

THE N I H R E C O R D

Still The Second Best Thing About Payday

Medieval Merriment Over Return of Manuscript

When a long-missing medieval manuscript is returned to its collection, what's a library to do?

Have a party, of course. And so, on the evening of May 19, the lords and ladies of NLM, scholars attending the annual meeting of the American Association for the History of Medicine in Bethesda, and assorted friends and colleagues donned medieval costumes, ate, drank and made merry. The shindig was sponsored by the association.

"It's always a cause for celebration when a lost book returns home," observed Dr. Elizabeth Fee, chief of the History of Medicine Division at the library. And what a book this is.

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Lord and Lady Lindberg (actually NLM director Dr. Donald Lindberg and wife, Mary)

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Of Chemistry and Consciousness

By Harrison Wein

The concept of consciousness is familiar to us all, but it may be the most mysterious feature of our existence. What exactly is consciousness? What gives us this self-awareness? Are our minds somehow separate from our bodies, destined never to be explained by science? These questions have occupied philosophers and artists ranging from the writings of Kant and Hegel to movies like Arnold Schwarzenegger's *Total Recall*.

Scientists are now finally glimpsing brain activity that they believe is associated with consciousness, yet many people question whether we can ever have real answers. "Scientific Approaches to Consciousness: Reductionism Debated," a symposium organized by the National Institute of Mental Health and held on May 10 in the Natcher Conference Center, brought together four of the leading researchers—two scientists and two philosophers—in the field of consciousness. They explored whether our sense of consciousness could ever be reduced to a set of nerve cells (or neurons) and chemical interactions in the brain.

"More people are exploring a wider variety of approaches and producing a greater number of new insights into consciousness than ever before," said Dr. Howard S. Kurtzman, chief of the

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Set Ground Rules First, Advises NIH Ombuds

By Robert Bock

Before two or more people start working together, it will help if each finds out what the other expects, said Dr. Howard Gadlin, director of the NIH Office of the Ombudsman.

"Often, people form a collaboration on a shared interest—a scientific problem, perhaps," he said. "Before they begin, they need to find out what they expect—not only in terms of the work—but also the working relationship."

For example, a postdoc might need a lot of autonomy, whereas her mentor may think it best that the two work closely together. By reaching agreement in such situations before they start working together, the two may preserve fruitful collaboration and avoid bitter disappointment.



Dr. Howard Gadlin

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MEDIEVAL, CONTINUED FROM PAGE 1

The Latin manuscript, *Treatises on Medicine*, was written in England in the 12th century on vellum (calf skin) and contains some 40 texts by different authors. Like many books of its day, the fastidiously hand-lettered work represents an attempt to compile all medical knowledge of the day.

The work disappeared from the library some 50 years ago and was recently returned in good condition.

In honor of the manuscript's return, NLM mounted an exhibit showcasing it among about 25 other books and manuscripts of the period. Partygoers could view these works in the History of Medicine Reading Room as they enjoyed medieval music performed on period instruments.

The revelers included knights, ladies, wizards, wenches, queens and kings, courtiers and jesters. An interesting sight was a collection of guests wearing crowns, Viking horns, jester caps and other medieval garb searching the NLM's databases at computers in the Reading Room, one of the party areas. The centuries clashed to produce an indelible image.

To learn more about the library's medieval treasures, consult www.nlm.nih.gov/press_releases/medievalpr00.html.



Where's the Beef(eater)? Bob Mehnert, chief of NLM's Office of Communications and Public Liaison, stands at attention. While the party is now over, NLM's manuscript exhibit is on view Monday through Friday, 8:30 a.m. to 5 p.m. through July 14.



NLM Deputy Associate Director for Library Operations Becky Lyon (l) and Dr. Elizabeth Fee, chief, History of Medicine Division, pause for a photo at the May 19 gala.

Patti page? Actually, this is Patricia Tuohy (r), exhibition program manager in NLM's History of Medicine Division. Below, an unidentified Viking attending the AAHM conference ponders the NLM databases.

NLM also has a new web site devoted to its Islamic manuscripts at <http://www.nlm.nih.gov/hmd/arabic/arabichome.html>.



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Oxygen Found to Reduce Infections After Surgery

By Michael Vatalaro

Pennies' worth of extra oxygen could save millions of dollars in hospital costs by helping to prevent post-surgical wound infection, nausea and vomiting, researchers report.

Clinical researchers have recently demonstrated that a simple and inexpensive change in basic surgical procedures—giving patients more oxygen during and immediately after surgery—can cut the rate of wound infections in half. The work was conducted by the Outcomes Research Institute (<http://www.or.org>), led by Dr. Daniel Sessler, associate dean and professor of anesthesiology at the University of Louisville in Kentucky. The study, which was largely funded by the National Institute of General Medical Sciences and conducted by Sessler while at the University of California, San Francisco, appeared in the *New England Journal of Medicine* in January.

Wound infection is a serious and costly complication of surgery. Wound infections can develop into sepsis, an infection in the bloodstream, which is difficult to treat and can be fatal. On average, 2-3 percent of general surgeries result in a wound infection; however, the rate increases to 27 percent in some types of colorectal surgery.

"Our experimental treatment, giving extra oxygen, costs only 3 cents per patient," said Sessler. This inexpensive treatment dramatically reduced the number of infections after colorectal surgery. Patients who suffer an infection after abdominal surgery typically spend an extra week in the hospital at an average cost of \$12,500.

Sessler and his team designed the study to test whether higher doses of oxygen would stimulate immune function. A higher level of oxygen is believed to increase the ability of immune system cells known as neutrophils to kill bacteria in wound tissues. Neutrophils surround invading bacteria and expose them to a highly reactive form of oxygen in a process known as oxidative killing. The researchers reasoned that providing the neutrophils with more oxygen would increase their killing efficiency.

