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The Beat Newsletter

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## The Beat Newsletter

College of Medicine

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# The Beat



University of South Alabama  
College of Medicine

OCTOBER 1997

## SEARCHING FOR GLIAL GROWTH FACTORS

Research in the laboratory of DR. ANTHONY L. GARD, Associate Professor in the Department of Structural and Cellular Biology, seeks to identify protein growth factors that stimulate the development and survival of oligodendrocytes, the myelin-forming cells of the central nervous system. "We use primary cultures of oligodendroglia purified at different stages of the lineage from postnatal rat brain to bioassay known growth factors and other cultured cell types for oligodendroglial activity. Under defined in vitro conditions oligodendrocytes execute an intrinsic differentiation program of myelin-associated gene expression but rapidly die shortly thereafter. Their approach has led to the recognition that both diffusible and non-diffusible protein signals can suppress apoptosis of differentiating oligodendrocytes. Previous work in other laboratories has suggested that purified members of the interleukin-6 (IL-6) cytokine family held the greatest promise as oligodendrocyte survival factors suitable for clinical application. Unfortunately these agents have demonstrated only short-term effects, at least in vitro. Looking for natural factors operative in brain, Dr. Gard's laboratory has shown that the astrocyte, another CNS glial cell type which is structurally apposed to the outer loops of the myelin sheath, can in vitro release a powerful trophic stimulus which promotes long-term survival of mature oligodendrocytes." Dr. Victor Solodushko has recently joined the laboratory, moving from the Institute of Cell Biology and Genetic Engineering in the Ukraine, and will attempt to purify and characterize the astrocyte-derived stimulus.

"Astrocytes synthesize a plethora of growth factors, including known members of the IL-6 family, which are known to be trophic for neurons. Another research aim in the laboratory is to test these agents for activity in glial cultures. The hypothesis that astrocyte-oligodendrocyte interactions are instrumental to myelination has gained credence from recent studies of transgenics indicating that astrocyte dysfunction in vivo causes myelin degeneration and blocks remyelination."

As myelination progresses, the oligodendrocyte plasmalemma becomes largely invested within the multilamellar loops of compact

myelin. In light of the function of cell adhesion molecules as signal transducers and regulators of programmed cell death in extraneural cell types, Gard and his collaborator Dr. Melitta Schachner (Swiss Institute of Technology) have hypothesized that oligodendrocyte interactions mediated by myelin-associated adhesion molecules contribute trophically to myelination or myelin maintenance. "With the assistance of Richard Maughon, a medical student at USA, we provided the new evidence that interactions of oligodendrocytes with one of their own myelin adhesion molecules, the myelin-associated glycoprotein (MAG), evokes a trophic response. This suggests an attractive model in which self-contact of oligodendrocytes during their encirclement of the axon promotes continued cell survival and up-regulation of myelin membranogenesis in an autotypic fashion. We are now positioned to test our hypothesis by examining the apoptic index of the lineage in MAG knockouts and in normal animals receiving MAG-neutralizing antibodies from intracranial hybridomas. Biologically active fusion proteins consisting of the extracellular portion of MAG coupled to the Fc fragment of IgG will also be tested as a diffusible stimulus."

To continue these studies, Gard has received a three-year renewal of his grant entitled, "Trophic Determinants of Oligodendrocyte Development", totaling \$506,296, from the National Institute of Neurological Diseases and Stroke. Adds Gard, "neurobiologists now realize that glia, like neurons, develop in overabundance and undergo programmed cell death. This observation and conclusive evidence that some oligodendrocyte progenitors persist into adulthood as a population capable of remyelination have fueled the search for protein factors with therapeutic potential for demyelinating disorders, e.g., multiple sclerosis and spinal cord injury, in which myelin fails to regenerate. In all likelihood, this search will yield the complex scenario of a cell type whose fate is controlled not by a single ligand-receptor interaction but rather through the collaboration of multiple diffusible factors and membrane-bound recognition molecules whose intracellular signaling pathways are intermodulatory."

