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U.S. Department of Health and Human Services

National Institutes of Health

"Still The Second Best Thing About Payday"

The NIH Record

Encomiums, Advisories Offered

Varmus Outlines Leadership Plans at Senate Hearing

By Rich McManus

At his confirmation hearing Nov. 3 before Sen. Edward Kennedy's (D-Mass.) Senate committee on labor and human resources, NIH director-designate Dr. Harold Varmus outlined his most important priorities for NIH: filling top jobs at NINDS, NIDA, the Clinical Center and the Office of AIDS Research; conducting a major reevaluation of the $1.2 billion intramural programs; establishing strong principles for equal employment; and addressing encumbrances in the peer-review process governing extramural awards.

Throughout the hour-long hearing, Varmus, who was joined by his wife Constance Casey and one of their two sons, Christopher, a high school student, repeatedly emphasized the importance of basic research to NIH's mission.

"Undirected NIH funding in support of brilliance" is NIH's prime value to the nation, said Varmus, who used the example of 1993 Nobel Laureate Phillip Sharp to illustrate the value of nurturing hidden talent—Sharp hailed from a small college in Kentucky before going on to a distinguished career in biology at MIT—to maturity. Twenty-five years of NIH grant support preceded Sharp's Nobel Prize in Physiology or Medicine, Varmus pointed out.

Kennedy began the hearing by calling Varmus "an outstanding choice to lead the NIH...He is widely recognized for his ability to manage and lead. Throughout his brilliant career he has demonstrated his extraordinary commitment to scientific excellence. He has the vision and skill to lead this nation's biomedical research into the 21st century. We

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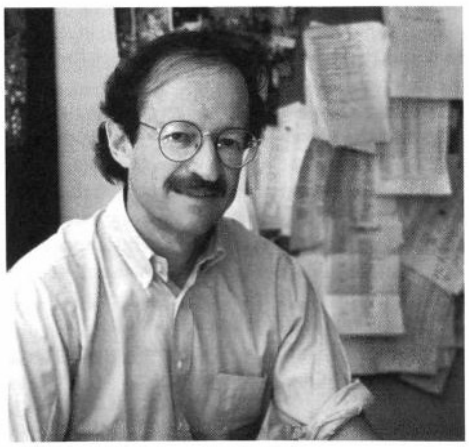

Dr. Harold Varmus (file photo)

Harold Varmus's Opening Statement to the Senate

I am honored to appear before you today as President Clinton's nominee to direct one of our country's greatest assets, the National Institutes of Health.

My preparation for this job has been unusual. For most of my adult life, I have been an academic scientist, studying retroviruses and cancer genes, teaching graduate and medical students, and training postdoctoral fellows at the University of California, San Francisco (UCSF). Given this background, I would like to explain why I want to take on the responsibilities of running an immense institution, why I believe I am prepared to do it and what I

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World AIDS Day, Dec. 1

The NIH Office of AIDS Research will sponsor an observance of World AIDS Day on Wednesday, Dec. 1 at noon in Masur Auditorium, Bldg. 10. All NIH staff, patients, families, visitors and friends are invited.

The World Health Organization has announced that the theme for World AIDS Day this year is "Time to Act." The NIH program will include a number of speakers. In addition, information on AIDS and NIH AIDS research programs will be available at the event.

In conjunction with World AIDS Day, the U.S. Postal Service will issue an AIDS Awareness postage stamp featuring the red AIDS Awareness ribbon. The stamps will be available for sale in all NIH R&W stores beginning Dec. 1.

World AIDS Day was first observed in 1988 with events around the world as a day of awareness and reflection on the impact of AIDS on individuals, families, communities, and society. It is a day to consider the efforts taken, and those needed, to find solutions to this worldwide epidemic. On World AIDS Day, we are reminded not only of the toll that has been taken by the epidemic, but also of the commitment of NIH'ers to provide care and support to HIV-infected individuals and their families. For more information call OAR, 60357.

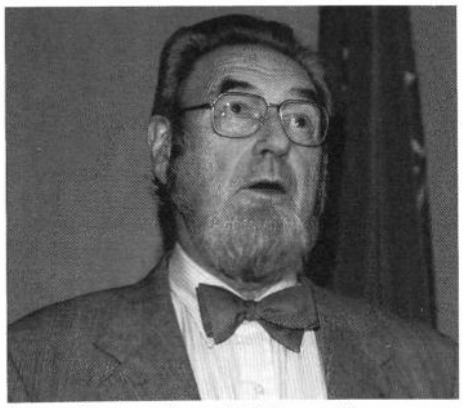
AIDS Meeting Illuminates Epidemic's Past, Future

By Rich McManus

In the dozen years since the AIDS epidemic was first recognized in this country—a relatively brief period as epidemics go—the incremental assembly of scientific knowledge about the disease has advanced, probably unprecedentedly, at the same time society has grappled awkwardly with the disease's myriad social aspects.

At a recent 2-day meeting called "AIDS & The Public Debate: Epidemics and Their Unforeseen Consequences," those at the forefront of America's fight against AIDS spoke frankly about the victories and embarrassments in the tumultuous 12 years that have elapsed since an unusual immunodeficiency syndrome—noticed first among gay males—was initially reported on June 5, 1981, in CDC's *Morbidity and Mortality Weekly Report.*

Overall, the meeting produced shocking and sobering insights into this new disease: former



Former Surgeon General C. Everett Koop

Surgeon General C. Everett Koop, the leadoff speaker, confirmed that conservative political operatives within the Reagan White House hewed to a deliberate silence about the epidemic long after its danger should have been shouted from the housetops; Dr. James Curran, deputy CDC director, warned that the devastation already wrought by AIDS—more than 330,000 cases in the U.S. and more than 200,000 deaths—"is really nothing compared to what's going to happen—hundreds of millions of people (worldwide) are destined to die of this disease"; Dr. Mark Smith, a resident at San Francisco General Hospital when AIDS first broke out and now a public policy advisor, warned that those most at risk of HIV infection are those who not only have the most tenuous ties to society's fabric to begin with, but are also most vulnerable to modernity's other apocalyptic avenues—drugs, violence, weapons and treatment-resistant tuberculosis; Dr. June Osborn, former chairman of the

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Daily Aspirin Not Recommended for Healthy Pregnant Women

A large NICHD-supported study has found that for most healthy pregnant women, a daily children's aspirin tablet has no benefit. Previous studies have indicated that daily aspirin use can help prevent preeclampsia, a serious complication of pregnancy in women at high risk for the disorder.

But investigators supported by the institute's network of maternal-fetal medicine units have concluded that in low-risk women, the slightly increased risk of a condition known as abruptio placentae associated with aspirin use, and the finding that aspirin use did not improve the well-being of either mother or child, argues against routine use.

Dr. Donald McNellis, NICHD project officer for the study, said: "We do not think that routine use of low-dose aspirin in healthy women pregnant for the first time is warranted." The study did find that daily aspirin use slightly lowered the occurrence of preeclampsia in some women participating in the study, but this benefit was limited to those women who entered the study with slightly elevated systolic blood pressure, he said.

Preeclampsia, defined by the presence of high blood pressure and proteins in the urine during late pregnancy, is a leading cause of maternal and fetal illness and death in the United States and underdeveloped countries. Severe cases can lead to convulsions, coma, and death. Earlier research linking aspirin and lowered preeclampsia rates targeted women at high risk for the complication. This study focuses on effects of aspirin in healthy women pregnant with their first child. Effects of aspirin on maternal and infant sickness and death rates were also evaluated by the investigators.

Investigators randomly assigned 3,315 women 13 to 26 weeks pregnant into two groups. One group took low-dose aspirin daily, and the other took a placebo daily for the remainder of their pregnancies.

Differences in severity between the aspirin group and the placebo group were not found in those women who developed preeclampsia. Research proved that aspirin had no beneficial effects on maternal outcomes or on the rates of infant sickness and death. Conflicting reports by previous studies ascribed decreased rate of intrauterine growth retardation, preterm delivery, and greater birthweight in women taking aspirin. This study, however, found no such benefits.—**Carolyn Chung** ❑

Silicone Implant Patients Sought

The Laboratory of Immunology, FDA, seeks volunteers who have undergone silicone implants or silicone injections and are well and have no physical or laboratory evidence of an autoimmune or connective tissue disease. Participation in the study consists of completing a short questionnaire, a brief physical exam and the collection of a blood sample. For more information, call Dr. Frederick Miller or Rebecca Gurley, 66913. ❑

'Knowledge Is Power' Symposium

The Black employees advisory committee (BEAC), under the auspices of the Black Employment Program, Office of Equal Opportunity, will sponsor a "Knowledge Is Power" symposium on the Thrift Savings Plan (TSP). Mac Hadley, personnel officer at the Division of Research Grants, will be moderating. The symposium will begin with an overview of the TSP, followed by a question-and-answer period.

