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Dear Interviewees,

Welcome to NYU School of Medicine. These are very exciting times here and we hope that you choose to join us for your graduate education.

As you can see from the activity going on around you, we are in the midst of a major construction program to upgrade and expand our already sizable facilities and faculty. The centerpiece of this expansion will include a new 400,000+ sq ft research building which will house a new research institute in neurosciences. To fill these laboratories and other newly created positions at the Medical Center, we have already hired more than 45 new faculty in the past four years and there are more to come. As of January 1, 2014, there are 200 Medical Center faculty and another 40+ faculty at the NYU Main campus with whom students can rotate and carry out their dissertation research (including most of the faculty at the Center for Neural Science). There have also been major academic changes in our graduate program to offer students more research options, to streamline our requirements and to increase mentoring in order to insure that a greater percentage of our students complete their degrees in an appropriate time frame. Presently, over 85% of the students who start our program receive their Ph.D. with a median time to degree of 5.4 years. Both numbers are already at the high end of the educational spectrum, but we hope to do even better.

We are also very excited about our new training programs in Stem Cell Biology (which began in 2010) and Immunology and Inflammation (which officially started in 2011). Both programs have already been awarded training grants from the NIH and the Stem program also received a NYSTEM award (the NY state stem cell initiative, which allows human stem cell research). Many of our programs are now designed to train doctoral candidates for careers at the interface between biology and medicine, providing essential tools to allow Ph.D.’s to function effectively in translational research endeavors. Furthermore, the knowledge of basic medical concepts and the holistic approach imparted by our programs, prepares students to be more effective in careers as “traditional” basic scientists. In the 2010 report by the National Research Council Evaluation of Graduate Programs, 7 of our programs were ranked in the top 20 of their respective fields (4 in the top 10) and according to an evaluation by the Chronicle of Higher Education (2008) the overall Graduate Program
at Sackler was ranked in the top ten of all biomedical science programs in the country.

For those of you that may not be aware, the Institute is composed of one of the most diversified student bodies in the country, consisting of more than 300 full-time Ph.D. (230) and M.D./Ph.D. (72) candidates of whom 18% are from underrepresented or underserved groups, more than 60% are women, and 25% are international (from 27 different countries on 5 continents). We are firmly committed to maintaining this diversity.

The Institute has also been recognized as a national leader in graduate education. We have been highlighted by the American Association for the Advancement of Science (AAAS), Association of American Medical Colleges (AAMC), New York Academy of Sciences (NYAS), National Postdoctoral Association (NPA), National Research Council (NRC), the NIH and the NSF for our innovating programming in interdisciplinary graduate education; the recruitment of students underrepresented in the sciences into graduate and postgraduate education; and student, postdoctoral and young faculty career counseling and development. In September 2013, our postdoctoral program received the top rating in the country for our submission of an NIH BEST (Broadening Experiences in Scientific Training). This grant is to “support bold and innovative approaches to broaden graduate and postdoctoral training, such that training programs reflect the range of career options that trainees (regardless of funding source) ultimately may pursue and that are required for a robust biomedical, behavioral, social and clinical research enterprise.”

Again, welcome to NYU. We hope you find your visit here both useful and enjoyable and that you seriously consider becoming part of the NYU family.

Sincerely,
Joel Oppenheim

Honors and Awards 2013-2014

Yusuff Abdu, HHMI International Student Research Fellow

Laura Fogli, NIH NRSA

José Montoyo-Rosario, NSF Graduate Research Fellowship

Susan Sheng, Career Development Activities Award, NYU Clinical and Translational Science Institute, NIH/NIDDKD

Cover photo courtesy of Daisuke Chihara
From the SSC

Dear Sackler,

It has been a pleasure to serve this graduate student body for the past 4 months! We have already had some great fun, and we can’t wait for what 2014 will have to offer us all! With most of the labs at NYULMC getting back to normal post-Sandy, it’s really encouraging to see the sense of community that has remained long after the effects of the storm. Friendships crossing institutes, programs, and departments have fostered an even more supportive, collaborative environment, and we are so fortunate to be surrounded with such brilliant and personable scientists.

