

The NIH Record

How're We Doing?

NIH Claims Ten Percent of Decade's Hundred Most-Cited Scientists

By Carla Garnett

Intramural NIH has distinguished itself in one of the most competitive areas of biomedical science—publication of research. According to a recent issue of *The Scientist*, 10 NIH researchers are among the top 100 most-cited scientists of the 1980's. The list was compiled from the files of *Science Citation Index*, a publication of the Philadelphia-based Institute for Scientific Information (ISI).

"We're very proud that a number of our prominent scientists have been recognized by their publications," said Dr. Philip Chen, NIH associate director for intramural affairs.

Chen's work was recently lauded as well in another ISI publication, *Current Contents*: His 1956 methodology paper on microdetection of phosphorus has drawn more than 5,400 citations, making it one of the most-cited articles of all time.

Another NIH'er made the all-time list—Dr. Martin Rodbell of NIEHS. His 1964 article on the metabolism of isolated fat cells has collected more than 2,800 citations over 40 years. The ISI index covered citations of publications back to 1945.

"There are various measures of a scientist's impact," Chen continued. "There are prizes won, awards conferred and citations. That NIH, by virtue of having 10 highly cited scientists—and actually many more—has had this great an impact on the science of other researchers is very important."

Guidelines for NIH Intramural Scientists Drafted

By Carla Garnett

Researchers at NIH now have something that many university scientists around the country have: written guidelines that may help clear up some cloudy areas of scientific conduct.

NHLBI director of intramural research Dr. Edward Korn, who chaired a nine-member committee that drafted *Guidelines*, described the document's background.

"The scientific directors thought it would be useful to define a set of standards for practicing science here at NIH," he said. "The subcommittee consisted of working laboratory, clinical and computer scientists. Its draft document was modified by the scientific directors before their final approval.

"The guidelines are not rules and regulations," he continued. "They are

(See **GUIDELINES**, Page 8)

The 10 NIH researchers found in the top 100 most-cited scientists of the decade are listed below.

Dr. Robert Gallo, chief of NCI's Laboratory of Tumor Cell Biology and codiscoverer of the HIV virus, is the world's most-cited scientist of the last decade, collecting more than 23,000 citations of his articles. His most cited paper was published in *Science* in 1984, had been cited almost 1,500 times by December 1988 and is the 10th most-cited article of the decade.

NIAID director Dr. Anthony S. Fauci, who is also NIH associate director for AIDS research, and chief of NIAID's Laboratory of Immunoregulation, is the eighth most-cited scientist during 1980 to 1988. He is also author of the most-cited paper in medicine in the last 2 years; his review, "The human immunodeficiency virus: Infectivity and mechanisms of pathogenesis," published in a February 1988 *Science*, has already garnered more than 300 citations.

Dr. Ira Pastan, chief of the Laboratory of Molecular Biology at NCI, has been among the top 50 most-cited researchers since 1965. For the period covering 1980 to 1988, he ranks 33rd. His most cited paper during that time is "Journey to the center of the cell: Role of the receptosome," which was published in

(See **TOP PAPERS**, Page 2)



Students from the Carnegie Institution of Washington's "First Light" science program visited NIH recently. Asba (l) holds long-term "patient" Muriel as program originator Dr. Maxine Singer, Carnegie president and NCI scientist emeritus, looks on. See story on page 6.

Whose Genome Is it, Anyway?

By Leslie Fink

A quick glance around any public gathering will attest to the physical diversity of the human population. In most groups of people, some will be tall, others may be hefty; some will have brown eyes, and others blue. Physical attributes such as height, complexion, and hair and eye color are largely determined by genes—packets of the genetic material DNA, which are located on chromosomes.

The complete set of human genes, collectively called the human genome, is made up of about 3 billion chemical subunits called nucleotides. A research initiative called the human genome project is now under way to map all the genes on human chromosomes and to determine the order, or sequence, of the 3 billion nucleotides. So as scientists begin to map and analyze the molecular details of the complete set of human genes, whose will it be?

In many ways, describing the anatomy of the human genome will be similar to studying the human heart, for example, or the human brain. While there are small differences from person to person in the size and shape of these organs, most of the key characteristics are the same. "Although human beings are distinct from one another, they are really very similar

(See **GENOME**, Page 7)

Never Too Late To Learn

Training Offered to Veteran NIH Administrators

By Rich McManus

Second of two articles

Say you've been around NIH for a few years when you suddenly realize there's a whole new set of ropes you have yet to learn about this place.

If you happen to be a health scientist administrator, there is a program, developed in 1984, that permits you to get the training you want. Only six people have enrolled in it so far. One of them tailored a new and more satisfying career for himself.

An Invent-It-Yourself Program

Dr. Marvin Kalt, deputy director of NCI's Division of Extramural Activities, had already been at NIH for 8 years when he took advantage of a professional development assignment (PDA) offered by the HSA Development Programs office.

"I had been so busy that I never seriously considered it," he said. "Then I made the time to do it.

(See **HSA TRAINING**, Page 4)

TOP PAPERS

(Continued from Page 1)

Science in 1981 and collected close to 400 citations.

NCI Metabolism Branch chief Dr. Thomas Waldmann is number 34 of the top 100 most-cited scientists. His most cited paper during the 1980's is "A monoclonal antibody (anti-Tac) reactive with activated and functionally mature human T cells," which was published in the *Journal of Immunology* in 1981 and had collected 843 citations by the end of 1988. Waldmann collected almost 6,800 citations overall from 1980 to 1988.

Dr. Stuart Aaronson, chief of the Laboratory of Cellular and Molecular Biology at NCI since 1977, is the 46th most-cited scientist in the last decade. According to ISI, his 1982 *PNAS-Biology* article, "Translocation of the *c-myc* gene into the immunoglobulin heavy-chain locus in human Burkitt lymphoma and murine plasmacytoma cells," amassed more than 560 citations through 1988.

NCI Laboratory of Chemoprevention chief Dr. Michael Sporn was cited almost 370 times for his paper, "Transforming growth factor-b in human platelets: Identification of a major storage site, purification, and characterization," published in 1983 in the *Journal of Biological Chemistry*. He is the 51st most-cited scientist of 1980 to 1988.

Dr. William Paul, chief of the Laboratory of Immunology at NIAID, was the 53rd most-cited scientist during the 1980's, collecting close to 5,680 citations by 1988. His most-cited paper, "Identification of a T-cell derived B-cell growth factor distinct from interleukin-2," was published in a 1982 *Journal of Experimental Therapeutics*. That paper collected more than 530 citations by 1989.

NHLBI Pulmonary Branch chief Dr. Ronald Crystal, whose 1981 *American Journal of Medicine* paper, "Interstitial lung disease: current concepts of pathogenesis, staging, and therapy," collected about 300 citations, is 59th among the 100 highly cited researchers through 1988.

Dr. John Daly, chief of the Laboratory of Bioorganic Chemistry at NIDDK and collector of more than 5,220 citations overall, ranks 62nd among the top-cited scientists.

According to *The Scientist*, his total citation count "reflects numerous high-impact papers rather than one or two blockbusters." ISI reports that at least 10 of Daly's papers have been cited more than 300 times each. His most cited paper during the 1980's was "Adenosine receptors in the central nervous system: Relationship to the central actions of methylxanthines," published in a 1981 issue of *Life Sciences*.

