Harvard MSTP Grant Enters 4th Decade

This year the program celebrates Harvard Medical School’s 30th year of support from the Medical Scientist Training Program (MSTP) Grant. In recognition of our anniversary, we are printing a letter from our archives written by Dr. Vincent Price, former NIH-MSTP program administrator, to program directors in September 1979. Dr. Price’s letter documents the early evolution of the MSTP and reinforces that the original hallmarks of the program have remained essentially unchanged. In this issue, we also recognize our program’s founding leaders while introducing our new director, Dr. Chris A. Walsh.

– Linda Burnley, Editor

I will attempt to summarize the beginning of the Medical Scientist Training Program. The story really begins in 1956-57 when the National Institutes of Health (NIH) initiated an Experimental Training Program at thirteen institutions, funded at a total of 2.5 million dollars for a five-year period, in which these institutions could experiment with ways of getting medical students interested and involved in biomedical research. Most of the thirteen institutions simply developed programs that involved summers and dropout years; several such as Texas and Oregon developed programs in which the student took the first two years of the basic medical curriculum combined with a Master’s program in a total of three years, so that roughly half of their time was devoted to research. This appears to have been the better pattern. The institutions liked the Experimental Training Program and toward the end of the five-year period the decision was made to rename the

New Director, Chris A. Walsh Takes the Lead

Dr. Chris A. Walsh, M.D., Ph.D., the Bullard Professor of Neurology and Investigator, Howard Hughes Medical Institute, was appointed the new director of the Harvard M.D.-Ph.D. Program last November. He replaced Dr. Nancy C. Andrews who left the position in September to take on new responsibilities as Associate Dean of Basic Science and Graduate Studies at HMS. Dr. Walsh, a respected neurologist and scientist, has been involved with the program for many years, first as a member of the admissions committee and later as the advisor to the M.D.-Ph.D. students in the Cannon Society. As an active mentor already well known to the students, he began his new role with a strong interest in improving the integration of medical and scientific study. He is especially interested in improving the efficiency of the program to help students reduce the time to degree.

After finishing a combined M.D.-Ph.D. program at the University of Chicago, Dr. Walsh completed a neurology residency at Massachusetts General Hospital and a fellowship in genetics at Harvard, and since 1993, he has been at the Beth Israel Deaconess Medical Center.

As Chief of the Division of Neurogenetics, his research lab studies the genetic mechanisms underlying development of the cerebral cortex. His lab collaborates with other physicians around the world to use positional cloning techniques to identify genes that cause human brain malformations. The lab also uses biochemical methods and animal models to study the roles of these genes in the developing brain. His laboratory has made important contributions to understanding genes that control the shape and size of the human brain, and how

continued on page 2

continued on page 5
Dr. Frank McKeon and Narie Storer at Retreat poster session.

Dr. Shannon wanted to see a real change in the medical curriculum and the creation of one that was designed for scientists and not physicians. For this reason he proposed a Clinician-Scientist Program in which support would be given for combined medical and scientific training leading to the M.D.-Ph.D. degree or its equivalent. Dr. Shannon wanted to start at an earlier age, right as the students come out of college and have them enter a totally different program of combined medical and scientific training designed specifically for scientists not physicians. A trial balloon submitted from New York University was unsatisfactory and returned to the school and the whole program was held up for nearly a year while discussions were held regionally throughout the country. In these discussions great emphasis was placed on upgrading the scientific level of the medical curriculum, which proved to be such a massive and difficult task that applications came in very slowly.

“It started by ‘changing a rule’ - the Federal Government for the first time undertook support for the medical curriculum...”

In order to get on with the task Dr. Shannon wanted to immediately phase out the Medical Student Research Training Program that had just been expanded and to insist that the institutions immediately convert over to the dual degree program. There was a great deal of controversy with Dr. Fred Stone, Ed Dempsey, and other members of the Council on one side and Dr. Shannon on the other. One eminent surgeon on the Council thought the idea of a dual degree was ridiculous. Mixing science and medicine was like mixing oil and water—they are immiscible. Furthermore, by the time a young man completed college, both medical and graduate school, a residency and a postdoctoral fellowship, he would be too old to be good at anything. It was a discouraging time.

