

THE SCHEIE LOOKING GLASS

Volume 1, Number 3

Fall, 2000

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NEXT ISSUE:

New Division of Pediatric Ophthalmology
Low Vision Services



DISCOVERY AT SCHEIE PROMISES BRIGHTER FUTURE FOR BLIND CHILDREN

It was a typical winter day at Scheie Eye Institute's Center for Hereditary Retinal Degenerations. **Dr. Samuel G. Jacobson** and his colleagues were huddled in a darkened laboratory awaiting the outcome of an experiment. Not unlike the numerous other experiments they perform, some yield results while others become only steps on the long road toward help for Dr. Jacobson's patients, all of whom have incurable forms of retinal degeneration. This particular experiment, based on recent theory, careful investigation

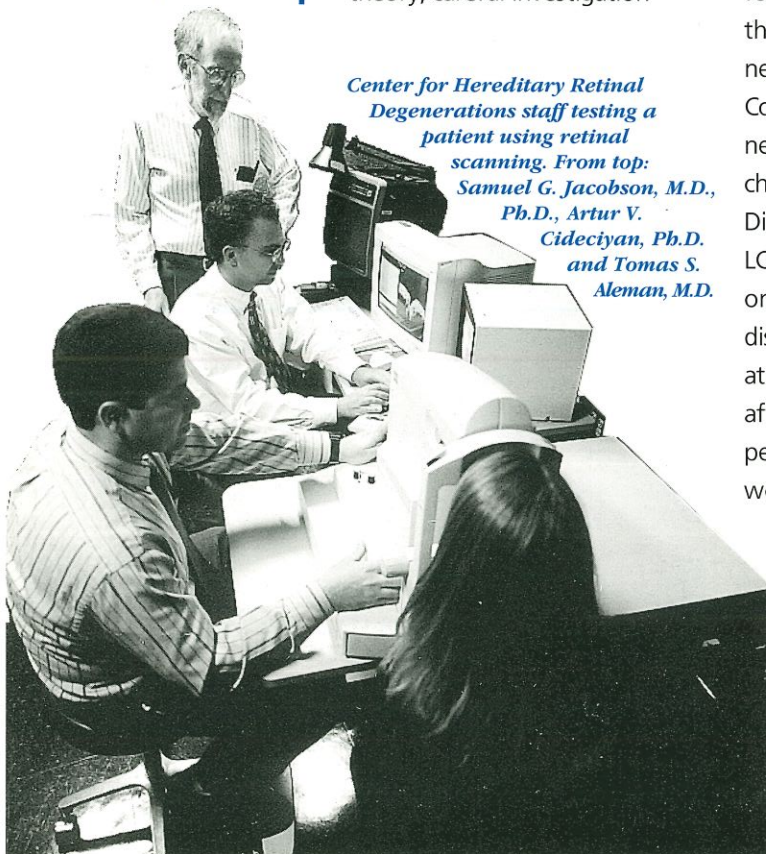
and collaboration with leading retinal biochemists in Seattle (a team headed by **Dr. K. Palczewski**), had a very good chance for success. But the result shocked even the scientists. After administering a new therapy to a previously blind animal afflicted with a disorder like the childhood blindness named Leber Congenital Amaurosis (LCA), tests showed that vision had been rapidly restored. Despite the long road ahead, a giant leap toward a cure for patients had just been taken.

The birth of a child is a cause for much rejoicing and plans for the future. For parents of newborns afflicted with Leber Congenital Amaurosis (LCA), the news is heartbreaking — their child will most certainly be blind. Discovered over 100 years ago, LCA is a group of severe, early-onset retinal degenerative diseases causing rapid vision loss at birth or during infancy. It affects considerable numbers of people/newborns per year worldwide and as yet has no cure.

He began his career in neurology, but his strong interest in scientific investigation of disease caused him to break temporarily from his clinical neurology residency to study for a Ph.D. in neuroscience. This eventually led to a move from neurology to ophthalmology and from brain research to eye research. After 12 years on the faculty of Bascom Palmer Eye Institute of the University of Miami he came to the Scheie Eye Institute, University of Pennsylvania, in 1995. Within months he established the Center for Hereditary Retinal Degenerations (CHRD), which enjoys international recognition. Patients from around the globe ranging in age from newborn to geriatric are referred to Dr. Jacobson at the Center for clarity of diagnosis, prognosis, genetic counseling, low vision rehabilitation from **Dr. Janet Steinberg**, and candidacy for future treatment trials.

