

Indiana University School of Medicine
Eugene and Marilyn Glick Eye Institute

Ophthalmology

Update

Department of Ophthalmology

Spring 2014

IUSM students in the Department of Ophthalmology are at the forefront of clinical and translational science research projects

From learning how drugs work to understanding why patients don't always take their medications as prescribed, students at the Eugene and Marilyn Glick Eye Institute are participating in research they hope will change peoples' lives.

In the lab of **Tim Corson, Ph.D.**, **Halesha Basavarajappa**, a third-year Ph.D. student, is working on the basics of drug discovery. He's learning the basic steps of designing molecules that might become

drugs to treat age related macular degeneration and retinopathy of prematurity.

Lyne Racette, Ph.D., investigates racial differences in glaucoma and is studying why some patients are better than others at understanding and taking their medications.

Working with her is student **Elizabeth Eads**, who is developing an educational intervention to help explain glaucoma to patients who

have the disease, and to impress upon them the importance of complying with their prescription regimen.

"I speak with each study participant individually to explain open-angle glaucoma, its risk factors, eye anatomy, how their prescription drops work and the importance of compliance in order to save their sight," said Eads, who is completing her master of public health degree at IUPUI. *Continued on Page 4*

Cover image: A pre-retinal vascular tuft from a 17-day-old mouse that has gone through a model of retinopathy of prematurity (from the lab of **Maria Grant, M.D.**).

Ophthalmology Student Interest Group (OSIG) establishes eye clinic within IUSM student outreach clinic.

Read more Page 3.

Meet the new Ophthalmology residents. Read more Page 5.

Faculty news, notes and honors. Read more Pages 6-7.

From the Chairman



I continue to be impressed by the faculty, residents and fellows, students and staff in the Department of Ophthalmology. The two students you read about in our cover story are among dozens of bright, talented young people who are working here to achieve a common goal - saving sight. From our clinical initiatives to the basic science and translational research that occurs at the Glick Eye Institute, and in our research labs across the IU School of Medicine campus, real strides are being made toward that goal.

Our next generation of ophthalmologists - the medical students who are members of the Ophthalmology Student Interest Group - have laid the foundation for a permanent eye clinic at a School of Medicine neighborhood health clinic in a church basement not far from downtown Indianapolis. These promising young students, who will be our eye care providers in the future, devote their time to provide free screenings to an underserved population. You can read about them on Page 3.

On campus we are experiencing change as our faculty practice prepares to transition into the Indiana University Health Physicians practice. We are receiving expert guidance from Brian Kremer, vice president of Surgical Services at IUHP as he and his team interview all faculty and staff to determine how new roles will be assigned with the transition. Our goal is to provide seamless care for our patients by aligning with IUHP.

Louis Cantor, M.D.

Chair and Professor of Ophthalmology
Jay C. and Lucile L. Kahn Professor of Glaucoma
Research and Education
Director, Glaucoma Service
Eugene and Marilyn Glick Eye Institute
Indiana University School of Medicine
Department of Ophthalmology

Philanthropic support is necessary to accelerate vision research. To learn how you can make a tax-deductible gift to benefit the Eugene and Marilyn Glick Eye Institute, please contact:

Linda E. Cantor, J.D.
Director of Development
Eugene and Marilyn Glick Eye Institute
Indiana University School of Medicine
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Phone: **317.274.3602** or
800.643.6975

Donations may be mailed to:

IU School of Medicine
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PO Box 6460
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Gifts to the Glick Eye Institute

Donors who wish to make a memorial gift, or a donation to honor someone, may do so at any time. There are several funds available for support, including the building fund, several research funds or an endowment in memory of Eugene and Marilyn Glick. All options are listed on our website, www.glick.iu.edu, where donations also can be made.

If you have questions about how to memorialize or honor a friend or loved one with a gift to the Eugene and Marilyn Glick Eye Institute, please contact Linda Cantor at (317) 274-3602.

Online donations may be made through the Eugene and Marilyn Glick Eye Institute website at:

www.glick.iu.edu

OSIG establishes eye clinic within IUSM student outreach clinic

The Ophthalmology Student Interest Group has established an eye clinic for the IU School of Medicine's Student Outreach Clinic.

The Student Outreach Clinic is a free clinic based at the Neighborhood Fellowship Church on the near east side of Indianapolis. According to a 2007 community assessment, there are roughly 15,000 homes in the community with 50 percent or more of the residents living at or below the poverty level.

