



GBS newsletter

Table of Contents

A Few Words from the Graduates	Page 2
Faculty Chats: Identifying a Compelling Scientific Question	Page 3
Build Your Brand: Highlights from Beer and Branding	Page 4
Interview with an Expert: Epidemiologist	Page 5
Team Effort: Dual Job Searches	Page 6
Internship: Licensing & Ventures Group	Page 8
Science Hot Topics: Zika	Page 9
Science In Review	Page 10
GBS 2016 in Review	Page 11
Acknowledgements	Page 12



BIMS: Steven Griffith, Debi Luzador, Jake Morgan, & Jeff Teoh

BME: Matthew Biggs, Adam Dixon, Joshua Heuslein, Surabhi Nair, & Kelsie Timbie

A FEW FINAL WORDS WITH THE GRADUATES

Written by Jeremy Shaw



Full name: Josh Heuslein

Lab/PI: Rich Price in BME.

General Area of Study: Regulation of arteriogenesis by mechanosensitive microRNAs and DNA methylation as a potential epigenetic approach for treating peripheral arterial disease.

What are your Post-Grad plans?

A Post-doc in Dr. Brian Annex's lab as part of the UVA CVRC's NIH-funded training grant. Using a pre-clinical model, I will investigate whether candidate microRNAs and/or other non-coding RNAs regulate angiogenesis and skeletal muscle regeneration to identify new therapeutic targets for treating peripheral arterial disease.

What did you enjoy most (or going to miss most) about your time here at UVA?

Well, considering I did meet my fiancée here, I'd have to say that has been the best part of UVA. I also have enjoyed the community of UVA and Charlottesville, including all the great restaurants, Fridays After Five concerts, hiking in the Blue Ridge, and the breweries/wineries. Though I am still going to be in Cville, I am going to miss Spudnuts donuts, since it is tragically closing.

Any advice for people starting out in the BME program?

Keep a good lab notebook, work hard, and don't be afraid to ask "dumb" questions or to ask for help. UVA has a great collaborative environment with some great researchers, so take full advantage of it.

What is your funniest memory at UVA?

It isn't necessarily funny, but a "memorable memory" was the men's basketball final home game (Senior Night) of the 2015-2016 season. Senior Caid Kirven, usually reserved to the bench, hit a 3-point shot in the waning seconds of the game and everyone in JPJ arena went nuts.



Full name: Jeffrey Teoh

Lab/PI: Michael G. Brown Laboratory

General Area of Study: Dynamics of natural killer cell influences on adaptive immunity to viral infection

What are your Post-Grad plans?

Working at Juno Therapeutics as a Scientist, CAR T cell Characterization

What did you enjoy most (or going to miss most) about your time here at UVA?

First and foremost Bodos -- you'll never find a bagel as cheap or as good anywhere else. More seriously though, I'll miss my friends and colleagues from UVA. I was fortunate to find a community of like-minded individuals from a variety of different backgrounds and experiences, and each of them was far more talented than myself. Their support and companionship not only made grad school a fun experience, but it pushed me to be a better scientist, to emulate their successes, and to learn from their challenges and hurdles.

On a similar professional note, I am grateful for the high caliber of collaboration at UVA. For me, collaborations were never a formal process that required agreements to deliver data and manuscripts. Rather, they occurred through genuine interest and generosity from students, staff and faculty within the BIMS program. Their constant feedback, thoughtful critiques, reagent sharing, and willingness to teach novel techniques always proceeded unprompted, and I am grateful for how accessible 'learning' and 'improving experimental methods' was at UVA. That's not something that happens everywhere.

Any advice for people starting out in the BIMS program?

Grab hold of the brass ring and take advantage of every opportunity that you can at UVA. You learn a lot in the classroom and the lab, but in my experience, almost all of my transferable skill-sets were acquired through extracurricular events and organizations: say 'yes' to meeting with speakers and learning about their science and attend as many seminars as you can (while still being productive in the lab). You'd be surprised how much more informed you become about current topics, technologies, and techniques from seminars unrelated to your thesis work (I reference many of these talks far more often than I do CMV or NK cells, specifically).