Dr. Jacobson and his colleagues **Artur V. Cideciyan, Ph.D.** and **Tomas S. Aleman, M.D.** collaborate with researchers around the world, making progress toward their

Center for Hereditary Retinal Degenerations staff testing a patient using retinal scanning. From top: Samuel G. Jacobson, M.D., Ph.D., Artur V. Cideciyan, Ph.D. and Tomas S. Aleman, M.D.



SEARCHING FOR THE CURE

Finding a cure for this devastating disease and other inherited retinal degenerations is what drives **Dr. Jacobson**, the F.M. Kirby Professor of Ophthalmology.

Continued on page 2

It is the relationship between the vision abnormalities and the gene changes coupled with basic scientific discoveries that will lead to sufficient understanding to formulate future treatments for the patients.

goal of curing inherited retinal degenerations. The stepwise path that should lead to a cure is defined, but fraught with twists and turns. Patients who have symptoms of the disease or previous diagnoses of retinal degeneration come to see Dr. Jacobson for a careful evaluation of their vision. Based on this evaluation, decisions are made to screen by new molecular techniques for an abnormal gene or groups of genes that may be the cause of the disturbance or loss of vision. It is the relationship between the vision abnormalities and the gene changes coupled with basic scientific discoveries that will lead to sufficient understanding to formulate future treatments for the patients.

FIXING THE PROBLEM

In the case of LCA, there are a number of known gene causes already; one such cause is mutation of a gene named RPE65. Once the gene is isolated, the next step is to find or develop an animal model with the same disease on which to test promising therapies. Scientists then need to decipher the defect caused by the abnormal gene. Through the animal model and other methods, scientists determined that the RPE65 gene product is critical to the cycle of vision. A mutation in the RPE65 gene disrupts the visual cycle and prevents formation of the all-important light-sensing substance of the retina that is the first stage of vision. Without this substance called rhodopsin, the light-sensing cells (photoreceptors) cannot function and there is no vision. In

other words, without this first stage of vision, the other stages from the retina to the brain do not send signals and we do not see. To try and fix such defects, researchers test treatments that might compensate for the defective gene. Dr. Jacobson and colleagues circumvented the defect and provided the needed chemical to the

underachieving retinal cells. This successfully overcame the dysfunctional RPE65 gene, allowing the animal's retina to produce an artificial rhodopsin that restored vision.

FURTHER RESEARCH NEEDED

The stunning reversal of vision loss was the culmination of years of arduous research, but it is not the end. Before human trials can begin, numerous questions will be answered. How long does the

vision improvement last? Is there any toxicity? Can the success be reproduced in other animal models with comparable forms of blindness? What is the best way to deliver the treatment? How early or late in the disease process can one intervene and be successful? Finally, human trials can begin. But one astonishing result on a dark winter day promises a bright future for children with inherited retinal degenerations.

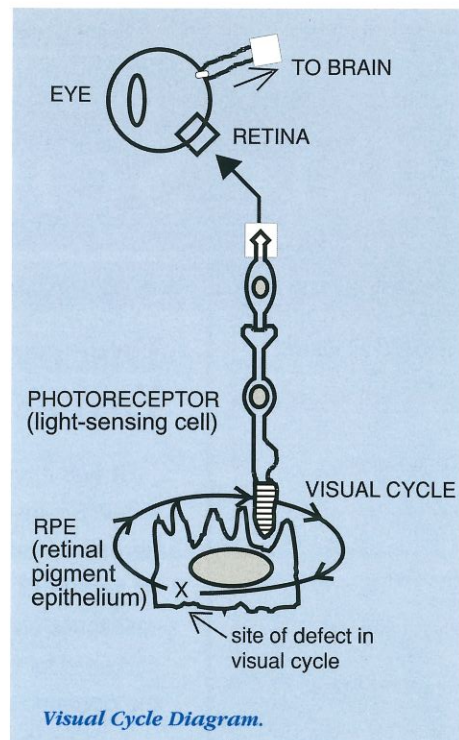


Diagram by Daniel A. Marks

NEWS RELEASE

At the annual meeting of the Foundation Fighting Blindness on August 12, 2000, Drs. Jacobson and Palczewski were presented the Trustee Award in recognition of outstanding research accelerating discovery and knowledge toward reaching a mission of the Foundation Fighting Blindness.

