

AN EYE TO THE FUTURE



The Department of Ophthalmology
The University of Arizona
Health Sciences Center

Spring 2004



Early Treatment of Eye Disease in Premature Infants Prevents Severe Vision Loss

▲ Ella Hummels, age 7 months, demonstrates the eye patch used during infant testing in the ETROP study. Ella, who was not a study participant, was tested for retinopathy of prematurity during a recent visit to the Square & Compass Children's Clinic. (Photo by Xavier Gallegos, Tucson Citizen.)

The risk of severe vision loss in premature infants with retinopathy of prematurity (ROP) has been shown to be reduced by early treatment, according to a national multi-center clinical study in which the UA Department of Ophthalmology participated.

ROP – abnormal growth of blood vessels in the retina – is one of the leading causes of blindness in infants and young children.

Because ROP sometimes improves on its own and treatment can cause partial loss of peripheral vision, treatment previously was begun when there were clear signs the disease had reached a level that seriously threatened visual development.

The study, 'Early Treatment for Retinopathy of Prematurity (ETROP),' used a new computerized assessment model to identify high-risk premature infants for earlier treatment.

UA investigators participating in the study included Department of Ophthalmology Professor Velma Dobson, PhD, an experimental psychologist who specializes in the assessment of vision in infants and young children.

Dr. Dobson directed the Vision Testing Center, one of the study's three Resource Centers, which provided vision testing for 401 premature infants in the study throughout the United States. She also was one of the developers of the Teller Acuity Card procedure used to test the infants in the study. The Teller Acuity Card method is used widely for measuring visual acuity in infants and multiple-handicapped individuals.

The results of the study, which was sponsored by the National Eye Institute of the National Institutes of Health, were published in the December, 2003, issue of *Archives of Ophthalmology*.

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From the Chairman

We have seen tremendous growth in our research program and this column typically has discussed new initiatives and research projects or acknowledged those supporting this growth.

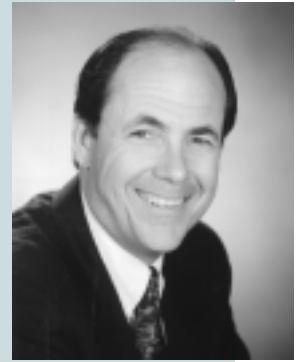
I believe our research programs now have reached a critical mass. We have established excellence in a number of programs and areas, and we have a strong core faculty to continue to pursue our mission of research, teaching and service in the areas so important to the people of Arizona.

My years with the department have been rewarding and fulfilling, however I have decided to step down as department chairman and pursue a private practice of medicine in Tucson.

I know this may come as a surprise to some. Plans for a smooth transition are underway. I will continue to support the department's research, development and teaching activities to the greatest extent possible.

I am grateful for the opportunity to work with so many fine people dedicated to preserving healthy vision and preventing blindness. I want to thank each and every one of you who have been so instrumental in helping build our department and who have provided the resources necessary for our development.

I look to a bright future for ophthalmology and continued excellence in our mission of teaching, research and clinical care.



▲ Robert Snyder, MD, PhD

Robert W. Snyder, MD, PhD

The Department of Ophthalmology at the University of Arizona College of Medicine in Tucson is dedicated to preventing blindness and preserving eyesight through innovative research and comprehensive eye care for all patients whose vision is threatened by eye disease or injury. Founded in 1982, the Department has grown to include 20 faculty members, who handle more than 30,000 patient visits a year, and is among the top ophthalmology departments at U.S. universities receiving research funding from the National Institutes of Health.

University of Arizona Department of Ophthalmology

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'G' is for Glaucoma: Young Sleuths Work to Uncover A Silent Sight-Killer

Like private eyes, a group of UA College of Medicine students are seeking to uncover a silent killer attacking unsuspecting citizens of Tucson: glaucoma.

Known as the "Student Sight Savers," they meet each month at the St. Elizabeth of Hungary Clinic in Tucson to examine patients for evidence of this blinding eye disease that some do not even know they have.

Without warning and often without symptoms, glaucoma gradually steals sight by damaging the optic nerve. It is the second-leading cause of blindness in the U.S. and the leading cause of preventable blindness, according to the Glaucoma Research Foundation.