Take your training in graduate school seriously, as this is a major milestone in your future career; but at the same time, keep your mental health high, and be sure to unwind with something that keeps you grounded. Whether that's running marathons, cooking your way through Julia Child's book and blogging about it (do people still blog?), or convincing your friends to dress up as a randomly assigned Game of Thrones character for your name day -- maintaining your release is critical, and in the long run, you'll be better off enjoying your experience in grad school.

What is your funniest memory at UVA?

My friend and I joined the same lab in the summer after our first year, and while we were trying to learn the ropes of specific rules and regulations in the lab (and the temperatures outside were rising), we debated whether or not it was acceptable to wear shorts in the mouse room under a gown. My esteemed colleague made the unfortunate, but quite humorous error of asking our lab manager, "Do we need to wear pants in the mouse room?" A question to which she replied, "Is there a reason that you need to take your pants off in the mouse room?" That story still makes me laugh.

First Time Events

Faculty Chats: Dr. Sarah Ewald

Written by Nicole McKenna

How to identify a compelling scientific question



This fall GBS introduced a new event, Faculty Chats, seeking to increase communication between various faculty and students about topics relating to the academic side of research. The first faculty member to participate was Dr. Sarah Ewald, an assistant professor in the MIC department who studies the innate immune system and host-parasite interactions.

Her discussion was titled “How to identify a compelling scientific question, or, some thoughts on how to prepare the mind for *chance*.” Dr. Ewald provided nine tips she has learned throughout her career, starting with how to develop an effective hypothesis using “how” questions with an interesting answer regardless of the result. Dr. Ewald also encouraged the ability to move on from one question to a more interesting one. Her largest piece of advice was “Do The Experiment (D.T.E)”, as it’s impossible to know the answer without doing the experiment. This event was well received by the grad students who attended. Alex Keller provided an overall impression from the event: “Grad students are often told to be open minded in originating scientific ideas, but Sarah gave actionable approaches to reach that goal, which was really helpful.”

A huge thank you to Dr. Ewald for helping kick off this new event! Stay tuned for future Faculty Chats.

Side Note: Dr. Ewald’s lab is full of creativity outside of science as well! Just check out these cookies they made for a bake-off this holiday season!

Here are Dr. Sarah Ewald’s tips for identifying compelling scientific questions:

1. **Read widely** for theory and technique
2. Define the interesting questions at different **orders of magnitude**
3. When hypothesis building, **ask how (not why) questions**
4. Be equally interested in pursuing your **null hypothesis**
5. Your experiment is as good as your **controls**
6. Understanding **statistics** will always save you time (and face!)
7. Kill your darlings, **let your hypothesis evolve**
8. Seize opportunities to **think creatively** about science with your colleagues (don’t skip social hour!)
9. **D.T.E.:** ideas are cheap, **experiments don’t do themselves**



Build Your Brand

Highlights from *Beer and Branding* with Kimberly Barker

Written by Kathy Michels

WHAT IS A PERSONAL BRAND?

Your personal brand is the professional persona that you use to interact with your colleagues, mentors, and clients. You are always reinforcing your brand! It is important to actively craft your brand, rather than let it develop by chance.

WHY HAVE AN ONLINE PRESENCE?

For better or for worse, your collaborators and employers will search for you online. By proactively generating your own online content, you can take control over what people see when they Google your name.

HOW TO CULTURE OUR PERSONAL BRAND

Write down a mission statement to define who you are and the work you want to do. What image do you want to project to your professional contacts? A good place to start building your personal brand is on social media platforms such as LinkedIn, Twitter, and ResearchGate. Blogs related to your interest also help build your image, even if they are not directly related to your research! Whatever you choose, make sure your sites are updated regularly. It is better to remove yourself from an unused platform than to leave it up.