THE RETINAL DEGENERATION HISTOPATHOLOGY LABORATORY

Many questions remain unanswered about the disease mechanisms and cellular changes in human retinas with retinitis pigmentosa (RP) and macular degeneration. It is important to clarify these pathologic changes to understand why and how the retina degenerates. This information is essential in order to develop effective therapies for these diseases. In particular, we need detailed understanding of the changes in the rods, cones and inner retinal neurons. A useful approach is to use light and electron microscopy to study donor retinas from patients with RP and macular degeneration.

To meet this goal, the Foundation Fighting Blindness initiated a donor eye program and established a histopathology

laboratory in 1987 to study the diseased retinas. The Retinal Degeneration Histopathology Laboratory is directed by **Dr. Ann H. Milam** at the Scheie Eye Institute. The collection now includes approximately 500 preserved diseased retinas, one of the largest in the world. Studies of the retinas by Dr. Milam and associates have revealed new features of rod and cone cell degeneration and documented changes in the inner retinal neurons following death of the photoreceptors. The valuable donor tissues have also been distributed to over 40 research laboratories around the world for new studies on the causes and treatment of RP and macular degeneration.

Visiting scientists and members of the Milam laboratory discuss the histopathology of human donor retinas with inherited photoreceptor diseases.



Anand Swaroop,
Ph.D., Professor
of Ophthalmology,
Kellogg Eye Center,
University of
Michigan.

Ann H. Milam,
Ph.D., Director
of Retinal
Degeneration
Histopathology
Laboratory,
Adjunct Professor,
SEI.

Gustavo Aguirre,
V.M.D., Ph.D.,
Professor of
Ophthalmology,
Cornell School
of Veterinary
Medicine, Adjunct
Professor, SEI.

Sinoj N. John, Julie E.
M.D., Post
Doctoral
Fellow.

Jama Bouy, B.S.,
Smith, B.Sc.,
Laboratory
Assistant.
Technician.

Alumni News

SCHEIE ALUMNUS HONORED AT TEXAS TECH UNIVERSITY

On May, 19, 2000, **Dr. John Buesseler**, retired Dean of the University School of Medicine, was named Founding Dean and Vice President for Health Affairs and Health Sciences Emeritus at Texas Tech. University President **David R. Smith, M.D.** bestowed the honor on Dr. Buesseler. Said Smith, "For your leadership, for your vision and for your service, Texas Tech and all here assembled extend to you our deep and abiding gratitude." Dr. Buesseler was Dean for 28 years.

SAVE THE DATE ACADEMY ALUMNI RECEPTION

MONDAY, OCTOBER 23, 2000

HOTEL ADOLPHUS

7:30 TO 10:30 PM

PUBLICATIONS COMMITTEE

STUART L. FINE, M.D.
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President of the Alumni Association

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Alumni Relations

FRANCES MANNING SMITH
Senior Major Gifts Officer,
Medical Center Development

MICHELE SZKOLNICKI, M.S., R.N.
Director of Network Administration
and Clinical Resource Development

Photography by
Bill Nyberg and Jim Berger

SEI WELCOMES NEW FACULTY

Joshua Dunaief, M.D., Ph.D. received his undergraduate degree at Harvard where he began to conduct research on the genetics of retinoblastoma. After nine years at Columbia, where he obtained his M.D. and Ph.D. degrees, Josh completed a residency in ophthalmology at the Wilmer Institute at Johns Hopkins. At Scheie, Josh is involved with patient care and research. For four days a week, he conducts research on macular degeneration at the **F. M. Kirby Center for Molecular Ophthalmology**. One day a week, he examines and treats patients with macular degeneration, diabetic retinopathy and related conditions at the Scheie Eye Institute. His research is focused on age-related macular degeneration.