The first step in neutralizing bacteria is phagocytosis, during which the neutrophil literally engulfs a bacterium, walling it off in an internal chamber. The neutrophil then shoots free-radical oxygen molecules into the chamber, killing the microbe. If insufficient oxygen is available, the microbe soon wriggles free of the neutrophil and continues to invade and infect the wound tissue. Ordinary air contains around 20 percent oxygen. The researchers gave the patients four times that amount to raise the level of oxygen in the patient's body tissues. In theory this makes more oxygen available to the neutrophils, ensuring that they never run out of microbe-killing ammunition.

The study involved 500 patients undergoing

colorectal surgery in one of three European hospitals. Participants were assigned at random to receive either 30 or 80 percent oxygen along with their anesthesia. Thirty percent oxygen is the minimum concentration used by anesthesiologists in the United States and Europe. The supplemental oxygen treatment continued for 2 hours after surgery. Half of the patients received the lower dose of oxygen, and 28 of them developed wound infections. Only 13 of the patients who received the higher dose of oxygen developed infections.

Researchers working independently of the surgical team evaluated each patient's wounds daily during their hospital stay. These researchers did not know which treatment a patient had received. Patients who were kept in the hospital longer by the surgeons were the same ones noted by the researchers to have wound infections, lending even more strength to the study.

For years, doctors have resisted giving high levels of oxygen during surgery because they feared that it could cause impaired lung function or even partial collapse of the lungs. But an earlier study, also done by the Outcomes Research Institute, demonstrated no difference in lung function after surgery between a group given 30 percent oxygen and one given 80 percent oxygen. The additional oxygen has no known side effects.

Increasing the amount of oxygen during surgery had other benefits as well. A study on a subset of the patients showed that increased oxygen cut in half the rate of nausea and vomiting associated with general anesthesia. Although not life-threatening like a wound infection, nausea and vomiting occur much more frequently—in as many as 7 out of 10 patients—and are the leading cause of unexpected hospital admission after outpatient surgery. In addition to being extremely unpleasant for the patient, these complications place additional burdens on hospitals and may require an ambulance to transport the patient from an outpatient clinic to a hospital. In a subsequent study, the researchers demonstrated that extra oxygen prevented nausea and vomiting as effectively as the leading anti-nausea medication.

While the rate of wound infection in general surgery is not as high as in colorectal surgery, even a small reduction in the rate of infection could produce huge benefits. "You have to multiply that reduction by the 25 million surgeries performed in the U.S. each year," said Sessler. Standardizing the level of oxygen given during surgery at 80 percent has an impressive number of potential benefits. But they are even more striking simply because the cost of the extra oxygen is trivial and administering it is so simple. "The anesthesiologist has to set the dial to something. It's just as easy to make it 80 instead of 30," said Sessler. ■



Dr. Michael Waalkes, chief of the inorganic carcinogenesis section of the NCI Laboratory of Comparative Carcinogenesis at NIEHS, has been appointed editor of Toxicology and Applied Pharmacology, a Society of Toxicology journal. Waalkes is currently the associate TAP editor, and served on the TAP editorial board from 1993 to 1997. He has served on the editorial boards of the Journal of Toxicology and Environmental Health and the Toxic Substance Mechanisms since 1992. In 1990, he received the Society of Toxicology Award for outstanding contributions to the science of toxicology by an individual 41 years of age or younger.

OMBUDSMAN, CONTINUED FROM PAGE 1

As the ombuds (and head of the Center for Cooperative Resolution), Gadlin helps staffers work through many disagreements. His 5-person office handled 305 cases last year. Although some involved scientific projects, others pertained to ethnic and racial differences, conflicts with management or other staff members, and high levels of pressure in the workplace.

Agreements reached through the ombuds office are non-binding. All counseling sessions are kept confidential and information provided to the office will not affect an employee's rating or potential for promotion. Such non-binding arbitration can offer benefits over more formal processes, which may end up making a situation worse. Moreover, after a conflict is resolved through a formal process, the people involved may have to go back to the same working relationship they had before—without ever having resolved their differences.

Gadlin stressed that there is no general prescription for avoiding conflict. "So much depends on the situation and history of the people involved that it's hard to specify a set of guidelines," he said.

Still, there are some behaviors that tend to make a difficult situation worse. For example, supervisors need to find thoughtful ways of giving their employees criticism. Moreover, criticism should be given in a way that helps an employee's job performance—rather than venting a supervisor's frustration. Supervisors should also address small issues regularly, rather than surprising their employees with a buildup of past grievances at performance review time.

Racial or ethnic differences can also provide the basis of conflicts. Gadlin gave an example of two people from different cultures. The first person's culture may stress looking someone in the eye when talking to him or her; the second's culture may emphasize avoiding eye contact when speaking. If the two work together, the first person may think the second is shifty or deceitful. Gadlin advised that in these kinds of situations, people should learn to bring their differences out in the open:

"The first person might say, 'When we talk, it seems you never look me in the eye. Is there something wrong?'"

To help employees through their conflicts, Gadlin and his employees practice a variety of techniques. One is "coaching." With this technique, ombuds staff offer advice on how to write email messages tactfully or confront the offending person, to avoid escalating the conflict. Another technique is mediation, in which a member of the ombuds staff brings the two parties together and helps them work through their differences. Still another is facilitation, in which the ombuds office relays messages back and forth between parties who may be too angry to meet face to face.

Although he would prefer to see people avoid stressful, antagonistic relationships, Gadlin said that some conflict is necessary. If two people can't talk openly about their disagreements, resentments may smolder for a time, then catch fire at a critical moment—perhaps when an employee fails to be promoted.