POWER OF SCIENTISTS ONLINE

Scientists can use social media to get the public excited and invested in research, and act as a counter to the spread of misinformation.

Professional Column

Interview with an Expert

Chad Porter
Epidemiologist, Naval Medical Research Center

Can you describe a typical work day? What tasks are involved in your current position?

I am employed by the Naval Medical Research Center (NMRC), which means I work for the US Department of Defense (DoD). Something I never fully appreciated before I started working here is how much effort the DoD puts towards public health research and interventions. I work in the Infectious Disease Directorate which is predominately focused on developing vaccines for deploying military populations for things such as malaria, dengue fever, travelers' diarrhea and other infectious diseases that impact our troops' ability to perform their mission. Importantly, many of the diseases we focus on are the same ones that impact kids in the developing world. For example, next to respiratory diseases, diarrheal disease is the number 1 infectious disease killer of kids <5 years of age throughout the developing world. My focus is in the travelers' diarrhea area (again, something I never would have envisioned myself working on).

I head up the clinical studies and epidemiology branch within my department. My typical work day is focused around designing clinical trials to test products that have been developed by my coworkers. This requires ongoing communication with numerous regulatory agencies and scientific and ethical review boards. I spend a significant portion of my day working on documents to support those clinical trials. Additionally, I oversee all of the clinical trials conducted within our department (usually 3-5 each year). This whole area of work is unique and could be described on reams of paper; however, for now let's just say there is a need for continual oversight and monitoring of clinical trial activities.

In addition to those efforts, I lead a robust effort to better understand the epidemiology and morbidity of travelers' diarrhea in our military populations, much of which goes to informed vaccine development efforts (such as what epitopes to focus on, what valency will be required, etc). These data feed into our biochemical and preclinical groups to help guide their research areas.

What do you find most rewarding, and challenging, about your current position and career track?

I sit on the cutting edge of science and we are conducting translational research that has never been previously conceived (much less conducted). That is incredibly rewarding. Additionally, while vaccine development is a long-term solution that requires decades of development, there is an altruistic feeling that my work may one day not only decrease the morbidity of disease in our military populations but also may save the lives of millions of kids living throughout the world. I really enjoy that I get to engage at all levels of research and science including academia (I have two adjunct faculty appointments), industry (both large and small pharmaceutical companies), governmental organizations, and large non-governmental organizations. It is this breadth of exposure that continually fosters new ideas and ongoing research efforts. Challenges are inherent in all jobs and this is no exception. As you might be able to imagine, there are numerous bureaucratic hurdles that are challenging. Additionally, as is the case in most areas of research, we are underfunded to fulfill our mission. That creates challenges as we make prioritizations that are not always based on science but are required to move things forward.

How did you find your current position? Why did you take this career path, as opposed to alternatives?

I am not your typical PhD-level employee. I received my Bachelor's degree and went immediately to work. I changed jobs one time and then was laid off (right after getting married and buying a house). I was frantically searching for employment when I found a position in the Enteric Disease Department as kind of a research coordinator. I applied, and with some good fortune ended up getting hired. Once I was here, the world of public health research and epidemiology really opened up to me. We are a unique institution in that most of the people I was (and still am) interacting with had multiple post-graduate degrees. As a BS-level employee, I began to feel the need to expand my educational background but I didn't want to leave my position. So, I initially worked on a Master's of Public Health degree part time taking night classes at George Washington University. I reached the end of that degree and felt the desire to continue my education and pursue my PhD in epidemiology. I completed both of those degrees while working full time. As I continued my education and my work experience, my roles expanded as did the branch that was growing beneath me to the point that I am now the head of the branch to which I was initially hired as a research coordinator.

Your second question is a key one...I took this path because I really like what I do and the idea of leaving this job to complete my education was one that I just simply could not fathom at the time. It was certainly a struggle to work 40-50 hours a week and complete an MPH and PhD; however, it gave me a unique opportunity to hone the skills I was learning in the classroom in a real-world setting.

