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Dear Sackler,

Well, it has been QUITE a year, and we have had so much fun serving you all as the Sackler Student Council! This year has been one filled with good times, new friendships, and many great memories (and of course...research)! From a jam-packed orientation week to our annual Halloween Party and Winter Holiday Party/Ugly Sweater Contest, we started off the academic year with a bang. As we transitioned into 2014, our Sackler Ski Trip took many of us upstate for a fun weekend. Some hit the slopes, while others simply capitalized on the subsidized trip away from the lab and the big city; but all had a great time!

Always our biggest (and most important) feat of the year, though, involves ushering potential PhD candidates through six rounds of interviews! It’s always exciting to show off all the reasons why NYUMC is such a fantastic place to spend the graduate years, and a successful interview season can only be attributed to the cumulative effort of the entire student body. Most recently, many of our Sackler students could be found at our annual semi-formal – suits, ties, and dresses at a rooftop bar, 8 blocks from and directly facing the picturesque Empire State Building. Rewarded for a year of hard work with gorgeous weather and a stellar view of one of the most beautiful cities in the world, it was definitely a night to remember!

Of course, most of what we do wouldn’t even be possible without the brilliant, diverse, lively students we can call our own here at Sackler. You all have made this past year nothing but fun for all of us in SSC, and we hope that we have done the same for you! We are so excited to pass the “torch” on to next year’s council and see what else is in store next year. If you see Julia Derk or Nicole Wake around campus, be sure to congratulate them and get to know these wonderful ladies as your next SSC co-presidents! Here’s to new beginnings, lasting memories, and the continued camaraderie and effervescence that make Sackler such a great and unique institution for us all. Have a happy summer!

Sackler Student Council 2013-2014
sacklerstudentcouncil@gmail.com

Julia Derk (left) and Nicole Wake (right)
SSC Co-Presidents, 2014-2015
Scenes from SSC Events

Honors and Awards 2014

Michael Burel, NSF Graduate Research Fellowship
Lamia Harper, NSF Graduate Research Fellowship
Wilnelly Martinez-Ortiz, Career Development Activities Award, NYU Clinical and Translational Science Institute, NIH/NIDDKD
Carlos Sanchez, NIH NRSA
Ayana Sawai, NIH NRSA (NINDS)
Kirsten Wiens, Canadian Institutes of Health Research (CIHR)
Doctoral Foreign Study Award (DFSA)
Ah summer, the perfect time to work in the lab and produce lots of data for your qualifying exam or your next paper because classes are over, right?! Of course, it’s important to get out of the lab to give your mind a break and a chance to recharge. Plus it would be a shame to not take advantage of New York City’s numerous (free or very cheap) events and activities! Read on for a sampling of events and activities happening in the city these next few months.

**Movies and Music:**
Parks throughout New York, including Central Park, Bryant Park, and numerous smaller parks, screen free movies throughout the summer. All you need to bring is a blanket to sit on, snacks and drinks, and you can kick back and watch the show. A listing of parks and movie schedules can be found online at Time Out New York.

There are also numerous music festivals; there are the big ones like Governor’s Ball (June 6-8), and Electric Zoo (Aug 29-31) where tickets need to be purchased in advance and can be quite expensive, but there are also many that are free. The Rite of Summer Music Festival on Governor’s Island features “classical and cutting-edge contemporary music” and will have concerts on the afternoons of May 31, July 13, August 9, and Sept 6. Central Park’s SummerStage has a great and varied line-up, from New Orleans-style jazz to electronic music, to international music from South Africa, Ethiopia, France, and Spain, just to name a few. Summerstage kicks off June 17 and runs through to September. There is surely something for everyone! Also in Central Park, and other locations across New York, the Metropolitan Opera and the New York Philharmonic both have free outdoor concert series; the “Met in the Park” runs from June 23-July 10, and the New York Philharmonic runs from July 9-15. Later in the summer, the Lincoln Center Out of Doors will feature three weeks of world music, dance and other performances at the Lincoln Center Plaza, from July 20-August 10.