One other NIH researcher was recognized in ISI's top 100 top-cited scientists of the last

decade—NCI Surgery Branch chief Dr. Steven Rosenberg, who wrote the 1982 *Journal of Experimental Medicine* paper, "Lymphokine-activated killer-cell phenomenon: Lysis of natural-killer resistant fresh solid tumor cells by interleukin-2 activated autologous human peripheral-blood lymphocytes," that was cited more than 680 times through 1988.

Rosenberg's true ranking could not be ascertained by ISI because another S.A. Rosenberg—Saul A., who conducts oncology research at Stanford University—was also highly cited. The Rosenbergs' papers are commingled in ISI data files. *The Scientist* estimated that articles written by NIH's S.A. Rosenberg have been cited more than 5,000 times through the 1980's.

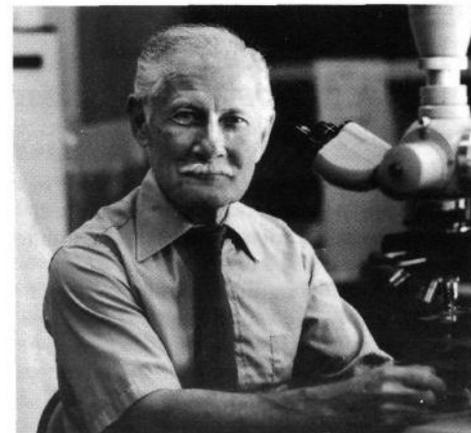
A final interesting point noted by *The Scientist*—all 10 of these highly cited scientists are career NIH'ers with 27 years average length of service. □



Dr. Louise E. Ramm has been appointed director of the Biological Models and Materials Program at the National Center for Research Resources. Ramm began her career at NIH as a health scientist administrator with the biological models and materials section of the Animal Resources Program and became acting director when the section became a program in 1989. Prior to coming to NIH, she served on the faculty of the molecular biology and genetics department at Johns Hopkins University school of medicine for 5 years. Ramm received her Ph.D. in microbiology from the University of Virginia.

IMPAC Data Base Course Offered

DRG will be teaching a course on the Inquiry and Reporting System, which is a programming language used to query the IMPAC data base. The course will be given on Aug. 1, 2, 3, 8, 9 and 10 in Bldg. 12A, Rm. B45. A knowledge of Wylbur is required. For further information, contact Carol Bleakley, 496-7217 or Brenda Grimes, 496-7864. □



University of Toronto officials have named NINDS scientist Dr. Milton W. Brightman as the first recipient of the new international Cragie Scholar Award, given biennially "to recognize classic work in the field of brain capillaries." Brightman, chief of the brain structural plasticity section, Laboratory of Neurobiology, discussed NINDS research on ways of bypassing the blood-brain barrier during the keynote address at the first Cragie Conference on Brain Capillaries on June 24. Dr. E. Horne Cragie, who died last year, was one of Brightman's professors at the University of Toronto while Brightman was studying for his master's degree.

The NIH Record

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Dental Researchers Link Smokeless Tobacco to Oral Lesions

A study of professional baseball players indicates that using smokeless tobacco increases the risk of developing oral lesions and gum problems, according to dental researchers at the University of California, San Francisco.

Study results appear in two separate articles in July—one in the *Journal of the American Medical Association* and another in the *Journal of the American Dental Association*.

"This is the most comprehensive study of its kind," said Dr. Harald Löe, director of the National Institute of Dental Research, which supported the study. "These findings show us that smokeless tobacco is harmful to the oral tissues and that further research in this area is warranted."

The study focused on 1,109 baseball players during spring training in 1988. Members of seven major league teams and their associated minor league teams participated: the San Francisco Giants, California Angels, Cleveland Indians, Milwaukee Brewers, Oakland Athletics, Seattle Mariners, and Chicago Cubs.

The researchers examined baseball players because of their high rates of smokeless tobacco use and because they are role models for young men. They assessed the effects of snuff—a finely ground or shredded tobacco—and chewing tobacco—a more coarsely cut tobacco packed in loose or plug form.

Thirty-nine percent of the players had used smokeless tobacco during the previous week, a much higher rate than that found in the general population. According to recent national survey data, the prevalence of smokeless

tobacco use in the general population ranges from about 4 percent to 11 percent among males who are anywhere between their late teens and 39 years of age.

In the baseball study, about three times as many players used snuff as used chewing tobacco. Only 4 percent of the players were cigarette smokers.

Of those classified as within-week users, 46 percent had oral leukoplakia lesions, a leathery-appearing white or yellowish patch inside the cheek. Snuff users had a much higher prevalence of oral leukoplakia (55.6 percent) than did tobacco chewers (17.2 percent).

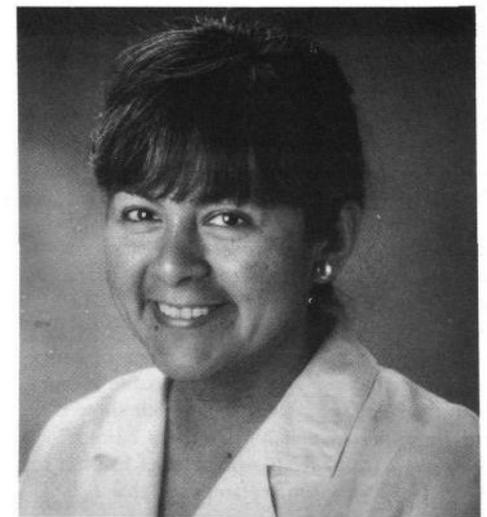
The researchers believe that snuff might be more dangerous to oral health because it is held in one place in the mouth (a "pinch"), unlike chewing tobacco, which is held loosely in the cheek (a "chew") and may move around. Also, snuff generally has higher levels of nicotine and other carcinogenic substances than does chewing tobacco.

Snuff users were more likely than nonusers to have separation of gums from teeth at the site where the tobacco is usually held. The researchers stressed that such periodontal disease would probably not be reversible, even if smokeless tobacco use was stopped.

Despite the fact that baseball and smokeless tobacco have been seen as partners for a long time, things are beginning to change. Many teams such as the San Francisco Giants have banned the availability of free smokeless tobacco products in their clubhouses and now provide information to players on the health effects of smokeless tobacco. □



Dr. Susan M. Pilch recently was appointed deputy director of the Division of Nutrition Research Coordination (DNRC), Office of Disease Prevention, OD. The DNRC coordinates the NIH nutrition research and training activities supported by its ICDs; a major component of the DNRC is the NIH nutrition coordinating committee. Pilch received her B.A. from the University of Virginia and her Ph.D. from Cornell University. She was formerly on the staff of the Life Sciences Research Office, FASEB, where she was project leader for a variety of studies on nutritional status assessment, nutrition monitoring, and other topics, and served as an assistant editor for the American Journal of Clinical Nutrition.



Dr. Norika Ruiz Bravo has been appointed executive secretary of the Minority Access to Research Careers review subcommittee in the National Institute of General Medical Sciences. Bravo, a native of Peru, received her Ph.D. from Yale University. She comes to NIH from Baylor College of Medicine where she had been an assistant professor doing research in the departments of urology and cell biology since 1987.

Day Care Subcommittees Need Volunteers

Day care surveys were distributed to the NIH community in early January. At that time the NIH day care committee received names of employees interested in volunteering and is now extending the invitation again. As a result of the survey, a need for five subcommittees has been defined to further explore and evaluate day care needs and options at NIH.

