Volume VIII
Number 5

BBS Bulletin

September/October 2004

Contents

A Star is Born: Creating the Harvard Stem Cell Institute

Olaia Naveiras Torres-Quiroga (G3)

Politics, Politics....

"Do you go for Presidential lines or for non-Presidential lines?" This may sound like a question for fashion victims during the upcoming election, but it is the essence of the current human stem cell debate in the United States.

At this moment, using federal funds to perform research on "non-Presidential" human embryonic stem cell lines (that is, any stem cell lines not among the pre-existing lines approved for research use by President Bush) constitutes a felony punishable by a minimum of 10 years in prison and a $1 million fine. While the Clinton administration allowed human embryonic stem (ES) cell research as long as the stem cell lines were derived with private funds, President Bush and his administration took a more ethically conservative stance and restricted federal funding exclusively for research on human ES cell lines derived before August 9th 2001. At the time the decision was made, these 78 so-called "Presidential lines" were thought to be both easily accessible to researchers and sufficient to determine the potential of stem cell therapies in the cure of degenerative diseases. Unfortunately, it is now known that (i) only 19 of these 78 ES lines are actually available for distribution, (ii) they are accumulating genetic abnormalities due to extensive culturing, and (iii) the fact that they were co-cultured with mouse fibroblasts makes them unusable for human clinical trials.

Luckily for the future of U.S. stem cell research, Harvard visionaries Douglas Melton and Andrew McMahon foresaw the limitations of the Presidential lines and, in 2001, used private money to develop new high quality human ES cell lines. Seventeen of these cell lines were published in March and soon will be widely available thanks to Howard Hughes Medical Institute funds. Still, very few U.S. investigators will be eligible to perform research with these non-Presidential lines because the majority of researchers rely, at least in part, on federal grant support.

see 'Stem Cell' on page 2

atggacttacggcatggatcgtttgacggcgatccagtttgaaccagtgaccagttttagggcaaatatatatgcacagattcagcatgacttacggcatgacttacgacttacgatggacttacggcatggatcgtttgacggcgatccagtttgaaccagtgaccagttttacaaatatatattga

2003 DMS Student Survey

Laura Burrack (G3)

A year and a half ago, DMS students were invited to complete a lengthy survey covering a variety of topics including general student satisfaction, faculty mentoring, and administrative issues. The survey data was never released to the DMS community leaving some of us on the BBS Bulletin staff (and likely many of the BBS Bulletin readers) to wonder what happened to the collected information. Specifically we wanted to know what was learned and how it was used to inform faculty members and program directors about student thoughts and needs as they make administrative and academic decisions. I recently talked with Tom Fox, the Associate Dean for Graduate Education, about the DMS survey to find out a bit more about the original goals of the survey and what was done with the knowledge gained from it.

The survey originated from a desire for formal student input in reviewing the current DMS programs and determining the future directions of graduate education at the medical school. The committee responsible for the survey was a group of faculty members including the directors of each of the four programs within DMS, and it included Bob Kingston, who subsequently became the new director of BBS. All current DMS students were asked to complete the on-line survey. Approximately 230 students responded to most or all of the survey

see 'DMS Survey' on page 3

Stm Cell, continued from page 1

A Sad State of Affairs

Currently, three years after the institution of President Bush's stem cell policy, the state of stem cell research in this country continues to lag behind its potential, as well as behind the continued advances of other nations. Where, at one time, the National Institutes of Health had anticipated the use of federal funds to perform research on ES lines privately derived from some of the 400,000 frozen embryos awaiting disposal at fertility clinics across the country, now many researchers avoid human ES research fearing greater restrictions on their future work. Here in the U.S., while 150 million potential candidates for stem cell therapies wait for news from Congress on the stem cell ban, embryonic stem cell research is rapidly advancing worldwide. In fact, just last March Shin Yong Moon's group in South Korea developed the first human ES cell line derived from a cloned blastocyst, demonstrating that somatic cell nuclear transfer (known before as therapeutic cloning) is possible in humans. The question remains as to how the U.S. can stay at the top of the stem cell community when the restrictions on this field are so great and the scientific questions so challenging.

