Sporn, Roberts Present Mider Lecture, Mar. 30

Transforming growth factor-beta (TGF-β) is a multifunctional cytokine involved in regulation of a diverse set of cellular functions including growth, differentiation, chemotaxis, and synthesis of the extracellular matrix. Elucidating the actions of this growth factor and understanding its role in specific disease processes are key research interests of Drs. Michael B. Sporn and Anita B. Roberts, chief and deputy chief, respectively, of NCI’s Laboratory of Chemoprevention in the Division of Cancer Etiology.

The two will review milestones and recent developments in understanding the role of TGF-β when they present the G. Burroughs Mider Lecture, “Transforming Growth Factor-Beta (TGF-β): Past, Present, and Future,” on Mar. 30.

HIV Risk on Rise in U.S. Women, Studies Show

Women constitute the fastest growing population at risk for HIV infection in the United States, with the majority of women being infected through heterosexual contact, speakers told the audience at the recent Women’s Health Seminar Series on “Women and HIV.”

“In the United States, HIV infection and AIDS in women is a problem,” said Dr. Lewis Schrager, chief of the clinical epidemiology section, Vaccine Trials and Epidemiology Branch, NIAID. “Globally, it’s an overwhelming problem.”

He said the driving factors behind HIV infection in women are injection drug use, sexual relations with injection drug users, and HIV infection in women being infected through heterosexual contact.

NIAID To Establish Allergic Diseases Lab

NIAID is establishing a laboratory dedicated to state-of-the-art scientific investigations of allergic diseases, which affect as many as 50 million Americans.

“Because allergic diseases continue to significantly influence the health of people in the United States and around the world, NIAID is strengthening its commitment to conduct the highest quality research on allergic and immunologic diseases, including asthma,” said NIAID director Dr. Anthony S. Fauci.

“Research results that can reduce the impact of allergic diseases will improve people’s health and quality of life as well as diminish the economic burden imposed on individuals, families and the health care system.”

The economic burden of these diseases is staggering, Fauci notes. One NIAID study, for example, estimated the total direct and indirect costs of allergic diseases in the United States in 2001 to be $15.6 billion.

NIAID’s new laboratory will be dedicated to state-of-the-art scientific investigations of allergic diseases, a field that has seen tremendous advances in recent years. The laboratory will be located on the NIAID campus in Bethesda, Maryland, and will be staffed by 20 scientists and support staff.

The laboratory will focus on asthma, allergic rhinitis, food allergies, and allergic skin diseases. It will be led by Dr. Lewis Schrager, chief of the clinical epidemiology section, Vaccine Trials and Epidemiology Branch, NIAID.

The laboratory will be equipped with state-of-the-art research facilities and equipment, including flow cytometers, mass spectrometers, and high-throughput screening technologies.

By Bob Kuska

25th Anniversary National Eye Institute: From Idea to Reality

Feb. 13, 1964, was a busy news day. In Dallas, District Judge Joe B. Brown prepared to issue a ruling on where Jack Ruby should be tried for the murder of Lee Harvey Oswald.

In Concord, N.H., New York governor and presidential hopeful Nelson Rockefeller declared the nation’s effort to land a man on the moon “a publicity stunt.” In Detroit, a resurgent Chrysler Corp. reported record profits over the past year.

But history was made on Feb. 13, 1964, that never appeared in the newspapers. That day, six research ophthalmologists met at Chicago’s O’Hare Airport to discuss some administrative matters. Because of a heavy snowstorm, the men were forced to extend the meeting for several hours. As they waited for the skies and runways to clear, the researchers broached the subject of creating a separate eye institute at the National Institutes of Health.

The 4-year lobbying effort that arose from this discussion tells the remarkable story of how thousands of Americans came together to help establish the National Eye Institute and invest in a future of improved eye care.

Although the meeting at O’Hare Airport is remembered today for its role in creating the National Eye Institute, which funds more than 75 percent of the vision research in this country. This exhibit, much like a stockholder’s report, highlights some of the sight-saving results of this support.

Vision Institute's traveling exhibit, VISION, will visit approximately 18 U.S. cities during the next few years, is the centerpiece of a nationwide celebration of vision research commemorating the 25th anniversary of the National Eye Institute. The exhibit was made possible through the financial support of several corporations, professional societies, and foundations.

“Many people think of vision research as something that they read about occasionally in the newspapers,” said Dr. Carl Kupfer, NEI director. "But through their tax dollars, Americans actually support the National Eye Institute."
Wednesday, Mar. 30, at 3 p.m. in the Clinical Center’s Masur Auditorium.

Sporn, Roberts and their coworkers were the first to define TGF-β and to purify the peptide more than 10 years ago. Since that time, their laboratory has been a leader in defining the family of TGF-β peptides, cloning five different forms of TGF-β, and describing the many activities of this family of peptides.

More recently, their laboratory has led the way in cloning and characterizing the promoters for the three mammalian forms of TGF-β and in defining the elements needed for their transcriptional activation. They have also investigated structural aspects of the TGF-βs and have begun to identify specific regions of the molecule involved in binding to proteins and TGF-β receptors.

An important finding of their laboratory was that certain steroid-like compounds, including the potent chemopreventive agents retinoic acid, 1,25-dihydroxy vitamin D₃, and tamoxifen, can induce expression of the TGF-βs in target tissues.

In the past year, the development of a mouse in which expression of the TGF-β, gene has been disrupted has led to several important findings regarding the function of TGF-β in the immune system, including its ability to regulate expression of the class I and II major histocompatibility antigens. Recently, Sporn, Roberts, and their coworkers have found that TGF-β is transferred maternally to newborns and that this maternal TGF-β is sufficient to rescue developmental defects in mice who do not produce the protein.

In their lecture, Sporn and Roberts will also highlight some of the newest findings of their laboratory concerning transcriptional/translational control, roles in carcinogenesis, the TGF-β knockout mouse, and activities of chimeric and mutant TGF-βs.

Sporn obtained his medical degree (M.D. with honor) from the University of Rochester in 1959. He is a member of numerous editorial and advisory boards and has played an active leadership role in the American Association for Cancer Research. He is the author of more than 300 publications. Sporn has been with NIH since 1960, and has been chief of the Laboratory of Chemoprevention since 1978.

Roberts obtained her Ph.D. from the University of Wisconsin in 1968. She serves on several editorial boards and plays an active leadership role in the Wound Healing Society. She joined NCI in 1976 and became deputy chief of the Laboratory of Chemoprevention in 1990.

The G. Burroughs Mider Lectureship, established in 1968, recognizes scientists who have contributed significantly to the biomedical research eminence of NIH. Previous lecturers have included Drs. Judith L. Rapoport, Steven A. Rosenberg, R. Michael Blaese, W. French Anderson and Mortimer Mishkin.

Research Volunteers Needed

The Laboratory of Neurosciences, NIA, is seeking healthy volunteers to participate in a study investigating the effects of aging on brain functions. Volunteers must be in excellent health, medication-free, and without past or present major health problems. Procedures require approximately 15 hours; participants can receive a stipend of up to $300 depending on the time involved. For more information, call 6-4754, Monday through Friday, 9 a.m. to 5 p.m.
World Health Day Celebrated Thursday, Apr. 7

On Apr. 7, the 187 member countries of the World Health Organization (WHO) will celebrate World Health Day. This year the theme is oral health, and the activities inaugurate the 1994 "Year of Oral Health."

As one of WHO's collaborating centers, NIDR will participate in the events associated with this celebration. The events, cosponsored by government agencies and professional organizations, are designed to communicate information to the public about oral health advances.

Everyone, from preschoolers to senior citizens, is encouraged to participate in the celebration of World Health Day and the "Year of Oral Health." Planned activities include health fairs, special exhibits, lectures, TV programs, publication of magazine articles, and the issuance of governmental resolutions and proclamations to help promote oral health.

World Health Day has been sponsored by WHO since 1950 to increase awareness of health conditions worldwide and to stimulate community participation. Global issues highlighted in the past included such topics as "Heartbeat—the Rhythm of Health," and "Injury and Violence Prevention."

CRISP Now on CD-ROM

The Computer Retrieval of Information on Scientific Projects (CRISP), NIH's scientific database describing extramural and intramural research supported by the Public Health Service, is now available on CD-ROM.