Subcommittees are as follows:

- Central oversight subcommittee to develop policies and procedures for monitoring NIH day care services;
- Day care referral subcommittee to investigate options for creating and implementing a resource service that would make information about day care (tuition subsidies, sick child care, elder care, etc.) available to NIH employees;
- Current NIH day care services subcommittee to work with a consultant to evaluate

the current day care services at NIH and make recommendations for additions and changes;

- Fund raising subcommittee to search out methods of raising money needed to subsidize tuition and equipment costs;
- Family day care network subcommittee to explore the desirability and feasibility of maintaining a network of NIH-sponsored family day care homes used to care for NIH employees' children.

If you are interested in participating in any of these subcommittees, please use an inter-office envelope to send your name, NIH address, telephone number and subcommittee that interests you to: Paul R. Horton, Director, Division of Space Management, Suite 200, Executive Plaza South.

Send in your responses by Aug. 16 so that the subcommittees may be organized and convened. If there are any further questions, call Horton, 496-3172. □

HSA TRAINING*(Continued from Page 1)*

"It's basically an invent-it-yourself program," he explained. "It's for people who have been around long enough to know what they don't know."

Open to HSAs with at least 3 years of experience, the PDA offers 4-12 weeks of training spread out over 2 years. Kalt signed on in late 1988 following conversations with A. Robert "Tony" Polcari (see sidebar) and just recently finished his training.

"I wanted to get broader experience," he said. "It turned out to be a golden opportunity."

Trained in cellular, developmental and reproductive biology, Kalt came to NIA in 1980 as an executive secretary. He had been assistant professor of anatomy at the University of Connecticut Health Center where his work on germ cell development and differentiation had been supported by NICHD and the National Science Foundation. Prior to that he had done an NIGMS-sponsored postdoctoral fellowship at Yale.

"At the university, I was interacting with scientist administrators all the time," he recalls. "Realizing that grant money would be harder, not easier, to get made me consider careers other than straight research. NIH gives out all the grant money and seemed like a

"One of the best parts of the program is that it gives you a reason to talk to the experts. Just listening to them for an hour or two about what their day-to-day life was like . . . gave me insights."

good place to start."

Owing to contacts he had made while an academic researcher, Kalt was offered a job at NIA.

"NIA had just gotten off the ground," he remembers. "It had relatively few experts so it seemed like a good place to develop. It was small enough for me to learn a lot in a short time."

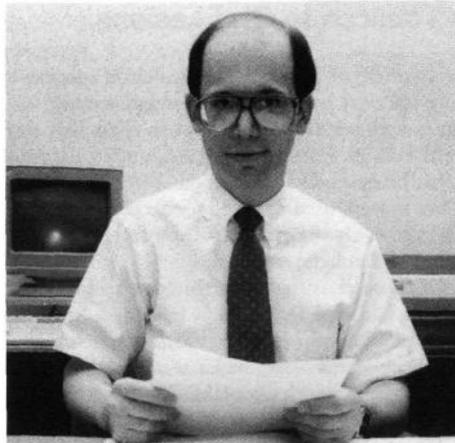
"I got to know about a wide range of issues and problems," he continued. "I made about 100 site visits to universities, which showed me the importance of NIH-academic links."

In just 3 years, Kalt rose to chief of NIA's Scientific Review Office, an outfit that is dwarfed, in turn, by his present post.

"NIA's entire extramural program is on one floor of Bldg. 31," he says. "At NCI, review and evaluation functions alone have division status."

Hoping eventually to land a job in policy-making, Kalt, who was besieged at NIA by an ever-increasing workload, sought a kind of refuge in the PDA.

"PDA is for those who are happy in what



Dr. Marvin Kalt

they're doing but haven't had the breadth of a few jobs at NIH," he said. "It gives you the license to walk in virtually anywhere relevant to your goals and get training."

Kalt's goals were shaped in part by the preceptor to whom he was assigned—Dr. Ernest Johnson, a former GA who now directs NIDDK's Division of Diabetes, Endocrinology and Metabolic Diseases. The two planned a PDA that included:

Five weeks learning program planning and evaluation with Dr. Barbara Packard, NHLBI's planning director. "That taught me how broad goals at NIH are set," said Kalt, who wrote a report on the effectiveness of NHLBI training programs while on assignment there.

"Very often there is a specific product associated with these rotations," he related.

Six weeks (spread out over 3 months) with Dr. Faye Austin, acting associate director for the extramural research program at NCI's Division of Cancer Biology and Diagnosis, taught him how the National Cancer Advisory Board works and familiarized him with how NCI handles grant cycles.

"There is a lot of variability in how the ICDs get things accomplished and still stay within the rules," Kalt learned. "It taught me how different offices handle the same task."

"One of the best parts of the program is that it gives you a reason to talk to the

"One of the things NIH teaches you is what the difference is between being good in a field and being the best. I'm glad to be a scientist administrator and not a bench scientist."

experts," he said. "Just listening to them for an hour or two about what their day-to-day life was like and what issues I could work on gave me insights into trends that weren't obvious, or that would become issues in the future."

"A PDA," he continued, "would be a good opportunity to go across NIH and the department to assemble a broad view of an issue."

Kalt's last assignment—discovering how issues develop across government agencies—involved formal course work at the Federal Executive Institute and the Office of Personnel Management, plus interviews with top-level managers in Bldg. 1, including Dr. William Raub, now acting NIH director.

Kalt acknowledges that his present position at the Senior Executive Service level in NCI owes, in part, to a PDA assignment in that institute.

"It's just a coincidence that I did a rotation in the institute that eventually hired me," he said. "But that assignment gave me a tremendous advantage in learning the specifics of my job. There are 2,000 people in NCI, so any advantage is important to have."

Kalt says he has a lot more time these days to devote to policy issues rather than to review of specific applications. "Being able to do that was really the goal of my PDA experience. This is the kind of job I thought I'd be most interested in."

Admitting that he misses research "a little," Kalt says, "I have never felt that I made the wrong decision. One of the things NIH teaches you is what the difference is between being good in a field and being the best. I'm glad to be a scientist administrator and not a bench scientist."

Employees who think an HSA training program might be broadening may call the Office of Health Scientist Administrator Development Programs, 496-1736.

Polcari Plays Matchmaker Role

There may be no more capable a matchmaker on the NIH campus than A. Robert "Tony" Polcari, director of the Health Scientist Administrator Development Programs. Combining the skills of a diplomat, confessor and counselor, he is probably the one person to meet if you are interested in broadening your management horizons at NIH.

A native of Little Italy in Boston's North End, Polcari arrived at NIH in 1962 with a graduate degree in psychiatric social work from the University of Chicago. He had worked with patients in Chicago and Anchorage before joining the Clinical Center's social work staff. He served three institutes at the hospital—NCI, NINDS and NIMH.

"Children with leukemia were the last patient population that I served," he recalls. "It was very depressing and very emotional. Every patient that came in was going to die, and they did. I finally had it up to here and became an administrator."

In 1970, Polcari became executive secretary at ADAMHA's Center for Studies of Suicide Prevention. From there he migrated to a similar position in the Center for Studies of

Metropolitan Mental Health Problems. In 1974, he returned to NIH as assistant to the chief of the Office for Protection from Research Risks. Polcari became executive secretary of the Grants Associate (GA) Program in 1975 and today oversees the four HSA training programs—GA, newly hired, HSA trainee and professional development assignment.

So much for his history on paper. What he really has to offer appears on no resume.