"If you're always avoiding difficult issues, they're going to come back and get you when you least expect it," he said.

(The author is the press officer for the National Institute of Child Health and Human Development and a member of the NIH Management Cadre class of 2000. This article resulted from an assignment to study science and leadership at NIH. Information about the NIH Management Cadre Program is available at <http://mcp.nih.gov/>.)



Surgeon General David Satcher meets with first graders at Shepherd Elementary School in Washington, D.C., on May 25, when the first-ever Surgeon General's report on oral health was released at a press conference held at the school. In addition to the Surgeon General, who presented key findings of the report, the press conference featured Charles T. Frock, president and CEO, First Health of the Carolinas, representing Community Voices: Healthcare for the Underserved, and Janet Crockett, a teacher at Shepherd Elementary School, together with her first grade class. Students at the school have been learning about oral health through a pilot curriculum developed by the National Institute of Dental and Craniofacial Research and NIH's Office of Science Education. "Oral Health in America: A Report of the Surgeon General" emphasizes the importance of oral health for general well-being and identifies a "silent epidemic" of dental and oral diseases and disorders that burden all too many people in this country. The executive summary of the report is available on the NIDCR web site: www.nidcr.nih.gov.

Angry, Irritable or Difficult Teens

You and your 11-16-year-old may be eligible to take part in research at the National Institute of Mental Health. This study is about how young people experience emotions, and how bad moods can cause problems. Payment will be provided. For details, call Barbara Usher, 496-1301. ■

Postmenopausal Women Sought

Postmenopausal women not currently taking hormone replacement therapy are needed to participate in a study of normal blood. Participants will be required to give a small blood sample (about 2 tablespoons) in an initial screening. Total visit time required is about 30-45 minutes. The study, which takes place at the Clinical Center, does not require you to take any new medications—it involves only a blood sample. Compensation (\$50) is provided for each blood draw. For more information, call 496-5150.

NLM 'Profiles' Web Site Adds Axelrod Papers

The accomplishments of some of the giants of 20th century biomedicine are newly available as the National Library of Medicine makes the scientists' archival collections available through the latest digital technology on its "Profiles in Science" web site (profiles.nlm.nih.gov).

Launched in 1998, "Profiles" contains the personal collections that scientists have donated to NLM and features published and unpublished items including books, journal volumes, pamphlets, diaries, letters, manuscripts, photographs, audiotapes, video clips and other materials.

The most recent addition to the archive is pharmacologist and neuroscientist Julius Axelrod, who shared the 1970 Nobel Prize for discoveries "concerning the humoral transmitters in the nerve

terminals and the mechanism for their storage, release and inactivation."

Axelrod spent his most fruitful years of research at NIH, first at the (then) National Heart Institute and later at the National Institute of Mental Health.

According to a recent ABC News poll, one of every eight adults in the United States has taken Prozac or a similar drug to help relieve anxiety or depression. That they

can do so is the result of research by Axelrod in the 1960's. His work enabled pharmaceutical firms to create anti-depressants like Prozac. Prozac and other similar drugs are called SSRIs (selective serotonin reuptake inhibitors) because they prevent certain actions of chemicals, called neurotransmitters, in the brain.

"Axelrod did not invent Prozac, but he discovered how early antidepressant drugs work in the brain, and he coined the term 'reuptake' to describe those actions," said Dr. Alexa McCray, who directs the "Profiles in Science" project at NLM.

Since his discovery in the early 1960's, Axelrod's explanation for how neurotransmitters work has forever altered the way modern pharmaceutical companies design antidepressant drugs. Furthermore, his work has greatly advanced how scientists understand the biological basis of human behavior. Axelrod was awarded the 1970 Nobel Prize in Physiology or Medicine along with Sir Bernard Katz of University College London and Dr. Ulf von Euler of the Karolinska Institute in Stockholm.

Axelrod also helped to discover the pain-relieving medicine acetaminophen, better known by its brand name, Tylenol. He was one of the first scientists to

conduct full studies of caffeine, amphetamine and mescaline. Until his retirement in 1984, he worked on research projects that sought to elucidate the relationship between drugs and behavior.

His research suggested that mental states were the result of complicated physiology and brain chemistry, rather than the sole result of psychological or environmental factors. This ushered in an era of pharmacological drugs that were designed to inhibit or stimulate neurotransmitters in the nervous system.

The new "Profiles" site shows off a variety of documents and includes materials that span the various phases of Axelrod's life and career. These include examples from his extensive collection of laboratory notebooks showing his early experiments involving caffeine and LSD, an unpublished manuscript from 1994, and a large sampling of his most important published articles.

Axelrod, known to friends as "Julie," still comes to the lab about three times a week to conduct research, according to Dr. Michael J. Brownstein, chief, Laboratory of Genetics, NIMH/NHGRI. His contributions are still felt among his colleagues. As Brownstein recounts, "He has a greater capacity than most scientists to take pleasure in other people's novel findings and to suggest followup experiments." ■



Dr. Julius Axelrod

2000 NIH Research Festival, Oct. 10-13; Poster Submission Available Online

The 14th annual NIH Research Festival, the yearly showcase for the NIH intramural research program, will be held Oct. 10 through 13. The festival organizing committee, cochaired this year by NHLBI Scientific Directors Robert Balaban and Elizabeth Nabel, is now accepting submission of poster abstracts by all NIH staff. Posters in any area of research conducted on campus will be considered for presentation, but the committee is requesting a limit of one poster submission per first author. Plenary, mini-symposia, and poster sessions are scheduled on Wednesday and Thursday, Oct. 11 and 12. Plenary sessions will feature the latest research advances in nitric oxide, angiogenesis, and genome analysis and 12 mini-symposia will cover the wide range of research interests of the NIH intramural community. As in previous years, the NIH Office of Education-sponsored NIH Job Fair for postdoctoral fellows will kick off the week's events on Tuesday, Oct. 10. The Research Festival Scientific Equipment Show, sponsored by the Technical Sales Association, will cap the event off on Thursday and Friday, Oct. 12 and 13. For a general schedule of events and the online poster registration form, visit the Research Festival web site at <http://festival2000.nih.gov>.

