



# THE DUAL DECREE

VOLUME III, ISSUE 2 - WINTER 2012



## IN MEMORY: DUANE SEWELL, MD



**DUANE SEWELL, MD**

In November 2011, our MSTP Program lost a great mentor and friend, Duane A. Sewell, MD. He was an Associate Professor of Otorhinolaryngology - head and neck surgery—arriving on our campus in 2007. Dr. Sewell trained at Harvard, the University of Pennsylvania (where he was also a research fellow in Microbiology following Residency), and Johns Hopkins Hospital.

His untimely passing has given me the opportunity to pause and reflect on what Dr. Sewell meant to our program. When he first arrived on our campus, I invited him to present a Physician Scientist seminar, which he gladly did. His enthusiasm for research was compelling, as was his support for MD/PhD students interested in pursuing careers in surgery. As a gifted clinician who had a passion for research, he stood

out as a superb example for our MSTP students. I was delighted when he willingly accepted our invitation to become a member of the MSTP Advisory Committee. He rapidly became a wonderful contributor to our program as he deeply and sincerely cared about our students, always finding time to give them advice. His discussions on clinical commitments with MSTP students who were returning to Clerkships were so wonderful that I wish I had recorded them for posterity. But of course I didn't think there would be a time when he could not convey advice in person.

The photo we share here, taken during a Molecules to Medicine session, captures the essence of this sharing and thoughtful mentor. During his four years with us, Dr. Sewell became the "go to guy" to

whom I would send aspiring MSTP applicants so they could benefit from his wisdom and insight. Dr. Sewell was also a valued member of the Advisory Committee. With quiet confidence he would weigh in and lead discussions on important MSTP policy decisions. He actively interviewed applicants every year and was involved in promoting diversity in our program population. In a relatively short period he did a great deal for us. In the end Dr. Sewell was a true gift to the MSTP Program who will be fondly remembered.

**-TERRY ROGERS, MSTP DIRECTOR**

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## A LETTER FROM THE EDITOR

I am writing because I have started a thought process that I will need time and the help of my mentors—peers and otherwise—to complete.

The thought process began when I read the headlines about the controversy over the recent publications on H5N1 and the resulting moratorium on H5N1 research. Naturally, as a basic science PhD student and someone who believes in the primacy of responsible but largely unfettered research, I was appalled that the paranoia of the US government was going to stifle scientific enquiry. “This is an ugly precedent being set by people who live a hair’s breadth away from a trigger,” I thought; “if we in academia cannot ask timely questions and expect to be able to pursue the answers, who can?” Doesn’t the uproar indicate that the terrorists have eliminated our ability to behave rationally, and thus won the war without having to destroy a single additional life (or step into a lab)? But when my fury subsided, I realized that I had nothing of significance to say on the matter. What do I know—perhaps this avenue of virology research was indeed going to put lives at stake. After all, if I had any gift for prognostication my whole life would be different, right?

Then, while visiting some college friends, I was asked “What is it that you DO all day?” I was brought up short by that question. Yes, I have my two-minute research summary that my grandmother could understand, but that would not have been the correct answer in this case. My friend, a Master of Public Policy and former economics major, was not asking me about my project. He was asking me what the life of a bench researcher is like. The first answer that sprang to my mind was “I pour a

lot of gels” but I held my tongue. After all, was I really ready to launch into an explanation of the roles of gels in science? My uncle, a vascular surgeon, had asked me something similar some weeks previously except he had framed it as a statement: “research is ridiculous.” “No, no,” I had tried to convince him, “the type of research you did, chart reviews and case studies, that’s different from what I do. Different even from the research a trained epidemiologist does.” So I asked around my lab and several of my wet bench friends: how do you explain the day-to-day of our lives? No one had a reasonable answer.

Finally, I was reminded that many leaders of science departments around the country often visit congress to, in a sense, defend themselves and demonstrate why tax dollars must continue to go to research. With this reminder, anxiety began to put down roots. To my way of seeing, there is the Grandeur of Science, linked to Cures and the Human Genome and Triumph over the Inexplicable and Einstein. But, in the ignoble shadows behind the Grandeur of Science, is the Practice of Science. In the Practice of Science, one must learn to cherish any victory, be it small or moral. I doubt very much that a single congressperson has ever been educated about the Practice of Science. But wouldn’t such a lesson be important for explaining where the dollars actually go and why we need so many millions of them? And wouldn’t it be a step in demystifying research and those who conduct it? Fairly or not, as long as the research enterprise in this country is largely funded by tax payers, scientists will be

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Aparna Kishor  
Editor-In-Chief

Kristi Chakrabarti  
Monica Charpentier  
Adam Fisch  
Patrick Kerns  
Jeffrey Kleinberger  
Elise Ma  
Contributing Editors

Aaron Hess  
Layout Editor

[dualdecree@gmail.com](mailto:dualdecree@gmail.com)

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accountable to people who have no idea what it is that they DO all day.

