

nih record

To Welcome Workforce in Spring 2006

Bldg. 33, Close to Completion, Gets Formal Name

By Carla Garnett

Construction of Bldg. 33 is nearly 85 percent finished and should be substantially complete by year's end, according to Kyung Kim, project officer, Office of Research Facilities Development and Operations. Occupants are expected to begin moving in during spring 2006.

Located at the corner of Rockville Pike and Cedar Lane, the new facility was in January formally named the "C.W. Bill Young Center for Biodefense and Emerging Infectious Diseases," in honor of the U.S. congressman from Florida currently serving his 18th term in the House of Representatives. A longtime promoter of health issues and supporter of medical research, Young founded the national registry for bone marrow donors, chair-

SEE YOUNG BLDG., PAGE 6



Builders work on exterior corner of a nearly complete Bldg. 33. Construction of the interior is also shaping up.

NIH Honors Felsenfeld, 'Quintessential NIH Scientist'

By Marcia Vital

NIH is filled with successful scientists, but "successful" does not even begin to describe the life and career of Dr. Gary Felsenfeld, chief of the Laboratory of Molecular Biology, NIDDK.

Recently, NIDDK's Division of Intramural Research and the Foundation for Advanced Education in the Sciences held a tribute to Felsenfeld's career titled, "DNA and Its Complexes." Friends, colleagues and admirers honored the man and his science in a day filled with scientific presentations focused on research involving DNA-protein interactions relating to transcription.

"He is an extraordinary scientist who, in a career spanning over four decades, has made one monumental discovery after another," said Dr. Allen Spiegel, NIDDK director. "I'm impressed not only by the elegance of his work, but also by the absolutely undiminished

SEE FELSENFELD, PAGE 4

Workshop Highlights Stem Cell Research Progress, Challenges

By Kirstie Saltsman

Unimagined potential. That's how Dr. James Thomson described the impact that human embryonic stem cell research could have on the future of medicine. In 1998, Thomson, a developmental biologist at the University of Wisconsin, was the first to isolate and culture human embryonic stem cells (HESC). He now directs one of three NIGMS-funded exploratory centers for human embryonic stem cell research launched in 2004 to focus on the basic biology of HESC and on training scientists to work with them. Thomson predicts that, much like the dramatic impact of recombinant DNA technology, HESC-based discoveries will revolutionize biomedical research and medicine in ways we can't even foresee.

Thomson made these comments at a recent workshop titled "Human Embryonic Stem Cell Research: Recent Progress and Future Directions of NIGMS Grantees." Participants included scientists from the three HESC centers as

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ABOVE • Some of Bldg. 33's features, like this lobby staircase, are detailed. See story on page 1 and more photos on pages 6-7.

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briefs

Maddox To Give Diggs Lecture, July 21

The 10th annual John W. Diggs Lecture will be held Thursday, July 21, from 11:30 a.m. to 1:15 p.m. in Masur Auditorium, Bldg. 10. The keynote speaker will be Dr. Yvonne Maddox, deputy director, National Institute of Child Health and Human Development. Her topic is "Transforming NIH in an Age of Translational Sciences." Opening remarks will be given by NIAID director Dr. Anthony Fauci.

Potter To Give Cancer Prevention Talk, July 28

Dr. John D. Potter will be the keynote speaker at the annual Advances in Cancer Prevention Lecture to be held Thursday, July 28 at 3 p.m. in Lister Hill Auditorium, Bldg. 38A. The title of his talk is "What We Know and Don't Know About Colorectal Neoplasia."

Potter is senior vice president and director of the division of public health sciences, Fred Hutchinson Cancer Research Center, Seattle.

The lecture is sponsored by the Office of Preventive Oncology, Division of Cancer Prevention, National Cancer Institute. Continuing Medical Education credit is available.

Pilot Child Care Subsidy Program

In May, NIH announced the start of a new child care subsidy program designed to assist lower income federal employees. The Office of Research Services' Division of Employee Services is overseeing a 3-year pilot program to provide monthly tuition assistance for child care expenses based on family income and actual cost of child care. Annual total adjusted gross income may not exceed \$60,000.

The tuition subsidy can be used at any licensed child care program, including registered family child care homes and child care centers.

Employees who are interested in program qualifications and application information should visit the ORS child care web site at <http://does.ors.od.nih.gov> or contact the child care programs office at (301) 402-8180.

National Meeting on Cancer, Immunotherapy

On Sept. 22-23, the NCI Center for Cancer Research will sponsor a national meeting in Masur Auditorium, Bldg. 10, on "Translational Immunology Related to Cancer." The meeting will host leaders in the field of cancer immunotherapy, and will also highlight the Center of Excellence in Immunology at the CCR. The conference will

focus on novel immunotherapy strategies for the prevention and/or treatment of a range of human cancers. Topics will include the innovative uses of monoclonal antibodies, cytokines, cell-based therapies, vaccines and transplantation in the prevention and therapy of human cancers. There will be no registration fee; all investigators working in the field are encouraged to register at <http://web.ncifcrf.gov/events/tirc/> and submit abstracts by July 30 for poster presentations. The web site also contains the list of sessions and speakers. For more information, contact Carlei O'Neal at carleioneal@adelphia.net or (301) 846-6333.

NIH Sailing Association Open House

The NIH Sailing Association invites everyone to its open house on Saturday, July 23 from 10 a.m. to 3 p.m. at the Neff Marina located on Selby Bay, Mayo, Md. Would you like to learn to sail? Does the idea of racing sailboats appeal to you? Can you imagine being part of a group filled with skilled sailing instructors, enthusiasts and boat owners? Membership includes instruction, sailboats for charter, racing, cruises, parties and fun. Admission is \$5 at the door and includes food and boat rides. For more information and directions, visit www.recgov.org/sail or www.selbybay.com.