The workshop will be held on Wednesday, Dec. 1, in Lister Hill Auditorium, Bldg. 38A, from 10 a.m. to noon. All employees are invited to attend, and are encouraged to bring written questions or comments for the speaker to address. For more information, contact the Office of Equal Opportunity, Bldg. 31, Rm. 2B40, or your ICD BEAC representative. ❑

Fenn To Give Pisano Lecture

Prof. John B. Fenn of Yale University's department of chemical engineering will give the Pisano Peptide Lecture, sponsored by FAES, on Wednesday, Dec. 1 at 2 p.m. in Lipsett Amphitheater, Bldg. 10.

His talk is titled "Electrospray Wings for Molecular Elephants: The Mass Spectrometry of Proteins and Other Large Molecules." A reception will follow the lecture. For more information call Sylvia DeLong, 67975. ❑

Children's Inn Founders' Board Grows

Eleven people presently or formerly associated with NIH were among 25 new members named to life terms on the founders' board of the Children's Inn at the annual meeting of its board of directors. Appointment to the founders' board is the inn's highest honor.

Among current NIH employees, Donna Wilson, clinical social worker, was inducted as a member, joining June McCalla, consultant pediatric nurse practitioner, NCI, who was appointed in 1992.

Former NIH employees also designated as founders were: Calvin Baldwin, William Raub, George Russell, Sheila Santacroce, Robert Slevin, Andrew Tartler, P. Roy Vagelos, Zulienne Wolfrey and James Wyngaarden.

Members of the founders' board continue their involvement in the inn's activities by serving as a consultative forum.

On hand for installment as members of the founders' board of the Children's Inn at NIH are (from l) Mark Raabe of Merck & Co., former NIH director Dr. James Wyngaarden and parent Sylvia Valdivia.

The NIH Record

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Genome Project Updates Research Plan for Next 5 Years

By Leslie Fink

Human Genome Project planners have issued a new set of goals to guide the project into its next phase. Just beginning its fourth research year, the 15-year project has progressed so well, says Dr. Francis Collins, who directs the National Center for Human Genome Research, "we had to start thinking about our next steps much sooner than we had originally expected."

Although the first 5-year plan is not due to expire until September 1995, "advances in genome research have already changed the way the research is being done," Collins says. "We need to incorporate these advances into our present research strategies to ensure that the program continues to be ambitious and cutting edge."

The plan extends goals for research in already established categories of genetic mapping; physical mapping; DNA sequencing; technology development; research on model organisms; ethical, legal, and social implications; informatics; training; and technology transfer. In addition, the plan includes specific new goals for identifying genes and for outreach programs to distribute genome materials to the scientific community.

Progress over the past 3 years in genetic and physical mapping has put the first set of goals in those areas well within reach. The discovery and development of new types of high-quality DNA markers, for example, will allow researchers soon to complete a genetic map with markers spaced approximately 2 million to 5 million DNA bases apart, as spelled out in the first 5-year plan. Development of large-capacity cloning vectors and new methods for assembling cloned DNA fragments into long overlapping sets makes it likely that a low-resolution physical map of the human genome will be completed in the next 2-3 years.

And DNA sequencers have now produced the first 1 million bases of contiguous DNA sequence at a cost much lower than that of 3 years ago. These accomplishments and others now influence the strategies researchers will use to complete the maps and sequence of the human genome. Methods are now available, for example, for creating maps of the entire genome, rather than one chromosome at a time. So, future mapping studies should include regions larger than a single chromosome. At the same time, sequencers and fine mappers should focus on filling in the details of smaller DNA regions 1 to a few million bases long. (An "average" human chromosome contains about 150 million base pairs.) One million bases is an ambitious dimension for detailed analysis, the plan says, and will provide a "useful bridge" between conventional genetics and larger-scale genomics research.

The original goals for sequencing called for reducing cost to 50 cents per base pair. Although this goal may be achieved within the next few years, conventional sequencing technology still "will not be sufficient to meet the needs of whole-genome sequencing," the report says. The plan calls for development of novel technologies for sequencing 1 to a few million base pair regions of DNA and testing the technologies on DNA of high biological interest.

Mapping and sequencing the genomes of certain model organisms will continue to provide a resource for comparing and interpreting information about the human genome.

In just the past few years, maps generated by Human Genome Project researchers have assisted in finding the genes for dozens of genetic disorders. In 1993 alone, Human Genome Project technologies have helped find genes for Menkes syndrome; the X-linked immune disorder agammaglobulinemia; glycerol kinase deficiency; adrenoleukodystrophy, the disorder popularized in the movie *Lorenzo's Oil*; the hereditary cancer alveolar rhabdomyosarcoma; neurofibromatosis type 2; Lou Gehrig's disease; Huntington's disease; and others.

The new goals, effective through Sept. 30, 1998, are as follows:

- Genetic Map. Complete the 2-5 centimorgan map by 1995. Develop technology for rapid genotyping. Develop markers that are easier to use. Develop new mapping technologies.
- Physical Map. Complete an STS [sequence-tagged site] map of the human genome at a resolution of 100 kilobases.
- DNA Sequencing. Develop efficient approaches to sequencing one- to several-megabase regions of DNA of high biological interest. Develop technologically novel approaches to sequencing 1-2 megabase regions of DNA of high biological interest. Develop technology for high throughput sequencing, focusing on systems integration and impedance matching of all steps from template preparation to data analysis. Build up capacity to a collective rate of 50 Mb per year by the end of the period. This rate should result in an aggregate of 80 Mb of DNA completed by the end of fiscal year 1998.
- Gene Identification. Develop efficient methods for identifying genes and for placement of genes on physical maps or sequenced DNA.
- Technology Development. Substantially expand support of innovative technological developments as well as improvements in current technology for DNA sequencing and to meet the needs of the Human Genome Project as a whole.
- Model Organisms. Finish an STS map of the mouse genome at 300 Kb resolution. Finish the sequence of E. coli and S. cerevisae by 1998 or earlier. Continue sequencing C. elegans and Drosophila genomes with the aim of bringing C. elegans to near completion by 1998. Sequence selected segments of mouse DNA side by side with corresponding human DNA in areas of high biological interest.
- Informatics. Continue to create databases and database tools for easy access to data, including effective tools and standards for data exchange and links among databases. Consolidate, distribute, and continue to develop effective software for large-scale genome projects. Continue to develop tools for comparing and interpreting genome information.
- Ethical, Legal, and Social Implications. Continue to identify and define issues and develop policy options to address them. Develop and disseminate policy options regarding genetic testing services with potential widespread use. Foster better understanding of the social meaning of human genetic variation. Enhance and expand public and professional education.
- Training. Continue to encourage training scientists in interdisciplinary sciences related to genome research.
- Technology Transfer. Encourage and enhance technology transfer both into and out of centers of genome research.
- Outreach. Cooperate with those who would establish distribution centers for genome materials. Share all information and materials within 6 months of their development.

Manuscript copies of the plan are available from NCHGR's Office of Communications, phone 20911, fax 24570. ❑

Gail Grosman, NIGMS administrative officer, recently received the NIH Award of Merit in recognition of her "steadfast commitment, superb leadership skill, and organizational proficiency displayed in the efficient management of administrative services for NIGMS." The award reflects the work she has done to prepare the institute for the move to the Natcher Bldg. that is currently being built. NIGMS acting director Dr. Marvin Cassman presented the award.

Male Subjects Needed

Earn up to $260 for participating in a USUHS study of commonly prescribed drugs. Requires 10 to 15 minutes in the morning between 8:30 and 10 over a 3-week period. Must be male, between 21 and 40 years old, in good health, and not active-duty military. Call (301) 295-3672 for more information. ❑

HEARING
(Continued from Page 1)

look forward to working closely with him."

Sen. Nancy Kassebaum (R-Kan.) called NIH "one of our most important institutions, one of the real guiding lights in this nation. I can't think of anyone more distinguished to lead it than Dr. Varmus.

"He is the first Nobel laureate to lead NIH, but more importantly he is a wonderful blend of scientific inquiry, a probing mind and also great compassion and enthusiasm for the job ahead. With a graduate degree in 17th century English poetry as well as his medical training, he has a nice blend of skills that will help him keep perspective."

Sen. Paul Simon (D-Ill.) advised Varmus that Congress, too, will be looking to him for direction: "You are going to have to say to Sen. Kennedy, and to Sen. Kassebaum, and to Sen. (Paul) Wellstone, 'This is important, this is where NIH funding should go.' Sometimes that's not easy."

Said Wellstone (D-Minn.), "Above and beyond his brilliant background and impressive resume, Dr. Varmus has a great sensitivity and openness to people. I'm just delighted with his nomination."

