



# A.B.S.T.R.A.C.T.

**Annals of Biomedical Student/Trainee Research and Current Trends**

## Letter from the Editor

**T**his past July, PhD students and postdoctoral fellows gathered at the Vanderbilt Student Life Center for the two day, BRET-sponsored Career Symposium. Every few years, Kim Petrie, PhD, organizes this event. The goal of the symposium is to expose trainees to professionals (all with PhD degrees in biological or medical related sciences) who have both traditional and alternative science careers. The whole event is kicked off with a keynote address; this year Eric Haseltine gave a motivating and dynamic introduction for the whole Symposium by describing how his training helped him take advantage of opportunities and excel across disciplines: the once-neurobiologist has been a Walt Disney Imagineer, a Director of Science and Technology for the Office of the Director of National Intelligence, and a business owner, among many other positions. After the keynote, sessions are organized by career, ranging from academia to writing to government and intelligence. The second day begins with a networking breakfast which is followed by professional skills workshops. Many of the speakers who participate are Vanderbilt Alumni. Over the course of these two days, our writers had the ultimate networking experience: opportunities to meet and interview some of these presenters. With this unique opportunity in mind, we at ABSTRACT decided to set up this issue a bit differently than what our readers are used to seeing. This issue will feature these interviews, with a specific focus on Vanderbilt Alumni. In keeping with the theme, we'll kick off the whole issue with a Spotlight on alumnus Susanne Tranguch, written by Rebecca Thomason; this article will be followed by the career symposium interviews. Then, finally, the issue will wrap up with highlights from around the university. Please read on, and we hope you enjoy this special alumni issue.

-Jessi Mazerik-

## Spotlight Alumnus Scientist: Susanne Tranguch

-Rebecca Thomason

**G**raduate school is a time of remarkable growth, both scientifically and personally. However, as we go through this experience as a collective group, it is often easy to lose touch with one another once our friends and colleagues graduate and move on to their new lives away from Vanderbilt University. I had the great fortune of getting to know and become friends with Susanne Tranguch, a graduate student in Cell and Developmental Biology, when I was a first year in 2006. She graduated from Vanderbilt University the next year, but I have followed her post-graduate career path with great interest, and we continue to keep in touch.

Upon graduation with her PhD, Susanne took a position as Editor for the Cell Press journal, Trends in Endocrinology and Metabolism (TEM) located in Cambridge,



## Spotlight Alumnus Scientist: Susanne Tranguch *(continued from front page)*

Massachusetts. Her job revolves around commissioning articles, shaping the scope of the journal, sending articles out for review, rendering decisions on manuscripts based on her opinion and those of the reviewers, and editing the pieces so they are accessible to a broad audience (not just the non-specialist reader).

Susanne is indubitably qualified for this job and it truly suits her academic training and personal interests. Her intellectual and scientific roots trace back long before her graduate school days when she showed an interest in biological systems and physiology at a time when most young adults are pursuing less heady interests. Her first spark of interest originated from a class taught by Dr. Crosby, a high school biology teacher at The Taft School in Western Connecticut. His approach involved conceptualizing to students *why* science is interesting, encouraging higher level thinking and not forcing rote memorization. He put emphasis on the creative skills involved with generating ideas and then provided the knowledge needed to figure out testing methods. Susanne was both enthused and challenged by Dr. Crosby, and this positive experience yielded her an undergraduate degree in Biology and Medical Humanities from Davidson College in North Carolina.

From there, Susanne attended the University of North Carolina at Charlotte to obtain a Master's of Science degree. She worked under Dr. Yvette Huet-Hudsen, who had worked under the tutelage of Dr. Sudhansu K. "SK" Dey, a professor at Vanderbilt University in the Reproductive Biology Program (SK is currently at Cincinnati Children's Hospital). Susanne's "ah ha" moment came when she realized her interests were in reproductive biology and, at that point, she decided to attend Vanderbilt

and work in the lab of SK, her "science grandfather."

Working in the Dey lab was a wonderful, eye-opening experience for Susanne. The lab environment was team-oriented and Susanne recalls a time when she found out that another group was working on a project very similar to hers. The lab banded together to help Susanne collect the data necessary to complete the project. As a result Susanne published her first lab paper<sup>1</sup> and gained great respect and appreciation for her labmates, and especially her mentor. From this experience she realized the support, attitude, and example that her mentor set made a profound difference in her success as a graduate student. Throughout her time in the lab this morale continued, which is something that Susanne remembers and appreciates everyday.

Susanne's thesis involved embryo implantation and pregnancy, and she specifically studied the role of FKBP52, a co-chaperone for progesterone receptors, and its roles throughout pregnancy ranging from implantation to placentation. She also collaborated with Dr. Daikoku, a research assistant professor in the lab, to study the signaling pathways involved in epithelial ovarian cancer. Studying reproductive biology was a particular interest of Susanne's, but it became evident to her that her professional goals were shifting from benchwork to writing and editing. "As I progressed through my graduate career, I found that one of the things I enjoyed most in the lab was writing papers and grants. I enjoyed the challenge of transforming the data into a story," Susanne explained.