Monte Mills, M.D. graduated from Baylor College of Medicine in Houston, then completed a residency in ophthalmology at the Massachusetts Eye and Ear Infirmary and a pediatric ophthalmology fellowship at The Children's Hospital in Boston. Since 1993 he has been on the faculty of the University of Wisconsin in Madison, and has served as Chief of the Division of Pediatric Ophthalmology since 1995. Dr. Mills is the new Chief of the Division of Pediatric Ophthalmology at the Children's Hospital of Philadelphia and will oversee the substantial growth and development of the pediatric ophthalmology program over the next several years.



Jane Z. Portnoy, M.D. was in the private practice of ophthalmology in Louisville for 12 years. In 1995, she relocated to Philadelphia where she has been Assistant Professor of Ophthalmology at Temple University School of Medicine. Although Jane has had fellowship training in neuro-ophthalmology at the University of Iowa, she functions primarily as a comprehensive ophthalmologist at Penn Medicine at Radnor and at Mercy Community Hospital at Haverford. With a reputation as a superb instructor, she also attends residents in the outpatient clinic and the operating room at the Scheie Eye Institute and at the VA Medical Center.



Annapurna Singh, M.D. completed her professional training initially in the United Kingdom and subsequently completed both an ophthalmology residency and a glaucoma fellowship in the United States. She was a glaucoma fellow with **Drs. Jody Piltz, Evan Dreyer, and Richard Stone** from 1998 through 1999. Dr. Singh will work as both a comprehensive ophthalmologist and as a glaucoma specialist. Her primary assignments will be at the Scheie Eye Institute satellite located at Mercy Fitzgerald Hospital in Lansdowne and at the Scheie Eye Institute, where she will see private patients and attend residents in the outpatient clinic and in the operating room.



SPECIALTIES AND SERVICES

Applied Ophthalmic Neurobiology Laboratory

Patricia Grimes, Ph.D.
Alan Laties, M.D.
Richard Stone, M.D.

Center for Preventive Ophthalmology and Biostatistics

Judy Alexander, B.A.
Mary Brightwell-Arnold, B.A.
Jeffrey W. Berger, M.D., Ph.D.
Maureen G. Maguire, Ph.D.
Ellen Peskin, M.A.

Center for Hereditary Retinal Degenerations

Artur Cideciyan, Ph.D.
Samuel G. Jacobson, M.D., Ph.D.

Comprehensive Ophthalmology

David M. Kozart, M.D.
Mina Massaro-Giordano, M.D.
Charles W. Nichols, M.D.
Jane Portnoy, M.D.
Anna Singh, M.D.
Nasreen Syed, M.D.

Contact Lenses

Debbie Dana
Diane Heistand
Cynthia Silvestri
Fran Ward

Cornea/External Diseases/ Refractive Surgery

Mina Massaro-Giordano, M.D.
Stephen E. Orlin, M.D.
Michael Sulewski, M.D.

F.M. Kirby Center for Molecular Ophthalmology

Jean Bennett, M.D., Ph.D.
Joshua Dunaief, M.D., Ph.D.
Edward Pugh, Ph.D.
Eric Pierce, M.D., Ph.D.
Dwight E. Stambolian, M.D., Ph.D.
Michael Tolentino, M.D.

Genetics

Dwight E. Stambolian, M.D., Ph.D.

Glaucoma

Evan B. Dreyer, M.D., Ph.D.
Jody R. Piltz-Seymour, M.D.
Anna Singh, M.D.
Richard A. Stone, M.D.

Glaucoma Research and Neuroprotection Laboratory

Evan B. Dreyer, M.D., Ph.D.

Low Vision Research and Rehabilitation Center

Janet DeBerry Steinberg, O.D.

Medical Retina

Jeffrey W. Berger, M.D., Ph.D.
Alexander J. Brucker, M.D.
Joshua Dunaief, M.D., Ph.D.
Stuart L. Fine, M.D.
Juan E. Grunwald, M.D.
Albert M. Maguire, M.D.
Michael Tolentino, M.D.

Medical Therapies Initiative

Alan Laties, M.D.
Rong Wen, M.D., Ph.D.

Motility/Strabismus (Adult)

Nicholas J. Volpe, M.D.

Neuro-Ophthalmology

Laura Balcer, M.D.
Steven L. Galetta, M.D.
Grant Liu, M.D.
Nicholas J. Volpe, M.D.

