Program’s Progress
Recited at NIH Visit

by Linda Burnley

Representatives of the National Institutes of Health (NIH) visited the M.D.-Ph.D. Program on May 11, 2001 as part of its review to renew the funding for the Medical Scientist Training Program (MSTP) grant. Now in its 23rd year, the Harvard-MIT MSTP grant is the major source of funding for one of the country’s 39 training programs that prepare students for careers as medical scientists. Submitted to NIH in January, the 777 page competitive application documented the program’s recent progress.

Dr. Nancy Andrews, program director since January 2000, is the Principal Investigator. Along with Dr. David Golan, professor of biological chemistry and molecular pharmacology and program co-director, she conducted several workshops in March-June to update and inform both faculty and students of the numerous changes in the program since the last site visit. Dr. Andrews answered questions to help participants understand the unique differences among the numerous components of the M.D.-Ph.D. Program, such as the New Pathway, HST and graduate schools at Harvard, DMS and MIT. Students were also enthusiastic in demonstrating their support of the changes that have been put into place to improve their overall experiences.

Here is a summary of some of the program’s major changes presented at the site visit: (1) incoming students now begin in July rather than September by participating in a special course three days a week while doing their first lab rotation; (2) students will now be exposed to a two-month clinical (medicine or pediatrics) rotation in the summer following their second year;

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shown above is Jesus Adrian Garcia holding his son, Lorenzo, and his two degrees. Dr. Garcia was one of 20 M.D.-Ph.D. graduates celebrating at HMS Class Day on June 7, 2001 (see more photos of the graduates as well as their appointments on page 5).
M.D.-Ph.D. Student Praises Preceptorship

by Carolyn Rodriguez

When the new M.D.-Ph.D. curriculum was introduced in July 2000, I was delighted that one of the supplementary programs, “subspecialty clinical preceptorships,” would be relevant to me even though I was midway through the program. This preceptorship program involves interacting with a mentor in an area of clinical specialty, such as breast cancer, neuromuscular movement disorders, or cardiology, for one day a month for six months. This new course complements the already existing Longitudinal Course in Clinical Medicine (LCCM), which is an intensive eight week medical skills refresher course taken immediately before returning to clinical clerkships. Since I was unsure when I would return to the wards, I thought the preceptorship program, in contrast to LCCM, would be a good way to get exposure to a wide range of medical specialties during my graduate school career.

“I would highly recommend this experience to any student pursuing his or her M.D.-Ph.D.”

Although my primary interest is neurology, I decided to try a specialty I had been exposed to during one of my favorite courses in HST, “Hematology,” but had not explored fully. I contacted Dr. David Golan, the mentor for the hematology preceptorship, and arranged a time to begin. A week before my first meeting with Dr. Golan, I realized I had no idea where I had placed my medical equipment. After an hour of rummaging through the dark recesses of my closet, I found my dusty medical bag. Looking at the contents inside my bag, I suddenly felt as if I had forgotten everything I had learned during my first two years of medical school. How do I take someone’s blood pressure? What are the nerves in the brachial plexus? Which are the gram-negative bacteria? Fortunately, Dr. Golan e-mailed me the hematological diseases of our first set of patients and asked that I bring my stethoscope. Instead of the overwhelming review of the first two years of medical school that I had initially anticipated, I could narrow my list to a study of iron deficiency anemia, myelodysplastic syndrome, polycythemia vera, and a quick review of heart sounds.

Under Dr. Golan’s guidance, I slowly regained familiarity with reading charts, asking patients questions and conducting the basic physical exam. Although we never reached the point of my doing a complete history and physical of a patient independently, one of the highlights of my experience was interviewing a non-English-speaking patient in Spanish. Because the new M.D.-Ph.D. curriculum will entail a third year medical rotation between the second year of medical school and graduate school, I believe the preceptorship program will evolve to allow students to interview their own patients. In this way, students will be able to keep their medical skills fresh and will not be overwhelmed when they see their medical equipment after its long slumber in the closet. I learned a tremendous amount with Dr. Golan. I would highly recommend this experience to any student pursuing his or her M.D.-Ph.D.