**Parks and Nature:**
Although one does not normally associate New York City with nature, there are a surprising number of parks in the city where one can escape the hustle and bustle of the city. Prospect Park in Brooklyn has numerous trails suitable for walkers, runners and cyclists, and is also popular amongst birding enthusiasts, and unlike Central Park you can start to forget you are in the city due to the lack of towering skyscrapers on its borders. Inwood Park in northern Manhattan and Van

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Entertainment Away From the Bench: Of Puppets and Kicking the Coat

By José G. Montoyo Rosario

Ever wonder what Sesame Street would look like if they grew up and entered adulthood? Avenue Q has been defying musical theatre traditions since 2003 when it first opened on Broadway and since 2009 at the New World Stages complex, its current home. Avenue Q tells the story about Princeton, a recent university graduate who is trying to find his purpose in life, in New York City of all places. Any resemblance the story has to the life of an eager bioscience graduate student finding his purpose in New York City is purely coincidental… Avenue Q draws its inspiration from Sesame Street by employing the use puppets to tell this musical tale. The relatively small cast play human characters, voice multiple puppet characters and sometimes join another actor to handle a single puppet. If you want a non-traditional Broadway show and some hilarious comic moments go over to New World Stages to see Avenue Q which won the Tony Awards for Best Book of a Musical, Best Original Score and Best Musical (beating Broadway behemoth Wicked).

Finally, the event you should not miss is the 38th Annual Macy’s 4th of July Fireworks. This year (after much awaiting) the fireworks return to our backyard! The firework extravaganza featuring more than 40,000 fireworks will take place in the East River highlighting the Brooklyn Bridge. The fireworks start at 9pm, but plan to arrive early since people start lining up hours before to secure a good viewing spot.

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### Summer Movies 2014

- Edge of Tomorrow - June 6
- The Fault In Our Stars - June 6
- 22 Jump Street - June 13
- How to Train Your Dragon 2 - June 13
- Jersey Boys - June 20
- Transformers 4 - June 27
- Dawn of the Planet of the Apes - July 11
- Jupiter Ascending - July 18
- The Purge: Anarchy - July 18
- Guardians of the Galaxy - August 1
- Lucy - August 8
- Teenage Mutant Ninja Turtles - August 8
- The Giver - August 15
- The Expendables 3 - August 15
Scizzle is a site (started by Sackler alumnus Gaia Vasiliver-Shamis) that provides a new way to stay on top of the hottest science literature. Check it out at myscizzle.com! The site also features a blog with graduate student writers. Several Sackler students participate in this blog and each issue, we will feature one of their latest posts.

**Drosophila Diaries: Sweet Sensations**

By Michael Burel

Every graduate student has a contingency plan. You know, that thing you’d do if you were suddenly expelled from your program and no longer had semi-stale seminar pizza for sustenance. For me, that plan is to open a bakery. It’s a flawless idea. Everyone loves sweets (read: Everyone. Don’t let anyone fool you into thinking they don’t have a sweet tooth. They hide behind the thin ‘salty-food-is-better’ veil. Give them a cookie and see who is smiling now). And, as Ina Garten so famously chortled while sharing a recipe for irresistible chocolate chip cookies: “You can be miserable before you have a cookie and you can be miserable after you eat a cookie, but you can’t be miserable while you are eating a cookie.” Preach it, Ina.

But you know, sometimes a cookie just doesn’t cut it for graduate students. I mean, sure, on the outside we put on our big happy face (you know the one) and say through a forced grin, “Oh. Great. Seminar cookies... again. My favorite.” In reality, however, we do need actual food from time to time to exist on this planet. I’m talking about the kind of food that has vitamins (huh?), minerals (what are those?), fiber (like from a wicker basket?), and whole grains (isn’t that for cows?). In times of nutritional need, our bodies activate an intrinsic dowsing rod to hunt down food with the nutrients we desperately lack. That’s why patients with pica, a disorder characterized by an appetite for unusual things like sand and clay, often have a mineral deficiency: They seek these non-nutritive materials in a last-ditch attempt to restore, for example, a low iron count.

