

AN EYE TO THE FUTURE

**The Department of Ophthalmology
The University of Arizona
Health Sciences Center**

Winter 2000/01

Department Receives RPB Challenge Grant

I am pleased to announce that the University of Arizona Department of Ophthalmology has joined the ranks of other top ophthalmology departments in the United States eligible for Research to Prevent Blindness (RPB) funding.

Research to Prevent Blindness (RPB), the world's leading voluntary organization supporting eye research, awarded the Department a \$220,000 Challenge Grant to expand research efforts directed toward the elimination of blinding diseases. This is fantastic news because the Challenge Grant opens the door to further funding from RPB.

There are 126 Departments of Ophthalmology in the United States, but only a select group receive RPB funding. This award provides an opportunity to greatly expand our research efforts and signifies that the UA Department of Ophthalmology has become one of the leaders in vision research.

During the past 10 years, we have made tremendous strides in developing the teaching, clinical care and service aspects of the Department. Now we are in the midst of developing a productive and comprehensive research program. This grant from RPB will provide the Department resources that enable the cultivation of innovative research ideas. RPB funding will:

- p allow us to invest in new ideas and new faculty.
- p foster interactions among our faculty and other scientists at the University of Arizona.
- p apply for further funding from RPB, which is critical to our success in initiating new research projects and recruiting new investigators. Additional awards available through the RPB include as much as \$625,000 over five years from the Jules and Doris Stein Professorships to recruit senior-level basic scientists, \$65,000 per year from the Senior Scientific Investigator Awards to support senior scientists in the Department, and \$55,000 per year from the Physician-Scientist Awards to strengthen and promote clinical research in the Department.

This award will have a vital impact on the Department and its faculty. The grant reflects the confidence RPB has in this Department becoming the premier eye research institution in the Southwest.

Robert W. Snyder, M.D., Ph.D.

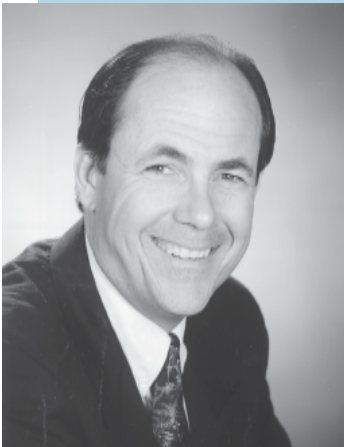
USA Today Reports on Tohono O'Odham Research Grant

The UA Department of Ophthalmology received national attention Dec. 13, 2000, when *USA Today* reported on the \$1.7 million grant UA researchers received from the National Eye Institute to expand a study of vision problems on the Tohono O'Odham Reservation south of Tucson.

The Tohono O'Odham Vision Screening Program began in 1997 to test and treat 4- to 5-year-olds on the reservation for astigmatism, a condition in which the shape of the cornea prevents clear vision at any distance. The goal of the original four-year effort was to identify the best possible screening methods to detect the condition.

The new money from the National Eye Institute, part of the National Institutes of Health, will allow researchers to test and treat grade school children to determine the maximum age at which children can be treated successfully for amblyopia that results from uncorrected astigmatism.

The article stated that researchers from the Department will test more than 1,000 children in kindergarten through sixth grade over five years to determine treatment. It also told how one in three Tohono O'Odham children has astigmatism, compared with one in 20 in the general population.



From the Director's

Giving Gift of Sight in Mexico

The UA Department of Ophthalmology teamed up with Nogales, Sonora, physicians for two days in December to deliver gifts that truly keep on giving — gifts of sight.

Members of the Department worked with Miguel Alvarez, M.D., an ophthalmologist at the clinic Oftalmologos Asociados, to perform free corneal transplant surgeries. Dr. Alvarez has been studying corneal transplant surgery as part of a new foreign fellowship program offered by the Department. He coordinates with the Sonora Lions Club to bring UA ophthalmologists to Mexico.

