

UMB MSTP SAYS FAREWELL TO NANCY MALSON EIGHT YEARS' DEDICATED SERVICE

JULIE BROWNLEY, GS II

In thinking about writing an article about Nancy Malson's recent retirement from the MD/PhD program, I considered starting off with the standard "I'm honored to be writing this article about such a special person," but I realized that there is absolutely no need for such a preface. I think the best way to illustrate Nancy's amazing character and commitment to the program and its students is by telling a personal story: After my undergraduate education at Towson University I was working as a pre-doctoral fellow with Dr. Alessio Fasano at the Mucosal Biology Research Center in HSFII. I became entranced by the research, and began to envision a life mission even more fascinating than clinical medicine—I was being seduced by siren song of TRANSLATIONAL SCIENCE. Holding me back was the conviction that I wasn't competitive enough to enter this world, but I thought I should at least check it out. Walking into the MD/PhD office, Nancy's warm welcome melted away my apprehension. I felt free to ask questions about my best chances of getting into the program. She arranged several meetings with Dr. Rogers, but I think some of the most encouraging moments were those sitting in her office when she often reminded me to "go for it"—there's no use in carrying around regret. When I was accepted into the program in 2006, we both enjoyed the triumph.



NANCY MALSON

I credit my success to her encouragement and support, but I can't claim to be unique. I remember her saying "I love ALL of the people I work with, but if it weren't for the daily interactions with students, this job just wouldn't be the same." Interacting with Nancy, it's easy to believe that her students brought her a special joy and challenge to each and every day. She says that she has always treated students with the caring and respect that she would with her own children.

It's now been over three months since Nancy officially retired from her position as Program Manager of the MD/PhD program and she will happily admit, 'I'm having so much fun... time is flying!', though she will never fail to add how much she misses us all. However, it's not in Nancy's nature to take it easy--she

still has quite the full plate. She and her husband of 41 years, Don, just refinished the bottom of their motor boat and are ready to put it in the gunpowder for another season. Nancy said that they are hoping to have a few more sunset cruises this year, with a nice bottle of wine and an Audubon bird watching guide close at hand. Sounds romantic!

Nancy is also currently training for her 2nd Iron Girl Triathlon Competition this August. Nancy and her husband volunteered for the race in 2008 and were inspired by the diversity of women running across the finish line. Last year, at the age of 59 (wow!), Nancy finished the .62 mile swim, 17.5 mile bike ride, and 3.4 mile run in just over 3 hours, although she will tell you that her goal was simply to finish the race. This year she has set her sights on beating last year's time. Ultimately she views these sorts of challenges as a fun and exciting way to stay healthy so that she can enjoy the years of retirement.

Her volunteerism extends beyond athletics to the arts. She has spent many nights collecting tickets or ushering at the Hippodrome Theatre and the Meyerhoff Symphony Hall,

Continued on Page 3

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GETTING THE PRE-DOCTORAL GRANT YOU WANT

BY PAZ LUNCSFORD, GS III

I'm hoping to apply for a pre-doctoral research award this summer and I've been asking our classmates for suggestions on how to proceed. Even before writing my first word, there were two questions I used to orient myself. First, what grants are available to me, either through the NIH or from privately funded sources? Second, if I apply for an NIH-funded grant, which institutes will fund me?

Where is the Money?

To address the first question, Dr. Rogers directed me to the Association of American Medical Colleges (AAMC). The AAMC website has an entire document on what funding sources are available for MD/PhD students along with a wealth of other information including some ideas on how to choose the right grant based on research interests. This website also has some information on private funding sources such as the American Diabetes Association, American Cancer Society, and others, including links to these groups and the F award applications. I recommend that all students interested in applying for grants go to this website first!

In addition to private funding information, the AAMC website has an overview of the two federal sources of funding for MD/PhD students: 1) the F30 grant that provides research service awards for individual pre-doctoral MD/PhD fellows and 2) the F31 grant that provides individual pre-doctoral awards to students from underrepresented groups to promote diversity in health-related research. There are three deadlines each year, (in April, August, and December), for submitting an F30 or F31 grant proposal. While the F31 provides financial support to train pre-doctoral students "from underrepresented

racial and ethnic groups, individuals with disabilities, and individuals from disadvantaged backgrounds," the eligibility criteria seem to be rather broad and may vary by institute. Melissa Liriano Vyfhuis, GSIII, strongly recommends applying for the F30 over the F31: "If you are an MD/PhD student, apply for the F30. You are sure to get funding for the rest of your MD/PhD student career, where as for the F31, funding during medical school is obscure." Melissa submitted her F31 application to the NCI in April of 2009, received her score that summer, and was notified of receiving the grant shortly thereafter. Melissa's funding for 3 years began in November of 2009 for her project "Protein dynamics of calcium-S100A5 in the presence and absence of target peptide."