Now let me throw a wrench into the scheme: What if you couldn’t taste anything? How would your body know—in a time, let’s say, before we could scientifically determine the nutritional value of food—if something is good for you to eat? Indeed, animals that have lost the ability to taste still have preference for foods that are more nutritious and easier to digest (1, 2). But how?

In search for an answer, and for the second installment of Drosophila Diaries, scientists hunted for a gene in Drosophila that would abolish a fly’s ability to distinguish what is nutritionally beneficial from what is not. Monica Dus et al. led a study to really understand how animals blind to taste can still select the more nutritionally appropriate food choice, an ability that is potently augmented in times of starvation. At the core of their research was a genetic screen in otherwise normal, healthy flies to find a mutation that would prevent them from choosing a good sugar (the metabolically

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Vincent du Vigneaud: Finding Science in a Time of War
By Bianca Jones Marlin

Vincent du Vigneaud held pride in the fact that he could milk two-dozen cows by hand. Do not infer that I find this a feat worthy of his Nobel prize, but in the end his story may justify his means.

In 1918, World War I waxed and waned with the accessible career paths for American high school students. Vincent du Vigneaud, in tandem with his national academic cohort, was urged to exercise his patriotism through service as a farm worker. In return, America promised him a high school diploma, and the security that comes with training as an agriculturist. When du Vigneaud resolved to abandon the banality of nationalism and pursue the lifelong endeavor of science, he unknowingly sought the most renowned of scientific paths.

Du Vigneaud’s scientific career seemed to follow the cadence of international conflict. He pursued studies in organic chemistry, focusing on peptide synthesis, and was the principal investigator of his own laboratory by the beginning of World War II. His progress came to a halt. But scientific advancements during the wartime led to the refinement of techniques like the starch column, which allowed for separation of amino acids. du Vigneaud had stored peptides during the seven years of his scientific stagnation.

The unthawing of the peptides led to its more glorious rebirth. In 1953, du Vigneaud became the first person to sequence and synthesize a polypeptide hormone. His hormone of happenstance was oxytocin.

I am wary of scientists who undertake the project of understanding the structure and function of peptides. These truncated chain of amino acids not only fail even to meet a protein’s most basic requirements. Less than a century ago, they were physiological enigma. My suspicions lie in the ability of these chained amino acids to override the most instinctual of human behaviors. Oxytocin is nine amino acids in length, yet it is the dominator of sexual drive, controller of maternal interactions, and the regulator of ethnocentric behavior. For the farmer, oxytocin increases milk let down in cows.

In 1955, Vincent du Vigneaud won the Nobel Prize in Chemistry- a prize unshared by another scientist that year. “I attempted to present not only the findings encountered,” he said, “but also... accidents of fate that played a part.”

Bianca Jones Marlin is a graduate student in Dr. Robert Froemke’s lab performing research examining the role of oxytocin in maternal responses to the distress calls of young offspring.
Glioblastoma is the most common and lethal primary brain malignancy with over 10,000 new cases in the United States every year. Glioblastoma cells are able to invade millimeters away from the tumor core, making complete surgical resection impossible. This image shows the invasion of tumor cells (green) through the brain of an immunodeficient mouse xenograft model of human glioblastoma using primary cultures from patient samples. Use of primary cultures is critical for glioblastoma research because they are able to recapitulate the disease phenotype in animal models better than current established cell lines.

Submit your science-as-art images to BiocanvasMessenger@gmail.com!


Tee W, Shen S, Oksuz O, Narendra V, Reinberg D. 2014. Erk1/2 Activity Promotes Chromatin Features and RNAPII Phosphorylation at Developmental Promoters in Mouse ESCs, Cell, Feb;156(4):678-690


2014 Graduation
Congrats to this year’s graduates!!!
Joel’s Farewell Party
Continued from pg. 4 - Summertime in the Big Apple

Cortlandt Park in the Bronx are also great options that are accessible off the A and 1 subway lines, respectively. Van Cortlandt Park is known for its challenging cross-country trails as well as its public golf course. (Shameless plug: If anyone is interested in playing Ultimate frisbee - experienced and beginner players welcome! - Manhattan Ultimate Disc league has its recreational leagues games at the fields in Van Cortlandt on Saturdays and the fields are really nice!)