Upon earning her PhD in an impressive three and a half years, Susanne finished up in the lab as a postdoctoral fellow for six months. She then immediately began her job as Editor of TEM. She has been working at Cell Press for over a year now and has been excited to be exposed to so many aspects of the field. Some of the best features of her job include the ability to be in "the know" of recent advancements in science. She has the opportunity to travel to many conferences, meet and interact with top scientists, and learn about the most cutting-edge research. In terms of being an editor, it is exciting for Susanne to see the final product of her efforts—the manuscript, "knowing that I made the article more accessible or more enjoyable to read. It is also great to work with other editors here at Cell Press, many who come from such different backgrounds." Of course, with all the positives come some negatives. The hardest part of her job is re-

### Quick Facts:

Davidson College, BS Biology, 2000

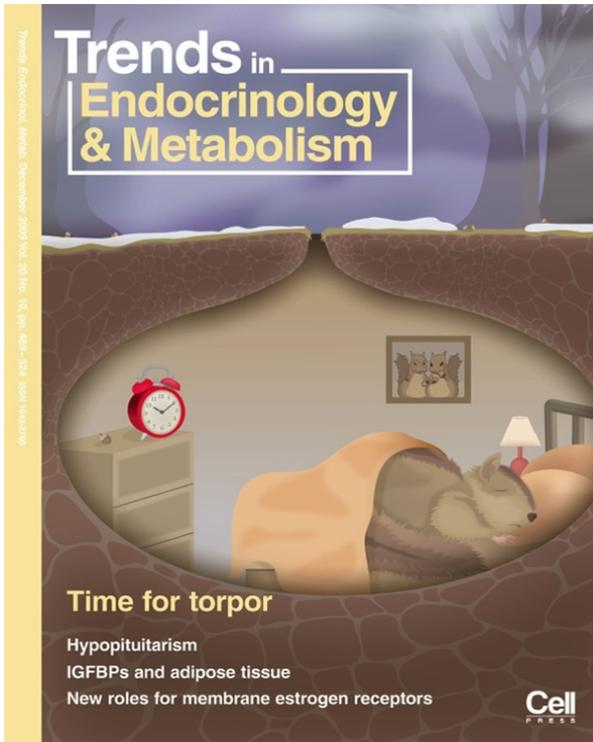
UNC Charlotte, MS, 2002

Vanderbilt University, Ph.D Cell and Developmental Biology, 2007

Editor of Trends in Endocrinology and Metabolism, published by Cell Press, 2008 – present

Currently lives in Boston, MA

Devoted NFL fan, enjoys practicing yoga, running along the Charles River, volunteers with One Village at a Time (health awareness group)



idea for what to do next in either their project or mine. I also used to come in early on the weekends, maybe around 6 a.m. or so, and my PI and I would walk through the Vanderbilt campus and talk about lab issues/research experiments, my plans in life, his ideas for grants...even if I didn't have much to do in the lab over that weekend, I would always come in for those coffee chats with SK." While she prefaced this with, "as dorky as it may seem," many of us can probably relate and appreciate to her scientific recollections.

As for the future of the scientific editing field, things look bright. Cell Press has initiated the "Article of the Future," which will change the way articles can be read online. Accessing information on social networking sites such as Twitter, Facebook, and RSS feeds is becoming a very popular method of communicating. Cell Press is embracing the new technology and methods, and taking a prominent role in incorporating it in the dissemination of scientific knowledge. "It's an exciting time to be in the publishing environment and I think Cell Press will have some more innovations in store."

Susanne plans on staying in the editing field. She has been working to gradually change the scope of the journal and in doing so, TEM is increasing the number of issues that are published every year thus making it consistent with other Cell Trends journals. She has enjoyed expanding her knowledge of endocrinology and metabolism, and continues to hone her skills as a journal editor.

Susanne's story is inspirational because it reminds us that there are as many paths that science can take us as we can conjure up. As graduate students, many times we become so involved with the rigors of our experimentation and the pursuit of our finished thesis that we lose sight of the bigger picture. Susanne provides us with some wisdom and solid advice: "make the most of your graduate career—put your face out there at meetings, talk to that famous scientist that you may think is too important to chat with a graduate student, work those extra hours to do that experiment that you thought would be impossible—it will help expand your horizons and help things come together for you down the road."

<sup>1</sup>Tranguch, SL., et al. (2005). Cochaperone immunophilin FKBP52 is critical to uterine receptivity for embryo implantation. *Proc Natl Acad Sci USA* 102: 40. 14326-14331.

ceiving manuscripts and having to rework, rewrite, or even completely reject someone's article. She knows the amount of work that goes into writing a manuscript, so having to make that decision is extremely difficult.

While her job is exciting and challenging, transitioning from bench science to editing made Susanne realize that "success did not come without sacrifice." As a graduate student, Susanne worked very long hours, was extremely dedicated to her experiments and was an overall model student scientist. When it came time to choose the next road to take in her career path, she began to consider whether she could maintain her standard of success at the bench while sustaining a personal life. In retrospect, she realized that she was unable to do that in graduate school. Susanne's love for science and research—the essential element to being a successful scientist—resulted in lack of attention to her personal life. Understanding and accepting that balance, which is a different decision for every scientist, is crucial to success in the research field.

I asked Susanne what was one of her favorite memories from her time at Vanderbilt. She recalled working in lab late and other graduate students would stop by just to chat about their work and how their experiments were coming along. "I really enjoyed those moments—coming up with some sort of off-the-wall

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## 2010 Career Symposium Interviews

### Susanne's Days Now: Editor

Susanne Tranguch, PhD -Caitlin Gessner

If you have read anything about Dr. Susanne Tranguch, editor of *Trends in Endocrinology & Metabolism*, you already know how successful her career as a basic scientist has been. What you might not know is that she is also highly personable, caring, and broad-minded. These varied characteristics reflect the diverse needs of the scientific discipline in its current state. With the growing need for scientists in non-traditional disciplines, more students than ever are pursuing careers outside of academia. Vanderbilt's 2010 career symposium was a great introduction to the diversity of these fields. During the symposium, I got the chance to interview Dr. Susanne Tranguch and would like to tell you a little more about her and her job.