Hope Springs Eternal – The Birth of the Harvard Stem Cell Institute

In response to this research crisis, several major U.S. initiatives have been created to allow for the continued study of the therapeutic potential of human embryonic stem cell research and to ensure non-federal funding when the use of non-Presidential lines is involved. Several states, including New Jersey and California, have or are considering legislation to provide private funding to promote continued stem cell research. While Massachusetts has yet to join the pro-stem cell community at the level of state legislation, Harvard is walking several steps ahead in the fight.

On April 23, 2004, the creation of the Harvard Stem Cell Institute (HSCI) was announced. Two main purposes brought the project together. The first is to gather efforts in a unified forum from multiple disciplines involved in studying the ethical, political, economic, and scientific issues inherent to ES cell research. The second goal is to promote increased collaboration among the already world renowned Harvard stem cell scientists in the hope that more progress could be made through collaboration than through competition. To meet these goals, the HSCI has successfully involved seven Harvard schools in the project: the Medical School, the School of Public Health, the School of Arts and Sciences, the Law School, the Business School, the Divinity School, and the Kennedy School of Government. Since the Institute must be privately funded in order to perform research on or to develop any new ES lines, a $100 million fund-raising campaign has been launched with full support of Harvard University President, Lawrence Summers.

With regard to the scientific work of the Institute, five pathologic conditions have been targeted as the initial research focus: diabetes, blood diseases, neurodegenerative diseases, cardiovascular diseases and musculoskeletal diseases. Each project funded by the HSCI will have to be approved by a mixed committee of scientists and ethicists. Co-directors Doug Melton (GSAS) and David Scadden (MGH) are also committed to ensuring that the research produced through the HSCI will eventually be used clinically to treat as many diseases as possible. Ultimately, collaborative efforts must merge to answer the one common question on human stem cell research: how to differentiate embryonic stem cells into specific tissues that can be used for the cure of these target diseases. There are currently 25 participating Harvard stem cell labs, 13 of which are affiliated with the BBS Program and listed below. To promote a sense of community and communication among these labs, joint seminars are held on a monthly basis. In addition, an annual symposium is planned to allow for disclosure of new findings to the whole Harvard medical community. No new building for the Institute is planned in the near future, but a new stem cell core facility will allow all researchers both to profit from technical expertise and to assay non-Presidential ES lines exclusively through private funding.

Overall, HSCI truly is a one-of-a kind endeavor uniting researchers from a myriad of disciplines to study a common issue. It is still only the beginning for this institute, and there will definitely be challenging times ahead, scientifically and politically. Many technical problems must be defeated before differentiated tissues from ES cells constitute a widespread therapeutic option for specific diseases, and many ethical issues are still to be raised. In the midst of these issues, a think-tank like the HSCI will be an incredibly valuable resource to find optimal solutions, and it will be exciting to watch the future of this organization unfold.

(More information on the Harvard Stem Cell Institute will be available soon at www.stemcell.harvard.edu)

BBS Stem Cell Laboratories

Spyros Artavanis-Tsakonas
Connie Cepko
George Daley
Niels Geijsen
Gary Gilliland
Ron Kahn
Andrew Lassar
Richard Mulligan
Stuart Orkin
Bruce Speigelman
Daniel Tenen
Chris Walsh
Len Zon

Thinking Outside the Ivory Tower: The Alternative Career Search

Katie Auld (G6)