Options are fewer for our international students. Jessica Shiu, GSI, submitted her grant on "The role of alternatively activated macrophages in nematode infection" to the A G A (American Gastroenterological Association) in February 2008 and received funding for 10 weeks. She says "In general, it's been difficult to find grants for non-U.S. citizens. I am having trouble identifying full graduate student awards or grants right now that will support me for more than a summer though. There used to be an option to apply for CIHR (Canadian Institutes of Health Research) but it seems like they are limiting it to Canadian universities now."

Which Institute?

If I decide to go for an NIH grant, the decisions aren't over. Determining whether the project is aligned with the research missions of a specific institute will require some effort: internet searches; discussions with Dr. Rogers, my P.I. and other faculty members; and even getting in touch with the grant management officer

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affiliated with the specific institute. Unfortunately for me and other UMB students with cancer-related projects, an F30 from the NCI is not an option. NCI does award F30s, but only to students going to medical schools with a "designated cancer center." As of printing, Maryland's Greenbaum Cancer Center has not been recognized as such. In my case, my PI and I are in the process of determining who best to review my grant.

Thoughts on Writing

Many of our students write grants during their graduate school years. Making mine stand out in the huge number that are processed every year seemed like an impossible challenge, especially because issues of style and readability, "grantsmanship," can be as important as the actual science. What does a bunch of scientists locked in a room in Bethesda for two days want to see? Nick Frost (GSIII) submitted his F30 on "Regulation of actin dynamics at functional subdomains within dendritic spines" to

(Continued on Page 7)

GRADUATING STUDENTS

TIM FEENEY, MS II

Amanda Mason is getting set to graduate from our program this year and is preparing for a post-doctoral fellowship. She came to the University of Maryland after graduating summa cum laude from Goucher College where she majored in chemistry. After the first two years of medical school, she pursued her PhD in Medical Physiology in Paul Welling's lab. Under Dr. Welling's guidance, she studied protein trafficking and discovered a novel internalization motif in the inwardly rectifying potassium channel, Kir2.3. She is married and has two children, both of whom were born during graduate school. On the rare occasion that she has free time, she enjoys reading, traveling, watching sports, and boating. Amanda has been very successful and has contributed a great deal to our program. She is helpful, always willing to dispense advice, and very easy to get along with.

What were some highlights?

I think some of the greatest highlights occurred while getting to know all the other MD/PhD students. I was an anatomy lab partner with former MD/PhD students, Darryl Auston and Carl Deetz. Although I was not a fan of anatomy, it was a great bonding experience. Darryl and Carl become two of my closest friends during the first few years of medical school. Coincidentally, Darryl and I both had a daughter born on the same day a few years later. Christine Campo Alewine and I were in Paul Welling's lab together and both had two kids at very similar times. I've talked to Cristina several times this year to get her advice as I was contemplating my career decisions. Going to the National MD/PhD conference with Darryl and Zach Roberts was also a ton of fun. Although I can't mention each person



AMANDA MASON, MD PHD

by name, I cherish many different friendships that have grown while traversing the MD/PhD path.

How did you select your mentor?

I had several different MD/PhD advisory committee meetings that included Dr. Welling during the first year of medical school. He really seemed to care about the well-being of students, and I respected his advice. As I began to contemplate which lab to choose for my summer rotation between first and second year of medical school, I scheduled a meeting with him to get his advice on which lab to choose. He asked me about my interests and suggested several different labs that matched those interests. He also told me about several different projects in his own lab. After meeting with a few other PIs, I decided that his lab was the best fit. Although some of the other labs had very exciting and high-profile projects, I felt that some of the other PIs were stretched too thin and wouldn't be able to provide as much direct guidance. I feel like I couldn't have made a better choice. Dr. Welling was always available to offer suggestions while allowing me to

grow as a scientist and learn to make my own choices. He also offered tons of feedback while writing my paper and grant. Although I'm no longer in his lab, I continue to seek his advice frequently as I'm making career choices and know his advice will be insightful.

How did you combine your personal and academic lives?

It definitely wasn't easy. I got married over winter break during MSII, and we postponed our honeymoon until spring break. My husband went along with my plan to have kids during graduate school, and my son was born two weeks before the end of graduate school classes. I studied for my finals and PhD qualifying exams as a sleep-deprived first-time mom. (I definitely don't recommend that.) I was placed on bed rest at the end of my daughter's pregnancy but fortunately was able to use that time to write my grant. I think the most important factor has been having a strong support network. My husband is also a very motivated person and extremely supportive of my career choices. My parents have been wonderful, and my mom retired from her job in order to help care for my children.