Many IUSOC clinic patients report unmet health needs for a variety of reasons, including cost, lack of transportation or lack of a primary care provider. Additionally many report a fear of the medical community. Poverty and unemployment add to the number of uninsured residents. The IUSOC helps close the healthcare gap in this community by coordinating a nonthreatening medical presence right in the neighborhood.

The IUSOC functions as a student run clinic and provides free medical care along with other services from partners including the IU School of Dentistry, School of Law, social work, physical therapy, occupational therapy and the Butler University School of Pharmacy. Starting this year, the IUSOC now offers vision services thanks to the work of the IU School of Medicine Ophthalmology Student Interest Group or OSIG. Student leaders from the IUSOC

approached OSIG with the idea to start an eye clinic last summer. OSIG quickly began working and with the help of the IU School of Optometry, a slit-lamp and phoropter were donated to the clinic.

Next, senior medical student **Ana Pearson** applied for and received a \$12,000 grant from the IU Woman's Philanthropy Council to purchase a non-mydratric fundus camera. Prevent Blindness Indiana also donated equipment to OSIG including a large auto-refractor, multiple visual field machines, and more. **Chi Wah (Rudy) Yung, M.D.**, OSIG faculty advisor, secured necessary clinic items such as a retinoscope and occluders, and mapped out clinic logistics with students.

With a fully equipped clinic, OSIG hopes to screen for preventable disease including glaucoma and diabetic retinopathy and provide free glasses prescriptions. Senior medical student **Andrea Wenzel** worked to establish a partnership with OneSight, a large philanthropic organization that provides free glasses through participating retailers including LensCrafters. Now, patients at the IUSOC Eye Clinic can receive a free screening eye exam, glasses prescription and free glasses at LensCrafters.

To provide glasses prescriptions, OSIG needs one faculty and resident volunteer each month. At a recent clinic in March, faculty members

included Dr. Yung and **Amy Waddell, M.D.**, and residents **Sally Primus, M.D.**, and **Evan Dunn, M.D.** More than 20 patients were screened with 10 individuals receiving prescriptions for free glasses. Medical students volunteer to staff the clinic and work to triage patients, test visual acuity, auto-refract, use the tonopen and take fundus photos.

Faculty oversee fundus photos, check for pathology and counsel patients should they need follow-up care. Residents work at the slit-lamp and refract patients who need glasses. During the most recent clinic, 18 medical students volunteered to work at the clinic. First and second year medical students learned how to use the tonopen and check visual acuity. This clinic helps a population in need while introducing medical students to ophthalmology. Medical students with an interest in ophthalmology also can practice refraction under the supervision of a resident and faculty member.

Although the clinic is in its first year, OSIG members believe it has tremendous potential to give back to the community while fostering an environment for learning between medical students, residents and faculty. Interested volunteers can contact Dr. Yung at ryung@iupui.edu. Faculty volunteers are needed for the last Saturday of each month.

-- submitted by Andrea Wenzel

Wenzel selected as Plater Civic Engagement Medallion Award winner

Andrea Wenzel, a student at the IU School of Medicine, will be one of the recipients of the 2014 Plater Civic Engagement Medallion Award.

Andrea is active in the Ophthalmology Student Interest Group, providing vision screenings for at-risk communities and working in research at the Glick Eye Institute, home of the Department of Ophthalmology.

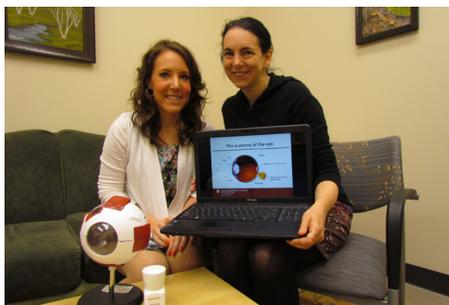
She worked for former faculty member Brian Samuels, M.D., Ph.D., in his lab and also worked for **Tim Corson**,

Ph.D., in his lab. She was recently featured as the Student Spotlight in the weekly IU School of Medicine e-newsletter INScope.

"I nominated Andrea for the 2014 Plater Civic Engagement Medallion Award and I am glad to learn that she has been chosen as one of the recipients," said **Chi Wah (Rudy) Yung, M.D.**, faculty advisor for OSIG. "This honor reflects her exemplary commitment to serve the local community with vision screenings and as president of the student group."