"When someone comes into our program, I try to get under their skin and see what the problems are," says Polcari, crediting his years of social work with preparing him for this job. "I try to learn what clicks and what helps get



A. Robert Polcari

people off the ground. I try to hear between the lines and read between the lines. Also, I keep close contact with people."

"Tony is the kind of person who instills self-esteem," says Tommie Sue Tralka, one of his trainees. "I've seen people go into his GA program who appear beaten and they start out with this wounded look. But after a year in the GA Program they come out with their chests out, feeling good about themselves. They're prepared.

"It scares me for when he retires," Tralka continues. "It's terrible to think that one person could have so much impact. I'm not sure what it is about Tony but he gives you the sense that you can do anything. I can't imagine how he could be replaced."

Says Polcari, "You get a feel for peoples' strengths after knowing them for a few months. I try not to push."

If there is any secret to his skill, Polcari says it is that he "gets to know (trainees) as people. I try to support where their real motivations lie. These people aren't leaving science or their research careers at all. By managing portfolios of grants, they are expanding their research, not narrowing it."

There are some 700 HSAs working at NIH. Roughly 10-15 percent of them are graduates of either GA, newly hired, or HSA trainee programs—all voluntary—run by Polcari. The GAs get most of his attention, as he is their prime supervisor and career counselor.

"It's a very selective program," he says. "We get 100 new applications for the GA Program every year. Seventy percent are rated eligible, but only half of those get high enough priority scores to be reviewed by the GA board. Of them, one third are interviewed, then only one third are selected. At the end of their year, however, they are ready for any HSA assignment."

Only five GAs are accepted for training each year. The other HSA training programs currently enroll about 20 people.

"A couple of times a week I hear from interested members of intramural NIH," says Polcari. "Calls from extramural NIH come in daily."

Though many credit him with rejuvenating their careers, Polcari is modest and low-key about his talent: "If you're around long enough, you learn a few things. NIH is just a special agency and I've been with it for years. Age and experience are the key."

Reconsidering, he gives all the credit to his assistant Roberta Light, who has been with him since 1976. "Roberta really runs the program, not me. She's just fantastic." □

Office Supply Show Planned

NLM will sponsor an office product show featuring free samples and demonstrations by the 3M Company on July 27, 11 a.m.-2 p.m. in Bldg. 31, Conf. Rm. 10. For more information, contact Rob Morrison, 1-800-241-3669. □

FAES Offering Stipends

FAES is administering special funds known as Wellcome Stipends to augment the stipends of postdoctoral level guest workers at NIH. Depending on the total funds that are available and the number of eligible applicants, a maximum of \$3,600/year (\$300/month) may be granted to each approved individual as an income supplement to a maximum total family income of \$15,000/year plus \$1,000 for each dependent including spouse.

The selection committee will consider the scientific merit of the research to be conducted as well as need and professional qualifications of the applicant.

Awards will be made twice a year, Mar. 31 and Sept. 30 for the 12-month period beginning Apr. 1 and Oct. 1, respectively. Applications for 1990 must be received in the FAES office on or before Aug. 24 for the September awards. Applications are now being accepted.

Additional application forms are available from the FAES business office, Bldg. 10, Rm. BIC18 or by calling 496-7976. □

NIMH Seeks Volunteers

NIMH seeks volunteers to participate in a study using an innovative treatment for depression. All services and medications are free. For more information call 496-6981 or 496-2141. □



Jennifer Price, the 1990 Asthma and Allergy Foundation of America poster child, displays a Camp NIAID T-shirt presented to her at the recent dedication of the NIAID Asthma and Allergic Diseases Center located in the Clinical Center during National Asthma and Allergy Awareness Week. Looking on are (from l) Dr. John Gallin, director of the Division of Intramural Research, NIAID; Dr. Anthony S. Fauci, NIAID director; Dr. Michael A. Kaliner, head of the allergic diseases section of the NIAID Laboratory of Clinical Investigation; and Dr. Dean D. Metcalf, head of the mast cell physiology section of the LCI.

Introducing Science to the Young

Singer Starts Science Program for Carnegie Institution

By Carol R. Cronin

To most kids their age, jeans are found in department stores. But to the students of the Carnegie Institution of Washington's "First Light" science program, genes are found on chromosomes and involve an entirely different process of selection.

First Light's recent visit to NIH was part of a special program currently being developed by the NIH Visitor Information Center's (VIC) Learning Laboratory.

The First Light program got under way in 1989, after a year of planning by Carnegie's president Dr. Maxine Singer (formerly chief of NCI's Laboratory of Biochemistry and now NCI scientist emeritus), with the help and enthusiastic support of many others.

"We went to neighborhood schools and churches and told people about the program," said Singer, who became frustrated with the more traditional selection procedure. Students are accepted for the program on a first-come, first-served basis.

Students in the program range in age from



Students (from l) Janelle, Asha and Rashard get the feel of a scientist's white coat.

8 to 10 and attend area elementary schools such as Garrison or Ross within the neighborhood of the Carnegie Institution, located at 16th & P Sts., NW. The students meet every Saturday to focus on a program that begins, first, in their laboratory.

"We emptied out an old shipping room," said Singer. The lab session is followed by a field trip designed to heighten the awareness of the students, perhaps helping them to choose science as a career path. Trips have included such places as the National Aquarium in Baltimore, the Naval Observatory, and the Smithsonian's "Dinamation" exhibit featuring 18 robotic dinosaurs.

First Light has become informally connected to NIH, utilizing the strengths and volunteer



Volunteer teacher Dr. Julie McMillan of NCI demonstrates DNA electrophoresis for First Light students (from l) Nick, Asha, Janine, Tai, Janelle and Rashard.

Photos: Ernie Branson



Director of First Light Charles James and Dr. Maxine Singer demonstrate the automatic blood pressure machine to students Rashard and Brandon (2nd from r).

efforts of NIH postdocs, some of whom work with Singer at NCI laboratories. "The kids are exposed to real scientists," said Singer.

But science does not live by scientists alone. As First Light's operating expenses have grown, so have contributions, which have come from local foundations and other scientists in the Washington area. Funding has included personal grants from Dr. Robert Gallo of NCI and Dr. James Watson, director of the National Center for Human Genome Research.



First Light student Lindsay examines cells through a microscope during a visit to NIH.

Asked why she started the program, Singer responded, "I've served on a lot of committees. Through them all, I came to the same conclusion. Instead of wasting my time, I'll start a school for small children."

Singer credits many people with the success of First Light. Among them is Charles James, its director and primary science teacher.

"I interviewed many people," said Singer, "but he understood what science is all about. He almost never answers a question but leads the kids to an answer."

For further information about arranging a program in the VIC Learning Laboratory, contact the Visitor Information Center, 496-1776. □

Sailing Club Lessons, Open House

The R&W Sailing Club will hold a picnic and open house on Saturday, July 28 (rain date July 29) from 10 a.m. to dusk at Selby Bay Sailing Center in Edgewater, Md. The club also will hold a 6-week training session for new members on the South River in August and September.

Applications for club membership are available at the R&W Activities Desk; sign-up begins July 25 and ends on Aug. 8. You must be an R&W member to join. □

Male Volunteers Wanted

NIMH seeks recovering male alcoholic volunteers. Please call 496-6981 or 496-2141. □

GENOME

(Continued from Page 1)

in most biologically important respects," says Dr. Mark Guyer, National Center for Human Genome Research's assistant director for program coordination. "That's what makes us human. So the map of the human genome can really be based on information collected from many different people. And most of the information in that map will pertain to everyone."