The deadline for online poster registration is 5 p.m., Monday, Aug. 7. Applicants will receive email confirmation of receipt of poster abstracts and will be notified of acceptance by Aug. 21. For more information about poster registration, contact Paula Cohen at 496-1776 or email pc68v@nih.gov.



Dr. Simon Y. Liu has been named director of information systems at the National Library of Medicine. He comes to NLM from the Department of Justice, where he served most recently as acting director of the information management and security staff. He will direct the programs of the Office of Computer and Communications Systems and its staff of 60, who provide the NLM backbone computer networking facilities and support other NLM components in local area networking. Liu also serves as an adjunct professor at the Whiting School of Engineering, Johns Hopkins University, and the Robert H. Smith School of Business, University of Maryland. He is the editor of IT Professional Magazine, a publication of the Institute of Electrical and Electronic Engineers.

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Cognitive Science Program at NIMH and moderator of the seminar. But despite all this progress, he said, "It is not obvious how consciousness can be understood within the frameworks of psychological science and neuroscience...Consciousness poses probably the greatest challenge to reductionist approaches."

Reductionism Debated

The history of science is littered with problems thought to be insoluble and immune to a reductionist approach. Dr. Patricia S. Churchland, a philosopher from the University of California at San Diego, challenged the audience, "The fact that you yourself can't imagine the solution doesn't mean a whole lot." Heat, related to the movement of molecules, is one example of a phenomenon people thought could never be explained. Until people understood what molecules were and that faster-moving molecules caused higher temperatures, they found it inconceivable that temperature could ever be explained.

Genes and DNA are a similar example brought up by Dr. Christof Koch, a neuroscientist from the California Institute of Technology who is currently collaborating with DNA structure co-discoverer Francis Crick on some of his work. Koch showed a quote from a book published in 1916 and explained that, back then, people couldn't conceive how chromosomes, seemingly indistinguishable from each other, could convey all the properties of life. "We should not make the same mistake twice," he said. Koch assumes that there is a specific circuitry and specific neurons that generate consciousness. He argued, "Once we understand the neural circuitry of the brain it'll become clear why we're conscious."

Not all the speakers agreed. Dr. J. Allan Hobson of Harvard Medical School said, "My intuitive persuasion would be that consciousness will not yield in the way that we hope it will yield. But," he added, "I...never thought that changes in consciousness would yield to a reductionist approach as clearly as they do." Hobson was referring to the difference between waking and dreaming, which he said can be reduced to changes in levels of two kinds of molecules in the brain. He said, "This was something I did not imagine when I was a postdoctoral fellow at the NIH."

Dr. David J. Chalmers, a philosopher at the University of Arizona, was more adamant about the impossibility of ever fully understanding consciousness. Since you can never really know what people are thinking or feeling, how can you ever fully explain consciousness merely in terms of nerve cells and chemicals? "A purely physical explanation will not reductively explain first person data," Chalmers argued. "Close correlations, close associations—that's not enough to count as a reductive explanation...You've got to add in some kind of

principle to bridge the gap, some kind of principle relating the two."

This something that Chalmers is talking about is what makes us the thinking, feeling, self-aware people we are. But it is unclear whether there really is something more than a play of language. A neurologist from the audience voiced his doubts: "I think the real problem here is when we start talking about language," he said. "In fact, I specifically blame a little thing with 4 letters: N-E-S-S. That thing is the real problem. When you say redness instead of red, that's the problem. You are putting a lot of stuff there that doesn't exist."

Linguistic Confusion

Ambiguities of language certainly help to confuse this topic. At times, it seemed like people were talking about completely different things. One audience member summed up: "I'm not sure what kind of added value we get by lumping all these things together as consciousness."

Chalmers, whose talk was entitled, "Toward a Non-Reductive Science of Consciousness," said in his introduction, "A lot of people mean a lot of different things when they talk about consciousness."

"Consciousness is kind of an umbrella term that includes various aspects of perception, attention, and knowledge," echoed Kurtzman, the moderator, in a telephone conversation. "The most difficult aspect to describe scientifically is this subjective feeling of consciousness and what that has to do with neurons and material reality. This raw subjectivity is hard to capture."

Starting To Understand Consciousness

Scientists like Koch and Hobson concentrate their efforts on aspects of consciousness that are easier to define and address. Koch, who said he was emboldened by twentieth century molecular biology and cell biology, described his studies into conscious awareness and visual recognition in his talk, "Identifying the Neuronal Correlates of Consciousness."

"Right now you might be conscious of my Arnold Schwarzenegger accent," Koch said in his introduction, "but you're not conscious of other things in the room. Most of the activity in your brain you have no conscious access to. You have no idea how you talk. I don't know how I put the words together. I don't have access to the way I see color, I hear, I analyze language." He asked, "Is there something special about the things you have access to?"

Koch showed how specific neurons in the brain respond to recognized images and the memories of images. For example, certain neurons in one monkey familiar with O.J. Simpson's image "fired" when the monkey saw a picture of Simpson but not of Elvis, Ronald Reagan or others. One neuron in a person's brain fired specifically when he saw an

animal. Another fired when a person saw an image or cartoon of a famous person. Another fired at the image of a baseball. Only some of the neurons fired when the people were asked to remember certain images. By looking at these patterns of neuron activity and their overlap, Koch hopes to gain insight into visual consciousness and recognition.