Recently produced by the Division of Research Grants' Information Systems Branch, it is entitled "CRISP: Biomedical Research on CD-ROM" and provides the user with powerful text-searching capabilities. The disc holds more than 54,000 PHS-funded records, an entire fiscal year of research information. Users can easily search abstracts, titles, research investigators, institutions, etc., without online charges and each disc has both a MS-DOS and Windows version.

These enhanced capabilities, combined with the CD-ROM 600-megabyte storage space, virtually eliminate the need to sift through mounds of paper output manually to find research grant project information.

To search CRISP CD-ROM, users need an IBM PC or compatible with 4 MB of RAM, a CD-ROM drive reader with MS-DOS extensions, and Microsoft Windows 3.1 or DOS.

CRISP on CD-ROM is updated quarterly and is available by subscription from the U.S. Government Printing Office. The annual subscription rate is $93 (single copy $24). Orders may be placed by calling (202) 783-3238, or fax (202) 512-2250.

For more information, contact the Information Systems Branch, 4-7267.

NIAID To Fund Centers for AIDS Research; Money Is for 5 Years

NIAID will award grants for three new and eight continuing Centers for AIDS Research (CFARs) at leading research institutions in the United States. In addition, NIMH will fund one new CFAR.

The CFAR grants, lasting 5 years, provide shared core support for facilities, research techniques, and staff at institutions conducting high quality, multidisciplinary research on HIV and AIDS.

"The very nature of the HIV epidemic requires a multifaceted approach to research that involves basic, preclinical, clinical and applied scientific investigations. Our CFARs foster interdisciplinary cooperation between basic and clinical scientists who have earned outstanding reputations in HIV and AIDS research," said NIAID director Dr. Anthony S. Fauci. "In addition, the CFAR concept permits a greater quantity and quality of HIV and AIDS research than would be possible with the same investment of resources in individual grants."

The NIAID CFAR program will total about $7 million during the first year, with individual grants awarded between Mar. 1 and Aug. 1, 1994. The maximum level of funding has been set at $750,000 for each award for the first year. Applicant institutions for CFARs had to demonstrate substantial current funding in AIDS research from NIAID.

NIAID established the CFAR program in 1988 to enhance substantially the yield of scientific information about HIV and AIDS that could lead to improving the diagnosis, treatment and prevention of the disease.

STEP Examines NIH Workplace

NIH is being challenged by mandated downsizing and the call for plans to "redefine" the way it does business. Employees are faced with changing technologies that must be incorporated into day-to-day business. How are these changes "redefining" the typical NIH office?

At a STEP forum on Thursday, Apr. 21, from 1 to 3 p.m. in Wilson Hall, Bldg. 1, this topic will be examined. The following questions will be discussed: What are offices currently doing to meet the new demands and what changes are likely in the next few years? What impact will new technologies and downsizing have on the current functions of support and professional staff?

The speakers will be: Dr. Lynne Chernin, Chernin Associates Inc.; Howard Chernoff, personnel officer, NIGMS; Dr. John McGowan, director, Division of Extramural Activities, NIAID; and Cassandra Isom, assistant director for development and training, Division of Personnel Management, OD.

The forum is open to all NIH personnel. No advance registration is required. Attendance will be on a first-come, first-served basis. Sign language interpretation will be provided. For more information call 6-1493.
sexual relations with men at increased risk.
The risk of developing HIV infection and AIDS is especially high among minority women. "In African-American women," he added, "the years of potential life lost due to AIDS has surpassed years of potential life lost due to breast cancer. Women need to demand that their partners use protection, and we need to develop ways women can protect themselves."

According to Dr. Alexandra Levine, professor of medicine and chief of the division of hematology at the University of Southern California School of Medicine, 61 percent of women who are infected with HIV contracted the virus through sexual intercourse with a high-risk partner.

She explained that risk factors for heterosexual transmission include a break in mucosal barriers, as found in genital ulcer disease; inflammatory diseases of the genitourinary tract, as found in various sexually transmitted diseases; anatomic factors, such as an intact foreskin or cervical cancer; certain sexual practices, such as receptive anal intercourse and sex during menses; and various HIV-related factors such as advanced HIV infection in one's partner.

Once infected, Levine explained, men and women differ in the manifestations of the disease. Potential differences affecting manifestations include differences in underlying immunity, especially during pregnancy; various opportunistic infections that may be encountered; pharmacokinetics of various drugs; access or utilization of health care services; psychosocial factors; and specific gynecologic illnesses in HIV-infected women.

The majority of women with HIV infection are in their childbearing years, which adds the concern of possible transmission to the infant. Levine said that, in the U.S., the chance of transmission from the infected mother to her infant is approximately 30 percent. The virus may be transmitted to the fetus intrapartum through the placenta; through infected blood at time of delivery; and via lactation.

Addressing these concerns, NIH conducted a clinical trial on zidovudine (ZDV) for the prevention of transmission of HIV from infected mothers to their infants. Dr. James Balley, chief of the Pediatric Medicine Branch, NIAID, explained that the treatment regimen consisted of ZDV administered to HIV-infected pregnant women beginning at 14 and 34 weeks of gestation, continued intrapartum, and then to the infants during the first 6 weeks of life.

The interim results of the randomized clinical trial showed a significant reduction of the risk of transmission of HIV from mother to infant, Balsley said.

While there are no current apparent side effects in the women who participated in the trial, he emphasized that researchers do not have information on long-term effects on the child and they will have to conduct long-term followup studies to address this issue.

The closing speaker, Dr. Robert Fullilove, associate dean for minority affairs at Columbia University School of Public Health, addressed the challenges of HIV prevention in minority communities. He said that communities have a "common thread" and one must find the core of the community in order to deliver a message and educate the people.

"Destruction of the community network contributes to the AIDS epidemic," he explained. "We cannot have community health education campaigns if communities don't exist. We need to find a recognized leader, someone around whom the community can rally. This will allow us to bring in people who might otherwise be reluctant. If we can find the core of the network, incredible communities can be built."

The Women's Health Seminar Series is sponsored by the women's health seminar committee of the Office of Research on Women's Health. Dr. Vivian Pinn, NIH associate director for research on women's health and director of ORWH, opened the second program of the four-part series. The final topic for the 1993-94 series will be "Breast Cancer" on May 19. For more information call 2-1770.

**Golf League Plans 1994 Season**

The NIH R&W 9-Hole Golf League is preparing for its 1994 season. Play is once a week after work at the Falls Road public golf course. This league accommodates all levels of golfers through competitive and noncompetitive play. To play competitively, three 9-hole score cards must be submitted in order to determine a handicap. The season begins in early May and ends Labor Day. For more information or to obtain a registration form, contact Lew Pollack, 6-0612, for B-Team (11-20 handicap); Susan Shoaf, 6-4936, for A-Team (0-10 handicap) or Miriam Randall, president, 6-7453. Registration closes on Friday, Apr. 15.

**Nominees Sought for Award**

The Asian/Pacific Islander American advisory committee is seeking nominees within the NIH community to receive annual awards to be presented on May 13 at the committee's Heritage Month Culture Celebration evening program.

Nominations must be received by close of business on Apr. 4 and should be for a person (or persons) contributing substantially to equal opportunity employment and related matters in the workplace.

Nomination should be in the form of a letter stating the achievements of the nominee. The letter should be sent to Dr. Rita Liu, chair, education and awards subcommittee, A/PIAAC, Rm. 10-42, Parklawn Bldg., fax 3-0538.
Conference on Ovarian Cancer
NCI and the NIH Office of Medical Applications of Research are sponsoring a
Consensus Development Conference on Ovarian Cancer: Screening, Treatment, and
Followup, Apr. 5-7.
Each year approximately 24,000 women are
diagnosed with ovarian cancer, and more than
13,000 die of the disease. The purpose of this
colference is to examine what is known about
screening, prevention, diagnosis, and treat­
ment of ovarian cancer.
Conference sessions will be held in Masur
Auditorium, Bldg. 10. Sessions will run from
8:30 a.m. to 5:15 p.m. on Tuesday; 8:30 to
11:30 a.m. on Wednesday, and 9 to 11 a.m.
on Thursday.
This 2½ day conference is open to the
public, and there is no charge for registration,
but attendees are encouraged to register as
early as possible. Contact Laura Hazan at
Technical Resources, Inc., (301) 770-3153,
for program and registration information.