Throughout this controversy I attempted, as usual, to steer a middle course by: (1) stopping the acceptance of any new applications for the Medical Student Research Training Program while keeping our existing commitments, and (2) by writing a document defending the experimental programs which some have said was the greatest mistake I ever made, but I felt I couldn’t act in bad faith on the old program and turn around with any degree of credibility and ask the schools to start a new one. Nevertheless, no new applications for the Medical Student Research Training Program were accepted and they were allowed to phase out as their awards terminated. From the appended table you will see that the start of the Medical Scientist Program was quite slow, but has been progressive ever since. In my view the slowness of the program had an important impact on its quality. Had it started expanding rapidly to all schools, as some wanted to do, it would have ended up with a considerably larger program but much lower quality. A keystone has been selectivity in both institutions and trainees and one of our great concerns is how quality can be maintained if we significantly lower the degree of selectivity on the part of both the institutions and individuals involved.

During the early years a great deal of emphasis was placed on strengthening the
curriculum and assuring the quality of the program was being maintained. We reviewed the grants every third year, at which time successful schools that were doing well could ask for supplemental increases and schools that were not doing well took a certain risk of having a reduction in the number of incoming students in successive years. Thus, we attempted to control the quality by frequent monitoring and controlling the level of input of new trainees into the programs. It should be noted that in certain years, about 1974-75, because of the uncertainty of Federal funding a number of schools did not fill their quotas; thus, there were fewer actual bodies than slots available. Furthermore, I have always told schools if they did not have a first-rate applicant for a slot that they should not take one because they would have to live with him for five or six years, and that they should be discouraged from taking someone in that they would not want interviewed at the time of a site visit. Thus, I have not pushed schools to keep their slots filled.

At the end of their third years, we made site visits to NYU, Einstein, and Duke to review their programs. NYU had significantly modified Anatomy so as to give the trainees more time for graduate studies, and had also emphasized great flexibility in the program. Einstein and Duke had attempted to introduce courses in Molecular Biology into either the lecture period or laboratories for the Medical Scientist Trainees. At the time of the site visits to both of the latter institutions, we were met by a concerned—almost angry—group of trainees. They said they had the medical curriculum and the graduate curriculum, and yet because of us the programs were trying to push still more courses at them. They did not care how good they were; what they did not need were any more courses. Furthermore, it was obvious that the students who had been selected were very unusual people with quite diverse backgrounds. They were well out on a bell-shaped distribution curve, and did not get out there by being alike. They read avidly on their own, they picked up knowledge with great ease, and they did not need courses to learn something. Based on the findings of the third year review and discussions within the committee it was decided to change our old strategy and to stop pushing for altered curricula and to emphasize flexibility; however, funds for the creation of new courses were continued throughout the “old grants.”

Looking back there have been certain hallmarks that might be emphasized:

1. It started by “changing a rule”—namely, the Federal Government for the first time undertook support for the medical curriculum on the condition that it be adapted for the training of medical scientists and in the context of a dual degree program.

2. The emphasis has been on selectivity for both institutions and individuals, in an attempt to assure the maintenance of the highest possible quality.

3. There has been continued emphasis on flexibility both on the part of the institutions in molding its program and on the part of the individual in the development of his own training and career goals. The key idea is to “pick the right guy” and give him the freedom to do what he wants to do—under the guidance of a qualified and skillful Program Director and the Advisory Committee. Thus, insofar as possible, decisions have been decentralized to the institutions and individuals—they have not been made in Washington.

4. To become a good scientist takes time: it cannot be rushed. In the earlier years there was considerable pressure to do this in five or six years. We now find that six or seven are required. Any reduction in time results in a marked reduction in quality.

5. Stability. If a school or individual is going to undertake a program of this magnitude, involving six to seven years of commitment for each trainee, it must have stable funding. Perhaps one of our most significant contributions in Washington was to see that that was true.

6. Don’t sell it. Earlier attempts to sell the program on changing their medical curriculum were so unsuccessful and so controversial that a change in stance on the part of NIH was obviously needed. By way of contrast, the present stance of a low NIH profile with emphasis on flexibility to the institutions to run their own programs, subject to tough periodic peer review, has led to a stable program that has grown slowly but progressively with very high quality over the past fifteen years. If the program is successful it is because of the institutions themselves and because some of the best students in those institutions want the dual degree program. The program doesn’t need “selling”—it sells itself.
Program History - Auspicious Beginnings

From the archive: excerpts from the minutes of early program committee meetings:

1971: The Faculty of Medicine established the M.D.-Ph.D. Program Faculty Standing Committee (FSC) and appointed Dr. Baruj Benacerraf as chair to ensure that students are made aware of the existing opportunities in the curriculum leading to the combined M.D.-Ph.D. degrees. The FSC was charged with monitoring student progress, developing innovations in the program, and recommending changes thought advisable.