Sen. Barbara Mikulski (D-Md.) told Varmus, "I'm the senator of NIH and for NIH, and I will be particularly interested in working with you to reinvent the NIH for the 21st century. This is an era of new science, new attitudes and new resources...we are concerned sometimes that NIH might be adrift. I know you've won one Nobel Prize, but we're looking to give you a prize for reinventing NIH."

Varmus was joined at the witness table by Sen. Barbara Boxer (D-Calif.) and by Rep. Nancy Pelosi (D-Calif.), who carried not only their own endorsements but also those of Sen. Diane Feinstein (D-Calif.), who could not attend.

"Dr. Varmus is truly a remarkable man," said Boxer. "He is a Renaissance man for our times."

Added Pelosi, "I can testify that (Varmus) is a very effective advocate for biomedical research and for his own point of view."

Varmus then gave his opening statement (see sidebar), first introducing his family to the panel.

The question period began with an inquiry by Kennedy on how best to speed the fruits of basic research to the bedside.

"In the last 5 years, this kind of transfer has occurred mainly in the area of human genome studies," answered Varmus. "This is a field known by the buzz word 'molecular medicine.' There is no doubt that we need to train more people who have the ability to take research from the bench to the bedside. As this field matures, NIH will play a major role in making benefits available to patients."

Kennedy then mentioned a list of Senate concerns that he hoped Varmus would address, including allegations of racial discrimination at NIH, a need for focus in the fields of substance abuse research and mental health, reorganization of NIH's Office of AIDS Research (OAR), attention to rehabilitation medicine and the needs of people with disabilities, and lastly the FIAU drug trial that went amiss last summer.

"This committee has been deeply saddened to learn of the deaths of 5 of the 15 patients in that trial," said Kennedy.

The questions got tougher as Kassebaum took the floor. "The director of NIH has somewhat limited powers...how do you plan to strengthen that role?"

Varmus said that he has held discussions with HHS Secretary Shalala and PHS director Dr. Philip Lee, who agree that the NIH director must have more authority to make appointments at salaries commensurate with those offered at leading academic institutions. Varmus also said that, as director, he would coordinate trans-institute research activities on campus. "These initiatives can be guided by leadership from the director's office," he said.

Kassebaum then asked if controversial studies at George Washington University involving attempts to clone human embryos called for establishment of an ethics oversight board.

"Those studies represent a relatively small advance scientifically—it has been done in animals for years—but the research raises ethical issues that we need to confront," answered Varmus.

He said he has received permission from HHS to establish a subcommittee of the NIH advisory committee to the director to examine the ethics of research.

Simon then recounted details, none of which he expected Varmus to know, of a bureaucratic snafu holding up progress in a small drug trial for patients with a urea cycle disorder. Varmus astonished and impressed Simon with his knowledge of the case, and how to solve it.

Declaring that mental health research is underfunded, Simon then asked Varmus for a letter, due within 60 days, analyzing what areas are most worthy of research in this area.

Next up was Sen. Dan Coats (R-Ind.), who threw a fastball at Varmus's chin: Quoting a

"I can testify that (Varmus) is a very effective advocate for biomedical research and for his own point of view."

—Rep. Nancy Pelosi (D-Calif.)

STATEMENT BY VARMUS DURING NOV. 3 SENATE CONFIRMATION HEARING
(Continued from Page 1)

hope to achieve.

I grew up in an atmosphere that encouraged public service in the health professions. My mother was a psychiatric social worker, active in community affairs in my home town, Freeport, N.Y. My father was a family doctor who also served as the Jones Beach State Park physician for 30 years. In this climate, it was natural that I would consider a career in medicine. But as a premedical student at Amherst College I developed a love of literature that I set aside only after a year of graduate studies.

My indecision about careers did not end there. I began Columbia Medical School fascinated with the brain, intending to practice neurology or psychiatry; a new interest in tropical health brought me to a mission hospital in India; by the time of my residency, I thought I had settled on the practice of internal medicine.

The NIH then pointed me in a new direction, when I served as a Public Health Service officer at the NIH campus in Bethesda. My mentor, Ira Pastan, showed me how to use a simple model organism—the bacterium, E. coli—to understand a complex phenomenon, hormone action. This experience converted me to an enthusiastic bench scientist, so I sought further research training and then work as a professor in a basic science department of the medical school at UCSF. In this new setting, I used another kind of simple microbe, a retrovirus, to study the genetic basis of cancer and the way genes behave in animal cells.

Although I left Bethesda in 1970, I did not leave the NIH. As a new faculty member, a large part of my salary was paid by an NIH Career Development Award, and for over 20 years most of my laboratory's work—like that of most university labs—has been financed by grants from the NIH. I have been fortunate. With NIH funding I have worked unimpeded by anything other than my own limitations.

I have known the joys of discovery, nurtured brilliant students, and received public accolades for work that was largely an act of love. The indebtedness I feel towards the NIH is one of the reasons I am sitting before you today.

In 1989 my colleague, Mike Bishop, and I shared the Nobel Prize in Physiology or Medicine for our discovery that viral cancer genes are derived from cellular genes. One unexpected consequence of this honor was a sudden and widespread interest in my views. As a result, I have spoken out or taken action on many topics—the funding of young investigators; indirect cost reimbursements; the training of new scientists; and science education for the public. I have been especially concerned about the need to explain why fundamental research in biology and chemistry is essential to progress against cancer, AIDS, and other diseases—and why it is essential to the success of our biotechnology and pharmaceutical industries.

These new activities have helped to make me a candidate for the NIH directorship. But

publication called *The Prune Book*, which details requirements for the top federal jobs in Washington, Coats emphasized the need for administrative experience in the NIH director's post. "How does an individual with a love for literature and the laboratory handle the daunting task of administering a major national institution, filled with political intrigue and daily inundated with requests from senators and congressmen? It seems comparable to taking a politician out of the lights of the TV cameras and putting him in the lab where he's expected to make discoveries. I can't imagine any politician surviving in that atmosphere."

Varmus explained that, as American Cancer Society research professor at UCSF, he was excluded from deanships and other administrative posts that would have taken him away from research and teaching. "But I am no stranger to the issues confronting NIH involving research integrity, indirect costs, appropriations and the like. I've been in the thick of many of the battles."

Through his participation in the National Research Council, Varmus said he has further been exposed to the issues. "Though I haven't had the (administrative) titles, I have had the experience. Also, I do have a big team of accomplished deputy and associate directors. My goal is to have excellent relations with them."

Varmus said he is well versed in NIH's pressing problems, among them the allegations of discrimination on campus, the need to organize OAR, and to address the deterioration of the Clinical Center and almost half of the aging labs on campus. "These require my attention and I will give it to them," he declared.

"You are going to need a lot of steel to resist the enormous pressures," warned Coats.

Coats' last question involved the balance in NIH's portfolio of directed versus undirected research. Answered Varmus, "My concern is to protect the basic research enterprise, along with the areas that have been targeted by Congress."

When it came her time to query Varmus, Mikulski first acknowledged the accomplishments of NIH acting director Dr. Ruth Kirschstein, who was in the hearing room. "The committee should know that she has done an extremely good job running NIH and helping Harold Varmus with the transition. We owe her an enormous debt of gratitude."

Said Varmus, "To my great pleasure, Dr. Kirschstein will remain as deputy director of NIH and will be working with me hand in hand."

"We want you on the scene, to make sure the President's budget is really robust for NIH," Mikulski told Varmus. "I want you to be sure to pull out your green eyeshades when it comes time to look at the budget."

Mikulski asked Varmus to peer 6 months, 1 year and 3 years into the future "so we get a sense of your navigational chart for NIH," at which point Varmus catalogued the priorities mentioned earlier. When Mikulski made passing reference to the strategic plan crafted by former director Dr. Bernadine Healy, Varmus endorsed the process of thinking about future planning in concert with authorities from extramural NIH, but distanced himself from publishing any bible: "The recommendations that you come up with are often out of date by the time they're in print."

Wellstone, decrying stingy funding for biomedical science—which he said "pays for itself over and over and over again"—confided that both his parents suffered from Parkinson's disease, and asked Varmus why funding for research into this illness is comparatively low.

Varmus used the opportunity to explain that much basic research, while lacking a disease-specific title, nonetheless offers hope for treating diseases such as Parkinson's.

"There is an enormous amount of research being done on how cells talk to each other. It might not be labeled 'Parkinson's disease research,' but it has applications to that disease of the basal ganglia."

As Wellstone continued, Mikulski stepped down into the gallery to offer personal congratulations to Kirschstein.

Wellstone's last question involved environmental causes of disease.