IUSM students at the forefront of clinical and translational science research projects

Continued from Page 1



Elizabeth Eads and Dr. Racette with some of the tools they use to educate glaucoma patients about treatment compliance.

While Eads is learning teaching patients to take their drugs, Basavarajappa is working on designing drugs that could prevent vision loss.

“After I got my master’s degree in biochemistry, I decided I wanted to work on drugs that could be used to fight diseases,” he said.

“I am interested in reducing health disparities in glaucoma,” Dr. Racette said. “People of African descent are disproportionately affected by primary open-angle glaucoma. This high-risk population is also less likely to adhere to sight-preserving medical treatment. We are developing educational and motivational approaches to improve adherence to glaucoma treatment in patients of African descent, with the long-term goal of eliminating this health disparity.”

Dr. Racette received the 2013 Investigator Award from Prevent Blindness America to fund this research. “Liz was instrumental in developing the educational intervention we are using to improve adherence in glaucoma patients. Her training in public health combined with her experience working with patients allows her to make significant contributions to our studies,” Dr. Racette said. Eads has worked with Dr. Racette

since last fall, as part of her internship in the master’s in public health program. “My background in science, my background in working with patients with a local optometrist and my studies on vulnerable populations all come together when I am at the Glick Eye Institute,” Eads said. “I am grateful for the opportunity to learn under Dr. Racette’s guidance. Each day is something new and so far has been a truly rewarding experience. I feel like I am making a difference in the lives of study participants.”

Basavarajappa began working with Dr. Corson two years ago. “Halesha began work studying KIF14 as an oncogene in retinoblastoma, and published a review on this topic early in his training, and contributed to our recently published study of this gene in ovarian cancer,” Dr. Corson said. The major focus of Basavarajappa’s work is on the mechanistic studies of an antiangiogenic natural product; he has recently had his first paper on this topic accepted by the scientific journal PLoS ONE. His work is funded by the Ausich Graduate Scholarship from Kemin Health.

“Halesha has done excellent work screening derivatives of this product to find a very potent and selective analog that we are actively pursuing as a therapeutic lead for AMD and ROP,” Dr. Corson said. “In parallel, he has delved into how these compounds might be working.”

Dr. Corson’s lab, the first to become operational at the Glick Eye Institute building in 2011, seeks to apply the tools and techniques of chemical biology to the problems of eye disease. He and his team are interested in understanding the biology of - and developing potential therapies for - ocular tumors, AMD, ROP and other neovascular eye



Halesha Basavarajappa and Dr. Corson in the lab.

diseases.

Basavarajappa said he has appreciated the opportunity to work in Dr. Corson’s lab, and expects to continue his research until he completes his Ph.D.

“These are the types of research projects we could only hope to undertake when we moved to this building three years ago,” said **Louis B. Cantor, M.D.**, chairman of the Department of Ophthalmology. “Dr. Corson is part of the basic science team that works with **Michael Boulton, Ph.D.**, our director of basic science and translational research, and Dr. Racette is a member of the clinical research team of **Alon Harris, M.S., Ph.D., FARVO**, director of clinical research.”

“When we look at the intersection of basic science and clinical research, these are the kinds of projects that impact the lives of our patients. The opportunity to work on new drugs to treat blinding eye diseases, and the opportunity to work with patients to make sure they understand how their medicines work, and why it’s important to take them as prescribed, can be life changing for the scientists and for the patients who will benefit,” Dr. Cantor said.

Meet the 2014 Department of Ophthalmology residents

Residents who matched with the Department of Ophthalmology and will begin in July 2014 are:

Leslie Tobe, Joshua Paschall and **Laura Magnuson**, all graduates of the IU School of Medicine; **Whitney Boling**, graduate of the American University of Antigua College of Medicine; **Rehan Hussain**, George Washington University and **Ryan Wise**, University of Iowa Roy J. and Lucille A. Carver College of Medicine.

"We have an eclectic but strong group of incoming residents this coming academic year," said **Darrell WuDunn, M.D., Ph.D.**, director of the residency program for the Department of Ophthalmology. "Most of the incoming residents are already familiar to the Department of Ophthalmology through medical school or research activities. We are looking forward to welcoming the new residents in July and we have high expectations for each of them."