Teacher Award Nominees Sought
The NIH fellows committee is requesting
submission of nominees for the Distinguished
Teacher Award. The award has been given
annually since 1985 and recognizes the
excellence of inpatient and outpatient teaching
involving the direct care of patients provided by
junior clinical investigator at the Clinical
Center. The award, consisting of a certificate,
will be presented at Clinical Center grand
rounds in May or June.
Clinical associates are asked to nominate
teachers with whom they have had significant
contact and formally honor them for the
contributions they have made or are making to
the fellow’s professional development.
Nominations should be supported by a
statement of less than one single-spaced,
typewritten page.
Fax your nomination to Cindy Parker, NIH
Office of Education, 2-0483. Deadline for
receipt of nominations is Apr. 15.

NIH R&W Co-ed Softball Recruits
Are you looking for some fun and excite­
ment? If you are, the NIH R&W Co-ed
Softball league is just for you! The softball
season runs from May until August. Games are
played weekday evenings at fields located near
NIH.
There are currently openings for three new
teams. Any individual player or team cap­tains
interested should contact Genia Bunn, 6-2266,
for more details.

Linda Nee, a social science analyst in the NINDS
Office of the Clinical Director, family studies
unit, has been chosen to give the annual Hoffman
Lecture on Sociology and Social Policy at Russell
Sage College, Troy, N.Y., on Mar. 31. She will
speak on “Social Factors Affecting Longevity: The
Social-Cellular-Survival Complex.” Nee, who is
well-known for her studies of Alzheimer’s disease
in large family groups, has written more than 40
published articles. She has received numerous
awards including the 1988 Research Award from
the Alzheimer’s Association of D.C., the 75th
Anniversary Commemorative Medal from Russell
Sage College for her outstanding contributions
and achievements in health care, and the PHS
Volunteer Award. Nee has been a board member
and president of the D.C. chapter of the National
Association of Social Workers, the Alzheimer’s
Association of D.C., and the friends of the
Clinical Center at NIH. Recently, she was elected
trustee of the Sage Colleges in Troy, N.Y.
Donald F. Cyphers, financial management officer at NIDDK, retired Jan. 3 after 37 years of federal service, 27 of which were spent with NIDDK.

Following graduation from Cornell University, Cyphers joined the U.S. Navy as an airborne radar officer and assistant squadron legal officer. In 1961, he came to NIH as a management intern and later accepted a position with NIAID as assistant budget officer. In 1966, looking to broaden his management experience, he became an administrative officer in NIAID's transplant immunology contract branch.

In 1967 he came to NIDDK to manage its financial operations. As a financial management officer, Cyphers played a key role in developing and implementing program operation guidelines, while also serving as a senior advisor to four institute directors. "I never felt like I had a supervisor or was a supervisor because working at NIDDK was such a team effort," he said.

Dr. Phillip Gorden, NIDDK director, described Cyphers as "the person who made miracles happen when I was in the intramural division. Don is an excellent example of the intellectual environment of NIH. His leadership has been greatly appreciated during his 27 years of service to the NIDDK."

Cyphers is not likely to have time to miss NIDDK. Two years ago, he and his wife Jane, who are experts on the Victorian period, bought a Victorian house, built in 1892, in Old Towne Gaithersburg. Combining their love of antiques and their knowledge of the Victorian period, they have filled their home with beautiful period furniture and collectibles. In fact, the Gaithersburg Heritage Alliance has featured Cyphers' home on its tour of historic structures.

During the winter months, Cyphers and his wife plan on spending their leisure time relaxing in their other home on Lake Dora in central Florida. One of the first items on his retirement agenda is to buy a small sailboat so he can pursue his love of sailing on the lake. For many years Cyphers was active in the Sea Scouts, a branch of scouting that trains older Boy Scouts in boating and other water activities. As a former leader of a Sea Scout troop, he took the scouts on many sailing trips on the Chesapeake Bay.

At a party held in his honor, his friends and colleagues presented him with a number of gifts, including a marine frequency radio. Because Jane is not a fan of sailing, the 2-way radio, with a main station for their home and a hand-held radio and antenna for Don's sailboat, will allow them to maintain communication with each other. —Eileen Corrigan

SAS Video Training Available

Six SAS Institute video tutorials are now available for viewing in the NIH User Resource Center in Bldg. 31 through a cooperative arrangement between DCRT and the NIH Training Center. For experienced SAS software programmers, these tutorials take advantage of the visual impact unique to video to present information. Each video provides about 1 hour of instruction and most have a student handbook that the student may take back to the office/lab. Topics included are:


For more information or to make a reservation to view a tutorial, call 6-5025.

DCRT Training Classes

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Dr. Mario Sznol recently became head of the biologics evaluation section of the Cancer Therapy Evaluation Program in NCI's Division of Cancer Treatment. He received his B.A. from Rice University, where he was elected to Phi Beta Kappa and graduated magna cum laude. In 1982, he graduated from Baylor College of Medicine. Sznol is board-certified in internal medicine and medical oncology. He is currently a member of the American Society of Clinical Oncology, the American Association for Cancer Research, and the American College of Physicians.


NIAID Mourns 40-Year Veteran Holly Smith

NIAID’s Laboratory of Clinical Investigation (LCI) mourns the loss of Holly A. Smith, who died on Nov. 19, 1993, of a heart attack. She suffered a heart attack following an open heart surgery at Washington Hospital Center in Washington, D.C. He was 67.

Smith began working for the federal government in 1950 at the Bureau of the Census as a statistical clerk. He came to NIH in 1953—the year the Clinical Center opened—as an animal caretaker technician. He was promoted to medical biology technician and research technician in viruses and rickettsia. At the time of his death, Smith was a biological laboratory technician (microbiology).

"Mr. Smith developed a mastery of tissue culture and virologic techniques that spanned the origins and explosive development of animal virology as a discipline," says Dr. Stephen E. Straus, chief of LCI. "Literally hundreds of research publications on both clinical and basic problems in gastrointestinal, respiratory and herpes virology were supported by his efforts. He was a coauthor on many of these."

"Those who worked with Mr. Smith on a daily basis, though, will recall him most as a gentle, soft-spoken and refined man of great warmth and self-discipline," adds Straus. "Generations of young scientists traversed their first research years by the side of Mr. Smith, who taught them generously and with encouragement and affection."

One of those young scientists is now director of NIAID. Dr. Anthony S. Fauci says, "Mr. Smith was himself an institution within NIAID. We will always remember with fondness and appreciation his help in our beginning days in research. He was here in 1968, when I first came to NIAID as a fellow and was very generous with his time and expertise in helping to orient me and other young investigators and in teaching us complex techniques used in laboratory work."

In 1988, Smith received the NIH Merit Award for "34 years of contributions to clinical virology and the NIH community." In 1987, the Clinical Center’s department of transfusion medicine presented him with an Outstanding Service Award for 25 years as a volunteer blood donor.

Smith was born in Ft. Pierce, Fla., and served in the army in World War II in the Pacific theater.

Besides the many in NIAID who will deeply miss Smith, he leaves his wife of 11 years, Diane Afes Smith, and an extended family of relatives and friends. Smith was laid to rest at Rock Creek Cemetery in Washington, D.C., atop a quiet grassy knoll befitting his manner and dignity.

Retired NCI Researcher Lucia Dunham Dies

Dr. Lucia Jordan Dunham, 87, a retired researcher in the pathology laboratory of the National Cancer Institute, died Feb. 21 at Suburban Hospital after a stroke. She had lived in Bethesda since 1949.

Dunham retired in 1974 after 23 years as a medical officer for NCI. Her work there included studies of transplantable and transmissible tumors, carcinogenic materials in drinking water and environmental causes of oral cancer. She wrote or coauthored more than 30 publications.

Dunham was a native of Chicago and a graduate of Smith College. She received a medical degree from the University of Chicago, where she was an assistant in cancer research programs from 1938 to 1946. Until 1949, she was assistant editor of the journal Cancer Research. After moving to the Washington area, she was a professional assistant at the National Research Council.