Ocular Vascular Research Laboratory

Joan Dupont
Juan Grunwald, M.D.
Charles Riva, D.Sc. (Adjunct)

Oculoplastics & Orbital Disease & Surgery

Roberta E. Gausas, M.D.
James A. Katowitz, M.D.

Optical Shop

Patrick O'Brien
Anita Taylor

Pathology

William C. Frayer, M.D.
Nasreen Syed, M.D.

Pediatric Oculoplastic Surgery

James A. Katowitz, M.D.

Pediatric Ophthalmology

Jane Edmond, M.D.
Brian Forbes, M.D., Ph.D.
Ellie Francis, O.D., Ph.D.
Monte Mills, M.D.
Eric Pierce, M.D., Ph.D.
Graham E. Quinn, M.D.
Terri Young, M.D.

Photography

Jim Berger
Cheryl Devine
Deborah Elkins
William Nyberg
Laurel Weeney

Retina & Vitreous Surgery

Jeffrey W. Berger, M.D., Ph.D.
Alexander Brucker, M.D.
Albert M. Maguire, M.D.

Retinal Degeneration Histology Laboratory

Ann H. Milam, Ph.D.

Ultrasound

Kym Gendron

Uveitis

Nasreen Syed, M.D.

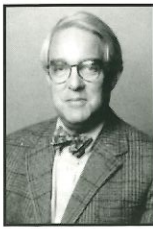
Development

Ann Sacks

Education Coordinator

Sue Hess

Scheie Eye Institute Faculty



Stuart L. Fine, M.D.
Chairman and Director



Laura Balcer, M.D.
Neuro-Ophthalmology
Epidemiology



Jean Bennett, M.D., Ph.D.
Retinal Degeneration
Genetics Research



Jeffrey W. Berger, M.D., Ph.D.
Retina & Vitreous
Computer Vision Lab



Alexander J. Brucker, M.D.
Retina & Vitreous



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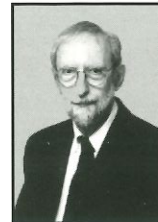
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Disease & Surgery



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Retina Research



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Hereditary Retinal
Degeneration



James A. Katowitz, M.D.
Pediatric Oculoplastic
Surgery



David M. Kozart, M.D.
Vice Chairman, Administration
Comprehensive Ophthalmology



Alan M. Laties, M.D.
Retinal Degeneration
Research



Grant T. Liu, M.D.
Neuro-Ophthalmology



Albert M. Maguire, M.D.
Retina & Vitreous
Retinal Degeneration Research



Maureen G. Maguire, Ph.D.
Biostatistics
Epidemiology



Mina Massaro-Giordano, M.D.
Comprehensive Ophthalmology
Refractive Surgery



Ann H. Milam, Ph.D.
Retina Research



Monte Mills, M.D.
Pediatric Ophthalmology



Charles W. Nichols, M.D.
Comprehensive Ophthalmology



Stephen E. Orlin, M.D.
Cornea/External Diseases/
Refractive Surgery



Eric Pierce, M.D., Ph.D.
Pediatric Ophthalmology
Genetics Research



Jody R. Piltz-Seymour, M.D.
Glaucoma



Jane Portnoy, M.D.
Comprehensive Ophthalmology



Edward N. Pugh, Ph.D.
Retina Research



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Pediatric Ophthalmology



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Glaucoma



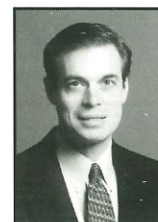
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Retina Research



Terri Young, M.D.
Pediatric Ophthalmology

PRIVATE PHILANTHROPY OPENS EYES

Advances in research, new patient care programs and development and evaluation of new treatments all thrive on enlightened philanthropy. Scheie Eye Institute has been the fortunate recipient of many generous donations from grateful patients and private foundations. Gifts and bequests provide both endowment and direct operating funds to establish new laboratory facilities, to renovate existing space and to purchase state-of-the-art technology. This infrastructure is crucial for Scheie to maintain its position as an international leader in eye research. Private philanthropy also provides the flexibility our scientists need to explore new avenues in prevention and treatment — a flexibility not afforded by traditional grants. Our ability to support innovative, high-risk research projects has enabled our department to attract and retain the leading ophthalmologic and vision scientists in the country, investigators whose research continues to make a difference. We are fortunate that we can cite numerous examples where private contributions have “opened eyes” by creating new hope for those suffering from or threatened by vision loss.