How did your career goals develop?

I think my career goals are still in transition. I've always been interested in pediatrics. Although I've decided not to enter a residency at this time, I'm still undecided whether I'm completely finished with a clinical career. I'm currently applying for post-docs at NIH and Hopkins, all of which involve pediatric research.

Why did you opt out of the match?

The decision to withdraw from the match was not easy to make, but I feel like it was the right decision for

(Continued on Page 9)

FAST FORWARD

APARNA KISHOR, GS II

Dr Stephen Shorofsky, MD, PhD is surprised by his own career path. He received both degrees through the University of Chicago's MSTP but originally considered his medical education ancillary to his goal of being a research scientist. As a result, he prioritized research throughout his training: during his 3 year medicine residency, he combined all vacation and elective time to make 9 clear months for research and he divided his cardiology fellowship (also three years) evenly between clinic and research. For 12 years after his training he was active in both worlds. These days, however, he directs Maryland's Clinical Electrophysiology Program and is almost exclusively clinical. "There will always be more rats," Shorofsky says, "if you care at all about patients, you will keep getting pulled back to the clinic."

The most efficient way to become a clinical researcher, according to Dr Shorofsky is to complete a postdoc after medical school; pursuing a PhD is for the love of lab. He warns that a dual degree person "is not as good as either degree alone" because we keep bouncing between clinic and the bench. However, our purpose is different. Having both aspects of training, we are able to draw together two seemingly distant worlds: the clinic, in which "you can't control

anything" and the bench, where "they used to say that if you can't do it in six experiments, you designed it wrong."

When considering medical school, Dr Shorofsky mentions that the difference between dual degree students and the typical med student is most apparent in the clinical years. MD/PhD students "haven't been memorizing their whole life and are confident with people." We are already experts in something and more interested in learning and finding our specialty rather than trying to impress our attending, making it possible for us to get more out of our clinical time.

Dr Shorofsky has a number of ideas about institutional support and mentoring. He argues that an institution offering a dual degree training program must make an "outright commitment" to its students. The goal is to complete the PhD within three years but Shorofsky urges the dual degree student to "plan to the end of your training after medical school," in order to ensure research time throughout. Picking a good environment for oneself continues to be important right up to the first job—there should be the opportunity for good mentorship and collaborators with every step.

In life, Dr Shorofsky feels that his children are his biggest success. Dr Shorofsky's policy was to make sure



STEPHEN SHOROFSKY, MD PhD

to eat breakfast with his family because he knew he might not be available later at night. Another key to his happiness is that his wife had "life of [her] own" to keep her busy as he developed his career. Ultimately, however, Shorofsky feels that it is unsustainable to continue to be both a clinician and a researcher if you "also want a life."

Even with decades of training, it is difficult to predict what may lie ahead. It is clear that Dr Shorofsky loves what he is currently doing, but he loved the past incarnations of his career as well. His life once again demonstrates the centrality of flexibility to both the training and career of an MD/PhD.

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BOOK REVIEW: *ANATHEM*, BY NEIL STEPHENSON

JOSHUA LIEBERMAN, GS II

Anthem is the story of Erasmus, a young *avout* – essentially a Scientist-Monk – who is plunged into a richly developed adventure. In Neil Stephenson's work of speculative-fiction we are introduced to an Earth-like world almost 4000 years out from "the Terrible events." As a result of these events, scientists have sworn

off technology – *praxis*, in Stephenson's lexicon – and live cloistered from the outside world. These *avout* study everything from philosophy, logic and rhetoric, to cosmology, quantum physics and plant biology. Central to their learning are math and music.

Anthem opens with the ritual opening of Erasmus' monastery gates. From here, Erasmus and his

small group of friends fall into an exhilarating adventure of world-shaking proportions. The book will draw fans of many different genres, but there is special appeal for those who work in the sciences.

Stephenson's characters are very accessible and develop naturally. The central group of 18-year-olds

(Continued on Page 9)

AROUND BALTIMORE

APARNA KISHOR, GS II

There's a lot going on this summer, and I hope you take advantage of the myriad options!