“Most of the patients here in the clinic need transplants because of corneal failure after cataract surgery,” Dr. Alvarez said. “They have some light perception, but are basically blind. A corneal transplant can help them regain much of their lost eyesight.”

Corneal transplants are difficult to come by in Mexico because there are few certified doctors and demand for corneal tissue is high, he said.

Also performing corrective eye surgery was Associate Professor Joseph M. Miller, M.D. Dr. Miller worked with Maria G. Ramirez, M.D., of Nogales, Sonora, to operate on children with strabismus (misalignment of the eyes). Dr. Miller said children who have strabismus are at risk because it can lead to amblyopia, or secondary vision loss.



■ Robert Snyder, M.D.; Miguel Alvarez, M.D.; Joseph Miller, M.D.; Maria G. Ramirez, M.D.

The trip to Mexico was not the first for the UA ophthalmologists — and will not be the last, said Department Head Robert W. Snyder, M.D., Ph.D. “In areas where such surgeries are not readily available, many people are left with no other option than functional blindness,” he said. “The Department will continue to assist Drs. Alvarez and Ramirez in providing more advanced procedures to the people of Sonora to improve their eye care.”



■ Lynn Polonski, M.D.

Dr. Lynn Polonski Joins UA Ophthalmology

Lynn Polonski, M.D., has joined the UA Department of Ophthalmology as assistant professor. He is a comprehensive ophthalmologist and has special interest in oculoplastic surgery, which includes upper and lower eyelid blepharoplasty (eyelift), repair of ptosis (drooping eyelid), and reconstruction due to tumors and facial trauma, such as composite lids (using cartilage and skin to form new functional lids).

Dr. Polonski also performs topical clear cornea cataract extraction, glaucoma-filtration surgery and corneal transplant surgery. He has extensive training in refractive surgery and is certified on VISX and Nidek Refractive Laser systems and Moria's MicroKeratome. He has performed PRK and LASIK for patients with myopia, astigmatism and hyperopia refractive errors.

In addition to his surgical responsibilities, Dr. Polonski will serve as investigator in a variety of clinical studies, including one on antibiotic treatment of corneal ulcers and bacterial conjunctivitis.

After receiving his medical degree at Albert Einstein College of Medicine of Yeshiva University, Bronx, N.Y., Dr. Polonski completed a transitional residency at Mount Sinai Medical Center of Cleveland, Ohio, and an ophthalmology residency at Case Western Reserve Hospitals of Cleveland. He also completed an oculoplastics preceptorship at St. John's Westshore Hospital and worked in private practice in Ohio before moving to Tucson.

New Tools for Screening Children's Vision

The Science of Eye Disease

The latest equipment in technology-based vision screening for young children was demonstrated Dec. 13 as part of the new continuing medical education series designed to bring medical doctors and basic scientists together to examine eye disease.

Three experts in pediatric eye disease and visual development — Joseph M. Miller, M.D., associate professor; Velma Dobson, Ph.D., professor; and Erin M Harvey, M.A., research lecturer — presented a Science of Eye Disease Series lecture and demonstration on “New Strategies for Preschool Vision.” They showed how these tools — alternatives to eye charts — such as photorefractometry, autorefractometry and automated visual acuity testing strategies can be used for early detection of vision abnormalities in preschool-age children.

Amblyopia, or secondary vision loss, is potentially reversible if detected during the critical period for visual development and treated appropriately. Early detection and initiation of treatment before the child enters first grade are essential in preventing permanent visual impairment. “The younger the child is when eye problems are detected and corrected, the better the child will see later on,” Dr. Miller said.

Screening vision and eye examinations also may detect other common conditions such as nystagmus and refractive problems, as well as rare diseases such as retinoblastoma, infantile glaucoma, cataract and retinal disease, he said.