Glaucoma most often occurs due to elevated pressure in the eye or to a deficient blood supply to the optic nerve. Although there is no cure for glaucoma, treatment can control eye pressure and prevent blindness, which is why glaucoma screenings are so important.

The UA College of Medicine is one of 24 medical schools throughout the country participating in the Student Sight Savers Program (SSSP), a community service project funded and administered by the Friends of the Congressional Glaucoma Congress Foundation. SSSP, which was started in the early 1990s at the University of Michigan Medical School by Eve Higginbotham, MD, involves medical students and ophthalmologists who volunteer to provide free glaucoma screenings to community members.

The UA SSSP was established in 2002 by ophthalmology department

Chairman Robert Snyder, MD, PhD, who saw the program as an opportunity to expose medical students to the field of ophthalmology early in their training. SSSP is part of the UA's Commitment to Underserved People (CUP) program, a medical student-directed service learning program that provides clinical experience in the context of community service to rural and underserved populations in Arizona.

Through SSSP, UA medical students are introduced to the group of eye diseases that comprise glaucoma and to screening methods used to detect it. They learn to conduct eye exams and to use ophthalmic equipment, such as a panoptic ophthalmoscope (to examine the back of the eye), tonopen (to measure eye pressure) and Frequency Doubling Technology (FDT) (to test the visual field for signs of glaucoma).

UA SSSP clinics are held the third Saturday of each month at St. Elizabeth of Hungary Clinic, an agency of Catholic Community Services of Southern Arizona. Located near downtown Tucson, the clinic provides health care services for community members who are not eligible for public assistance yet are unable able to afford private care or private insurance coverage.

Working one-on-one with volunteer ophthalmologists from the UA or in private practice in the community, the medical students conduct screenings at the clinic, taking patient histories to uncover glaucoma risk factors, measuring blood pressure, performing visual acuity exams, measuring eye pressure and checking peripheral vision.



▲ Shown at a recent Student Sight Savers screening are, left to right, Shameema Sikder, second-year medical student; Teri Corder, first-year medical student; and David Morales, third-year medical student

"The clinics provide a valuable learning experience for the students," says UA SSSP Student Coordinator Shameema Sikder, second-year medical student. "The ophthalmologists have provided interesting views on current medicine and shared some of their medical training experiences. On one occasion, some patients canceled their appointments at the last minute and Dr. Snyder brought out his laptop and went through several interesting presentations, including emergency eye cases and eye problems in the elderly. It was quite a unique occasion to spend some quality time with a physician so interested in teaching."

Ophthalmologists who volunteer in the program include Jack Aaron, MD; Norman Ahl, MD; Todd Altenbernd, MD; Dean Brick, MD; Harry Carrozza, MD, UA assistant professor, ophthalmology; Harold Cross, MD, PhD, UA clinical professor, ophthalmology; Sean McCafferty, MD; Harry Schlosser, MD; and Robert Snyder, MD, PhD, head, UA Department of Ophthalmology. Jill Brickman-Kelleher, senior program manager, University Physicians Department of Ophthalmology, is community coordinator for the UA SSSP.

About four medical students staff each SSSP clinic, which have been successful in uncovering potential (as well

as actual) cases of glaucoma. A recent clinic screened 18 patients and found 12 at risk for glaucoma and one with glaucoma that left untreated would have caused blindness in about a year, says Shameema. "Because the screenings are held at the St. Elizabeth clinic, we are able to refer these patients back to the clinic for a follow-up visit with an ophthalmologist, if needed."

The students also have learned that glaucoma suspects can be deceptive. "We had a father come in with his 15-year-old daughter and while he was fine, the daughter was at risk," notes Shameema.

The SSSP clinic has become a family affair, Shameema says. "A good experience for one family member often brings spouses, children or cousins to a subsequent clinic. The patients love the attention from the medical students and the opportunity to share some of their concerns with an ophthalmologist."

SSSP screenings at the clinic are advertised in local media and are open to anyone free of charge. Screenings generally are held the third Saturday of each month from 9 a.m. to noon at the St. Elizabeth of Hungary Clinic, 140 W. Speedway, Tucson. For an appointment, or for information about upcoming screenings, contact the clinic at 628-7871.