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# INSIDE:

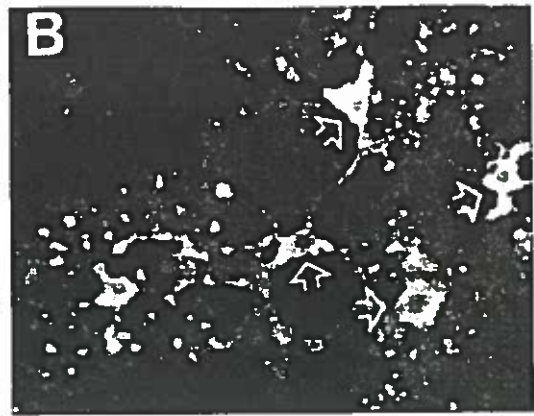
24th Annual Student Research Day  
USA Children's and Women's Hospital  
Official

College of Medicine Homepage  
New Faculty

Figure A



Figure B



*Oligodendroglia labeled by immunofluorescence as progenitors, immediately following their isolation and culture (A) and, seven days later (B), as fully differentiated oligodendrocytes surviving in the presence of astrocyte-secreted trophic factors. Even in the absence of the axons they myelinate, mature oligodendrocytes (arrows indicate cell soma) regenerate large cytoplasmic processes (shorn off during cell isolation from tissue) that terminate as expansive sheets of myelin-like membrane unfurled against the substratum.*

## BIOMEDICAL RESEARCH GROUPS LAUNCH PUBLIC POLICY WEB SITE

The Joint Steering Committee for Public Policy Action has developed a new Web site <http://www.jscpp.org/jscpp> which features action alerts, issue backgrounders, and public policy news relating to biomedical research. Members of the Joint Steering Committee are the American Society for Cell Biology, the American Society for Biochemistry and Molecular Biology, the Biophysical Society, the Genetics Society of America, and the American Association of Anatomists.

## STUDY FINDS PATIENTS AT MAJOR TEACHING HOSPITALS MAY FARE BETTER

Patients treated at major teaching hospitals for serious illnesses such as heart attack and stroke may have a lower risk of death and a shorter hospital stay than those treated at non-teaching hospitals, according to an article in the August 13 issue of the Journal of the American Medical Association.

The study examined the records of nearly 90,000 patients at 30 hospitals in northeastern Ohio, including 19 non-teaching hospitals, six minor teaching hospitals, and five major teaching hospitals. Membership in the AAMC's Council of Teaching Hospitals and Health Systems was the criterion used to define a major teaching hospital for the purpose of the study. Lead author Gary Rosenthal, M.D., of the Case Western Reserve University School of Medicine in Cleveland, found that the risk of death was 19 percent lower in major teaching hospitals compared with non-teaching hospitals, and that length of stay was nearly 10 percent lower.

The study concludes that cost of care should not be the only, or even the primary, benchmark used in making decisions about delivery of care, and that shifting hospital utilization patterns away from major teaching hospitals for economic reasons poses a threat not only to patient outcomes, but to the health care system as a whole.

## CONGRATULATIONS.....

Betsy Bennett, M.D., professor of pathology, recently attended a luncheon for the Medical Advisory Board of the Society for the Advancement of Women's Health Research at the White House in Washington, D.C. Dr. Bennett was appointed by the Board of Governors of the College of American Pathologists to serve as their representative on the society's Medical Advisory Board.

The mission of the Medical Advisory Board is to engage the resources of health care professionals and providers to guide and assist the Society for the Advancement of Women's Health Research in spearheading change toward the overall understanding and improvement of women's health.



Brenda Glusman, Health Education Specialist at USA Student Health Services, and Co-Chair of the Mobile County HIV Prevention Community Planning Group was one of five individuals invited to represent Alabama at a training Conference on Collaboration for Statewide Planning to prevent HIV infection among youth. As Co-Chair of the HIV Prevention Community Planning Group, Ms. Glusman has also been invited by the Alabama Department of Public Health to participate in the United States Conference on AIDS to be held in Miami Beach, Florida.