Since becoming the editor of *Trends in Endocrinology & Metabolism*, Susanne has exerted a great deal of influence over the direction of the journal. Once coming on board, Susanne decided to restructure the journal so that it would encompass a definitive scope of research; the journal now publishes reviews from 12 different areas in endocrinology and metabolism. Since the journal focuses on trends in the field, the articles submitted for publication are reviews of exciting new topics in these 12 areas. A major part of Susanne's job is commissioning review articles from those scientists who have published the best papers in their field.

As the editor of a major *Trends* journal, Susanne must be able to constantly answer the question: "Where is the field now?" She keeps on top of trends by consistently reading relevant literature, visiting labs at the forefront of endocrinology and metabolism research, and attending con-

ferences. The decision to write a review article comes when there is a burst of publications on a specific topic in several journals. This usually constitutes about five or more articles published within a short period of time. In order to identify these trends, Susanne must keep up with a great deal of literature every month. She subscribes to the electronic table of contents (eTOCs) of between 14 and 18 different journals and peruses a variety of science journals daily.

In her editorial role, Susanne is constantly dealing with a multitude of personalities. She has to carefully and critically read each submission. Each article requires a substantial amount of her time because she not only assesses the broad scope and readability of the article, but also line-by-line edits each one before making an acceptance decision. Other tasks include incorporating the reviewers' comments, marking up figures, reviewing the text, and giving constructive feedback to the author. Often times she will ask an author to try to sum up what they are saying if their text seems too narrowly focused. Even in science, commenting on the work of others requires a soft touch. Susanne compares receiving criticism in graduate school to giving criticism as an editor. During graduate school, we are often given feedback in a very direct manner. As an editor, giving feedback to an author who has spent a lot of time researching and writing a review article for your journal requires a great deal of tact.

Starting in January 2010, Cell Press unveiled a novel way of viewing scientific articles online. The new format is referred to as "The Article of the Future," and is now utilized by all Cell Press journals, including *Trends*. It is a tabular version of the traditional linear layout. Instead of scrolling down the article to find the various sections, the main segments (Methods, Results, etc.) are pulled out and placed sequentially on a horizontal axis in tabular format. To access a particular section, all you have to do is click on the tab. To find an example of this format, go to [www.cell.com/abstract/S0092-8674%](http://www.cell.com/abstract/S0092-8674%201001001)



Speaker Ryan Bender and graduate student Tim Panosian chat at the networking breakfast.

## 2010 Career Symposium Interviews

*(Susanne Tranguch continued from page 4)*

2809%2901439-1. This change reflects Cell Press's dedication to co-evolve with new technology and redefine the presentation of a scientific publication.

Susanne notes many good things about her job. One of these is that she is constantly reading and learning about science whether it be from editing a manuscript or browsing journals. This enables her to have a broad exposure to the field and interact with different kinds of scientists. The job also allows her to remain close to research without having to put in long hours at the bench. One of the most rewarding aspects of her job is when a manuscript she has worked very hard on with an author is accepted for publication. A negative aspect of her job is that the workload is often high because of the quick turnaround. She also notes that as an editor you tend to become the "jack of all trades, but master of none."

So how did she get here? During her time as a graduate student in Dr. S.K. Dey's lab at Vanderbilt she was often asked to edit the work of her peers since she was the only native English speaking member of the lab. She found that she really liked the process of writing a paper for publication and enjoyed helping her peers assemble a coherent story. She also helped Dr. Dey write grants for the lab. These experiences were invaluable to her becoming an editor. A great piece of advice she learned from her mentor was on the aesthetics of paper writing. "A key to a successful paper is in its packaging," she says. Striving to tell a story with your figures will help to capture the editor's eye.

If this type of career interests you, Susanne has a couple of suggestions to help you get started. She recommends getting exposure to different fields of science. Reading and learning about science in the broad sense will help you become successful as an editor. Submitting articles for local newspapers is a great way to get experience writing in different formats for different audiences. She also recommends getting involved in reviewing manuscripts. This can be your peer's work, an article your mentor has been asked to review, or even a grant submission. Susanne also urges those seriously interested in editing or writing to attend the annual Santa Fe Science Writing Workshop, held in New Mexico in May.

Graduate school helped Susanne become resilient and has given her a backbone and a new outlook on life. These qualities have allowed her to become successful in her career. Her success

would not have been possible without her training here at Vanderbilt where she learned to think like a scientist. Susanne represents the leitmotif of the Vanderbilt career symposium: training as a graduate student in biomedical sciences at Vanderbilt will prepare you for success in any field.

## Science Policy

Larry Kerr, PhD -Stephanie Hirst

Lawrence (Larry) D. Kerr completed his undergraduate degree in biology and art history at the University of the South in Sewanee, TN in 1986. He went on to receive his PhD in Cell Biology at Vanderbilt in 1990 and did his postdoctoral research at the Salk Institute for Biological Studies in San Diego, CA. He then returned to the Vanderbilt School of Medicine as an assistant professor in Microbiology and Immunology, where his laboratory studied the transcriptional regulation of gene products involved in HIV replication and in the development of breast cancer. In 1998, he received the Robert Wood Johnson Foundation Health Policy Fellowship. During his fellowship in Washington, DC, Dr. Kerr worked for the health subunit of the Senate Judiciary Committee on matters concerning NIH reauthorization; medical device coding for Medicare reimbursement, radiation exposure compensation litigation, and more. After completion of the fellowship, he briefly worked as section chief of Transplantation Immunobiology at the National Institute of Allergy and Infectious Diseases (NIAID) before taking a position in the Office of Science and Technology Policy (OSTP) at the White House in 2001. Dr. Kerr later became the Director of Biodefense Policy for the White Homeland Security Council until he moved to the Office of the Director of National Intelligence (ODNI) in 2006. He now serves as the Deputy Director of Global Biological Threats and as an adjunct associate professor of Microbiology and Immunology at Georgetown University. Given his impressive and unique career path, I was excited to interview him while he was in town for the Vanderbilt Career Symposium.