Looking back on the 2013 Fall semester, we got to start off by meeting our freshest batch of graduate students and getting to know them really well throughout orientation week. From baseball games to Turkish dinners to IKEA shopping to Brooklyn Bridge walking (and everything in between), the first years got a small glimpse of what it feels like living in The Big Apple. In October, we got our fill of Halloween spook during a movie night when we watched The Conjuring. We also put on our annual Halloween party, which took place this year at Gallery Bar in the Lower East Side. Fast forward to just a few weeks ago, when we brought back our annual Holiday Party/Ugly Sweater Contest (after a one-year hiatus thanks to Hurricane Sandy). The evening was filled with good food, great company, and ugly sweaters! We were also fortunate to raise money for Typhoon Haiyan Relief in a cash giveaway raffle. At the end of January, we’ll be going on our annual Sackler ski trip to Hunter Mountain (a few hours upstate) for a weekend.

But that’s not all we’ve got planned for the year! Besides getting to meet an awesome bunch of interview candidates from January to March, we will dive into the spring semester ready for more Sackler bonding. SSC is in the planning stages for a Sackler-wide talent show – so start getting your acts ready for a great display of hidden talents (we’re not just good for doing Western blots). We will also be holding the well-attended Sackler formal in May/June. Whatever the event, we love to see and facilitate the camaraderie and good spirits of our student body, part of what makes Sackler Institute such a great institution for all.

Photos courtesy of Michael Escosia
As usual, we are more than happy to hear your thoughts! We are here to serve you, and if there is anything you’d like to see happen, we will do everything we can to make it a reality. Whether it’s an SSC event, a club you’d like to start, or a community service act, if something sparks your interest then it’s a priority to us. Happy Holidays from all of us, and best wishes for a successful year in 2014!

Sackler Student Council 2013-2014
sacklerstudentcouncil@gmail.com

Scenes from SSC Events
The young scientists of New York City gathered at NYU Langone Medical Center on November 2-3 to attend the 2013 version of What Can You Be with a PhD? Begun as a half-day series of talks in 1995 by Senior Associate Dean Joel Oppenheim, WCUB (www.wcub.org) has grown into the largest career fair in the biomedical sciences in the entire country. Dr. Oppenheim was truly visionary in creating a forum to educate PhD students on the many career options open to them during a time when any outcome short of tenure-track faculty was seen as a failure. This year, we were proud to host this trailblazing event almost exactly one year after Hurricane Sandy devastated our facilities and made it unclear whether we could even properly hold such a large event. Undaunted by the challenges, we were supported by 15 co-sponsoring institutions in the area, and attendees from as far away as UC Berkeley.

Though we had reduced space, and no cafeteria for lunch, there was no shortage of enthusiasm or great advice, as over 1000 people attended to hear more than 80 speakers provide their perspectives on a wide range of careers. Each time slot featured three different panels, and one career skill workshop, and every room was filled all day on Saturday, November 2. Highlights included There’s a Pill for That: Careers in the Pharmaceutical Industry, an amazing workshop on Networking, and the day’s keynote talk from Alison Hall, NIH Deputy Director Division of Training, Workforce Development, and Diversity. Dr. Hall provided some insights into the current funding climate at NIH, and what the NIH is doing to promote better training and mentoring at schools across the country.

Sunday, November 3 was not just the second day of career panels, but also the NYC marathon, which might have made it more difficult to get to the Medical Center for some but the attendees were rewarded with another outstanding slate of sessions. Leading the day off with panels on faculty careers, science policy, and international careers, we also introduced our audience to Mary Mitchell, who provided a workshop on business etiquette and interviewing skills that left not an open space in the room. Other great sessions included sessions on Science Writing, Entrepreneurship, and an amazing session on Teaching careers. We finished the event...
NYU’s BEST Grant and IDP Course
by Keith Micoli

This year, for the first time ever, the National Institutes of Health solicited applications for a new type of grant to support training of scientists for careers beyond academia. This grant, Broadening Experiences in Scientific Training (BEST, get it?), was open to any PhD-granting institution in the US, and offered up to $250,000 per year for five years. Only one submission per institution was allowed, and the Sackler Institute’s Postdoctoral Program took the lead in this effort, with collaborators here from NYU’s CTSI, and a strong contribution from NYU Washington Square, and we submitted our proposal in early April.