The UA Department of Ophthalmology Science of Eye Disease Seminar Series is presented quarterly to those in the community with medical or research interests in eye disease.

The Faculty of Ophthalmology

Robert W. Snyder, M.D.,
Ph.D., Head

Millicent L. Palmer, M.D.

Velma Dobson, Ph.D.

James T. Schwiegerling,
Ph.D.

Joseph M. Miller, M.D.

Lynn Polonski, M.D.

Rand Siekert, O.D.

Robert J. Noecker, M.D.

W. Daniel Stamer, Ph.D.

Richard R. Ober, M.D.

Robert M. Tyszko, O.D.,
F.A.A.O.

\$6 Million ARMD Research Campaign

Last fall, the University of Arizona Department of Ophthalmology kicked off a five-year, \$6 million fund-raising campaign for the creation of the Department of Ophthalmology's Southwest Age-Related Macular Degeneration (ARMD) Research Program. This new initiative will pursue the development of new surgical and non-surgical treatments of ARMD through the investigation of the molecular and cellular mechanisms that underlie ARMD.

This exciting venture, which is being led by the Department and its Lions partners, promises results in the fight against ARMD, the leading cause of irreversible vision loss in the United States. The establishment of a research training program for clinical and postdoctoral fellows, graduate/medical students and undergraduate students will be key to the mission of the new program.

The program also will focus on the creation of an endowed chair position for the scientist project leader. This position would be filled through the recruitment of a nationally recognized research scientist with extensive ARMD experience.

AN EYE TO THE FUTURE newsletter is published by the UA

Department of Ophthalmology to share news and showcase research activities. Correspondence or inquiries should be addressed to: Newsletter, UA Department of Ophthalmology, 655 N. Alvernon Way, Suite 108, Tucson, AZ 85724-5046; phone (520)626-7219.

PUBLICATIONS

ARTICLES

Schwiegerling J: Theoretical limits to visual performance. *Surv Ophthalmol* 2000;45:139-146.

Schwiegerling J, Snyder RW: Eye movement during laser in situ keratomileusis. *J Cataract Refract Surg* 2000;26:345-351.

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Harvey EM, Miller JM, Dobson V, Tyszko R, Davis AL: Measurement of refractive error in Native American preschoolers: Validity and reproducibility of autorefractometry vs. retinoscopy. *Optom Vis Sci* 2000;77:140-149.

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Miller JM, Dobson V, Harvey EM, Sherrill DL: Astigmatism and amblyopia among Native American children (AANAC): Design and methods. *Ophthalmic Epidemiology* 2000;7:187-207.

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Stamer WD, Allingham RR, Roberts BC, McKay BS: Subcellular localization of myocilin mutants. *Invest Ophthalmol Vis Sci* 2000;41(4):S523.