Geneticists estimate, for example, that any two people are about 99 percent similar in their genetic makeup. The tiny differences between any two people rest in only 2 to 10 million (out of the 3 billion total) nucleotides, an amount that computes to about 1 percent or less of their total DNA. "Because these small differences vary from person to person," says Guyer, "it doesn't matter whose genome it is. For some studies, the differences will be the focus of interest. In other cases it will be the similarities."

Eventually, scientists will "map," or establish distinctive genetic landmarks, from one end of a chromosome to the other and add that information to the genetic map of the entire human genome. This complete map will become the "reference" to which researchers will compare DNA taken from a variety of people as scientists look for disease genes and other important genetic regions located on chromosomes. A particular region on a chromosome, for example, may be found to contain information about height. Although the genetic content of that specific site may change slightly from person to person, the location of the site will be the same in each person's genome.

Because studying the entire 6-foot stretch of human DNA is a huge project, scientists are tackling the genome one chromosome at a time. Even then, analyzing the genetic content of just one chromosome is an enormous task for a single research group, so many scientists are studying only portions of a chromosome. The complete map for a single chromosome then will be derived from samples collected from several unrelated people by researchers in many different laboratories.

Dr. David Ledbetter and his colleagues at the Baylor College of Medicine, for example, are mapping the sex chromosome X and chromosome 17. "We collect DNA from patients who come into our clinic for genetic testing," says Ledbetter. "So each sample is from a different and unrelated person. Our cell culture collection contains a number of different human genomes."

Defective genes responsible for a type of neurofibromatosis and that play a role in some forms of cancer are located on chromosome 17. Hemophilia and Duchenne muscular dystrophy

are caused by malfunctioning genes located on the X chromosome.

To get cells that contain only the chromosome piece they are interested in, scientists have developed ways to fuse human cells with rodent cells in culture dishes. Growing these human-rodent "hybrid" cells in special nutrients selects out specific human chromosomes, while the others are gradually knocked out. Hybrid cells containing human chromosomes have now been developed for nearly all of the 24 different human chromosomes. Most of these cell lines are stored in commercial cell repositories where they are distributed to any scientist who wants to study them.

For several decades, geneticists searching for disease genes have studied human cells maintained in the laboratory. These cells originally came from people who have an inherited disease, from their healthy relatives who are carriers, or from other unrelated healthy people. But because human cells do not ordinarily survive long under laboratory conditions, scientists have had to invent ways to keep the cells alive long enough to perform detailed studies of DNA inside the cells.

Since almost all cells in the body contain the same genetic information, nearly any type of cell can be used as a source of DNA. A type of white blood cell called a lymphocyte is commonly used because it is easy to obtain from a blood sample. To get the cells to last longer in the laboratory, scientists infect lymphocytes in the test tube with a common virus known as EBV. This virus, the cause of mononucleosis, interrupts the cell's normal life cycle so it literally doesn't know when to die. Cells "immortalized" by EBV then grow and divide indefinitely in laboratory cultures, providing researchers with unlimited amounts of human DNA for genome studies.

"The ultimate goal of the genome project is to have the technology and ability to check parts or all of many genomes," says Dr. David Schlessinger, director of the Center for Genetics in Medicine at Washington University in St. Louis. "We will analyze one genome relative to another, and that's part of the interest in this project. There are so many different scientific interests in the human genome, whether it's about disease causation or variation in human populations."

Schlessinger and his group keep copies of the X chromosome region they are studying in hybrid cell cultures in their laboratory. "The identity of the donor is locked away," he says. "We know it's a male, but otherwise that individual is the genetic equivalent of the unknown soldier." □

GUIDELINES

(Continued from Page 1)

intended to encourage the free exchange of information, protect privileged information, facilitate scientific investigation and enhance the professional training of fellows. They provide goals towards which scientists might strive."

Begun about a year ago by the late Dr. John Eberhart, compilation of the guidelines was reassigned after Eberhart's death last fall to a committee set up by Dr. Joseph Rall, NIH deputy director for intramural research. The committee's draft document was reviewed and approved by the NIH scientific directors.

The purpose of *Guidelines* is stated in the preface written by Rall:

"In the past, at NIH as in other academic communities, it could be assumed that investigators shared a common understanding and set of expectations regarding the conduct of research. For this reason, an unwritten code of conduct seemed adequate.

"Today, the increasing complexity of research and the entry of far larger numbers of trainees into the research community make appropriate a written set of guidelines."

According to committee member Dr. Alan Schechter, chief of NIDDK's Laboratory of Chemical Biology, two other important factors figured in the decision to make official practices most scientists take for granted.

"Recent discussions of scientific misconduct and questions about good scientific conduct were certainly motivations for us to write these guidelines," he commented. "There have also been inquiries from outside NIH as well as from within for such a document."

Guidelines addresses a wide range of subjects including most practices that are generally understood but unwritten among researchers.

Expectations about the relationship between a scientific mentor and a trainee, for example, are clearly spelled out under the heading "Supervision of Trainees."

"It is particularly critical," reads *Guidelines*, "that the mentor recognize that the trainee is not simply an additional laboratory worker... the mentor has the responsibility to supervise the trainee's progress closely and to interact personally with the trainee on a regular basis in such a way as to make the training experience a meaningful one."

Other directions included in *Guidelines* pertain to retention and storage of research data, especially primary experimental results; publication and authorship practices; peer review and privileged information; and clinical research.

After agreeing to provide a handbook for scientists, the committee then researched published guidelines of universities and other institutions, using them as a basis for the

15-page document that is scheduled to be distributed this week to every NIH lab through its scientific director's office. About 8,000 copies of *Guidelines* were printed.

"After reading the other documents, which ranged from very brief to rather long, the committee agreed on about six to eight topics that we would cover in our own middle length draft," said Schechter. "We have tried to make it encouraging and supportive to veteran scientists as well as young researchers new to the bench or to NIH.

"The document is not meant to be prescriptive," he emphasized, "but descriptive. It is meant to define the standards for good scientific conduct as opposed to scientific misconduct."

"The formulation of these Guidelines is not meant to codify a set of rules," reads the introduction of *Guidelines*, "but rather to make explicit patterns of scientific practice that have been developed over many years and are followed by the vast majority of scientists, and to provide benchmarks when problems arise."

"It is hoped that based on initial reaction, this document may be improved upon," Schechter continued. "This is only meant as a starting document. By having this in writing, we now have a document that says what is expected should situations arise where there may be conflicts."

The concluding statement of *Guidelines* speaks for itself: "These Guidelines are not intended to address issues of misconduct... or other practices motivated by intent to deceive. Rather, their purpose is to provide a framework for the fair and open conduct of research without inhibiting scientific freedom and creativity."

Korn summarized the intended impact of the new document: "Not everyone will agree with every facet of them," he said, "the subcommittee was not unanimous on every point, and they may need to be applied differently in different situations.