The competition was fierce, with over 100 institutions applying for this grant, but our proposal was chosen as only one of 10 to receive funding! Our program, NYU STEP (Science Training Enhancement Program), is ambitious and promises to change the way we prepare scientists for the careers they ultimately pursue. The heart of our program is the Individual Development Plan (IDP), something so important that we have created a ten-week course just to be sure we get this right.

The IDP Course will be run each semester, and is the very first official career planning course in a biomedical career PhD program in the nation. Our course, and our entire grant, is based on the idea that each PhD is unique and the “best” career outcome can only be measured by how well that career matches the intentions and desires of the individual who pursues it. Essential to any Individual Development Plan is a period of deep internal reflection on our own skills, values, and interests. This may seem trivial, or even obvious, to some, but many young scientists find themselves at the end of a PhD or even postdoc without ever having carefully considered what they are doing it all for. It’s very hard to know what your next career step should be if you don’t even know why you’ve come this far in the first place.

Once we have a sense of what is most important to us, we can start identifying careers that best match our own desires. It can be very liberating and encouraging to come to the realization that it is ok to want to be happy and fulfilled in our careers, and almost miraculous to find that there are real careers out there that seem made with you in mind. We will spend several weeks exploring different careers, bringing in outside speakers who are in those careers, and ultimately we will learn what skills and competencies are most needed for competitive applicants in those jobs. We want to help you create a roadmap for your career, and put all the important landmarks

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Emerging Translational Neurotechnologies
by Susan Sheng

Neuroscience research has received a lot of attention recently, particularly with President Barack Obama’s announcement of the US Brain Research Through Advancing Innovative Neurotechnologies (BRAIN) Initiative. Fittingly, the topic for the 2013 Fourth Annual Aspen Brain Forum was “Accelerating Translational Neurotechnology.” Held in September in beautiful Aspen, CO, the conference brought together approximately 200 industry and academic scientists from around the globe to discuss emerging developments in translational neuroscience. I was fortunate to have the opportunity to attend the conference, and was awed by the applications of basic science to clinical settings to improve quality of life. From bionic skeletons and “electrochemical prosthetics” to restore movement in paralyzed patients, to the use of deep brain stimulation to treat conditions such as Parkinson’s disease and depression, to retinal prosthetics, the 3 day conference was an eye-opening and inspiring look at the practical applications of basic research.

The conference kicked off with a memorable public lecture titled “Bionic Skeletons and Beyond: Emerging Technologies for Spinal Cord Injury.” It featured Grégoire Courtine, an associate professor at the Swiss Federal Institute of Technology (EPFL), Nathan Harding, the CEO and co-founder of Ekso Bionics, and Amanda Boxtel, a paraplegic patient who has benefited from the technology developed by Ekso Bionics. Courtine discussed his ongoing work to develop what he termed an “electrochemical prosthetic.” Using a rat model of spinal cord injury where the spinal column was cut but not fully severed - mimicking the condition of a significant proportion of human spinal cord patients - Courtine and his team are developing a device that delivers growth factors and electrical stimuli to bypass the damaged region and promote regeneration and regrowth. Once the device was implanted, the rats were outfitted with vests on a robotic set-up that held them stand upright, with all of their weight bearing down on their (paralyzed) hind limbs. Through daily training sessions, these rats gradually were able to regain the use of their hind limbs, as well as navigate over obstacles such as steps, in pursuit of a food reward.

Next, Nathan Harding discussed the development of an exoskeleton which is currently being used in rehabilitation centers for patients who, for various reasons, have lost the ability to walk. The suit assists individuals in standing and walking by detecting shifts in weight. The highlight of

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Sackler Alumnus Spotlight: Dr. Michelle Starz-Gaiano
By Lydia Grmai

These days, more attention than usual is being given to careers outside academia for PhDs. This is an encouraging shift for those thinking of leaving the bench to use our skills in an adjacent field. All the same, the academic track remains an important one, and what we typically call “traditional” is often anything but. Our alumnus spotlight for this edition features Dr. Michelle Starz-Gaiano, now an assistant professor at the University of Maryland, Baltimore County (UMBC). In this article, we get a small glimpse into one PI's path and career.