States of Consciousness

Hobson, in his talk "Dreaming and the Brain," took another approach to understanding consciousness, addressing "states" of consciousness between sleeping and waking. Hobson said that levels of consciousness change with levels of activation in the brain. Different regions of the brain have also been linked to different states of consciousness by comparing positron emission tomography brain images of sleeping and waking people. Different sets of chemicals are associated with the sleeping and waking states as well.

"The kind of consciousness we feel," Hobson said, "is actively controlled by the brain stem," the lower stalk of the brain that connects it to the spinal cord. In different sleep states, Hobson explained, the sensory inputs are blocked; at other times the abstract thinking inputs are blocked. Different waking states such as daydreaming, being vigilant, relaxed, or drowsy, are also governed by the brain stem in this way.

"So now we're beginning to get a rather more complete picture of how consciousness changes with changes in the brain state," said Hobson. "Consciousness is the forebrain's representation of the world, our bodies and ourselves, and of course this is the great mystery...we still haven't said how this happens. What we can say is it is always a construction whose level, focus and form depend on the brain stem."

Explaining a Feeling

Yet the work of Koch and Hobson, while intriguing, doesn't begin to explain the more complicated aspects of consciousness—the self-awareness, the raw subjectivity. What makes the redness of red, the pain of headaches, the feeling of emotion, belief, imagination? According to Chalmers, if we don't explain these subjective experiences, the science is incomplete.

Can such things ever be explained? Chalmers says that first person data cannot be subject to the standard method of reductive explanation. We may one day explain how memory works, what neurons are involved in selective attention and what chemicals are associated with emotions, but even then, he argued, there will still be a further question: "Why is the performance of these functions accompanied by subjective experience?"

And herein lies the heart of the debate. Is subjective experience really something different and

insoluble, as Chalmers claims, or is it just our egotistical minds that need to believe it is so? When Chalmers polled the audience about it, a majority raised their hands at the question, "Is there a further phenomenon over and above these functions that calls for explanation?" Chalmers noted, "A pretty strong majority say yes, even in this bastion of reductionism."

Churchland couldn't agree less. In her talk "Why Anti-Reductionism Is Wrong," she said, "If you want to argue that consciousness cannot be explained neurobiologically because conscious phenomena are intrinsic, and what intrinsic means for you is it doesn't have any parts and so can't be explained...you're just arguing in a circle."

Churchland maintains that scientists will continue to design revealing experiments and eventually explain these seemingly insoluble questions. "I look around at these brilliant graduate students, and I think, 'They've got a good shot at it.'"

In the meantime, research scientists continue to move one small step at a time. Koch explained his approach, "We try to focus on the most simple, basic level of awareness. And maybe once we understand the simple level then everything else will follow, but maybe this requires more complex laws that we still don't understand."

Koch concluded, "Dave [Chalmers] might be perfectly right and it may forever remain beyond a reductionist explanation. That's for the future to see. I'm just taking the working stiff approach."

Further information about the symposium, including access to a video archive of the proceedings, can be found at <http://www.nimh.nih.gov/events/consciousness.cfm>. ■

Dr. Karen Sirocco, a research psychologist, has joined the Center for Scientific Review as a scientific review administrator in the risk, prevention, and health behavior integrated review group; she is responsible for managing the review of applications for grants under the Small Business Innovative Research Program. Prior to joining CSR, Sirocco spent 10 years in the Laboratory of Clinical Studies, NIAAA, where she was involved in basic and clinical biobehavioral research into the causes, prevention, and treatment of alcoholism. Concurrent with her position at NIAAA, she was also a school psychology consultant, first as an intern with the Arlington County Public Schools from 1995 to 1996, then with Montgomery County Public Schools. Within the public school systems, Sirocco, who is fluent in American Sign Language, performed psychological evaluations on deaf students.



Dr. Jerry Klein has joined the Center for Scientific Review, where he will be scientific review administrator of two study sections in the oncological sciences integrated review group. These sections review Small Business Innovation Research and Small Business Technology Transfer Research grant applications in the areas of diagnosis and treatment of cancer, radiation biology and medical physics. He spent 23 years at Johns Hopkins, ending up as adjunct associate professor of oncology in 1992. That year he joined INTRACEL Corp., in Rockville, where he was director of both the preclinical pharmacology and toxicology laboratory and the immunconjugate research laboratory.

Attention Female Computer Users

Do you experience work-related pain, numbness, or tingling in your fingers, hands or wrists? Have you been diagnosed with carpal tunnel syndrome? Are you a female between ages 21 and 50 who is currently working full time? If so, you are invited to participate in a research study of job stress and carpal tunnel syndrome that can help you learn more about your problem. This study includes a \$100 payment and receipt of ergonomic and job stress self-help workbooks. For more information, call (301) 295-9660.

Program Gives Boost to Native American Health

The National Institute of General Medical Sciences and the Indian Health Service have announced plans to collaborate on a new program designed to promote, develop and support centers that will link the Native American community with organizations that conduct health research. The program, Native American Research Centers for Health (NARCH), will pursue this goal by encouraging research on diseases and health conditions of

Leo Nolan, assistant to the director of the Indian Health Service, helped explain the new NARCH program.



importance to American Indians and Alaskan natives.

The NARCH program also seeks to develop a cadre of American Indian biomedical and behavioral scientists and health professionals who are able to compete successfully for NIH funding. Another goal is to increase the capacity of both the research-intensive organizations and the Indian organizations to work in partnership to produce competitive research proposals.