As always, there are weekend events at the **Maryland Zoo** and the **National Aquarium**--keep checking on their websites. The **Walters** has a number of exciting exhibits going on, including ones on mummies, Islamic Manuscripts and Japanese Art. There will be a number of concerts at the **Pier Six Pavilion**, so keep an eye on their schedule. The **BSO** has a really awesome program coming up, available in its entirety on their website. Of course, you can go to **trivia** at the Metropolitan or **swing** at the Metropolitan or **swing** at Charm City Swing any Monday evening. During your weekend perambulations, there will be concerts at the **Inner Harbor**, starting Memorial Day weekend (their schedule is online as well). If you feel like strolling with history, Friday and Saturday nights bring you the **Fells Point Ghost Walks** (sign up online). Sate your craving for indie flicks at **The Senator** and **The Rotunda** theaters.

Looking month-by-month, if you've been craving **fresh veggies**, May 9th is the beginning of the weekly Baltimore Farmer's market and May 11th is the beginning of the University Farmer's market. The next Fells Point **Haunted Pub-Walk** is on May 22nd. Additionally, on May 22nd you could also **plant trees** with the Aquarium or go see the Charm City **Roller Derby** that evening. For theater, **Journey's End** will be at the Fells Point Corner Theater from May 7 to June 6

and **Blackbird** will be at Everyman Theater from May 11 to June 13. If you're really aching for opera, The Charles will be showing **Das Rheingold** on the 26th as a live cast. Close out May with a **Brew at the Zoo** the weekend of the 29th or the **12th annual Wine and Herb Fest** at Boordy Vineyards.

In June, the Visionary Art museum has **Flicks from the Hill** every Tuesday starting on June 1st at 9 p.m.—check their website for the lineup. Boordy Vineyards has **Sustainable Happy Hours** with music every Thursday starting on June 10th through September 9th at 4 p.m.. The Pub-Walks are on the 12th and 26th, and the opening of the Harbor East farmers' market is on the 13th. There is yet another **summer concert series**, this time at Boordy Vineyards on Saturday evenings starting June 12th at 5:45 p.m., look online for tickets and artists. The roller girls will be home again on June 19th. There will be art on June 26 at the **Pile of Craft Show**.

Drinking will step up in July as the Fells Point Pub-Walk can happen on any Saturday night of your choosing. An opera I have never before heard of, **The Queen of Spades**, will be shown at the Charles on July 1. Dress up your pet for the Visionary Art Museum's July 4 for their **Visionary Pets on Parade**. **Artscape** is from July 16-18, so save some cash for that. If you missed it in May and June, Roller Derby will once again be in town on July 24th.

No matter what you decide to do, have fun, be safe, and don't forget the sunscreen.

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PROGRAM REMINDERS

All Students

- MD/PhD graduation reception
- Medical school graduation
- Monthly program seminars!!
- Send out welcome emails to incoming MD/PhD class

MS 1

- Finalize rotation
- Grad school program retreats

MS 2

- Finalize rotation
- Step 1—Good Luck!
- Check grant deadlines
- Grad school program retreats

GS 1&2

- Work on 1st author publication
- Quals
- Declare GPILS program and fill out relevant paperwork (GS1)
- Check grant deadlines
- Grad school program retreats
- Submit an abstract to Dr Rogers for Keystone Conference (GS2)
- Plan for clinical longitudinal (GS2)

GS 3+

- Work on 1st author publication
- Check grant deadlines
- Submit an abstract to Dr Rogers for MD/PhD keystone conference (GS3)
- Longitudinal
- Grad school program retreats
- If you're returning to the clinic, check status of all school accounts

MS 3

- Think about residency

MS 4

- Graduate!

FROM THE STUDENT COUNCIL

TIM FEENEY, MS II

It has been a busy year for the new MSTP student council. We started in January, and quickly began working on implementing the great ideas and work of the last student council while also undertaking some of our own initiatives.

As part of the normal responsibilities, the council has been assembling the various committees that are required every year. Currently the Retreat Committee is hard at work designing a retreat that will out do the amazing gathering we had last year. Further, due to some fortuitous happenings, the Max speaker for next year has already been selected and scheduled; the speaker will be Dr. Paul Shadlen. Kavita Ghandi and Tim Feeny have been appointed as the student MSTP advisory committee representatives. The SOM council representative is now Jen Rathe and Aaron Hess is still acting as alternate representative.