As you progress through graduate school, you may notice a transition: All of a sudden, rather than being asked when you will (finally) graduate, you will start being asked what you plan to do when you graduate. This question can strike fear into the hearts of all students, but it can be particularly daunting for the many students in our program who wish to pursue careers outside academia. Although there are many people on Longwood who can provide input on postdoctoral fellowships, it is not as easy to investigate the other career possibilities out there. While transitioning out of academic research can be intimidating, there are helpful resources available. To find out which of these resources are the most useful, I consulted a few recent BBS graduates who are currently working outside of academia. Melissa Rones ('01) works in patent law, Mari Takasu ('02) and Hiten Patel ('03) are consultants, and Sarah Seton-Rogers ('04) is a medical writer. When asked about how to find more non-traditional jobs like these, a common complaint was that there was no central place to find these resources. They did, however, offer insights from their own job searches. Below is a compilation of the career resource information that they gave me, along with some of my own experiences in the search for alternative career options.

1) Professional Networking

The most commonly offered advice to our question regarding alternative careers was simply to talk to as many people as possible. The informational interview is an effective

see 'Alternative Career' on page 4

atggacttacggcatggatcgtttgacggcgatccagtttgaaccagtgaccagttttagggcaaatatatatgcacagattcagcatgacttacggcatgacttacgacttacatggatcgtttgacggcgatccagtttgaaccagtgaccagttttagggcaaatatatattcagcatgacttacggcatgacttacgacttacgtga

DMS Survey, continued from page 1

questions for a total response rate of slightly less than 40%. The committee was pleased with the many thoughtful evaluations and suggestions. Although the overall response rate was lower than ideal, perhaps because the survey was so lengthy, students at all stages of their graduate school careers responded with no obvious correlation between response rate and graduate year. Also, the response rates among the different programs within DMS were comparable. The survey produced an enormous amount of data, much in the form of written comments. Only about half of the questions had quantitative components and could be easily condensed. The amount of data collected turned out to be one of the problems blocking the analysis and release of the survey results. The complete results of the survey were given to each member of the survey committee, but a full analysis was not completed. Other issues also competed with committee members' time for further analysis. The lack of a condensed, understandable set of data prevented release to the greater DMS community.

During one of our discussions, Dr. Fox showed me a summary of BBS student responses to most of the quantitative questions. Of the data that was made available to me, it was clear that the overall feedback from students was positive, but that students are less satisfied with certain aspects of the program. To the question "Are you satisfied with your current program?" 74.2% of BBS students responding to the survey answered "yes," 16.7% said "maybe," 1.5% replied "can't say" and the remaining 7.6% were unsatisfied. The program also received encouraging responses to questions asking "Do you think the program is providing excellent training to become a scientist?" and "Do you believe the program provides a stimulating intellectual environment?" A vast majority of BBS students also reported that their needs were being met by the program staff. The survey did expose some areas where improvements can be made. One of these areas is providing better faculty mentoring for students. When asked "How would you rate the faculty in DMS regarding their qualities as scientists?" on a scale of 1 (excellent) to 5 (poor), 73.5% of BBS students gave the faculty a score of 1 and 22.7% gave a score of 2. However, when the students were asked to rate the faculty as mentors, the scores were much lower with an average rating of about 2.5 compared to an average rating of 1.3 for the previous question. One of the changes in BBS that Bob Kingston has discussed is the development of a stronger mentoring relationship between faculty advisors and students. This change may help to address the issue of faculty mentoring raised by student responses to this survey question.

In addition to gathering opinions about program satisfaction and mentoring, the survey also included questions to obtain student feedback to guide administrative decisions. For example, a majority of BBS students felt that DMS should remain separate from the Cambridge-based graduate programs. These responses have influenced discussions between DMS administration and GSAS about this topic. One of several desires expressed by students was to have electronically distributed stipends. This is now available to all students.

According to Dr. Fox, there is no question that the feedback obtained from the survey has been useful. However clear mandates are harder to discern due to the lack of complete data analysis and differing student opinions on several issues. DMS would like to do another survey in the near future, especially since some of the data in the old survey is now out of date or opinions may have changed. The goals of the new survey include updating the results from the survey in 2003 and obtaining the data in a more readily accessible and analyzable format. DMS would also like to include several students on the new survey committee. Additionally, Dr. Fox stressed that students should feel free to provide input to DMS and the individual programs outside of a formal survey. He and others welcome discussions and suggestions from students.