- Carolyn Rodriguez is a 6th year M.D.-Ph.D. student (HST-DMS-Neuroscience).

SAVE THE DATE
October 12-14, 2001
19th Annual Student/Faculty Weekend Retreat Waterville Valley, NH

NIH Visit, from page 1

(3) stipend levels for students in the clinical years were increased to remain equal to the graduate student rate; (4) students are expected to take graduate courses during the first two years along with their medical school courses, in order to provide better integration of medical and graduate education; (5) enhancements to the clinical experience (called ‘Clinical Connections’) have been set up to provide individual students with the opportunity to work with a preceptor in a subspecialty clinic during the graduate phase and to bring M.D.-Ph.D.’s in their postgraduate years together to interact with students; and, finally, a dedicated group of advisors assigned to students meets regularly while maintaining a closer longitudinal connection to their advisees.

Dr. Joseph Martin, dean of the faculty of medicine, who was also an active participant at the site visit, voiced his strong support and commitment to help Dr. Andrews and Dr. Golan streamline and fortify the Harvard-MIT M.D.-Ph.D. Program. A final report and evaluation from the NIH is expected within the next few weeks.
New Class Begins Summer Course

The M.D.-Ph.D. Program summer course, Molecular Biology of Human Disease, is now in its second year. Directed by Dr. Richard Maas, the course is required of all entering M.D.-Ph.D. students. It is taken concurrently with the first laboratory research rotation preceding the first year of the program.

The course is organized around nine blocks, each of which is focused on a particular area of biomedical research. The areas were chosen to represent a cross-section of science at Harvard and to reflect the expertise of a select group of HMS faculty chosen for their teaching excellence. Many of the faculty members hold M.D. and Ph.D. degrees, making them excellent role models for the entering students. In addition, the course content is carefully integrated with the subject areas of the major graduate programs represented among the current M.D.-Ph.D. student body, including the four DMS graduate programs, Harvard Biophysics and MIT Biology.

The course spans eight weeks (July 6-August 24, 2001 this year), meeting Monday, Wednesday and Friday from 9:00 a.m. to 12:15 p.m. The intervening day or weekend gives students a chance to prepare for the discussions and to integrate their coursework with their laboratory rotation. The first hour and a half of each class consists of a discussion of one to two papers, assigned for critical reading, that are relevant to the previous course day’s lecture. These discussions, which are led by two students each, are also attended by the faculty member who assigned the paper(s) and by Dr. Maas.

Following the class discussion, students are presented with a lecture that provides didactic content in the form of key principles and examples. While most faculty give lectures with slides, the lecture format also includes blackboard presentations, videos and, in one session pertinent to cancer genetics, hands-on examination of pathological tumor specimens. Student questions are encouraged during the lectures.

Before the end of each class, faculty members give a brief introduction to the paper(s) they have assigned for the next class discussion, including an explanation of any new methods. Thus, the students are well prepared to consider the assigned papers, in terms of both their knowledge base and their appreciation of the paper’s position in its field. The discussions consider issues such as experimental design and logic, controls, and interpretation of data, as well as the paper’s conclusions. Some papers are deliberately chosen because they contain flaws. The student leaders for each discussion are encouraged to meet with the responsible faculty member beforehand to discuss the papers.

Student performance in the course is evaluated on the basis of classroom participation, performance as a discussion leader, and a written critique of a selected paper. In the first year, course evaluations were solicited after every session from both students and faculty.

The inaugural year of the summer program proved to be an enormous success on many levels—it fostered camaraderie among the entering class, allowed students to interact closely with outstanding faculty role models, honed the students’ critical reading skills and provided a view into career possibilities for physician-scientists.
### Admissions Update

by Tara Smith

The official kick-off to the M.D.-Ph.D. admissions season began last September when the first applications crossed the threshold of the tiny M.D.-Ph.D. office in the MEC, the building otherwise known as the Tosteson Medical Education Center at Harvard Medical School. Within a month, the pace of the incoming applications changed from a deceptive trickle to a steady flow. Dozens of applications were being received, processed and housed in individual folders, the manila dividers between each individual’s hopeful story. By November, applicant interviews were being scheduled and the stories in the manila folders were being told.