DEPARTMENT NEWS



Researcher Receives Research to Prevent Blindness Career Development Award

▲ *Lihua Marmorstein, PhD*

Cell biologist Lihua Marmorstein, PhD, a member of the Southwest Age-Related Macular Degeneration (ARMD) Research Program at the UA Department of Ophthalmology, is the recipient of a \$200,000 Career Development Award from Research to Prevent Blindness (RPB), the world's leading voluntary organization supporting eye research. Dr. Marmorstein also is an assistant professor in the UA Departments of Ophthalmology and Cell Biology and Anatomy.

The award, which will be distributed over a four-year period that began January 1, 2004, will support her research into the causes of ARMD. Her work for the first time links defective proteins and the translation of genetic information to the development of ARMD. She also is developing new animal models for studying the cause of ARMD and testing prevention and treatment strategies. Her research is funded by the National Institutes of Health (NIH).

Dr. Marmorstein was nominated for the award last year by Robert W. Snyder, MD, PhD, professor and head, UA Department of Ophthalmology. "Lihua's research is extremely valuable," says Dr. Snyder. "She has

developed a unique approach to studying a genetic variant of ARMD. Her approach opens the door to developing tools and techniques for early diagnosis and prevention trials as well as testing of treatment strategies."

This is the department's third RPB Career Development Award. James T. Schwiegerling, PhD, assistant professor, and W. Daniel Stamer, PhD, associate professor, also received the award in 2002 and 2001, respectively. RPB established the award in 1990 to attract young physicians and basic scientists to eye research positions in departments of ophthalmology at universities across the country.

New Company To Develop Unique Retinal Camera



▲ *Three men and a camera: from left to right are James T. Schwiegerling, PhD; Joseph Miller, MD, MPH; and Robert Snyder, MD, PhD, with their invention.*

A missing retinal camera has turned out to be a good thing – thanks to the ingenuity of three UA Department of Ophthalmology researchers.

Joseph M. Miller, MD, MPH, professor and pediatric ophthalmologist; James T. Schwiegerling, PhD, assistant professor and optical scientist; and Department Chairman Robert W. Snyder, MD, PhD, won approval from the

Arizona Board of Regents in November to hold ownership stakes in Optica Technologies Inc., a company that will develop the unique retinal camera they invented when a quick replacement was needed for the missing equipment.

The new design is an improvement over the missing equipment in several ways.

It solves an old problem with light refraction in lenses designed for hand-held cameras used in photographing the back of the eye. The original retinal camera left an image on the film that was distorted by refracted light. The new lens eliminates this light by using light-emitting diodes (LEDs) to illuminate the interior of the eye and filtering technology to sharpen the images.

The new lens is designed to fit a standard Nikon digital camera, making it compact and allowing images to be downloaded to a computer.

The camera, lens and software developed by the team are much less expensive than the missing equipment. The system will sell for less than \$6,000, compared to an average of \$50,000 for current equipment.

The company will develop the camera as a more affordable and smaller tool for diagnosing retinal damage in eye disorders such as age-related macular degeneration (ARMD), the leading cause of irreversible blindness in people over 50 years of age in the United States and the western world.

The lens also can be used by emergency room pediatricians to help detect signs of child abuse, such as shaken baby syndrome. (Violent shaking of infants is evidenced by broken blood vessels in the retina, or the inner back wall of the eye.)

According to Dr. Miller, the new system will have applications in telemedicine, as well, improving communication between ophthalmologists and primary care physicians.

Nayaks Join Department

Pamela Farthing-Nayak, PhD, cell molecular biologist and geneticist, and Ramesh C. Nayak, PhD, physiologist and immunologist, have joined the Department of Ophthalmology. Dr. Farthing-Nayak has been appointed assistant professor of ophthalmology and Dr. Nayak has been appointed associate professor of ophthalmology. Prior to joining the UA, the Nayaks were with Tufts University School of Medicine in Boston, Mass.

Pamela Farthing-Nayak, PhD



Dr. Farthing-Nayak's research interests include the molecular events and genes involved in the development of the cornea (the front part of the eye) and corneal disease processes.