Alternative Careers, continued from page 3

way to learn more about a career, so ask your lab-mates, classmates, friends, and family if they know anyone in the field you are considering. In fact, part of what is great about being in such a large program is being part of the BBS network… so use it!

2) Fairs and Forums

Another great way to meet people in various careers is to attend the job fairs and career forums sponsored by BBS, DMS, the Harvard Office of Career Services, and the Biotechnology Club (see www.thebiotechclub.org for events). At the fairs, companies and organizations come to Harvard to recruit upcoming graduates for positions, and even if you are not looking for a job yet, the representatives are usually very willing to talk about what they do and what they like about it. Aside from being an effective networking tool, these glimpses into daily life outside the lab environment can introduce you to various career options you may not have considered otherwise.

3) The Office of Career Services

This office is based in Cambridge, and as a result, we are less familiar with it here on Longwood. However, I highly recommend checking out their website at www.ocs.fas.harvard.edu. This office has many resources, events, and counselors to help students through the career search, including everything from personality and interest testing, to job listings and taped mock interviews. There is even a three-session Career Transition Workshop Series specifically designed for GSAS students wondering about options outside academia.

4) Books on Alternative Careers

There is a plethora of career-hunting guides out there, and some of the most widely read general guides are the What Color is Your Parachute? series of books by Richard Nelson Bolles. For a more specific look at some of the non-academic options available to scientists, consult Alternative Careers in Science: Leaving the Ivory Tower, edited by Cynthia Robbins-Roth. This collection of essays by science PhDs is useful for its inside look into the transition from academic science into the worlds of business, publishing, broadcasting, consulting, patent law, public policy, and more. Although this resource is somewhat out-of-date, having been published in 1998, it is still worth reading, if only for the descriptions of daily life outside of the lab.

5) Career Guides on the Web

Once you have decided on a few fields that interest you, how do you find your dream job? In addition to establishing contacts and using the Office of Career Services, you may consult several job-search websites recommended by our alums: www.vault.com and www.wetfeet.com (both general); and www.biospace.com (specific to science jobs). Some of these sites also offer advice for resumes and interviews, so they can be helpful at all stages of the job search process.

6) Get Involved

A great way to learn about a new field is to become involved in it while still a student. For instance, if you're thinking about getting into business, read the Wall Street Journal; if you want to be a science writer, write for Harvard papers and join the National Association of Science Writers. Joining a professional organization such as the NASW can give you access to job postings and lists of members who might be helpful contacts.

7) Try This On for Size: Facilitated Internships

If you're still hesitant about which direction to go after graduate school, try one of the facilitated internships available through the BBS program. The most popular internships are at AstraZeneca and Cell Press, and there is a list of other affiliates in the BBS office. These paid internships are a great way to try out a different career path for a short period of time, ranging from three to twelve months, while gaining valuable experience to add to your resume.

8) Begin Early

In conclusion, deciding on a post-graduate career will take research and soul-searching. According to the Harvard Office of Career Services, there are several phases of the process: self-assessment, career exploration, and the job search. In other words, to get the best results from your job search, you will need time to figure out what interests you. Therefore, as one of our alums advises, the most important resource is time: Plan enough time for the process and you'll likely be happier with the outcome!