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PRESENTATIONS

- Snyder RW: Boundaries in refractive surgery. Sociedad Mexicana de Oftalmología, Consejo Mexicano de Oftalmología, San Carlos, Mexico, October 1, 2000.
- Miller JM: Recommended hypermetropia screening guidelines by pediatric eye care specialists. American Association for Pediatric and Ophthalmology and Strabismus, Palm Springs, CA, April 12-15, 2000.
- Ober R: Age-related macular degeneration: update on photodynamic therapy. Low Vision Conference, Las Vegas, NV, April 27, 2000.
- West SK, Munoz B, Klein R, Rodriguez J, Sanchez R, Broman AT, Snyder R: Social risk factors for diabetic retinopathy in an Hispanic population. Annual Meeting of the Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL, April 30-May 5, 2000.
- Quigley H, West S, Rodriguez J, Munoz B, Klein R, Snyder R: Prevalence of glaucoma in a population-based study of Hispanics. Annual Meeting of the Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL, April 30-May 5, 2000.
- Sanchez R, Rodriguez J, Munoz B, Broman AT, Snyder R, Klein SK: Prevalence and causes of visual impairment in a population-based study of Hispanics: Proyecto VER. Annual Meeting of the Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL, April 30-May 5, 2000.
- Broman AT, Munoz B, Rodriguez J, Sanchez R, Snyder R, Klein R, West SK: Disability associated with visual impairment in a population-based study of Hispanics. Annual Meeting of the Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL, April 30-May 5, 2000.
- Rodriguez J, Munoz B, Klein R, Sanchez R, Broman AT, Snyder R, West SK: Prevalence of diabetes and diabetic retinopathy in an Hispanic population. Annual Meeting of the Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL, April 30-May 5, 2000.
- Munoz BE, Rodriguez J, Sanchez R, Broman AT, Snyder R, Klein R, West SK: Self reported visual disability with diabetic retinopathy in a population-based study of Hispanics with diabetes. Annual Meeting of the Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL, April 30-May 5, 2000.
- Nichols JC, Snyder RW, Payne CM: Mode of keratocyte death after corneal de-epithelialization. Annual Meeting of the Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL, April 30-May 5, 2000.
- Schwiegerling J, Snyder RW, MacRae SM: Comparison of real ablation shapes of PRK patients to theoretical Munnerlyn pattern. Annual Meeting of the Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL, April 30-May 5, 2000.
- Miller JM, for the Pediatric Eye Screening Study Group: Hypermetropia screening recommendations of pediatric eye specialists. Annual Meeting of the Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL, April 30-May 5, 2000.
- Hall HL, Greivenkamp JE, Schwiegerling J, Miller JM: Modeling Purkinje images in ray-trace code for the assessment of pediatric lenticular astigmatism. Annual Meeting of the Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL, April 30-May 5, 2000.
- Atodaria NJ, Harvey EM, Miller JM, Dobson V: Preschool vision screening using a new photoscreener: effectiveness in a population with a high prevalence of astigmatism. Annual Meeting of the Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL, April 30-May 5, 2000.
- Harvey EM, Miller JM, Dobson V: Preschool vision screening with a new portable vision screener: effectiveness in a population with a high prevalence of astigmatism. Annual Meeting of the Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL, April 30-May 5, 2000.
- Delaney SM, Dobson V, Mohan KM, Harvey EM: The influence of stimulus flicker rate on measured visual field extent in 3.5- and 7-month-old infants. Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, April 30-May 5, 2000.
- Mohan KM, Dobson V, Delaney SM, Harvey EM: The influence of stimulus size on measured visual field extent in 17- and 30-month-old children. Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, April 30-May 5, 2000.
- Dobson V, on behalf of the CRYO-ROP Cooperative Group: Contrast sensitivity at age 10 years in children who had threshold retinopathy of prematurity. Association for Research in Vision and Ophthalmology, Fort Lauderdale, FL, April 30-May 5, 2000.
- Snyder RW: Pharmacology for cataract and refractive surgery. Course taught at the Annual Meeting of the American Society of Refractive and Cataract Surgery, Boston, MA, May 20-25, 2000.
- Snyder RW: Refractive phakic and pseudophakic intraocular lens symposia. Course taught at the Annual Meeting of the American Society of Refractive and Cataract Surgery, Boston, MA, May 20-25, 2000.
- Snyder RW: The cutting edge. Canadian Ophthalmological Society, Whistler, BC, Canada, June 18, 2000.
- Snyder RW: Optics for the refractive surgeon. Canadian Ophthalmological Society, Whistler, BC, Canada, June 19, 2000.
- Snyder RW: Antibiotic therapy for the prevention of endophthalmitis. Canadian Ophthalmological Society, Whistler, BC, Canada, June 19, 2000.
- Miller JM, Harvey EM, Dobson V: Confirmed autorefractive component differences in a population of astigmatic Native American preschool children. VIII International Conference on Myopia, Boston, MA, July 7-9, 2000.
- Miller JM: Computerized visual acuity measurement using the Amblyopia Treatment Study Threshold Acuity Test [ATSTAT]. Annual Meeting of the American Academy of Ophthalmology, Dallas, TX, October 22-25, 2000.
- Herrygers LA, Noecker RJ: Comparison of Fluressä (Akorn) versus Fluoracaineä (Akorn) on corneal epithelium. American Academy of Ophthalmology Annual Meeting, Dallas, TX, October 22-25, 2000.
- Kapner L, Noecker RJ, Snyder RW, Palmer ML: Comparison of chilled versus room temperature BSS during phacoemulsification. American Academy of Ophthalmology Annual Meeting, Dallas, TX, October 22-25, 2000.
- Jones B, Noecker RJ: Foldable intraocular lens damage associated with forceps and injector delivery methods. American Academy of Ophthalmology Annual Meeting, Dallas, TX, October 22-25, 2000.
- Miller JM: Isoametropic amblyopia in astigmatic Native American preschool children. International Society for Eye Research XIV International Congress of Eye Research Meeting, Santa Fe, NM, October 15-20, 2000.
- Stamer WD: Aquaporin-1: Role in resting cell volume. XIV International Congress of Eye Research, Santa Fe, NM, October 15-20, 2000.
- Stamer WD: Conceptos actuales de investigación en glaucoma. Colegio de Oftalmólogos del Estado de Sonora Conference. Nogales, Mexico, 2000.
- Stamer WD: Glaucoma is associated with defects in the secretory pathway. Role of TIGR/Myocilin in Glaucoma Catalyst Meeting, Glaucoma Research Foundation, Oakland, CA, 2000.
- Noecker RJ, Bulau S, Kay J: Efficacy and tolerability of Alphagan and Trusopt in Mexican-American patients with glaucoma or ocular hypertension. American Glaucoma Society Annual Meeting, 2000.
- Noecker RJ, Schwiegerling J, Bulau S, Kay J: Measurement of iris pigmentation changes induced by latanoprost using a digital imaging technique. American Glaucoma Society Annual Meeting, 2000.
- Noecker RJ, Kelly T, Schuman J: How long should I keep the G-probe? American Glaucoma Society Annual Meeting, 2000.