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Otis Gowdy, Jr., a third year medical student has been named Rep of the Year for 1996-97 by *The Journal for Minority Medical Students*.

Gowdy, a native of Meridian, MS was one of two students selected nationally for the honor in recognition of his efforts as a member of the *Journal's* Campus Rep Board. Student reps regularly contribute articles, disseminate information, and provide resources for the quarterly publication, allowing the magazine to address the needs of minority medical students. Gowdy was recognized for being "outstanding in his enthusiastic support of the *Journal*, with surveys, articles and information on special topics." As Campus Rep of the Year he receives an all-expense paid trip to Jamaica, which he plans to take this fall.



Donald Herbert, Ph.D., professor of radiology, presented a lecture at the 5th International Conference on Dose, Time and Fractionation in Radiation Oncology hosted by the University of Wisconsin Medical School. Dr. Herbert's address was entitled Beyond Molecular Biology: An Introduction to the Strange and Violent World of Nonlinear Dynamics. Dr. Herbert also served as a member of the steering committee for the conference.



Dr. Michael T. Monroe, orthopaedic foot and ankle surgery fellow and Dr. Arthur Manoli, II, professor and chair of orthopaedic surgery, received the "best poster award" at the 13th Annual Summer Meeting of the American Orthopaedic Foot and Ankle Society in Monterey, California.

The poster was entitled "Functional and Dynamic Assessment of Plantar flexion Peak Torque Following Flexor Hallucis Longus Augmentation for Achilles Tendinosis or Rupture". Dr. Timothy C. Beals, University of Utah and Dr. Gregory Pomeroy, University of New England, were also co-authors.

The poster now qualifies for display at the "Best Posters from the Specialty Societies" exhibit at the Annual Meeting of the American Academy of Orthopaedic Surgeons to be held in New Orleans, LA, March of 1998.



J. Graham Smith, Jr., M.D., professor of dermatology, attended the 72nd annual meeting of the Canadian Dermatological Association in St. John's Newfoundland. He is one of only five dermatologists from the United States who are honorary members of the Association. He presented a paper entitled "Darwinian [Evolutionary] Dermatology".



Ian H. Thorneycroft, M.D., professor and chair of the Department of Obstetrics and Gynecology, has been named by *Good Housekeeping* magazine as one of America's best doctors for women. The August issue of the magazine lists 401 U.S. physicians who were nominated by other physicians.

Thorneycroft is certified as a diplomate of both the American Board of Obstetrics and Gynecology, and the Reproductive Endocrinology Subspecialty of the American Board of Obstetrics and Gynecology.

## USA CHILDREN'S AND WOMEN'S HOSPITAL NOW OFFICIAL



Dedication ceremonies for the USA Children's and Women's Hospital were held on September 3, 1997. During the ceremony, USA Doctors Hospital was officially renamed the USA Children's and Women's Hospital. The change in name from Doctors to Children's and Women's expresses a shift in the hospital's mission. The transition has been in the works since 1982 because leaders wanted to have a hospital dedicated specifically to the needs of children and women. This transformation is part of the relocation of all services of the USA Children's and Women's Hospital to one location; the transfer occurred on September 27. USA has now dedicated a whole new hospital just by expanding one facility and moving beds. The hospital has expanded an additional 56,000 square foot which will provide increased clinical space for USA's High-risk Obstetrical Unit, Labor and Delivery, Intensive Care and Newborn Nurseries. Sixty beds were added from the Medical Center to the 159 beds at Doctor's Hospital to produce a "new" 219 bed hospital without getting state certification for one extra bed.

The newly renovated hospital includes all private rooms -- the private rooms make it easier for mothers to stay with their newborns rather than sending them off to the nursery. Also, the mothers will have more time to learn breast-feeding techniques and other parenting skills. The hospital makes special accommodations for the parents of critical risk babies. The parents can learn how to care for their newborn while staying in a special hospital room the night before they leave for the first time. This will allow parents to get more comfortable with their new responsibilities. For instance, the neonatal nursery has five times the space it had previously.

The new Children's and Women's Hospital is one of only a small group of hospitals devoted exclusively to women and children's health problems.