Dr. Tobe graduated from IU in 2007 with a Bachelor of Science degree in biology. She earned a Master's Degree in Biology at IUPUI and graduated from the IU School of Medicine in 2012. After graduating from medical school Dr. Tobe participated in a department graduate program that combined research and clinical opportunities. She worked in the research lab of **Alon Harris, M.S., Ph.D., FARVO**, on the Indianapolis Glaucoma Progression Study and with other faculty in the clinic. She was a co-president of the Ophthalmology Student Interest Group while in medical school.

Dr. Paschall received his Bachelor of Science degree from Bob Jones University cum laude with a major in biology and a minor in chemistry in 2008 and his medical degree from the IU School of Medicine in 2013. While in medical school he was a member of and president of the Ophthalmology Student Interest Group, volunteered at community

health clinics and participated in service trips to Mexico and Honduras.

Dr. Magnuson graduated from IUPUI in 2008 with a Bachelor of Science degree in biological chemistry and a math minor. She was a Top 10 female student and was twice elected to IUPUI's Top 100 students. She was a Biology Chancellor's Scholar Nominee and recipient of the University Physics award. She graduated from the IU School of Medicine in 2013 and also received a Master's in Public Health degree in 2013 from the IU School of Public Health. While in medical school she was a member of OSIG and worked at the IUSM Student Outreach Clinic. She participated in a global health outreach project in Nicaragua and a mission dental clinic in Belize. She was a member of Progress Notes, the IUSM a capella group.

Dr. Boling graduated magna cum laude as a psychology major with a premed concentration from the University of Indianapolis in 2006 and from the American University of Antigua College of Medicine in 2011 as first in her class. She organized Kindness to Prevent Blindness while in medical school, a mobile vision screening service to visit schools for screenings, and participated in community service activities in Antigua. She played volleyball in college, coached after her competitive career ended, taking her high school team to the state finals two years in a row. Before medical school she received training as an ophthalmic technician and a LASIK technician. She participated in research in the Department of Ophthalmology, working with Drs. WuDunn and Cantor. She completed an internship at Sinai Grace Hospital in Detroit.

Dr. Hussain graduated from George Washington University in 2008 with a Bachelor of Arts degree in psychology and from the GWU School of Medicine in 2012, completing a seven year integrated B.A./M.D.

program. He graduated magna cum laude as an undergrad. He is currently in a pathology fellowship program at Bascom Palmer Eye Institute. While in medical school he was a member of Sight Savers and currently volunteers with Bascom Palmer in a community outreach clinic. He has been a Red Cross volunteer and a member of the Pakistani Student Association, where he raised funds to aid victims of the 2005 Pakistan earthquake.

Dr. Wise received a Bachelor of Arts in chemistry and a Bachelor of Science in biology from the University of North Carolina at Charlotte in 2009. He received his medical degree from the University of Iowa in 2013. He also received an associate's degree in 2005 from Central Piedmont Community College. He was co-president of the Ophthalmology interest group in medical school and volunteered with pediatric screening programs, with a mobile clinic and with an AIDS project in North Carolina.

OSIG students match for 2015 academic year

Six IU School of Medicine students participated in the ophthalmology match for 2015 and all six students matched, according to Chi Wah (Rudy) Yung, M.D., faculty advisor for the Ophthalmology Student Interest Group.

"This is 100 percent and all six students are members of OSIG," said Dr. Yung. The students are Andrea Wenzel, John Ling, Nathan McIntyre, Tara Schaab, Priyanka Kanakamedala (matched at IU) and Lori Myers. "This is a phenomenal performance by this group of students, and indirectly reflects the quality of the medical education provided by our department," Dr. Yung said.

Faculty news and notes



Michael Boulton, Ph.D., director of basic science and translational research, recently attended NEI BVS study sections and was the leader of the task group

for "Retinal Pigment Epithelium in Health and Disease" at the Beckman Initiative for Macular Research, Irvine CA. He presented a talk titled "A non-canonical role for β -secretase (BACE) in AMD at the same meeting."

Dr. Boulton presented a seminar at the IU Biochemistry Dept. entitled "The roles of mitochondria, autophagy and diurnal rhythm in retinal degeneration" and presented a seminar at Case Western Reserve University, entitled "Preprogrammed bone marrow-derived cells as a systemic therapy for age-related macular degeneration."



Lyne Racette, Ph.D., has received a \$100,000 grant from the BrightFocus Foundation for the project "An individual model to monitor glaucoma progression."

She also received \$15,800 from the IUPUI Multidisciplinary Undergraduate Research Institute for the project "The effectiveness of motivational interviewing to improve adherence to glaucoma treatment in patients of African descent." (See cover story for more about her research).