"The conduct of science must be fair and open, and that is the purpose of the guidelines, but it must not be bound by narrowly conceived rules and regulations that will inhibit its freedom and creativity. And science should still be fun." □

Spector Brandishes 2nd Sabre Title

Defending fencing champion Dr. Novera Herb Spector, an NINDS neurophysiologist, recently repeated his last year's performance by winning the Alabama State Fencing Sabre Championship. This victory made him eligible to compete in the Southeast Divisional Championship, where he finished in the top six and qualified for the Division I (Open) U.S. National Championship, which is limited to 36 entries. The average competitor is younger than 35; Spector is 70. □



Margaret Meadows, a longtime veteran of the Biometry and Field Studies Branch of NINDS, retired on June 1, after 28 years of service. Meadows began her career at NINDS in the Perinatal Research Branch and transferred to the Biometry Branch some years later where she has worked as a statistical assistant on a variety of studies such as the Collaborative Perinatal Project and the Stroke and Traumatic Coma Data Banks. She has long been known for her kindness and concern for her fellow workers and will continue her help to others in her retirement. She and her husband Ralph plan to do missionary work in Haiti concentrating on orphanages and hospitalized children.

Ours Earned, Hours Spurred

According to the Office of Personnel Management, employees from executive branch agencies, which include NIH'ers, used more than 120 million days of leave in 1989.

The average employee used 21 days of annual leave, 8 days of sick leave, 10 days of holiday leave and 2 days of administrative leave (military, court, weather, blood donation and local holiday overseas). Overall use of the various types of leave translated into about \$14 million last year.

Executive branch employees used 59 million days of annual leave and 24 million days of sick leave.

About \$94 million in average wages was forfeited by federal staffers, many of whom lost annual leave due to the 240 hour maximum carryover policy. Altogether, 811,000 days of annual leave did not get carried over to 1990. Governmentwide, 166 million days of sick leave were unused and carried over to 1990. □

First Dentist Scientist Awardees Visit NIDR

Members of the first graduating class of the new Dentist Scientist Award program sponsored by the National Institute of Dental Research visited the institute recently to report on their experiences in the 5-year program. Through the new program, the institute supports students with dental degrees as they work toward their doctorates and gain valuable clinical and basic research experience.

The 2-day visit to NIDR allowed awardees to meet with each other and some of the top researchers in the field. On the first day, graduates presented their research to dental scientists and discussed their personal experiences in the program. The following day, awardees were invited to attend and take part in a meeting of the institute's National Advisory Dental Research Council—the scientific body that makes final recommendations on NIDR grant awards and considers policy issues related to the support of dental research.

"The Dentist Scientist Award allowed me to create my own job description and become the expert that I think NIDR envisioned—clinician, teacher and researcher," said Dr. Martha Ann Keels, a Ph.D. candidate at the University of North Carolina. Keels, who specializes in the epidemiology of craniofacial birth defects, says, "Doors have opened for me



The first dentist scientist awardees meet with NIDR director Dr. Harald Loe (seated, 4th from l) and his deputy director, Dr. Preston A. Littleton Jr. (seated, 2nd from l).

that never would have opened before."

"The Dentist Scientist Award is the premiere program for training future dental researchers," said NIDR director Dr. Harald Loe. "By supporting doctoral training and research protocols for these dentists we are ensuring that there will be enough dental scientists capable of moving from basic to clinical research in the 21st century."

Dr. Susan Mallery, a Ph.D. candidate in experimental pathology at Ohio State, says she never thought about research while she was in dental school. But after a year and a half in general practice she decided to expand her

horizons. "The DSA has greatly increased the caliber of research I was personally able to do," said Mallery. "You can present your own ideas and work on your own projects as opposed to working with Ph.D.'s who have already established what you need to do for them."

Says Mallery, "It's really given me a great deal of freedom. Being awarded the DSA was an overwhelmingly positive experience."

The NIDR plans to follow the careers of the graduates for the next 10 years to see if the goal of increasing the number of dentists in research is being fulfilled. □

Fauci Receives Honorary Degrees

Dr. Anthony S. Fauci, director of NIAID, recently received honorary degrees from four educational institutions. The degree of doctor of science, honoris causa, was conferred on him during graduation ceremonies at Mount Sinai Medical Center, New York City; Georgetown University school of medicine; Neumann College, Aston, Pa; and Hahnemann University, Philadelphia, where he also delivered the commencement address to the graduate school and school of medicine. In addition, he delivered the commencement address to the Harvard Medical School class of 1990.

Fauci was honored for his many contributions to understanding the function of the human immune system and the pathogenesis and treatment of immune-mediated diseases. He is recognized worldwide for his current research on HIV infection and AIDS. He has delineated the immunopathogenic mechanisms of HIV infection and has been instrumental in developing strategies for the therapy and immune reconstitution of patients with AIDS.

In the 1970's, Fauci first became internationally recognized for his basic research in human immunology as well as for studies on disorders of the immune system. Most signifi-



Father Leo O'Donovan, S.J. (l), president of Georgetown University, confers a doctor of science degree, honoris causa, to NIAID director Dr. Anthony S. Fauci. Three other schools honored Fauci at commencements last spring.

cantly, he developed effective therapies for formerly fatal diseases such as polyarteritis nodosa, Wegener's granulomatosis, and lymphomatoid granulomatosis.

As chief, Laboratory of Immunoregulation, NIAID, a position he has held since 1980, Fauci continues his basic and clinical research on the immune system and continues to train postdoctoral fellows.

In 1987, Fauci received an honorary degree from his alma mater, Holy Cross College in Worcester, Mass. □

NICHHD Holds Awards Ceremony

Dr. Duane Alexander, director of the National Institute of Child Health and Human Development, recently honored NICHHD employees at the Director's Award Ceremony. Sponsored by the institute's equal employment opportunity committee, the ceremony recognizes outstanding accomplishments and achievements by employees in carrying out the mission of NICHHD.

Equal Employment Special Achievement Awards were presented to Dr. Douglas E. Brenneman, Dr. Leslie D.C. Cooper, Dr. David B. Gray and Baldwin M. Wong.

Receiving Merit Awards were Dr. Scott F. Andres, Hallie K. Boone, Richard Greenawalt, Catherine A. O'Connor, Michael H. Rosenthal and Lydia C. Yuan.

PHS Commendation Medals were presented to Drs. José G. Rigau and Leslie D.C. Cooper. Drs. Ephraim Y. Levin and William S. Stokes received PHS Citations.

Quality Step Increases were awarded to Mary Ellen Colvin, Sandra Fitzgerald, Linda Frew, Richard Greenawalt, Martha Guice, Belinda Jackson, Dr. Eric Lee, Sandra Ott, Fernande Rakes, Rosemary Riggs, Arline Sanchez, Sieghild Sloan, Genevieve Sotak, Shirley Sutphin, Dr. Richard Tasca, Diane Wetherill and Evelyn Witt. □

New Bulletin Board System Developed by DCRT

The Computer Center is now offering a new NIH Centralized Bulletin Board System (BBS). Does your group, office, or organization need to discuss AIDS research, lab techniques, scheduling problems, or other professional interests with your peers—world wide? Do you need to publish public notices, agendas, seminar proceedings, safety procedures, or patent announcements? Do you need to share and access information about grants guidelines, meeting schedules, housing availability, or computers at NIH? Anyone can use ENTER BBS to access a variety of bulletin boards or to create and be the moderator of an electronic bulletin board of their own.

The design of ENTER BBS was a collaborative effort of the NIH Computer Utility and the Computer Center staff. Potential users of ENTER BBS were used as test evaluators during its design phase.

ENTER BBS is not a bulletin board; it is a second generation bulletin board system that provides a collection of independent boards, created by any Computer Utility user. One does not have to be a "computer professional" to set up, run, or access an electronic bulletin board. No special equipment is required. With ENTER BBS, you only need to have a desire to communicate.