**SH: Why did you think this career symposium was important enough for you to come back to Nashville?**

LK: Great question. One of the things I recognized very early on after I left Vanderbilt and I went to work for Congress is how desperate the need to have scientists in the federal government is. There are very, very few relative to the number of other policy makers. So we try to recruit good scientists into the government and see if they have an interest in policy, either in the congressional side or the executive side. (p. 6)

## 2010 Career Symposium Interviews

(Larry Kerr continued from page 5)

**SH: How did you find your previous training in academia helped you in your new career?**

**LK:** I think one of the differences I noticed between myself and individuals who are coming in, either as students or postdocs, was the whole granting process. In other words, writing for grants, going through the grant-review process, running a laboratory, etc. It gave me a slightly different perspective, particularly when it comes to funding. Policy not only involves strategy and implementation plans, but also how are you going to pay for it? You suddenly go from a laboratory here, where you look at everything in the [\$\$\$]1,000's, to dealing with almost everything having seven, eight, and nine zeroes behind it. Having an appreciation of how something that you're working at the federal level translates back to a lab at a specific university or a lab within a biotech firm allows you to bring a perspective not many people have. For example, when I was on the health subunit of the Senate Judiciary Committee, I was surrounded by sixty-six lawyers. None had worked in academia beyond getting their JD. I would have to explain what impact passing a bill or supporting a bill would have to universities, to the biotech sector, and to the pharmaceutical industry. Being able to have that appreciation is profoundly important.

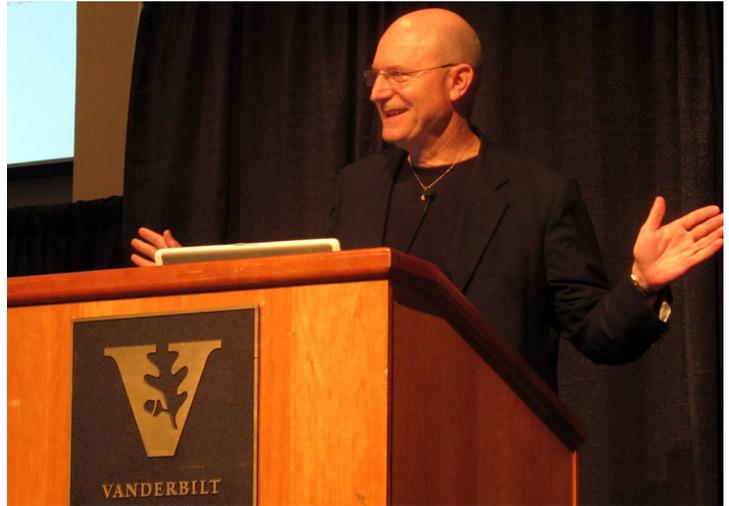
**SH: What kind of skill sets did you have to obtain once you left academia?**

**LK:** In almost every field that I've dealt with, you really need to develop negotiating skills very quickly. The job of policy is to lay out all available options. Those can be from doing absolutely nothing, to doing something that is obscenely stupid but doable, and everything in between. Say there are actually five options of which only three are really valuable. You then develop those three options with pros, cons, and cost, both in terms of money and political cost. You may have to give up something in order to push this through. You need to become really good at working with other people and trying to bring them to consensus. You must take charge and make a decision, and so the higher you go, the more you are actually asked to be the decision maker. You're presented with the options, and sometimes some decisions have to be made that aren't necessarily popular.

**SH Describe a typical day for you.**

**LK:** Most days are usually between 10 to 12

hours. There are many jobs across the government that are 9-to-5. Mine is a little different. When you choose to be in the senior executive service, which is above the GS scale, you aren't really on the clock, so to say. You could have sixty, seventy, even eighty-hour weeks. It just depends on whether or not you like that or whether it's a lifestyle you want. Many of my friends don't travel at all. I spend about 40% of my time traveling. I have friends who work in the State Department who spend maybe 80% of their time traveling. They love it because they get to go all over the world, they're learning different languages, and they're negotiating science at an international perspective. It's a phenomenal career if you like that. I'm not sure that many people would like my calendar. Most of my time is booked into fifteen-minute increments. I spend a lot of time down at the White House; I'm down there four or five days per week for multiple periods. There is a slight aspect when I wake up in the morning and I turn on CNN, my day could change depending on what's going on in the world. It's a very



Eric Haseltine delivers a motivational Keynote Speech.

## Management Consulting

Paul McDonald, PhD -Jason Downey

**D**r. Paul McDonald earned his PhD in Neuroscience in Dr. Randy Blakely's lab in 2006. He studied mechanisms involved in Parkinson's disease, specifically dopamine transporter signaling and movement in *C. elegans*. Before his stay in graduate school was over, he realized his preference for the intellectual side of research: the experimental and hypothesis design and uncovering cutting-edge ways of solving a problem. Paul was exposed to the field of management consulting when a recruiter from McKinsey & Co came to Vanderbilt. Management consultants are employed to

## 2010 Career Symposium Interviews

*(Paul McDonald continued from page 6)*

streamline a research and development program, develop a solution set, and hand off the new strategy for implementation. Through Dr. Kim Petrie in the BRET Office of Career Development, he interviewed with a recruiter at Booz Allen Hamilton (BAH). They extended him a job offer and he started as an Associate the Monday after defending his thesis.

