



# Scoop



Children's Eye Health  
and Safety Month

Friday, Sept. 7, 2001

THE UNIVERSITY OF TEXAS MEDICAL SCHOOL AT HOUSTON

## EVENTS TO KNOW:

→ **Joint Seminar Series**, Dept. of Integrative Biology & Pharmacology and The Institute of Molecular Medicine, **Dr. Marek Radomski**, University of Alberta, "Nitric Oxide and Matrix Metalloproteinases in Basic and Clinical Investigations," 4 p.m., Mon., **Sept. 10**, MSB 2.135.

→ **Dean's Lecture**, 4 p.m., Wed., **Sept. 12**, **Dr. Owen Witte**, "Lymphocyte Growth Regulation," MSB 3.001.

→ **Clinical Research Curriculum**, "Introduction to Clinical Epidemiology: Diagnosis: Sensitivity, Specificity & Likelihood Ratios," 5-6:30 p.m., Wed., **Sept. 12**, MSB 2.135.

→ **Distinguished Lecture in the Neurosciences**, 4 p.m., Thurs., **Sept. 20**, **Dr. Solomon Snyder**, "Novel Neural Messengers," MSB 3.001.

→ **To be rescheduled. Brown Bag Open Forum with Dr. James T. Willerson**, originally set for Sept. 25 at the Medical School.

## UTmost Interest

**Dr. Carlos Moreno**, vp, Community Programs and Education Outreach, and professor and



Hot News

chairman, Dept. of Family Practice and Community

Medicine, appeared on Fox News, Channel 26, Sept. 3, discussing health-care issues. He is scheduled to appear every other Monday on Fox News at 12:45 p.m...**Dr. Jonathan Ophir**, director, Ultrasonics Laboratory, Department of Radiology, is the principal investigator for an NIH \$1,349,990 grant renewal, "Elastography: Clinical and Basic Science"...

**Dr. John P. McGovern** was quoted about his foundation's gift to the University of Texas Medical Branch (*Houston Chronicle*, 9-4-01)...**Dr. Susan Cooley**, Pediatrics, looked at "vaccinating kids against illiteracy," touting the benefits of the Reach Out and Read (ROR) program (*Houston Chronicle*, 8-9-01).

**SCOOP DEADLINE FOR COPY**  
*Scoop* welcomes Medical School news regarding students, faculty, staff, and of general interest to its readers. Deadline for copy is Tuesday of each week. E-mail copy to <Colleen.L.O'Brien@uth.tmc.edu> or FAX, 713-500-0597.

## Dr. SAMUEL KAPLAN NAMED MENTOR OF THE YEAR

Dean L. Maximilian Buja is pleased to announce that **Samuel Kaplan, Ph.D.**, professor and chair, Department of Microbiology and Molecular Genetics, has been selected to receive the



Dr. Samuel Kaplan

2001 Mentor of the Year Award. Dr. Kaplan was nominated by **Drs. Theresa M. Koehler, Heidi B. Kaplan, William Margolin, Alicia Dombroski, Katherine A. Borkovich, Amy L. Davidson, and E. Lynn Zechiedrich**. He was chosen by the Selection Committee from a wide field of excellent mentors. While department chairs, by the very nature of the scope of their influence, are generally regarded as important mentors, Dr. Kaplan has excelled in this area and truly merits special recognition as the Medical School's third Mentor of the Year. Dr. Kaplan's mission, since 1991, has been to build a highly successful

Microbiology and Molecular Genetics Department and to staff it with an extraordinary, talented group of scientists and researchers. His strong mentoring has effectively earned him praise, trust, and respect. He has been a role model for his faculty and has energized and nurtured them to achieve heights that have made his department what it is today. Those who know and work with him are unanimous in their description of his high level of enthusiasm and energy to help his mentees succeed and to develop their talents.

## DR. ROGER ROSENBERG ON CAMPUS NOV. 8

The thirteenth annual William S. Fields Lecture, "Genomic Neurology – a New Beginning," will be presented at noon, Thurs., **Nov. 8**, MSB 3.001 by **Dr. Roger N. Rosenberg**, Zale Distinguished Chair and Professor of Neurology, University of Texas Southwestern Medical Center at Dallas. Faculty, students, and support staff are welcome to attend. The lectureship is named after **Dr. William S. Fields**, a renowned physician in the Texas Medical Center, with a 45-year career. Internationally respected, Dr. Fields served as the first chair in the Medical School's Department of Neurology.