What are the most important skills and personal characteristics that make you successful in this field? Did you work on them specifically in graduate school?

I think some of the most important skills in this position and field are perseverance, the ability to work with a variety of people, being flexible, being a good leader, and having a vision for success and a strategy to carry out that vision. I hadn't thought about whether or not I worked on those in graduate school or not; however, considering I was working here at the time, I don't think there is any doubt those skills were further honed in grad school. However, I really think that one's ability to be successful in their careers is dependent on their ability to adapt their academic skills to the workplace. Those are incredibly different areas and oftentimes I see graduate students unable to separate themselves from school and succeed in the real world. I think that comes with time and experience, but I would strongly encourage all those in graduate school to start to apply their skills in a workplace setting as soon as possible.

TEAM EFFORT

Jess Harakal is a recent graduate of the Microbiology PhD program at UVA while her husband Glen Hirsh is wrapping up his PhD in the UVA Cell Biology program. They recently completed their job searches and are in the process of transitioning into their post-UVA life in Philadelphia, PA. Jess is now an Investigator in the Immunology group within the Dermatology Therapeutic Area at GlaxoSmithKline, and Glen will soon join her to begin a postdoctoral fellowship in the Dermatology Department at the University of Pennsylvania. Jess and Glen talked with us about their experiences during their joint job search, how being part of a scientific couple affected their approach to the process, and the synergies they uncovered while tackling the challenge together.

Interview by Alex Keller

How did you each find your position? (e.g. professional network, job postings, recruiters)

Glen: Jess and I started the job search at the same time, even though we knew she would graduate first. She wanted to transition directly into an industry position, while I was interested in an academic postdoc. We started looking at the same time because it can take longer to find an academic postdoc position, especially if the position is contingent on securing your own funding. I had emailed a few mentors about postdoctoral positions in their labs, and Jess actually stumbled upon a listing for my job on the AAAS Science Careers page while looking for herself. I contacted the PI and things really took off from there.

Jess: I found my current position posted on the jobs section of LinkedIn (I highly recommend signing up for their job alerts). I then turned to my professional network. I reached out to a friend, a previous UVA graduate student who had worked in the group that posted the position. She sent the hiring manager (my current boss) an email recommending me, including my resume, and it all went from there. At the same time, Glen's future mentor offered to send my resume out to the Immunology Department at the University of Pennsylvania, and I was fortunate enough to set up multiple interviews there for academic postdocs. Additionally, I applied to and interviewed for an industry postdoc at Janssen Pharmaceuticals, which I found directly through Janssen's website.

Was your approach to your individual job search influenced by the context of your spouse's simultaneous search? If so, how?

Jess: I have to admit that I delayed applying for jobs longer than I should have because I was worried we wouldn't find something in the same area. I was looking at positions in a few different cities around the country and had difficulty narrowing it down. We knew that we wanted to limit our searches to large biotech hubs because we thought that would give us the best chance of finding positions in the same city. Philadelphia had the added appeal of being close to both of our families. Once Glen found a great opportunity at UPenn with a mentor that was willing to hold the position until he graduated, it was easier for me to narrow my search.

In approaching your joint job search, what concerns did you prioritize? What tradeoffs were you willing to concede if necessary? How did the result compare to what you expected?

Glen: Our first priority was location. We ruled out any jobs that weren't in large biotech hubs. We then focused on jobs that looked like good fits. I was interested in a lab that incorporated specific skill-sets into their research and took certain approaches to science. Probably the biggest tradeoffs have to do with timelines and living apart. I'm still finishing my PhD and Jess needed to start at her job much sooner than I could finish. We decided that her job opportunity was too good to pass up, and it made the most sense for her to start her career as soon as possible. This means that we are living in separate cities until I can finish things up here. Although the timing is not ideal, we both knew from the beginning that this was a possibility and decided that these few months apart are a sacrifice that we were willing to make for the betterment of our careers.