During the 2000-2001 admissions season, a total of 376 M.D.-Ph.D. applications were received and 79 interviews were granted. On each of the four, predetermined interview dates, there were approximately 20 applicants scheduled for interviews. Each applicant had two interviews, both with a member of the M.D.-Ph.D. Subcommittee on Admissions. This meant that roughly 40 interviews were being conducted across the Harvard Medical School campus on each of the four dates.

The Subcommittee on Admissions, chaired by Dr. Nancy Andrews, carefully reviewed the applications, interviewed the candidates and discussed the prospects at length. By February of 2001, the final selections were made. Those offered positions were mailed congratulatory letters in March. They were also invited back to Boston for a Revisit Weekend in April for the purposes of recruitment and an orientation to the program.

Three months later, in July, 11 new students matriculated to the Harvard Medical School M.D.-Ph.D. Program. Of the three women and eight men, 10 are being funded by the Medical Scientist Training Program (MSTP) grant and one has applied for a Minority Access to Research Careers (MARC) fellowship. Six of the students entered the Peabody Society and five joined Health Sciences and Technology (HST). The students began the program with the summer course, Molecular Biology of Human Disease, and an individual laboratory rotation.

### For the Record

#### Incoming M.D.-Ph.D. Students, 2001-2002

- **Jennifer Chang** of Troy, MI, graduated from the University of Michigan with a B.S. in Biochemistry and Chemistry in 2001.
- **Michael J. Feldstein** of Hillsborough, CA, graduated from the University of California, Berkeley with a B.S. in Bioengineering in 2000.
- **Adam A. L. Friedman** of Tupelo, MS, earned an A.B. in Molecular Biology from Princeton University in 2001.
- **John W. Hanna** of St. Louis, MO, received a B.S. in Biological Sciences from Stanford University in 2001.
- **Arindel S. Maharaj** of Katy, TX, graduated from State University of New York at Stony Brook in 2001 with a B.S. in Biochemistry/Anthropology.
- **Sashank K. Reddy** of Eau Claire, WI, completed a B.A. in Biology and a B.A. in Humanistic Studies from Johns Hopkins University in 2000.
- **Russell S. Roberson** of North Little Rock, AR, graduated from Hendrix College with a B.A. in Interdisciplinary Studies 1999 and attended the University of Waikato in Hamilton, New Zealand from 1999-2000 as a Fulbright Scholar.
- **Daniel P. Seeburg** of Heidelberg, Germany, completed a B.S. in Biology from Duke University in 2001.
- **Elizabeth H. Stover** of Columbus, OH, graduated from Harvard University in 2000 with a B.A. in Biology and a M.Phil. in Medical Sciences in 2001 from Cambridge University, England.
- **Ellen Yeh** of Easton, CT, graduated from Harvard University with a B.A. in Biochemical Sciences in 2001.
- **Mauro D. Zappaterra** of Lafayette, CA, received a B.S. in Molecular Cell and Developmental Biology from the University of California, Los Angeles in 1998.
Spring Dinner Honors Graduates

The M.D.-Ph.D. Program’s Annual Spring Dinner was held on May 15, 2001 in honor of the program’s 20 graduates. Family, friends, students, faculty and staff filled the Alpert Courtyard at Harvard Medical School to congratulate the newest crop of physician-scientists and wish them well. The dinner preceded the official June commencement where the graduates were presented with their dual degrees.

For the Record

Class of 2001 Appointments

**Suneet Agarwal**, Pediatrics, Boston Combined Pediatrics - Harvard Hospitals, Boston, MA.

**Paul R. Borghesani**, Psychiatry at University of Washington Affiliated Hospitals, Seattle, WA.

**Solange S.P. Brown**, Postdoctoral Fellowship, Harvard University, Boston, MA.

**Steven Chao**, Associate, McKinsey & Co., Boston, MA.

**Andy I. Chen**, Internal Medicine, Stanford University Programs, Stanford, CA.

**Clark C. Chen**, Preliminary Surgery; Neurological Surgery, Massachusetts General Hospital, Boston; Harvard/ Massachusetts General Hospital, Boston, MA.