1972: Dr. Robert Ebert, HMS Dean of Faculty of Medicine, met with the program’s first directors, Drs. Bert Vallee and S. James Adelstein, and reported that in conversations held with the senior staff of the NIH he learned that no M.D.-Ph.D. training programs were to be funded in that year. Dean Ebert expressed his continued support for the program and desire that it not lose momentum. It was agreed that failure to appropriate training funds for medical scientists in general, but especially for the potential academic leaders likely to enter the M.D.-Ph.D. programs, was antithetical to the national interest, and the dean and committee decided to press this point at appropriate encounters and provide the sponsoring agencies with information and support to capture more monies for this purpose.

1973: On a motion of Dr. Benacerraf, the FSC voted unanimously to make tuition scholarships available to M.D.-Ph.D. candidates, so that lacking other tuition scholarship support no candidate shall have to pay more than four years of tuition required to obtain the M.D. degree alone. The committee also agreed that it should assist the departments in procuring stipend supports for those students who cannot be supported by departmental sources alone.

1974: In November, Dr. Bert Vallee, serving as both chair of FSC and director of the program, announced that the NIH had funded the Medical Scientist Training Grant application at a level commensurate with five to six students per year for five years. Drs. Vallee and Adelstein continued to lead the program with Dr. Adelstein serving as program director and then as interim director after Dr. Vallee stepped down.

1983: Under the deanship of Dr. Daniel C. Tosteson and directorship of Dr. Edgar Haber, the program acquired its first designated office space in the basement of the Brigham and Women’s Hospital, and Linda Burnley was appointed its first full-time administrator. The program office subsequently was moved to the Medical Education Center and two decades later Ms. Burnley’s position is the director of administration and finance. Throughout this era, the program has benefited from Ms. Burnley’s diligent stewardship and the leadership of the following directors: Edgar Haber, MD, (deceased); Bernardo Nadal-Ginard, M.D., Ph.D.; Dennis Ausiello, M.D.; Nancy C. Andrews, M.D., Ph.D.; David E. Golan, M.D., Ph.D.; and Chris A. Walsh, M.D., Ph.D., the current program director.

The Harvard M.D.-Ph.D. program has had continuous support from the MSTP Grant since 1974 when the first 6 positions were awarded. The current number of trainee slots is 45 with an annual budget of $2,023,535. Students funded by the grant are recipients of the “Ruth L. Kirschstein National Research Service Awards”. The size of the M.D.-Ph.D. student body at Harvard in 2004 is 150. Nearly 350 graduates have completed the program since its formal inception in 1974, and over 85% who are beyond the residency and postdoctoral training years hold positions in academic medicine, industry and government.

The Founders of the M.D.-Ph.D. Program

From left, Baruj Benacerraf, M.D., George Fabyan Professor of Comparative Pathology, Emeritus; Nobel laureate, 1980; Bert Vallee, Ph.D., M.D., Paul C. Cabot Professor of Biochemical Sciences, Emeritus; S. James Adelstein, M.D., Ph.D., Paul C. Cabot Distinguished Professor of Medical Biophysics in the Department of Pathology.
For the past four years, HMS has hosted an annual visit for minority undergraduates from New York schools, organized by Parmanand Singh and me with the invaluable assistance of Dr. Jocelyn Spragg, Faculty Director of Minority Programs, Ph.D. Programs Office. The purpose of the visit is to educate minority students about the process of getting into medical school, demystify any false perceptions, and offer some perspective about the life of an M.D., Ph.D., or M.D.-Ph.D. student. Though the visit is not intended specifically to advertise HMS, visiting students are given a short tour of the medical campus guided by current medical and graduate students.

The first trip was planned when Parmanand and I were undergraduates. Our motivation stemmed from an enjoyable experience participating in the Summer Honors Undergraduate Research Program (SHURP), and a shared desire to provide other students with the opportunity to experience some of the insights.