Does Your NIH Badge Work?

Your NIH ID badge functions as your "key" to the NIH campus for such things as building access, library services and eventually the perimeter security system. It is important that employees and contractors wear their NIH ID badges at all times and make sure the badge is valid—up to date and working properly.

To confirm that your badge is valid, self-service badge validation stations will be set up in the following building lobbies beginning in July:

Bldg. 31A

Bldg. 45

Clinical Center (Old Admissions Desk)

Twinbrook II, 12441 Parklawn Drive

6130 Executive Blvd.

Badge validation is easy and only takes a few seconds. Simply wave your badge in front of the card reader at the validation station. A solid green light means your badge is valid and fully functional. A red or flashing light means your badge is not working properly and needs to be reissued.

If your badge needs to be reissued, contact your supervisor or administrative officer, who will begin the process for a new badge. Written instructions will also be provided at the badge validation stations.

Watch for future notices about NIH security in NIH publications, global emails and at <http://www.security.nih.gov>. Still have questions? Contact the ORS Information Line at orsinfo@mail.nih.gov or (301) 594-6677, TTY (301) 435-1908.



Students See Connections

Summer brings students to work in the labs, and there are plenty of intriguing talks given for their benefit over the summer weeks. A pair of recent lectures complemented each other nicely and gave insight into how research can progress on a problem from multiple angles.

The University of Cambridge's Dr. Stephen O'Rahilly wound up the 2004-2005 Wednesday Afternoon Lecture Series on June 29 with a talk about human obesity and insulin resistance. His group studies families with extreme phenotypes and focuses on interesting candidate genes. Leptin is probably the best known of these findings, but O'Rahilly described several other intriguing genes his lab is studying.

It was interesting to see how Dr. Yavin Shaham's talk at the summer lecture series for students complemented the final WALS lecture. Shaham, from NIDA's Behavioral Neuroscience Branch, spoke about relapse to cocaine use after prolonged abstinence. His group showed that cocaine-seeking in rats progressively increased over the months after withdrawal from cocaine when they were prompted by cues they associated with the drug. In other words, their drug craving "incubates" over time. The same applies to heroin and methamphetamines. If this rat model reflects what humans experience, he explained, drug addicts may be highly vulnerable to relapse after periods of abstinence if they're exposed to cues they associate with abused drugs.

Shaham discussed the role of specific proteins in the central amygdala in this relapse process and described some promising attempts to block it. He also spoke about how stress is a major contributor to relapse. Pharmacological treatments look particularly promising for preventing stress-induced relapse.

Shaham pointed out that, for people who are dieting, stress can also provoke a relapse to bad eating habits. Last year, his team set about developing an animal model to look at compulsive food-seeking habits. They found that rats showed stress-induced food-seeking behavior similar to that for abused drugs. One promising treatment for stress-induced drug relapse also helped with stress-induced food-seeking in the animals. These types of animal models, which

have led to experimental treatments for drug addiction in humans, promise to advance the field of food addiction as well.

Shaham's talk showed how work in one field (drug abuse) can unexpectedly yield important insights in another (eating habits). Students attending both these talks would also have gotten an excellent lesson in how completely different approaches to a problem—in this case, obesity—can both produce important results.—**Harrison Wein** 📧

NEI Hosts Symposium on Gene Found to Increase Risk of Blindness

On June 14, the National Eye Institute sponsored a symposium called, "Age-Related Macular Degeneration and Complement Factor H."

New research recently published in *Science* and *Proceedings of the National Academy of Sciences* indicates that scientists including NIH investigators and grantees have identified a gene that is "strongly associated" with a person's risk for developing AMD, the leading cause of blindness for older Americans. This discovery, made by four independent teams, may lead to early detection and new strategies for prevention and treatment for this debilitating eye disease.

The symposium featured lead authors of the four recent publications, presenting their data on the discovery of the association of AMD and complement factor H.



PHOTOS: ERNIE BRANSON



Top left: NEI director Dr. Paul Sieving moderated the symposium.

Top right: A panel discussion featured all of the AMD and complement factor H investigators and other participants.

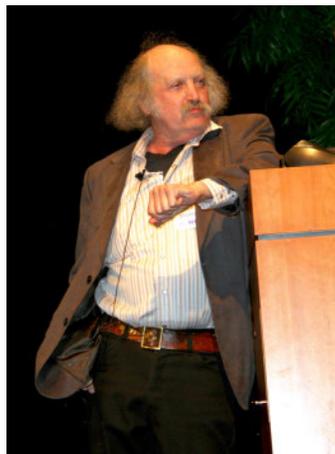
Above: The symposium drew great interest and was well attended.

Left: Dr. Jurg Ott (l), Rockefeller University; Dr. Robert Nussbaum, NHGRI (c); and NEI's Dr. Emily Chew, symposium organizer, gather at the meeting.



FELSENFELD

CONTINUED FROM PAGE 1



Top:

Dr. Gary Felsenfeld (l) poses with Dr. Michael Grunstein at the event.

Middle:

Paying tribute to Felsenfeld were visiting scientists (from l) Dr. Tom Maniatis, Dr. Richard Axel and Dr. Keith Yamamoto.

Bottom:

Dr. Eric Davidson offers remarks at the tribute.

PHOTOS: MARCIA VITAL AND RODOLFO GHIRLANDO

enthusiasm he takes in unraveling nature's secrets."