Here is where I have reached in my musings: perhaps it is critical that I learn to explain my day in concrete terms; for the sake of the future of free inquiry and the intellectual health of our world, it is important that scientists invite outsiders to understand our tools. Scientists are a trained, elite workforce, but we are also members of a greater society. Or would I be doing a disservice by revealing the uncertainty and waste necessary to good research? Any thoughts are welcome.

*Aparna Kishor*

## OUR NEW UM MSTP STUDENTS (PART TWO!)

Dear Everyone,

We know you've been patiently waiting. We know you were grateful for the hustle of the holidays since it helped relieve the stress of anticipation. But now your wait is over: *The Dual Decree* is proud to introduce the rest of the UMB MSTP new students!

Love,  
The Staff

### Haley Simpson

Miss Simpson was born in North Carolina, grew up in Gaithersburg MD and went to undergrad at UNC-Chapel Hill. She made the trek back north and settled down in Baltimore because she "wanted to be able to go to [her] family's house and visit [its] dog on the weekends." Unlike most of us, Haley is not going to be the only dual degree-holder in her family: her father is a veterinarian (DVM/PhD) who does research. Her mother, a people doctor, rounds out the huge amount of biological training in the Simpson domicile.

Growing up with two such parents, it might seem inevitable that Haley would gravitate towards the sciences.



**HALEY SIMPSON**

Mama and Papa Simpson, however, left nothing to chance: Haley was looking at microscope slides with her dad at the tender age of three and, when Haley was in elementary school, her mom did science experiments with her class. This early science education not only fostered her love for the natural world, but also has left her with the yen to "volunteer in a public school to teach science and math to young children." Haley is certain that a place like Baltimore could use her help on such community projects.

In addition to its proximity to the Simpson homestead with its livestock and the ample opportunities for public service, Haley came to Maryland because the Greenbaum Cancer Center is where she would love to do her research. She enjoyed doing her honors thesis at UNC, and it sounds like she had a great set of research mentors who cemented her resolve to join our ranks.

It turns out that Haley is also a ballerina. She affirms that ballet is "quite challenging and not at all relaxing but is very enjoyable." She has been perfecting her ballet for about 20 years (doing the math, toddler Haley was probably throwing in a few plies while slide-gazing) and performed in *The Nutcracker* in her hometown this past December.

Haley, no worries, you're pretty interesting without needing our help!

### Jeff Kleinberger

Yes, that's right, the first years have another Jeff. This one grew up in Bradford, PA (pop. ~9000). Apparently the only thing to do in Bradford, PA is to join sports teams. Jeff K did this with a vengeance, playing football (WR/CB), basketball (Center), and running



**JEFF KLEINBERGER**

track (jumping events) for his high school. He graduated in 2004 and went to Juniata College (~1400 students) in Huntingdon, PA. For those of you who don't know, Huntingdon, PA has a population similar to Bradford, PA. In 2008, Jeff K graduated with a degree in Biochemistry. At Juniata, he played rugby (outside center), and started in on his research career by studying Honey Bee Venom Proteins (melittin) with Dr. Lorraine Mulfinger. He admits that his work at Juniata was small-time research that didn't really make much progress, but that it had value as part of his scientific process.

After college, Jeff K stepped out of his small-town comfort zone to work at the University of Pittsburgh School of Medicine. There, he did research in the Division of Endocrinology and Metabolism studying cycle molecules in human pancreatic beta cells. His group put out a couple of papers and presented its research at various conferences. Jeff cites this as his first exposure to "real" research. During his time at Pitt, he was able to work closely

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# FAST FORWARD: JONATHAN BROMBERG, MD PhD

## KRISTI CHAKRABARTI, MS I

Nothing is impossible – for Dr. Jonathan Bromberg at least. Dr. Bromberg is not only the newly appointed head of the Division of Transplantation in the Department of Surgery and a professor of Surgery and of Microbiology and Immunology, but he also runs his own lab in the Department of Microbiology and Immunology. How does he do it all? By doing what he loves.

Dr. Bromberg's ambitious career started at Harvard where he got his undergraduate degree in Biology in 3 years (in which time he also managed to read all of Dostoyevsky). Growing up, he had an interest in science so when he went to Harvard he joined a neurology and immunology lab and fell in love with immunology. After college he worked for a year in an immunology lab at the University College of London. He then returned to this side of the Atlantic to do his MD/PhD at Harvard, which he finished in 5 years. His extensive background in immunology combined with finding his thesis project after his first year of medical school allowed him to finish his PhD in about 2 years, spending only about a year and a half in the lab itself. For Bromberg, the hardest part of medical school was deciding what kind of medicine he wanted to go into. He thought about pathology (couldn't do it) and internal medicine (didn't like it), but found his calling when he got to surgery. "You get to do stuff with your hands and brain," he says. Based on his interest in immunology and surgery he naturally landed upon transplant.

