New Department Head: Dr. Miller Outlines Plans for Ophthalmology

The UA Department of Ophthalmology has grown tremendously since its founding in 1982. In addition to a strong faculty dedicated to teaching, research and patient care, the department has attained excellence in several areas, including macular degeneration, glaucoma, retinal disease and other conditions of the aging eye, children’s vision problems, such as amblyopia, eye surgery, and eye diseases among Hispanics.

This summer, Robert Snyder, MD, PhD, decided to step down after 13 years as department chairman to pursue a private practice of medicine in Tucson. He remains affiliated with the UA as professor of biomedical engineering and remains on our department advisory committee.

I accepted the position of department head as of July 1. For those who do not know me, I joined the department in 1991, and have served as vice head of the department for many years.

My plans include continued growth in our clinical program to provide the best care for our patients and continued research in fighting blindness.

I am looking forward to working with so many people who are committed to preserving healthy vision and preventing blindness and to providing the resources necessary to accomplish our goals.
Joseph M. Miller, MD, MPH, a nationally known ophthalmologist and professor of ophthalmology, has been appointed head of the UA Department of Ophthalmology. Dr. Miller also is professor of optical sciences at the UA Optical Sciences Center and professor of public health with the Mel and Enid Zuckerman Arizona College of Public Health.

Prior to his appointment, Dr. Miller served as vice head of the department for six years. He joined the UA College of Medicine faculty in 1991 as assistant professor of ophthalmology.

“Dr. Miller has a strong record as an investigator, clinician and educator. He has an ambitious plan to expand the clinical and research programs within the department and to integrate those programs fully into our expanding opportunities on the various campuses,” says Keith Joiner, MD, MPH, dean, UA College of Medicine.

Dr. Miller trained as a biomedical engineer at Case Western Reserve University in Cleveland, Ohio, before attending medical school. He earned his medical degree from Northwestern Ohio Universities College of Medicine in Rootstown, Ohio, in 1985, followed by a residency in ophthalmology at Yale University in New Haven, Conn., and a fellowship in pediatric ophthalmology at Johns Hopkins University, Baltimore, Md. Prior to joining the UA, he was with the Wilmer Ophthalmological Institute at Johns Hopkins Hospital in Baltimore, Md.

“A board-certified ophthalmologist, Dr. Miller specializes in pediatric eye care and strabismus. He is listed in the 2003-2004 Best Doctors in America database, and is a fellow of the American Academy of Ophthalmology and a member of the American Association for Pediatric Ophthalmology and Strabismus.

In addition to his clinical work, Dr. Miller’s research interests include the effect of refractive error on visual development and the invention of instruments to detect strabismus (misaligned eyes) and amblyopia (lazy eye) in young children. He is the recipient of the 2004 Walt and Lilly Disney Award for Amblyopia Research from Research to Prevent Blindness (RPB).

He is medical director of “Astigmatism and Amblyopia Among Native American Children,” a project supported by a grant from the National Eye Institute of the National Institutes of Health involving Head Start and elementary school children of the Tohono O’Odham Nation.

Dr. Miller, Dr. Snyder and James T. Schwiegerling, PhD, UA Department of Ophthalmology assistant professor and optical scientist, invented a unique retinal camera for diagnosing retinal damage in eye disorders such as age-related macular degeneration (ARMD). The camera also can be used by emergency room pediatricians to help detect signs of child abuse, such as shaken baby syndrome, and the new system also will have applications in telemedicine, improving communication between ophthalmologists and primary care physicians.
An Ode to My Eyes: Gratitude for a Gift of Colorless Sight

By Meirav Malter, age 8

Oh, eyes, you are forever there,
Right above my nose,
Right below my eyebrows.

You are still very special,
Even if you don’t see very well.
Eyes, I am glad I have you,
Glad that you let me see the world.
And all the things in it.
If I was blind it wouldn’t be the same,
I wouldn’t see the sparkling sea,
The big tree in my yard,
Or the shiny sunrise.
I would never see the excitement of the circus,
Or the gentle flowers.
So eyes, I just want to tell you once again,
I’m glad to know you’re there,
Right above my nose.

Imagine seeing the world only
in shades of white, black and gray.
Imagine being unable to see in bright light.
Imagine having to wear dark
sunglasses all the time, both indoors and out.
Imagine seeing your best only
at night.