## DIABETES TRUST FUND ANNOUNCES FIRST BURIS R. BOSHELL SCHOLARSHIP IN MEDICINE AWARD

Mr. Arin Bhattacharjee has been awarded the first Buris R. Boshell Scholarship in Medicine by the Diabetes Trust Fund. The Buris R. Boshell Scholarship in Medicine was established by a special appropriation of \$100,000 by the Alabama State Legislature to the Diabetes Trust Fund. The appropriation was incorporated into the investment portfolio of the Diabetes Trust Fund as a perpetual endowment. The investment earnings from this endowment have been designated by the Board of Directors of the Trust Fund to provide awards annually in the amount of \$12,000 in support of graduate studies in endocrinology and pathophysiology related to diabetes mellitus in the human.

Mr. Bhattacharjee is a student in the Graduate Program in Basic Medical Sciences in the College of Medicine and was nominated for this award by Samuel J. Strada, Ph.D., Senior Associate Dean.

Dr. Strada commented that "Mr. Bhattacharjee is an excellent graduate student who is currently working with Dr. Ming Li, Assistant Professor of Pharmacology, on research that has great potential to advance our understanding of the pathophysiological changes associated with diabetes at the cellular and molecular levels".

## 24th ANNUAL MEDICAL SUMMER RESEARCH DAY

The 24th Annual Medical Student Research Day was held on Friday, August 15, 1997. Seventeen first and second year medical students participated in summer research projects with basic science and clinical faculty. The summer program concluded with the Annual Medical Student Research Day in which students presented oral or poster presentations.

Dr. Donna Carden, associate professor of internal and emergency medicine at Louisiana State University Medical Center in Shreveport, was this year's keynote speaker. Her research has resulted in numerous awards including an NIH National Research Service Award and the Emergency Medical Foundation Career Development Award. Dr. Carden's research has focused on physiological and biochemical approaches to study the role of neutrophils as mediators of lung injury in response to systemic inflammation. Her lecture was entitled "Neutrophil-Mediated Lung Injury and the Systemic Inflammatory Response Syndrome."

Jay Heidecker (best oral presentation), sponsored by Dr. Jane Funkhouser, Department of Biochemistry and Molecular Biology and Joshua Vacik (best poster presentation), sponsored by Dr. David Dean, Department of Microbiology and Immunology, were presented the Clyde G. Huggins Medical Student Research Awards in special recognition of their summer research.



Dr. Britt Wilson (upper left), freshman medical student, discusses his research findings with Matthew Tucker.

## KNIGHTS TEMPLAR EYE FOUNDATION AWARD

Dr. Atef K. Sayed, senior postdoctoral fellow in the Department of Biochemistry and Molecular Biology, was awarded a \$20,000 grant by the Knights Templar Eye Foundation, Inc. Formerly a clinical assistant professor in pathology, Sayed is now pursuing basic science studies in the laboratory of Steven J. Pittler, Ph.D. This is the third year a researcher in Pittler's lab has received the award.

Sayed is receiving the Pediatric Ophthalmology Research award for studies proposed on retinoblastoma (Rb), a malignant cancer affecting the eyes of young children. His research focuses on finding an alternative treatment for the disorder.

The proposed project will test a new class of anticancer agents on cultured Rb cells. The current methods of treatment are surgery, radiation or chemotherapy, which most often require removal of the eye.

The Knights Templar Foundation Inc. is a non-profit Masonic charity that provides for vision research, surgical treatment and hospitalization for those suffering from eye disease or injury.

*If you would like to submit  
an article for publication,  
please forward it to:*

Dusty Layton  
University of South Alabama  
College of Medicine  
CSAB 170  
or  
FAX (334) 460-6073

## NEW FACULTY MEMBERS



Stephen Andrews, M.D., *Assistant Professor of Family Practice and Community Medicine*, received a B.S. in biology from Grambling State University and a M.D. degree from the University of South Alabama. He completed his residency in family practice at the University of South Alabama.