Helpful Career Planning Resources

Harvard Office of Career Services
54 Dunster St, Cambridge

Websites

www.ocs.fas.harvard.edu
www.thebiotechclub.org
www.vault.com
www.wetfeet.com
www.biospace.com

Books

What Color Is Your Parachute? 2004: A Practical Manual for Job-Hunters & Career-Changers" by Richard Nelson Bolles

Alternative Careers in Science by Cynthia Robbins-Roth

So What Are You Going to Do With That?: A Guide for M.A.'s and PhD's Seeking Careers Outside the Academy by Susan Basalla and Maggie Debelius (Out-of-print, but still available used or at libraries)

BBS Awards 101

Yao Chen (G3)

There are many faculty, staff and students who show extraordinary commitment to the continued excellence of the BBS Program. Their time and effort make a tremendous impact on our graduate education. Therefore, the students of the BBS Program present the BBS awards every year to recognize the contributions and achievements of these people. There are three main categories of awards, each intended to honor a different facet of education: Teaching, Mentoring, and Service.

The mediocre teacher tells. The good teacher explains. The superior teacher demonstrates. The great teacher inspires. (William A. Ward)

A substantial portion of a graduate student's early years is spent in the classroom. Many students are influenced at this stage by the quality of instruction they receive. Typically, recipients of the ***BBS Award for Teaching*** are exceptional lecturers who recognize the importance of these early impressionable years. These faculty or students genuinely care about their pupils' education. They provide clear, concise, and inspirational lectures; their offices are always open, and they give their time generously to ensure that the willing student gains a thorough understanding of any given topic.

Mentors are advisors, people with career experience willing to share their knowledge; supporters, people who give emotional and moral encouragement; tutors, people who give specific feedback on one's performance; masters, in the sense of employers to whom one is apprenticed; sponsors, sources of information about and aid in obtaining opportunities; models, of identity, of the kind of person one should be to be an academic. (The Council of Graduate Schools)

After we have finished our courses and come to our thesis research stage, our mentor often has the most direct influence in shaping our intellectual growth and career path. With the ***BBS Award for Mentoring***, we show our appreciation to the mentors who have shown concern to our well-being, who have helped and guided us in our graduate work, who have provided constructive criticism on our scientific strengths and weaknesses, who have imparted to us their experience in science itself and the making of a scientist, and who have supported and encouraged us to achieve the goals of our chosen career path. In essence, we honor the mentors - our official and nonofficial advisors - who have helped us to become the individuals we want to be.

Small service is true service, while it lasts. (William Wordsworth)

With the ***BBS Award for Service***, we acknowledge the faculty, staff or students who have made a real difference to the BBS Program. Through lasting small deeds or initiatives to make changes, they have devoted their time to ensure or improve the quality of student life, curriculum or program services. We honor their commitment with the BBS Services Award.

Usually, the BBS Awards Committee opens nomination online to all students of the BBS Program between May and June. After all nominations are received, a nomination meeting is held to determine the finalists for each category. This year, in order to facilitate student participation, voting for the final award winners took place online.

Finally, if you are wondering who this year's winners are, they remain secret until the awards ceremony at the BBS retreat in September. A list of past winners (and more information regarding the BBS Awards) can be found at http://harvard.bhmediaservices.com/awards/, a website designed by Corey Bakalarski.

atggacttacggcatggatcgtttgacggcgatccagtttgaaccagtgaccagttttagggcaaatatatatgcacagattcagcatgacttacggcatgacttacgacttacatggatcgtttgacggcgatccagtttgaaccagtgaccagttttagggcaaatatatattcagcatgacttacggcatgacttacgacttacgtga

Community Service Opportunities

Jennifer Svendsen (G2)

Several months ago I found myself wondering, how I could get into community service on the Longwood campus. Since then I have compiled a list of service opportunities in Boston. Resources on campus include:

1. **Jean Hess and the Office of Enrichment Programs(OEP) located at 307 Gordon.** This office has drawers full of community service oppurtunities and is open M-F 8:30-5pm You can also make an appointment with Jean by calling her at 617-432-0951 or emailing her at Jean_hess@hms.harvard.edu.

2. **Online at the mycourses website.** To get there click the education link on the mycourses home page and then go to the OEP homepage, then select the OEP database and search for community service oppurtunities

3. **Ebert Community Service Day on Nov 4th in the Mec Atrium at 4pm.** Representatives from various organizations come to this day and offer information about service oppurtunities.

