NEWSLETTER FROM THE DEPARTMENT OF
ANATOMY AND NEUROBIOLOGY
Boston University School of Medicine · Division of Graduate Medical Sciences
VOLUME 1, ISSUE 3
FEB/MARCH 2004

THE CARNEGIE INITIATIVE ON THE DOCTORATE (CID)

By Dr. Todd Hoagland

Founded by Andrew Carnegie in 1905, the Carnegie Foundation for the Advancement of Teaching is a national center for research and policy studies about teaching. Its mission is "to do and perform all things necessary to encourage, uphold, and dignify the profession of the teacher and the cause of higher education." This past year, the Carnegie Foundation began a five-year research project called the Carnegie Initiative on the Doctorate (CID). The CID project was developed to evaluate, clarify, and more purposefully structure doctoral programs in six disciplines: chemistry, education, English, history, mathematics, and neuroscience. Last fall, the Department of Anatomy and Neurobiology at Boston University School of Medicine was selected as one of 9 partner departments across the country to participate in the CID program in neuroscience. The CID is a unique opportunity for our department to make improvements to the doctoral education in neuroscience that will serve as a model for programs across the country. Preparing the next generation of neuroscientists is akin to the Darwinian fitness of propagating our professional species. We need to prepare stewards of our discipline to whom we can entrust the quality and integrity of neuroscience. To borrow from the Carnegie, "Such leaders have developed the habits of mind and ability to do three things well: creatively generate new knowledge, critically conserve valuable and useful ideas, and responsibly transform those understandings through writing, teaching and application."

From left to right: George Walker (CID Project Director), Deborah Vaughan, Lee Shulman (President of Carnegie Foundation), Maureen Estevez, and Peter Bergethon stand together at the 2004 Winter Convening held at the Carnegie Foundation in Stanford, CA.

(continued on page 6)

DR. VAUGHAN PROMOTED TO FULL PROFESSOR

By Dr. Julie Sandell

Dr. Deborah Whittaker Vaughan is known throughout the Medical Center as an outstanding teacher, and on the tenth floor as an indefatigable early bird, who arrives by 6 in the morning to begin at least a 12 hour day. Her standards for teaching and advising, and her personal drive are a source of inspiration for her colleagues. She truly leads by example. Who else has recently baked 36 dozen cookies for her advisees, *in one day*?

As a child in Concord, New Hampshire, Dr. Vaughan dreamed of becoming a veterinarian. In high school she schooled horses for dressage events, and she majored in Biology at the University of Vermont. She was elected president of the women's student government (in those gender-exclusive days) and received an award as the outstanding woman undergraduate. She received her Ph.D. in Biology at Boston University for a study of the ultrastructure of the blood-brain barrier in goldfish. It was a natural progression for Dr. Vaughan to join Dr. Alan Peters in 1972 for postdoctoral training, and she soon became involved in the very first iteration of the Aging Program Project grant, AG-00001-01. This was among the first efforts to apply rigorous, quantitative methods to the study of the aging nervous system. Dr. Vaughan's work included studies of the auditory cortex and spinal cord in aging rats, and later the spinal cord in monkeys. She became interested in the question of how advancing age affects the response of neurons to the massive metabolic challenge of regeneration, and so she turned to the facial

(story continued on page 6)

Dr. Vaughan teaches during the 2004 Neurosciences course.

ALUMNI LINK: JONATHON WISCO, PH.D.

By Dr. Lawrence Zoller

Jon was born in Quezon City, the Philippines, but grew up in Gresham, Oregon. Jon attended college at the University of Washington in Seattle. He began his college career as a pre-law student, but "got bored with it" and pursued biology instead. In college he published a paper on evolutionary fitness of locomotor speed in fruit flies. He graduated in 1994 with a Bachelors of Science in Biology. After graduating, Jon taught biology and journalism at a Yeshiva High School on Mercer Island, WA. He also worked part-time for a medical malpractice attorney in order to keep his options open for law school, but again, his interest in biology prevailed.