Mark Caylor, M.D., *Assistant Professor of Family Practice*, received a B.S. in chemistry from the University of Florida and a M.D. degree from the University of South Alabama. He completed his residency training in family practice and community medicine at USA.



Carole Boudreaux, M.D., *Instructor of Pathology*, received a B.S. in biology from Louisiana College and a M.D. degree from Louisiana State University. She completed a pathology residency at the University of South Alabama.



James Cummings, M.D., *Associate Professor of Surgery*, received a B.S. in chemistry from the University of Alabama and a M.D. degree from the University of South Alabama. He completed his residency training in general surgery and urology at St. Louis University, Missouri, where he was previously on the faculty.



Randall Boudreaux, M.D., *Assistant Professor of Anesthesiology*, received a B.S. in pre-medicine from McNeese State University and a M.D. degree from Louisiana State University in Shreveport. He completed an anesthesiology residency at the University of South Alabama.



Gamil Dawood, M.D., *Assistant Professor of Internal Medicine*, received a M.B.B.Ch. from Assiut University, Egypt. He completed an internal medicine residency at the University of South Alabama.



Jose Castillo, M.D., *Assistant Professor of Anesthesiology*, received a M.D. degree from Popular Autonomous University of Pueblo State, Mexico. He completed his residency training in anesthesiology at the University of South Alabama.



Jerril Green, M.D., *Assistant Professor of Pediatrics*, received a B.S. in chemistry from Birmingham-Southern College and a M.D. degree from the University of South Alabama. He completed a pediatric residency at USA and a critical care fellowship at Children's Hospital of Pittsburgh.



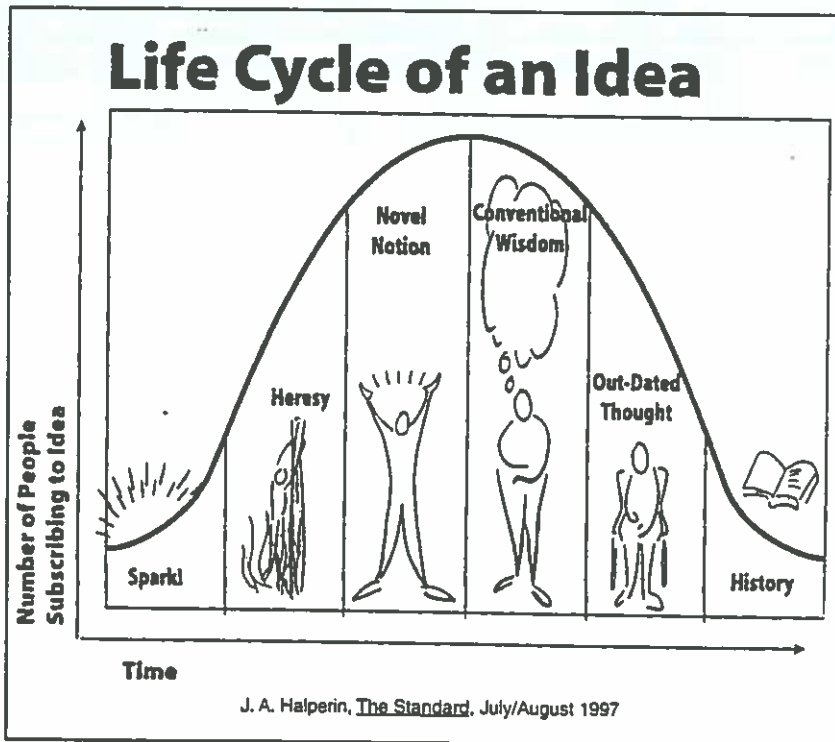
Russell Meldrum, M.D., *Assistant Professor of Orthopaedic Surgery*, received a B.A. in chemistry from Brigham Young University and a M.D. degree from the University of Utah. He completed an internship in general surgery at UCLA, his residency training in orthopaedic surgery at St. Mary's Medical Center, San Francisco, CA, and an orthopaedic surgery fellowship in adult reconstructive surgery at Massachusetts General Hospital.