Howley Receives Ehrlich Prize

Dr. Peter Howley, a former NCI lab chief who recently left NIH to become chair of Harvard Medical School’s department of pathology, received the Paul Ehrlich Prize for 1994, the most prestigious medical award given by the Federal Republic of Germany. Howley, whose pioneering work over the last decade on the molecular biology of papillomaviruses led to numerous outstanding contributions in the understanding of viral gene expression, is considered a leading geneticist in the field of papillomaviruses, an important tumor virus group. Previous recipients of the Ehrlich Prize at NIH are Dr. Stuart Aaronson (1989), Dr. Abner Notkins (1986), Dr. Michael Potter (1983) and Dr. Wallace Rowe (1979).

FAES Needs Teachers, Courses

The FAES Graduate School at NIH needs new instructors and new courses (at all levels) in chemical, physical and biomedical sciences, medicine, statistics or any other area. If you would like to teach one night a week, have ideas for courses not listed in the current catalog, would like to share specialized knowledge in any scientific or nonscientific area and/or the desire to acquire teaching experience, call Lois Kochanski, 6-7976. Even if you are at NIH (or elsewhere) on a temporary basis, your services are welcome. Lecturers are paid a modest remuneration and have fringe benefits such as FAES bookstore discounts and Social Security coverage.

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Science and Industry, where an estimated 40,000 people saw the exhibit during its 2-month stay; and the Museum of Discovery and Science in Fort Lauderdale, Fla.

In each city, VISION has earned excellent reviews. "The exhibit has broad appeal," said Frank Cycenas, design resources director for Chicago's Museum of Science and Industry. "Some exhibits only appeal to one age group. VISION appeals to a variety of visitors. You might see a school group, a family with small kids, and an older couple by the exhibit all at the same time."

The 2,000-square-foot, 52-panel exhibit highlights two themes: how the eye and brain interface to create vision and how researchers are developing novel strategies to protect our eyesight from disease and developmental problems.

To illustrate these ideas, the exhibit features a number of "hands-on," interactive activities that demonstrate how the eye focuses light, how we perceive motion and color, and how the brain processes visual information into a meaningful picture.

In addition, VISION offers a remarkable display of artifacts including antique eyeglasses and glass eyes, on loan from the Foundation of the American Academy of Ophthalmology. It also features "Eyeglasses of the Rich and Famous"—an interesting display of eyeglasses worn by such luminaries as George Bush, John Chancellor, and Miss Piggy from the Ohio State University College of Optometry.

According to Jean Horrigan, program director of NEI's 25th anniversary, the exhibit also serves as the focal point around which local research centers can organize other regional events celebrating vision research.

In San Francisco, Smith-Kettlewell Eye Research Institute joined forces with five local research centers to host a 3-day celebration that included an evening reception, science writers seminar, and an exhibition of local vision research activities.

The University of California at Berkeley School of Optometry also presented "Vision Education Day." That day, the School of Optometry closed the doors to its clinic, allowing nearly 600 fourth and fifth grade students from throughout the Bay Area to try on eye goggles, take home photographs of the back of their eyes, and learn more about the eye's anatomy.

"The kids were terrific and the interactive nature of the program made it particularly effective," commented Karla Zadnik, a senior researcher at the UC-Berkeley School of Optometry. "The program served the dual purpose of helping to meet the university's goal of reaching out to its neighbors and at the same time fit in with the NEI's mission of interacting with the community."

After its 2-week stay at Union Station, VISION travels to New Orleans, where it will be exhibited in July and August at the Louisiana Nature and Science Center. In October and November, it will be exhibited at Boston's Museum of Science.

VISION is just one of several events planned to commemorate NEI's 25th anniversary. Other activities have included:

- Research to Prevent Blindness, a voluntary health organization, sponsored a science writers seminar last April in Universal City, Calif. The 4-day event brought together 30 of the nation's leading vision researchers to discuss the latest advances in the control and prevention of blinding diseases. The seminar included a special ceremony to commemorate NEI's 25th anniversary, at which Kupfer presented the keynote address, "Vision in the Year 2000." Hollywood star Angela Lansbury was the event's honored guest. Press coverage reached more than 12 million Americans.
- The American Academy of Ophthalmology last April displayed a 12-panel exhibit on vision research on Capitol Hill. The exhibit, which honored NEI's 25th anniversary, was shown in both the Cannon House Office Bldg. and the Russell Senate Office Bldg.
- The American Academy of Ophthalmology opened a hands-on learning exhibit at the Capital Children's Museum in Washington, D.C., last May. The exhibit, which is still on
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NEI HISTORY
(Continued from Page 1)

Eye Institute, it was actually arranged to lay the groundwork for another organization: The Association of University Professors of Ophthalmology.

Present that day were some of the biggest names in the field: Drs. A. Edward Maumenee, Johns Hopkins University; David Cogan, Harvard Medical School; Michael J. Hogan, University of California at San Francisco Medical School; John McLean, Cornell University School of Medicine; and Bernard Becker, Washington University Medical School.

As the snow settled over Chicago and the scientists exhausted the day's agenda, their conversation shifted from the nation's university campuses to the overall state of vision research.

They talked about NIH, where the National Institute of Neurological Diseases and Blindness served as the primary federal supporter of vision researchers. While NINDB had been helpful in expanding the field, they agreed that as long as vision science was linked to neurology, the field would face an uncertain future.

As Jules Stein, a leading ophthalmologist and businessman, later summarized the problem, "We have moved out of the horse-and-buggy era and the potential of our ophthalmic researchers today far exceeds the resources available to them. But there will be no substantial progress while ophthalmology is forced to tag along as a medical subspecialty, without self direction and subject to the narrower leadership of those whose major interests lie in other fields."

Maumenee, who led the discussion, as well as his colleagues, were painfully aware from their own clinical experience that although most eye diseases are not fatal, they can have enormous social and personal costs.

In the early 1960's, thousands of Americans were blinded by diseases that were inadequately studied and poorly understood. Many commonly used treatments had never been scientifically validated for their safety and efficacy.

Government estimates during the 1960's placed the annual cost of blindness in the United States at nearly $1 billion. This estimate caused some scientists to wonder, "When we compare this (the cost of blindness) with the pitifully inadequate sums spent on eye research, we may well ask if we ourselves have not been blind in our total approach to the problem."

Before Maumenee and the others flew home that day, they concluded that a national eye institute was critical both for the well-being of the nation and for the progress of science.

Maumenee contacted Stein, chairman of the New York-based voluntary organization Research to Prevent Blindness (RPB), to discuss the viability of a national eye institute. Stein,

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An Interview with Dr. Carl Kupfer, NEI Director

On Jan. 11, 1970, Dr. Carl Kupfer was appointed first director of the National Eye Institute, a position that he still holds today. With his strong research background and penchant for strategic planning, Kupfer has firmly established NEI as the world's leading resource for the support and conduct of vision research. On the occasion of NEI's 25th anniversary, Kupfer recently offered some thoughts on the past, present, and future of NEI and vision research.

How would you describe the last 2 decades under your watch at NEI?

It has been, without a doubt, the most satisfying professional experience I've ever had. It's the longest time I've been in one place, and to be able to shape the direction of vision research, directly in the United States and indirectly throughout the world, has been very satisfying to say the least. The nation's investment in vision research has increased from $23 million to almost $300 million in the last 25 years. The number of people engaged in vision research, by way of looking at the membership in the Association for Research in Vision and Ophthalmology as well as the Society for Neuroscience, has increased tremendously. I think the results of our clinical trials have really had an impact on the welfare of patients, not only in the United States but throughout the world.

What has the existence of NEI meant in the last 25 years to the expansion of vision research?

I think the NEI has made it quite clear to the vision research community that those with both the strongest laboratory and clinical research units will be the major contributors to the field. I think the NEI has focused the attention of the leaders of the vision community on the value and the opportunity of doing strong biomedical research in their departments and collaborating with other departments in their institutions.

What were some of NEI's major accomplishments during its first 25 years?

To the American public, I think the most significant advance has been the establishment of effective treatment for diabetic retinopathy, a potentially blinding complication of diabetes. Another major advance was the validation of cryotherapy to help prevent the blinding effects of retinopathy of prematurity in very low birthweight infants. These and several other NEI-supported clinical trials have improved the ability of the ophthalmologist to present to the patient the pros and cons of any particular intervention.

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NEI MARKS ITS PLACE IN RESEARCH HISTORY
(Continued from Page 9)

whose organization also championed the idea, told Maumenee that the RPB was anxious to get involved.