Responded Varmus, "We have a whole institute dedicated specifically to such questions, the National Institute of Environmental Health Sciences. Other institutes as well are looking into environmental contaminant etiology in a variety of diseases."

Wrapping up the hearing, Kennedy counseled Varmus not to fret too much about his dearth of formal administrative titles:

"I sympathize with you. It's like when a governor runs for president. Everybody says he has no foreign policy experience. Or when someone runs for senator. People say you lack managerial experience. My experience is that these things shake out around the time of the first primary."

Kennedy asked Varmus to look into the tricky area of crafting pay scales sufficient to attract the best people into government service, then ended by welcoming Varmus' wife, who, he pointed out with pride, was born in Boston.

"Her father, Joseph E. Casey, was a congressman who once ran against Henry Cabot Lodge. We remember well her father's service to the state and to Congress."

By unanimous voice vote, the Senate committee approved Varmus as next NIH director on Nov. 10. As of press time, the full Senate had not yet voted on confirmation. ❑

what qualities and aspirations would I bring to the job?

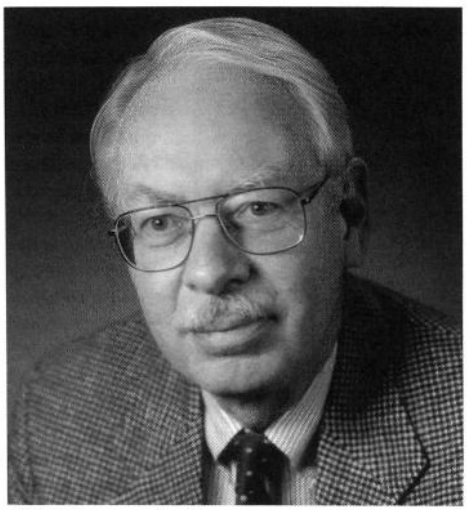
- As a working scientist, I will bring to discussions of science policy an intimate knowledge of how science is done and a firm commitment to scientific excellence.
- As an investigator who has seen the pursuit of an obscure chicken virus create a new vision of human cancer, I will defend open-ended basic science against the calls for restricted applications of what is already known.
- As a fair-minded citizen concerned with the role of science in our society, I will try to improve science education at all levels and to promote the careers of women and minority scientists.
- And as a medically trained custodian of federal funds, I will encourage NIH investigators to extend their biological discoveries to clinical settings.

These are large challenges, especially in a time of fiscal constraint. But it is also a time of remarkable exuberance in biology, when our understanding of living forms is reaching heights that could not have been imagined 50 or even 20 years ago. We are learning the instructions written into our genes; the way our cells divide and our organs develop; and the precise damage to molecules that causes disease.

I welcome the stewardship of NIH, for the NIH remains the world's best hope for sustaining this progress and for realizing its dividends for human health.

Twins Needed for Study

The Uniformed Services University of the Health Sciences seeks twins age 8 and older to participate in research. Subjects will be paid. For more information, call (301) 295-3672. ❑



"The Future Role of Reverse Transcriptase Inhibitors in AIDS Therapy," a research symposium honoring Dr. David G. Johns, will be held Dec. 6 from 9 a.m. to 4 p.m. in Bldg. 31, Conf. Rm. 10. An internationally recognized expert in the pharmacology of anticancer and anti-HIV drugs, Johns recently became an NIH scientist emeritus after a long and illustrious career as chief of NCI's Laboratory of Biochemical Pharmacology. The symposium program will consist of seven scientific presentations dealing with the clinical and preclinical aspects of HIV reverse transcriptase inhibition. Participants include S. Broder, B. Chabner, H. Mitsuya, R. Yarchoan, J. Bertino, Y.C. Cheng, A. Fridland, J-P. Sommadossi and J. Balzarini.

AIDS HISTORY
(Continued from Page 1)

National Commission on AIDS, echoed Koop's indictment of the obstacles posed by conservative ideologues close to the president—"People around presidents are so much more of a barrier than we can ever know"—and suffered as well presidential indifference—"I had very little interaction with past presidents (Bush and Reagan) during 4 years as chairman."

That much news was only day one. Day two dawned with a series of heartbreaking reports of undue suffering abroad wrought by social responses exacerbating the epidemic: Harvard professor Dr. Paul Farmer reported on "active and malignant harassment" visited by American soldiers on Haitian immigrants detained by the U.S. at Guantanamo, Cuba, a squalid, pest-infested barbed-wire encampment where some of the HIV-positive women allegedly received forced injections of the long-acting contraceptive Depo-Provera; Dr. Maryinez Lyons of the University of London limned the horrors of being a marriage-age woman in Uganda, a country where HIV and syphilis are rampant and where women are regarded as mere "transferable assets"; Dr. Anne Marie Moulin, a senior investigator at INSERM, Paris, put in perspective the tragic contamination of factor VIII in the French blood supply that led to the accidental HIV exposure of perhaps half of France's hemophiliacs, a "total social trauma" that "shook socialist France to its foundations." A bitter irony in that tragedy, she related, was an offer—turned down by French health officials—by the U.S. firm Travenol of a heat treatment that could have averted the contamination.


Dr. Maryinez Lyons


Dr. Anne Marie Moulin

The meeting's final speaker, NIAID director Dr. Anthony Fauci, gave a whirlwind review of novelties—both scientific and social—wrought by the epidemic, but emphasized most the urgent need for investigators to learn now how HIV works in the body: "The answer to HIV containment lies in intense study of the lymphoid tissues of those we call 'non-progressors'—those who are still well after a decade of being HIV-positive...There will be no solutions until we understand the virus-host interaction more clearly."

Sponsored by the AIDS history group of the American Association for the History of Medicine, the conference, in Bldg. 38A's Lister Hill Auditorium, was planned in part by Dr. Victoria Harden, director of NIH's Historical Office and the DeWitt Stetten, Jr. Museum of Medical Research on campus, and her staff.

Harden both presided at the last session of the conference and gave a talk, "The NIH and Biomedical Research on AIDS." Starting with the admission of the first AIDS patient to the Clinical Center on June 16, 1981—to an omnibus immune deficiency protocol led by NCI's Dr. Thomas Waldmann—Harden illustrated the rapid ascent, especially after 1986, of NIH's AIDS budget. She argued that AIDS, which was first studied here at the personal initiative of interested physicians, has wrought at least four unforeseen institutional changes: in the way clinical trials are designed and conducted, in how activism has come to prompt funding, in how budgets are divided into targeted versus basic research, and how one disease has come to dominate NIAID's research portfolio.

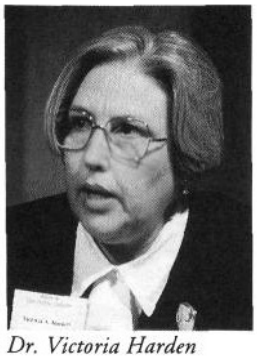
***"In early 1981, only a few people had heard of AIDS. AIDS quietly, gradually, and with almost no fanfare at all entered our thinking."*—Dr. C. Everett Koop, U.S. surgeon general 1981-1989**

Of all the talks—which even included former rock music critic and current *Village Voice* executive editor Richard Goldstein's examination of the impact of AIDS on American culture, at a dinner session—none came close to Koop's for prompting cynicism about top U.S. leadership during a public health crisis.

"In early 1981, only a few people had heard of AIDS," he related. "AIDS quietly, gradually, and with almost no fanfare at all entered our thinking."

By August of that year, some 100 cases had been reported to CDC, half of which had ended in death. "Everyone knew we were in for big trouble by that point."

Koop, whose confirmation as surgeon general was held up in the Senate at the time, recognized a tantalizing opportunity to be effective: "If there was ever a disease made for the surgeon general, AIDS was it."


Dr. Victoria Harden

But, for reasons Koop says he still doesn't understand, he was prohibited from talking about AIDS for the next 3 1/2 years.

The death of actor Rock Hudson in 1985 finally made AIDS the subject of White House attention, "though not as severely as I wished it might have," Koop recalls.

While much was being learned about AIDS in the nation's research labs—"We learned as much about AIDS in the first 6 years as we knew about polio in the previous 40"—Koop, who by 1984 had important information to impart to the public on the four known routes of AIDS infection, was muzzled at the behest of members of Reagan's domestic policy council.

During a visit by the president to the Great Hall in HHS headquarters at the Humphrey Bldg., Koop abruptly learned that he would finally get his chance to report to the public on AIDS.

"The president never told me in advance that I would do this. I'm just glad I was there in the audience that day, and I'm glad I was paying attention."


Dr. Virginia Berridge

With the help of then Secretary Otis Bowen ("a true public servant"), who helped him over federal clearance hurdles, Koop drafted, after 16 tries, a report that could assure Americans that their risks of getting AIDS were minimal if they took certain precautions. Some fancy footwork around the political appointees close to Reagan "whose conservative ideology was placed far above saving lives" enabled Koop to come up with a document that was eventually mailed to 107 million households in the U.S.