From Boston, he traveled across the country to the University of



JONATHAN BROMBERG

Washington for his surgical residency. As chief resident, Dr. Bromberg spent every other night on call for six months. But he doesn't view it as a bad thing, "you get to be a *very* good surgeon and see a lot of patients." From there, he traveled back to the east coast to the University of Pennsylvania for his fellowship in transplantation. He spent the first year doing clinical work and the next two years back in the lab. "I had to learn all the molecular biology that had happened in the past decade," he says. From Penn he took his first position at the Medical University of South Carolina in Charleston as assistant professor. This is where he started pancreatic transplant surgery, writing grants, and his own lab. He began getting some foundation grants and then a R29 after two years from the NIH (like a small R01). After three years he was promoted to associate professor. He then spent five years at the University of Michigan. Dr. Bromberg was recruited to the University of Maryland School of Medicine in 2010 from Mr. Sinai Medical Center where he had been

chief of kidney and pancreas transplant for 10 years.

At Maryland, Bromberg spends some of his time every day doing science and medicine. He spends 50% of his time on a clinical rotation, which includes inpatient, outpatient, or surgery, a week at a time. His clinical time is variable depending on the rotation and the surgical demand. However, he makes time to walk over to his lab every day. His lab personnel is six post docs, one technician, and two junior faculty members. He takes primarily post docs because they are more independent and can work with each other (but would be interested in adding a MD/PhD graduate student to the lab). His research focuses on extending the duration and effectiveness of immune suppression in transplant patients. Dr Bromberg is attacking this problem with a unique angle of a "3-D approach to immune suppression." According to Bromberg, "the immune system has an anatomy" so he is trying to study the migration of lymphocytes in the body since where and how they travel can be critical. Altering their migration and trafficking position can really influence the host's immune response. Bromberg also does a little clinical research examining the microbiota – all the living organisms that grow in or on your body - of transplant patients.

Dr. Bromberg has achieved an accomplished career as a physician-scientist in one of the toughest medical disciplines while still maintaining one foot in research. So what's his secret to achieve the impossible? First, he doesn't have to

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# MSTP STUDENTS TRANSITION TO CLINICAL ROTATIONS

JEFF KLEINBERGER, MS I

The training path of an MD/PhD student has many similarities to riding a seesaw. In the first phase, like all starting medical students, you are airborne, trying to get used to the increased workload and expectations. After two years of medical school, just when your feet get set back on the ground, you take off into your PhD training. Once again airborne, you have to come down to the new terrain of hypothesis testing, rather than rote memorization. Some years later, you blast off again and travel back to clinic where you are confronted with yet another new set of expectations. The points where you are up in the air, trying to get back down to *terra firma*, are said to be the most difficult part of our training. Two of our students, Joshua Lieberman and Kavita Ghandi, recently transitioned back to clinic and were happy to give tips from their experiences.

Kavita and Joshua had very different types of graduate training. Kavita did her research with Dr. Christopher Plowe, working on a novel technique for studying the epidemiology of malaria. Her work allowed her to take multiple trips to Africa and to be involved in the patent-application process. On the other hand, Joshua powered through his research on *E. coli* pathogenesis with Dr. Michael Sonnenberg in only 3½ years. Although working in different fields on different projects, they both believe that the most important part of PhD training is to enjoy the process and learn as much as possible.

Even though the PhD training can be long, both transitioning students agreed that the culmination and thesis defense can happen all too



quickly. As with any lab, there are many delays that constantly push back schedules, which can lead to limited prep time for the thesis. Joshua regretted having so little time to work on his, while, in Kavita's case, it was best to delay her thesis defense. She plans on defending during her 4<sup>th</sup> year.

Both Joshua and Kavita were adamant about beginning the writing process early, be it for submitting papers or for theses. Although it seems like there is always another experiment to be done before writing, it is important for students to begin the process early so that they can analyze the story their research is creating and how it can be improved. Also, writing early helps to prevent a stressful crunch that can occur as the PhD training is wrapping up. Both Kavita and Joshua had specific time blocked off for writing. Kavita wrote during frequent sessions lasting a few hours, while Joshua wrote for weeks straight during more dispersed sessions. Although writing style can vary for each person, the important factor is to dive in and gain as much practice as possible.

Another step for transition back to clinic is the completion of the MSTP longitudinal clinical rotation.

When selecting a preceptor, it is important to know what you plan to gain from the experience. Three of the possible goals for the rotation include networking, exploring opportunities, or gaining experience. Kavita used her clinical rotation to explore the field of parasitology in Africa. Joshua used his to improve his skills as a physician in the Emergency Department. Both explained that the flexibility of longitudinal rotation allowed them to achieve their very different goals in a manner that fit best for their commitments and personal style.