Beyond administrative tasks, the student council is in the process of bolstering the MSTP student curriculum. The MSI and MSII course, Molecules to Medicine, is currently in the very early stages of

Student Council Representatives:

MSI: Mark Kvarta
MSII: Tim Feeny
G1&2: Patrick Kerns
G3+: Melissa Liriano
MSIII: Shayna Rich
MSIV: Amanda Mason

MSTP Retreat Committee:

Melissa Liriano (chair)
Jessica Shiu
Aparna Kishor
Heather Wied
Monica Charpentier
Tim Feeny
L. Latey Jones

Student Representatives to the Advisory Committee:

Tim Feeny
Kavita Ghandi

S O M C o u n c i l M S T P Representatives:

Jen Rathe
Aaron Hess (alternate)

being refocused to better prepare MSTP students in medical school to enter graduate school. Additionally, a curriculum that will foster clinically focused thinking during the graduate

school years has just been approved and is in the early stages of implementation for the fall. The student council believes that both of these changes will help us further the MSTP objectives by facilitating our development as physicians and scientists.

Last, but certainly not least, we are working on instituting social activities for all of our students. A major charge of the student committee is to promote cohesiveness between all MSTP students and to foster more meaningful interactions with each other. As a result, we hope to implement fortnightly happy hours on campus sponsored by the MSTP. Additionally, following the success of last year's weekly summer MSTP lab lunches, we have asked Aparna to continue that tradition this summer.

As we work to develop our program, please keep an eye out for our emails so that you can get involved. Of course, if you have any ideas or want to voice a concern, please do not hesitate to contact your student council representative.

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PRESENTATIONS!

The following students will present at the Student Research Seminar Series. The event is held in Howard Hall 450 - talks start at 12 p.m.:

May 28: **Jennifer Rathe**
June 4: **Nick Frost**
June 25: **Paz Luncsford**
July 16: **Julie Brownley**

CELEBRATIONS!

Andrea Harriott, GSIII has been elected for membership in AOA.

Nick Frost, GSIII, recently had a manuscript accepted by *Neuron*.

(GRANTS, from Page 2)

the NIMH in July of 2008. The grant was scored in November of 2008 and officially approved for funding in April of 2009. Nick's funding began on July 1, 2009 and will cover the rest of his MD/PhD training here. He says "It is very helpful to read the training plans and grants from other successful students. There is a limited amount of space to make your project (and you) stand out." It is important to be aware of the grant formatting restrictions. The research plan is only one of the documents that make up a grant submission; most agencies will not accept grants that are missing any of the required documentation so pulling together everything that's required might take more time than anticipated.

Even after everything is honed to perfection, it is possible for the

worst to happen. Julie Brownley, GSII, submitted her grant to NHLBI on "Tissue-type plasminogen activator-mediated signaling events" in August of 2009. She received a very competitive score for her grant, but the pay line ended up being higher than anyone expected. "[When I found out that my grant didn't make] the cutoff for funding ... I was pretty disheartened. But, knowing that I was really close and having received great advice from my reviewers, I felt resubmission was a must. I rewrote my final aim and buffed up my boss's training plan, amongst other endless little changes. In the interim, of course, a bunch of the rules had changed and I went from a 10 page maximum for the research training plan to a 6 page maximum - that was really tough. You have to be flexible and willing to get rid of stuff that you absolutely pored over a million times, wrote, and rewrote. Sometimes, it can be the

most elegant, concise, and poignant statement, but if it's not absolutely essential, you have to let it go ... Once you submit [or resubmit your grant], just let it go, pretend like you didn't even submit it, and when you finally get word, hopefully it will be good!" Julie resubmitted her grant this April and will hear back about her score and funding status this fall.

Strategy, quality, and persistence. These seem to be the bywords of a successful grant application process. For those of us who plan to stay in academic medicine, grant-writing will be an ongoing theme in our lives, and when best to develop our skills than in our graduate school years? Drawing upon the experience of the students in our program, I hope to be able to put together the first grant of many I will be proud of. In my own efforts, and in all of yours, I wish the best of luck.

DD

ROGER THAT!

Our program director responds to the recent nationwide evaluation of MD/PhD programs.

There are critical issues that need to be addressed if we are to continue to invest in MD-PhD training on a national scale. One such issue is that there have been several comments in the op-ed medical literature claiming that MD-PhD programs are not successful in turning out a cohort of physician investigators, as many alumni end up in private practice. This set of largely unsubstantiated comments, and the resulting call for reevaluation of the value of MD-PhD programs in general, prompted the National MD-PhD Association to perform an analysis of the alumni of 24 programs, including Univ. of Maryland. Several lessons are learned from the results published in April issue of *Academic Medicine*, which includes information on 3,946 alumni. First, about 80% of grads are in careers generally

consistent with the goal of MD-PhD training, i.e. physicians who are committed to the quest for new knowledge and new approaches to disease diagnosis, prevention, and treatment. Our own historical record is that 63% of Maryland alumni are in academic medical centers, biotech companies, or institutes, with the rest in private practice. The proportion outside of academic centers (37%) is declining with our more recent alumni population. These new results are largely encouraging when combined with study recently published by AAMC in which it was shown that MD's are less likely to become investigators than MD/PhD's. If the MD's do receive an R01 grant they are less likely than their dual degree counterparts to have it renewed by NIH. They noted a decrease in the number of MD's serving on NIH study sections. Thus the data support our investment in MD-PhD training and do not justify claims that most MD-PhD trainees either drop out or end up in private practice.