One last website that I found to be excellent, with over a 1000 listings is the United Way website at www.volunteersolutions.org/boston/. This website has contact info for all the programs they list, they have a detailed description about the programs and you can even contact the programs directly from this website.

The Harvard-Manville Mentoring Program-*Longwood Area/Mission Hill*

Mentor children from the Manville School of The Judge Baker Children's Center. Children have emotional, behavioral, and learning problems.

see 'Community Service' on page 6

Community Service, continued from page 5

Ethos- *Longwood Area/ JP*
Help low income elders in the greater boston area stay at home and remain independent for as long as possible. Also serves LGBT elders.

Brookline School-Community Partnership- Steps to Success(STS)- *Longwood Area/Brookline*
Tutor teens, grades 7-11 from low-income families in Brookline.

Home For Little Wanderers-*Longwood Area*
Work in various programs that focus on the healthy development of children at risk, their families and communities.

Food For Free-*Cambridge*
Help prevent local hunger by rescuing fresh foods that might otherwise go to waste and distributing them within the emergency food system.

Prevention NOW!, Inc- AAA School Age Child Care Program-*Longwood Area/ JP*
Work with others to provide comprehensive and innovative services that meet the educational, recreational, social, health and vocational needs of modern urban youth.

MissionSAFE: A New Beginning, Inc.- *Longwood Area/ Mission Hill*
Tutor and/or mentor primarily African-American and Latino adolesescents from low-income and at-risk neighborhoods.

Reach Out and Read -*Longwood Area*
Read to young children(6mon- 4yrs), model book-sharing techniques for parents and show them by example that reading aloud is fun for parent and child.

Project Bread-The Walk For Hunger- *North End*
Work to advocate freedom from hunger across the Commonwealth. A main project is the walk for hunger.

The Boston Rescue Mission- *Downtown Boston*
Work in residential programs, with clients going through alcohol- and drug-recovery, or in their nightly shelter for homeless men.

GREATER Boston Food Bank- *South Boston/Roxbury*
Sort, categorize and distribute donated products to the hungry.

Boston Area Rape Crisis Center (BARCC)-*Cambridge*
Work in many areas dealing with rape awareness and rape survivors including the crisis hotline, the medical advocacy program, and legal advocacy.

Springwell, Inc.- *West Boston*
Work to keep individuals over sixty in their own homes safely and independently for as long as possible.

Casa Myrna Vazquez- *Boston*
Work with an organization that provides comprehensive services to women and children who are victims of domestic violence.

For more information on the above organizations including contact information and websites please visit the BBS Bulletin website at http://www.hms.harvard.edu/dms/bbs/bulletin/index.html and click on the link to the full community services article.

atggacttacggcatggatcgtttgacggcgatccagtttgaaccagtgaccagttttagggcaaatatatatgcacagattcagcatgacttacggcatgacttacgacttacatggatcgtttgacggcgatccagtttgaaccagtgaccagttttagggcaaatatatattcagcatgacttacggcatgacttacgacttacgtga

Faculty Profile: David Rudner
Assistant Professor of Microbiology and Molecular Genetics

Yao Chen (G3)

Research Interest: Understanding basic mechanisms in bacterial differentiation, including cell-cell signaling and determinants of sub-cellular protein localization, with a budding interest in chromosome architecture and dynamics.

Beginnings: Rudner grew up in New York City. His mother is a microbiologist who, like Rudner, works on *Bacillus subtilis*. As a child, his mother often took him to the laboratory. To keep Rudner out of trouble, she would have him count colonies on bacterial plates. That is where the seeds were planted. Rudner majored in physics as an undergraduate at Oberlin College. However, he ultimately decided to work in biology, partly because it was difficult to be both a theorist and an experimentalist in physics. Biology offered him the opportunity to generate hypotheses and do the experiments necessary to test them. Rudner's love for solving puzzles led him to Alan Grossman's laboratory at MIT. The two years he spent there had a tremendous impact on Rudner's intellectual growth. He decided to go to graduate school to study biology, and he fell in love with microbiology.