At BAH Paul had a diverse portfolio of clients. As a scientific adviser to the Department of Defense (DoD) he evaluated proposals and programs funded by the DoD and technologies for chemical, biological, radiological, nuclear, and explosive detection devices. For the Defense Advanced Research Project Agency (DARPA) he was a Scientific Engineering Technical Assistant, advising on a number of projects. One such project, named "Intestinal Fortitude," involved searching for an enzyme from symbiotic bacteria in ruminants, which convert grass cellulose to glucose. Paul also vetted funding applications for malaria and tuberculosis programs at the Bill and Melinda Gates Foundation. As a neuroscience expert familiar with disorders such as post-traumatic stress disorder, he worked with Provost Marshal General Colleen L. McGuire on the 2010 Army Health Promotion/Risk Reduction/Suicide Prevention (HP/RR/SP) Report team. Paul was one of three co-authors of the 2010 Army HP/RR/SP Report, which focused on trying to understand the reasons for increased rate of suicides in the armed forces. Last year Paul started his own consulting business: AxHill ([www.axhill.com](http://www.axhill.com)). His company identifies up-and-coming technologies that may benefit the DoD, works with the company to market their technology to the DoD, and gets written into any contracts as a project manager.

Strong communication and time management skills are two key traits a consultant must possess. Consultants have to constantly think on their feet and keep clients' expectations and needs in mind. "If I get a question I can't answer, how can I find an answer, or at least hold the client at bay until I can find an answer?" Communication skills are crucial. The ideal candidate also combines the academic rigor of Vanderbilt with someone that is personable. Meeting clients and getting business is part of the job requirements. Clearly, communicating expectations is a necessity. From the clients' perspective, a consultant is their asset. From the consultant's perspective, the only way to grow a business is to spread around effort. If expectations are not made transparent upfront, it is easy to get overwhelmed.

Paul benefited by starting his career at such a large consulting firm. BAH offered classes on relevant professional skills and exposed new associates to the concepts, laws, and regulations surrounding consultant contracts. Dr. McDonald advises graduate students and fellows seeking a career in management consulting to get in touch with someone that has an interesting position and has ties back to Vanderbilt. He recommends that the biggest thing a graduate student can do regardless of whether going into a postdoctoral fellowship or directly into the workforce is to network and have mentors. Professional connections are most important. Furthermore, take advantage of every opportunity to present and rigorously defend your data. Write for a grant and get feedback to improve technical writing skills.

Dr. McDonald is currently busy looking for opportunities to expand AxHill. His hunt for emerging technologies takes him to places like Fredericksburg. Paul's perspective on the life of a consultant: "Right now I'm at a conference in Fredericksburg, VA for the Army Criminal Investigation Division. What do I know about criminal investigation? Nothing." The life of a consultant is a flexible one.



**ABSTRACT founder and former Editor Julie Field networks at breakfast, socializing with another attendee.**

## 2010 Career Symposium Interviews

(Larry Kerr continued from page 6)

active calendar. (continued on page 8)

**SH: Well, what do you like/dislike about your job?**

LK: The likes are definitely the people I work with. You find that you're surrounded by incredibly smart, driven people from many, many different disciplines. For example if I have a question of law, I literally just walk around the corner, and I have lawyers who work on a variety of issues who are willing to explain issues to me and help us sort through what we need to get accomplished. If I want to know something about nuclear medicine or nuclear aspects, they're right next door to me. For counter-terrorism, we deal with everything from first-responders to basic scientists who are working on vaccines, diagnostics, therapeutics, also health delivery systems, intelligence aspects, the troops, etc. It's very stimulating in that one subject can touch so many different areas and that you can go to people to learn about their expertise. On the flip side, that is almost the challenge as well because it can be information overload. Sometimes you have to figure out where to go, which also creates the other problem in government, which is bureaucracy.

**SH: Outside of the bigger fellowships, such as the AAAS and RJW fellowships, how do you find out about these more specific ones?**

LK: If you belong to a society, contact them first. Express your interest in working in policy to them and see whether or not they have specific programs that are already set up, or they may be willing to sponsor you. In other words, they may not have a formal program, but if you are in their society and you say, "I would like to work on your topic. Would you be willing to sponsor me for a year?" there are associations that do that and have the money to do that. Sometimes, home universities also have fellowship programs. For example, the governmental affairs office of some universities offer fellowships and stipends to send students and postdocs to the Hill so that when they come back, they act as ambassadors or liaisons. Some of those people actually go into government or congressional affairs offices as jobs.

**SH: How would you recommend that graduate students and postdocs learn about the differences in a government résumé versus an academic résumé?**

LK: The master guide is from the Office of Personnel Management (OPM, [www.opm.gov](http://www.opm.gov)). If you search for "résumé," a PDF will come up that

explains each part and exactly what they (the government) are asking for. In some cases, the government résumé is much shorter than your academic résumé. For example, they're not interested in your thesis topic until you get to the next phase, where you would be interviewed. This is a very bureaucratic process. They're just looking for the basic information that will get you to the next phase.

**SH: As graduate students and postdocs, what can we do now if we think we'd like to transition into policy later?**

LK: My first advice would be, become the best scientist that you can become. Don't slack or shirk in any way. Take this time period to truly understand and develop the discipline of science because once you leave, you will never be in that learning framework again. What we learn as scientists is fundamentally different than anyone else in any other discipline. You will find that within weeks or months of stepping into an environment where you're surrounded by non-scientists. The way we think is fundamentally different. We learn to ask questions, we learn to find ways to resolve those questions, but then we're constantly questioning. "Is that right? Do we need to do something else to improve it? How do we evaluate whether or not the decision we've made is a correct one?" So you're not only bringing whatever discipline of science you've gained your PhD or done your postdoc in, you're bringing a way of thinking with you, and I would just say, first and foremost, develop that.