In announcing the collaboration, Dr. Clifton Poodry, director of the NIGMS Division of Minority Opportunities in Research, said, "This is a groundbreaking venture. We will combine the research and training mission of NIGMS with the specific IHS mission to serve the health care needs of the American Indian/Alaskan Native community. Most importantly, we are responding to advice from the community to find ways to include American Indians as researchers, not merely as subjects."

Leo Nolan, assistant to the IHS director, added that the program "will ensure that the American Indian and Alaskan native community will direct and control research on their own behalf. This effort is in direct response to the administration's initiative to actively seek the Indian community's advice and direction on matters that directly affect them."

The NARCH program is being developed in response to concerns raised at the American Indian Research Training Needs meeting held at NIH in August 1999. The meeting, cosponsored by NIGMS

and IHS, brought NIH scientists and health policy makers together with American Indian scientists from around the country to discuss the needs of American Indians with regard to biomedical research training and to develop a plan of action.

The new program, expected to be launched in mid-2000, will provide funds to support faculty-initiated, scientifically meritorious research projects, including pilot research projects, at NARCH organizations. It will also support projects designed to increase the research skills and numbers of Native American science students.—Susan Athey ■

Celebrate NIH IntraMall 2000

Celebrate IntraMall 2000 in an air-conditioned tent with free food and giveaways.

BioSpace.com will host the NIH IntraMall 2000 tent show Wednesday, July 12, 10 a.m.-3 p.m., in parking lot 10-D, on the north side of the Clinical Center. The event will highlight recent NIH IntraMall enhancements and key vendors.

Learn more about the new and improved IntraMall, the leading electronic catalog and ordering system on the NIH campus. See new IntraMall features including reconciliation and enhanced search. Learn how you can easily purchase lab supplies, computer and office supplies on the IntraMall using your purchase card.

Visit such IntraMall vendors as Biosource International, Comdisco, Government Scientific Source, Hyclone, Invitrogen, Life Technologies, Office Depot, Peninsula Labs, RAL Diagnostic, Sigma-Aldrich, Strategic Biosolutions, Thomas Scientific and VWR.

Visit BioSpace.com, NIH's new CRADA partner for the IntraMall. The leading web site for life sciences content and supplies, BioSpace.com has integrated life sciences content with catalogs in the IntraMall (intramall.nih.gov). BioSpace.com has increased the number of products available in the NIH IntraMall from 100,000 in December 1999 to 1 million products in summer 2000. ■

Female Volunteers Needed

The Behavioral Endocrinology Branch, NIMH, is seeking female volunteers ages 18-55 to participate in studies of the effects of sex hormones on brain and behavior. Volunteers must have regular menstrual cycles with no changes in mood in relationship to menses, be free of medical illnesses and not taking any hormones or medication on a regular basis. They will complete daily rating forms and be offered participation in one or more protocols. Payment will be determined by the duration of each visit and the type of protocol. For more information, call Linda Simpson-St. Clair, 496-9576. ■

NIH Marks 28th Anniversary of Asian/Pacific Islander American Heritage Program

The NIH Asian/Pacific Islander American Heritage Program celebrated its 28th anniversary this year. The festivities included a lunchtime program of Asian food and demonstrations of Asian arts and crafts on May 12 and an evening program of Asian music and dance on May 26. There was a calligraphy demonstration (below, l) and an exhibition of Indian rugs. The Mitra Kusuma Quartet played Balinese music (below, r). Cuisines from China, India, Japan, Korea, the Philippines and Thailand were represented. A percentage of the proceeds were donated to the NIH Asian/Pacific Islander American Organization scholarship fund. The celebration continued at the evening program on May 26 with performances of music and dance from: China, by the Hua Sha Chinese Dance Center (two photos at r); India, by the Indian Dance Educators Association; Indonesia, by the Gamelan Mitra Kusuma Orchestra and Dance Troupe; and Korea, by the Washington Korean Dance Company. A Japanese fashion show featuring kimonos was also featured.

PHOTOS: BILL BRANSON AND JOHN CRAWFORD



Artist Al Laoang (second from l), who has designed many of the annual posters for this event, enjoys lunch with friends May 12.



These ladies show off floral arrangements at the luncheon while (below) members of the Hua Sha Chinese Dance Center perform.



NLM's Janet Nguyen demonstrates the art of calligraphy at the lunchtime event at Bldg. 31's patio.



At left, performers from the Washington Korean Dance Company whirl at the evening program.

NIH'ers gather at the table (l) sponsored by the Bangkok Garden, a Thai restaurant in Bethesda. Part of the proceeds from the sale of food benefitted the APAO scholarship fund.

Renewal of NIH Parking Permits

NIH General Parking Permits for campus employees whose last names begin with M and N will expire on the last day of July 2000.

In order to obtain a new General Parking Permit, an employee must visit the NIH Parking Office in Bldg. 31, Rm. B3B04. Hours are 7:30 a.m. to 4 p.m., Monday through Friday. Off-campus employees will be issued the "Off Campus Employee Parking Permit." These permits allow you to park at the NIH Bethesda campus or leased facilities that require an NIH parking permit in the general employee parking lots. Remember, when applying for new/renewal permits, you must bring a valid NIH identification card, valid driver's license and a valid vehicle registration certificate. For more information, call 496-6851 or send email to nihparkingoffice@ors.od.nih.gov.

CIT Plans Dynamic Summer Term

Plans are being finalized for a dynamic Summer Term in the CIT Training Program. CIT continues to meet the demands of a population always excited by new knowledge and skills that can be used to improve their work. It will offer new sections of existing courses, increase the frequency of some of the most popular selections, update offerings to remain current with the rapid changes that take place in technology, and add a number of new courses to the schedule.