Now you can imagine what seeing is like for 9-year-old
Meirav Malter, a third-grade student at Manzanita
Elementary School in the Catalina Foothills School District
and a patient of ophthalmology
department head Joseph Miller,
MD, MPH.

And you can begin to understand how remarkable it is
that she would write “An Ode to My Eyes” even though she is
severely vision impaired.

Meirav has achromatopsia —
sometimes called achromatopsia —
a rare congenital vision
disorder that affects one in
33,000 persons in the U.S.,
according to the Achromatopsia
Network. Achromatopsia is the
most severe form of color
vision deficiency — people
with the condition see little
or no color.

Achromatopsia affects the
eye’s cone cells, which are
light-sensitive photoreceptor
cells that function best in
bright light and are
responsible for color, detail
and central vision. The eye
has about 6 million cone
cells, located mainly in the
macula at the center of the
retina. In achromatopsia, the
cone cells lack an enzyme
so they have little or no
function, leaving the eye’s
rod cells to provide vision.

There are about 100
million rod cells, which are
photoreceptor cells located
primarily at the retina’s
periphery. Rod cells
function best in low light,
allow the eye to adjust to a
range of lighting conditions
and enable night vision, but
they can’t differentiate color
or provide good detail vision.

In addition to color vision
deficiency, achromatopsia
symptoms include
hypersensitivity to light, an
inability to adapt to high levels
of illumination, poor detail and
distance vision, and nystagmus,
an involuntary side-to-side
movement of the eyes that can
go away with age.

The severity of symptoms
varies depending on how many
cone cells are affected as well
as lighting conditions. In bright
light, vision can become hazy or
washed out. In areas of both
bright light and shade, objects in
the shade can be difficult to
see. At night, people with
achromatopsia see the way
people with normal vision do
after their eyes adjust to a dark
room — they can see objects
but not colors or details.

The condition is not
progressive and doesn’t lead to
blindness. Currently, no
treatments exist for
achromatopsia; genetic research
one day may provide a therapy.

Symptoms are managed
with sunglasses, hats and
visors, low-vision aids such as
magnifiers, and optical aids
such as monoculars (small
telescopes) that can help
distance vision. Tinted
contact lenses, especially
those with red tints, can
reduce the light entering the
eyes and help the rod cells to
function better.

Although legally blind,
Meirav can see. She wears
sunglasses all the time to
manage her sensitivity to light.
In school she uses enlarged
materials to help compensate
for her poor visual acuity.
Activities involving distance
vision, such as seeing the
blackboard or perceiving fast-
moving objects such as when
playing ball, are extremely
difficult.

Meirav’s older sister,
Ma’ayan, 11, also has
achromatopsia. Meirav’s
younger sister, Mika, 6, has
normal vision and often helps
her older sisters identify colors or
spot either very small or
very distant objects.

Neither of Meirav’s parents
has achromatopsia. Her father,
Alan Malter, PhD, is assistant
professor of marketing at the
UA Eller College of
Management, and her mother,
Gili, is an art teacher at
Sunrise Drive Elementary
School. They both have
talked with their daughters
“about children who are
completely blind, so they
appreciate the vision they do
have,” says Dr. Malter.

The “attitude of gratitude”
that Meirav learned from her
parents motivated her to write
about her eyes when her
second grade teacher, Kris
Green, gave the class an
assignment to write an ode.

Her teacher was so
impressed by Meirav’s piece
that she proposed entering it in

(continued on page 6)
The Department announces the following appointments and promotions:

**Alan D. Marmorstein, PhD**, associate professor and a member of the Southwest Age-Related Macular Degeneration (ARMD) Research Program, has received a joint appointment as associate professor with the UA Optical Sciences Center.

**Robert I. Park, MD**, assistant professor and a member of the Southwest Age-Related Macular Degeneration (ARMD) Research Program, has received a joint appointment as assistant professor with the UA Optical Sciences Center.

**James T. Schwiegerling, PhD**, assistant professor with a joint appointment in the Departments of Ophthalmology and Optical Sciences, has been promoted to associate professor of ophthalmology and optical sciences, with tenure in ophthalmology.

**J. Daniel Twelker, OD, PhD**, assistant professor, has received a joint appointment as assistant professor with the Mel and Enid Zuckerman Arizona College of Public Health at the UA.

**Dr. Miller receives Walt and Lilly Disney Award for Amblyopia Research**

Joseph M. Miller, MD, MPH, professor and head, ophthalmology department, has received a Walt and Lilly Disney Award for Amblyopia Research from Research to Prevent Blindness (RPB).