Some recent examples are listed below:

- In 1992, the **F.M. Kirby Foundation** donated \$5 million to establish the **F.M. Kirby Center for Molecular Ophthalmology**, the first Center in the world devoted exclusively to investigating molecular causes and

treatments for blinding ophthalmic conditions. The **F.M. Kirby Foundation** has continued to provide generous research support to **F.M. Kirby Center** research scientists: **Jean Bennett, M.D. Ph.D.**, **Dwight Stambolian, M.D., Ph.D.** **Eric Pierce, M.D. Ph.D.**, **Edward Pugh, Ph.D.**, and **Joshua Dunaief, M.D., Ph.D.**

- The late **Adele Niessen**, a grateful patient of the late Dr. Harold Scheie, established a charitable remainder unitrust, which directed that her \$6 million estate be used to support education and research programs at the Scheie Eye Institute. This generous bequest has endowed a professorship in ophthalmology (ophthalmic education) and will assist in the renovation of many of our department’s educational and research facilities.
- **Research to Prevent Blindness (RPB)** of New York, the world’s leading voluntary organization that funds eye research, has supported investigators at the Scheie Eye Institute for more than 25 years. In 1999, **Edward Pugh, Ph.D.** received the prestigious **Jules and Doris Stein Professorship Award** which provides salary support for five years and additional support for laboratory renovations. Also in 1999, **Eric Pierce, M.D. Ph.D.** received a four-year **Career Development Award** which will support his research in the area of inherited retinal degeneration. In

2000, **Joshua Dunaief, M.D., Ph.D.** received a four year **Career Development Award**, and **Jean Bennett, M.D. Ph.D.** received the **William and Mary Greve Special Scholar Award**. In both years, **Dr. Stuart Fine**, as Department Chair, was awarded \$100,000 to be used at his discretion for supporting research programs in the Department of Ophthalmology. Previous **RPB** awardees in the department include **Rong**

Wen, M.D., Ph.D., **Jeffrey W.**

Berger, M.D., **Ph.D.** **Jean**

Bennett, M.D.

Ph.D., **Alan Laties,**

M.D., **Evan Dreyer, M.D., Ph.D.**, and

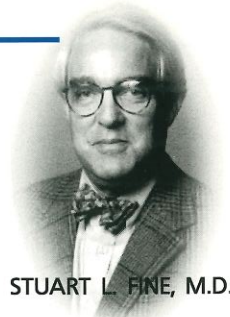
Richard Stone, M.D. A generous three year grant from the **Roseanne Silberman Foundation** has provided salary and research support for **Eric Pierce, M.D. Ph.D.** to pursue research on age-related macular degeneration, retinitis pigmentosa, and related conditions.

- **Jean Bennett, M.D. Ph.D.**, a scientist in the **F.M. Kirby Center for Molecular Ophthalmology**, this year received the **Lois Pope LIFE Foundation International Research Award** and the **Ruth and Milton Steinbach Foundation Award**, both in support of her research on age-related macular degeneration.
- In 1999, the Odyssey Ball and our department’s annual campaign together raised a substantial sum which provides seed money for innovative, creative projects by our research scientists.

As we move into the 21st century, there are many ways in which you can play a leadership role in our efforts to eliminate blindness and serious visual impairment through research. Our scientists are addressing better ways of treating age-related macular degeneration, diabetic retinopathy, glaucoma, cataract, optic neuropathy and other sight threatening conditions. By choosing to contribute an outright annual cash gift, a planned gift in your estate plans, or a major gift to support a research program or an endowed professorship, you can support our efforts and, in turn, positively affect the lives of so many patients who ultimately will benefit from groundbreaking research and the improved patient care that results from that research.

To learn more about how to support our program, please contact Mrs. Ann Sacks, Director of Development at (215) 662-8774.

STUART L. FINE, M.D.



Scientists at the F.M. Kirby Center for Molecular Ophthalmology from left to right: Edward N. Pugh, Ph.D., Eric Pierce, M.D., Ph.D., Jean Bennett, M.D., Ph.D. and Joshua Dunaief, M.D., Ph.D. Not pictured: Dwight E. Stambolian, M.D., Ph.D.