"Political meddlers in the White House tried to bottle up the whole effort," said Koop, who said the ideologues saw only two messages in the document—sex education, and the dreaded word "condom."

Once the booklet hit the streets, "I found myself praised by my former liberal adversaries and condemned by my former conservative friends."

Koop's travails with conservatives did not end with publication of the factbook. He recalls a meeting of the domestic policy council at which a nurse who was a member demonstrated "a depressing lack of intelligence" by speculating that AIDS might still be transmissable by cats, shared typewriter keys and doorknobs. "Who's to say the government researchers are right and that these ideas are wrong?" she allegedly cried.

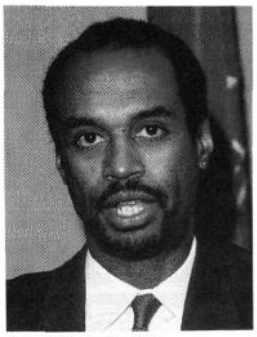
Reagan's advisers continued to keep Koop at arm's length from the president, who, said Koop, "was reluctant to go out front and provide leadership. By spring of 1987, it was clear that antibody testing was the top issue—

there were calls for testing everybody. It was at this point that AIDS became a civil rights issue."

The wisdom in public health circles was that testing had to be voluntary and confidential, lest people at high risk be driven underground where disease might spread faster. In the White House, however, "political hacks recommended widespread and mandatory testing." Koop, in one of his last victories in office, was able to persuade Reagan of the merits of the liberal view.

Looking back, Koop said the longest conversation he ever had with Reagan on AIDS was, ironically, at NIH "in a secure anteroom where the two of us were held before he introduced the members of the new AIDS commission" (see *NIH Record*, July 28, 1987).

Praising Koop as a leader who "wasn't afraid to swim upstream," CDC deputy Curran, an epidemiologist lured into AIDS research even before the first five cases were reported in 1981, made an impassioned plea for more Koop-like leadership in public health: "We desperately need more Koops and Osborns and (Adm. James) Watkinses (who headed the President's Commission on AIDS, precursor to the National Commission)—people who are committed and objective, who did the unexpected, who can rise above the fray and develop consensus. We need to nurture these leaders, not eat them alive."


Dr. Mark Smith

His reason for soliciting such leadership? "The HIV/AIDS epidemic is just beginning in the history of the world. This is really nothing compared to what's going to happen."

Curran, a medical school classmate of NCI director Dr. Samuel Broder, thinks the U.S. epidemic has had three eras, each roughly 5 years long—discovery of the epidemic, its growth in certain risk groups, and now the long haul, an era of crisis and opportunity. More behavioral science will certainly be required as the epidemic matures, he said, and politics will still tend to interfere with public health goals.

"Those of us who have been in the fight for a while often feel like the body of a bird being beaten to death by the right and left wings," he commented.

Representing what may be the next generation of AIDS leadership was Dr. Mark Smith, a young physician who went to work one day as a resident at SF General and looked up 10 years later to find that he had unwittingly embarked on an AIDS career that hasn't yet peaked. "AIDS chose me for a career, not the other way around," he explained.

Examining "AIDS and Minority Health," Smith both underscored what is widely known—that most new AIDS infection is disproportionately affecting Blacks and Hispanics—and debunked some myths that have arisen, notably the equation that whites get HIV through gay sex while minority HIV infection is IV-drug related.


Dr. James Curran

"In fact, most Black men (49 percent) with AIDS got it through sex with other men. The same is true for Latinos (46 percent)," he reported. "If you look at Asian-American and Native American populations, on the other hand, they are underrepresented in HIV infection. So you can't make the blanket statement that all minorities are alike in their rate or mode of AIDS acquisition."

Five main issues shape the response to HIV in minority communities, said Smith: blame (owing to reports of the virus' putative African origins, and early fears of an AIDS-Haiti connection), drug use (addicts are seen as both victims and victimizers in their communities), homosexuality (there is strong antigay sentiment in the minority community, which prompted Smith to comment ironically, "Social cross-reactivity [in a group supposedly sensitive to racism and bigotry] is partial at best"), suspicion (there are many who think AIDS is a deliberate government attempt at genocide; there is also a legacy of mistrust of research institutions, particularly in the wake of the infamous Tuskegee study of untreated syphilis), and, lastly, inadequate medical care.

"The big challenge, as it is for all epidemics, is prevention," said Smith. But even the most well-meaning minority-targeted ministries often fall a layer or two short of those most at risk. "Those folks don't have the social, let alone medical, connections that the rest of us do. They're also most susceptible to TB, violence, and drugs. Faced with a synergy of plagues, we [caregivers] have precious little way of surmounting any of these barriers."


Dr. June Osborn

Dr. June Osborn, who was chair of the National Commission on AIDS for its 4-year lifetime (1989-1993), gave a bittersweet account of her commission's efforts, which included 16 reports and two last rallying cries: "Leaders must speak out at all levels, and we must develop a national plan for confronting AIDS."

Osborn accused President Reagan of a "consistent silence on the rising number of people with AIDS," and added that the presidential commission on AIDS he eventually chartered represented a "sluggish and reticent response" to the urgings of the Institute of Medicine.

On a hopeful note, Dr. R. Gordon Douglas, president of Merck's vaccine division, said a 15-pharmaceutical company consortium was formed in April 1993 to collaborate on AIDS drug development. Worldwide, some 91 treatments—including 8 vaccines, 30 antivirals, 12 cytokines, 23 anti-infectives, and 13 immunomodulators—are being developed by 66 companies, he said.

The second day of "AIDS & The Public Debate" crossed international boundaries to examine tragic manifestations of the AIDS epidemic abroad, including a soberly given account of atrocities visited on HIV-infected Haitian immigrants detained by the United States military at Guantanamo, Cuba.

"We know what we're dealing with now...the answers are not going to come tomorrow."—Dr. Anthony Fauci, NIAID director

Dr. Paul Farmer, physician and anthropologist, spends half of each year in Harvard Medical School's department of social medicine. For the other 6 months he runs a rural clinic and hospital in Haiti. From conversations with witnesses and participants in the detention camps, he pieced together a story—largely unreported in the American press—of barbaric horror: 34,000 Haitian refugees were picked up at sea and taken to Guantanamo. There, amid poor living conditions that amounted to virtual exposure to the elements, the refugees contended not only with snakes, lizards, bees, flies, scorpions and vermin-infested food, but also the petty brutalities of their overseers and forced, invasive medical procedures.


Dr. Paul Farmer

Two hundred and sixty-eight of the refugees were found to be HIV-positive; for them, special indignities loomed. Women found to carry the virus were forced to endure injections of the long-acting contraceptive Depo-Provera. Others had blood drawn against their will.

"It was not much of a humanitarian mission, though that's what the U.S. military termed it," said Farmer, who blamed the maltreatment on soldiers' deep sense of racism and xenophobia.

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Where news accounts portrayed the American wardens as victims themselves of bureaucratic inaction as Washington agonized through a policy on immigration, Farmer painted a different scene: "active and malignant harassment, including beatings and the use of solitary confinement" was daily perpetrated by the soldiers against the detainees.

Indifference, if not hostility, regarding the fate of these disenfranchised people was not limited to the military alone, argued Farmer. With a Jesse Helms-sponsored bill before the Senate addressing the issue of immigration, the Department of Health and Human Services received some 40,000 letters supporting a policy of denying entrance to the U.S. of HIV-positive immigrants. "Only a few letters supported lifting the ban," Farmer reported. His conclusion from this evidence? "It is clear that the U.S. public simply doesn't care about Haitians with HIV."

But lots of people do care about HIV, especially when it becomes a backyard—or personal—issue, offered social historian Dr. Virginia Berridge of the London School of Hygiene and Tropical Medicine. She traced the voluntarism that emerged in response to the AIDS crisis in the United Kingdom through four stages, beginning with the intense enthusiasm of the early 1980's, through a wartime-like emergency response by the state, to a sense of normality and professionalization in the late 1980's (another speaker labeled this "the routinization of AIDS"), to the current "fragmentation of the liberal consensus."

Across the English Channel in France, the European nation worst hit by AIDS, society was rocked in 1988 when it was learned that the head of the nation's state-run blood banks had allowed contaminated batches of factor VIII to be transfused into perhaps half of the country's hemophiliacs. Dr. Anne Marie Moulin, an investigator at INSERM, Paris, reviewed the origins of the mishap, which "shook socialist France to its foundations." Ironically, the heat treatment that could have inactivated HIV in plasma collections was available in 1985, at the time of the contamination, she said. It had been offered to the head of France's blood bank, a state monopoly, but he turned it down allegedly because of the expense involved.