Jess: To add to that, I'm pleasantly surprised by how everything worked out and I'm happy with the decisions we made. It has certainly not been easy, but I just have to remind myself that our current "long-distance" lifestyle is temporary, and it's exciting to know that Glen has such a great postdoc lined up for when he graduates.

How was your joint job search different than you initially expected?

Jess: Because I knew I'd be graduating sooner, I did not expect that Glen would find a position before me! But, I'm glad he did, because it really helped to put things in motion for both of us. I also did not expect the job search process to take so long. For example, for my current position, I did a phone interview with the hiring manager, a conference call with the entire team, and full day (about 10 hour) in-person interview. The total process from start to finish was 2 months. It was difficult to juggle the applications and preparing for different interviews (4 in one week) on top of thesis writing and preparing my defense, but it was worth putting in the extra time to find a position I was happy with.

How did potential employers respond to help facilitate a joint job search? Did this detail enter the conversation?

Glen: This detail did come up the first time that I spoke with my future postdoc mentor over Skype. He asked how I heard about the position, and I told him that my wife actually found the job listing. He immediately offered to send out Jess' CV to his department along with a description of her research interests, and she received quite a few emails from other PIs. They even coordinated our in-person interviews so that we could travel together. Jess ended up taking the industry job, but she did have some great options in academia as well. I'm glad I mentioned it during my interview!

Speaking individually now, what factors helped or hindered your success at getting a job after graduate school?

Glen: I have always had broad scientific interests and we were both involved in different organizations on campus including GBS, VA-BIO, GSCB, and teaching as part of SEP (Saturday Enrichment Program). My externship through the Biotechnology Training Program gave me experience in the field of research I was interested in;. I also completed quite a few Coursera courses online. I think these activities really helped exhibit my passion for learning and trying different things. Additionally, I think being able to efficiently present your data to any audience is essential. I had presented my data to diverse audiences, which helped prepare me for the job talk.

Jess: First, I think my skill set was well-suited to this particular position. Second, networking during graduate school and reaching out to a previous classmate is what got me the initial phone interview. Third, I thought a lot about the type of environment I wanted to work in and was able to give examples of why I could be successful in that environment. Industry can be very different than academia, so it was important that I could show my interest and explain why I thought it would be a good fit for me. This included networking with industry professionals and getting involved in different organizations that helped me better understand the career path. Fourth, I found as many opportunities as I could to present my research to diverse audiences and really refine my communication skills. Fifth, I tried to maintain a positive attitude and show up to my interviews with a smile and enthusiasm for the science and the environment. It really helps if they see you as someone they would enjoy working with every day, particularly in very team-oriented environments like you find in industry. Finally, I was a bit lucky. GSK had made a big move and lost many employees during that time. It worked out that they were actively recruiting to fill those positions during the time I was looking.

What advice would you give current students approaching a similar joint job search?

Glen: Start applying for industry positions a few months before you finish your PhD, and academic postdocs much earlier than that. The search becomes a bit more complicated when there are two of you applying. Finding two good jobs in the same location can take more time than finding one job, so the sooner you start the better. In an ideal situation, you are both receiving offers at the same time in the same location.

Jess: Do not limit yourself. Use all of your resources, especially your network! However, don't hesitate to apply for positions directly through company websites or for positions that may seem a bit out of reach, because you may be surprised by the responses you get. Also, do not wait to hear back from one position before you apply for another. Be prepared for a long process and give yourself enough time to really prepare for each interview. You will need to research the companies/labs you are applying for and tailor your resumes/CVs and research talks for each position. This is very important, so make sure you give yourself that time to feel prepared.

Any other comments or advice you'd like to share?