Albert Pearsall, IV, M.D., *Assistant Professor of Orthopaedic Surgery*, received a B.S. in Communications/Economics from Northwestern University and a M.D. degree from Case Western Reserve University. He completed an internship in general surgery, residency training in orthopaedic surgery at the University of Chicago Hospitals, and a fellowship in sports medicine/research at Duke University Medical Center.



Jorge Mendizabal, M.D., *Assistant Professor of Neurology*, received a B.S. in sciences and a M.D. degree from the University of Francisco Marroquin, Guatemala City, Guatemala. He completed an internal medicine internship at the University of Alabama at Birmingham and residency training in neurology at the University of South Alabama.



## COLLEGE OF MEDICINE HOMEPAGE

The Biomedical Library is proud to present the College of Medicine Homepage. The address is <http://southmed.usouthal.edu>. There is a button bar along the left side of the page to help navigation. The following buttons enable jumping from one section to another.



There are two options on the 'Search' page. Search the College of Medicine and Biomedical Library Homepages, or search the Internet using Excite. The local pages are re-indexed once per month.

The 'COM Departments' page has links to the COM departments that have created Web pages and it also has links to catalog information for those departments that haven't created an individual page. There are currently eight departments with their own homepages.



Next is a direct link to the Biomedical Library Homepage. There are subject lists, electronic publications, instructions to authors, and much more to help COM faculty, staff and students.

The College of Medicine newsletter, *The Beat*, is archived on the COM Homepage. The earliest issue available on the web dates back to October, 1994.



Both COM faculty and COM students are listed on the new homepage. The faculty page is divided into departments with faculty names and e-mail addresses below. The student list is divided by class and has the student usaovid e-mail addresses listed.



The Biomedical Library has created a page of 'Other Resources.' FREIDA, the *College of Medicine Electives Booklet*, Search Tools for the Internet, and a link to the USA General Library are all on this page. There are two NEW items on this page - 'Medical News on the Internet' and the web version of OVID. The Medical News on the Internet includes American Medical News, CNN Health, Physician's Weekly, Your Health Daily from the *New York Times* as well as some general news sources and weather pages.



The 'New' page will be the place to check for updates and new links and sites to the COM homepage. Finally there is a link to the University of South Alabama Homepage.



## BIOMEDICAL LIBRARY SYSTEMS UPDATE

The WWW interface for OVID, called OVIDWeb is now installed. This allows the user to search the OVID databases using the familiar web browser of their choice, and provides a much more graphical and robust interface to OVID than the now-discontinued OVID Windows GUI Program. OVIDWeb is also the first stage of the upgrade to the Java version of OVID. The text-based telnet version of OVID will remain available as well. To access OVIDWeb, simply point your browser to <http://usaovid.usouthal.edu> and login

with your regular user name and password. After October 1, access to MEDLINE and CINAHL via OVID will not be available without a password. Password applications are available at the Circulation Desk of both sites of the Biomedical Library. All public access computers in the Campus Biomedical site now require users to login with their own unique user name and password. The computers at UMC will shortly follow suit. The instructions for logging on are shown on the screen of each computer.



## HEALTH POLICY FELLOWSHIP AVAILABLE FROM ROBERT WOOD JOHNSON FOUNDATION

The Institute of Medicine (IOM) is accepting nominations for six career development fellowships funded by the Robert Wood Johnson Foundation. The fellowships provide opportunities for mid-career health care professionals to gain an understanding of the national health policy process by participating in a one-year program of orientation and full-time work experience in Washington, D.C. Fellows are selected from academic health centers and medical schools, and from community-based health organizations and agencies.

An explanation of the nomination process and further background on the fellowships are available on the National Academy of Sciences Web site at <http://www2.nas.edu/rwj/>

## RESEARCH!AMERICA LAUNCHES WEB SITE

Research!America, a national organization which advocates greater support of medical research, has established a new Web site at <http://www.researchamerica.org>. The site includes poll data, advocacy materials, and information about the successes of medical research. Also available are quick and easy links to Congressional e-mail addresses; an assortment of e-mail postcards to send to friends, lawmakers and the media; and an online membership application.

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