There are many factors that need to be taken into account when preparing to schedule clinical rotations. Although both transitioning students re-entered the clinic out-of-sync with the MS 3 schedule, they had different opinions about the timing. Starting later than July pushes the rotations into the next year, which can make it very difficult to schedule 4<sup>th</sup> year rotations and electives. Also, there is less time to make a decision about medical specialty, since specific away rotations generally have to be scheduled early in 4<sup>th</sup> year. However, starting later can provide more opportunities since there will be less student demand for the winter and spring rotations. Joshua and Kavita took different approaches to planning rotation schedules, but it has worked well for each of them. Joshua carefully planned his rotations, with the help of his PhD mentor and longitudinal clinical rotation preceptor, so that he could enter during Outpatient (Ambulatory) Medicine in January, which allows him to transition into the clinic setting in a slightly less stressful environment. Kavita started in the fall of 2011 and said

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with physicians which really made him want to become a physician-scientist. As yet, he doesn't know what kind of medical doctor he would like to be. Nor has he selected a research mentor, although he would like to do some work in either genomics or the CVID.

Jeff is engaged to Laura Gomez Martin. Adorably, they have been together since high school. Miss Martin is currently in her second year of Law School at the University of Pittsburgh.

In case you missed it, Jeff likes sports. His favorite teams are the Buffalo Bills, Pittsburgh Pirates, and Philadelphia 76ers. Here in Baltimore, he plays flag football and volleyball and basketball. He's also into Olympic lifting. And a really nice guy to boot.

### **Jesse Stokum**

Jesse is also a small-town guy. He grew up in Burgettstown, Pennsylvania, a little town that is apparently about an hour's drive south from Pittsburgh. There were about 40 other people in his high school. His small town upbringing didn't limit his scientific outlook, however. He writes "I've always had an interest in science and medicine; my Dad and Grandfather are obsessive tinkerers, a trait that I 'inherited.'"

After high school, Jesse went to West Virginia University for a Chemistry and Biology degree. At WVU Jesse did research in analytical chemistry and also met his wife, Carly. After graduation, the Stokums moved to Pittsburgh where Jesse completed a Master's degree at Carnegie Mellon University in computational biology, working with a group at the NIH that studied epilepsy associated changes in language fMRI activation. So far, Jesse seems happy at Maryland. He is excited to



**JESSE STOKUM**

learn from Baltimore's patient population and to participate in "varied, exciting, and well-funded" research.

When not studying, Jesse likes to bake bread (particularly ciabatta), go on road trips with Carly, eat banana foster, and indulge his "borderline unhealthy obsession" for his two cats, Olive and Bea.

### **Sara Stockman**

Sara Stockman was born in Frederick and lived there her entire life before leaving for college. She was drawn to science by her natural inquisitiveness and she is excited by the idea of doing things that have never been done before. Sara went to the University of Maryland, Baltimore County and was part of the famous Meyerhoff Scholarship Program through which she met many mature and aspiring scientists. Her first research experience was here at Maryland with Dr. Greg Elmer in the Maryland Psychiatric Research Center. Sara intends to study behavior for her graduate work, and is impressed by the quality of behavioral research at UMB, which she says "far exceeded" what she saw elsewhere. Sara enjoys crafting things in her spare time. Like so many others

among our first years, she also has a beloved pet: her new kitten.

*Along with our 8 MSIs, our MSTP has two students who joined the MSIs:*

### **David Kurland**

David grew up in Baltimore and did his undergrad in at the Washington University in St. Louis. He graduated in 2008 and then worked at the NIH, at the National Human Genome Research Institute under Dr. William Gahl studying metabolic genetics and rare diseases. Despite what sounds like a solid foundation in bench research, David writes that he managed to avoid catching the research bug until the summer after his first year of medical school. That fateful summer, he "decided to enter the fray just one more time (for the CV, of course)" and signed on with Dr. Marc Simard. He was "just blown away" by what was going on in the Simard lab and how much of an impact the work was having on the field of brain injury treatment. Dr. Simard, an MD/PhD himself, saw this and encouraged David to take some time off to continue research. This sudden change in his career

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**SARA STOCKMAN**

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path was initially terrifying, but soon David found that he simply “needed” to apply to the MSTP program.

Not surprisingly, David plans to continue his neuroscience research with Dr Simard and wants to train as a neurosurgeon. Now that he is settled into his new identity as a dual degree student, he’s “excited about everything” that will be part of this process.

David loves to read and be outside. Indeed, the first time many of us met him, he was reading outside. If medicine and research weren’t in the cards, David thinks he’d probably just be an undergrad forever. Now that’s a real thirst for knowledge!

### Christy Perry

Christy grew up in Wilmington, DE and, being an overachiever from the very beginning, graduated from Virginia Tech after three years in 2009 with a bachelor’s degree in Biochemistry. In the year before attending medical school she stayed at Tech to work on two different research projects regarding plant and fungal genetics. She writes that she moved to Baltimore the summer before starting medical school,



DAVID KURLAND



CHRISTY PERRY

having never lived in a city before. She finds it pretty charming here, but admits that it is quite different from Blacksburg, VA!