Yara Catoira-Boyle, M.D., has been named a Recognizing External Achievements (REA) from IUPUI in honor of being named an

Ophthalmologist of the Year by the Indiana Academy of Ophthalmology.



F. Ryan Prall, M.D., has been named at 2014 Trustees' Teaching Award (TTA) recipient for the School of Medicine.



Tim Corson, Ph.D., has received \$25,000 from Funding Opportunities for Research Commercialization and Economic Success (FORCES), administered through the IUPUI Office of the Vice Chancellor for Research.

The program supports researchers in the successful transformation of their research findings into commercially viable outcomes. Dr. Corson's proposal is for "Precommercialization validation of a novel antiangiogenic molecule in vivo."

Dr. Corson also received a \$30,000 grant from the Retina Research Foundation to test a novel antiangiogenic compound his lab has developed in a mouse model of retinopathy of prematurity.



Daniel Neely, M.D., recently traveled with ORBIS to South Africa to provide education and pediatric eye care training for eye doctors in at pediatric eye clinic at the Inkosi Albert Luthali Hospital in Durbin.

The clinic was created by ORBIS to provide care to South African children, many of whom were born with cataracts and were blinded after birth because their cataracts were left untreated.

Dr. Neely is medical director for Cyber-Sight, the ORBIS telemedicine program.

While in South Africa, Dr. Neely participated with the ORBIS Cycle for Sight fundraising team in a 69 mile race. "The race was huge, there were 37,000 riders who participated and rode along the amazing Cape Town coastal scenery." Dr. Neely said.



Darrell WuDunn, M.D., Ph.D., gave a presentation at the annual meeting of the American Glaucoma Society in Washington DC entitled "Failed Tube Shunt" as part of Surgery Day's The Quaternary Care Patient: How to Manage the Super-Specialist Surgical Glaucoma Referral.



Louis B. Cantor, M.D., has received funding of \$35,052 from Bausch & Lomb for an existing project titled "A Randomized, Multicenter, Double-Masked, Parallel-Group Study Comparing the Safety and Efficacy of BOL-303259-X 0.024% (Latanoprostene Bunod) Ophthalmic Solution With Timolol Maleate Ophthalmic Solution 0.5% in Subjects With Open-Angle Glaucoma or Ocular Hypertension."



Jingyun Wang, Ph.D., has received \$13,643 from Indiana University for the CTSI – Project Development Team for a study entitled "A novel approach to improve compliance for amblyopia treatment in children."

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Dr. Helveston to receive distinguished faculty award



Maria Grant, M.D. FARVO, presented a talk entitled “Preservation of Ang-(1-7)\Mas pathway activation in CD34+ cells is associated with reduced severity

of diabetic retinopathy” at the Gordon Research Angiotensin Conference, Pisa, Italy.



Rajashekhar Gangaraju, PhD, was appointed to ARVO’s Professional Development and Education Committee.



Alon Harris, M.S., Ph.D, FARVO, delivered the keynote lecture for the Russian Ophthalmology Society in St. Petersburg. The address was delivered to

ophthalmologists and researchers from Russia and neighboring countries.

Dr. Harris was awarded \$89,360 to investigate the effects of lutein on ocular blood flow. The grant, “The effects of Lycored Lutein Supplementation on Ocular Blood Flow: A two-phase Protocol” is the from an Israel based nutraceuticals company.

ARVO has accepted more than 30 presentations from the Clinical Research team this year.

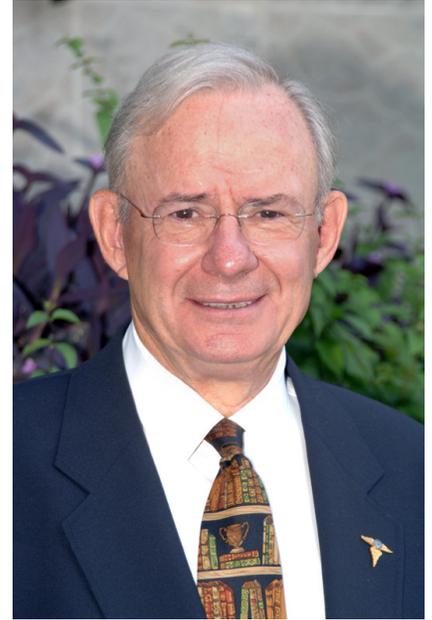
Eugene Helveston, M.D., a 1966 graduate of the IU School of Medicine’s Ophthalmology Residency, will be honored with the Glenn W. Irwin Jr., M.D. Distinguished Faculty Award. Named after a past dean of the IU School of Medicine and chancellor for IUPUI, this award recognizes faculty with outstanding service to the IU School of Medicine through dedication to students, colleagues, research or the medical profession.