Over the next several months, Stein met with and gained the support of some of the most influential politicians in Washington. These included his personal friend President Lyndon B. Johnson and Senators John E. Fogarty and Lister Hill.

To frame the national debate on vision research, the RPB issued findings on Oct. 18, 1964, from the first-ever survey on the state of vision research. It described a field of enormous scientific opportunity hamstrung by meager financial resources, a lack of scientists, and training programs at several medical schools that still categorized ophthalmology as a surgical subspecialty.

By 1966, Maumenee and his colleagues founded the Association of University Professors of Ophthalmology, the organization discussed previously at O'Hare Airport. One of AUPO’s first actions was to draft a resolution supporting the establishment of a national eye institute.

This lobbying effort seemed to have paid off. By January 1967, Sen. Lister Hill and 50 cosponsors had introduced in the Senate a bill calling for a national eye institute at NIH. By November of that year, 38 pro-NEI bills had been introduced in the House of Representatives. One of these bills, sponsored by Rep. Harley O. Staggers of West Virginia, finally reached committee.

But many formidable naysayers stepped forward to question the wisdom of a national eye institute. These included Secretary of Health, Education and Welfare (HEW) John Gardner and NIH director Dr. James Shannon.

Gardner argued that a separate eye institute represented a “compartmen­talization of research” that would serve only to isolate scientists and discourage collaborative investigations, one of NIH’s strengths.

As a middle ground, NINDB’s council subcommittee on vision and its disorders issued a major report outlining the institute’s plans to upgrade its vision research efforts. The report had the blessings of several high-ranking HEW administrators.

With the feasibility of a separate eye institute still unclear, a 2-day House hearing convened on Oct. 31, 1967, to weigh the issues more fully. Twenty-nine witnesses delivered statements, both pro and con.

“The National Eye Institute will become a symbol and focus about which the people and organizations interested in eye research and sight conservation can group,” said Dr. Ralph W. Ryan, treasurer of the American Association of Ophthalmology and Rep. Staggers’ personal ophthalmologist. “It will become the fountainhead and coordinator of eye research and the repository of scientific advances in the field of eye research.”

Dr. William H. Stewart, surgeon general of the Public Health Service, countered, “At this time, to select this one area for special immediate consideration, especially at the risk of long-term disadvantage to the total (NIH) program, would not appear to be in the national interest.”

Although the testimony that day largely supported the need for the NEI, as sometimes happens in Washington, the NEI bill languished in committee over the next few months.

Knowing the bill’s fate hung in the balance, Ryan organized a nationwide letter-writing campaign to move it to the House floor for a vote. He notified Lions Club members in all 50 states, urging them to write their congressmen for action. Ryan’s efforts led to nearly 100,000 telegrams and letters arriving on Capitol Hill in support of the NEI legislation.

Using these letters as verbal ammunition, Staggers persuaded his fellow committee members for action. Ryan’s efforts led to nearly 100,000 telegrams and letters arriving on Capitol Hill in support of the NEI legislation.

KUPFER CHARACTERIZES FIRST 25 YEARS OF THE NATIONAL EYE INSTITUTE
(Continued from Page 9)

I think that is our most outstanding contribution.

The second significant advance has to do with the establishment of high-quality, laboratory research programs in molecular biology, immunology, neuroscience, and very recently, in molecular genetics. This clearly establishes the research foundation for the entire field of vision research to move forward as rapidly as possible.

I think the third contribution has been the emphasis on strategic planning, which started back in the early 1970’s. We’re now in the sixth iteration of this plan. What strategic planning has allowed us to do, in my belief—and this is a very conservative statement—is to hasten the rate of progress in vision research. This is because we have called upon the research community to identify the needs, but more importantly, to identify the opportunities to address those needs. There are many, many needs, but very few opportunities. If we can encourage the research community to identify the most important needs and opportunities through the planning process, then what would happen spontaneously with time will happen much more rapidly. Therefore, the entire research process is speeded up, becomes more effective, and utilizes resources more efficiently.

With the first plan, how difficult was it to get the vision community to sign on to the idea of strategic planning?

It was quite difficult. I think scientists feel very strongly, and rightfully so, that they should be able to pursue whatever leads they think have the best chances of being productive. I agree completely with that. We pointed out to the members of the scientific community that when they plan every day which experiments they’re going to conduct tomorrow, those small plans fit into a larger overall plan.

It took us a number of years to convince them that this planning was not going to interfere with their research activity. If their research was not included as one of the priorities in the plan, that was irrelevant to us. Our first priority has been, is now, and will always be, the very best research.

What is the role of intramural research in these days of tightened budgets? And, why is intramural research so important to the vision research community?

The intramural research program is integral to the success of the overall United States biomedical research program. It supports certain programs better and more easily than on the outside. First of all, as far as the Eye Institute intramural program is concerned, and I think this can be generalized to all NIH intramural programs, new research areas can be opened up very quickly. We can literally turn on a dime and open up new areas of investigation. The NEI has done this in immunology, by establishing a laboratory of immunology under Bob Nussenblatt. The institute has done it in molecular biology a decade ago. Very little
members to send the NEI bill to the House floor for a vote. The result: On July 2, 1968, the House passed the NEI legislation overwhelmingly.

The tide had turned. On Aug. 8, new HEW Secretary Wilbur Cohen reversed the position of his predecessor and strongly supported the bill. And, on Aug. 16, President Johnson signed Public Law 90-489 establishing the National Eye Institute.

Twenty-five years later, one can ask whether this lobbying effort was worth it.

As Dr. John W. Chandler, chairman of the University of Illinois at Chicago’s department of ophthalmology, recently wrote, the NEI’s “research programs have changed our (eye care professionals) practice patterns in many areas and scientifically validated old practices in others.”

Indeed, NEI-supported research has led to treatment advances for numerous eye diseases such as diabetic retinopathy, glaucoma, uveitis, retinopathy of prematurity, cytomegalovirus retinitis, strabismus, and many others. This research has saved the nation many billions of dollars. For example, the NEI-funded clinical trials that established laser surgery as a safe and effective treatment for diabetic retinopathy, a common eye complication of diabetes, save the government between $1.2 billion and $1.6 billion annually.

Another NEI-supported clinical trial showed that the risk of blindness in premature infants with retinopathy of prematurity can be reduced 50 percent by briefly freezing the outer part of the retina. This research could save society as much as $20 million to $60 million annually.

During its next 25 years, NEI-supported research should yield new therapies for potentially blinding diseases such as cataract, retinitis pigmentosa, diabetic retinopathy, and macular degeneration. It is also likely that the rapid research progress in the neuroscience of vision will lead to a better understanding of cross eye, lazy eye, optic neuritis, and other disorders of visual processing.

As Ryan predicted more than 25 years ago, NEI has today become “the fountainhead and coordinator” of the nation’s vision research.

The NEI’s Intramural Program

A Critical Step in the Research Continuum

In 1970, NEI launched its intramural research program as a “national resource” for vision researchers. It was conceived as a research center where scientists could rapidly and efficiently apply cutting-edge laboratory findings to clinical problems.

Nearly 25 years later, the NEI intramural research program remains one of vision science’s national treasures, conducting high-quality research that has helped to expand the field and improve the nation’s eye health.

Led by Dr. Robert Nussenblatt, the NEI intramural research program today consists of six laboratories and two branches: Laboratory of Immunology, Laboratory of Mechanisms of Ocular Diseases, Laboratory of Molecular and Developmental Biology, Laboratory of Ocular Therapeutics, Laboratory of Retinal Cell and Molecular Biology, Laboratory of Sensorimotor Research, the Ophthalmic Genetics and Clinical Services Branch, and the Clinical Branch.

“There have always considered a strong intramural research program as essential to the overall success of the nation’s vision research effort,” said Dr. Carl Kupfer, NEI director. “The sustained excellence of the NEI intramural program over the last two decades has only confirmed my belief.”

According to Kupfer, one of the NEI’s premier research accomplishments of NEI’s first 25 years.