Examining the plight of Uganda, where an estimated 1.5 million citizens are HIV-positive and where almost half the country's hospital beds are occupied by patients with AIDS-related ailments, was Dr. Maryinez Lyons of the University of London. She focused primarily on the lowly status of women in Ugandan society: they are regarded as "transferable assets," can't inherit wealth nor the right to their children, do most of the agricultural work (often as "diggers," who draw the water and hew the wood) but almost never handle the profits of their labor, are fiercely resented if they are independent and must be subservient if attached (legally or not), and are often blamed for the spread of HIV.

Dr. Anthony S. Fauci

Photos: John Keith

"It is difficult for women in Uganda to survive outside the patronage of a male," said Lyons, who reported that it is not uncommon in that country for schoolgirls to earn tuition money by prostitution.

The closing speaker, NIAID director Dr. Anthony Fauci, said mankind has never faced a disease as complex as AIDS. "No other virus is as well studied as HIV...the virus itself is probably studied too much. What we need to know is how HIV works in the body. We still don't know that much today about the extraordinary process of pathogenesis."

Before the causative agent was found in 1984, Fauci and other investigators struggled to stifle their instincts that a virus was involved. "I remember the pain and discomfort of keeping an open mind when all our instincts told us it was a virus," he recalled.

In those days of naivete, scientists thought tackling AIDS would be a textbook case. Investigators would simply isolate the virus, then make a vaccine.

"Unfortunately, that scenario was based on an old paradigm, with old viruses," counseled Fauci. "HIV is a retrovirus with a complex life cycle. The virus can remain latent without causing clinical disease for many years."

Buried in the host genome, the highly mutable HIV reached many Americans before physicians ever saw the first case of the actual syndrome.

Fauci elucidated many of the familiar milestones reached by medicine as the epidemic has widened: the emergence of constituent activism, unprecedented press scrutiny, reinvention of both the drug approval process and the conduct of clinical trials, development of the parallel track in drug trials, a new era of science's accountability to Congress and the public, and lastly, how AIDS has exposed many inadequacies in our public health system.

Looking to the future, Fauci said we are in a new, sober era. "We know what we're dealing with now...the answers are not going to come tomorrow."

He expects combinations of chemotherapy to be tried, as well as drugs specifically tailored to attack different components of the virus and stages in its complex life cycle.

"Vaccines remain a problematic issue," he reported. "We don't really know what immune responses protect against HIV infection. The current trials are based on very little data. There exist almost none of the classic criteria for launching a large vaccine efficacy trial."

Fauci said there is newly emerging evidence from Thailand and Africa that certain strains of HIV may be adapting more readily to heterosexual transmission.

He reminded, "We still have a major problem in all of the risk categories."

Asked to comment on NIH's AIDS budget, Fauci emphasized the need for investment in all of biomedical research, including behavioral studies, adding that, under the best circumstances, he could find good uses for about four times the anticipated AIDS budget increase of 5 percent for next year.

Conference co-organizer Harden expects a monograph of the proceedings to be available some time next year. For more information, she may be reached at 66610. ❑

Karate Classes at Navy

Classes in ryukyu kempo karate and self-defense are being offered at the Bethesda Naval Hospital gym (Bldg. 23) for $49 a month. Private sessions are available and the first 25 students to sign up get a free uniform. Classes are Tuesday and Thursday evenings, 8-9, until Jan. 1; after that, same nights, 7-8:30. Call Peter Polander, (301) 933-9090. ❑

The NIH Life Sciences Education Connection

✎ Request for Mini Reviews: The Office of Education (OE) has an electronic bulletin board, NIH EDNET, that is available to teachers and students across the country. The forum conference on the bulletin board is used to post mini reviews by NIH scientists on current areas of research. The scientists pose questions at the end of the review to stimulate a dialogue on the topic presented. The objective is to initiate communication between students and scientists. The forum is also open to questions on new topics that may be posed by students. The OE requests that mini reviews, of approximately three pages at a high school or college level, be sent by research scientists to the Office of Education, Bldg. 20, Rm. 409. Researchers may call Dr. Mary McCormick or Gloria Seelman at 21914 for more information.

✎ Request for Speakers: Anyone interested in speaking in a high school classroom should contact the Office of Education. Speakers are typically requested to discuss their research, their career preparation and the process of science. High school students need role models and personal contact with scientists who can spark their interest in careers in science. Call Seelman at the number above.

New Online Catalog Brings DCRT Library to User's Office

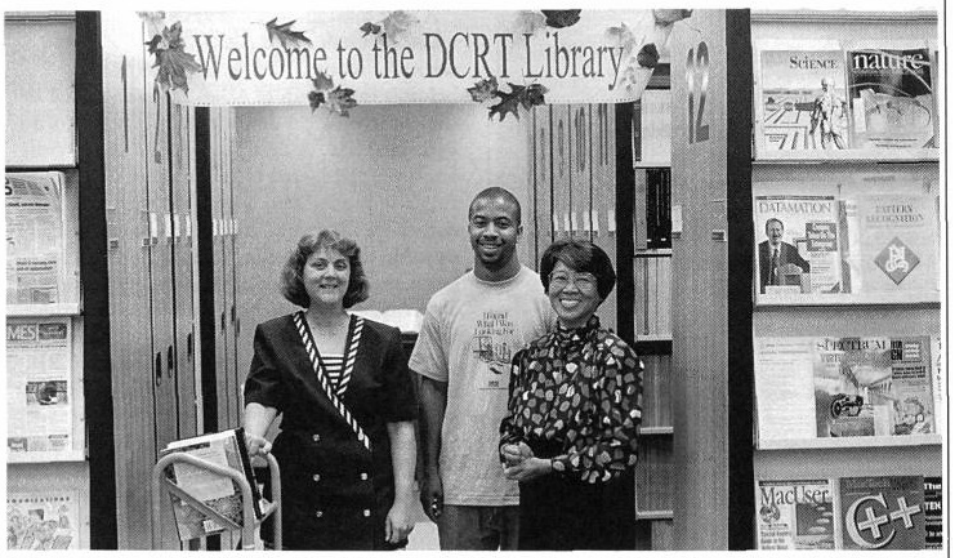
The DCRT Library presented its new online catalog of holdings at a recent open house. The service extends to NIH desktop computers the availability of the library's information resources in computer science, mathematics, and statistics, along with computer applications in biomedical sciences, engineering, information science, and management.

Librarian Ellen Chu says this online catalog is available on Gopher, a network-based distributed information system established at NIH by DCRT in 1992. The online menu allows users to search the catalog and then send search results to their own e-mail addresses. Thus, busy NIH personnel who log into the system as "remote" users can "browse" through the catalog and collect needed information at their own desks even after regular library closing hours. The menu also contains a suggestion box where users can comment on the library's services, collection, and information resources. Questions about the system may be sent by e-mail to dcrtlib@nih.gov.

The open house also showcased renovations in the library designed to increase storage capacity and to provide safe access to shelved items.

Attendees at the event participated in hands-on demonstrations of new movable shelving that increases storage in the library more than 30 percent. Twin banks of metal units standing in tightly collapsed rows open at the touch of a button, exposing aisles wide enough to permit wheelchair access. This high-density compact system includes safety features such as pressure sensitive floors and optical sweeps that control the opening and closing of aisles one at a time.

The DCRT library is open 9 a.m. to 4 p.m., Monday through Friday, in Bldg. 12A, Rm. 3018; phone 61658, fax 20007.



DCRT Librarian Ellen Chu (r) and staff members Anita McGregor and Douglas Whitley presented the library's new online catalog and a new compact movable shelving system (shown behind them) at a recent open house. Visitors saw how to access the catalog from their own computers on the network through the NIH Gopher server and received demonstrations of the operation and safety features of the modern storage units.

DCRT Computer Training Classes

Classes	*Dates*
Orientation to Running SAS on the Mainframe	12/1
Structured Software Systems Analysis and Design	12/1-3
SAS Fundamentals I for Nonprogrammers	12/2-3
Advanced Network Topics	12/6
Designing Tables and Managing a DB2 Database	12/6-8
Intermediate PC DOS	12/7-8
SAS Fundamentals II for Nonprogrammers	12/9-10
Network Services	12/10
Beyond Basic WYLBUR	12/13-17
Distributed Database Using Client/Server	12/13
INTERLNK: Connecting two PC's with DOS	12/13
OS/2 2.1 Overview	12/14

Classes are offered by the DCRT Training Program without charge. Call 62339 for more information. ❑

IRM Grad Degrees Available

The GSA 1000 X 2000 Program will be holding a systems analysis and software engineering course (ADMN643), which will be taught at NIH by the University of Maryland, University College for the spring semester starting January 1994. Find out how you can earn a graduate degree in information resource management (IRM) or earn an IRM certificate. For course enrollment and program information, contact Anne Robertson, 66693, or send e-mail to LISTSERV@NIHLIST, enter SUBSCRIBE IRMTRAIN, your e-mail address and your name. ❑

FIC Anniversary Symposium Set for Dec. 9

A special 25th anniversary symposium on the "International Dimensions of Biomedical Research," sponsored by the Fogarty International Center, will be held on Dec. 9 from 1:30 to 3:30 p.m. in Masur Auditorium, Bldg. 10.