Extraordinary is a term often used to describe Felsenfeld, who joined the LMB in 1961 to work on protein-nucleic acid interactions. He came from the California Institute of Technology, where he had studied physical chemistry as a graduate student under Dr. Linus Pauling, and from the University of Pittsburgh, where he spent 2 years as an assistant professor of biophysics. In between, he spent 2 years in the Laboratory of Neurochemistry at the National Institute of Mental Health where he joined Dr. Alexander Rich, now professor of biophysics at Massachusetts Institute of Technology, and Dr. David Davies, who became chief of the molecular structure section, LMB.

It was at NIMH that Felsenfeld, along with Rich and Davies, performed their famous RNA triplex experiments. Together they discovered the first three-stranded helical nucleic acid molecule, titled the F.D.R. triplex for Felsenfeld, Davies and Rich. This discovery revealed the diversity of structures that nucleic acids can form.

"You have to be very lucky to start your career with something like that," said Felsenfeld. "It keeps you going through the slower days that always follow."

But Felsenfeld did not have many slow days after that pivotal discovery. He built upon those findings with studies of DNA and RNA structure and in his later research on chromatin, first at Pittsburgh and then at NIH in the newly formed LMB, which he joined at the urging of then chief, Dr. Gordon Tompkins.

In addition to Tompkins and Felsenfeld, the LMB (which was then part of the National Institute of Arthritis and Metabolic Diseases, the NIDDK predecessor) included other young and promising scientists such as Davies, Dr. Martin Gellert, Dr. Todd Miles, Dr. Phillip Ross, Dr. Bruce Ames and Dr. Harvey Itano. Since then,

the LMB has become one of the greatest success stories in the history of the NIH intramural program. Including past and current staff and postdoctoral students, more than 15 alumni of the LMB have been elected to the National Academy of Sciences.

"Gary has the ability to do so much with experimental elegance," said Nobel laureate Dr. Richard Axel. "Technical grace alone is important, but inadequate. So to this Gary adds an ability to add connections that are simply not apparent to others." Axel was a postdoc with Felsenfeld in the LMB for 2 years, from 1970 to 1972.

"The history of [Felsenfeld's] career is the history of the field of transcription science," added Davies.

Much of the work Felsenfeld has done since returning to NIH has focused on the regulation of gene expression, and particularly on the ways in which chromatin structure serves to regulate gene activity in eukaryotes. Chromatin is the complex of proteins, predominantly histones, and DNA, which contain genetic material, packaged inside the nuclei of eukaryotic cells. Chromatin structure packages the large volume of DNA into the small space of the nucleus and also regulates the action of DNA during gene transcription and cell replication.

According to Dr. Michael Gottesman, NIH deputy director for intramural research, in closing remarks at the tribute, "If [Felsenfeld had] only done brilliant experiments on complex problems, it would have been enough." But in addition to his scientific accomplishments, Felsenfeld is also a well-respected and well-loved teacher and mentor, Gottesman said.

"Gary is an inspiration and an unbelievable role model, who exemplifies the best of our chromatin field and the best of NIH science," said Dr. Carl Wu, chief of the Laboratory of Molecular Biology, NCI. "Gary's presence on campus has been a magnet, not only for the incredible list of research fellows who've come to his lab, but also for those of us who wanted to come to work at NIH. I'm one of those who was drawn here because Gary was here." 🧠

'Grand Challenges' Initiative Backs 43 Projects

The Grand Challenges in Global Health initiative, a major effort to achieve scientific breakthroughs against diseases that kill millions of people each year in the world's poorest countries, recently offered 43 grants totaling \$436.6 million for a broad range of innovative research projects involving scientists in 33 countries. The ultimate goal of the initiative is to create "deliverable technologies"—health tools that are not only effective, but also inexpensive to produce, easy to distribute and simple to use in developing countries.

The initiative is supported by a \$450 million commitment from the Bill & Melinda Gates Foundation, as well as two new funding commitments: \$27.1 million from the Wellcome Trust, and \$4.5 million from the Canadian Institutes of Health Research. The initiative is managed by global health experts at the Foundation for the National Institutes of Health, the Gates Foundation, the Wellcome Trust and CIHR. Additional proposed Grand Challenges projects are under review and may be awarded grants later this year.

The Grand Challenges initiative was launched by the Gates Foundation in 2003, in partnership with NIH, with a \$200 million grant to the FNIH to help apply innovation in science and technology to the greatest health problems of the developing world. The 14 Grand Challenges were identified from among more than 1,000 suggestions from scientists and health experts around the world.

"The Grand Challenges projects are very ambitious, and the researchers are taking important risks that others have shied away from," said NIH director Dr. Elias Zerhouni, who is a member of the Grand Challenges scientific board. "Many of these research projects will succeed, leading to breakthroughs with the potential to transform health in the world's poorest countries."

He said, "When we started this project, the Gates Foundation had only committed \$200 million. It is telling that the funding was increased...because of the quality of the grand challenges, in the sense that each one of them is a long-term problem that would be of defining importance for the field of global health."

Zerhouni said NIH currently spends about \$600 million a year on global health activities, "about half of which is related to TB and malaria...Our global health portfolio outside of HIV/AIDS has almost tripled in the past 5 years." He said NIH

invests in 85 countries currently, and views the Grand Challenges funding as complementary to what NIH is already doing abroad.

Zerhouni noted that "the researchers involved in these projects really come from backgrounds that would not have been attracted to this field, were it not for this funding source."

For a full description of the projects that were funded, visit www.grandchallengesgh.org. 