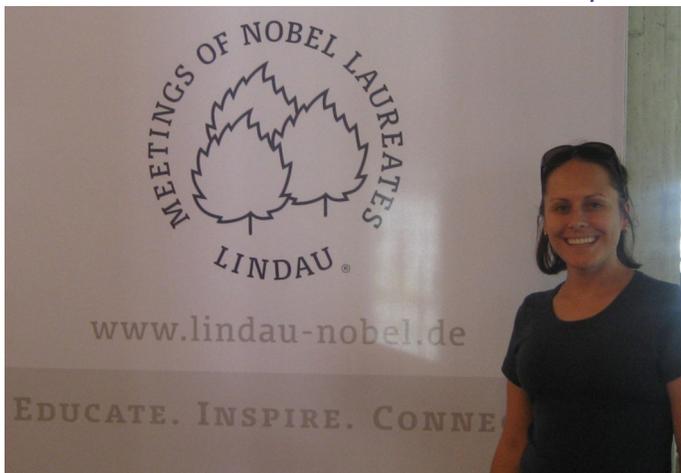
Secondly, think beyond being a scientist. Every once in a while, pop your head up from what you're doing in the university to say, what else am I doing in my life? Am I involved in extracurricular activities? Am I involved in social activities that are developing skill sets that I will use throughout my career? It's important because a very high percentage of the successful scientists in policy are people who just have many interests all over. Those individuals are able to take science and translate it into other perspectives more readily. If you're interested in science policy and want to become involved in the more political aspects, work through the (scientific) associations; don't be afraid to approach something new. Have familiarity with everything that's going on with the federal system. If you're actually interested in seeing how science, technology, and math is conducted, become a part of it. There's a huge detachment from the policy world to the world in which policy is actually implemented.

**Interested in writing for ABSTRACT?  
Email [jessica.n.mazerik@vanderbilt.edu](mailto:jessica.n.mazerik@vanderbilt.edu)**

# Around the University

## Vanderbilt Highlights & Updates

### Lessons from Lindau -Sarah Kurley



Sarah standing in front of the Lindau Logo.

This summer 650 young researchers and 59 Nobel Laureates gathered in Germany for the 60<sup>th</sup> Annual Nobel Laureate Meetings at Lindau to continue an interdisciplinary, intergenerational scientific dialogue. The events of the Lindau meeting centered on the Lindau Foundation credo: educate, inspire, connect. Students representing over 70 countries participated in daily lectures and discussion sections lead by Nobel Laureates in Physics, Chemistry, and Medicine. From “The Underground Physics: Neutrinos and Dark Matter” to “Mice, Men, and Medicine,” lectures provided an excellent introduction to a wide variety of topics and highlighted the interdisciplinary nature of the meeting. During meals, members of the United States delegation were provided an opportunity to connect with students from other countries and discuss science around the globe. The meeting closed with a discussion on energy and sustainability reflecting another theme of the meeting, the effects of science on society.

The discussion panels focused on the life of a scientist and achieving success in science. Young scientists are often faced with questions of how to navigate the long and winding road of science. While one conference is not sufficient to tackle such complex discussions, the Laureates provided insights into topics surrounding achievement in science and life as a scientist. First, success in science and family are not mutually exclusive. Dr. Ada Yonath, 2009 recipient of the Nobel in Chemistry, ended her lecture of the structure of the ribosome

with a picture made by her granddaughter. It read, “The grama of the year is Ada Yonath!” When Dr. Yonath asked her granddaughter why she was best for only this year, she replied, “Every year you have to re-prove yourself to me.” Dr. Yonath encouraged that success in both family and science is possible, if you work hard and earn it every year.

Second, successful scientists are as diverse as the types of science they study. Some laureates earned the prize for their lifes’ work, whereas others were simply tinkering around with a new technology. One specific personality, field of study, or way of doing science does not generate a Nobel Prize or a successful scientist. Dr. Ciechanover, 2004 Nobel Laureate in Chemistry, stated, “Not everyone looks at problems the same way. This is an unbelievable melting pot.” Dr. Chalfie, 2008 Nobel Laureate in Chemistry, echoed this idea, “Scientific success comes via many routes.” They imparted the wisdom that science and scientists advance because of diverse approaches and unique paths.

Finally, lifelong learning and following interests will lead to a fruitful career. Despite the differences in approaches to science, the common bond between successful scientists is curiosity and joy in learning. Dr. Smithies, inventor of gel electrophoresis and 2007 Nobel Laureate in Physiology or Medicine for gene targeting, is 85 and still works at the laboratory bench. He stated, “I am still a student. I am a simple student of science.” After emphasizing the importance of always learning, he continued by reflecting on the value of finding pleasure in science, “I think you have to play hard. Choose a field of work that is not work. Then when you go to work, you go to play.”

To learn more about the Nobel Laureate Meeting at Lindau and watch lectures online, go to [www.lindau-nobel.org](http://www.lindau-nobel.org).

Sarah (left) smiles for a photo with David Wheeler from University of Pittsburgh (middle) and Hamilton O. Smith, Nobel Laureate in 1978 for the discovery of restriction enzymes; current developer of the artificial cell (right).



## Around the University

### Vanderbilt Highlights & Updates

#### Consulting Club -Elizabeth Ashley Durham

We are excited to announce the founding of the Vanderbilt Graduate Consulting Club. Consulting firms help their clients, other businesses, and find solutions to their problems by providing information and advice. Many top consulting firms actively recruit advanced degree holders, a group known for their ability to creatively break down and analyze problems.

The consulting club is open to all graduate students and postdocs and is intended to be a casual way for students interested in consulting to learn more about the field and prepare for the consulting application process. We meet quarterly and don't require a large time commitment—we would just like to provide information and support each other as we prepare to apply for consulting positions. Some goals of the club are to:

- Provide an overview of the consulting field, and in particular companies that focus on hiring advanced degree holders
- Distribute information about recruiting, internships, and full-time opportunities
- Provide resources for preparing for consulting interviews
- Provide a network of students who can share their experiences, and prepare and practice for interviews together
- Develop a network of alumni in consulting firms who can provide guidance to students looking to enter the consulting field

Some of our upcoming events include consulting-specific resume critique sessions, on-campus recruiting events, and informational events where members can interact directly with consultants to learn more about the field.