Dr. Miller is one of only two scientists selected to receive the $25,000 award in 2004. The RPB established the Walt and Lilly Disney Award for Amblyopia Research in 2002 to strengthen and promote research to improve the diagnosis and treatment of amblyopia. The award is offered to assist exceptional ophthalmic scientists, either MDs or PhDs, doing research of significance and promise in this area.

Amblyopia, also called “lazy eye,” is reduced vision in one eye that often results from a misalignment, such as crossed eyes, or a difference in image quality between the eyes (one eye focusing better than the other). One eye becomes stronger, suppressing the image of the other eye, which eventually may become useless. Early diagnosis and treatment can restore the sight in the affected eye.

Dr. Miller plans to use the award funding to promote legislative efforts to increase the number of children who receive vision screening before starting school, and to develop new visual acuity test methods that are faster and more reliable when used with preschool children.

Dr. Miller is a board-certified pediatric ophthalmologist whose amblyopia research focuses on the development of instruments to detect the condition in young children. Most of the research involves computerized image analysis and is done in conjunction with the Optical Sciences Institute.

He is medical director of “Astigmatism and Amblyopia Among Native American Children,” a project supported by a grant from the National Eye Institute of the National Institutes of Health involving Head Start and elementary school children of the Tohono O’Odham Nation. A very large proportion of Native American children need glasses because of astigmatic refractive error. This study will determine the best way to identify children in the Head Start age group who need glasses, and also determine if the use of eye glasses during the preschool years improves the vision of children when they start first grade. This also will provide valuable information to help prevent amblyopia in all Americans.

RPB is the world’s leading voluntary organization supporting eye research. Since it was founded in 1960, RPB has channeled more than $220 million into eye research. RPB currently supports eye research at 54 medical institutions throughout the United States.
The Department of Ophthalmology is investigating a potential research relationship with a Canadian-based company dedicated to the design and manufacture of eye care diagnostic devices.

Department faculty members met with executives and scientists from ERIC Technologies Corporation, based in Calgary, Alberta, on Aug. 9 to explore research opportunities and the possibility of establishing a U.S. headquarters in Tucson.

The scientific discussions, held on the UA campus, were a follow-up to a June 8 meeting between ERIC Chairman Larry Novak and then-Department of Ophthalmology head Robert W. Snyder, MD, PhD.

The August meeting included ophthalmology department members Joseph Miller, MD, MPH, professor and head, UA Department of Ophthalmology, and professor of optical sciences and public health; Robert Park, MD, UA assistant professor, ophthalmology and optical sciences; James Schwiergerling, PhD, UA associate professor, ophthalmology and optical sciences; and Dr. Snyder, UA professor of biomedical engineering. The meeting also included an overview of the UA Optical Sciences Center by director James C. Wyant, PhD, and tours of the center’s laboratories.

ERIC is an acronym for Elastic Reflectivity Information of the Cornea. The three-year-old company’s initial product is a medical instrument for diagnosing and monitoring glaucoma. According to the World Health Organization, glaucoma is a leading cause of blindness, with more than 100 million cases worldwide. Accurately measuring the pressure inside the eye (intraocular pressure) is critical as a key predictor for glaucoma.

The device is a breakthrough in ERIC Technologies’ patent-pending vibration tonometry that measures intraocular pressure. Different versions of the simple-to-use, non-invasive and highly accurate device are being developed for home and professional use. ERIC also measures cornea thickness and will enhance the outcome of cataract and refractive surgery.

“ERIC Homecare” is the company’s first product targeted at glaucoma — or glaucoma-suspect — patients and postoperative eye surgery patients. The product will be a self-administered test to monitor intraocular pressure.

A professional device for ophthalmologists is under development to measure the eye’s intraocular pressure, elasticity, pachymetry (thickness of the cornea) and axial length.

With five ophthalmology faculty members holding joint appointments with the UA Optical Sciences Center, there is much common ground for pursuing research and clinical trials related to ERIC’s technologies. The ophthalmology department’s special interest in preventing blindness among Hispanics also is an area of interest to the company.

Mr. Novak noted his company’s relationships with the University of Calgary and the need to seek a U.S. location with a similarly strong university connection. In discussing possible research and development collaborations, Dr. Snyder noted that the ERIC technology is “a quite remarkable screening tool… with a huge potential economic impact.”