NIH Grantees, Intramural Scientist Win Early Career Awards

Eleven NIH grantees and one intramural scientist—Dr. Marisela Morales of the National Institute on Drug Abuse—were among 58 researchers who received the 2004 Presidential Early Career Awards for Scientists and Engineers. The PECASE award is the nation's highest honor for professionals at the outset of their independent research careers.

Morales is a tenure-track investigator in the cellular neurophysiology section, Molecular Neurobiology Branch. "Work by my group at NIDA uses a combination of molecular biology and high-resolution microscopy to identify and study brain neuronal networks that participate in the biology of various drugs of abuse," she said. "Results from these studies provide key insights on the location and type of brain cells that are affected by drugs of abuse."

The grantees who won the award include: Luis R. Garcia, Texas A&M University; Catherine M. Gordon, Boston Children's Hospital; Joanna C. Jen, University of California, Los Angeles; Yuhong Jiang, Harvard University; Neil L. Kelleher, University of Illinois; Tejvir S. Khurana, University of Pennsylvania; Robin F. Krimm, University of Louisville; Suneeta Krishnan, University of California, San Francisco; Kenneth D. Mandl, Boston Children's Hospital; Teresa A. Nicolson, Oregon Health and Science University; and Brenda A. Schulman, St. Jude Children's Research Hospital.

The awards were established in 1976 to honor the most promising researchers in the nation within their fields. Eight federal departments and agencies annually nominate scientists and engineers at the start of their careers. Winners get up to 5 years of funding to further their research. 



Dr. Marisela Morales of the National Institute on Drug Abuse
PHOTO: BILL INGALLS/NASA



Above:
The main entrance of the Young Bldg., as seen from the future plaza

Right:
A rear view of Bldg. 33

Below:
Outside Bldg. 31B, the new permanent access road to MLP-10 is being built parallel to the road in use currently.

Bottom:
View of a corridor leading to the vivarium suite. All surfaces are coated in epoxy. Walls are constructed of CMU (concrete masonry unit) block.



YOUNG BLDG. NEARLY COMPLETE

CONTINUED FROM PAGE 1



ed the House committee on appropriations for 6 years, led the subcommittee on defense twice and was vice chair of the health appropriations subcommittee for 8 years.

The Young Bldg. is the first NIH facility devoted exclusively to biodefense research and studies of new or re-emerging infectious diseases. Scientists working at the National Institute of Allergy and Infectious Diseases, the lead institute in NIH's implementation of the President's initiative to develop counter-bioterrorism measures, will occupy the new facility.

"Scheduled to move in are research programs on influenza, dengue, West Nile virus and drug-resistant tuberculosis," among others, said Dr. Kathryn Zoon, acting director of NIAID's Division of Intramural Research. "Our staffing plan is currently under review, so we'll be able to confirm other research programs when the review is complete." Initially, scientists will be relocating from labs in the Twinbrook rental facility as well as other buildings on the main campus. Also, NIAID will be recruiting new personnel for additional programs.

"The sequence of moves will be floor by floor for a total of four floors," explained Judy Quasney, an NIAID architect. "Existing programs moving into the facility will be scheduled such that disruption to ongoing experiments

is minimized. Programs with new recruits will move in depending upon the arrival of the new staff. The NIAID expects the building to be fully staffed by the end of 2006." Approximately 250 people will work in the building at full capacity.

The 150,000-gross-square-foot lab building and adjacent plaza/courtyard are the last segments of construction for the multi-phase Bldg. 33 complex that was begun in November 2003. Other parts of the complex—a massive underground storm water management system and 1,250-space, multi-level parking garage (MLP-10)—were completed in 2004.

In addition to work on the interior of the new building, construction crews are also currently paving an extension of North Drive that will connect with East Drive and offer vehicular access to MLP-10, once East Drive reopens. East Drive has been closed to campus traffic since shortly before construction of the new building began. The MLP-10 entrance currently in use on North Drive will be removed. The surface parking lot 31B will be repaved for just two rows of spaces, with the remainder of the area landscaped as a "green" buffer zone to Cedar Lane.

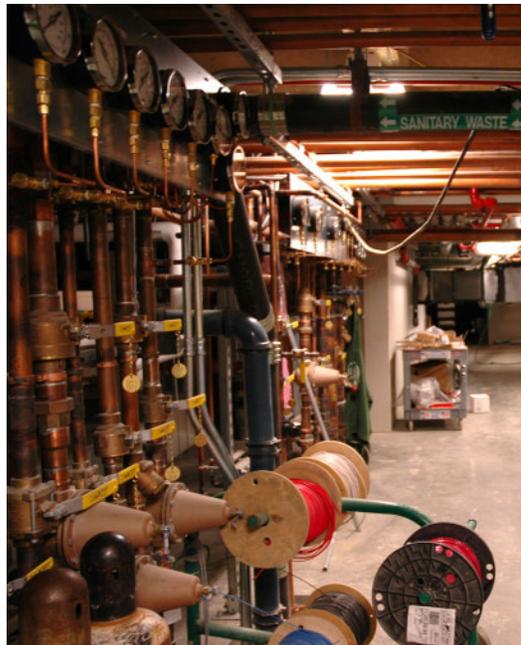
The former surface parking lot 31C, which is now being used as a construction "lay-down" area complete with a mock-up biosafety level-3 lab, will also be redesigned as green space. A pedestrian crosswalk from MLP-10 across North Drive will lead to the new plaza/courtyard and offer access to the Young Bldg. as well as Bldg. 31.