Since 2000, the visit has expanded to include undergraduate students from Columbia University, Hunter College, NYU, Pace University, SUNY at Stony Brook, St. Francis College and others. Due to geographical limitations, and the fact that New York represents a major applicant pool for medical schools, the trip thus far has been limited to New York schools. It is our hope that this group of students will go onto educate peers at their respective campuses, as well as establish networks with one another.

Last November, over 100 visiting students arrived early one Saturday morning, and were greeted by Dr. Jocelyn Spragg, Parmanand and myself. Dr. Tom Fox, Associate Dean for Graduate Education, then spoke to the visiting students about the Ph.D. programs, followed by a discussion of the combined M.D.-Ph.D. Program lead by Dr. Chris A. Walsh, the newly appointed Program Director. After the morning session, the visiting students shared lunch with current medical and graduate students and were taken on a brief tour of HMS.

In the afternoon, the visitors attended a talk on the admissions process by former student admission committee members, Alejandra Casillas (New Pathway, HMS III), and Parmanand. Dr. Spragg then spoke on the value of summer programs, followed by an interactive discussion about life at medical school led by Parmanand and me. The day ended with many of the visiting students wishing that they could spend the night in Boston to experience life as medical students, and others expressed their delight with the trip.

The trip this year would not have been possible without the support of the Division of Medical Sciences, the M.D.-Ph.D. Program, and the Office of Multicultural Affairs of the medical school. Students from New York are already looking forward to next year’s trip.

Arindel Maharaj is a 3rd year M.D.-Ph.D. student.

Dr. Chris A. Walsh addresses the student visitors from NY in the Alpert Courtyard Cafe.

Dr. Chris A. Walsh, from page 1

mutations of these genes cause diseases such as epilepsy, mental retardation, and autism. Dr. Walsh is on the clinical staff at the BIDMC and Children’s Hospital, and directs the Comprehensive Brain Malformation Program that provides integrated medical care and genetic counseling to patients with brain disorders and their families.

Dr. Walsh is also a member of the faculty of the Biological and Biomedical Sciences (BBS) and Neuroscience graduate programs. He lives in Brookline with his wife, Dr. Ming Hui Chen, HMS assistant professor of medicine at Brigham and Women’s Hospital, and their two daughters.
Riding Through the Storm... Together.

By Marissa Wagner and Rachel Bortnick

As a 7th-year M.D.-Ph.D. student sprinted naked across the dance floor at last fall’s Retreat, the first years were practically oblivious – we were too wrapped up in dancing the night away. Narie revealed she knew all the words (not to mention the moves) to The Eminem Show, Ilya used his Latin dance moves to sweep a certain administrator off her feet, and the rest of us just danced. And danced.

Events such as the retreat never fail to bring out our camaraderie, but it is our individuality and collective idiosyncrasies that make our class, well, our class. We come from all over the world, including the U.S., Taiwan, Russia and Puerto Rico. Eight of us have a native language other than English, and among us we have studied or worked in England, Argentina, France, Spain, Australia, Georgia and India. Our interests vary tremendously, from chemical engineering to parasitology to neuroscience to sociology, to name only a few; many of us took time off after college to pursue research or other interests. We are excited to be here and infinitely thankful to have each other as we embark on the first of our many years at Harvard Medical School.

This is how our classmates describe themselves:

Jose Aleman

Jose was born and raised near San Juan, Puerto Rico and first left the island to attend Cornell University in Ithaca, NY. After graduating in 2001 with a degree in Chemical Engineering, he conducted research in Spain for a year at the Universidad Complutense de Madrid. He interspersed theoretical biochemistry work (no wet lab!) with travels to Portugal, Morocco, England and Andalucia. For the past academic year, he concentrated on completing coursework and exams for the doctoral program in Chemical Engineering at MIT. Jose’s research experience includes aspects of microfabrication, theoretical biology, bioinformatics and systems biology; he looks to work in Bioinformatics of Type 2 Diabetes with Greg Stephanopoulos. In the meantime, he enjoys swimming, salsa dancing, Spanish literature, cooking and traveling. Just this past summer, he went on the Yatra Pilgrimage to the northern Indian Himalayas with a good college friend.