Each bulletin board within the system can provide electronic conferencing, direct display of online information, and notices, as well as

files available for downloading to personal computers. These three components (conferences, bulletins, and files) all relate to the "topic" of the bulletin board. How the three components of a bulletin board are used is under the complete control of the individual who is the moderator of the board. This person establishes the overall topic of the individual bulletin board and the "subtopics" of its various components.

ENTER BBS makes many bulletin boards (about a variety of topics) available with a single telephone call and logon. To reach these bulletin boards, simply use a personal computer or terminal to logon to WYLBUR, then type ENTER BBS. You will then obtain a list of the bulletin boards available and will be able to choose the one that seems most interesting. Switching to other bulletin boards without exiting the ENTER BBS facility is quite simple. Best of all, each bulletin board uses the same command syntax and help facility. Since ENTER BBS is an integrated system, it is not necessary to learn different commands and procedures for accessing multiple bulletin boards.

Even though ENTER BBS is easy to learn just by using it, the Computer Center has announced a series of overview seminars. For individual assistance or to request a presentation for your own group, contact the Training Unit, 496-2339. □

DRG Ties Into BBS System

The Division of Research Grants electronic bulletin board is now available for use by NIH employees and others with valid DCRT account numbers. It can be accessed by logging on to WYLBUR and typing the command ENTER BBS. Select DRGLINE as the board you wish to enter and follow the instructions and prompts given by the program to locate the information of interest to you.

DRGLINE (NIH GRANT LINE) is part of the NIH Bulletin Board System that was announced in the July issue of *Interface*. For users in the extramural research community, the bulletin board is known as the NIH GRANT LINE. It consists of bulletins, files, and an opportunity to make comments for use in evaluation of this method of disseminating NIH extramural program information to the research community.

This new electronic information service can be used to download weekly issues of the *NIH Guide for Grants and Contracts*, the latest revisions of program announcements and guidelines, the extramural green pages (abbreviated *NIH Telephone Directory*), and other items such as monthly or quarterly indexes to the NIH Guide. For more information about DRGLINE, try signing on to the NIH Bulletin Board System—or send a message via WYLBUR mail to JQJ. □



Four new members were recently appointed to 4-year terms on the National Advisory Allergy and Infectious Diseases Council. Shown with NIAID director Dr. Anthony Fauci (l), they are (from l) Dr. J. Wayne Streilein, professor and chairman of the department of microbiology and immunology at the University of Miami school of medicine; Dr. Janet L. Mitchell, director of perinatology at Harlem Hospital Center in New York; Dr. Arnold S. Monto, professor of epidemiology and international health at the University of Michigan school of public health; and Dr. Lawrence M. Lichtenstein, director of the Johns Hopkins Asthma and Allergy Center.

Carcinoma Conference Planned

The National Cancer Institute, the National Institute of Allergy and Infectious Diseases, and the National Institute of Diabetes and Digestive and Kidney Diseases are sponsoring a conference on "Hepatocellular Carcinoma in North America," which will be held Sept. 26 and 27 in the Lister Hill Auditorium, Bldg. 38A.

The purpose of this conference is to define the scientific questions concerning hepatocellular carcinoma as it occurs in North American patients and to collect and publish data from studies of these patients. The program will cover epidemiology, etiology (viral and chemical), pathogenesis, diagnosis and screening, and therapy. Seating will be limited; those interested in attending are encouraged to register now.

For further information contact conference consultant Betty Rollins, Crosspaths Management Systems, Inc., telephone: 1-800-527-2847. □

TRAINING TIPS

The NIH Training Center of the Division of Personnel Management offers the following:

<i>Courses and Programs</i>	<i>Starting Dates</i>
<i>Management and Supervisory 496-6371</i>	
Recognition Secrets: Innovations for Rewarding Today's Workers	9/9
Managing Stress, Maximizing Effectiveness	9/11
Effective Communications	9/11
Managing Outstanding Performers	9/20
Hands-On Animal Techniques	
Workshop: Rodent Techniques	9/26
<i>Office Operations Training 496-6211</i>	
Delegated Acquisition	8/20
Basic Time and Attendance	8/2
Introduction to Working at NIH for New Support Staff	8/13
<i>Personal Computer Training 496-6211</i>	
Advanced Microsoft Word	8/1
Mac Draw II	8/2
Introduction to CricketGraph	8/3
Improving Keyboarding Skills	8/3
Harvard Graphics	8/6
Welcome to Macintosh	8/6
Excel Level 2	8/9
Advanced WordPerfect (Macintosh)	8/10
Introduction to Power Point	8/13
Hypercard	8/14
3Com Network Administrator	8/15
Welcome to Macintosh	8/20
Lotus 1-2-3 Advanced Topics	8/27
Intro to WordPerfect 5.0	9/11
Word Perfect 5.0 Advanced Topics	9/17
Intro to dBase III Plus	9/18

Training and Development Services 496-6211

Personal Computer training is available through User Resources Center (URC) self study courses. There is no cost to NIH employees for these hands-on sessions.

The URC hours are:

Mon.-Thurs.	8:30 a.m. — 7 p.m.
Friday	8:30 a.m. — 4:30 p.m.
Saturday	9 a.m. — 1 p.m.

Training Center, DCRT, and other training information is available on WYLBUR. Logon to WYLBUR and type ENTER TRAINING

New, Used Uniforms Sought

The DC Branch, Metropolitan Area COA, Inc. is operating a Uniform Service Center to provide for the sale of new and high-quality used PHS uniforms and uniform-related apparel items. Officers are encouraged to donate or consign surplus uniform items to the center. To date, this activity has generated \$1,200. All proceeds are contributed to a charitable organization. This year monies were given to the Children's Inn at NIH. The program is temporarily housed in the Parklawn Bldg., Rm. 7A32, until appropriate space can be identified. For further information, contact Capt. Amy Barkin, 443-8113. □

Calvin Waddell Retires After 40 Years in Government

Calvin Waddell, a computer clerk in the NIGMS Office of Data Management, retired recently after 40 years of government service, 23 of them at NIGMS.

During those years, Waddell witnessed tremendous growth and change in the institute. NIGMS data management officer Thomas Mitchell said, "You might say that NIGMS grew up around Mr. Waddell."

Waddell began his government career in 1943 as a messenger with the Government Accounting Office. He was only 16 when he started his service, but World War II was in progress, and it was an opportunity for him to work while attending high school at night. He recalled that at that time, "government employees worked a 5½-day week."

In 1950, he spent the year with the U.S. Census Bureau. From 1951 to 1960, Waddell was a clerk with the Federal Aviation Agency. During the following 2 years, he worked in the Department of the Navy, the U.S. Marine Corps, and the U.S. Postal Service.

In 1962, Waddell decided to leave the government and worked at a variety of jobs in private industry. He returned, however, in 1967 and was hired by NIH as a nursing assistant in the Clinical Center for what was then the National Institute of Arthritis and Metabolic Diseases.

The following year, Waddell joined NIGMS as a clerk in the Administrative Office. He has been in the NIGMS Office of Data Management since 1971.



Calvin Waddell is congratulated on his 40 years of government service by Dr. Ruth L. Kirschstein, NIGMS director.

A native Washingtonian, he devoted his adult life to caring for his handicapped brother, Richard, who passed away several months ago. Although from a family of eight siblings, Waddell has only two sisters and two brothers remaining, but he also has "about 40 nieces and nephews."