SEI NURTURES FUTURE LEADERS IN OPHTHALMOLOGY COMPUTER VISION HELPS OPHTHALMOLOGISTS SEE MORE CLEARLY

When **Dr. Jeff Berger** graduated from Princeton with a degree in mechanical engineering, little did he realize that in a few years his career would take him to the interface of patient care and bioengineering. Currently an ophthalmologist and researcher at the Scheie Eye Institute, he heads the Computer Vision Laboratory. Computer vision refers to taking familiar images such as retinal photographs, angiograms and CT scans to a deeper level of understanding and analysis. It allows the clinician or researcher to make decisions based on imaging data. Dr. Berger got the idea for developing and applying advanced imaging processing and computer methods to ophthalmic problems while studying ways of imaging the lens while still a graduate student in bioengineering at Penn. He realized that radiology was well ahead of ophthalmology in this area and reasoned that many techniques used to process and store images for applications in radiology could be applied to ophthalmology for improved diagnosis, treatment, and study of blinding diseases.

CHANGE IN CAREER ENRICHES OPHTHALMOLOGY

Many of the advances in ophthalmology (as well as other areas of medicine) have come from cross-fertilization with other scientific disciplines. Dr. Berger is one of the new generation of interdisciplinary scientists. He came to the University of Pennsylvania in 1985 to study under **Dr. Alan Laties** (also at Scheie) for an MSE in Bioengineering. It was here he discovered an interest in medicine, especially processes at the molecular level. He went on to receive his M.D. and a Ph.D. in Biophysics. It turned out that Ophthalmology was the perfect playing field for his multifaceted talent. He currently holds joint appointments in the Schools of Medicine and Engineering.

STANDARDIZATION WILL IMPROVE CLINICAL TRIALS

Dr. Berger's innovations already have had an impact. In the research area, where he is the Principal Investigator for the CAPT Reading Center, his

thrust is to improve the conduct of clinical trials. Researchers studying the effects of new treatments for age-related macular degeneration, for example, are looking for a primary outcome in humans of a reversal or abatement of vision loss. This reversal or abatement of vision loss may correspond to a change in the characteristics of new blood vessels best seen with fluorescein angiography (a secondary outcome). Since the prerequisite animal trials must

Many of the advances in ophthalmology have come from cross-fertilization with other scientific disciplines.

be done prior to the human trials, and animal studies can

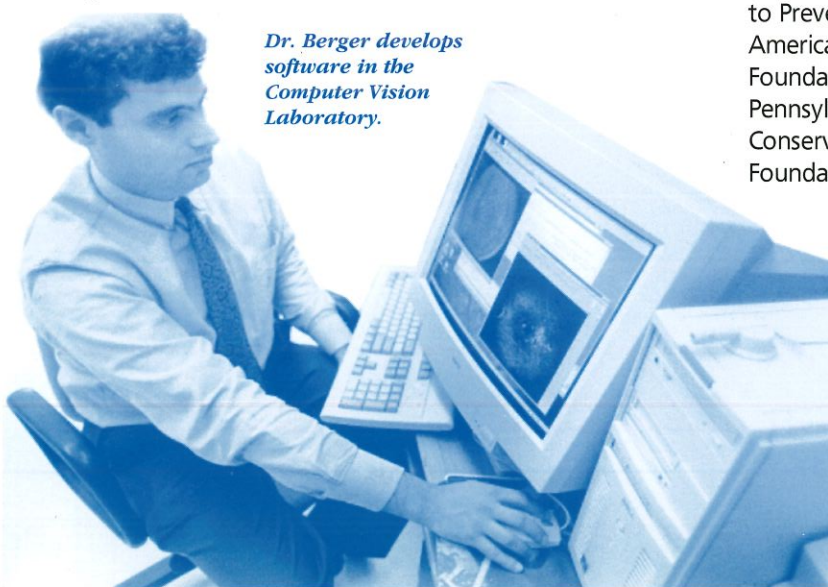
only measure secondary outcomes, the accuracy and reproducibility of measurements based on fluorescein angiography images is of great importance. Currently, Dr. Berger is validating the computer-assisted analysis with standard methods of interpretation, and is developing ways for more efficient conduct of clinical trials through the Internet. He receives funding from the National Eye Institute, Research to Prevent Blindness, the American Health Assistance Foundation, and The Pennsylvania Lions Sight Conservation and Eye Research Foundation, Inc.