Mr. Novak has a long history with Arizona as a business owner in the Phoenix area and as chairman of the Calgary/Phoenix Sister City Committee.

An Ode to My Eyes (continued from page 3)

Ma'ayan excels at rock climbing despite her achromatopsia, although she may need assistance walking over rocky terrain to get to the climbing site.

In Memoriam (continued from page 5)

“...He helped a huge number of kids and he was an exceptional doctor,” said Joseph Miller, MD, MPH, professor and head, UA ophthalmology department. Dr. Stidham was an excellent surgeon who "loved taking care of people and helping children see. It's a terrible loss to the community.”

Dr. Stidham also was involved in community service, including performing free eye exams at Pueblo High School’s Care Fair.

Families of patients of Dr. Stidham, and his former medical partner and accused murderer, pediatric ophthalmologist Bradley Schwartz, MD, should contact their primary care physician for a new eye care referral. They also can contact directly any of the four remaining pediatric ophthalmologists in Tucson for routine care: Wayne W. Bixenman, MD, 1500 N. Wilmot Rd. Ste. 180-C, 886-4137; Dr. Miller, University Physicians Healthcare (UPH) ophthalmology clinic, 707 N. Alvernon Way, 694-1460; Sam Sato, MD, 3910 N. Campbell Ave., 323-2466; and Lydia BaZuelos, MD, UPH ophthalmology clinic, 707 N. Alvernon Way, 694-1460. UPH is providing free immediate care for parents who have had eye surgery and need urgent eye care, to avoid delays due to insurance coverage.

Dr. Miller will continue teaching the pediatric ophthalmology residents.

Dr. Stidham’s coworkers and friends have established a college fund for his children. Donations can be sent to: Stidham Children Fund, account number 1811704479, Northern Trust Bank, 3450 E. Sunrise Dr., Tucson, AZ 85718.

A separate fund has been established to provide emergency assistance for the family. Donations are tax-deductible. For more information, call (520) 740-5729, or send a donation to: Homicide Survivors, Stidham Family Fund, 32 N. Stone Ave., Ste. 1408, Tucson, AZ 85701.

Don’t miss these upcoming events!

Science of Eye Disease Seminar

Wednesday, March 9, 2005

Topic to be announced

Speaker: Maria Grant, MD, professor, Department of Pharmacology and Therapeutics, University of Florida, Gainesville, Fla.

5-6:30 p.m., Ophthalmology Administrative Offices, 655 N. Alvernon Way, Suite 108, Tucson. A social precedes the seminar from 5 to 5:30 p.m.; hors d’oeuvres and soft drinks provided. Continuing Medical Education (CME) credits given.

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

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

Glaucoma Screenings

Third Saturday of each month (except December, no screening)

St. Elizabeth of Hungary Clinic, 140 W. Speedway, Tucson

Free glaucoma screenings by medical students from the UA College of Medicine’s Student Sight Savers Program and volunteer ophthalmologists from the community. Screenings include glaucoma risk factors evaluation, blood pressure measurement, visual acuity exam, eye pressure measurement and peripheral vision check.

For an appointment or more information, contact St. Elizabeth of Hungary Clinic, (520) 628-7871.

These events are free and open to the public.

(continued from page 3)
**ARTICLES**


**PRESENTATIONS**


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The following are presentations made at the Annual Meeting of the Association for Research in Vision and Ophthalmology, Ft. Lauderdale, FL, April 25-29, 2004:

Clifford CE, Haynes BM, Dobson V: Are Teller Acuity Card norms obtained with the Teller Stage appropriate for use when testing is conducted without the stage?  


Harvey EM, Dobson V, Miller JM: Treatment of astigmatism-related amblyopia: Evidence for a sensitive period that extends beyond early childhood.

McKay BS, Erbe E, Rak D, Sherman S: Pigmenting RPE secretors neurotrophic agents.

Haynes BM, Clifford CE, Dobson V: Are Teller Acuity Card norms based on the original Vistech Acuity Cards appropriate for use with the new Stereo Optical Acuity Cards?


Clifford CE, Haynes BM, Dobson V: Are Teller Acuity Card norms obtained with the Teller Stage appropriate for use when testing is conducted without the stage?


Harvey EM, Dobson V, Miller JM: Treatment of astigmatism-related amblyopia: Evidence for a sensitive period that extends beyond early childhood.

McKay BS, Erbe E, Rak D, Sherman S: Pigmenting RPE secretors neurotrophic agents.


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 (ARMD) 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.