Rachel Bortnick

Rachel was born and raised near Washington, D.C., graduated from the University of Chicago in 2001, and from King’s College, the University of Cambridge in 2002. After graduating from Cambridge with an M.Phil in Neuroscience and before coming to Harvard, Rachel did some much-needed traveling and then spent several months working for a non-governmental human rights organization and editing a weekly newspaper in Tbilisi, Georgia (in the former Soviet Union). Rachel’s research experience has encompassed cancer, immunology and neurobiology and she hopes to find a way to combine at least 2 out of the 3 while at Harvard. She also hopes somehow to incorporate her interests in philosophy, international health and human rights into her career as a physician scientist. In addition to spending time at the bench, she loves traveling, writing, reading philosophy and fiction, the occasional Middle Eastern dance class, spending time with her classmates and learning as many languages as possible.

Hannah Chang

Growing up in seven different cities in the U.S. and Taiwan, Hannah received an interesting blend of Western and Eastern education that has shaped the way she approaches problems. A series of small decisions led her to theoretical chemistry as an undergraduate at Princeton that proved to be intellectually satisfying, but not fully satiating in the “making a difference” department. Her decision to pursue an M.D.-Ph.D. degree began with the desire to widen her horizon with medical knowledge that will hopefully help her identify areas of research in which to utilize her previous theoretical training. A few months of medical school later, however, she is finding herself learning the art of cell culturing for a systems biology project under the guidance of Dr. Donald Ingber and coworkers. Hannah has no idea where her recent explorations will lead her but hopes to continue making friendships with people who are intelligent, perky, and so interesting in the mean time! Some past and current avocations of Hannah’s include fossil collection, music composition, double bass playing, rock climbing, acrylic painting, and most recently, modern dancing.

Christy Comeaux

Christy joined the M.D.-Ph.D. Program in HST after graduating from Johns Hopkins University in 2003 with a B.S. degree in Biomedical Engineering. Christy’s research background is in developmental biology and genetics, but she hopes to explore new fields before deciding on her Ph.D. area. Despite spending her entire childhood in a small Texas town, Christy now considers the East Coast home and enjoys everything about Boston except for its winters. In her spare time, Christy enjoys art and music, and she hopes to continue painting and playing flute throughout her years as a M.D.-Ph.D. student. By cutting down even further on the hours of sleep she gets per night, Christy also hopes to remain active in projects that provide better education and healthcare to underserved populations.

continued on page 9
Alumni & Alumnae Notes

Nancy C. Andrews, M.D., Ph.D., class of 1987, the Leland Fikes Professor of Pediatrics and former Harvard M.D.-Ph.D. Program Director, was named Associate Dean for Basic Sciences and Graduate Studies in September 2003.

Joseph V. Bonventre, M.D., Ph.D., class of 1979, the Robert H. Ebert professor of medicine and master of HST, delivered the Osler Oration at the meeting of the Royal College of Physicians in London in October. The award lecture is given every three years with the awardee receiving a gold medal.

Carolyn Compton, M.D., Ph.D., class of 1977, was appointed as the first woman to graduate from the MSTP-funded Harvard M.D.-Ph.D. Program.

Joel N. Hirschhorn, M.D., Ph.D., recipient of the Society for Pediatric Research’s Young Investigator Award. Strathcona Professor and chair of pathology at McGill University.

Carolyn, class of 1977, was appointed to the Leland Fikes Professorship and chair of pathology at McGill University. Carolyn was the first woman to graduate from the MSTP-funded Harvard M.D.-Ph.D. Program.

Joel N. Hirschhorn, M.D., Ph.D., class of 1995, has been named the 2004 recipient of the Society for Pediatric Research’s Young Investigator Award. The award has been presented annually since 1983, and recognizes early achievements of rising researchers in the investigation of diseases affecting children. Joel will receive the award at the annual meeting of the Pediatric Academic Societies in San Francisco in May.

Max L. Nibert, M.D., Ph.D., class of 1990, was appointed Professor of Microbiology and Molecular Genetics at Harvard Medical School on February 2004.

Marc E. Rothenberg, M.D., Ph.D., class of 1990, was promoted as an endowed and tenured professor at Cincinnati Children’s Hospital Medical Center. He is also director of the Division of Allergy and Immunology.

Barry P. Sleckman, M.D., Ph.D., class of 1989, was promoted to tenured associate professor in 2003, and received professor of the year award from the first-year medical students at Washington University in St. Louis, MO.

To Our Alumni Readers: we welcome your newsletter articles, ideas, and personal stories. Please send to mdphd@hms.harvard.edu.

