

CELL BIOLOGY UPDATE

Spring 2004

VISITING PROFESSOR IN HARTZELL LAB

Rodolphe Fischmeister began a one-year sabbatical in Criss Hartzell's lab last July. This is not the first visit that Rodolphe pays to our Department: 20 years ago, he was a post-doc in Bob DeHaan's lab. His wife, Fred, provided this introduction to Rodolphe, his work and family.

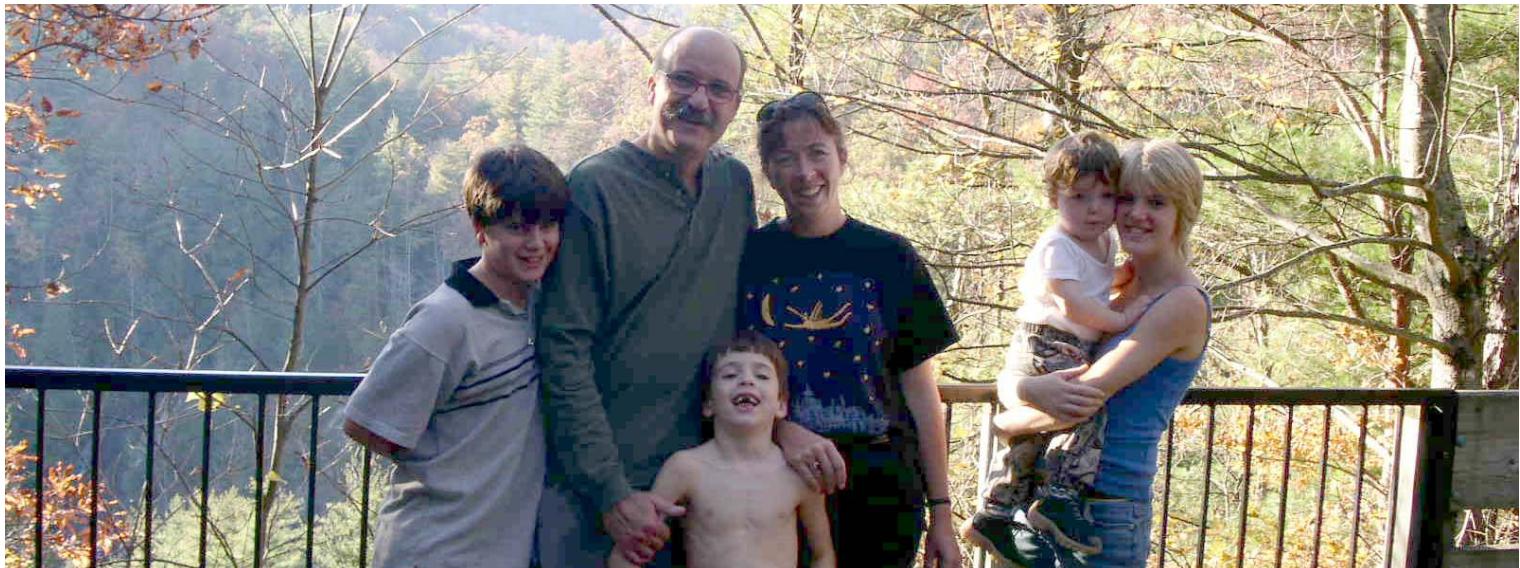
Rodolphe was born close to Paris, 48 years ago, from Czech emigrant parents. After studying electrical engineering, he decided that he preferred life sciences and started to study ion currents in cardiac cells with one of the pioneer cardiac electrophysiologists, Edouard Coraboeuf.

After obtaining a PhD at the University of Paris XI with Guy Vassort, another eminent cardiac electrophysiologist, and completing a first post-doc position at Dalhousie University (Halifax, Canada) with Magda Horackova on mathematical modelling of cardiac ion currents, he discovered the joys and frustrations of experimental research in Bob DeHaan's lab and since then has never quit.

He is now Director of Research at INSERM (the French equivalent of NIH), and head of an Inserm Unit of Molecular and Cellular Cardiology. His lab is located in Châtenay-Malabry, in the Faculty of Pharmacy of the University of Paris XI. The activity of his lab, composed of about 30 people, is devoted to the study of ion channel regulation, energetic metabolism, and hormone receptors involved in normal and abnormal cardiac function.