Unable to stomach the thought that she may never do research again, Christy applied for the MSTP shortly after matriculating as a medical student. She admits to being “a little nervous” about integrating into our program, but hopefully we’re allaying her fears! Christy is into genetics—she wants to study genetic diseases, genetic solutions to medical diseases, and medical genetic susceptibility.

Outside of school, Christy spends any free time with family and friends, cheering for the HOKIES, going on hikes with her dog, traveling and recreational sports. Had she not decided to go to medical school she would have liked to genetically engineer designer flowers or own some kind of small business.



## MSTP CLINICAL ADVISORY SUBCOMMITTEE

The Clinical Advisory Subcommittee guides MS 3 and 4 students in our program through the transition back to clinic and helps with decisions relating to selecting residencies. The members of the committee are:

- **Simeon Goldblum**, MD, Chair, Clinical Advisory Subcommittee; Professor, Medicine and Infectious Diseases
- **Richard Alexander**, MD, Professor, Urology
- **Cynthia Bearer**, MD, PhD, Chief, Division of Neonatology, Professor, Department of Pediatrics
- **Rochelle Cunningham**, MD, Assistant Professor, Medicine
- **Miriam Laufer**, MD, Assistant Professor, Pediatrics
- **Joseph Martinez**, MD, Assistant Dean for Student Affairs
- **Thomas Pallone**, MD, Professor of Medicine
- **Robin Pierson**, MD, Director, Surgical Clinical center, VAMC
- **Jean-Pierre Raufman**, MD, Professor, Medicine
- **George Wittenberg**, MD, PhD, Associate Professor, Neurology

# BUYING A HOUSE IN BALTIMORE

## MONICA CHARPENTIER, GS II

A big draw of Baltimore is how affordable it is to buy a home—you can't seem to go a week in Maryland without hearing on the news that housing prices and interest rates are at their lowest. Currently there's a huge number of homes for sale in Baltimore, many at prices far below what they were during the peak of the housing bubble. Mortgage interest rates have also been below 4% for a while now, presenting a potentially great opportunity to buy at a low cost. Here are some things to think about as you prepare:

**Timing:** The MSTP program is typically 8 years long, and a general real-estate rule of thumb is that you need to be in your home for 5 years to break even from the initial costs required for home ownership. Think about how much longer you plan to be in the program, and what you anticipate your space and housing needs to be during that time period – will a one-bedroom suit your needs for the next few years or will you need multiple bedrooms and a yard? The New York Times has a decent interactive calculator that can help you determine whether buying or renting is more cost-effective in your situation:

[www.nytimes.com/interactive/business/buy-rent-calculator.html](http://www.nytimes.com/interactive/business/buy-rent-calculator.html)

**Affordability:** The cost of homeownership is much more than just your monthly mortgage payment. You'll need a down payment (shoot for 20% to get the best rates on your mortgage), PLUS money for closing costs, a home inspection, home insurance, possible HOA or condo fees, and you'll probably need to pay some of the property taxes upfront. Speaking of property taxes...Baltimore City has almost twice the property tax rate of the surrounding counties so be sure

to take the cost of property taxes into account. Beyond all of these initial costs, you'll probably need to budget about 1% of the cost of the home for maintenance each year. Don't forget about the costs of any initial repairs you might need to make before moving in as well.

**Getting a Mortgage:** Most people will need to take out a mortgage in order to afford a home purchase. In order to qualify for the best rates, you'll need to have a great credit score (over 760 should get you the lowest rate). Check the official to get a free credit report (you'll have to pay to get a numerical score):

[www.annualcreditreport.com](http://www.annualcreditreport.com)

You'll also need to show proof of income. Many lenders may not consider your MSTP stipend as income, so you may need a cosigner on your loan, be it a spouse or other family member.

**Rental Income:** Many of the MSTP homeowners rent out rooms in their homes in order to reduce the costs of homeownership. While that seems easy, here are a few things to think about first: Will you be able to afford the house without the extra money? How will you go about selecting your tenants? What will you do if you get a problem tenant? You will also have to report the extra income to the IRS, which can be a little complicated.

If all of these considerations haven't swayed you, proceed with the home search! The housing market is definitely in your favor. While there's certainly considerable cost and effort in purchasing and maintaining a home, it will be all yours to enjoy and could be a great asset during your time here at the University of Maryland MSTP.



## MSTP ADVISORY COMMITTEE

Below is the 2011-2012 roster of the MSTP Advisory Committee. Graduate students, remember that you must have **at least one** MSTP advisory committee member on your thesis committee.