Above: Recently installed metal stairs at lobby area: “[This view] also shows the great amount of light that comes into the building,” notes Kyung Kim, project officer. “The windows shown are blast-resistant glass.”

Right: This corridor shows BSL-3 labs on the left side and BSL-2 on the right. Throughout the building, BSL-3 space is located in the core, with BSL-2 space on each flank.



Above: Pressure service floor zone control valving stations are located on “interstitial” (a floor between floors) floors. Each station is dedicated to one lab and controls lab cold and hot water, domestic cold water, deionized water, lab vacuum, carbon dioxide and high pressure compressed air.

Below: A typical interstitial level—all heating, ventilation and air conditioning, plumbing and electrical equipment is located on these in-between floors, which serve the labs below them. Maintenance can take place without disturbing the lab.



Above: The BSL laboratories (BSL-3 on the left and BSL-2 on the right) look a lot alike at this stage of construction. The BSL-2 space shows casework and covered epoxy counter tops. Shelving is adjustable. Casework installation continues on first and second floors.

Left: The HEPA (high efficiency particulate air) filter up close



Below: Typical view of interstitial ductwork coming off of HEPA-filter station

PHOTOS: CARLA GARNETT AND ORFDO

STEM CELLS

CONTINUED FROM PAGE 1

well as recipients of individual grants and grant supplements for pursuing HESC research. Central to the meeting's discussions were the basic research questions that must be addressed before the clinical use of HESC. Among these questions are what molecular features characterize stem cells, how genes are regulated in the cells, how best to maintain the cells in their undifferentiated state in the laboratory, and how biochemical pathways signal HESC to differentiate into specialized cell types.

Dr. Meri Firpo of the University of California, San Francisco, and Dr. Carol Ware of the University of Washington described their careful characterization of some of the stem cell lines approved for use in federally funded research and offered guidelines on how best to maintain and propagate them.

Drs. Ali Brivanlou of Rockefeller University and Mark Levenstein of the WiCell Research Institute in Madison, Wisc., described growth factors

and natural products that can substitute for the mouse "feeder" cells that are currently used to support the growth of stem cells in the laboratory. Finding an alternative to feeder cells would

be a significant breakthrough because these cells can contaminate stem cell cultures, limiting their medical usefulness.

Dr. Ren-He Xu of WiCell described his recipe for turning stem cells into trophoblasts, which comprise a tissue that surrounds the developing embryo and eventually develops into the placenta. Trophoblast development is an important early step in embryonic development, so understanding how the tissue forms from stem cells is of great interest.

One workshop session focused on new technologies to facilitate embryonic stem cell research, including ways to identify genes required for maintaining "stemness" or for differentiation into particular cell types. Dr. Rick Young of the Whitehead Institute for Biomedical Research in Cambridge, Mass., reported on whole-genome analysis of gene activities in HESC, which revealed that master regulators of gene activity in embryonic stem cells work together in a network to bring about gene activity patterns. Young also found that approximately a third of

all genes are active in HESC while the remainder are inactive.

Dr. Blake Meyers of the University of Delaware described a technique called massively parallel signal sequencing that he has used for comprehensive analysis of the gene activities of plant cells. The technique yields a gene activity pattern, or signature, for a particular cell type under a specific set of conditions. One of the strengths of the technique is that it can quantitatively analyze the expression of certain genes such as novel genes and non-protein coding genes that cannot be analyzed using other methods. Establishing signatures for human cells at various points in the differentiation process will help scientists better understand how embryonic stem cells become specialized cell types.

Dr. David Russell of the University of Washington described how he made use of viral genome fragments called vectors to target genetic information to embryonic stem cells, while Dr. Natasha Caplen of the National Cancer Institute described her progress in using RNA interference to selectively silence genes. These and other approaches will improve scientists' ability to control stem cell differentiation.

According to Dr. Marion Zatz, chief of the Developmental and Cellular Processes Branch of the NIGMS Division of Genetics and Developmental Biology and the workshop organizer, "The meeting underscored the importance of understanding the basic biology of human embryonic stem cells before embarking on clinical applications. While many hurdles remain, it was gratifying to see how much progress has been made in the few years since NIH funding for stem cell research became available, and how many NIGMS grantees are now engaged in addressing fundamental questions in human embryonic stem cell research. NIGMS's initiatives to stimulate research and training are already yielding valuable knowledge and tools to advance this exciting field." ●

Establishing signatures for human cells at various points in the differentiation process will help scientists better understand how embryonic stem cells become specialized cell types.

milestones

Former NIDDK Lab Chief Buck Mourned

By Jane DeMouy



Dr. John Bonner Buck, a man possessed of a curious and creative mind, must have lived a wondrous life. Fascinated by fireflies from an early age, he observed them, studied them and pursued them, from his backyard in Towson, Md., to Woods Hole, Mass., to Caribbean islands, Southeast Asia and Papua New Guinea. He became a world expert in bioluminescence who put the study of physiological synchronicity on the scientific map—for humans as well as insects.

Buck recently passed away at his home in Sykesville, Md., at 92. During his 40-year tenure at NIH, he was chief of the Laboratory of Physical Biology from 1962 to 1974; when the lab divided in 1975, Buck headed the section on comparative physiology. He retired as scientist emeritus in 1985.

“He really got the study of synchrony started,” says Frank Hanson, once a postdoc under Buck and now a professor of biological sciences at the University of Maryland, Baltimore County. “Nobody in the Western world was interested,” says Hanson. “He saw that synchrony in fireflies was communication, and a means to understanding the physiological basis of behavior.” Many were content to describe what they observed, publish and walk away, says Hanson, but not Buck, who was full of questions: Why does this species do it this way, and that another? What happens when you put them together? What happens on the receiving end? “He never stopped questioning,” says Hanson.