When Rodolphe decided to take a sabbatical year, it was to return to the bench. The choice of the lab was quite obvious: Criss Hartzell, whom he had met 20 years ago during his postdoc at Emory. Criss and Rodolphe had worked together during a whole year in France, when Criss took his own sabbatical (1985-86). A long friendship between them started then and grew over the years, when they regularly met for work or fun. Although, after all those years, their scientific interests had taken somewhat different paths, they both wanted to join again for a new personal and scientific adventure. Criss has succeeded to have Rodolphe leave his cardiac calcium channels for a while and devote his sabbatical year to the study of chloride channels in retina pigmented epithelial cells.

Rodolphe is here with his wife Fred and their 4 children: Alicia (17) and Julien (13) from a first marriage, and Thomas (7) and Simon (19 months). They live in Decatur and the whole family enjoys discovering the American way of life.



DOUG FALLS JOINS LUSKIN LAB

Though Dr. Falls has been at Emory for a few years, we have had the pleasure of his company in Cell Biology since last summer. He graciously provided this mini-bio.

Doug, Kate, Emily, and Zack Falls: Let's start with a confession: when I came to Emory to interview in the spring of 1994, I thought Atlanta was on the coast and had assumed Sherman's march to the sea was a walk across town. Oh, well. Doug grew up mostly in the suburbs of Chicago. He was an undergraduate at Indiana University, then attended medical school at St. Louis University and did a residency in Internal Medicine at Albany Medical Hospital in Albany, NY during which time he took up canoeing and cross-country skiing. Following his residency he took a job as an ER doc in Schenectady, NY and there met Kate. For reasons he's never understood, Doug's ER colleagues let him take off full summers to spend at the Marine Biological Laboratory in Woods Hole, MA where he was first a student in the Neural Systems and Behavior (NS&B) Course, then an NS&B course assistant for 2 summers and then a student in the Neurobiology Course (a total of 4 summers on Cape Cod for 7 years worked in the ER). While at Woods Hole he met Gerry Fischbach, who invited Doug to join his lab at Washington University (St. Louis) as a postdoc. Subsequently Gerry moved to Harvard and Doug, Kate, and Emily went to Boston with him. Doug's postdoctoral work focused on "ARIA", a protein believed to regulate the synthesis of acetylcholine receptors at developing neuromuscular synapses. After a long effort a purification run involving 10,000 chicken brains yielded enough ARIA to sequence information, and it was time for Doug to look for a real job. He joined the Biology Department of Emory College in Fall, 1994 where he developed a research program focusing on the mechanisms by which neuregulins mediate communication between cells in the developing nervous system. He also developed an undergraduate course in Cancer Biology and a joint undergraduate-graduate course in Developmental Neurobiology. Unfortunately, despite the enthusiastic and unanimous support of Biology Department colleagues for Doug's promotion with tenure and the support of many other colleagues across campus, actions at the upper levels of the Emory central administration prevented this. He was very warmly welcomed into a temporary position in Neurology and during the time in Neurology began developing projects with Marla Luskin. In the summer of 2003 he moved from Neurology to Cell Biology to study the process of neurogenesis in Marla Luskin's lab, as well as to continue his investigations of neuregulin biology. Doug commutes to Emory almost daily on his mountain bike-about 7 miles each way from his home near Northlake Mall. He loves nature and the outdoors and would do a lot more hiking and biking if his schedule allowed.