In 1996 he began his graduate career at Boston University in the Department of Anatomy and Neurobiology. Jon's initial research interests were attention deficit disorder and/or autism, but at the time no one in the Department was funded for this type of research. Jon soon found his place in the laboratory of Dr. Moss and Rosene. He used magnetic resonance imaging segmentation techniques and behavior testing to assess the relationship between brain structural changes and cognitive performance in rhesus monkey animal models. This was used to analyze normal aging versus aging in monkeys experiencing induced chronic hypertension. John received many accolades during his time at BU including the Henry I. Russek Student Achievement Day 1st Prize Award for Research in the Department of Anatomy and Neurobiology and an Excellence in Teaching in Dental Gross Anatomy Award.

Dr. Jon Wisco sits in front of one of the many MRI data sets.

While pursuing his research goals, Jon met a young woman named Monica though an old friend from Seattle. Unfortunately, Monica was leaving for Arizona at the end of the month. Showing the doggedness that is his hallmark, Jon was not dissuaded and asked her out for the next day. After dating the next consecutive four days, Monica invited him to Arizona. They were married in 1998 in Phoenix, Arizona. Five years later on February 13, 2003, their first child, Madison Leah, was born.

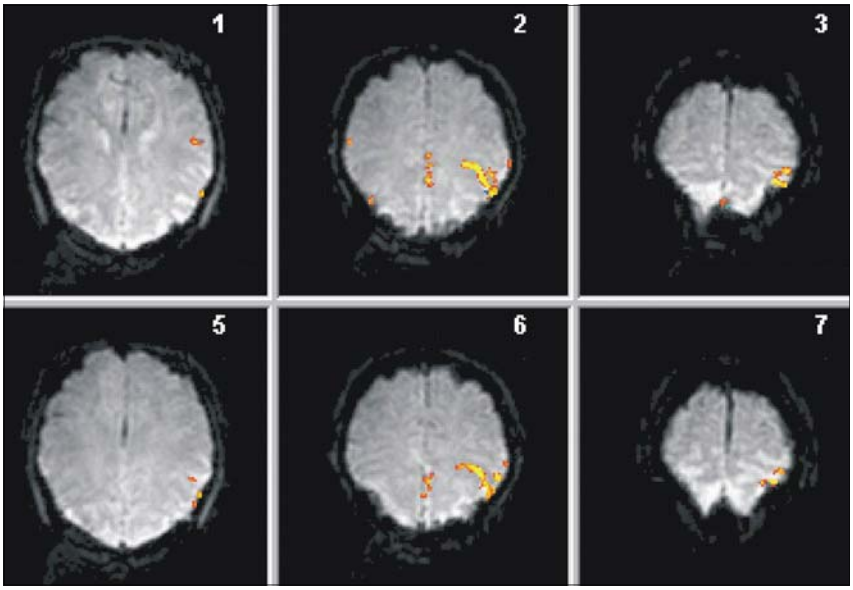
One of Jon's outstanding traits is his ability to juggle many different tasks at once. This is evidenced by the fact that in a six month period, he and Monica bought a house, moved to that house, had a baby, finished his thesis, graduated, and began a post-doctoral position. Jon presently has a post-doctoral position at Massachusetts General Hospital in the Nuclear Magnetic Resonance Center. He works with Dr. Greg Sorensen whose primary area of research is the study of stroke and schizophrenia. Jon leads the schizophrenia project and also teaches Gross Anatomy part-time at Simmons College. In his spare time, he loves being with his family, playing golf and tennis, and leading a boy scout troop.

Dr. Lawrence Zoller is an associate professor and the ombudsman in the Department of Anatomy and Neurobiology.

