CELL BIOLOGY UPDATE

Issue 9 **http://www.emory.edu/CELLBIO/update.html** **Summer 2001**

FOURTH ANNUAL SUTIN LECTURE

The following summary was provided by Marla Luskin.

On Wednesday, May 23, the Department of Cell Biology, Emory University School of Medicine, presented the fourth Jerome Sutin Lecture. Dr. Carla J. Shatz, Professor and Chair of the Department of Neurobiology, Harvard University School of Medicine, was this year's invited speaker. The Sutin Lecture was initiated by Dr. Barry Shur to honor the many contributions made by Dr. Sutin, the Chair of the Department of Anatomy and Cell Biology (now the Department of Cell Biology) for more than 30 years. Dr. Shur acknowledged Dr. Sutin's significant influence, at Emory, nationally and internationally, on the disciplines of neuroscience and cell biology and his tremendous impact on Emory University School of Medicine. The lecture was attended by members of the Cell Biology Department, the Emory biomedical community and individuals from other institutions in Atlanta and Dr. Sutin was accompanied by members of his family. Following the lecture a reception, with music provided by a string quartet, was held for both the speaker and honoree on plaza outside the Cell Biology Bldg.

The lecture given by Dr. Shatz, "Brain Waves and Immune Genes in Visual System Development", captured the interest of both neuroscientists and non-neuroscientists. The main points of Dr. Shatz's lecture were that as the visual system develops the connections between structures are refined and that the nervous system uses genes that were previously thought to be the sole domain of the immune system. As a model system for investigating the role of experience (neural activity) in the formation of connections, Dr. Shatz's lab studies the projections of the ganglion cells in the retina to the eye specific (ipsilateral vs contralateral) layers in the lateral geniculate nucleus of the mammalian (cat, ferret, rat and mouse) thalamus. The experiments she discussed demonstrate how neural activity is required for lamination to arise. At birth the inputs from the two eyes overlap, and in the absence of neural activity she showed that the projections from the two eyes do not segregate. As a way to remember the mechanism that underlies the eye-specific sorting of inputs, Dr. Shatz stated that "cells (axons) that fire together wire together". In the next part of her talk she described some ongoing experiments aimed at revealing which molecules underlie how the pattern and requirement for activity get transferred to a structural remodeling. Using differential display her lab demonstrated how neural activity controls the expression of genes required for synaptic remodeling. Among the genes that appear to be dynamically regulated during development are the well studied Class I MHC genes. By mapping their spatial-temporal pattern of expression in the visual system, and in the lateral geniculate nucleus in particular, and examining the effect of blocking synaptic activity on their expression pattern, her studies argue for a requirement for MHC molecules in the formation of eye-specific layers. Dr. Shatz ended her talk with the hypothesis that the MHC molecules are localized to the synapse and that they are regulated by neural activity.

Dr. Shatz's lecture was planned as a multimedia event. Not only was Dr. Shatz animated, but her slides were informative and colorful. She had intended to show a video of calcium waves traveling from retinal ganglion cell to neighboring retinal ganglion cells. Although the video did not work, Dr. Shatz improvised and stated that the dynamic properties of the ganglion cells she hoped to show, and more findings, could be viewed at one's leisure by going to her web site (http://neuro.med.harvard.edu/site/Shatzweb/shatz.html)

CONGRATULATIONS!

A fond "send-off" was given to **Bob DeHaan** at his retirement party in January, though he remains active on his grant projects through this summer.

Harish Joshi was awarded a plaque in recognition of his exemplary commitment to mentorship for the year 2000 from the Graduate Division of Biological and Biomedical Sciences.

Joyce Yao (Joshi Lab) won an award from the Journal of Cell Science (Elsevere Publishers, Cambridge, England) to cover the expenses to complete a part of her experiments in University College London during Summer, 2001.

John Louis-Ugbo and **Karl Saxe** received Dean's Teaching Awards for the academic year 2000-2001. They were part of an inaugural group of 15 awards, which recognize superior undergraduate medical school teaching. In addition to the honor of being nominated and chosen by students and faculty, they each received a cash award.