Graduate School and Beyond: As a graduate student at Berkeley, Rudner studied alternative splicing and sex determination pathways in *Drosophila*. He worked simultaneously on both the genetics (in Thomas Cline's lab) and the biochemistry (in Donald Rio's lab) of the splicing pathways specified by *Sex-lethal*, the master regulator that controls sexual dimorphism and dosage compensation. Through his studies, he learned an invaluable lesson in experimental research: what we learn in the test tube is not always true inside the organism. Therefore, it is a tremendous advantage to work in a system, such as *B. subtilis*, where one can easily do both. After graduate school, Rudner returned

Continued on bottom of facing page...

Recent BBS Student Publications

Asthana S, King OD, Gibbons FD, Roth FP. (2004). Predicting protein complex membership using probabilistic network reliability. *Genome Research* 14(6):1170-1175.

Beck LH Jr (recent grad), **Goodwin AM** (recent grad), D'Amore PA. (2004). Culture of large vessel endothelial cells on floating collagen gels promotes a phenotype characteristic of endothelium in vivo. *Differentiation* 72(4):162-7

Cohen HY, Miller C, **Bitterman KJ** (G5), Wall NR, Hekking B, Kessler B, Howitz KT, Gorospe M, De Cabo R, Sinclair DA. (2004). Calorie Restriction Promotes Mammalian Cell Survival by Inducing the SIRT1 Deacetylase. *Science* 305: 390-392.

Everley PA (G4), Krijgsveld J, Zetter BR, Gygi SP. (2004). Quantitative cancer proteomics: stable isotope labeling with amino acids in cell culture (SILAC) as a tool for prostate cancer research. *Mol Cell Proteo* 3:729-735.

Fukuto HS (recent grad), Ferkey DM, Apicella AJ, Lans H, Sharmeen T, Chen W, Lefkowitz RJ, Jansen G, Schafer WR, and Hart AC. (2004). G Protein-Coupled Receptor Kinase Function Is Essential for Chemosensation in C. elegans. *Neuron* 42: 581-593.

Chen J, Wall NR, **Kocher K (**G3), Duclos N, Fabbro D, Nueberg D, Griffin JD, Shi Y, Gilliland DG. (2004). Stable expression of small interfering RNA sensitizes TEL-PDGFbetaR to inhibition with imatinib or rapamycin. *J Clin Invest.* 113(12):1784-91.

Paez JG*, Janne PA*, **Lee JC*** (G5), Tracy S, Greulich H, Gabriel S, Herman P, Kaye FJ, Lindeman N, Boggon TJ, Naoki K, Sasaki H, Fujii Y, Eck MJ, Sellers WR, Johnson BE, Meyerson M. (2004). EGFR mutations in lung cancer: correlation with clinical response to gefitinib therapy. *Science* 304(5676):1497-500.

Lilley BN (G6) and Ploegh HL. (2004). A membrane protein required for dislocation of misfolded proteins from the ER. *Nature* 429:834-40

Lenz DH, Mok KC, **Lilley BN** (G6), Kulkarni RV, Wingreen NS, Bassler BL. (2004). The Small RNA Chaperone Hfq and Multiple Small RNAs Control Quorum Sensing in Vibrio harveyi and Vibrio cholerae. *Cell* 118:69-82.

McKee AE (G4), Silver PA. (2004). REF-ereeing the cytoplasmic fate of mRNA via nuclear export. *Dev Cell* 6(6):740-2.

Scherz PJ (G4), Harfe BD, McMahon AP, Tabin CJ. (2004). The limb bud Shh-Fgf feedback loop is terminated by expansion of former ZPA cells. *Science* 305(5682):396-9.