As a first step toward identifying the genes involved in normal corneal function, she is using comparative proteomics (the study of proteins within cells) to investigate the biological processes involved in keratoconus, an eye disease in which the normally round cornea becomes thin and irregular or cone-shaped, preventing light from being focused correctly on the retina and causing distorted vision. She plans to expand her research, which currently is funded by the National Institutes of Health, to include other genetic diseases affecting normal corneal development.

She also is investigating the molecular basis of retinal angiogenesis (abnormal growth of retinal blood vessels) in diabetic retinopathy (an eye disease affecting people with diabetes in which the retina's blood vessels become damaged, leading to visual impairment or blindness). Using molecular biology, cell culture, genetic manipulation and other techniques, she hopes to identify the key genes that are turned on during the transition from (background diabetic retinopathy to the sight-threatening stage of proliferative retinopathy).

Her research has been published in numerous professional publications, including the *EMBO Journal*, *Journal*

of Cellular Biochemistry and *Journal of Biological Chemistry*.

Prior to joining the UA, she was assistant professor of ophthalmology, anatomy and cellular biology at Tufts University School of Medicine, and a member of the Special and Scientific Staff of Tufts-New England Medical Center.

She earned her doctorate in molecular, cell and developmental biology at the University of California, Los Angeles, in 1991, followed by training in molecular and cell biology at the UCLA Molecular Biology Institute from 1991 to 1992. She also received postdoctoral training in nephrology and mouse genetics at the Department of Medicine, Division of Nephrology, UCLA Medical School, and in molecular biology and dermatology at the Massachusetts General Hospital/Harvard Medical School Cutaneous Biology Research Center in Charlestown, Mass. She was a research fellow in dermatology at Harvard Medical School in Boston prior to joining Tufts University School of Medicine. She also was a postdoctoral research fellow at UCLA Medical School and the Molecular Biology Institute, UCLA.

Ramesh Nayak, PhD

Dr. Ramesh Nayak is formally trained in biochemistry, cell biology and immunology. His research interests include diabetic retinopathy. He currently is investigating an autoimmune mechanism that may be a contributing factor — in addition to the effects of elevated blood sugar — in the development of diabetic complications.

He and other researchers have found autoantibodies (antibodies that react with the cells, tissues, or native proteins of the individual in which they are produced) to the two types of cells that make up the walls of capillary blood vessels in some diabetics. Understanding the roles of these autoantibodies may lead to new methods for diagnosing and treating



diabetic retinopathy and other complications.

Prior to joining the UA, he was assistant professor of ophthalmology, physiology and pediatrics at Tufts University School of Medicine, and director of the Monoclonal Antibodies and Tissue Resources Module at Tufts University Center for Vision Research.

He earned his doctorate in biochemistry from the University of London, U.K., in 1984. He was a research fellow in medicine from 1984 to 1987 at Joslin Diabetes Center and Harvard Medical School in Boston. Prior to joining Tufts University School of Medicine, he was assistant professor of medicine at Harvard Medical School. He also was an investigator in the Section on Immunology and Immunogenetics at Joslin Diabetes Center, and a medical laboratory scientific officer in the Department of Immunology at Middlesex Hospital Medical School, London, U.K.

He has had several studies published in professional journals, including the *Journal of Experimental Medicine* as well as articles in *Retina*, *Journal of Immunological Methods* and *Microvascular Research*.

A volunteer in many community activities related to eye disease, he served as president of the New England Region of the American Diabetes Association (ADA) for 2002-2003. He was a member of the Massachusetts Lions Clubs for 12 years, serving as fundraising chairman for the Lions Eye Research Fund, District Diabetes awareness chairman and secretary of the Lions Eye Mobile Corporation. He currently is a member of the Tucson Breakfast Lions Club.

The Nayaks reside in Tucson with Dr. Farthing-Nayak's two children, Clancy, age 12, and James, age 9; a golden retriever named Abigail; two cats, named Rufus and Muffin; and a Malaysian box turtle. They both are learning to speak Spanish, and Dr. Nayak is taking guitar lessons. Dr. Farthing-Nayak enjoys windsurfing; Dr. Nayak enjoys sailing and cooking, especially Indian cuisine, and hopes to write a cookbook.