Three of NIH's most prominent scientists will give talks at the symposium describing the importance of international cooperation in their own research endeavors. The speakers and their topics are:

- Dr. John B. Robbins of NICHD, who will discuss "The Essential Participation of Foreign Countries in the U.S. Vaccine Development Program";
- Dr. D. Carleton Gajdusek of NINDS, whose topic is "One Biosphere-One Humanity-One Science"; and
- Dr. Francis S. Collins, NCHGR director, who will speak on "The Human Genome Belongs to All of Humanity: International Cooperation in the Genome Project."

The NIH community and the general public are invited to attend. ❑

STEP Offers Courses for NIH'ers

The Staff Training in Extramural Program (STEP) committee, which provides training opportunities to NIH's extramural community, invites employees who wish to attend the following courses to submit an application (Form NIH-2245) before Dec. 10.

Module 3, "Necessity is the Mother of REinvention" will be presented Mar. 22. This l-day module will examine various options of research management through interactive discussions with faculty and participants. Faculty will include senior research administrators from NIH, other federal agencies, and private funding organizations.

Module 4, "Reaching Beyond—Business as Unusual" will be offered Apr. 13 and 14. This module will examine strategies for introducing new approaches and challenging established paradigms.

The application form is included in the new STEP catalog available in personnel offices, the STEP office (31/3B59), and the following locations: 31/1B44, 38A/604, EPN/635E, 6100/8A17G, Fed/800A, Gateway/2N212, NIEHS/3-301A, Parklawn/9C15, Solar/3A12, Westwood/648, EPS/350. For more information call 61493.

New NICHD Publication Discusses Common Sex Chromosome Disorder

It's the most common sex chromosome abnormality known, yet few people have ever heard of it. For this reason, most of those who have it are never diagnosed and never receive the treatments that would allow them to lead normal lives.

From 1 in 500 to 1 in 800 males have an additional X chromosome, giving them a chromosomal complement of XXY, instead of the usual male arrangement, XY.

This chromosomal arrangement is often erroneously referred to as Klinefelter syndrome, after Dr. Harry Klinefelter, the physician who, along with his coworkers, published a 1942 report describing men who had enlarged breasts, sparse facial and body hair, small testes, and an inability to produce sperm.

Subsequent studies showed that while most men having the symptoms Klinefelter described had an additional X chromosome, comparatively few of the males who had the extra chromosome developed the complete set of symptoms. For example, only about 10 percent of XXY males undergo breast enlargement at adolescence. For this reason, the term Klinefelter syndrome has fallen out of favor with medical researchers. Most prefer the term XXY males.

The causes for the condition are largely unknown. Advanced maternal age increases the risk for conceiving a child with the XXY chromosome count, but only slightly.

Until now, little information was available for recently diagnosed XXY men and boys. In what may be the most comprehensive publication of its kind, NICHD lists a variety of strategies for dealing with this chromosomal anomaly.

Understanding Klinefelter Syndrome: A Guide for XXY Males and Their Families, is based on an NICHD study in which a large sample of XXY males was diagnosed from a random screening of more than 40,000 infants.

The NICHD booklet describes currently available treatments for the condition, based upon the stage of life in which diagnosis occurs. Sections of the booklet offer guidance for parents anticipating the birth of an XXY child diagnosed prenatally, and for the parents of infants and small children recently diagnosed as XXY.

The booklet describes early childhood development and offers advice for parents on deciding whom to tell—and how much to tell—about their son's extra chromosome.

Copies of the brochure are available from NICHD, Bldg. 31, Rm. 2A32; phone, 65133.

Scientists Link Ancient Gene to Human Skull Deformity

A 600 million-year-old gene is responsible for a human birth defect, according to a recent scientific report. The gene, called MSX2, belongs to a group of genes that are crucial to the embryological development of most forms of animal life. A defective version of the gene has been discovered in members of a New England family who were born with a skull deformity known as craniosynostosis. It is possible that mutations of MSX2 or similar genes are involved in other developmental abnormalities of the head and face, according to the researchers.

Supported by NIDR, NICHD and NCRR, the study appears in the Nov. 5 issue of the journal *Cell.*

Craniosynostosis is the term that refers to a spectrum of skull malformations that result from the premature joining of the separate bones that make up the human skull. Normal development of the fetal skull requires coordinated growth and fusion of these bones along boundaries called sutures, in part to accommodate the enlarging brain. In the United States, approximately 1 infant in 3,000 is born with premature closure of one or more of these sutures, resulting in an abnormally shaped skull.

Approximately 90 forms of craniosynostosis have been reported in all ethnic and racial groups, with more than 50 having a genetic cause. Severe cases of the skull deformity require surgery to relieve increased pressure within the skull and the problems it can lead to such as seizures, breathing difficulty, and loss of vision and hearing.

Scientists have thought for some time that the genetic cause of craniosynostosis lies within the so-called homeobox family of genes. These genes control basic processes of embryo development that are common to both primitive and advanced forms of animal life, and their structure has remained relatively constant throughout evolutionary history. The report in *Cell* has produced a clear link between a homeobox gene, MSX2, and a form of craniosynostosis.

This is the first report of a human craniofacial disorder that is due to a mutation in the critical region of a homeobox gene that is believed to regulate other genes during embryo development. The MSX2 mutation was observed at a site within the homeodomain that has remained unchanged for millions of years.

This study, which has linked the MSX2 gene to the Boston type of craniosynostosis, has opened the door to tracking the genetic cause of other forms of craniosynostosis. Researchers believe that future studies may provide additional insights into improved therapeutic approaches to this serious disorder.—**Wayne Little** ❑

GSA Extends Fed Ex Contract

The General Services Administration extended the express small package contract with Federal Express for an additional year. The mandatory contract covers the period from Nov. 16 through Nov. 15, 1994.

The rates, charges, and services remain the same. The NIH policies and procedures relating to usage of this contract also remain the same. Refer to the NIH Yellow Pages under "Shipping and Receiving Instructions" and the "Federal Express U. S. Government Contract Service Guide" for more details. Call Blaine Jacobs, 65921 with questions about the contract, comments regarding enhancements for inclusion in next year's solicitation, or to schedule a briefing. ❑

The Division of Research Grants recently held a ribbon-cutting ceremony opening the new User Resource Center (URC) in the Westwood Bldg. Available to all ICD staff, the center offers several PCs, a learning lab, a library containing literature on computers and software, a video tutorial room, and computer classes taught by NIH Training Center contractors and Westwood staff. Dr. Jerome Green (second from r), DRG director, cuts the ribbon to the URC classroom and is joined by (from l) Sandy Brouard, URC coordinator; Tom Mitchell, information resources management officer, NIGMS; Miriam Spiessbach, chief, resource technology team, NHLBI; and Ellen Ring, chief, networking and telecommunications section, DRG.

NIDR's Robey Honored for Bone Research

Dr. Pamela Gehron Robey is the 1993 recipient of the Fuller Albright Award from the American Society for Bone and Mineral Research (ASBMR). Robey, chief of the skeletal biology section in NIDR's Bone Research Branch (BRB), was honored for her "meritorious scientific accomplishments in the bone and mineral field."

Dr. Pamela Gehron Robey

In nominating her for the award, former BRB chief Dr. John Termine called her "one of the bone field's most promising young investigators." ASBMR president Dr. Steven L. Teitelbaum presented Robey with the award at the society's annual meeting held earlier this year in Tampa.

Robey's research interest lies in the biochemistry of connective tissues, specifically, the study of osteoblasts, or bone-forming cells. Among her most important accomplishments is the establishment of an easy and reproducible procedure to isolate and characterize human osteoblasts from bone biopsy specimens from donors of any age, sex, or disease state. This finding was the foundation for several important breakthroughs in her laboratory as well as in other laboratories around the country.

A native of Bloomfield, N.J., Robey earned a bachelor's degree in biology from Susquehanna University. She received a master's degree in biochemistry and a doctorate in cell biology, both from the Catholic University of America. After obtaining her Ph.D., she worked briefly at the National Institute of Arthritis, Metabolism and Digestive Diseases and the National Eye Institute before joining NIDR.