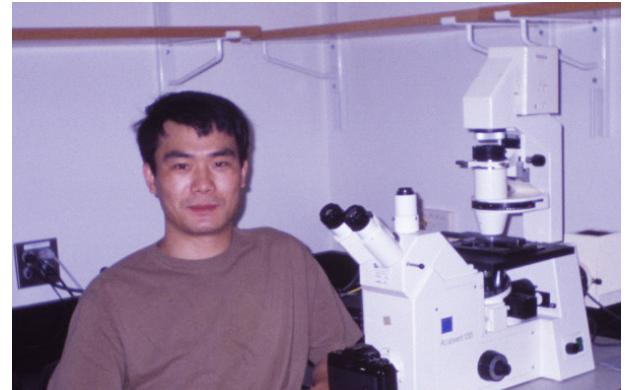


Doug's wife Kate is a nurse working at the Emory Cystic Fibrosis Center inpatient unit at the corner of Clifton and Houston Mill. She enjoys a daily morning walk with Azalea, our mostly Labrador dog, dancing (ballet), horseback riding, coffee, and hiking with Doug. Kate has gotten us involved intermittently with refugee resettlement: a few years ago we hosted two Bosnian families when they first arrived in the U.S, we have helped an Ethiopian family get settled, and we are now awaiting word on whether we will be hosting Bantu refugees scheduled to arrive in Atlanta this spring. Kate and Doug have two children, Emily and Zack. Emily was born in St. Louis and is now 15. Currently she is a sophomore at the DeKalb School for the Arts, which she has very much enjoyed, but next year she likely will move to Lakeside High School in order to have a broader range of classes to choose from. Emily loves horseback riding and animals in general; she thinks she may want to be a vet. Zack was born in Boston, is now 12, and currently is a 7th grader at Henderson Middle School. His passion is the drums (much to the distress of his sister). With friends he has founded a band named "Mind the Gap", which has been well-received at several local appearances. Zack also plays the piano and enjoys athletics, especially baseball and basketball. Zack is now about 6" taller than he was when the accompanying picture was taken in summer 2002.

"WELCOME BACK" TO JUN ZHOU

Some of you may remember when Jun Zhou was a graduate student in Harish Joshi's laboratory. He has contributed this description of his background, work and family.

Dr. Jun Zhou is a research Instructor in the Department of Cell Biology at Emory University. He was born and grew up in a small village called Balihe, in the Shan County of Shandong Province, China. Jun spent his childhood as a full-time and then part-time shepherd. His parents, both peasants, however understood the importance of attending school and sent him to the scarce primary and middle schools around his home. Jun successfully passed all the entrance examinations required for Balihe (grade 1 and 2), Jiulou (grade 3), Luzhuang (grade 1) and Shaozhuang Primary Schools (grade 5), and for the Shan County Middle School, and then headed for Fudan University in Shanghai, China.



Jun received his Bachelor of Science degree in Genetics in 1997 from Fudan University. He then went to graduate school at Peking University in Beijing, China, where he worked on the cell suicide (apoptosis) mechanisms in plants in the laboratories of Professor Zhonghe Zhai and Professor Yaoren Dai. Jun transferred to Emory University in 1999 to continue his graduate studies and worked in Dr. Harish Joshi's laboratory to study the roles of microtubule nucleation and dynamics in the cell-cycle progression. He received his Doctor of Philosophy degree in Cell Biology in 2002 from Emory University. After a postdoctoral fellowship in the Department of Molecular Oncology at Genentech, a biotechnology company in California, Jun now is back at Emory in the Department of Cell Biology. His current research is focused on drug resistance, a prevalent problem in cancer chemotherapy.

Dr. Zhou is married to Ms. Min Liu, who holds a Bachelor of Science degree in environmental science and a Master of Science degree in botany. Besides doing scientific research, this couple has special interests in reading Chinese literature, watching movies, doing outdoor exercises, and eating hot and spicy foods.

CONGRATULATIONS!

Effective September 1, 2003, Maureen Powers and Krishna Bhat were promoted to Associate Professor. Their promotions were acknowledged with a departmental reception on September 25, 2003. Erica Phillips (Powers Lab) was promoted from Research Specialist to Lead Research Specialist.

Dr. Noe was selected as one of 11 School of Medicine Dean's Teaching Award recipients for 2003. The award acknowledges superior teaching of medical students and includes a cash award. The awards presentation was held at the Miller-Ward Alumni Center on August 4, 2003.



Wesley Isaiah Alexander



Sarah Elizabeth

Congratulations to Rachal Love on the birth of Wesley Isaiah Alexander on October 2, 2003 and to Brooke Elder on the birth of Sarah Elizabeth on October 8, 2003.

Luzene Hill (Admin. Office) is now represented by Sandler Hudson Gallery and currently has a solo show of sculpture and drawings. Luzene was awarded a studio at the Atlanta Contemporary Art Center and her work can also be seen there by appointment.