Ph.D.s Completed

Scott D. Boyd, Health Sciences and Technology, Biology at Massachusetts Institute of Technology [Tyler Jacks, Ph.D.] p53: Two Target Genes, and a Regulatory Mechanism (6/03).

Martin D. Burke, Health Sciences and Technology, Chemistry and Chemical Biology (GSAS) at Harvard University [Stuart Schreiber, Ph.D.] A Synthesis Strategy for Generating Diverse Skeletons of Small Molecules Combinatorially (9/03).

Bradley C. Carthon, Peabody, BBS-Genetics (DMS) at Harvard [Piotr Sicinski, M.D., Ph.D.] D-Type Cyclin Specificity in Mureine Development (9/03).

Kumaran Kolandaivelu, Health Sciences and Technology, Medical Engineering and Medical Physics at MIT [Elazer Edelman, M.D., Ph.D.] The Development and Application of an In Vitro Model of Coronary Lesion Thrombosis (6/03).

Gabriela Motyckova, Health Sciences and Technology, BBS-Biological Chemistry and Molecular Pharmacology (DMS) at Harvard [David Fisher, Ph.D., M.D.] Microphthalmia Transcription Factor Family Target Genes in Osteoclasts (9/03).

Thanh-Nga T. Tran, Health Sciences and Technology, Chemical Engineering at MIT [Robert Langer, Sc.D.] Development of Reversible “Smart” Surfaces for Biomedical and Nanotechnological Applications (9/03).

GSAS = Graduate School of Arts and Sciences
BBS = Biological and Biomedical Sciences
DMS = Division of Medical Sciences

Recent Publications


Recent Publications, from page 8


Salil Garg
Salil was born in Cincinnati, OH. He received a B.S. in Biochemistry and a M.S. in Chemistry from the University of Chicago in 2003. His research interests are in immunobiology, and he is currently pursuing research with Dr. Michael Brenner at the Brigham and Women’s hospital on lipid antigens in immune responses. His favorite number is 3, and his favorite color is light green during most seasons of the year.

Thomas Hocker
Thomas, who is half Japanese-American and half African-American, grew up in San Jose, California, and attended Silver Creek High School, a public school that has an unfortunately poor reputation for education and violence at times. He had very poor grades at first, but joined the track team in late freshman year to meet girls. He discovered that he really liked track in its own right and had a few amazing coaches that helped him raise his grades and interest in school. Thomas decided to attend Yale, where he ran varsity track and field and found his science courses really fun. This led him to major in Cell Biology. Later, he found out that Organic Chemistry (Organic Synthesis) was just as fun as Cell Biology, and so focused his research on the total synthesis of a possible anti-cancer agent. After graduating from Yale, Thomas headed over to Cambridge, England on a Churchill Scholarship, where he again did research in Organic Synthesis. After one year of research there, he completed his M.Phil and returned to the U.S. for medical school. Once Thomas gets done with running the Boston marathon this April he hopes to spend some more time with his M.D.-Ph.D. class!

Ilya Leskov
Ilya is originally from Moscow, Russia. He came to the U.S. when he was twelve, and eventually attended Swarthmore College. After college, Ilya took a couple of years off, working in a laboratory that studies biochemical pathways of vision and at the same time became an EMT. His current research interests include all kinds of dancing (especially Latin!), as well as international travel. His extracurriculars have recently switched from neuroscience to immunology, and may switch again sometime next week.

Ken Lin
Ken was born in Tainan, the oldest city in Taiwan. In 1995, he came to Orange County, California, for high school. He studied biological sciences and classical history at Stanford. Ken loved carbonyl chemistry in freshman year; as such, he was drawn to drug delivery and design. After a summer research experience in ultrasound-based drug delivery, Ken became interested in the endothelium, an important component in drug delivery. He and his colleagues worked on elucidating a new cellular mechanism that predisposed diabetics to vascular diseases, and also on developing high throughput technology to assay plasma biomarker. Since coming to HMS, he has been interested primarily in genomics (hapmap and tech development) and tissue engineering (stem cell therapy in myocardial regeneration). In Ken's free time, he writes and plays music with friends, and enjoys playing with computer graphics for art and bookcover design.