The Road

Raised in Pittsburgh, PA, and staying on the east coast ever since, Michelle earned her B.S. in Biology from MIT and worked as a technician for two years before joining Sackler. She is married with two children, and her story is certainly not a case of opposites attracting – her husband is also an academic. In fact, she was in her last year of graduate school (and her husband a postdoc) when they had their first child. Michelle stressed how grateful she was for a supportive advisor and work atmosphere as she finished up her graduate work.

It’s also healthy for people in such a mentally taxing field to pursue interests outside of science; for Michelle, that happens to be the performing arts. Having earned a minor in theater/arts at MIT and participated in shows before arriving at NYU, she still supports the arts today and remains a supporter of theatrical performances. (She even supports the theater community at UMBC, attending occasional shows produced on campus.)

The Research

Michelle’s current research efforts seek to understand the role of JAK/STAT signaling in cell motility. Her lab studies this in the context of border cell migration in the Drosophila ovary, a population of epithelial cells that must migrate through an egg chamber to facilitate proper germline development. Michelle is also no stranger to the fruit fly Drosophila melanogaster: after earning her PhD under the mentorship of Dr. Ruth Lehmann, she acquired a postdoctoral position in the lab of another fly geneticist, Dr. Denise Montell at the Johns Hopkins University School of Medicine (now at UCSB). Her current studies reflect work she accomplished as a postdoc, and now she is using both genetic and math modeling tools to better understand border cell migration and the molecular signaling events that regulate this process.

The Rest

Surely the life of a PI isn’t all about research – it’s actually a fraction of a long...
It remains a daunting task to create drugs for treating diseases like nicotine addiction without causing severe behavioral side effects. Fortunately, nature has given us a head start in the form of small peptides called conotoxins, which are produced by carnivorous marine conesnails. Here, a conotoxin (magenta) is shown binding to a receptor in the brain (blue) that is a target for smoking cessation drugs. A key residue on the conotoxin involved in this interaction is highlighted (orange). The goal of my research is to use computational and experimental methods to engineer conotoxins into pharmacological tools for studying the brain and possibly generating drug leads for treating diseases like addiction.
In the brain and spinal cord, microglia act as the primary form of immune defense in the central nervous system. As is shown in this section of an adult mouse brain, microglia (green) can also participate in the degeneration and regeneration of myelin (red). The large, central red band is the corpus callosum, which connects both hemispheres of the brain. The corpus callosum is an area of interest for understanding microglia activity because it is large and heavily myelinated.

Submit your science-as-art images to BiocanvasMessenger@gmail.com!
You Scored an Interview! Now What?
by Jason Wong

In 2013 NYU Sackler had roughly 1000 applicants of which 200 were interviewed for about 40 spots. Congratulations, you got an interview! Now comes the chance for you to separate the women from the girls. Here are some things to consider to help improve your chances at getting an offer:

Tell me about yourself...
The most common question any interviewer asks. Prepare for a smooth response to this and make sure you have a few different ways to answer because there are many ways to phrase this type of question.

What drew you into science? Besides what’s on your résumé what else have you done? What do you ultimately want to do with a Ph.D and what has influenced you to come to this decision?

You’re cool, but not that cool…
You may think you’re hot stuff, but there is always someone with a more impressive résumé than you. You can be proud of who you are, but don’t overstate your (so-called) accomplishments.

Why even have interviews?
1. To see that you are a human
2. To check the résumé matches the human
3. To measure your potential and likelihood of success as a Ph.D candidate

1 and 2 are fairly easy, but 3 is the tricky part. Through your answers to your interviewers, via a Socratic method-like style you have to get your evaluators to come to the conclusion that you are capable, inherently special and the institution will only benefit from having you there.

So how do you do number 3? During your interview you should be able to respond in a concise, purposeful, constructive (in terms of improving your interviewers impression of you) and coherent way.

Quite a tall order... A person can spend a lifetime trying to master this art, but you don't have the time for that. Instead, what I recommend is for you to take time to think about how you are going to respond to an interviewer before you actually say anything. It’s not a race to see who can respond the quickest. Actually a slower response time may actually work to your benefit because your interviewer will see you are a pensive person. Also, if you are too quick and say the wrong thing, you can’t take it back. Remember the most important part is making yourself distinguishable from the others by demonstrating you possess the
traits that will make you a successful PhD candidate.