BIOIMAGING UPDATE

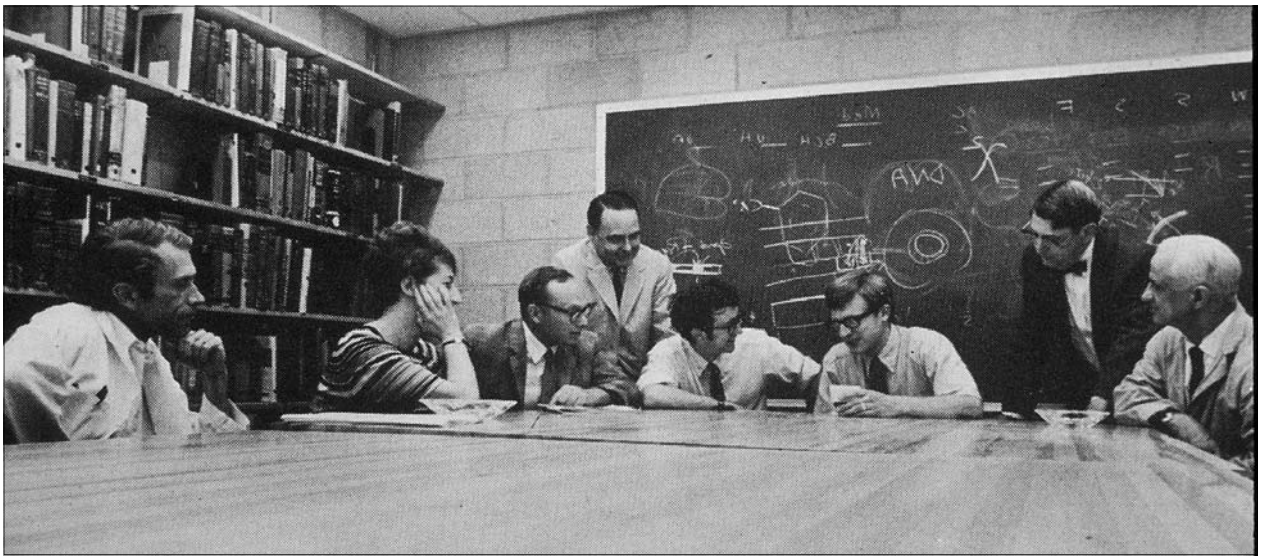
By Dr. Itamar Ronen

Just a few weeks after its arrival to the basement of the Evans-X building, the Philips whole-body MRI scanner at the new Center for Biomedical Imaging is fully operational. The MRI scanner operates at a high magnetic field of 3 Tesla, and thus is considerably more sensitive than scanners at 1.5 Tesla commonly used in most hospitals. The scanner is already able to provide a wide array of MR data types: high-resolution anatomic images with different types of tissue contrasts, flow-based images (angiography) that translate into exquisite images of vasculature, functional MRI studies in which brain activity correlated to a task performance is revealed, MR spectroscopy, cardiac MRI and more. It is expected that by the beginning of March 2004 the scanner will become available to researchers from BUSM that are interested in incorporating MRI research in their studies.



The above fMRI images show successive, horizontal slices of Dr. Dae-Shik Kim's cortex while he completes a finger tapping task. Color indicates the statistical significance of the linear correlation of each data voxel with the timing of the task. The image was taken on December 17, 2003.

THE DEPARTMENT FACULTY FROM 1970: THEN AND NOW



By Dr. Alan Peters

When I came to Boston in 1966, the Department of Anatomy was housed in a building that was located on the "green", on the left, or East Newton side, of the path that leads from the front of the present Medical School building. Faculty offices, a small museum and the dissecting room were in this building, which was subsequently demolished; I think in about 1970. In addition we had some space on the third floor of the Research Building, where the Departmental office was located. Then in 1968, when the Instructional Building was completed we moved from the old building to occupy the present space on the 10th, 9th and 8th floors of the Instructional Building. This increase in space allowed the Department to expand its faculty and below is a photograph of the faculty taken in 1970. Two people missing from the photograph are myself and Dr Elizabeth Moyer who was in charge of Gross Anatomy. I will write more about her in a later contribution.

As you can see, this photograph was taken in the Departmental Library, sitting around the table that is still there. On the left is Bill McNary, who was the subject of an October article written by Dr Zoller. Next to Bill McNary is Dr Ita Kaiserman-Abramof, who originally came from Brazil. She was a postdoctoral fellow with Dr Sanford Palay, at Harvard, before she joined this Department in 1967 to teach histology and to work with me on the fine structure of pyramidal and Betz cells in cerebral cortex. Dr Abramof eventually left in 1971 to go to Case Western Reserve, where she is now a Professor in the Department of Anatomy.