GRANTS AND CONTRACTS

NEW AWARDS

| | |
|------------------|---|
| Krishna Bhat | “Niemann Pick C Disease in Drosophila”, NIH Total Costs: \$1,311,000 (5 years) |
| Criss Hartzell | “Retinal Degeneration and Chloride Channels, NIH Total Costs: \$1,216,000 (4 years) |
| Marla Luskin | “Mechanisms of Olfactory Bulb Development”, NIH Total Costs: \$2,411,463 (5 years) |
| Robert McKeon | “Astrocyte Mediated Neuroprotection after CNS Injury”, NIH Total Costs: \$850,842 (3 years) |
| Robert McKeon | “Lipid Microtubule-Mediated Drug Delivery for the Treatment of Spinal Cord Injury”, Co-PI with R.V. Bellamkonda, GaTech The Wallace H. Coulter Translational/Clinical Research Seed Grant Program Total Costs: \$60,058 (1 year) |
| Kevin Moses | “Retina: Map Kinase Regulates Cell Fate”, NIH Total Costs: \$1,595,280 (4 years) |
| Maureen Powers | “Structural Basis for Messenger RNA Recognition”, NIH Total Costs: \$259,718 (1 year – transfer from Biochemistry) |
| Zhiqiang Qu | “Characterization of Mouse Bestrophin Genes” Pilot Project, Emory Center for Health in Aging Total Costs: \$15,000 (1 year) |
| Zhiqiang Qu | “Contribution of Bestrophin 2 to Calcium-activated Chloride Currents in Mouse Cardiomyocytes”, American Heart Association Total Costs: \$260,000 (4 years) |
| Karl Saxe | “Regulation of Actin Dynamics in Dictyostelium” Emory University Research Committee Award Total Costs: \$30,000 (1 year) |
| Erica Werner | Skin Disease Research Core Center Grant Award, NIH/Dermatology Total Costs: \$20,000 (1 year) |
| John Wood | “Functional Compartmentalization of Neurons and Glia”, NIH Total Costs: \$918,000 (5 years) |
| Daniela Zarnescu | “Characterization of a Novel Fragile X Interacting Gene Overexpression (Moses Lab) in the Eye”, NIH/NRSA Total Costs: \$149,916 (3 years) |

REGULATORY AND POLICY CHANGES/APPLICATION INFORMATION

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

NIH has issued a **new NIH Grants Policy Statement** (NIHGPS) which is applicable to all NIH grants and cooperative agreements with budget periods beginning on or after December 1, 2003. Most of the changes update the NIHGPS to reflect past policy changes, such as changes in modular grant application and expanded authorities. One recent change is that NIH will continue to accept no more than two revised applications after the submission of the original, but the two-year limitation has been eliminated.

A new federal indirect cost rate agreement and fringe benefit rate were approved. Effective September 1, 2003, the indirect cost rates on Federal research grants utilizing "on campus" locations is 53%. The new federal fringe rate is 20.3%. Both of the new rates currently are reflected on university and departmental accounting reports.

CHANGES

New Staff: Huronda Gordon, Sr. Accountant (Administration Office); Leisa Jennings, Research Specialist (Bhat Lab); Brian "Dallas" Kenney, Research Specialist (McKeon Lab); Tracy Obertone, Research Specialist Supervisor (Powers Lab); Chun Pfahl, Lead Research Specialist (Hartzell Lab); Jijun Tang, Lead Research Specialist (Luskin Lab); Chris Walker, Lead Research Specialist (McKeon Lab); Xiaobing Zeng, Lead Research Specialist (Luskin Lab).

New Postdocs: Shoab Ahmad (Otolaryngology, Lin Lab) Michele Doucette (Faundez Lab); Fadwa Hasouna (Bhat Lab); Michal Gazi (Bhat Lab- February, 2004); Ivana Gaziova (Bhat Lab- February, 2004); Daniel Marenda (Moses Lab); Rupal Thazhath (Bhat Lab).

New Graduate Students: Gary Ratner (Powers Lab); Adam Raymond (Shur Lab); Ed Rogers (Moses Lab); Alyria Vrailas (Moses Lab).