“So tell me a little bit about yourself”
STOP! Do not say anything... Think about what you want to say and consider the benefits (if any) there are to your response to address 1, 2, or most importantly 3 and adjust accordingly.

Here’s some other helpful interviewing tips from other Sacklers:

1. Pre-search about your interviewer’s research and participate actively.
2. Be prepared to explain anything that is on your CV and statement of purpose.
3. Make sure you have good reasons for why you chose to apply to this institution.
4. Make sure your background and the program you are applying to match up or there is a logical reason why you are applying for the program you are.
5. Be social and talk to people including program coordinators.
6. Make friends with other interviewees. You never know when you might have to strike up collaborations if they end up at other universities.
7. Show your passion for science. Be enthusiastic.
8. Be yourself and be honest. This is how you will truly know if the school is a good fit for you.

2014 Graduation Deadlines

January 2014 Graduation Deadlines:
Preliminary Thesis Deadline: December 6, 2013
Final Thesis Deadline: January 17, 2014

May 2014 Graduation Deadlines:
Register on Albert at home.nyu.edu through February 7, 2014 (http://www.nyu.edu/registrar/graduation/apply.html)

Preliminary Thesis Deadline: March 21, 2014
Final Thesis Deadline: May 9, 2014

September 2014 Deadlines:
Register on Albert at home.nyu.edu from February 10 through June 13, 2014 (http://www.nyu.edu/registrar/graduation/apply.html)

Preliminary Thesis Deadline: August 1, 2014
Final Thesis Deadline: September 12, 2014
Finding Palate-Friendly Alternatives for Energy Consumption: A Descriptive Piece

Introduction

In the graduate student environment, energy consumption levels are proportional directly to time spent in graduate school and inversely to time remaining until major deadlines. Since the former tends to increase over time and major deadlines are abundant in such a demanding environment [personal correspondences], finding efficient methods of energy consumption can provide widespread benefit in many different contexts. Until now, the primary “energy” molecule utilized by the graduate student has been caffeine, the most popular psychoactive drug in the world [Lovett R 2007, New Scientist]. However, the decline in motor skills (e.g., shaky hands under the microscope), increased fatigue at inopportune times (e.g., ending a night out with friends early), and depletion of already limited financial supply underscore the need for alternative strategies for energy acquisition. Here, we describe a fiscally efficient method that uses a more intuitive molecule to address the energy dilemma – glucose. Glucose is often the ultimate target of many psychoactive drugs, altering levels in the brain to elicit certain psychological or physiological reactions [Dwyer D et al, 2002]. We present this recipe, which incorporates two sources of glucose, as a more direct means of graduate school sustenance.

Materials and Methods

In a large, sterile container, 225 g churned milk was softened to room temperature (~22º C) and added to a mixture of 200 g sucrose plus 215 g brown sucrose, plus 2 eggs and 10 mL vanillin. Before adding dry ingredients, the entire mixture was blocked in 30 mL milk. Without washing the sample, the following were mixed together before adding to the container: 180 g cereal grain powder, 5 g NaHCO3, and 3 g NaCl. Prior to incubation, 350 g oats, 280 g white cacao pellets, and 125 g dehydrated Vaccinium oxycoccus were added to the sample. The sample was divided into 50-54 small clusters incubated on a metal tray at 190º C for ~7 minutes.

Results and Discussion

The utility of these samples as energy alternatives have been evaluated on three qualitative levels: savor, accessibility, and energy output. Each criterion was evaluated with respect to a cup of coffee and, since graduate students often have little time for physical maintenance, the latter with consideration to caloric content. Savor: The cacao derivative known commonly as “white chocolate” is a welcomed addition to many treats, and when combined with V. oxycoccus produces a cookie that is incredibly difficult to walk away from. Accessibility: This refers to its level of ease and its cost efficiency, both of which come out on top. Many of the reagents are common lab (read: kitchen)
materials readily available, and the remaining ingredients are relatively inexpensive. One sample preparation yields enough cookies to feed a small army. (Or a large study group.) Energy output: This is the only category that does not outcompete coffee; while the glucose content of the sample is higher than in coffee, this also leads to a significantly higher caloric content. For many, the option of alternative sweeteners makes coffee even more justifiable as an energy source over the guilt-ridden sample described above. While few can resist a cookie as delectable as this, its ability to replace coffee in the graduate student’s daily diet is somewhat questionable.