'Road Apple Roulette' Helps Eliminate Eye Disease

Last year, people laughed when they heard about the "Road Apple Roulette," the unique fundraiser held by the Tucson Breakfast Lions Club for the first time during the 2003 Tucson Rodeo Parade. This year, people cheered the success of the second Road Apple Roulette, which raised nearly \$35,000 during this year's parade on February 26.

Proceeds from the now annual event benefit the Arizona Lions Eye Center at the UA Department of Ophthalmology, other Lion's sight and hearing charities and local Lion projects.

Turning "road apples" (a polite name for horse droppings) into "gold" was the idea of event organizer Sandy Shiff, a board member of the Tucson Breakfast Lions Club Foundation, past president of the Tucson Breakfast Lions Club, and a member of the UA Department of Ophthalmology advisory board. The event was co-sponsored by Casino of the Sun.



▲ Horses draw an official parade entry float over the "Road Apple Roulette" grid. (Photo by Anne Shiff.)

For a \$50 contribution per square, Road Apple participants could buy random squares within a 1000 square grid in the roadway at the beginning of the parade route on Ajo Way and under the paths of many, many horses. Parade horses passing over the grid and randomly dropping road apples on the grids determined the three prize winners.

The winners of the 2004 Road Apple Roulette are:

3rd Prize (\$1,000), BRS Inc., owner of Square #59, at 9:09 a.m.

2nd Prize (\$2,500), Hubert Rome, owner of Square #712, at 9:10 a.m.

Grand Prize (\$5,000), Larry Hodges, who won when the third road apple dropped at 9:22 a.m. on square #279.

All square owners received official deeds to their squares as well as a commemorative tee-shirt, special parade viewing and refreshments during the event.

Plans for next year's Road Apple Roulette already are underway, so keep checking the web site, <http://www.roadappleroulette.com>, for details.

The Arizona Lions Eye Center, located at 707 N. Alvernon Way, is the result of a decade-long partnership between the UA Department of Ophthalmology and the Lions. Opened in 1999, the facility features a refractive surgery center, diagnostic center, optical shop and space for the department's clinical trials. Programs include research into causes and cures for macular degeneration, glaucoma and other age-related sight diseases, as well as sight-related medical treatments and services. The center combines the department's interdisciplinary research team and technology (including cutting-edge optics) with the Lions' mission to develop and use resources to enhance vision and hearing, both in Arizona and Mexico.

For more information about the Lions Clubs, call toll free, (877)403-5294 (in Tucson, (520)547-2003). For more information about the Arizona Lions Eye Center, call (520)694-1460.

Don't miss this upcoming event!

Friday, June 18

Science of Eye Disease Seminar / Jorge Rodríguez Memorial Lecture

Deep Lamellar Endothelial Keratoplasty (DLEK): New Surgery, New Paradigm of Cooperation

Speaker: Mark A. Terry, MD, Director, Corneal Services, Devers Eye Institute, Portland, Ore.

(DLEK is a new surgical technique for replacing corneas.) Current UA ophthalmic research also will be showcased.

4:00-7:00 p.m., Four Points by Sheraton, 1900 E. Speedway Blvd., Tucson
Continuing Medical Education (CME) credits given.

For more information, contact W. Daniel Stamer, PhD, UA Department of Ophthalmology, (520) 626-7767.

This event is free and open to the public.

Visit our website for updates:
www.eyes.arizona.edu

Ophthalmology Speakers Available

Department of Ophthalmology scientists are available to speak to Lions Clubs and other groups. To arrange speakers for Lions Clubs, call Lion Ramesh C. Nayak, PhD, UA associate professor, ophthalmology, (520) 370-4373. To arrange speakers for other groups, call Chris Van Houten, UA ophthalmology department development, (520) 321-3677.

PUBLICATIONS AND PRESENTATIONS

ARTICLES

Vision in Preschoolers (VIP) Study Group: Visual acuity results in school-aged children and adults: Lea symbols chart versus Bailey-Lovie chart. *Optom Vis Sci* 2003;80:650-654. (Writing committee: **Dobson V**, Maguire M, Orel-Bixler D, Quinn G, Ying GS)

Dobson V, Baldwin MB, Mohan KM, Delaney SM, Harvey EM: The influence of stimulus size on measured visual field extent in infants. *Optom Vis Sci* 2003;80:698-702.