NEW TECHNOLOGY BENEFITS PATIENT CARE

The second aspect of Dr. Berger's research has to do with bringing this "computer vision" technology to the patient encounter. For this he developed the concept of an "image overlay environment" to allow the ophthalmologist to perform certain procedures more easily. For example, laser treatment for destruction of abnormal blood vessels beneath the retina is a dichotomous procedure. The patient receives an injection of the dye fluorescein, which when photographed shows the abnormal blood vessels very clearly. Ordinarily, as the physician views the patient's retina through the slit lamp microscope, the angiogram image is projected on the wall behind the patient. It is then used as a map during laser treatment to locate the relative position of the abnormal blood vessels. With the use of Dr. Berger's adaptation to the slit lamp, the angiogram image can be superimposed over the slit lamp image and even tracked should the patient's eye move. This "ophthalmic augmented reality" environment allows the physician to precisely deliver laser treatment. Dr. Berger also sees this instrument as a way to bring images from the photography suite and the clinical record right to the point of care: the examination lane. A prototype will be evaluated this fall.

Talent and imagination aren't the only motivations that drive Dr. Berger. He loves his work and finds great joy in applying his strengths in mathematics and the physical sciences to the direct benefit of our patients.

Dr. Berger develops software in the Computer Vision Laboratory.



Comments, suggestions?
Please write, fax or e-mail to:
Stuart L. Fine, M.D.
Scheie Eye Institute
51 North 39th Street
Philadelphia, PA 19104

Phone: 215-662-8657
Fax: 215-662-9676
Email: sfine@mail.med.upenn.edu

www.med.upenn.edu/opth/

LECTURES AND SEMINARS SEPTEMBER 2000 – JUNE 2001*

Visiting Scientist Lectures are scheduled on Thursdays from 7:30-8:15 AM (Scheie Eye Institute Auditorium) followed by a second lecture from Noon-1:00 PM (5th floor Conference Room).

NOVEMBER 2

Anita Hendrickson, Ph.D.
University of Washington
Visiting Scientist / Retina

NOVEMBER 4

Steven A. Newman, M.D.
University of Virginia
CME / Neuro-Ophthalmology Update

NOVEMBER 30

Paul Sternberg Jr., M.D.
Emory University
Visiting Scientist / Retina

DECEMBER 14

Neil M. Bressler, M.D.
Johns Hopkins University
Visiting Scientist / Macular Degeneration

JANUARY 18

Leonard A. Levin, M.D., Ph.D.
University of Wisconsin
Visiting Scientist / Neuro-Ophthalmology

FEBRUARY 10

Dale K. Heuer, M.D.
Medical College of Wisconsin
CME / Glaucoma Update

APRIL 12

Harry A. Quigley, M.D.
Johns Hopkins University
Visiting Scientist / Glaucoma

APRIL 19

Ronald Klein, M.D.
University of Wisconsin, Madison
Visiting Scientist / Epidemiology

MAY 11-12

127th Anniversary Meeting
Michael A. Kass, M.D.
Washington University, St. Louis
Glaucoma

Neil R. Miller, M.D.

Johns Hopkins University
Neuro-ophthalmology

Melvin L. Rubin, M.D.

University of Florida, Gainesville
Optics for Clinicians

MAY 18

Daniel Albert, M.D.
University of Wisconsin
Louis Karp Lectureship
Ophthalmic Pathology

MAY 24

Hans E. Grossniklaus, M.D.
Emory University
Visiting Scientist / Pathology

JUNE 14

Sharon Fekrat, M.D.
Duke University
Visiting Scientist / Retina

TBA

Carol Mangione, M.D.
University of California at Los Angeles
Visiting Scientist / Quality of Life
Assessment

**Incomplete list; 6-8 additional Visiting Scientists to be scheduled*

**For more information on lectures and seminars,
call Sue Hess at 215-662-8020 or e-mail to sueh@mail.med.upenn.edu**