Win Sale will be on the Editorial Board of a new journal, *Eukaryotic Cell*, a publication of the American Society for Microbiology.

Beth Finch was an invited speaker at the Biophysical Society Meeting (February, 2001) and an invited speaker in International Biophotonics Symposium (August, 2001).

Anne Roush Gaillard (Sale lab) successfully defended her doctoral dissertation on June 29. Her topic was "The Characterization of A-Kinase Anchoring Proteins (AKAPs) in *Chlamydomonas* Flagellar Axonemes." Anne is joining North Georgia College and State University as Assistant Professor Biology.

Best wishes to **Jun Zhou** (Joshi Lab) who was recently married in China.

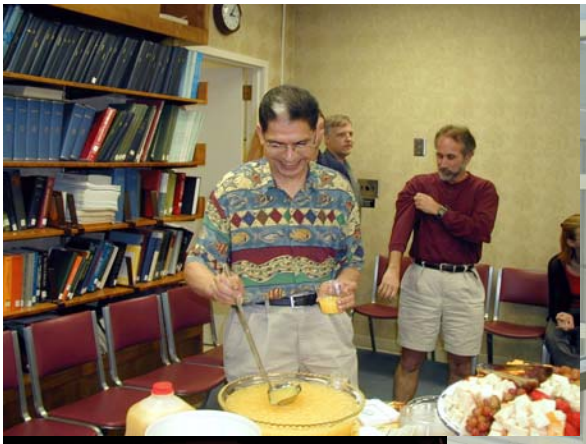
Congratulations to **John and Tolulope Louis-Ugbo** on the birth of their son, John Jr., on March 12. He weighed 5 lb., 14 oz. and was 18.5" long. **Triscia Hendrickson** (Joshi Lab) and husband Paul also greeted a new son, Tristan Paul on April 27. He weighed 8 lb. 11.2 oz. and was 20" long.

BREINEN LECTURE

On March 22, 2001, Cell Biology sponsored the the Goodwin and Rose Helen Breinin Lectureship in Basic Sciences which was presented by Nobel Laureate Günter Blobel, M. D., Ph.D. A standing room only crowd attended Dr. Blobel's lecture on "Protein Targeting".

WHITEHEAD

Here are some photos taken on recent tours of the new Whitehead Research Building, which is scheduled for completion on December 1, 2001. If you want to see the facility for the first time or want to see it again, please contact Linda Jordan to arrange a Friday afternoon tour.











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GRANTS AND CONTRACTS

NEW AWARDS

Krishna Bhat	"NPC Disease in Drosophila Mutant for the Tumor Suppressor Patched" Ara Parseghian Medical Research Foundation Total Costs: $208,647 (2 years)
Krishna Bhat	"Regulation of Axonogenesis and Neuronal Lineage Elaboration During Neurogenesis in the Drosophila Embryo", March of Dimes Total Costs: $168,855 (3 years)
Art English	"Spinal Circuits & the Musculoskeletal System", NIH Total Costs: $4,323,816 (5 years)
Michael Ensslin (Shur Lab)	"Mutational Analysis of Sperm P47 Function During Mouse Fertilization" Lalor Foundation Fellowship Total Costs: $30,000 (1 year)
Beth Finch	"Searle Scholars Fellowship Award" Total Costs: $240,000 (3 years)
Marla Luskin	"The Effect of Intraventricular Administration of Growth Factors on the Production of New Striatal Neurons in the Forebrains of Adult Transgenic Huntington Mice", Hereditary Disease Foundation Total Costs: $119,904 (1 year)
Qu, Zhiqiang (Hartzell Lab)	"Biophysical and Pharmacological Properties of Calcium-activated Chloride Channels in Vascular Smooth Muscle of Rabbit Coronary Artery", American Heart Association Postdoctoral Fellowship Total Costs: $63,000 (2 years)
John Scott	"Olfactory Receptor Neurons", NIH Total Costs: $100,000 (2 years)

REGULATORY AND POLICY CHANGES/APPLICATION INFORMATION

(from OSP and NIH web pages, university and other sources)

NSF and NIH recently have placed increased emphasis on timely receipt of progress reports. Failure to submit annual reports on time may delay continuation funding increments and overdue final reports on previous grants can delay or impede the funding of new ones.