Hardy RJ, Palmer EA, **Dobson V**, Summers CG, Phelps DL, Quinn GE, Good WV, Tung B, on behalf of the Cryotherapy for Retinopathy of Prematurity Cooperative Group: Risk Analysis of Prethreshold Retinopathy of Prematurity. *Arch Ophthalmol* 2003;121:1697-1701. Early Treatment for Retinopathy of Prematurity Cooperative Group: Revised indications for the treatment of retinopathy of prematurity. Results of the early treatment for retinopathy of prematurity randomized trial. *Arch Ophthalmol* 2003;121:1684-1696. (Writing committee: Good WV, Hardy RJ, **Dobson V**, Palmer EA, Phelps DL, Quintos M, Tung B)

Vision in Preschoolers (VIP) Study Group: Threshold visual acuity testing of preschool children using the crowded HOTV acuity test and the Lea symbols acuity test. *J AAPOS* 2003;7:396-399. (Writing committee: Cyert L (Chair), Schmidt P, Maguire M, Moore B, **Dobson V**, Quinn G)

Wu J, Peachey NS, Lem J, **Marmorstein AD:** Light-evoked responses of the mouse retinal pigment epithelium. *J Neurophys* 2004;91:1134-1142.

Nayak RC, Agardh CD, Kwok MGK, Stjernquist H, **Farthing-Nayak P**, Agardh E: Circulating anti-pericyte autoantibodies are present in Type-2 diabetic patients and are associated with non-proliferative retinopathy. *Diabetologia* 2003;46:511-513.

Herrygers LA, **Noecker RJ:** Effect of preservatives in chronic ocular therapy. *Clin Surg Ophthalmol* 2003;1/21(3):88-94.

Nayak RC, Kwok MGK, Stramer B, **Farthing-Nayak P**, Fini ME: Monoclonal antibody (3G5) defined ganglioside: Cell surface marker of corneal keratocytes. *Invest Ophthalmol Vis Sci* 2004;45:807-812.

Conley SM, Bruhn RL, Morgan P, Stamer WD: Selenium effects on MMP-2 and TIMP-1 activity in human trabecular meshwork cell supernatants. *Invest Ophthalmol Vis Sci* 2004;45:473-479.

Noecker RJ, Dirks MS, Choplin NT, Bernstein P, Batoosingh AL, Whitcup SM: A six-month randomized clinical trial comparing the intraocular pressure-lowering efficacy of bimatoprost and latanoprost in patients with ocular hypertension or glaucoma. *Am J Ophthalmol* 2003;135(1):55-63; 2003.

Noecker RJ, Earl ML, Mundorf T, Peace J, Williams RD: Bimatoprost 0.03% versus travoprost 0.004% in black Americans with glaucoma or ocular hypertension. *Adv Ther* 2003;20(2):121-128.

Serle J, Cantor L, Gross R, Katz J, Mundorf T, **Noecker R**, et al: Best practice treatment algorithm for primary open-angle glaucoma: Implications for US ophthalmology practice. *Am J Ophthalmol* 2003;135(2):264.

Twelker JD, Bailey IL: Sun exposure in unilateral and bilateral pterygium cases. *Invest Ophthalmol Vis Sci* 2003;44(Suppl):S816.

EXPLANATION OF PUBLICATION AND PRESENTATION INFORMATION

Publications

Author(s): Article title. *Journal Year* Published; Journal Number: Journal Page Number(s).

Presentations

Presenter: Presentation Title. Name of Conference/Organization, Presentation Location, Conference/Presentation Date(s).

PRESENTATIONS

Miller JM: Higher-order aberrations in Native American children. Poster presented at the Mopane 2003: International Conference on Astigmatism, Aberrations, and Vision, Mopani Camp, Kruger National Park, South Africa, August 2-5, 2003.

Nayak RC, Agardh CD, Kwok MGK, **Farthing-Nayak P**, Lynch K, Agardh E: Effect of diabetic nephropathy and blood pressure on the prevalence of circulating antipericyte autoantibodies at various grades of retinopathy. International Diabetes Federation Congress, Paris, France, September 2003.