Han J-DJ, Bertin N, Hao T, Goldberg DS, Berriz GF, **Zhang LV** (G4), Dupuy D, Walhout AJM, Cusick ME, Roth FP, and Vidal M. (2004). Evidence for dynamically organized modularity in the yeast protein-protein interaction network. *Nature* 430(6995):88-93

*These authors contributed equally to this publication.

Announcements

Christopher Brown (G3) was recently engaged to Stephanie Thurston, a recent Cornell University graduate who is currently serving as an officer in the US Navy.

Christin Cvetic (G6) was engaged to Jarrett Munkittrick on July 17th in Philadelphia. An October 2006 wedding is planned.

Jason Heindl (G3) married Karen Wiesenauer on June 5th, in Ann Arbor, MI.

Kerry Kocher (G3) and Dan Brown were married on June 5, 2004 in Allentown, PA.

Congratulations to Elyan and **Abraham Rosenbaum** (G2) on the birth of a daughter, Maidy, on July 14th.

to the East Coast to study *B. subtilis* sporulation in Richard Losick's laboratory at Harvard. He chose this topic because the field was open and a single lab could work on many interesting problems.

Hobbies: Rudner enjoys hiking and bicycling. He also has a passion for traveling, and strives to do so at every opportunity. Between his work at MIT and graduate studies at Berkeley, he traveled to Western Europe, Scandinavia, and Eastern Europe. After graduate school, he spent three months wandering through Hungary, Romania, Bulgaria, Turkey, Syria, Jordan, and Israel. Prior to starting his lab at Harvard Medical School, he spent time in France and the Netherlands. He loves the anthropological aspect of his travels, and is especially interested in countries that don't have a strong Western influence. He enjoys the experience of seeing and feeling a place and time that are unfamiliar.

Faculty Profile: David Fisher
Deptartment of BCMP & Associate Professor of Pediatrics

Maria Naylor (G2)

Research Interests: The Fisher lab seeks to understand the roles of helix-loop-helix transcriptional regulators, such as MITF, in development and cancer. In addition to utilizing basic biochemistry, cell biology, and animal models, the lab adopts a clinical perspective to approaching basic science questions, and is involved in clinical trials for melanoma and other diseases.

Beginnings: Fisher grew up in New Jersey and was exposed to experimental science from an early age by his father, a biochemistry professor at Rutgers. Despite some entertaining and expensive laboratory mishaps (including one that destroyed thousands of dollars worth of chromatography equipment in his father's lab), Fisher loved science and majored in biology and chemistry at Swarthmore College. A defining moment in Fisher's scientific career came when he was a summer student in Bob Weinberg's lab. He was given a project to transfect 3T3 cells with various samples of cancer DNA, in order to determine if real cancers contained genes capable of producing transformed foci. One of his samples succeeded and was eventually traced to a new oncogene: Ras.

Graduate School and Beyond: Fisher earned his M.D./Ph.D. at Rockefeller University and Cornell Medical College,

working on a joint project between the labs of Henry Kunkel and Günter Blobel that involved snRNP biosynthesis and its roles in auto-immune diseases. His post-doctorate work in Phil Sharp's lab at MIT focused on Myc DNA recognition and binding. Recruited to Harvard in 1993, Fisher heads the melanoma program at Dana-Farber and also treats cancer patients at Children's Hospital.

Odds and Ends: The profession of his mother, a musician, greatly influenced Fisher as well. As an undergraduate at Swarthmore, he also studied cello at the Curtis Institute of Music. He later won the Artists International Competition and performed at Carnegie Hall. Above all, he admires his father for successfully balancing work and family, and aspires to do the same himself. Although Fisher no longer plays the cello quite as extensively, his time is filled by running his lab and participating in activities with his four sons.

Goldenson Building , Room 129
Harvard Medical School
220 Longwood Avenue
Boston, MA 02115