Waddell takes great pride in the home that he purchased in Washington, where he plans to spend his retirement working with senior citizens.—Wanda Wardell □

DCRT Summer Term in Computer Training Under Way

The summer term of the DCRT Computer Training Program is well under way. A number of new courses and seminars of interest to scientists will be offered in August. As always, there is no charge to students or their organizations.

New offerings in UNIX include "Editing with Emacs" on Aug. 7 and "Advanced Emacs," Aug. 16-17. Emacs, in addition to being the most popular screen-oriented editor on UNIX systems, is also a complete and integrated environment including facilities for programming, mail, network access and document processing.

On July 30, a seminar on "Object Oriented Programming with C++" will offer an overview of the language features of C++ that support object oriented programming.

Biophysicists and cell biologists interested in problems relating to cell motility may be interested in attending a brief seminar, "Analyzing the Viscoelastic Properties of Cytoplasm" on Aug. 2, which will be pre-

sented by Dr. Ralph Nossal, Physical Sciences Laboratory, DCRT.

The summer program also offers experienced users of the IBM 370 mainframe a rare opportunity to delve into the complexities of Job Control Language. A senior computer specialist will present "Advanced JCL at NIH" beginning Aug. 2. Topics covered will include how to create and maintain private libraries, how to identify and correct JCL errors, and how to create catalogued procedures.

The summer 1990 program includes 35 seminars and courses on topics ranging from electronic mail to personal computing. To sign up for a course or seminar, call the Computer Center Training Unit, 496-2339. Copies of the summer 1990 computer training courses and seminars brochure describing all of the offerings and listing their dates, times and locations are available from the Computer Center's Technical Information Office, Bldg. 12A, Rm. 1015, 496-5431. □

*Year 2000 and Beyond***CC Staff Learns Options for Future of Bldg. 10**

By Anne Barber

The cornerstone for Bldg. 10 was laid in 1951 and throughout the years, NIH's Division of Engineering Services has maintained, repaired, and added onto the existing facility without replacing the original utilities such as air conditioning, electrical wiring and pipes.

On June 28, Dr. William F. Raub, acting NIH director; George Williams, acting deputy director, DES; John Jenkins from DES's Facilities Engineering Branch; and representatives from three architectural/consulting firms that have been working on Bldg. 10's infrastructure modernization and improvement program held an informal discussion on the renovation of Bldg. 10.

In introducing the panel, Raub had this to say about the private firms, "They have designed similar things—not identical—because there is nothing like Building 10.

"NIH is still number one in the biomedical sciences. And if we are to continue to be first, those of us in management and administration must attend to many things—salaries, parking, safety and maintenance of the buildings we occupy.

"The Clinical Center is central to the intramural programs and what NIH stands for to such an extent that, if we ignore its needs we literally risk the future. We must face up to and deal with its problems.

"The Clinical Center was built in the 1950's, with the needs and expectations of that time. It is remarkable how it has stood with all the advances made in biomedical sciences. It was one of the first centrally air conditioned hospitals. However," Raub continued, "by most measures, this is not a hospital. It is a laboratory with a hospital around it.

"Changes in the populations within the building and all the increasing demands bring about necessary concerns for safety and health. For instance, there is asbestos in places where we rather it not be, along with biohazards (viruses) and toxic hazards from chemical and molecular biological studies. We need proper conduits for the hood exhausts.

"We still have in use the original central system in these buildings. It is a credit to the engineers that they have continued to keep it going and to the original designers of the building. There is, however, potential for a catastrophe—where part of the building would have to be closed down, or worse, someone would get hurt.

"There was a study done in 1988 that estimated it would cost between \$400-800 million to renovate Building 10. We need

new pipes in the building to provide chilled water, hood vents, and, above all, the electrical capacity in general is insufficient.

"We are at a stage where patches and bandaids can no longer do it. When we get into the fixtures, we have to get into the services provided. It is not a simple matter. Correction of these deficiencies will require a major construction effort in several phases."

Raub continued, "But first, we must identify where we will provide turnaround room. Logistically, it is a nightmare. Utilities are oriented vertically with programs oriented horizontally. We hope to limit relocations, but out of necessity, everyone will need to relocate at least once and, hopefully, not more than twice, but don't read my lips.

"The entire Building 10 renovation is expected to take 10 to 15 years. At the end of this long term, the research opportunities will be different, the patient care will be different and hospital services will be different. Our planning process needs to respond to these changes.

"Looking ahead we have multiple points of view. Built-in flexibility will be the key and even more critical in the next century to respond to future needs. Mostly, we must preserve the beauty and research of the campus as always."

Williams explained, "To renovate a complex this large presents a lot of problems. We will need to vacate to larger space by renting, buying, or constructing new space to yield sufficient space to start construction. We will use an approach similar to the round robin renovations taking place. We will need to identify areas that we could expand, if new construction is part of any solution. Thus far, the answer seems to be south, west, and northwest of the building. This is a terribly massive and complex project that causes us a lot of concern and demands close integration of programs, utility and logistical needs."

In response to a question regarding the possibility of separating the labs from the clinic and hospital, Williams said, "We would not divorce labs that have critical ties with the hospital area. The decision to move those activities off campus will be determined by economics and the need to remain in close proximity to the patient care units. This is a critical issue and the steering committee will make the decision."

Parking continues to be a major problem of concern to employees all across campus. So much that, in fact, one employee asked if they had considered building a new hospital and gutting Building 10 and building a parking

lot. Another person stated that parking for contractors was equally difficult and, with all this new renovation coming up, what could be done to plan for this chaos?

Williams stated that these and other significant problems could be worked through by communications between employees and engineering staff and adequate planning to minimize the impact of a major construction effort. "There will be a workforce of between 200-300 workers when construction starts," he related.

In response to a question about where we stand now, Raub answered, "We are in the earliest stages of planning. No binding decision has been made other than we have to do it—even as painful as it is going to be. Sometime within the next few months, the renovation alternative should be determined."

It was pointed out by one of the architects that while we are looking to build something that will last long into the future, there is no way you can design a building that will be responsive to all needs. Flexibility within the facility system will be the key in meeting future requirements.

Questions were asked about the Bldg. 10 clinic tower (formerly the ACRF), which now has functional and technical problems. Raub's response: "You are right. When Building 10's renovations are over, the next step is the ACRF. We need to look not only at solving these problems but also at anticipating the ones coming up."

In summation, Raub stated, "We are intent on keeping NIH as the best and to keeping this building functioning the way it should."

The final decisions about Bldg. 10 will be made by a steering committee chaired by Raub that includes the following members: Dr. Vida Beaven, NIH assistant director for program coordination; Dr. Saul Rosen, acting director, Clinical Center; Dr. Cherie Fisk, special assistant for scientific activities, ORS; Norman Mansfield, director, ORS; Dr. Richard Wyatt, assistant director for intramural affairs, OD; Dr. Joseph Rall, NIH deputy director for intramural research; Tony Clifford, acting director, DES; Williams; Jenkins; Mike Harrison, DES and Cheryl Amatucci, DES. □

NICHD's Love Tape Honored

Marsha Love of NICHD's Office of Research Reporting recently won the Silver Screen (second place) award from the United States Festivals Association film and video competition for her videotape "Prenatal Care: A Window of Opportunity." The same videotape also won honorable mention from the Association for the Care of Children's Health. □