For those looking to really get out into nature, there are numerous hiking trails that are accessible via public transportation. The Metro North Hudson line has stops at Breakneck Ridge, Appalachian Trail, and Manitou Point, to name a few. So far I’ve only been out to one of the trails by Cold Spring Harbor (which, if you ever go, you must stop in the town at Sweetie Pies for their fantastic iced coffee. No joke, probably the best iced coffee I’ve ever had.), but I hope to tackle a few more trails this summer. A good resource for day hikes out of New York City can be found at http://www.nycdayhiking.com/

On the water:
If you’ve ever wanted to learn how to kayak or canoe, there are tons of clubs and boathouses that offer free lessons and guided tours of New York’s waterways. Downtown Boathouse (Governor’s Island; Pier 26 - near North Moore Street) and Manhattan Community Boathouse (Pier 96 - near 56 Street; 72nd Street) both offer free walk-up kayaking, lessons, and tours on the Hudson River. Hours vary slightly depending on location, but generally kayaks are available on a first-come-first-serve basis from about 10am-5pm Saturdays and Sundays, and weeknights from 5pm-7pm. Check each boathouse’s respective websites for specific hours. Another more unusual option is outrigging. An outrigger is a type of boat that originated in the Polynesian islands, and features a stabilizer that extends out from one side of the boat, giving the boat added stability when navigating rough waters. New York Outrigger is a club that offers free beginner outrigging lessons, as well as stand-up paddling-boating, every weekend during the summer. You can sign up for the outrigging lessons on their Meetup page: http://www.meetup.com/nyonovice/ I tried it out last year, and it’s a lot of fun and a great upper-body workout!

Of course, in a city like New York, it would be impossible to cover all of the events happening in one short article. Nearly every weekend there’s a street fair somewhere in the city with all sorts of food stands and street vendors. Additionally one could take the train out of the city to go hiking in the Catskills, relax on the beaches of Long Island, or, as one of my friends is planning, rent a CitiBike and go on a pizza tour of Brooklyn. No matter what your interests, make sure you get out into the sun and get some vitamin D this summer!
active D-glucose) from a bad sugar (the unusable L-glucose). They honed down on such a gene and named it—quite cutely—cupcake, which only seems appropriate: Put a cupcake and a bowl of bran flakes in front of a five-year-old and they will 99% of the time choose the cupcake. Nutritionally the best option? No. The more delicious, magical of the two? Absolutely.

The cupcake gene encodes a sodium/solute co-transporter whose mammalian ortholog works to move glucose across the small intestine into blood. Obviously, cupcake must be doing the same thing in flies: Without cupcake, flies can’t take up sugar into their hemolymph (bug blood) and therefore can’t sense the food’s nutritional value. A fly gives up all hope of even picking one sugar over another because, to the mutant, it’s all the same.

If only it were that simple. You see, cupcake isn’t even expressed in fly guts. The group found that cupcake is expressed only in a very select group of neurons in the fly brain in a structure called the ellipsoid body. The ellipsoid body is part of a larger brain structure called the central complex, which modulates fly behavior and—quite intriguingly—processes the senses. By specifically putting cupcake back in these neurons, the authors rescued the ability of flies to sense which sugar was best for them. How cupcake works in these neurons to sense appropriate glucose still remains a mystery.

As graduate students, we often come face to face with difficult decisions: Should I attend this conference or get data for my upcoming committee meeting? Should I run this Western now or wait until Monday? And perhaps the most important of all: Should I pick the oatmeal raisin cookies or the random deli salad for seminar munchies? (Obviously the former). Too often, we subsist on foods that aren’t the best for us yet are readily available. I can’t help but wonder if it’s because we all have a little hypomorphic cupcake in us.

Which works for me, because my bakery business would be booming. Science wins again.

September 2014 Graduation 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