On the left of Dr Abramof is Bruce Warr, who came to the Department after completing a PhD with Dr Mike Harrison in the Department of Psychology at the Main Campus. Bruce completed a year's postdoctoral training at the Mass. Eye and Ear Institute before joining the Department in 1967. He taught Histology and Neuroanatomy and worked on the connections of the auditory system in rats. Bruce left the Department in 1978 to set up a laboratory at Boys Town Institute for Communication Disorders, in Omaha. I believe that he is still there.

Standing behind Bruce Warr is John Ifft. Dr Ifft was part of the faculty of the Department when I arrived. He did his PhD at Yale and after teaching at the University of New Hampshire and at Simmons College. John taught Histology and did research in endocrinology. He came to Boston University in 1950, when Dr Lassek was Chairman. After spending 25 years here, John retired in 1975 and he went to live in South Africa.

Sitting down in front of John Ifft is Jim Hinds. He obtained his Ph.D. in Anatomy from Harvard in 1968 and joined the Department as soon as he had completed his Ph.D. He did seminal work on neurogenesis in the olfactory bulb, and taught in Histology and Neuroanatomy. In 1983 he decided that he had completed all the research that interested him and that he wanted to live in a more urban environment. So Jim left to go to Maine and become a chartered accountant. He is still there, and with his wife Pat he has just completed a book on lichens.

Talking to Jim Hinds is Jim Vaughn. Jim did his Ph.D. at UCLA in California and then came to Edinburgh with me as a postdoctoral fellow in 1965, where we worked on the fine structure and development of the cerebral cortex. I persuaded him to come with me to Boston and he and I had a research lab together on the 10th floor of the Research Building in the space that I still occupy. In 1970 Jim was recruited by the City of Hope in Duarte, California, where he eventually became head of the Department of Neuroscience. He works on the development of spinal cord.

Standing next to Jim Vaughn is Bill Barrett. Dr Barrett had been in the Department for several years and he was in charge of the Histology course. Together with Salvatore Lunetta, who is sitting next to him on the right of the photograph, he produced many of the histology slides that are still in the teaching boxes. I believe that Dr Barrett retired in the 1970s. As for Mr. Lunetta, you will recall that there was a profile of him in the October issue of the newsletter.

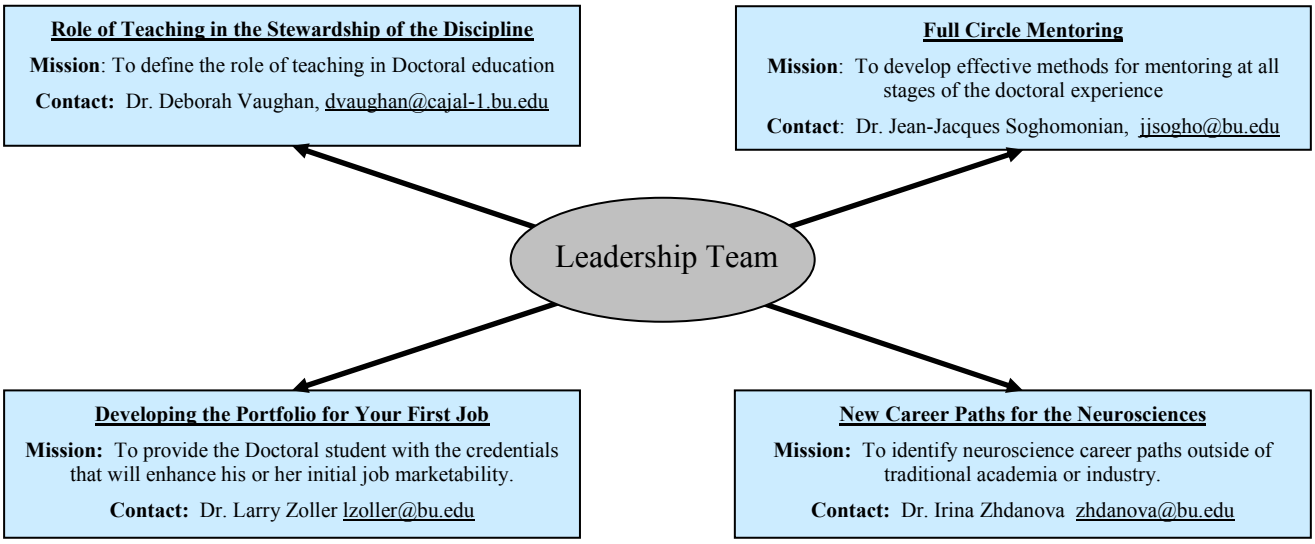
I have tried to decipher what they are all looking at and what was on the black board in the background. But apart from the crude drawing of the cerebral hemisphere on the upper left of the blackboard, I cannot figure it out.