Other Personnel News:

In addition to Dr. Falls, Dr. Zhou and Dr. Fischmeister about whom you can read in other articles in this newsletter, two new faculty joined the Department at the end of 2003. Ping Chen began as Assistant Professor of Cell Biology and her husband, (Xi) Erick Lin as Associate Professor of Otolaryngology. Both Dr. Chen and Dr. Lin have been assigned office and lab space on the 5th floor. Kenneth Moberg is Assistant Professor of Cell Biology and is located on the 4th floor. More information will be provided in the next newsletter.

Welcome back to Bob DeHaan who has left his position at the NRC and returned to Atlanta full-time.

WEB SITES OF NOTE

In September, 2003, NIH Director Elias A. Zerhouni, M.D. laid out a series of far-reaching initiatives known as the NIH Roadmap for Medical Research. For more information, see the NIH Roadmap web site at: <http://nihroadmap.nih.gov/>.

Review Emory's intellectual property policy at: <http://www.osp.emory.edu/policies.cfm>.

Find sources of internal and external funding on the OSP website at: <http://www.osp.emory.edu/funding.cfm>. The OSP web site also provides Proposal Writing Tips at <http://www.osp.emory.edu/proposals/propprep.html>

Emory faculty profiles can be viewed via the departmental web site or directly at: <http://www.medadm.emory.edu/faculty>.

Up-to-date information about visas can be accessed on the web site for Emory's International Student and Scholar Programs: <http://www.emory.edu/ISSP>.

PUBLICATIONS

- Bhat, K.M.** and **Apsel, N.** (2004) A mechanisms for the self-renewing asymmetric division of neural precursor cells in the Drosophila CNS. *Development*, in press.
- Merienda, T.T.**, Bota, V. and **Bhat, K.M.** 2004. Requirement of Patched reveals the role of pioneering neurons for the guidance of medial longitudinal tracts in the Drosophila ventral nerve cord. *Mechanisms of Development*, in press.
- Yedvobnick, B., Kumar, A., Opraseuth, J., **Mortimer, N.** and **Bhat, K.M.** 2004. The asymmetric division function of Mastermind is separable and distinct from its neurogenic function during Drosophila neurogenesis. *Genetics*, in press.
- Pencea, V.** and **M.B. Luskin**. 2003. Prenatal development of the rodent rostral migratory stream. *J. Comp. Neurol.* 463: 402-418.
- Yang, P.**, Yang, C. and **Sale, W.S.** 2003 Flagellar radial spoke protein 2 is a calmodulin binding protein required for motility in *Chlamydomonas reinhardtii*. *Eukaryotic Cell*, in press.
- Talbot, P., **Shur, B.D.** and Myles, D.G. 2003. Cell adhesion and fertilization: Steps in oocyte transport, sperm-zona pellucida interactions and sperm-egg fusion. *Biol Reprod.* 68:1-9.
- Hathaway, H.K.**, Evans, S.C., Dubois, D.H., **Foote, C.I.**, **Elder, B.H.** and **Shur, B.D.** 2003. Mutational analysis of the cytoplasmic domain of β 1,4-galactosyltransferase I: influence of phosphorylation on cell surface expression. *J. Cell Sci.* 116:4319-4330.
- Ensslin, M.A.** and **Shur, B.D.** 2003. Identification of mouse sperm SEDI, a bi-motif EGF repeat and discoidin domain protein involved in sperm-egg binding. *Cell* 114:405-417. (featured article and mini-review: featured in *Nature* 425:33)
- Rodeheffer, C.** and **Shur, B.D.** 2004. Sperm from β 1,4-galactosyltransferase I-null mice exhibit precocious capacitation. *Development*, in press.
- Rodeheffer, C.** and **Shur, B.D.** 2004. Identification of a novel, ZP#-independent egg coat ligand that facilitates initial sperm-egg adhesion. *Development*, in press.

GRADUATE DEFENSES

On August 29, 2003, Carey Rodeheffer (Shur Lab) successfully defended her doctoral dissertation entitled "Targeted Mutations in β 1,4-Galactosyltransferase I Reveal Novel Mechanisms of Mammalian Fertilization". Dr. Rodeheffer is working on vaccine development as a postdoctoral fellow in Brian Ward's lab in the Department of Microbiology and Immunology, Montreal General Hospital Research Institute, McGill University, Montreal, Canada.