The National Institutes of Health has announced the publication of a revised NIH Grants Policy Statement. A complete list of major changes may be found at: http://grants.nih.gov/grants/guide/notice-files/NOT-OD-01-015.html. One notable change is that the separate requirement for approval of significant rebudgeting has been eliminated which also negates the need to reply to question #2 of the four streamlined noncompeting award process questions on continuation applications each year. The complete grant policy statement is available at: http://grants/nih.gov/grants/policy/nihgps_2001/index.htm.

CHANGES

New Staff: Paul Griffin, Lead Research Specialist (Sale Lab); Virginia Kirby, Lead Research Specialist (Scott Lab); Kimberly Pierce, Part-time to Full-time Research Specialist (English Lab).

New Postdocs: Remus Airinei, Moses Lab; Liana Artinian, Finch Lab;

New Graduate Students: Aloma Rodrigues, Moses Lab; Quentin Machingo, Shur Lab.

Other Personnel News: Pinfen Yang-Tomasiewicz (Sale Lab) has joined Marquette University as Assistant Professor in Biology. In July, Ron Griffith, postdoctoral fellow in the McKeon Lab, transferred to Don Humphrey's lab in the Department of Physiology. Rip Finst (Sale Lab) will be joining the next class at Bolt School of Law at the University of California at Berkeley. Krisin Wuichet Millirons is going to graduate school in Bioinfomatics at Ga Tech. **Sara Leung** (formerly of the Joshi Lab) joined the Department of Biochemistry as a postdoctoral fellow with Dr. Anita Corbett. Overlooked in previous newsletters (our apologies): Eric Griffis joined the Powers lab as a graduate student.

Bill Goolsby has begun working with the new Department of Biomedical Engineering which is a joint department between Emory and Georgia Tech. At Emory he works with Don Giddens and Dave Harrison on how fluid shear forces affect plaque formation on the inner walls of arteries. At Tech, he works with Steve DeWeerth and the NeuroEngineering group on several projects, including mechanical devices to deliver well-defined injuries to brain cells.

WEB SITES OF NOTE

View grant deadlines for the next six months in 25 major disciplines on the OSP web site at: http://www.osp.emory.edu/funding/cfm. (Scroll down the page and click on "List of Upcoming Deadlines" or go directly to the list at : http://carousel.lis.uiuc.edu/-iris/deadlines/index.html

Emory faculty profiles can be viewed at: http:///www.medadm.emory.edu/faculty

The Office of Postdoctoral Education, with assistance from the Graduate School of Arts and Sciences and the Graduate Division of Biological and Biomedical Sciences, has purchased a campus-wide subscription of Science Nextwave, a unique career development resource for postdocs, junior faculty and graduate students available at: http://nextwave.sciencemag.org. Two options at this site include The Career Development Center, http://recruit.sciencemag.org which includes articles on professional issues such as setting up your first lab and negotiating, and The Postdoc Network, http://nextwave.sciencemag.org/feature/postdocnetwork.shtml which provides postdocs and their mentors with the resources needed to enhance the postdoctoral experience.

BYTE SIZE NUGGETS

Daniel Rouk

Lately we have been seeing a rash of computer virus transmitted via email. Everyone should know that simply receiving such an email does not infect your computer. That is because the email was originally designed as a text-only medium. To send a program, the file has to be sent as an encoded attachment. It is the process of opening up this attachment, which converts the program into an active form, which causes infections.

Thus I would like to remind everyone to NEVER open up attachments sent by people you don't know, and to please check and make certain your antivirus programs are up to date before opening up any attachments from others. Both Norton and McAfee programs have auto-updaters that you can manually run as needed. It takes only a minute to update in most cases with a fast connection.