Dr. Helveston will receive the honor during the IU School of Medicine Alumni Weekend’s 67th annual Strawberry Shortcake Luncheon on Saturday, May 17 at NCAA Headquarters, 700 West Washington Street, Indianapolis.

Dr. Helveston completed his medical education at the University of Michigan and began his Ophthalmology residency at Indiana University in 1961. In 1967 he completed a fellowship in strabismus and pediatric ophthalmology at the Wilmer Eye Institute at Johns Hopkins University. He then joined the faculty in the Department of Ophthalmology at the IU School of Medicine, where he later founded the pediatric ophthalmology and adult strabismus service. Dr. Helveston became a full professor in 1976. He served as department chair from 1981 to 1984 and became Emeritus Professor in 2000.

Throughout his distinguished academic career, Dr. Helveston has been a leader and innovator in his field of pediatric ophthalmology and adult strabismus. Dr. Helveston and his colleagues trained multiple generations of fellows in pediatric ophthalmology and adult strabismus, including current faculty member **Daniel Neely, M.D.**

“Dr. Helveston was one of the pioneers in the development of pediatric ophthalmology as a recognized discipline in the United States,” said **David A. Plager, M.D.,**



director, Pediatric Ophthalmology and Adult Strabismus in the Department of Ophthalmology.

“Dr. Helveston was a founding member of the American Association for Pediatric Ophthalmology and Strabismus in 1975 and this year the fellowship training program he established at IU will graduate its 100th fellow, giving IU the second largest number of pediatric ophthalmologist alumni in the US,” Dr. Plager said. “This is in addition to the hundreds of Indiana University ophthalmology residents who received their education in pediatric ophthalmology under his direction.”

Dr. Helveston’s interest in education and service led to a long affiliation with ORBIS, an international organization that provides education and consultation to ophthalmologists in the third world. He was a leader in the ORBIS program involving the flying eye hospital and the organization’s land based programs. Dr. Helveston developed the ORBIS Cyber-Sight program which provides learning opportunities, diagnosis and consultation assistance and patient follow-up for physicians in remote areas. This program has benefitted patients around the world and fosters a close relationship between colleagues worldwide.



EUGENE AND MARILYN GLICK EYE INSTITUTE

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Second Annual Glick Eye Open golf outing set

Plans are under way for the Second Annual Glick Eye Open golf event to benefit vision research at the Glick Eye Institute. This year's event will be Friday, July 18 at Ironwood in Fishers.

"We also are seeking sponsors for the event, and would be happy to talk about sponsorship opportunities with businesses and individuals with an interest in supporting vision care, education and research," said **Linda Cantor**, Director of Development for the Glick Eye Institute.

Interested sponsors or golfers who wish to participate can visit www.glick.iu.edu or email **Vicki Hermansen** at vkherman@iupui.edu

Afternoon of Art set for Glick Eye Institute

The Eugene and Marilyn Glick Eye Institute will host An Afternoon of Art from 2 to 4 p.m. Saturday, May 17 in conjunction with the IU School of Medicine's Alumni Weekend.

"We are opening the Glick Eye Institute for this event to give the artists an opportunity to talk about their work with the public and to show how it relates to our clinic, research and education space," said **Louis B. Cantor, M.D.**, chairman of the Department of Ophthalmology at the Glick Eye Institute. The event is free and open to the public. Parking is available in the Riley Outpatient Center garage on Riley Hospital Drive, one block north of the Glick Eye Institute. More information, maps and parking info is at www.glick.iu.edu.

Call Center Numbers

For appointments and/or referrals to a clinic operated by the Eugene and Marilyn Glick Eye Institute, please call:

317.274.2020 or **877.224.8393** (toll free)

Ophthalmology Update is distributed by the Eugene and Marilyn Glick Eye Institute, Department of Ophthalmology at the Indiana University School of Medicine. Please send any address changes, updates, comments or suggestions for items to include in future newsletters to: **Lynn Smith** at 317.274.1044 or smithlyr@iupui.edu