To find out more, please visit our Google group at <http://groups.google.com/group/vandy-grad-consulting> and request an invitation to join.

**The Career Symposium was sponsored by the Biomedical Research Education & Training Office and supported by the Vanderbilt Medical Alumni Association and Vanderbilt Training Grant Programs.**

#### CDB Highlight: Tansey Lab

-Dominique Donato

The Department of Cell and Developmental Biology has welcomed Professor William Tansey into the fold. Dr. Tansey was recruited from Cold Spring Harbor and praises Vanderbilt for its “egalitarian approach” to research and he is enthusiastic about the “critical mass” of good researchers found here. He brought lab members with him from Cold Spring Harbor and is looking to expand the lab. His laboratory has two main focused areas of interest: (1) the regulation of the ubiquitin-proteasome system, and (2) the regulation of c-myc transcriptional activity. Ubiquitylation is usually thought of as the process by which proteins are tagged for destruction by the proteasome, or the equivalent of the cell's trash receptacle. Tansey's research sheds a different light on the process, showing that ubiquitylation can actually act as a “licensing mechanism” for transcription factors, a way for the cell to “micromanage” the process of gene expression.

The lab uses *Saccharomyces cerevisiae*, otherwise known as Brewer's yeast, to study the machinery responsible, and then uses what they've learned to do *in vivo* studies using a mouse model. In this way, Dr. Tansey hopes to take an interesting scientific phenomenon and flesh out its importance in human disease.

Dr. Tansey was appointed Interim Chair of the Department of Cell and Developmental Biology in January. The former Chair, Dr. Susan Wenthe, cited increasing responsibilities as Associate Vice Chancellor of Research and senior associate dean for Biomedical Sciences as the reason for her resignation.

#### **Scholarly Communication Clinics Every Friday, 12:10-1:10 in 423 Light Hall**

Learn approaches to figure design, grant writing, publishing, and presenting from the CSC and invited Vanderbilt experts. Bring a draft or plan for feedback (optional)

Contact: [Jessica.I.Moore@Vanderbilt.edu](mailto:Jessica.I.Moore@Vanderbilt.edu)