Of course virus programs can cause harm in other ways. The latest attack took down several email servers around campus simply because of the huge amounts of email traffic they caused. Thus you should let me know if you are receiving repetitive emails from someone. If left untreated these can fill the disk space on our servers.

PUBLICATIONS

Yang, H., T. Mujtaba, **G. Venkatraman**, Y.Y. Wu, M.S. Rao and **M. B. Luskin**. (2000) Region-specific differentiation of neural tube-derived neuronal restricted progenitor cells after heterotopic transplantation. *Proc. Natl., Acad. Sci. U.S.A.* 97:13366-13371.

Smith, M.T., **V. Pencea**, Z. Wang, **M. B. Luskin** and T.R. Insel. (2001) Increased number of BrdU-labeled neurons in the rostral migratory stream of the estrous prairie vole. *Horm. Beh*. 39:11-21.

Coskun, V., **G. Venkatraman**, **H. Yang**, M. S. Rao and **M. B. Luskin**. (2001) Retroviral manipulation of the expression of bone morphogenetic protein receptor Ia by SVZa progenitor cells leads to changes in their p19(INK4d) expression but not in their neuronal commitment. *Int. J. Dev. Neurosci.* 19:219-27.

Coskun, V. and **M. B. Luskin**. (2001) The expression pattern of the cell cycle inhibitor p19INK4d by progenitor cells of the rat embryonic telencephalon and neonatal anterior subventricular zone. *J. Neurosci*. 21: 3092-3103.

Venkratraman, G. and **M. B. Luskin** (2001) Neuronal restricted precursors. In: M. S. Rao (ed) *Stem Cells and CNS Development*. The Humana Press Inc., New Jersey, PP. 93-122.

Pencea, V., **K. D. Bingaman**, S. J. Wiegand and **M. B. Luskin**. (2001) Infusion of BDNF into the lateral ventricle of the adult rat leads to new neurons in the parenchyma of the forebrain striatum, septum, thalamus and hypothalamus. J. Neurosci. (In press)

Gaillard, A. R., D. Diener, J. Rosenbaum and **W. S. Sale**. (2001) Radial spoke protein 3 is an A-kinase anchoring protein (AKAP). *J. Cell Biol.* 153: 443-448.

Yang, P., D. Diener, J. Rosenbaum and **W. Sale**. (2001) Localization of calmodulin and dynein light chain LC8 in flagellar radial spokes. *J. Cell Biol*. 153(6) June 11.

Sale, W. S. and K. L. Barkalow. (2001) Peter SatirBinvestigating the structural basis for cell function. *Trends in Cell Biol*. 11, 180-182.

Mehta, B. and **K. M. Bhat** (2001). Slit signaling promotes the terminal asymmetric division of neural precursor cells in the *Drosophila* CNS. *Development*. (In press.)

Hendrickson, T. W., **Yao J.**, Bhadury, S., Corbett, A. H., and **Joshi, H. C.** (2001) Conditional mutations in γ-tubulin reveal its involvement in chromosome segregation and cytokinesis. *Molec. Biol. Cell* (in press).

Li, Q., Hansen, D., Killilea, A., **Joshi, H. C**., Palazzo, R. E. and Balczon, R. (2001) Kendrin/pericentrin-B, a centrosome protein with homology to pericentrin that complexes with PCM-1. *J Cell Sci*. 114-797-809.

Joshi, H. C. and **Zhou, J**. (2001) Gamma-tubulin and microtubule nucleation in mammalian cells. *Methods Cell Biol*. (In press).

Kumar, J. P. (2002) The Epidermal Growth Factor Receptor in Drosophila eye development. In *Results and Problems in Cell Differentiation.* Ed. Granderath, S., Heidelberg: Springer-Verlag. (In press).

Kumar, J. P., Moses, K. (2001) EGF receptor and Notch signaling act upstream of Eyeless/Pax6 to control eye specification. *Cell* 104: 687-97.