Dr. Roger Rosenberg

## NATIONAL SCIENCE FOUNDATION OFFERS PROGRAMS IN FAR EAST

**Hui-Ming Chang, M.D., M.P.H.**, associate vice president, International Programs, and special advisor to **UT-H President Dr. James T. Willerson**, is pleased to announce that the National Science Foundation is offering 8-week summer research programs in Japan, Korea, and Taiwan to U.S. graduate students and medical students. Participant support includes: international travel costs to and from Korea, Taiwan, and Japan; in-country living expenses, such as accommodations, food and professional travel; and an allowance of \$2,500. The deadline for this application is **Dec. 1, 2001**. The senior program manager from the National Science Foundation is scheduled to visit the campus in early October. If interested in meeting with this representative, send an e-mail to <Hui-Ming.Chang@uth.tmc.edu>. To learn more about the program, click on the Web site <http://www.nsf.gov/pubs/1999/nsf99152/nsf99152.htm>.



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HEALTH SCIENCE CENTER AT HOUSTON

MEDICAL SCHOOL

L. Maximilian Buja, M.D., Dean  
Darla Brown, Manager  
e-mail: M.Darla.Brown@uth.tmc.edu  
Colleen O'Brien, Editor  
e-mail: Colleen.L.O'Brien@uth.tmc.edu  
FAX: (713) 500-0597

E-Scoop online: <http://deanweb.med.uth.tmc.edu/comm/scoop/>



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Designing better artificial visual systems**WITH A LITTLE HELP FROM OUR FRIENDS — THE MACAQUES**

*An animal's eyes have the power to speak a great language. — Martin Buber (1878 - 1965) German-Jewish religious philosopher*

What enables us to see and why is vision so important to us? This enigma has puzzled scientists and poets alike. It's not an easy answer. There are many scientists, including **David Marshak, Ph.D.**, associate professor, Depts. of Neurobiology and Anatomy, and Ophthalmology and Visual Science, studying various aspects of the eye's mystery and mechanisms. Dr. Marshak's undergraduate degree is in anthropology at Cornell University; Ph.D. in anatomy at the University of California, Los Angeles; and post-graduate training in neuroanatomy at Harvard University. His lab, through a million dollar study, "Primate Retinal Ganglion Cells," focuses on understanding two of the major visual pathways in the macaque (Old World) monkey, whose eyes are similar to humans.

"We study the macaques because with Old World monkeys – such as macaques and baboons — the eyes are actually identical to those of humans."

Dr. Marshak's work involves studying parasol and midget retinal ganglion cells, the two major types. They provide the brain with a signal to distinguish colors and to detect form and motion.

Visual information is conveyed to the brain by more than 20 types of retinal ganglion cells, each responding to different features of the stimulus and projecting to different targets in the brain. The goals of the research in Dr. Marshak's lab at this point, he said, are to learn how the neural circuits in the primate retina accomplish this parallel image processing, and ultimately, to use the results to design better artificial visual systems.

One major focus of the research is on retinal ganglion cells that project to the magnocellular layers of the lateral geniculate nucleus and contribute to many aspects of perception, particularly to the perception of motion. Many of the local circuit neurons providing input to these ganglion cells are being identified in Dr. Marshak's laboratory using both anatomical and physiological techniques. The results are used to make a realistic computer model of the neural circuit, in collaboration with investigators from Los Alamos National Laboratory. "We believe this work will help us to develop better artificial visual systems," said Dr. Marshak. "One of our researchers, in fact, Dr. Garrett Kenyon, has gone on to Los Alamos."



**Macaque Monkey**

Dr. Marshak explained the process whereby one can take a living retina, inject tracers into the various kinds of cells being studied, and determine how the cells interact. It gives the scientist an idea of how inputs come in and how cells that are presynaptic interact with each other. "We build models based on this information to give us some insight into artificial visual systems as well — a science still in its infancy — but growing," he said.

And how far off are war-of-the-robots scenarios, robots (and their eyes) used for cleaning nuclear reactors, and robotic emotions, the latter depicted in Stephen Spielberg's movie, *A.I./Artificial Intelligence*? "A long way," said Dr. Marshak. But what Dr. Marshak and his colleagues are doing — studying the processing of information in the eye and developing models from it — is important, he said. "We really don't know how sets of neurons process information. We know how some individual neurons respond to light, for example. But we don't understand the neural circuits that generate these responses. The basic information processing, how a signal to the brain is transmitted and subsequently interpreted by our brains — it's not really clear how any of that happens," he added.

Dr. Marshak then proudly pointed to a nearby scientific journal with a picture of his mother, a biochemist, featured inside. "I guess it's natural that I'm a scientist; both my parents and my brother are as well."



**Dr. David Marshak**