As presented in *Academic Medicine*, other insights are discussed that are

relevant to our program. We learn that time to completion has risen 21% between 1980 and 2007 (from 6.5 to 7.9 years). In our own program we are addressing this troubling trend by decreasing the clinical requirements in MSIV. We also find that many MD-PhD alumni are involved in translational and clinical research. In our own program, are we training our students appropriately for such patient-oriented research? My view is that we should include curricular activities to teach students how to conduct well-designed research in humans. Currently the student council is considering a clinical skills course for students in the PhD phase of training. I recommend we capitalize on this course to include clinical research training in our program.

This study will hopefully motivate a complete analysis of all MD-PhD alumni. So far the results are encouraging and a complete data set will be valuable in formulating changes and innovation in MD-PhD training in the future.

Terry Rogers

MAGNA INVENTA

In Latin (roughly translated), it means “greatest discoveries,” which is the focus of this section. Our goal is to keep MSTP students informed about the most important recent discoveries/findings in the world of science and medicine while facilitating group excitement about the entirety of biomedical science. Scientia Laudanda est!

LANCET RETRACTS PAPER LINKING VACCINES WITH AUTISM

Many *Dual Decree* readers will remember lectures on vaccination during which various lecturers felt the need to emphatically state that, “vaccines do not cause autism!” You may also remember physicians anecdotally describing parents who are too afraid to vaccinate their children due to the “risk of autism.” This fear became widespread as a result of the positive association between MMR vaccinations and the development of autism in children described by Wakefield and colleagues in their 1998 paper. Since then, there has been much debate over the validity of their claims. In early February this year, *The Lancet* retracted the paper saying, “The claims in the original paper that children were ‘consecutively referred’ [for autism therapies following MMR vaccinations] and that investigations were ‘approved’ by the local ethics committee have been proven to be false.” This should hopefully put the debate to rest and will certainly help all physicians to unequivocally advocate vaccination to their patients.

Retraction—Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. *Lancet*. Vol 375 February 6, 2010 pg. 445

Autism, bowel inflammation, and measles. *Lancet*. Vol. 359 • February 23, 2002 pg. 705

Wakefield, AJ, et al. Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children. *Lancet*. Vol. 351 • February 28, 1998 pp. 637-41

BABY STEPS ON THE WAY TO A CURE FOR DIABETES

Diabetes mellitus plagues our society. Effects include diabetic retinopathy, diabetic nephropathy, cardiovascular disease, and amputation for patients with even well-maintained blood sugars. There are two types of diabetes mellitus: type 1 caused by the autoimmune destruction of pancreatic β cells, and type 2 caused by acquired loss of pancreatic β cells. Until recently, treatment of diabetes revolved around the palliation of symptoms rather than a true resolution of disease. However, change may be on the horizon.

Thorel *et al.* describe, in a recent *Nature* paper, induced phenotype switching of pancreatic α -cells to β -cells. Mouse Pancreatic β -cells were selectively targeted for diphtheria-toxin mediated ablation while nearby pancreatic α -cells remained unaffected. Amazingly, following ablation, there was a reconstitution of β -cells via phenotype changes of α -cells rather than regeneration of β -cells. This phenomenon was not only completely unexpected, but is also indicative of cellular plasticity even in terminally differentiated cells. Further exploration of this finding is required but there is hope these results might lead to a real cure for diabetes. If these findings can be translated into something useful at the bedside, I look forward to a future where the terrible effects of diabetes can be corrected.

Thorel et al. Conversion of adult pancreatic α -cells to β -cells after extreme β -cell loss. *Nature*. 464, 1149-1154 (22 April 2010)

Zaret, K. Diabetes forum: Extreme makeover of pancreatic α -cells *Nature* 464, 1132-1133 (22 April 2010)

PALLIATIVE CARE WHEN NOT ENGAGED IN END-OF-LIFE CARE

Shayna Rich, MS III

It is often difficult to know the long-term prognosis for patients, especially with high patient turnover. In a recent issue of *JAMA*, Wunsch *et al.* examine patient outcomes after an extended ICU stay. Involvement of palliative care during an ICU stay was featured as a positive prognostic factor in regards to the long-term outcomes of these patients. Palliative care consults are often appropriate in the ICU setting, but they are infrequently requested in situations where the patient appears to be improving or aggressive care is ongoing. Palliative care is often erroneously viewed as only useful to help dying patients when perhaps it should be used more broadly to provide comprehensive, patient-oriented care to any patient with serious chronic disease.