Kumar, J. P., Moses, K. (2001) Analysis of eye specification gene express during Drosophila embryogenesis. *Dev. Genes and Evol*. (In press).

Kumar, J. P., Moses, K. (2001) The EGF Receptor and Notch signaling pathways control the initiation of the morphogenetic furrow during Drosophila eye development. *Development* (In press).

Kumar, J. P. and Moses, K. (2001) Eye specification in Drosophila: perspectives and implications. *Semin. Cell. Dev. Biol.* (In press).

Hsiung, F., Griffis, E. R., Powers, M. A. and Moses, K. (2001) Function of the Drosophila TGF-a homolog Spitz is controlled by Star through direct protein-protein interaction. Mechanisms of Development. (In Press).

UPCOMING EVENTS

(Summer/Fall/Winter 2001)

September 3	Labor Day
October 1	NIH New Submissions
November 1	NIH Competing Renewals and Revisions
December 5	Individual NRSA (NIH)
October 26-27	Cell Biology Research Retreat at Unicoi State Park
November 22-23	Thanksgiving
December 24-25	Christmas
January 1, 2002	New Year's Day
January 2-15	Whitehead move (tentative)
January 18	AHA SE Affiliate research grant applications

FEEDBACK REQUESTED

This is your newsletter and your involvement is crucial to its success. Please send comments, suggestions, or ideas for articles or columns to Linda Jordan by departmental mail, telephone at 727-3748 or e-mail to linda@cellbio.emory.edu.

CELL BIOLOGY SEMINAR SCHEDULE

September 5, 2001	John Porter, Case Western Reserve University
September 12, 2001	Allison D'Costa, Emory University School of Medicine
September 19, 2001	Christopher Wright, Vanderbilt University
September 26, 2001	Tom S Hays, University of Minnesota
October 3, 2001	Susan L Forsburg, The Salk Institute for Biological Studies
October 10, 2001	Martine Roussel, St.Jude's Children's Research Hospital
October 17, 2001	Utpal Banerjee, University of California at Los Angeles
October 24, 2001	Justin P. Kumar, Emory University School of Medicine
October 31, 2001	Raymond A Frizzell, University of Pittsburg
November 7, 2001	Steve Crews, The University of North Carolina at Chapel Hill
November 14, 2001	Asma Nusrat, Emory University School of Medicine (Neuroscience Mtg)
November 28, 2001	Guy Benian, Emory University School of Medicine
December 5, 2001	Peter R MacLeish, Morehouse School of Medicine
February 13, 2002	Erica Werner, Emory University School of Medicine
March 6, 2002	Mark Q Benedict, Centers for Disease Control
March 13, 2002	Carol A Mason, Coulmbia University College of Physicians and Surgeons
March 20, 2002	Thomas Sudhof, University Texas Southwestern Medical Center
March 27, 2002	Thoru Pederson, University of Massachusetts Medical School
April 3, 2002	Cynthia Foote, Emory University School of Medicine
April 10, 2002	Zhiqiang Qu, Emory University School of Medicine
April 17, 2002	Mina Bissell, Lawrence Berkeley National Laboratory
April 24, 2002	Michael Bender, University of Georgia
May 1, 2002	Susan R Wente, Washington University
May 8, 2002	Grant MacGregor, Emory University School of Medicine
May 15, 2002	Frank Gertler, MIT
May 22, 2002	Tricia Wilson, Georgia State University
May 29, 2002	Alan Levey, Emory University School of Medicine

B&G SCHEDULE

September 10, 2001	Benian	July & August 2002	none
October 8, 2000	Bhat	September 9, 2002	Luskin
November & December 2001	none	October 14, 2002	McKeon
January 14, 2002	English	November & December 2002	none
February 11, 2002	Faundez	January 13, 2003	Moses
March 11, 2002	Finch	February 10, 2003	Powers
April 8, 2002	Hartzell	March 10, 2003	Sale
May 13, 2002	Joshi	April 7, 2003	Saxe
June 10, 2001	Kowalczyk	May 12, 2003	Scott