**Katrin F. Chua**, Postdoctoral Fellowship at The Center for Blood Research, Children’s Hospital, Boston, MA.

**Jesus A. Garcia**, Plastic Surgery, Brigham and Women’s Hospital, Boston, MA.


**David S. Jones**, Pediatrics, Boston Combined Pediatrics - Harvard Hospitals, Boston, MA.

**Katherine P. Lemon**, Pediatrics, Boston Combined Pediatrics - Harvard Hospitals, Boston, MA.

**David B. Lombard**, Pathology, Brigham and Women’s Hospital, Boston, MA.

**Robert J. Monroe**, Pathology, Stanford University Programs, Stanford, CA.

**James A. Morrill**, Internal Medicine/ Primary Care, Massachusetts General Hospital, Boston, MA.

**Eric M. Morrow**, Psychiatry, Massachusetts General Hospital, Boston, MA.

**Lee F. Peng**, Internal Medicine, Massachusetts General Hospital, Boston, MA.

**Jeremiah M. Scharf**, Preliminary Medicine, Brigham and Women’s Hospital, Boston, MA; Neurology, Massachusetts General Hospital and Brigham and Women’s Hospital, Boston, MA.

**Christine L. Tsien**, Emergency Medicine, Brigham and Women’s Hospital, Boston, MA.
Recent Publications


Recent Publications


Niles JC, Wishnok JS, Tannenbaum SR. Spiroiminodihydantoin is the major product of the 8-oxo-7,8-dihydroguanosine reaction with peroxynitrite in the presence of thiols and guanosine photooxidation by methylene blue. Org Lett. 2001 Apr 5;3(7):963-6.


For the Record

Ph.D.s Completed


**Benjamin Simon Leader**, Health Sciences and Technology, BBS–Genetics (DMS) at Harvard University [Philip Leder, M.D.] Identification and Characterization of Formin-2, a Gene Required for Meiosis in the Oocyte (4/01).


**Finny G. Kuruvilla**, Health Sciences and Technology, Chemistry at Harvard University [Stuart Schreiber, Ph.D.] Studies of the rapamycin-sensitive signaling network using genomics, chemical genetics, and small molecule microarrays (5/01).

**Sohail F. Tavazoie**, Health Sciences and Technology, Neuroscience (DMS) at Harvard University [R. Clay Reid, M.D., Ph.D.] The Development of Neural Connections from Retina to Thalamus: Maturation and Plasticity of Receptive Fields (6/01).

**Kenneth Y. Tsai**, Health Sciences and Technology, Biology at Massachusetts Institute of Technology [Tyler Jacks, Ph.D.] Investigation of the Rb Pathway by Genetic Manipulation in the Mouse (4/01).


**Finny G. Kuruvilla**, Health Sciences and Technology, Chemistry at Harvard University [Stuart Schreiber, Ph.D.] Studies of the rapamycin-sensitive signaling network using genomics, chemical genetics, and small molecule microarrays (5/01).

**Benjamin Simon Leader**, Health Sciences and Technology, BBS–Genetics (DMS) at Harvard University [Philip Leder, M.D.] Identification and Characterization of Formin-2, a Gene Required for Meiosis in the Oocyte (4/01).


**Sohail F. Tavazoie**, Health Sciences and Technology, Neuroscience (DMS) at Harvard University [R. Clay Reid, M.D., Ph.D.] The Development of Neural Connections from Retina to Thalamus: Maturation and Plasticity of Receptive Fields (6/01).

**Kenneth Y. Tsai**, Health Sciences and Technology, Biology at Massachusetts Institute of Technology [Tyler Jacks, Ph.D.] Investigation of the Rb Pathway by Genetic Manipulation in the Mouse (4/01).

**BBS** = Biological and Biomedical Sciences

**DMS** = Division of Medical Sciences, Harvard Graduate School of Arts & Sciences

**GSAS** = Harvard Graduate School of Arts & Sciences

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