Dr. Alan Peters is the former chairman of the Department. He is a Waterhouse Professor of Anatomy and Neurobiology, and has been teaching and conducting research since 1966.

How Do I Get Involved in the CID? *(continued from CID, page 1)*

By Dr. Todd Hoagland

There are many opportunities to get involved in the CID project. The Department has currently formed a CID Leadership Team consisting of Mark Moss, Peter Bergethon, Todd Hoagland, Julie Sandell, Dan Roe and Maureen Estevez. The Leadership Team has formed four Core Working Groups (shown in the chart below) to address the critical issues pertaining to the doctorate in neuroscience. If you are interested in joining one or more of these groups, please contact the group leader by email. We look forward to the collegial deliberations that will lead to improvements in our department and potentially throughout the country! Further information about the study and all participants may be found on the Carnegie Web site at www.carnegiefoundation.org. *Dr. Todd Hoagland is an assistant professor in the Department of Anatomy and Neurobiology and the Medical Gross Anatomy course director.*



(Vaughan story continued from page 1)

nucleus and its efferents, using rats as a model system. Crushing the axons in the facial nerve induces retrograde degeneration in the nucleus and whisker paralysis. Over time, the axons regenerate and function returns. Regeneration occurs more rapidly in young animals, and among other differences, the regenerated axons in old animals have a different ratio of neurofilaments to microtubules, compared to those in young animals. The mechanism for the aging differences seen in the regenerating nerve are unknown, but it is intriguing that regenerating axons in young animals re-express a developmental form of b-tubulin which may not be expressed in old animals.

Since the mid-1990's Dr. Vaughan has devoted her energies to her teaching, advising, and administration. Since 1996 she has won teaching awards six times, she has become Assistant Dean for Admissions, she serves on the Faculty Council, and she is a member of the Academy of Advisors for medical students. She was recently promoted to Full Professor. The few hours she spends at home in Weston are shared with her husband, Ned Brush, and her two cats, while the Hereford cattle, chickens, turkeys, African geese, and the pig she once kept are long gone. Her two children, however, remain a continuing source of pride, as well as bearing responsibility for her early morning work routine, which began when she had to drive them to swim practice. James, now 29, is an attorney in North Carolina, and is expecting his first child in March. Her daughter Alison, 27, is the Executive Director of a non-profit tutoring organization in Cambridge. In keeping with her philosophy that working with young people keeps her young, Dr. Vaughan is looking forward to many more years of teaching, curriculum design, and advising, while we look forward to many more years of learning from the way that she does all of these things.

Dr. Julie Sandell is an associate professor of anatomy and neurobiology. She has been a member of the department since 1991, and has the pleasure of teaching with Dr. Vaughan in several courses

Special Note to our Readers: We are looking for new articles for the next edition. If you would like your laboratory highlighted or if you have a special student or professor you would like to honor, please send an email to anatneuronews@hotmail.com

ANATOMY & NEUROBIOLOGY NEWSLETTER

The official newsletter of the Department of Anatomy & Neurobiology at Boston University School of Medicine

EDITORS:
Maureen Estevez
Juliana Mariani

Boston University School of Medicine
Department of Anatomy and Neurobiology
715 Albany Street L-1004
Boston, Massachusetts 02118-2526
Phone: (617) 638-4200
Fax: (617) 638-4216
AnatNeuroNews@hotmail.com

Special thanks to Dr. Moss and Dr. Soghomonian for their support and encouragement in the production of this newsletter. Also thanks to our contributors Dr. Todd Hoagland, Dr. Dae-Shik Kim, Dr. Alan Peters, Dr. Itamar Ronen, Dr. Julie Sandell, and Dr. Larry Zoller. Special thanks to Claire Folger for her help in photography.