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As Ryan predicted more than 25 years ago, NEI has today become "the fountainhead and coordinator" of the nation's vision research. 

of all, the backdrop against which we have to look at research is health care reform. I think the drive for health care reform is going to focus on the quality of patient care and patient satisfaction. What does this mean? If we say we have a treatment that is going to improve the patient's vision, we want to be absolutely certain that in addition to measuring an improvement in vision, the patient also says, "Yes, I recognize that this treatment has improved my quality of life, and I am satisfied." Therefore, the eye institute is going to move beyond doing clinical trials for the usual endpoints of improved vision and visual function, and begin to fold into the clinical trials questions related to quality of life.

In addition, health care reform raises the question: How much is this all going to cost? Thus, we want also to build into our clinical trials some economic assessment and cost-benefit analysis, either prospectively or retrospectively.

We’ve been very careful in the diabetic retinopathy treatment studies to indicate what the economic impact has been. Laser surgery now saves the government in excess of a billion dollars a year, even assuming only 50 percent of the people are taking advantage of the treatment.

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intramural program’s enduring strengths has been its ability to conduct long-term, high-risk, clinically relevant research. These initiatives are harder to sustain extramurally because long-term financial commitments are more difficult to obtain.

Kupfer cited the program’s ongoing studies on gyrate atrophy as just one example of the intramural program’s success in this area. This work has been performed in the Ophthalmic Genetics and Clinical Services Branch.

Gyrate atrophy is a slowly blinding, inherited degeneration of the retina and the underlying choroid. For years, researchers paid little attention to the condition because it was considered exceedingly rare, affecting perhaps 300 people worldwide.

But in the 1970’s, two Finnish scientists put gyrate atrophy on the research map when they reported that people with the disease had 15 times the normal blood level of the amino acid ornithine. The research opportunity was clear: By identifying the enzyme that failed to metabolize the ornithine, scientists might be able to treat the disease and gain insight into the poorly understood process of retinal degeneration.

Over the next few years, Dr. Muriel I. Kaiser, currently chief of the Ophthalmic Genetics and Clinical Services Branch, in collaboration with Dr. David Valle of the Johns Hopkins Medical School, identified ornithine aminotransferase (OAT) as the deficient enzyme. This finding was rapidly transferred to the clinic in studies showing that if patients consumed a special diet that lowered plasma ornithine levels, their visual function could be stabilized.

More than 15 years since Kaiser first began studying gyrate atrophy, scientists in NEI’s Laboratory of Immunology have joined the project to write an even more exciting chapter in the gyrate atrophy story.

Having already identified and cloned the defective gene that gives rise to gyrate atrophy, the NEI scientists are developing a transgenic animal model and are planning to conduct a gene therapy study in humans.

“If gene therapy proves successful in gyrate atrophy patients, it will open up the possibility of genetic therapy for other blinding retinal degenerations like retinitis pigmentosa, which affects about 100,000 Americans,” said Nussenblatt. “Gyrate atrophy represents a few small pieces to solving the puzzle of retinal degenerations. But they are very important pieces.”

Another strength of the intramural program, according to Kupfer, is its ability “to turn on a dime” and take advantage of new technologies and research opportunities as they emerge.

In 1981, as biomedical research began to probe more deeply into the molecular world of the cell, the NEI recruited Dr. Joram Piatigorsky to create the Laboratory of Molecular and Developmental Biology (LMDB). It was heralded as one of the world’s first laboratories to introduce modern molecular biology to the study of the eye.

Nearly 15 years later, the LMDB remains one

Dr. Muriel Kaiser, NEI deputy clinical director, checks the visual acuity of a young child.

The future also lies in the rapidly progressing field of transplantation, not only of pigment epithelium but also of the retinal tissue itself. These research strategies may offer a treatment modality, but it is probably at least 2 decades off.

Nearsightedness, or myopia? Myopia research has moved ahead very rapidly in the laboratory. We know quite a bit about what seems to control the size and shape of the eye. How generalizable this will be to humans, we don’t know yet. But it is offering very valuable leads. I think that for the first time we can begin to set up hypotheses and design experiments to test them. I would say that a treatment modality is a couple of decades off.

What is the “Celebration of Vision Research” all about? A few years ago, several members of the vision community began asking what the NEI planned to do to celebrate its 25th anniversary. These included representatives from the American Academy of Ophthalmology, Association for Research in Vision and
of the top molecular biology laboratories in vision research. Focusing their efforts on understanding gene expression and molecular interactions in the eye, Piatigorsky and his group have established new paradigms in the study of ocular tissues.

For example, Piatigorsky has shown that the same genes that produce crystallins as the major structural proteins in the eye’s lens produce metabolic enzymes that serve a completely different function elsewhere in the body. He calls this phenomenon “gene sharing.”

Although this fundamental information does not have immediate clinical implications, it provides important clues for future studies on the eye’s lens and how genetic errors may damage vision.

The Laboratory of Sensorimotor Research (LSR), headed by Dr. Robert Wurtz, is another example of groundbreaking, high-quality research in the NEI intramural program. Formed in 1978, the LSR is credited with conducting seminal studies on alert-awake monkeys that have helped to elucidate the complex process of sorting myriad visual information in the brain. These studies have broad applications in developing approaches to treat diseases and disorders of visual processing.

Prior to the LSR’s founding, neuro-opthalmological studies on nonhuman primates were beyond the reach of most research institutions because of their high cost. But the LSR has also served as a training ground that has helped a cadre of scientists learn how to establish these laboratories elsewhere and efficiently utilize their resources.

Another strength of the NEI intramural program is its ability to rapidly translate findings from the laboratory bench to the clinical bedside.

Uveitis is a group of chronic inflammatory conditions of the inner eye that may have an autoimmune, infectious, or allergic cause. Because the disease is often difficult to manage with current treatment, it may lead to severe visual impairment or blindness. Uveitis is today responsible for an estimated 30,000 cases of blindness in the United States.

In the 1980’s, scientists in the Laboratory of Immunology (LI), the first laboratory of its kind in vision research, developed a rat model for autoimmune uveitis, marking a turning point in the study of this form of the disease. The rat model has helped the scientists discover fundamental information about how immune cells react to the molecular environment of the inner eye. For example, these studies have shown that specific sites, or antigens, on the retina can induce an autoimmune attack similar to human uveitis, and that T cells play a predominant role in waging these attacks.

Because of these findings, LI scientists launched a clinical trial that led to the approval of the drug cyclosporine as a treatment for uveitis. Cyclosporine, an anti-T-cell drug, is commonly used by transplant patients to prevent rejection of their donor organ.

LI scientists have also shown in the animal model that uveitis can be induced by injecting the retina’s S-antigen into the eye. But they have also discovered that if the animals are orally given the S-antigen or some of its specific fragments, autoimmune uveitis is inhibited.

Following up on this lead, LI scientists reported in a pilot study with two patients that S-antigen successfully controlled severe autoimmune uveitis. This success has now led to an expanded clinical trial of this therapy.

“Our results are very encouraging, but at this point we just don’t know how effective this therapy might be,” said Nussenblatt. “However, the ability to induce a protective immunologic state with feeding is a very attractive clinical approach in treating uveitis.”

Looking toward the future, Kuper said the NEI intramural program will make an even more concerted effort as it enters the 21st century to harness the emerging technologies of molecular genetics, molecular immunology, and neurobiology.

“By efficiently harnessing these technologies, the NEI intramural program will continue to play a key role in expanding vision science’s basic research base and applying these leads to the clinical bedside,” he said.—B.K.

**Diabetic Retinopathy: A Case Study for Clinical Trials**

Just 2 decades ago, people with diabetic retinopathy faced a bleak future. Having no proven treatment for this common eye complication of diabetes, doctors were powerless as they watched about half of their patients lose their vision within 5 years of developing advanced retinopathy.

But today, physicians consider blindness from the disease to be largely preventable. In fact, the National Eye Institute now coordinates a nationwide health education effort to alert people with diabetes about the sight-saving benefits of an annual dilated eye examination. (See adjacent article on National Eye Health Education Program)

This remarkable turnaround in treating diabetic retinopathy can be traced to NEI’s Diabetic Retinopathy Study (DRS), Diabetic Vitrectomy Study (DVS), and the Early Treatment of Diabetic Retinopathy Study (ETDRS). These three landmark clinical trials established laser surgery and vitrectomy (removing the vitreous gel at the back of the eye and replacing it with an artificial solution) as the first viable treatments for diabetic retinopathy.