“Synchronization in insects was more or less considered mythical until Buck went to work on it,” adds Jim Case, professor of marine science at the University of California at Santa Barbara, and a colleague at the Marine Biological Laboratories at Woods Hole, where the Bucks summered and studied. According to colleagues, Buck “never stopped thinking.”

“He was a good old-fashioned scientist,” agrees Bill Hagins, another NIDDK colleague. In 1945, when Buck arrived at the National Institute of

Arthritis and Metabolic Diseases, now NIDDK, NIH was still small, with very catholic interests, says Hagins. “He was one of the guys who built it up.” In the days before molecular studies, Buck presided over a lab where curiosity and multiplicity ruled. Lab members worked on vision, photosynthesis, muscle physiology and insect respiration, as well as bioluminescence, which had some researchers looking for firefly larvae (glowworms) on Rockville golf courses in the dead of winter. “Luckily, we never had to bail anybody out of jail,” laughs Hagins.

“John knew what everybody was doing, was very knowledgeable and interested in talking to you. That’s what was so beautiful about that lab,” adds NIDDK’s Shuko Yoshikami.

Field trips in pursuit of data on firefly behavior punctuated Buck’s career. He went first to Jamaica, and then to Thailand and Borneo, where Buck and his wife, Elisabeth, recorded their first sight of the fabled firefly displays that naturalists had reported seeing in vegetation along tidal rivers as early as 1680. The Bucks’ paper said that as they got closer to the dark shoreline, pale patches of light emerged as trees “spangled with hundreds of tiny lights pulsing steadily in a rapid rhythm of about 2 per second.” Amazing as the display must have been, the Bucks were not too stunned to activate a photometer-chart recorder they had built and made the first electronic recording of firefly synchrony.

In 1969, funded by the National Science Foundation, Buck headed an expedition to Papua New Guinea to study both terrestrial and coastal bioluminescence. These and other studies led to knowledge of the great diversity of synchronic behavior in fireflies. Each species develops and maintains different codes for light display, which identify them to their own kind and to potential mates. Musicians seem to have the capacity to match the rapid rhythms of fireflies, some of which can flash 2, 3 or 5 times a second. But even unmusical humans synchronize instinctively, says Case. When one or two people in a crowd begin to clap in rhythm, “it takes about one and half cycles for a group to synchronize its clapping,” Hanson adds.

Buck’s field recordings raised interesting questions about how multiple organisms with brains of only a few thousand cells could coordinate such rapid responses, and provoked studies of neural circuitry and its control of muscles. Buck’s work brought attention to the importance of rhythmic neural processes to human bodily functions, as well as awareness of a variety of voluntary rhythms and synchrony in human beings.

“He was a quiet, thoughtful man who could easily think outside the box,” says Ed Rall, who was NIDDK scientific director during Buck’s tenure. A Quaker who helped found the Bethesda Friends’ Meeting, Buck was known for his pacifist beliefs. With other Friends, he opposed the Vietnam war by maintaining a weekly silent vigil on a Bethesda street corner. Described as “a gentle man” who rarely showed anger, Buck was full of energy, a man who could keep his younger colleagues running during late night field trips after a full day’s work in the lab.

Known as a highly ethical person who commanded the respect of his colleagues, Buck and his wife practiced an easy hospitality: they maintained a “floating seminar” at their home for colleagues, and postdocs were routinely invited to dinner. He was also an avid racing sailor at Woods Hole and he and Elisabeth enjoyed playing sextets with his four children, each of whom played a different instrument.

Buck got his Ph.D. at Johns Hopkins in 1937, was a National Research Council fellow at California Institute of Technology, and taught briefly at the University of Rochester before coming to NIH. He was a visiting professor at several institutions, was a member of the NRC, the American Society of Zoologists and the Society of General Physiology. Besides many summers of teaching and research at Woods Hole, Buck was at first a trustee, then emeritus and a life member of that corporation.

Memorial contributions may be made to the John and Elisabeth Buck Scholarship, Marine Biological Laboratories, Woods Hole, MA 02543. ●

CIT Computer Classes

All courses are given without charge. For more information call (301) 594-6248 or consult the training program's home page at <http://training.cit.nih.gov>.

NIH Portal for Community Managers	7/19
FileMaker Pro 7 Advanced	7/19
What's New in SPSS	7/19
Improve Your Public Speaking While Using PowerPoint	7/20
Matlab Fundamentals	7/21
Ovid Searching (PsycINFO, CINAHL & more)	7/21
Windows XP Tips and Tricks	7/21
Data Warehouse Analyze: Human Resources	7/21
Matlab for Image Processing	7/21
Powerpoint Topics: Graphs, Links and More	7/21
PC Troubleshooting	7/22
90 Microsoft Office Tips in 90 Minutes	7/26
Network Security and Firewalls	7/26
What's New in Listserv	7/26
Perl for Biologists	7/26-8/4
Tackling a Presentation Assignment, Including Talking Points	7/26
Listserv Electronic Mailing Lists: Hands-on Workshop for General Users	7/26
Introduction to mAdb	7/27
Creating Web Pages with HTML/XHTML	7/27
Listserv Mailing Lists: Hands-on Workshop for General Owners	7/28
Microsoft Project – Key Tips and Techniques	7/28
Mathematica Introduction	8/1
XML Basics	8/1-9/12

NIH Training Center Classes

The Training Center supports the development of NIH human resources through consultation and provides training, career development programs and other services designed to enhance organizational performance. For more information call (301) 496-6211 or visit <http://LearningSource.od.nih.gov>.