This study looks at the outcomes of Medicare beneficiaries after an ICU stay. Surviving patients of this group were compared with two cohorts of surviving patients from the general population: 1) those who were admitted to the ICU and 2) those who were not admitted to the ICU during their respective hospital stays. Given the results, including a 3 year mortality rate of 39.5% among all ICU survivors and 34.5% for hospital controls, it is clear that palliative care may be a useful consult even among patients in the general hospital population. In addition, this article provides statistical analysis to go with the anecdotal reports from the wards about the multiple admissions of “frequent flyers” to the hospital, as well as the high mortality rates of patients following hospitalizations.

Wunsch H, et al. Three-Year Outcomes for Medicare Beneficiaries Who Survive Intensive Care *JAMA*. 2010;303(9): 849-856.

(AMANDA, from Page 3)

me. Even having a great support system, going through the clinical years with two small children was not easy. I felt a constant pull between wanting to be a perfect mom and feeling the responsibility of caring for patients and having clinical obligations. Ultimately, it came down to not having enough time for my family and me. However, I feel a huge sense of relief after making the decision and I am excited to do a post-doc. Although research has its own challenges and also often results in working very long hours, I really enjoy the independence and analytical thinking of research and the greater flexibility in my schedule. In the lab, I will be able to work the long hours and weekend days I choose, rather than the ones I'm told to work.

Are you optimistic about the future?

I'm extremely optimistic. In deciding to change career paths this year, I've stumbled upon so many possibilities for those holding an MD/PhD degree. While at Hopkins doing a research rotation, I had the opportunity to meet with some

representatives from industry. They were so excited when they learned I was an MD/PhD student and wanted to know what my career plans were, etc. Additionally, since I withdrew from the match, I've had a couple of residency program directors contact me to let me know that I could potentially join their programs out of cycle. When I sent my applications in for post-docs at NIH, I had responses from the PIs by the following day. Although we often hear that having the dual degree is a huge advantage, I don't think it really hit me until this year.

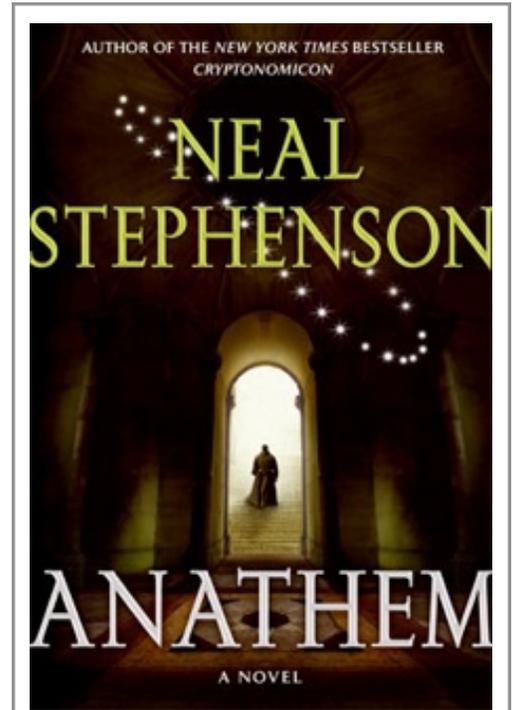
Any last words of inspiration?

I think one of the most important decisions an MD/PhD student can make is choosing a mentor/lab. As anyone who's talked to me about this decision knows, I strongly advise that you pick a mentor over a lab. While your research area and interests will likely change, having someone available to advise you on how to plan and execute experiments, write grants and papers, and make career choices is invaluable. I'm also more than happy to talk to anyone that has other questions.

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AMANDA WITH HER CHILDREN



(ANATHEM, from Page 4)

demonstrates compelling awareness, despite having been raised in a cloistered and rarified environment. Furthermore, Stephenson writes equal numbers of convincing female and male characters central to the narrative.

The book is both a daunting and captivating read. It is 900 pages of elegant world building, story telling, and high adventure, speckled with witty and intense discussions of philosophy, theoretical physics, consciousness, and geometry. Stephenson also writes with his own lexicon. The glossary should be in the front; expect to use it. The first third of the novel is a slow build as both world and language are being introduced. The plot then accelerates and the book becomes truly extraordinary. It is well worth the read.