**Sania Amr**, MD, MS., Epidemiology  
**Toni Antalis**, Ph.D., Professor of Physiology  
**Arnob Banerjee**, MD, PhD, Assistant Professor, Medicine, Stem Cell Biology & Regenerative Medicine  
**Mark J. Cowan**, M.D., Assistant Professor, Medicine  
**Martin Flajnik**, Ph.D., Professor, Microbiology  
**Ronald Gartenhaus**, M.D., Associate Professor of Medicine  
**Simeon Goldblum**, M.D., Professor, Med. Infectious Diseases  
**Eugene Y. Koh**, MD, PhD, Assistant Professor of Orthopaedics  
**Bruce K. Krueger**, PhD, Professor of Physiology & Psychiatry  
**Stuart Martin**, Ph.D., Associate Professor of Physiology  
**Mervyn J. Monteiro**, Ph.D., Professor of Anatomy and Neurobiology  
**Patricio O'Donnell**, MD, PhD, Professor of Anatomy & Neurobiology & Psychiatry  
**C. David Pauza**, PhD, Professor and Assistant Director, Institute of Human Virology  
**Terry B. Rogers**, Ph.D., Professor, Biochemistry & Molecular Biology,  
**Terez Shea-Donohue**, Ph.D., Professor of Medicine, Mucosal Biology Research Center  
**Koji Tamada**, MD, PhD, Assistant Professor, Otorhinolaryngology-Head and Neck Surgery  
**Daniel Weinreich**, Ph.D., Professor, Pharmacology  
**Paul Welling**, MD, Professor, Physiology  
**George F. Wittenberg**, MD, PhD, Associate Professor, Neurology  
**Jane Bacon**, MS, MSTP Program Manager

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sleep. He realized that he could function quite well with only 3-4 hours of sleep while in medical school. There really is no typical day for Bromberg, but he usually works from 5:30 am to 5:30 pm. Some days start with rounds at 6 am, which are over by 9-10 am and then he spends the rest of the day in the lab. His other keys to success include that he reads “relentlessly,” is very organized, constantly goes over data, and does a little writing every day. “I think about medical stuff all the time. I am also thinking about scientific stuff all the time.” He finds that the best part of his job is that he “gets to be schizophrenic” and the worst part, he “has to be schizophrenic.” Though he might seem like a workaholic, especially since he works seven days a week, he makes time to keep up with his other passions such as running, going to classical or jazz concerts, attending art showings, and of course, reading – novels, history, and short stories.

For future physician-scientists considering surgery Bromberg fully believes that not only is it possible, but very doable. He thinks students should not put “artificial limitations” on what they can do. Ultimately, drive and motivation must come from within. He advises students to follow what they are interested in scientifically and clinically and then “find a way to meld it together. Find something that makes sense so they can inform each other.” Many MD/PhD are taught to be scared of doing surgery, but as Bromberg says, “Do what you like, not what you think you’re supposed to like. Otherwise you spend a long time dead.”



## PROGRAM ANNOUNCEMENTS

### Congratulations!

Jess Shiu got engaged to George Baltz  
Heather Wied had her baby on Jan 25:



CHRISTOPHER AARON WIED

### Announcements:

*New MSTP Student Council for 2012:*

MS I	Kristi Chakrabarti
MS II	Grace Maldarelli
GS I & II's	Peter Li
GS III & IV's	Nicolas Johnson Dorsey
MS III	Joshua Lieberman
MS IV	Jen Rathe

### Publications/Abstracts:

Maya Matheny: “Inflammatory Cytokine Levels and Depressive Symptoms in Older Women in the Year After Hip Fracture: Findings from the Baltimore Hip Studies.” *Journal of the American Geriatrics Society*, Volume 59, Issue 12 (2) Dec 2011.

Shannon Dean: “Prostaglandin E2 is an endogenous modulator of cerebellar development and complex behavior during a sensitive postnatal period.” *European Journal of Neuroscience* (accepted for publication)

Joshua Lieberman & Nick Frost: “Outer Membrane Targeting, Ultrastructure and Single Molecule Localization of the Enteropathogenic *Escherichia coli* Type IV Pilus Secretin BfpB” *Journal of Bacteriology* (accepted for publication)

Jesse Stokum’s abstract from his summer work in Dr. Rao Gullapalli’s lab has been accepted for an oral presentation at the ISMRM (International Society for Magnetic Resonance in Medicine) Conference in Melbourne, Australia in May 2012.

Christy Perry’s abstract from her summer work in Dr. Reich’s lab has been accepted for a poster presentation at the AAN(American Academy of Neurology) Conference in April 2012 in New Orleans.

# THE LEGACY OF THE DOUBLE-EFFECT PRINCIPLE

PATRICK KERNS, GS III

Preventing and remedying pain is a central duty of the modern physician, but this straight-forward imperative has resulted in numerous ethical complications in practice. When medication is provided, worries about side-effects, especially respiratory depression, can influence physicians to reduce dosage below the level needed for adequate pain relief. Appropriate pain management no longer runs a sizable risk of hastening patient death (Regnard, 2007 “Lethal opioids or dangerous prescribers?”), however a few cases where it does gave rise to a well accepted (if now outdated) ethical principle. The Double Effect Principle (DEP) of pain management is that it is morally acceptable to administer opioids medication at doses that properly control pain in terminally ill patients even if it hastens their death.