Dobson V: The effect of astigmatism on visual development in a Native American population. Colloquium. Department of Speech and Hearing Sciences, University of Arizona, Tucson, AZ, September 9, 2003.

Dobson V: Astigmatism and emmetropization in a Native American population. Fall Vision Meeting 2003, Tucson, AZ, October 4, 2003. [Invited Symposium Participant]

Dobson V: Environmental influences on visual development. Module on visual conditions and functional vision assessment: Early intervention issues. Sponsored by Early Intervention Training Center for Infants and Toddlers with Visual Impairments, University of North Carolina Child Development Institute, Tucson, AZ, November 7, 2003. [Invited Speaker]

Dobson V: Visual function in the developing child following ROP. 3rd International Symposium on ROP. Anaheim, CA, November 13, 2003. [Invited Speaker]

Noecker R: Laser treatment of glaucoma. Joint Commission on Allied Health Personnel in Ophthalmology (JCAHPO) Annual Continuing Education Program for Ophthalmic Medical Personnel (Subspecialty Day), Anaheim, CA, November 15, 2003.

Noecker R: (1) Lasers in glaucoma and (2) Alternative/Adjunctive therapies for glaucoma. Annual Meeting of the American Academy of Ophthalmology, Anaheim, CA, November 16-18, 2003.

Noecker R: Cataract surgery in the glaucoma patient: Anticipation and preparation. New England Ophthalmological Society Meeting, Boston, MA, December 12, 2003. [Invited]

Hardy KM, Hoffman EA, McKay BS, Stamer WD: Myocilin association with exosome-like vesicles in human trabecular meshwork cells. American Society for Cell Biology Meeting, San Francisco, CA, December 13-17, 2003.

AN EYE TO THE FUTURE newsletter is published by the UA Department of Ophthalmology to share news and showcase research activities.

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Our Mission Is to Benefit the People of Arizona, the Southwest and Beyond

Entering the 21st Century:

In the United States, one child in 20 may suffer abnormal eye development. These children are at risk for serious vision problems that may lead to permanent vision loss.

Glaucoma is the leading cause of preventable blindness in the United States, affecting an estimated 3 million Americans. It is a silent villain that with little or no warning robs a person of their ability to see. Once destroyed, vision lost to glaucoma cannot be restored.

Age-related macular degeneration causes is the leading cause of irreversible blindness and vision impairment in people over age 50 in the United States and the western world. About 13 million Americans have evidence of ARMD, according to Prevent Blindness America. An estimated 1.7 million Americans over age 65 have visual impairment caused by ARMD, according to the National Eye Institute.

With the latest laser applications, computers and other new technologies, we enter the 21st century with far greater hope for preservation of vision. However, we continue to seek better answers for eye conditions, such as glaucoma and retinal diseases, which still are major causes of blindness.

UA Department of Ophthalmology

The UA Department of Ophthalmology is dedicated to preserving healthy eyesight and preventing blindness through innovative research and comprehensive eye care for all patients whose vision is threatened by eye disease or injury.

Become an Annual Member of the VISIONaries

We invite you to support the exciting work of the UA Department of Ophthalmology. Gifts of all sizes have been utilized throughout the Department, in the clinics, and in the research laboratories, helping the Department increase medical knowledge and offer the best possible vision care.

Donors of \$1,000 or more will have their name listed on the permanent donor recognition wall at the Lions Eye Care Center.

To find out more about the many other ways you can participate in our mission, call (520) 321-3677.

Ophthalmology Department Members Included in 2003-2004 'Best Doctors'® in America'

Four UA Department of Ophthalmology members are among the more than 100 University of Arizona Health Sciences Center (AHSC) physicians in 31 medical specialties listed in the 2003-2004 Best Doctors in America database. The list is based on a biennial survey of tens of thousands of leading specialists worldwide asking whom they would go to for treatment in their specialty.

The database includes 35,000 physicians in more than 40 specialties and 400 subspecialties of medicine. These represent just 4 percent of U.S. doctors.

The 2003-2004 list, released in January, includes ophthalmology department members Leonard Joffe, MD; Joseph M. Miller, MD, MPH; Richard R. Ober, MD; and Robert W. Snyder, MD, PhD.

For more information, contact Best Doctors at 1-800-675-1199 or see the website, www.bestdoctors.com.