As this energy source supports students desperate to snack on something as they skip yet another meal in favor of finishing their experiment, several questions remain: What other energy sources would complement the white cacao and/or the plant fruit originally added to the sample? How can the caloric content of this caffeine alternative be minimized in such a way that does not jeopardize its capacity to energize? To combine forces with the beloved cup of coffee, cacao/espresso may in fact be a suitable compromise. Since intake of this particular caloric source likely will not be avoided (the cookie is far too delicious), the future of graduate students’ health may benefit immensely from efforts to make these cookies more suitable as a replacement, rather than a supplement, to existing energy sources.

**Acknowledgements:** I would like to extend great thanks to my friend and colleague, Michael Burel, for the stimulating dialogue and editing that supported this inaugural piece. I would also like to acknowledge my mother, Almaz Mussie, whose expert baking skills led me to obtain this recipe in the first place.

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**White Chocolate Oatmeal Craisin Cookies**

1 cup butter (225 g)
1 cup sugar (200 g)
1 cup brown sugar (215 g)
2 eggs
2 tbsp milk (30 mL)
2 tsp vanilla (10 mL)
1 ½ cups flour (180 g)
1 tsp baking soda (5 g)
½ tsp salt (3 g)
4 cups oats (350 g)
10 ounces white chocolate chips (280 g)
1 cup dried cranberries (125 g)

**Instructions:** Preheat oven to 375 F. Mix butter, sugar, and brown sugar in a large bowl. Beat in eggs, then add milk & vanilla. In a separate bowl, mix dry ingredients (flour, baking soda, salt), then add gradually to butter/sugar. Mix until combined. Add 4 cups oats and mix. Stir in white chocolate chips & cranberries (or desired add-ins instead), then drop by teaspoon onto a greased cookie sheet. Bake for ~7 minutes (varies by oven, take them out when the edges are brown to maximize chewiness post-bake).

**Editor’s note:** This recipe makes a LOT of cookies – you can cut the entire recipe in half and still get great yield. Happy “experimenting”!
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with a closing keynote talk by Phillip Clifford, Associate Dean in the Graduate School of Biomedical Sciences at the Medical College of Wisconsin. When he isn't busy being a Dean, Dr. Clifford dabbles as an expert in career development for scientists, and his talk “What Got You Here Won’t Get You There” provided great advice on planning your career. Dr. Clifford knows what he’s talking about; he was one of the original creators of the Individual Development Plan for FASEB (Federation of American Societies for Experimental Biology), which has been rejuvenated as myIDP (www.myidp.sciencecareers.org) under the sponsorship of AAAS (American Association for the Advancement of Science). This free and anonymous online tool is fast becoming the standard for individual career planning for scientists, and the NIH is now strongly recommending that every PhD student and postdoctoral fellow write their own IDP.

This new recommendation should be noted as a watershed moment in scientific training, and is the first real step the NIH has taken to recognize that not every trainee who decides not to become a PI represents a failure. The movement towards embracing the myriad career options for scientists that began here well over a decade ago thanks to the foresight of Dr. Oppenheim, is now on the verge of becoming official policy at the NIH and we are proud to be leading the charge into the future.

Sackler Haikus
collected by Bianca Jones

C. elegans worms
Are the coolest animals
To have ever lived
-Kara Zang
Ringstad Laboratory

Sit in a dark room
With cells that glow bright colors
Microscopy time
-Lydia Grmai
Bach Laboratory

All stalls occupied
Post Monday morning coffee
Flushes synchronized
-Joe Marlin
Carter Laboratory

Neurons fire fast
Suprathreshold-ing my time
Worth it in the end!
-Bianca Jones Marlin
Froemke Laboratory

Enzyme active site
Kinase adds a phosphate group
Proteins go to work
-Lydia Grmai
Bach Laboratory

Melanin is GREAT!
Contributes to Uniqueness
With One Common Goal
-Ashley Jordan
Orlow/Manga Laboratory
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on it so that you can spend your time in graduate school proactively seeking the skills that will set you up for success.