The term begins the last week of June and then takes off through July and August. As always, CIT has courses available on some of the hottest tools out there. Some of the returning offerings include three courses on Java ranging from an introduction to the topic early in July to specifics such as GUI programming and Java Servlets. Also, Windows 2000 training, both for end users and system administrators, continues to be popular, and CIT continues to teach Unix, both its fundamentals as well as specifics such as Linux installation and configuration and basic workstation security. Finally, the Biowulf supercluster for scientific applications has experienced a significant upgrade and now includes more than 200 machines. Come join Dr. Steven Fellini and learn more about what that group is doing and how you can use this powerful tool.

A number of new courses are allowing greater specialization in or expanding the scope of coverage for a given topic. *Meet Your PC – What's Inside the Box* distinguishes itself from *Hands-On PC Hardware* as a class for those who do not plan on tackling advanced hardware issues on their own but would benefit from knowing more about how their machines work and what the different pieces do. Similarly, those who need to learn SQL can find information both from the standard 2-day course, *Using SQL to Retrieve DB2 and Oracle Data*, and from the new half-day *Beginning SQL*. The new class is geared towards the SQL beginner interested in PC-oriented databases.

Other new courses touch on a variety of thought-provoking topics. For those who have been working with HTML, *Dynamic HTML* offers a method for increasing design flexibility and including movement and user interactivity in web sites. SAS users who wish to remain on the cutting edge should come and hear *New Features in SAS Version 8*. This class will introduce you to the many enhancements that have been made to this powerful statistical tool. A good course for anyone concerned about computer security, *Resisting Hacker Attacks: Understand the Tools* should provide an interesting look at the motivations, tools, techniques and results of recent hacker attacks.

Those who are formatting scientific documents for presentation and publication may benefit from *An*

Overview of Latex. This program does an excellent job of bringing together text, pictures and graphics in a complete document. Another new scientific course is *Sequence Alignment and Modeling System, a Tutorial*, giving an introduction to a tool that uses hidden Markov models to search for homologies among protein sequences. For MVS users, CIT has expanded ISPF coverage to include both *Introduction to ISPF/PDF* and *Intermediate ISPF*. If you have experience with ISPF, you may want to consider visiting the later course to further your knowledge of this topic. If you are new to ISPF, consider taking both.

As always, classes in the CIT Training Program are offered without charge to CIT registered users and employees of NIH. Complete details on the summer classes are available on the web at <http://training.cit.nih.gov> or in the brochure *NIH Computer Training*. For details about the program and classes, to obtain a copy of the brochure, or to register, call 594-6248. Students may also register online at the above web site. ■

Dr. Monica Liebert has joined NIDDK to direct basic science projects for the urology program of the Division of Kidney, Urologic, and Hematologic Diseases. She comes to NIH from the University of Texas-M.D. Anderson Cancer Center and Health Sciences Center, both in Houston, where she served as associate professor in the departments of urology, surgery, and cell biology. Liebert is the recipient of many honors and awards and has served on NIH and private advisory and review committees. She will also continue her research on urothelial differentiation and altered gene expression in bladder cancer in NCI's Urologic Oncology Branch.



Sons of Italy Sponsor Talk, June 28

The NIH Sons of Italy Lodge invites you to an illustrated talk, "Old Calabria Revisited." Dr. William Sanslone, an alumnus of NIH, will share his experiences during recent visits to Locri and areas along the Ionian Coast of Calabria on Wednesday, June 28, 7:30 p.m., Executive Plaza North (ground-floor conference area), 6120 Executive Blvd., Rockville, Md. For more information, email ws23@gunet.georgetown.edu. The NIH lodge meets the second Tuesday of each month at 6 p.m. at Umberto's Italian Restaurant, Cabin John Mall. Anyone interested in joining the lodge may call Nina Baccanari, (301) 869-4045, or Cathy Battistone, 594-1088. ■



HRDD Training Tips

The Human Resource Development Division, OHRM, will offer the courses below. Hands-on, self-study, personal computer training courses are available through the HRDD's User Resource Center at no cost to NIH employees. For details, visit HRDD online at <http://trainingcenter.od.nih.gov/> or call 496-6211.

<i>Administrative Skills</i>	
The Professional Office Manager I	7/18
<i>Administrative Systems</i>	
Fellowship Payment System	7/5
<i>Communication Skills</i>	
Developing Editing Skills	7/11
<i>Computer Application and Concepts</i>	
Introduction to the Internet (half day)	7/10
Intermediate Internet (half day)	7/10
Intermediate MS Access 97 (Office 97)	7/12
Introduction to Corel WordPerfect 8.0	7/19
Print Production with Adobe PhotoShop 4.0	7/20
Intermediate MS Word 97 (Office 97)	7/20
Introduction to Web Page Design w/FrontPage	7/20
Introduction to MS Excel 97 (Office 97)	7/24
<i>Career Transition</i>	
Addressing KSA's and the Federal Rating Process	7/24
<i>Management, Supervision & Professional Development</i>	
Creating Distinctive Customer Service	7/11
The Invisible Rules of Organizational Culture	7/13
How to Manage Conflict: Solving Problems at Work	7/18
Winning Negotiations	7/19
Direct Attention Thinking Tools	7/20

CIT Computer Classes

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

Data Warehouse <i>Query</i> : Budget & Finance	6/28
Creating Presentations with PowerPoint 2000	6/29
Data Warehouse <i>Query</i> : Human Resources	7/5
Creating Presentations with PowerPoint 2000	7/5
Java Servlets	7/6
Data Warehouse <i>Query</i> : Property Management	7/6
Introduction to ISPF/PDF	7/6
LUG - Linux Users Group	7/7
Relational Database Overview	7/10
NIH Enterprise Directory (NED): Administrative Officer and Technician Training	7/10
NIH Enterprise Directory (NED): Administrative Officer and Technician Training	7/11
Meet Your PC - What's Inside the Box	7/11
Data Warehouse <i>Analyze</i> : Budget & Finance	7/11
WIG - World Wide Web Interest Group	7/11
Java	7/11, 13
Creating Composite Images with Photoshop	7/12
Outlook 2000 Tips and Tricks	7/12
Data Warehouse Budget Tracking	7/12