Thomas Rogers
Tom grew up in the Bronx, New York, and Tucson, Arizona. He attended the University of Arizona and then spent a year at the NIH Academy, focusing on health disparities and HIV pathogenesis. He plans to enter the Virology graduate program to study HIV cellular immunity and host resistance factors. In Tom’s free time, he enjoys hiking and camping, wearing shorts and flip-flops, swimming, and basking in the light of the life-giving orb we affectionately call “the sun”.

Vijay Sankaran
Vijay grew up very close to here and went out to the University of Pennsylvania for his undergraduate education. He then headed to Cambridge, England to study protein crystallography for a year, and has recently completed his triangular journey by coming back to Boston. He enjoys traveling, listening to a wide variety of music, and running. Vijay is currently trying to figure out what he wants to do in terms of research and also clinically, and has become quite interested in pediatrics recently.

Lakshminarayanan Ram Srinivasan
Lakshminarayan “Ram” Srinivasan, from Ellicott City, Maryland, received a B.S. in Electrical and Computer Engineering from Caltech in 2002, and an S.M. in EECS from MIT in 2003. He is interested in building and studying biological systems guided by principles from electrical engineering and medicine.

Narie Storer
Narie was born and raised in Chicago, Illinois. She was a biochemistry major at Harvard College and earned the Henderson Prize and Hoopes Award for her honors thesis, “The identification of genes involved in the development of Streptomyces coelicolor.” She is interested in doing research in cancer biology, although she has no idea where she is doing her next rotation! (If you have any ideas, please email her.) On her free time, she loves to rap (as witnessed by those who attended the 2003 Retreat), watch reality television with her husband, snowboard, and watch the Patriots win.

Marissa Wagner
Marissa was raised in Pleasantville, New York, and is quite proud to call both Manhattan and Cortez, Colorado home. After completing a degree in history at Yale, she pursued an M.Phil in Biological Sciences (Immunology/Parasitology) at the University of Cambridge. She worked in a vascular biology lab as an undergraduate, but ironically it was her work in the history department investigating the representation of 19th century French prostitutes in art that led to her interests in public health and infectious diseases. She became alarmed at both the incidence of particular infectious diseases within marginalized populations as well as the relative lack of research and treatment options. Since then she has worked in a biophysics lab studying malaria and an immunology lab that focused on schistosomiasis. Other than that, she enjoys reading fiction and theology, playing with other people’s dogs, triathlons, and is learning how to knit a hat.
For the Record

Class of 2004 Appointments

**Teresa H. Chae**, Preliminary Medicine, Brigham & Women’s/Faulkner Hospital, Boston, MA; Ophthalmology, Baylor College of Medicine, Houston, TX.

**Sandeep R. Datta**, Postdoctoral Fellow, Center for Neurobiology and Behavior, Columbia University, New York, NY.

**Ruben C. Fragoso**, Preliminary Medicine, Morristown Memorial Hospital, Morristown, NJ; Radiation Oncology, Thomas Jefferson University, Philadelphia, PA.

**Anna Greka**, Internal Medicine, Massachusetts General Hospital, Boston, MA.

**Edmund A. Griffin**, Psychiatry, New York Presbyterian Hospital, Columbia Presbyterian, New York, NY.

**Chao-Wei Hwang**, Internal Medicine, Brigham and Women’s Hospital, Boston, MA.

**Wynn H. Kao**, Postdoctoral Research.

**Samuel G. Katz**, Pathology, Brigham and Women’s Hospital, Boston, MA.

**William T. Kimberly**, Preliminary Medicine, Massachusetts General Hospital, Boston, MA; Neurology, Harvard/Massachusetts General Hospital and Brigham and Women’s Hospital, Boston, MA.

**Rahul M. Kohli**, Internal Medicine, Hospital of the University of Pennsylvania, Philadelphia, PA.

**Mayra E. Lorenzo**, Preliminary Medicine, Brigham and Women’s/Faulkner Hospital, Boston, MA; Dermatology, University of Massachusetts Medical School, Worcester, MA.

**Kenway Louie**, Postdoctoral Research.

**Carolyn I. Rodriguez**, Psychiatry, New York Presbyterian Hospital, Columbia Presbyterian, New York, NY.

**Gisela M.R. Sandoval**, Psychiatry, University of Chicago Hospital, Chicago, IL.

**Michael W-C. Su**, Preliminary Medicine, Newton-Wellesley Hospital, Newton, MA; Dermatology, UC-Davis Medical Center, Sacramento, CA.

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**M.D.-Ph.D. Program**

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