Don’t think that we’re encouraging anyone to take their science less seriously, or that just because you may want to work in science policy means you can worry less about getting your work published. No matter what you choose to do, being a great scientist is at the heart of it, and we only want to help you add to that. We know that graduate school is a challenging time that is often frustrating and seems to have no end in sight, and we intend to be the lighthouse that helps you see the course ahead. You have to sail that course yourself, but we will be here to provide an amazing set of courses, workshops, and networking opportunities that will make the journey fun and successful.

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the talk was at the end, when Amanda Boxtel, a woman who became paralyzed following a ski accident, strapped on one of these suits and slowly walked around the conference room.

What could be very interesting for the future, is if doctors could pair the electrochemical prosthetic developed by Courtine’s group with an exoskeleton suit such as the one developed by Ekso Bionics to treat and potentially heal patients with spinal cord injuries. The prosthetic would stimulate and promote nerve regeneration, while the exoskeleton would help patients relearn how to walk and maintain muscle tone, much like the robotic device devised by Courtine’s team.

As a young graduate student, the Aspen Brain Forum was an incredible opportunity to learn about cutting edge neurotechnologies from the very people developing them. The clinical applications were especially interesting as a basic scientist, because it gave me a whole new appreciation for the importance of studying and understanding the nervous system. There were treatments such as deep brain stimulation which I had not even been aware of before, and are gaining greater attention (i.e. Science recently published a News Focus article discussing the application of deep brain stimulation in treating depression. See references for citation). Overall, I’m excited to see what new developments and clinical treatments will come out of neuroscience research in the coming years, and hopeful that one way my own work in basic science will one day see some clinical application.

References and Further Reading:
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list of responsibilities, all of which are critical to the progression of a professorial career. From mentoring, to teaching, to administrative duties, a “typical” week for Michelle is actually difficult to define. Notably, her position at a moderately-sized four-year university (11,000 undergraduate, 2,500 graduate students) and a recent NSF Career Grant that supports teaching as well as research afford her the opportunity to interact heavily with undergraduates. She currently mentors three PhD students in her lab, but the lab is also populated with several college-level students conducting sustained research. Four of them are part of a new Undergraduate Biomathematics Program that combines applied mathematics with biology for a hand in interdisciplinary research under dual mentorship. Michelle noted the benefit of working in close quarters with professors from broad academic backgrounds: “Communication is different for different types of researchers,” and combining these mindsets can lead to novel solutions for previously mystifying scientific problems. One of the advantages Michelle mentioned of working at an institution that isn’t primarily biomedical is the broadened range of interdisciplinary ideas – working in the same arena as researchers of all disciplines, many outside of STEM, provides perspectives that may not be accessible in other academic settings.

So what’s next? The next big milestone, of course, will be receiving tenure – an honor so well deserved for a professor with such a strong commitment to training young scientists. When asked to offer advice she would give if she could talk with her former graduate student self, her reply was, “I don’t know what I would say, and I don’t know that I would listen anyway.” (This stubbornness is not uncommon among us grad students, although I would argue that it’s an element of our success.) Nevertheless, Michelle offered several words of encouragement to people at the graduate level. Although we hear the phrases – “It’ll be worth it in the end,” “It’s a marathon, not a sprint” – all too often, they’re exactly what we need to hear. We all have those days when it seems wisest to quit as soon as possible, and we certainly have those “back-up career plans” (for Michelle, it started with trapeze lessons). In the face of our doubts, we can at least be encouraged in the success stories of people like Michelle Starz-Gaiano – in the knowledge that clichés are clichés because they are true, and in the fact that the scientific footsteps in which we follow have proven them to be true.

GSAS Dean’s Travel Grant Program

The GSAS Dean provides funds to graduate students for travel to professional meetings and conferences to present invited papers or posters. The Dean’s Student Travel Grant Program provides a total of 225 awards each year, in the amount of $500 each, to help students defray the cost of presenting their scholarly work. Applications Accepted: Monday, February 10 – Friday, February 21. Additional details: http://gsas.nyu.edu/page/grad.travelgrant
Bloch N, O'Brien M, Norton TD, Polsky SB, Bhardwaj N, Landau NR. HIV Type 1 infection of plasmacytoid and myeloid dendritic cells is restricted by high levels of SAMHD1 and cannot be counteracted by Vpx. 2013. AIDS Research and Human Retroviruses. doi:10.1089/aid.2013.0119.


*These authors contributed equally to this work.