Sailing Club Open House, July 15

Old salts and landlubbers alike are invited to the R&W Sailing Club picnic and open house on Saturday, July 15 (rain or shine) from 10 a.m. to 4 p.m. at Selby Bay Sailing Center in Edgewater, Md. The event is free to R&W members and will include food, drink and demonstration sails in the club's 19-foot Flying Scot sailboats. Fall sailing classes begin in August; this is a good chance to preview the boats and meet the members before signing up. Directions to Selby Bay and other information on the open house and the sailing club are on the club's web site: <http://www.recgov.org/r&w/sailing/sail.html>. ■



NIH sailors enjoy the club's newest Flying Scot, "Breezy."

Make Online Training Work for You

If you are one of the people who have recently received an account for the pilot FasTrac Online training program, you know online training is a convenient way to gain the skills you need. However, it can be difficult to find the time to complete the training. To make the most of your training time, consider the following tips: prepare a training plan with clear goals and completion dates, make a commitment to complete the training, schedule time on your calendar, eliminate distractions, and bookmark your training sites. Need help developing your plan? Call 496-6211 and set up an appointment with a career counselor. ■



The Noontime Christian Fellowship's National Day of Prayer vigil held May 4 in front of Bldg. 1 drew a crowd surrounding the flagpole.

CIT Security Program Protects Against Hacker Attacks

By Kevin Haney

When the ILOVEYOU virus disrupted email traffic around the world in May, it made many people realize how much they rely on email in both their professional and personal lives (as the old adage says, the quickest way to make someone appreciate something is to take it away). And several months before the virus, many major commercial Internet web sites were brought down by a denial-of-service attack perpetrated by teenaged hackers. These types of incidents have made many people realize that the Internet, and thus their own email communication and web surfing, is vulnerable to viruses and other sorts of malicious activities. In fact, NIH experiences attempted hacker attacks and other nefarious electronic events every day. While usually not serious, these attacks illustrate the fact that the Internet can still be a very dangerous (virtual) place if the proper precautions are not taken.

CIT has been taking steps to ensure that access to NIH IT resources are not disrupted by these kinds of attacks. Among these steps are the following:

- CIT is running intrusion detection and firewall software in order to protect NIHnet from intruders and unauthorized activity. This provides real-time attack recognition and response that offers a greater level of protection against attacks.

- CIT has an NIH-wide Incident Response Team (IRT), which investigates and responds to all reported actual and suspected IT security incidents at NIH. Since its inception in 1999, the IRT has responded to an estimated 500 security incidents at NIH.

- CIT continuously scans NIH networks for potential problems. Specific networks or systems will be scanned by the IRT upon request and potential problems reported to the system owners.

- CIT provides site-licensed antivirus software and runs antivirus software on the NIHnet backbone as well (for more information, see <http://antivirus.nih.gov/>).

CIT has also created new mechanisms to communicate important security information to NIH staff. Three new email lists, to which any NIH employee can subscribe, have been created (see sidebar for subscription instructions). IT-SECURITY is a general list that will be used to communicate general, non-platform specific security information to NIH. WIN-SECURITY will be used to post information on newly discovered vulnerabilities and incidents on the Windows-family platform, and UNIX-SECURITY will be used for the same purpose except it will cover all UNIX platforms. Most system administrators will likely subscribe to two lists. It is especially important that any NIH staff member who is a system administrator subscribe to

How To Subscribe to Security Email Lists

To subscribe, send an email message with the following text to the address listserv@list.nih.gov:

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sub list-name your name
for example, sub IT-SECURITY John Doe
sub WIN-SECURITY
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(These commands would subscribe John Doe to both IT-SECURITY and WIN-SECURITY—it is not necessary to include your name on any line after the first.) Type the command(s) in the body of the email message. Each line is treated as a separate command and multiple subscription commands may be sent in a single email message. No subject line or other data is necessary.

either WIN-SECURITY or UNIX-SECURITY, based on the types of systems they administer.

CIT staff is available to assist with security issues, as is the Information Systems Security Officer (ISSO) for each IC. A list of ISSOs for each IC can be found at <http://irm.cit.nih.gov/security/scroster.html>. In addition, security incidents can be reported to TASC at 594-6248. Incidents should be reported when they occur. ■

Is Your Teen Withdrawn, Sad, Down?

You and your 11-16-year-old may be eligible to take part in a research study at the National Institute of Mental Health. This study is about how young people experience emotions, and how sad moods can cause problems. Payment will be provided. For details, call Barbara Usher, 496-1301.



Biologist Christiane Robbins and 11-month-old son David enjoy the comfort and privacy of NIH's new onsite lactation room, located in Bldg. 49, Rm. 1A63. Furnished with assistance from the NHGRI intramural research

program, many of whose scientists work in Bldg. 49, the new lactation room is one of 7 NIH worksite lactation program facilities where new mothers who are breastfeeding can go to collect their breast milk during the work day. The rooms are equipped with Medela Lactina pumps and may be used free of charge by NIH'ers. Employees can schedule a time to use the lactation rooms by contacting the NIH Worksite Lactation Program, 435-7850, or by going to the NIH Worksite Health Promotion Program web site at <http://odp.od.nih.gov/whpp>.