Review, Update on EEO Policies & Processing Laws	7/19, 20, 26, 27, 28
Basic Time and Attendance Using ITAS	7/27-28, 8/22-23
Introduction to Property Management	8/4-5
Simplified Acquisitions Refresher	8/8
Travel for Administrative Officers	8/8, 9/15
Purchase Card Processing System	8/11
Delegated Acquisition Training Program	8/16-19



NIH Receives White Oak Award

NIH received the White Oak Award for Excellence in Forest Conservation and Land Development from the Maryland Department of Natural Resources (DNR) at HHS's 4th annual Environmental Workshop, held recently at Lister Hill Auditorium. The award recognizes efforts made prior to the enactment of any formal laws requiring forest conservation, but that have been designed with Forest Conservation Act goals and objectives in mind. Presenting the award on behalf of the Maryland DNR are (from l) Todd Erickson, regional forester, and Marian Honesczy, state forest conservation program coordinator. Receiving the award on behalf of NIH are Lynn Mueller (third from l), NIH landscape architect, and Capt. Edward Pfister (r), environmental compliance officer, both of the Office of Research Facilities and Development Operations.

Principles of Clinical Pharmacology Course

The Principles of Clinical Pharmacology course, sponsored by the Clinical Center, will begin in Lipsett Amphitheater, Bldg. 10 on Sept. 1. The course will be held Thursday evenings from 6:30 to approximately 7:45 and will run through Apr. 27, 2006. "Many medical schools don't offer formal courses in clinical pharmacology," said Dr. John Gallin, director of the Clinical Center. "This program covers what researchers need to know concerning the clinical pharmacologic aspects of drug development and use."

The course covers topics such as pharmacokinetics, drug metabolism and transport, assessment of drug effects, drug therapy in special populations and drug discovery and development. An outstanding faculty has been assembled to present the lectures including Dr. Carl Peck of the University of California at San Francisco's Center for Drug Development Science, Dr. Janet Woodcock of the Food and Drug Administration and the Clinical Center's Dr. Arthur J. Atkinson, Jr., who is also the course director. The faculty has also prepared a textbook, *Principles of Clinical Pharmacology*, that follows the sequence of the course lectures and is available in the Foundation for Advanced Education in the Sciences, Inc. bookstore located in Bldg. 10. The textbook is also available from Amazon.com.

This is the eighth year that the course is being offered. Registration is open to all interested persons free of charge. Certificates will be awarded at the end of the course to students who attend 75 percent of the lectures. More information about the course, including online registration, is available at <http://www.cc.nih.gov/researchers/training/principles/shtml> or by calling (301) 435-6618.



Asthma Study Recruits

An asthma study at NIH is recruiting children ages 5 to 17. Compensation is provided. Call 1-800-411-1222 (TTY 1-866-411-1010). Refer to study # 04-I-0126.

Healthy African Americans, Africans

Healthy African Americans and Africans are needed for a blood count study. Call 1-800-411-1222 (TTY 1-866-411-1010) and refer to study # 03-DK-0168. Compensation is available.

Breast Cancer Study

If you or someone you love has metastatic breast cancer, call for study information: 1-800-411-1222 or 1-866-411-1010 TTY. Refer to study # 03-C-0040.

Weight and Insulin Study

The Uniformed Services University of the Health Sciences is conducting a study examining weight and stress responses to exercise in African American men and women between the ages of 18 and 45. Volunteers will be compensated for their participation. Call (301) 295-1371 or email humanperformancelab@usuhs.mil.

HIV-Positive Volunteers

HIV-positive volunteers who are off anti-HIV medications, CD4+ 350 or greater, without hepatitis B or C, are needed for a research study. Financial compensation is provided. Call 1-800-411-1222, or TTY 1-866-411-1010. Refer to study # 05-I-0065.

Lyme Disease Study

Do you think you have Lyme disease? People with active Lyme disease are invited to participate in a study at NIH. Evaluation and treatment provided. For information call (301) 496-8412.

Severe Systemic Lupus Erythematosus?

An NIH study is testing a potential treatment for lupus. The main purpose of the study is to determine whether long-term remission of lupus can be achieved through a combination of drugs and blood stem cell transplantation. For more information call 1-800-411-1222 (TTY 1-866-411-1010). Refer to study # 04-C-0095.

Exercise Study Volunteers Wanted

The Uniformed Services University of the Health Sciences is looking for healthy, 18-45 year old men and women interested in completing an IRB-approved research project. Project entails completing a step test with knee bends, and blood draws on two other days. If interested call (301) 295-1371. Volunteers will be compensated for their participation.

Normal Volunteers Needed

The Pulmonary-Critical Care Medicine Branch, NHLBI, is looking for healthy individuals between the ages of 18-65 to participate in a research study. A thorough medical evaluation and monetary compensation will be provided. If interested, call (301) 402-1553.

Free CIT Training Offers Relief from Summer Heat

All NIH personnel are invited to "beat the heat" with the latest and greatest in free computer training. Summer term 2005 has just begun for the CIT Training Program. It offers over 100 computer topics designed for NIH scientists and staff. A full description of the course schedule is available at <http://training.cit.nih.gov>.