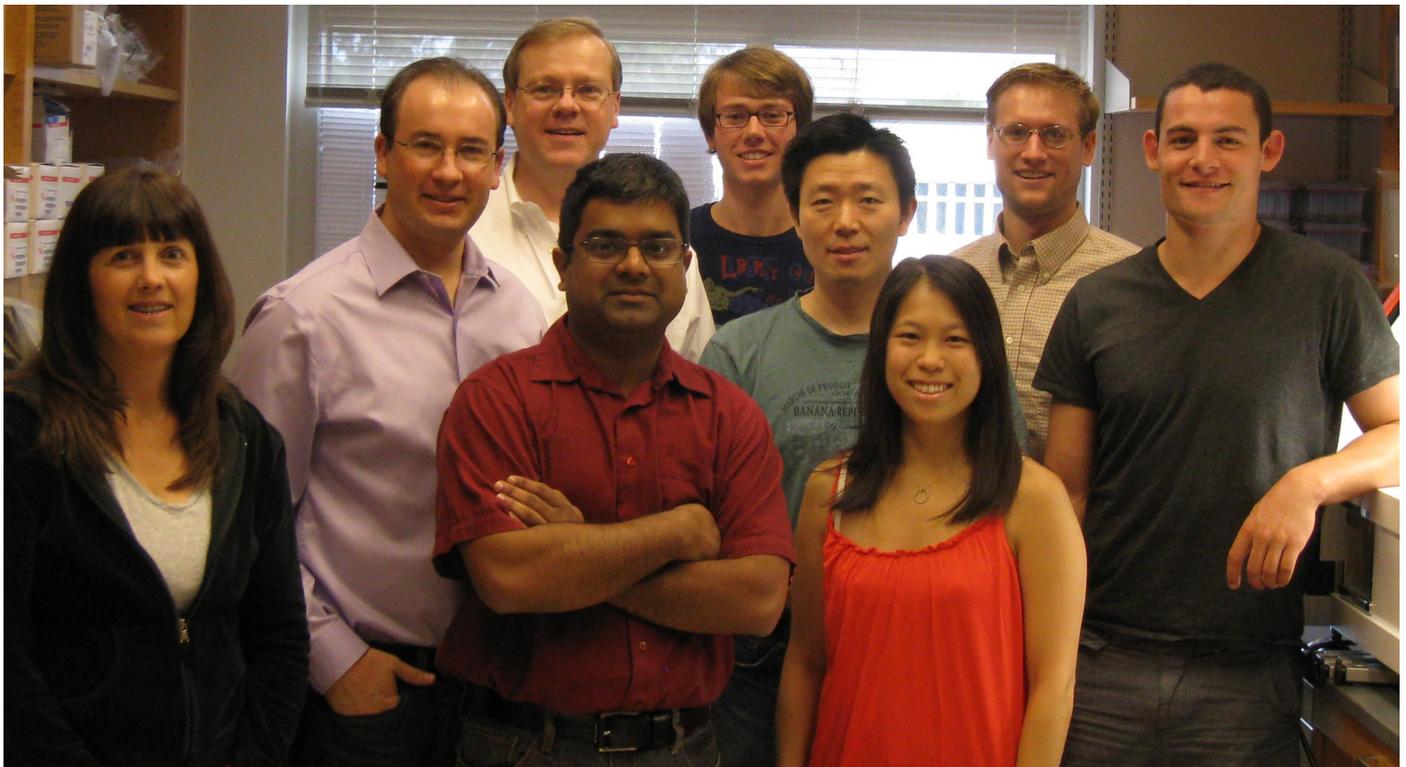
## Pathology Highlight: Hudson Lab

-Robin Marjoram

Novel discoveries in science are a part of the impetus for conducting research. A paper published last year in *Science* [2009 Sep 4; 325(5945): pp.1230-4] by Dr. Roberto Vanacore (research assistant professor in Dr. Billy Hudson's lab in the Department of Pathology) and colleagues used mass spectroscopy and nuclear magnetic resonance spectroscopy to identify a new type of biomolecular bond that connects collagen IV promoters. This new covalent link is a sulfilimine bond (-S=N-) and is formed between certain hydroxylysine and methionine residues in the noncollagenous-1 (NC1) domains of adjacent collagen IV molecules. Collagen IV is an important constituent of basement membranes, which are specialized forms of extracellular matrix that give structural support to tissues and serve as ligands for cell adhesion, migration, growth, and differentiation. Dr. Hudson's lab has focused on understanding the structure and function of collagen IV in relation to basement membranes and the molecule's involvement in diseases such as Goodpasture autoimmune disease. These sulfilimine bonds further stabilize the collagen IV network and also help keep masked the

collagen IV antigen that when exposed can cause Goodpasture disease. Through species sequence analysis, the authors showed conservation of the hydroxylysine and methionine residues involved in these sulfilimine linkages across a range of metazoans with divergence occurring at sponge and cnidaria, suggesting the sulfilimine bond was an evolutionary adaptation toward physical stresses on organisms.

More recently, Dr. Hudson and colleagues published research in *The New England Journal of Medicine* [2010 July 4; 363(4): pp.343-54] which examined the binding specificity of autoantibodies from patients with Goodpasture's disease for collagen IV NC1 domains. They determined that the sulfilimine bonds crosslinking the NC1 domains of adjacent collagen IV molecules constrain the quaternary conformation and block the Goodpasture autoantibodies from binding. However, upon pathogenic conformational changes in collagen IV caused by loss of the sulfilimine linkages, neoepitopes are exposed, allowing the autoantibodies to bind and trigger the autoimmune response. They newly characterize the pathogenesis of Goodpasture's disease as a "conformeropathy" highlighting the pathogenic conformational change in collagen IV as the pivotal step in the disease's progression.



C-Myc and ubiquitin uncovered daily: The Tansey Lab , posing in their new location on the 4th floor in Medical Research Building III.

# 'Peer Review': Advice for Research Trainees

Hosted by Rachel Roberts-Galbraith

Dear Reviewers,  
I am in a Research I position and am currently working in a great lab at Vanderbilt. I am unsure if I should pursue a doctoral degree. I have a Master's and may consider graduate school at Vanderbilt if I knew the criteria for acceptance. What makes a competitive application? Will working in a Vanderbilt lab help strengthen my application?  
-Ph.D.-to-be???

Reviewer 1: Well, it seems that you are asking more than one question... whether you should get a doctoral degree and whether you'd be accepted to the IGP at Vanderbilt. I would suggest you explore the first question first. What are your long term career goals and do they require that you

have a Ph.D? Do you really want to pursue higher education and why? What would you do next?

Reviewer 2: As we are not faculty here and thus don't know much about admissions, you should ask the head of your laboratory for advice and ask Michelle Grundy (Asst. Director of the IGP) if you have questions about admission requirements. That said, application to the IGP is free, so you don't have anything to lose.

Dear Reviewers,  
I am dating a new girl and I need suggestions for cheap dinner dates. Often, I only have an hour or two for the whole date before I need to get back to the lab to finish up my experiments. Ideas for dining on the cheap/quick?  
-Speed Dater

Reviewer 1: Calypso Café on Elliston Place.

Reviewer 2: Kalamata's... Mediterranean food in Green Hills.

Reviewer 3: Fido in Hillsboro Village.

Dear Reviewers,  
I have a rotation student who is really driving me bananas. He won't write anything down, so I have to repeat things over and over. He makes silly mistakes like putting agar plates in the freezer instead of the refrigerator and then laughs stupidly when he realizes his mistake. And he never shows up when he says he will. I know I am supposed to

be training to mentor students myself, but what do I do!? I am ready to snap!  
-Out of Patience

Reviewer 1: Tell your P.I. that this one's a wash and just give him pointless/harmless tasks from here on out. Your time's too valuable for this.

Reviewer 2: It's intervention time. You need to have a talk with this guy and lay out what your expectations are. He probably won't like it but you can frame it as an 'I am doing-you-a-favor-before-you-embarrass-yourself talk'... because no good lab will want such a loser. In the future, you might consider outlining these expectations at the beginning of the rotation.

If you have questions for the reviewers, email us at [peerreviewers@gmail.com](mailto:peerreviewers@gmail.com) and we'll try to help!

## UPCOMING EVENTS:

**GradSTEP 2011– Teaching 3D: Dimensions of Teaching**  
January 22, 2011 from 9:30– 3:15

**Career 101 Workshop**  
February 26, 2011

**SAVE THE DATE:**  
October 18, 2011  
**Grant and Fellowship Workshop for Graduate Students & Postdocs**

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## CAREER SYMPOSIUM PHOTOGRAPHS PROVIDED BY:

TARJANI THAKER  
KIM PETRIE

Have you considered using research ideas for a business venture?  
*Life Science Tennessee Graduate Alliance and the BRET Office present:*  
**Keith Gregg**, Chairman of JRG Ventures in Brentwood, TN

**Venturing into the Business of Science**  
Thursday, January 27

12:30-1:30 pm  
1220 MRBIII

For information and registration contact [Tim.Panosian@vanderbilt.edu](mailto:Tim.Panosian@vanderbilt.edu)