The University of Arizona Department of Ophthalmology

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

Research

The faculty of the UA Department of Ophthalmology conducts research that is of great importance to those who suffer from the most common eye diseases and conditions. Research areas include glaucoma; age-related macular degeneration and other conditions of the retina; laser surgery to rectify cornea problems, including myopia, cataract, and roughness on the surface of the cornea; pediatric ophthalmology, including visual field testing of infants and screening of children for astigmatism; and use of computers and sophisticated optical programs in preparation for surgery.

Education

The Department's educational mission includes medical students, residents, fellows, continued medical education classes for technical professionals, and providing primary care

physicians with the appropriate knowledge to adequately assess ocular and vision-threatening problems. In addition, the results of the Department's research are published in major medical and ophthalmic journals.

Service

Our goal is to provide the highest quality care and offer the latest advances in diagnosis and treatment of eye diseases. The Department also participates in Lions Club and Lions Foundation programs to assure that patients of all economic status benefit by having highly trained specialists providing state-of-the-art service. Faculty members also volunteer services at Tucson Veterans Affairs Medical Center, St. Elizabeth's of Hungary Clinic, and "Operation See," which provides free surgical treatment to children in Nogales, Sonora, in cooperation with Lions Clubs.

How VISIONaries Help Us Achieve Our Mission

Members of the VISIONaries contribute \$100 a year or more to support the Department's important and continuing research. These funds are used for the purchase of necessary equipment, for "seed" money for new research efforts, and for specialized assistance, as required.

VISIONaries receive four newsletters a year, as well as periodic updates on the latest research into eye conditions and diseases. Because individuals do not receive material benefit, the entire amount of donations is tax deductible under the regulations of the U.S. Internal Revenue Service.

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