So effective are these treatments, even people with advanced diabetic retinopathy have a 95 percent chance of maintaining their vision when they receive timely treatment. Indeed, the federal government now saves between $1.2 billion and $1.6 billion annually from the sight-saving benefits of laser surgery for diabetic retinopathy. Together, these clinical investigations cost just $180 million.

“Three of these clinical trials are milestones in treating the opthalmic complications of diabetes,” said Dr. Carl Kupper, NEI director. “Not only did these trials establish the scientific basis for laser and vitreous surgery, they also provided ophthalmologists with clearly identifiable clinical features for the blinding risks of diabetic retinopathy.”

(See DIABETIC RETINOPATHY, Page 14)

**National Eye Health Education Program**

Glaucoma and diabetic eye disease are two of the leading causes of preventable blindness in the United States today. Although early detection and treatment can reduce the risk of blindness, symptoms can be so subtle that people are unaware they have these diseases until serious vision loss has occurred.

To encourage people at risk for glaucoma and diabetic eye disease to have regular dilated eye examinations, the federal government launched the National Eye Health Education Program (NEHEP) in December 1991. NEHEP, which is coordinated by NEI, has developed strategies to reach the public with this important prevention message.

The NEHEP differs from many other eye health education programs because it is actually a partnership of more than 50 public and private organizations. This team approach allows organizations to pool their professional resources and craft targeted eye health education programs to best serve local community needs. “It’s the partnership that (See EYE HEALTH EDUCATION, Page 14)
DIABETIC RETINOPATHY
(Continued from Page 13)

Diabetic retinopathy causes a slow deterioration of blood vessels in the retina, the light-sensitive tissue at the back of the eye. The 7 million Americans with the disease usually have no early symptoms to alert them that something is wrong with their eyes. As diabetic retinopathy progresses, new and extremely fragile blood vessels begin to multiply and grow toward the center of the eye. This can lead eventually to hemorrhage within the eye, retinal detachment, and blindness.

In the early 1990’s, eye care professionals rarely treated diabetic retinopathy because people with diabetes seldom lived long enough to develop eye complications. However, with the introduction of insulin therapy in the 1920’s, people with diabetes began living longer, and diabetic retinopathy became a more common health problem.

By the 1950’s, diabetic retinopathy was a leading cause of blindness in the United States. With studies reporting that half of all people with advanced diabetic retinopathy would become blind in 5 years, the public health implications were enormous.

“Diabetic retinopathy presents one of the most baffling and discouraging challenges faced in the practice of ophthalmology,' wrote Dr. Matthew Davis of the University of Wisconsin Medical School in the 1960’s.

In search of answers, scientists began to test a variety of treatments. These ranged from steroid therapy and low-fat diets to removing a person's pituitary or adrenal gland. Based on previous research, all seemed to have the potential to control the growth of the abnormal blood vessels in the retina, but none were proven to actually slow down or prevent loss of vision.

One of the most promising of the potential therapies was photocoagulation. Photocoagulation, like focusing a magnifying glass under the sun, uses a strong light source (i.e., a xenon arc lamp) to direct a high-energy beam of light onto the retina and destroys the blood vessels before vision loss occurs.

Many practitioners were particularly interested in laser surgery, a new type of photocoagulation in which a laser emits a high-energy wavelength of light to treat the abnormal blood vessels.

Although both forms of photocoagulation made sense in theory, doctors still lacked the hard, scientific evidence that confirmed they actually saved vision. This uncertainty led to a friendly rivalry among the ablators, who advocated the removal of the pituitary gland, and the photocoagulators. The rivalry was humorously described by Dr. Thomas Duane, who reviewed the proceedings of a PHS symposium on the treatment of diabetic retinopathy in 1969:

EYE HEALTH EDUCATION
(Continued from Page 13)

makes the NEHEP so unique,” said Judith Stein, NEHEP director, who added that NEHEP staff are available to assist in the efforts by partner members to develop or broaden eye health education strategies.

Glaucoma

Glaucoma, which affects 3 million Americans, is a leading cause of blindness in the country. It causes progressive damage to the eye's optic nerve, a bundle of nerve fibers that relays visual signals from the back of the eye to the brain. Although early detection and treatment can control the disease, people with glaucoma often have no early symptoms to alert them to visit an eye care professional. Studies show, in fact, that half of all Americans with glaucoma are currently unaware they have the disease.

NEHEP has embarked on a nationwide education program urging groups at high risk for glaucoma—Blacks over age 40 and all people over age 60—to protect their vision by having dilated eye examinations at least once every 2 years.

The program educates people through several innovative approaches including:

- Public service announcements on television stations, and radio and print advertisements;
- Community-based eye health education programs;
- A billboard campaign now under way in 14 U.S. cities;
- Using the "Glaucoma Community Education Kit."

Several NEHEP partners are also involved in programs to provide glaucoma education. For example, The Links, Inc., an African American women's service organization with more than 8,000 members, incorporates a glaucoma prevention message into its Health and Wellness of the Black Family program. In the greater Washington area, The Links has offered glaucoma screening and referrals in collaboration with Greater Southeast Community Hospital, cosponsored Glaucoma Awareness Week, and assisted in providing eye health education workshops to D.C. youth and their parents.

Other education efforts by the NEHEP partnership include the dissemination of information about glaucoma to the American Association of Retired Persons' 32 million members. In addition, the National Medical Association has added eye health as a component in its Community Health Coalition Project, a program designed to educate African Americans about a wide range of risk factors for disease and premature death.

Diabetic Eye Disease

Today, an estimated 14 million Americans have diabetes. About 7 million of these people now have at least early signs of diabetic retinopathy, a degenerative disease of blood vessels in the retina at the back of the eye. Without timely treatment with laser surgery, diabetic retinopathy can result in blindness.

NEHEP's diabetic eye disease program, begun 2 years ago, helps health professionals succeed in encouraging people with diabetes to have dilated eye examinations at least once every year. The program evolved after a planning phase in which NEHEP staff and professionals in eye health carefully evaluated the status of diabetes eye health education. This included reviewing the medical literature on diabetic eye disease, conducting focus groups with people who have diabetes and their family members, and receiving the input of a variety of health professionals.

This process allowed NEHEP staff to...
The neurosurgeons were vociferous, each advocating his approach to the master gland, but [they] were obviously examples of fine techniques for completely unknown reasons. The ophthalmologists were the most emotional, loudest and least scientific of all. The photocoagulators gave nods to the laser boys, but only scowls to the ablators. Their thesis for the most part was: "I have an instrument. I am going to use it. Do you have anything better to offer?" To settle this point, the old chestnut was reintroduced: "If you had diabetic retinopathy (show hands), how many would want (1) only medical treatment, (2) pituitary ablation or (3) photocoagulation?" Few wanted their heads cracked. McMeel pointed out that there was a difference between treating a cold and treating pneumonia. How many would want a lobotomy for a Ghon's nodule? How many for advanced cavitating? Dr. Lundback, an intriguing, salty, Danish-philosopher type with a curved pipe, said he would vote after he saw adequately controlled studies by ophthalmologists.

Lundback's call for controlled clinical trials was shared throughout the eye care community. Dr. Arnall Patz, a noted vision researcher at the Wilmer Ophthalmological Institute at Johns Hopkins Hospital, wrote, "It is important to emphasize, however, that to document the role of photocoagulation by the argon laser, or any other modality, in the treatment of proliferative diabetic retinopathy will require carefully identified two broad information gaps: health professionals lacked the necessary resources to raise public awareness of diabetic eye disease; and people with diabetes still were largely unaware of diabetic eye disease, its treatment, and the necessity of having a yearly dilated eye examination.

To close these gaps, NEHEP developed a two-pronged approach that incorporates education materials and a media campaign. "Educating People with Diabetes" is an education kit available for health professionals who routinely interact with people who have diabetes. NEHEP also provides easy-to-read patient information brochures on diabetic eye disease. All materials are provided free of charge. The print media campaign consists of public service announcements that are placed in newspapers and magazines nationwide encouraging people with diabetes to have an eye examination through dilated pupils at least once a year.

The value of such information in making people aware of diabetic eye disease is revealed by the experiences of Jacklyn and Clyde Newton of Beaufort, S.C. Last October, while waiting at a pharmacy counter to have a prescription filled, Ms. Newton read a NEHEP pamphlet on diabetic eye disease that was on display. Her husband, who has type II diabetes, had been complaining about his eyesight. "My husband had just been put on medication for diabetes," she recalled. "I just realized that his eyes could be affected. I thought maybe I should take the pamphlet home."

