor of Surgery and Bioengineering at Massachusetts General Hospital. One of his current projects is the creation of an extracorporeal renal assist device using stem cells for patients on dialysis.