Volcun Coskun (Luskin Lab) successfully defended his doctoral dissertation on May 27, 2003. His topic was "Factors influencing the differentiation and cell cycle properties of the unique neuronal progenitor cells of the neonatal anterior subventricular zone (SVZa)." Dr. Coskun is currently a postdoctoral fellow in the Department of Molecular and Medical Pharmacology, University of California Los Angeles.

COMPUTER BYTES

Column by Daniel Rouk

As most of you are aware, some of the formerly free public tools available to the department now require logins and may be billed for future use. The first of these is the confocal microscope. Before this week, users could bypass the login and just start using the machine. Now each user must use an individual logon that can be billed to an account.

A paper log sheet will remain adjacent to the computer. If you find you have problems and feel you have not adequately been able to use your time on the computer, please contact Mike Kraetz or myself, make note of this here so that your charges can be adjusted accordingly. In the future I hope to be able to distinguish time spent on the microscope apart from time simply logged into the computer. However because that isn't an option at this moment, you should make full use of the confocal workstation in room 405R. All files on the microscope computer can be accessed from this workstation, and time will not be billed for it.

A new color laser printer has been installed on the fifth floor in the break room. However the "free" status of these printers will not last much longer. I'm currently testing software that will require users of these computers to login to a website to validate any jobs sent to them. This will function much as the high speed copier does, in that jobs can be held and won't be printed until a validated user is entered. Like the confocal, this will be your cellbio username. This new system will probably be operational sometime during the next month. When the change occurs you will be notified and will need to adjust the settings for the printers in question.

Finally, we now have a poster printer in the department. To optimize printing for this device, you should set either the width or height of your powerpoint slides to 42 inches. Currently all posters should be submitted to me for printing. However once I have the tracking software in place for the other color printers, I expect to be able to add this printer as well, eliminating me from the loop.

CHRISTMAS PARTY 2003



FIRST ANNUAL CELL BIOLOGY BOWLING COMPETITION

**Suburban Bowling Lanes (N. Decatur And Church St, I Think)
First Two Games And Shoes Paid By The Department**

All Family Members Invited, The More The Merrier

First Prize (Worth Close To Nothing) Goes To The Lowest Score

**Obnoxious Bragging Rights Goes To The Highest Score
When: Early Evening (Starting Around 6?), Some Monday-Thursday In March**

Each lab (and admin office) needs to identify one person who will let Luzene know how many people can go and what evenings are best during the month of March (Monday-Thursdays). Luzene will collate and work with Suburban lanes to accommodate the night with the fewest conflicts.

Be there or be square.

UPCOMING EVENTS

(Spring/Summer 2003)

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|-------------|---|
| March 1 | NIH Competing Renewals and Revisions |
| March 17 | Sutin Lecture presented by Eric Olson, Univ. of Texas Southwestern. "The Genetic Circuitry of Cardiac Development and Disease" |
| April 5 | NIH Individual NRSA |
| May 10 | End of spring semester and commencement |
| May 31 | Memorial Day Holiday |
| June 1 | NIH New Submissions |
| July 1 | NIH Competing Renewals and Revisions |
| July 4 | Independence Day Holiday |
| August 5 | NIH Individual NRSA |
| September 1 | Labor Day Holiday |

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

| | |
|-------------|--|
| February 11 | Martina Bruekner Yale University |
| February 18 | Esteban Dell'Angelica UCLA |
| March 17 | Eric Olson, Sutin Lecture UT Southwestern |
| March 23 | (Tuesday) Matthew Freeman Cambridge University |
| March 24 | Breinin Lecture |
| March 31 | John Foley Dept. of Dermatology |
| April 7 | Amy Lee Emory Pharmacology |
| April 14 | John Steeves University of British Columbia |
| April 28 | Margit Burmeister University of Michigan |
| May 5 | Margaret Robinson Cambridge University |

B&G SCHEDULE

| | |
|----------|--------|
| March 8 | Shur |
| April 12 | Wood |
| May 24 | Benian |
| June 14 | Bhat |