Robey has published extensively on the biochemistry of connective tissues and serves on many editorial boards of bone, mineral, and endocrinology journals. Among her honors and awards are an Individual National Research Service Award, the ASBMR Norwich-Eaton Young Investigator Award, and election to the ASBMR council. ❑

ABSA Honors Safety's Blayney

The American Biological Safety Association (ABSA) recently awarded Michael Blayney its Robert I. Gross Memorial Award. The award funded a trip to ABSA's annual meeting for a presentation based on his abstract: "Application of Multiple Regression Analysis in Modeling Participant Responses to a Training Program in Biomedical Laboratory Safety." Coauthors for the abstract were Dr. Deborah Wilson, chief, Occupational Safety and Health Branch (OSHB) and Dr. Albert Lock of OSHB.

Blayney is enrolled in the Experiential Learning Program (cooperative education) established between NIH and the University of Maryland. At NIH, he coordinates training and education programs for OSHB, Division of Safety, including "NIH Lab Safety" and "Working Safely with Bloodborne Pathogens." At Maryland, he is a doctoral candidate in the department of industrial and technological education with a focus on occupational safety and health .

With an M.S. in science education (Syracuse University) and B.S. in biology and environmental science (Hampshire College), Blayney was previously associated with SUNY Health Science Center, Syracuse, as an environmental health officer and with AlliedSignal Corp. as a technical specialist in molecular biology. ❑

NIAMS's Lawrence Petrucelli Mourned

Dr. Lawrence E. Petrucelli, former NIAMS Arthritis Program director, died on Sept. 27. "His wisdom, compassion, and professional skills will be missed by all who knew him," said Dr. Lawrence E. Shulman, NIAMS director.

Petrucelli joined NIH in 1970 as a scientist administrator, and later became executive secretary of the pharmacology study section in the Division of Research Grants. In 1974, he joined what was then NIAMDD, as Arthritis Program director. He remained in that position until his retirement in 1992.

He was born in Bridgeport, Conn., and earned his undergraduate degree from Fordham University in 1954. Petrucelli received a master's degree from Ohio State University in 1958 and a doctorate in pharmacology from Georgetown University in 1963. His postdoctoral research in neuropharmacology was performed at the University of Pittsburgh School of Medicine. He served with distinction in the Army during the Korean War.

Dr. Lawrence E. Petrucelli

He is survived by his wife, Rosemarie Bifano Petrucelli, former NIDR scientific review administrator; a son, Michael J. Petrucelli; and his mother, Helen Petrucelli. The family asks that expressions of sympathy be made to the Shrine of the Most Blessed Sacrament Church in Washington.

Career Boosts for Women Explored via Seminar

The advisory committee for women, in cooperation with the NIH Training Office, recently addressed career development opportunities in a seminar presented to NIH employees. The presentation "Taking the Initiative: An Overview of Career Enhancement Opportunities" examined the COTA, STRIDE, Management Intern, and the proposed Management Cadre programs.

Lucretia Coffer, manager of the NIH Federal Women's Program, and Diane Armstrong, director of the Office of Equal Opportunity, opened the seminar and encouraged those attending to persevere despite a climate of cutbacks and freezes.

Expert speakers Cynthia Miller, Edith Pruden, Patricia Scullion and Joan Brogan described their respective programs. Following each speaker, the audience was entertained as program veterans Joan Topalian, Felicia Shingler, and Darla Smith related their personal experiences in humorous but serious terms.

Tenacity seemed to be advocated for all of the programs. The difficulty in both the application process and the actual program were realistically presented. There was no hiding the fact that these programs are competitive and that the work is hard. But the rewards and accomplishments of the various program participants were obvious. Audience members were eager to "take their own career enhancement initiative" and this presentation provided insight on how to begin.

Because of the interest shown in career development opportunities, the advisory committee for women plans to address this issue with seminars and workshops in the near future. ❑

Interested in Chamber Music?

The R&W Chamber Music Club puts out a directory of members of the NIH community who play instruments or sing, and who wish to be able to contact each other to form music groups. The club will not organize groups or schedule events; it will just provide the directory to help interested musicians make their own plans.

If you wish to be listed in the directory, submit the following information: name, instrument or vocal range, phone number for music calls (work, home, or both), work address, city where you live, self-rating of proficiency and experience (A, B, C, D), and any other information you feel important to convey such as special repertoire interests.

If you were listed last year, say whether you are still here and wish to be listed again, and submit any information that has changed, or was printed incorrectly last time.

Submit this information to Suzanne Epstein, Bldg. 29, Rm. 522, HFM-521. The directory will be distributed to all members, probably early in 1994. ❑

Fogarty Center, ORMH Announce Minority Support Program

The Fogarty International Center has established a new institutional training grant program to provide research training opportunities abroad for minority university students to stimulate interest in biomedical and behavioral research careers, and for minority faculty to conduct research in institutions abroad.

Funded by the NIH Office of Research on Minority Health (ORMH), the 3-year Minority International Research Training (MIRT) grants total more than $2.3 million for the first year and $3 million in fiscal 1994. The first 15 grants were awarded to 20 colleges and universities in 10 states, the District of Columbia, and Puerto Rico to enable about 130 U.S. students and faculty members to collaborate with foreign research centers in 27 nations that can provide a substantial research training experience for the U.S. participants.

Rep. Louis Stokes (D-Ohio) joined NIH acting director Dr. Ruth Kirschstein at NIH for the announcement of the new program in a recent meeting of project officers from the institutions involved and potential grantees. Stokes, a ranking member of the House appropriations subcommittee that directs funding for NIH, has spearheaded efforts to increase minority representation in the biomedical science and research fields.

"I applaud the creation of this new training grant program for minority students," Stokes told those attending the meeting. "These students will truly be young ambassadors of science."

Kirschstein called the program "exciting and well justified," and added: "The demographic trend shows that at present, minorities are underrepresented in biomedical research. Our success will be to rectify this disparity."

"We have created this program to encourage minority college students to choose careers in science, and we feel that by going abroad many students will learn the excitement of scientific research in a global atmosphere," said Dr. Philip E. Schambra, FIC director. "We also want to establish linkages between American scientists and institutions and established centers of biomedical research abroad."

Participants are from groups underrepresented in science, including African-Americans, Hispanic Americans, American Indians and Pacific Islanders.

"The MIRT program was created for the right reason, not a political reason, but because it makes good sense," Dr. John Ruffin, NIH associate director for research on minority health, pointed out. "Because diseases are not limited to this side of the ocean, minority students need to have global research experiences."

Three students from Winston-Salem State University in North Carolina—Micheala Jones, Travis Perry and Carlos Privette—told the group of their research experiences in Norway under a similar program. They praised their exposure to international research, saying that it played an important role in helping them choose science as a career.

The MIRT program was developed by FIC and the Office of Research on Minority Health following a workshop in October 1992 in which the presidents and other representatives of colleges and institutions with significant minority enrollments from across the nation met to discuss the unique role of international programs to enhance the recruitment, education and training of minority students in science.—**Jim Bryant** ❑

Attending the announcement of the new MIRT grants are (from l) Dr. Ruth Kirschstein, acting NIH director; Dr. John Ruffin, NIH associate director for research on minority health; Rep. Louis Stokes (D-Ohio); and Dr. Philip Schambra, FIC director. The new program, developed by ORMH and FIC, is aimed at stimulating greater minority interest in scientific careers.

Stokes speaks to attendees at a meeting announcing the new Minority International Research Training program. He called the students who will go abroad "young ambassadors of science."

NIH Scientists Interested in Cell Biology Asked to Organize

A Cell Biology Interest Group is being organized at NIH. Its purpose is to provide a framework for communication and interaction among the many NIH scientists working in the diverse fields of cell biology.

At a recent organizational meeting of about 80 NIH scientists, enthusiasm for this idea was great. Several activities were decided upon, including: (1) A monthly workshop where three NIH scientists will present their work in 20-minute talks. This will be held in Wilson Hall, Bldg. 1, from 3 to 5 p.m. one Wednesday each month. The first meeting will be announced in the yellow sheet (NIH Calendar of Events); (2) A monthly NIH Lectureship/Visiting Professorship in Cell Biology will be established to bring visitors to the NIH campus; and (3) A Directory for Cell Biology at NIH will be put together and widely distributed.

To assure that all interested members of the NIH community are included in this activity and appear in the Directory, register your laboratory by sending your name, name of laboratory and institute, two sentences describing your research interests, your telephone number, fax number, e-mail address, and mailing address to Rick Klausner, Bldg. 18, Rm. 101, fax number 20078. The initial organizing committee members who will coordinate these activities are, in addition to Klausner, Juan Bonifacino, Harris Bernstein, Diana Blithe, Sam Cushman, Monique Dubois-Dalcq, Peter Fishman and Ed Korn.

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