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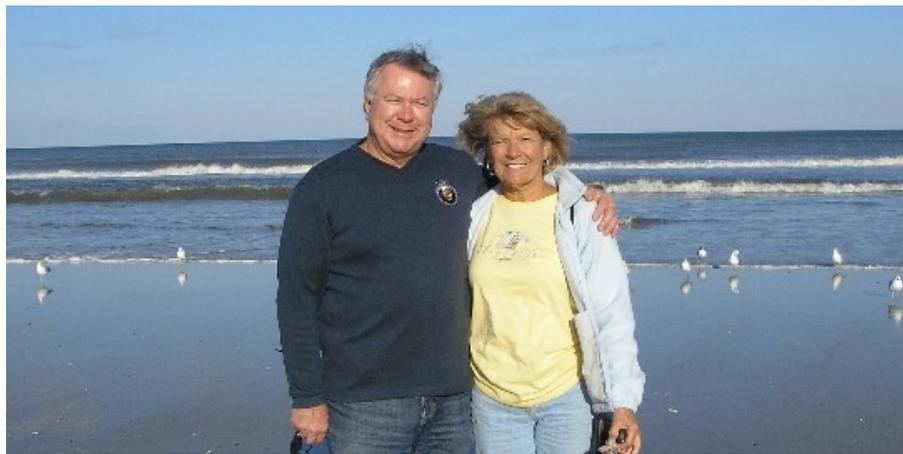
(Continued From Page 1)

where she and her husband enjoy the perks of watching the performances from the aisle.

Nancy's primary goal in retirement is to spend time with her family. She and Don plan to winter in Florida, where they will log in many hours with their 3 adorable grandchildren. Her youngest son is getting married this summer and Nancy is helping to organize and prepare for the big day.

To top it all off, Nancy is working on completing her bachelor's degree in English through part-time coursework. She is pursuing the degree mainly for personal satisfaction, but is hoping to score some freelance writing jobs once she has completed the program.

During her time with the MD/PhD program, Nancy made many contributions, but she points to a few as her most proud accomplishments. She was honored to help to re-initiate the Stephen Max Memorial Lectureship and is now thrilled to continue a friendship with the Max family with whom she has grown close with over the years of hosting this event. She helped to organize the first annual MD/



NANCY AND HUSBAND DON

PhD retreat for students. She led workshops at the AAMC MD/PhD section of the group on GREAT-Graduate Research, Education, and Training. Her "crowning achievement" was the MSTP funding that she helped the MD/PhD program at Maryland acquire after the huge task of completing the grant application and organizing student involvement.

Even under the most stressful of moments in the MD/PhD office, Nancy was well known to keep her cool. She points to the training ground of a long and happy marriage as being a significant source of her patience and understanding. She has learned over the years to take one thing at a time and to think through a problem carefully before reacting. More than all that, though, she simply takes a lot of joy in helping young people prosper; staying cool under pressure was one of the ways she could help us the most.

Nancy's would be tough shoes to fill, so after her retirement, the position was rightly upgraded. This is really a testament to Nancy's dedication and contribution over the past 8 years. As for the transition, we are in great hands. Jane has been on the campus for 4 years and had the opportunity to work with Dr. Rogers on a large 5-year NIH Program Project Grant (PPG) grant a few years back when she was Program Management Specialist for the Department of Biochemistry. Her familiarity with campus and with Dr. Rogers is giving

her a big leg up. Jane has managed her husband's medical office for the past 27 years, endowing her with an insider perspective on the medical world. She will certainly be a great resource to our students as they tackle the clinical years. She is tremendously grateful for Nancy's impeccable office maintenance--things were left so precisely organized that she has had very little trouble picking up where Nancy left off. When I asked Jane what we (the students) could do to help her during this transition she said, "oh no! I really like you all and it's just great that you're all really open. I'm just enjoying getting to know everyone. No, I couldn't ask for anything more." She told me that her goal is to work hard and have fun doing it. She sees Program Manager of the MD/PhD program as a great position to achieve just that.

I just want to conclude by saying thank you, Nancy, for being the tremendously thoughtful and caring person that you are. We were truly fortunate to have had such a dedicated administrator. The MD/PhD students will often think of you enjoying retirement and being the amazing inspirational woman that you are. We wish you the absolute best during this fun and exciting part of your life.

P.S. *Suggesting a friend...* Nancy wants us to know she misses us and hopes that we all keep in touch. The best ways to reach her are by e-mail and Facebook!



JANE BACON

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