During a dilated eye examination the next week, Beaufort ophthalmologist Dr. Baxter McClendon looked through Mr. Newton's pupils and discovered blood vessels growing from the optic disk, a sign of vision-threatening proliferative diabetic retinopathy. McClendon performed laser surgery that day on one eye and on the other eye the following week. "He sees better now than he did before the operation," said Mrs. Newton recently. Other people with diabetes are also responding positively to the increased information on diabetic eye disease. Since NEHEP began running public service announcements in local newspapers and in magazines for people with diabetes, NEHEP staff have noticed an increase in requests for information.

"Diabetic eye disease is a high priority for the diabetes educator," said Cheryl Hunt, past president of the American Association of Diabetic Educators. "However, we typically have limited time to communicate a wide variety of information to people with diabetes, much of it related to life-threatening complications." She added, "What's nice about the NEHEP materials is they offer visual cues and are easy to read for the person with diabetes." NEHEP is also attempting to address the lack of awareness among other health professionals who regularly come into contact with people who have diabetes, particularly pharmacists. It has developed a free information kit for the nation's pharmacists. In NEHEP's first year alone, pharmacists ordered more than 5,800 of these kits.

Looking to the future, NEHEP will continue to help close information gaps and create a greater public awareness of diabetic eye disease. It is currently involved in expanding its message to Hispanics and Native Americans, two groups at high risk for diabetes controlled studies, in a much larger number of patients, conducted over a period of several years."

In 1972, NEI launched its first large clinical trial, the Diabetic Retinopathy Study (DRS), at 16 research centers across the country. It was designed to evaluate the safety and efficacy of two types of photocoagulation, xenon arc and argon laser.

The DRS research group wrote at the time that it expected to issue its first results by the early 1980s. But, at the study's 2-year mark, the researchers discovered that the data already leaned strongly in favor of photocoagulation, particularly laser surgery, as an effective treatment against diabetic retinopathy. By April 1976, the group published its landmark preliminary findings to this effect in the American Journal of Ophthalmology. In all, the DRS research group would publish 14 research articles over the next 20 years, describing in great detail the various outcomes of the study.

But knowing that laser surgery saved vision was still not enough. Like designing a new computer program, practitioners had to develop guidelines that told them when laser surgery worked best to save vision. "The DRS told us that scattering a laser beam on the outer retina was effective in destroying the abnormal blood vessels and saving vision," said Dr. Frederick Ferris, chief of NEI's Clinical Trials Branch, who was the DRS project officer. "But from this data we could only infer when the best time was to treat patients."

In 1976, NEI launched the Early Treatment of Diabetic Retinopathy Study (ETDRS) to learn more about laser surgery as a treatment for diabetic retinopathy. By the mid-1980's, the ETDRS data started to come in. Researchers found that the sight-saving benefits of laser surgery are greatest when laser surgery is performed as the new blood vessels begin to develop, signaling advanced retinopathy. They also reported that aiming the laser beam directly onto leaking blood vessels can effectively treat macular edema, the most common cause of vision loss in people with diabetes.

To date, the ETDRS has generated 16 articles in peer-reviewed medical journals. Each article has helped practitioners greatly in establishing improved guidelines for treating diabetic retinopathy.

But in 1993, ETDRS scientists reported their most remarkable finding to date: Even people with advanced diabetic retinopathy have a 95 percent chance of retaining vision if they receive timely laser surgery, regular followup care, and, when needed, vitrectomy.

Despite the effectiveness of laser surgery, many people with diabetes still do not visit an eye care professional regularly. As a result, thousands continue to lose their vision needlessly each year. Through the efforts of NEHEP, NEI hopes now and in the future to greatly reduce this tragic statistic and help all people with diabetes to protect their vision for a lifetime.—B.K.
Snow No Hindrance to NCRR Employees at the Animal Center

It's been a long, hard winter. And Jack Frost's blustering wrath has done much to remind us mere mortals that we are not all as essential as we would like to believe.

Despite the recent Feb. 11 snow shut-down, a group of NCRR employees at the NIH Animal Center in Poolesville laughed in Jack's face, made it to work, and proved their essential nature to the nonhuman primates housed there.

"Rain or shine, my staff has to make it into work to feed and care for the primates we have out here," said Dr. Michael Flynn, chief of the primate unit in NCRR's Veterinary Resources Program.

"Alphie Cisar, our facility manager, is largely to thank for getting the monkeys their fruit that day. He brought his snowmobile in to work on his four-wheel-drive truck, and picked up bananas from another building here when our fruit shipment couldn't make it in from Bethesda," Flynn said. "He also picked me up at home on the snowmobile to bring me in to work. Thirteen out of the fifteen people on my staff made it in. I am fortunate to have such a dedicated crew."—Kathleen Canavan

Plan for Research Festival 1994; Poster Deadline Is May 20

Mark your calendars now for the 1994 Research Festival, scheduled for the week of Sept. 19-23. The annual festival includes symposia, workshops and poster sessions that feature NIH's intramural programs. The week concludes with a 2-day Scientific Equipment Show sponsored by the Technical Sales Association.

Researchers from all ICDs are invited to submit an application to display posters at the festival poster sessions. The deadline for applications is Friday, May 20. Space for the poster sessions is limited, so prospective authors should submit entries early. Look for the application forms to appear soon in your desk-to-desk mail.

For more information about the festival, call Gregory Roa, 6-1776.

STEP Sponsors Lecture on Clinical Depression

"Clinical Depression" is the subject of the next presentation in the "Science for All" series sponsored by the Staff Training in Extramural Program (STEP) committee. The program will be held on Tuesday, Apr. 12, from 1 to 3 p.m. in Wilson Hall, Bldg. 1.

Every year, many Americans experience clinical depression. This presentation will provide information about the identification, causes, and treatment of this disorder. Some of the questions that will be addressed are: What is clinical depression? How do you know if you are clinically depressed? What are some of the known causes of depression? What are some of the treatments for clinical depression?

Speakers will be: Dr. J. Raymond DePaulo, Jr., Johns Hopkins University; Dr. Robin B. Jarrett, University of Texas; and Dr. William Z. Potter, National Institute of Mental Health.

No advance registration is required. Attendance will be on a first-come, first-served basis. Sign language interpretation will be provided. For more information call 6-1493.

NIH Announces New Management Cadre Program

The NIH Training Center and the leadership development committee (LDC) are announcing the new Management Cadre Program. With special emphasis directed toward women, minorities, and employees with disabilities, this new program is designed to provide a combination of on-the-job training, academic courses, and short-term developmental assignments to prepare participants to compete for advancement or career change to leadership positions within NIH.

To be eligible to apply for the Management Cadre Program you must be currently employed at NIH under a career or career conditional appointment for at least 1 year prior to May 16 in a GS/GM 12-14 position.

Application packages have been distributed to ICD personnel offices, and have been mailed to all eligible employees. Applications must be completed and received by your ICD personnel office by close of business on May 16.

For more information about the Management Cadre Program, contact Jill Ippel at the NIH Training Center, 6-6371.

PHS Professional Meeting Set

The 29th annual USPHS Professional Association meeting will be held Apr. 6-8 at the Omni Inner Harbor hotel, Baltimore. Important public health, scientific, and health care policy issues of interest to commissioned officers and other health professionals will be highlighted at the meeting.

The meeting will open with a keynote address delivered by Surgeon General Joycelyn Elders. Public health issues will be the focus of the first day's program including a general session on access to health for vulnerable populations such as minority women and children, Native Americans, and the homeless.

On day 2, general sessions will be held on applications of gene therapy, and emerging infectious diseases. Sarah Brady will present the Luther Terry Lecture entitled, "Handgun Violence: It Is a Public Health Epidemic." She will be the first woman to receive this honor.

Health care/policy reform is the focus of the last day of the meeting.

Continuing education credits (13-19 hours) will be available for civilian and commissioned corps health professionals. For more information and registration materials, contact the USPHS Professional Association, 1400 Eye St., NW, Suite 725, Washington, DC 20005, phone (202) 289-6400.

Free van transportation is available from NIH and Parklawn. For more information on van availability, call Joe High, 6-5725.