There are a number of new end-user classes. Adobe Acrobat—Introduction shows how to create the PDF documents that are the required format for many scientific journals. Microsoft Project will include tips on scheduling projects, reporting project data and efficiently tracking and analyzing projects. FrontPage Advanced Topics will cover items such as creating forms, inserting cascading style sheets and using meta tags. FileMaker Pro 7 Advanced will show how to create integrated systems of databases linking together seamlessly. Finally, Forensics for IT Systems discusses how to use a compromised system to determine the dimensions of an attack.

Two new classes in Excel include Excel Topics—Formulas and Excel Advanced Topics—PivotTables. Basic classes in Excel are offered through HHS University at <http://learning.hhs.gov> or free online at <http://lms.learning.hhs.gov>.

New courses for developers include Python and XML Basics. Python for Programmers introduces this language, which excels at reformatting data, gluing together other programs and manipulating long strings of text. XML Basics gives a 6-session hands-on overview of this topic.

New courses for scientists include ImageJ, topics in SPSS and Proteome BioKnowledge Library. ImageJ, authored by Wayne Rasband of NIMH, is a public-domain Java image processing program inspired by NIH Image for the Macintosh. SPSS Clementine Data Mining reviews the basic operations and environment of the SPSS Clementine data mining software. What's New in SPSS 13 is an introduction to SPSS geared primarily to those new to the software. Finally, Proteome BioKnowledge Library offers training in this manually curated, protein-centric database containing information about all proteins in human, mouse, rat, *C. elegans*, *S. pombe*, *S. cerevisiae* and pathogenic fungi.

New courses for Mac users include OS X, OS X Deployment/Management and Tiger Server. Getting Started with the Mac on OS X is designed to help users regardless of experience level. PC users new to the Mac may find this particularly helpful. OS X Deployment/Management Seminar discusses how to streamline the process of installing and configuring Mac OS X on large numbers of computers. Mac OS X 10.4 Tiger Server will show the various features of this newest version of X Server.

Volunteers are needed to teach classes. Did you know that most instructors volunteer their time and talent to bring these sessions to NIH staff? If you have a topic you would be interested in presenting to the NIH community, call (301) 594-6248. ☎

NIH Radio News Service To Air on XM Satellite Radio

The NIH Radio News Service has a few new listeners—more than 4 million of them. That's the number of subscribers claimed by Washington, D.C.'s XM Satellite Radio. Beginning July 1, XM began running a daily 60-second radio feature called "NIH Health Matters," hosted by former XM broadcaster and current NIH Radio News Service production manager Bill Schmalfeldt.

"Health Matters is a feature aimed at health care consumers that tells the many success stories here at NIH," Schmalfeldt said. "In July, our stories include such topics as ways to avoid Type 2 diabetes, news about a study concerning problem drinking in colleges, and how NIH researchers are getting closer to cures for such things as food allergies." He said the stories include audio cuts from NIH researchers and grantees, geared to a lay audience.

Mark Schramm, executive producer of talk programming at XM Satellite Radio, said the subscriber-based radio service was looking forward to airing "NIH Health Matters." He called the features "informative and interesting" and said "they will be a strong addition to our news/talk lineup of channels."

"Health Matters" will air up to 8 times each weekday on the nearly two dozen news and talk channels on the satellite radio service, which went on the air in 2001 with a lineup of commercial-free music channels and news/talk channels including CNN, MSNBC, Fox News and CNBC. The service is available coast to coast for a subscription price of \$12.95 per month and requires a special radio, available from most consumer electronic stores. From 2001 to 2003, Schmalfeldt was the program director of XM's "On Broadway" channel.

The NIH Radio News Service, supported by the Office of Communications and Public Liaison, OD, also produces weekly features available online (www.radiospace.com/nihhome.html) and by telephone at 1-800-MED-DIAL. ☎



Pinn Gains Another 'First' at U.Va.

Dr. Vivian Pinn, director of the Office of Research on Women's Health, delivered the keynote address at the University of Virginia's 176th commencement exercises on May 23, becoming the first African-American female ever to do so. Pinn, the only African American and only woman in the U.Va. Medical School class of 1967, recalled "the many challenges to my own sanity and passion for my medical studies during the sociopolitical era of the 1960s." She told the nearly 5,000 graduates, accompanied by some 25,000 family members and guests, "I learned then, and have confirmed as years go by, that we can either dwell in the smallness of slights or difficulties, or rejoice in the larger meanings of life's experiences, and build a positive, constructive, and worldly view of barriers we have faced, and the satisfaction of having overcome them...Don't let difficulties make you small, a complaining spectator of life—but rather let a vision for your own life make you great, a vital participant of life."

PHOTO: U.VA. NEWS SERVICES/DAN ADDISON



Spring 2005 Senior Leadership Program

The Office of Strategic Management and Planning's NIH Training Center recently graduated the 2005 class of the Senior Leadership Program. Participants hailed from the Clinical Center, the National Cancer Institute, the National Heart, Lung, and Blood Institute, the National Institute of Diabetes and Digestive and Kidney Diseases and the Office of the Director. They included (front row, from l) Dorothy Foellmer, Chitra Krishnamurti, Jake Liang, Janet Dudrick, Valerie Prenger; second row (from l) Eser Tolunay, Dave Folio, Karen Kaczorowski, Francie Kitzmiller, Carolyn Bell; third row (from l) Steve Wank, Alice Mascette, Robert Mekelberry, Susan Persons, Gwenyth Wallen, Kevin Callahan; back row (from l) Robert DeChristoforo, Robert Pike, Phil Lenowitz, Ken Buetow, Marilyn Jackson, Joseph Jenkins, John Hanover, Lenora Johnson. Not shown are Dan Camerini-Otero, Anita Linde and Melanie Keller.