The DEP is based on the philosophy of Thomas Aquinas (a 13<sup>th</sup>-century theologian), who postulated that an action intended to do good that also causes a harmful outcome is still moral as long as the harmful outcome is not intended. Under this principle it is right to defend oneself, even if it results in the death of the attacker, because that death is not intended. This principle was applied to pain management to give rise to the DEP, which despite no longer being clinically relevant, was well-accepted as an ethical principle. This acceptance raises some interesting questions. For starters, what does it imply about the modern physician’s duties? Specifically, it seems like we’ve empowered doctors to engage in a kind of ethical calculus that most people find disturbing. Namely, “I will now trade one week of your life so that your last two weeks will be free from pain.”



**THOMAS AQUINAS, 1225-1274  
PHILOSOPHER, THEOLOGIAN, AND  
CATHOLIC SAINT**

Aquinas’ original principle is masking the same sort of ethic calculus. For Aquinas, killing was all right in self-defense because we do not intend to kill. But many people would intend to kill their attacker, and we would still deem that as self-defense and thus morally acceptable. The actual moral justification may be that in attacking another person the assailant has made his own life less valuable than that of his intended victim. Translated to the accepted principle for pain management, the physician seems to have judged, for example, that three weeks of painful life is worth less than two weeks of pain-free life.

By accepting the double-effect principle of pain management as ethical, we may have accepted that physicians should make judgments about the value of their patients’ lives in some circumstances. However, many would argue that physicians should never be put in the position of making such value judgments, worrying that once this is sanctioned

in any fashion it will ultimately end in physicians being able to justify sacrificing one person to treat another. The sacrifice could take the form of healthcare rationing, transplant organs, etc.

If we acknowledge that in rare cases physicians may be required to make an appraisal of the value of a patient’s life with or without a particular intervention (like opioids for pain) then we can formulate strict rules to guide it. The most basic rule would have to be that whenever possible such decisions should fall to a family member who is capable of taking the patient’s views into account. Keep in mind that there will be exceptions: in the case of organ transplants, this isn’t an option because of the necessity of selecting between patients for recipients of a finite number of organs.

By developing a unified ethical framework for when physicians can be called upon to make these sorts of value judgments, we could gain better insight into when they are appropriate. We could also strengthen our commitment to providing equal care to all patients in the vast majority of cases where it is inappropriate for physicians to make value judgments about a patient’s life. Additionally, having a rubric for when physicians should make these judges will be helpful in the future with the advent of new life-saving or life-prolonging treatments. Just as the development of hemodialysis resulted in an ethical crisis for doctors forced to chosen which patients to keep alive on a fixed number of machines, so will new technologies challenge our ethics.



# THE DEAN'S TAKE: AN INTERVIEW WITH ALBERT REECE

ADAM FISCH, GS II

Since 2006, Dr. E. Albert Reece, MD, PhD, MBA, has served as the dean of the University of Maryland, School of Medicine. Before becoming dean of our medical school, Dr. Reece was a physician scientist, with clinical training in obstetrics and gynecology and research in diabetes during pregnancy. Despite the fact that his busy schedule as a dean prevents him from having the time to see patients, Dr. Reece continues to run an active laboratory. With a physician scientist at the helm of our medical school, we were interested in discussing academic medicine in general, and specifically in our institution, with him.

When Dr. Reece embarked on his medical career, his original plan was to be a clinician with some involvement in academia. As a result, he decided to enter a traditional medical school program. During his residency, however, his constant need for help from the neighboring lab troubled him and made him feel uncertain about his abilities. He decided that he could benefit from a graduate program, and went on to complete a PhD. Looking back, Dr. Reece notes that there are many avenues to prepare for a career in research, with the common denominator being the experience obtained from additional training; he chose to complete a PhD because it includes formal education in research.

Since getting his graduate degrees, Dr. Reece has been very pleased with the translational research path his career has followed. He says a typical situation in academic medicine involves a question arising in the clinic followed by



**DEAN ALBERT REECE,  
MD PHD MBA**

investigation of the question in the laboratory. It is in the lab that the issue is broken down to its simplest parts, namely the basic biology that underlies the clinical observations. Once the cause is elucidated, a therapeutic method is created for the fundamental problem in the laboratory, followed by translation of that therapy to the clinic. Dr. Reece emphasizes that during this process “the eyes are always on the prize,” which is helping the patient.

Dr. Reece also has advice for students interested in applying to a Medical Scientist Training Program (MSTP). When choosing an institution, it is important that it shows “scientific strength, commitment to science,” and “a rich environment.” Typically, applicants gauge these qualities by the funding received by the institution. In addition to funding, Dr. Reece believes you can measure an

institution’s scientific investment and prowess by other indicators, such as how many centers, institutes, and programs are present at the university, as well as how scientists are regarded in terms of academic positions and recognition. In addition, Dr. Reece emphasizes that an institution that fosters science is typically rich in human interaction; people should be “positive, upbeat, and enjoying science,” which allows those around them to also find joy in what they do. Last, based on his training experiences, Dr. Reece strongly believes in the value of mentorship, a central tenet to any good research program, and its pivotal role in a student’s professional growth.

As for the future of our MSTP, and the entire medical school, Dr. Reece believes that the strength of an institution’s research lies in the level of scientific rigor and robustness its students demonstrate in their work. For that reason, in the next five years Dr. Reece would like to see the student research at our university match the strength of our faculty research. He believes that challenging students will translate to greater learning from experience, and will cause students to perceive themselves as junior scientists. Ultimately, with a new culture of increased expectations and performance in science, students will be better prepared for a career in scientific research.



## WINTER RECIPE

*Looking for a recipe to warm you up in case of another Snowpocalypse? Try this Hot Buttered Cider with Rum (alcohol optional, of course).*

### Hot Buttered Cider with Rum

#### Ingredients:

1. 1 gallon fresh, untreated (no preservatives) cider
2. 8 Tablespoons (1 stick) unsalted butter
3. 1 cup firmly packed dark brown sugar
4. Orange slices from about 3 oranges, thinly sliced
5. 1/4 teaspoon ground cloves
6. 1/4 teaspoon nutmeg
7. 4 cinnamon sticks, 2 to 3 inches long
8. 1 1/2 cups dark rum (optional)

#### Recipe:

1. Heat the cider in a large saucepan until it is thoroughly warm.
2. While the cider is heating up, melt the butter in a large heavy pot over medium heat. When the butter has melted, add the brown sugar and stir 2 to 3 minutes. Add the warm cider and continue to stir until all the sugar has dissolved. Add the orange slices, the ground cloves, nutmeg, 4 cinnamon sticks, and the rum. Stir, and cook at a simmer for about 10 minutes.
3. To serve, ladle the cider into cups or mugs. If you want to be fancy about it, garnish each serving with a slice of orange and a cinnamon stick.

(CLINICAL TRANSITION from Page 5)

that she “got lucky” by beginning with her surgery rotation. Since surgery has the longest hours, it allowed all the subsequent rotations to seem less daunting. Also, Kavita explained that there is a lower expectation of clinical knowledge in surgery, which negates any disadvantage she may have had from her time off during PhD training. Both students agreed that it was best to begin with a rotation in a field they weren’t necessarily interested in pursuing to allow them to build their confidence. Regardless of the scheduling differences, both Joshua and Kavita plan on taking a research elective to wrap up some projects they have remaining in their labs.

On a positive note, Kavita and Joshua both felt that they were very well-prepared to take on the clinical lifestyle. Both of their PhD trainings had pushed them so hard that they had no trouble transitioning to the long hours and countless tasks in the clinic. They both felt experienced, if not hardened, by their PhD work. They also felt that they had both matured a great deal in their time away from medical school, which will provide them with tools they need to be successful.

Transitions are difficult. Like the seesaw, it can feel like you are flying out of control, unable to get your feet back on the ground. However, as students gain more experience with transitions, each one becomes easier and easier. Kavita and Joshua have already adjusted to their new environments and settling in to become wildly successful. It will only be a short time before they are able to blast off into their next transition... residency.



## AROUND B'MORE

As always, keep an eye out for events and shows at typical Baltimore venues including: The **Zoo**, The **American Visionary Art Museum**, The **Meyerhoff Symphony Hall**, the newly renovated **Autograph Playhouse**, and **The Walters Art Gallery**. Check out the **Mobtown Ballroom** for free on Monday nights for premiere dancing

For something off-beat, try a short course on **beekeeping** at the **Howard County Fairgrounds** on February 17 and 23 or March 2, 9, or 16. The Fairgrounds will also show **Mid-Atlantic Antiques** on March 28 and host the **Maryland Sheep and Wool Festival** on May 1 (great yarns for the knitters out there and more sheep than you’d want to eat). The Baltimore Museum of Industry will be having its annual **Fest of All** on February 25 featuring swanky stuff. The 1<sup>st</sup> Mariner Arena has some impressive offerings in the spring, including some **Mixed Martial Arts**, a show by **Rammstein**, the **Trans-Siberian Orchestra**, and **Cirque du Soleil** performances of their ode to Michael Jackson. **Farmers’ Markets** will be reopening city-wide in the coming months and are a great way to stock up on local produce and other special products. Neighborhood events include the **Federal Hill Third Thursdays** featuring vendors and events during these evenings. Fells Point has its annual **Brew Fest** on April 14 and **Privateer Day** on April 21. The **Super Art Fight** is returning to Baltimore on March 16<sup>th</sup> at the Otobar. Finally, for an evening of hot pants (oh so hot!), pageantry, and roller derby, check out the **Charm City Roller Girls** at their arena on February 18, March 10 and April 14. Whatever you do, please send us pictures.