Glen: People often refer to the "two body problem" as being a bad thing, but it can also work in your favor. If one of you finds a job that you really like, use your new mentor as a resource. If they're serious about hiring you and something as simple as sending out your spouse's CV helps make your decision easier, then they're likely to do so. It can't hurt to ask if they would send out an email, or even if they know of any positions that match your spouse's interests.

Jess: There is a lot of pressure and stress involved with the job search. Don't just accept the first one that comes along, unless you are really sure it's the one for you. It's easy to want the relief of accepting a job, particularly if your significant other already has, but this is a big commitment! Take your time, do your research, and ask a LOT of questions during your interviews so that you can make an informed decision that you are confident in. Also, do not be afraid to make a big move. I was fortunate to have a few fantastic offers in both academia and industry. I was also scared to make the wrong decision or to take a job that I might not be successful at. Just remember that they are putting a lot of money and time into finding a great candidate, and they would not make you an offer if they weren't confident you would succeed.

Have more questions about the dual job search process? Jess and Glen are happy to answer any questions via email at jlh4zb@virginia.edu (Jess) and gdh5cy@virginia.edu (Glen).



Internship: Licensing & Ventures Group

Written by Alex Keller

The UVA Licensing & Ventures Group offers internships to graduate students, providing an opportunity to engage with the world of intellectual property amidst graduate study. GBS asked LVG's Josh Mauldin for more information about the internship program. As a former UVA Cell Biology graduate student and LVG intern himself, before receiving his PhD and joining the group full-time in 2012, Josh has an especially close familiarity with the internship program and the opportunities it creates.

Licensing interns are brought on by individual licensing professionals in the office with whom the intern works exclusively. Each licensing professional manages a portfolio of invention disclosures that is related to his/her background training, and typically takes on no more than one intern at a time. Schedules and expectations are worked out between the licensing professional and intern on a case by case basis, so the following information is generalized to a "typical" internship.

Licensing interns are most commonly PhD graduate students that have completed all formal course work. The internship is not meant to interfere with the student's normal research responsibilities, so interns typically devote 4-6 hours per week assisting with such activities as prior art searches and market analysis.

Prior art searches are part of a patentability analysis, answering the question, "has this invention or a similar invention been made before?" The information obtained in prior art searches directs UVA LVG's decision on which inventions we try to secure patent rights by filing patent applications. Market analysis involves

answering questions about whether there is a commercial market for an invention, and identifying prospective licensees with whom we can partner to bring the invention to the marketplace. As PhD students have a high level of technical expertise, these are areas that they can assist with that do not require a lot of training.

Interns may get exposure to more advanced topics like contract drafting and negotiations, as well as patent filing and prosecution. The internship program is a great introduction to the worlds of business development, patent law, and contract law, and is a primer for learning the unique vocabularies associated with those fields.

Students can apply for the licensing internship by sending a resume and cover letter to Josh Mauldin at UVA LVG (JMauldin@virginia.edu). Resumes and cover letters are sent around to the licensing staff, and if anyone has an opening then he/she will contact the applicant directly.

Since the previous GBS President, Alexandra Bettina, recently completed an internship at the LVG, we also asked her about her internship and what she took away from the experience.

GBS: Why did you pursue an LVG internship?

Alexandra: I chose to pursue an internship at LVG to learn about alternative career paths post-PhD.

GBS: What experiences during the internship did you find most valuable?

Alexandra: I greatly valued the hands-on experience I had at LVG. I had the opportunity to really get an idea of what a career in technology transfer might look like on a day-to-day basis.

GBS: How do you expect the internship to contribute to your intended career path?

Alexandra: I expect that the internship will contribute to my future career path in that it has given me a completely new perspective on how to approach bench work as well as alternative ways to think about science.

GBS: Why would you recommend this internship to other students, and which students would find an LVG internship most valuable?

Alexandra: I recommend the LVG internship to all students who are pursuing a science-based PhD because it gives a new perspective on work done in the lab setting. Furthermore, I think it is a great way for students who are interested in finding out more about alternative career paths in science to get hands-on experience in a new field.

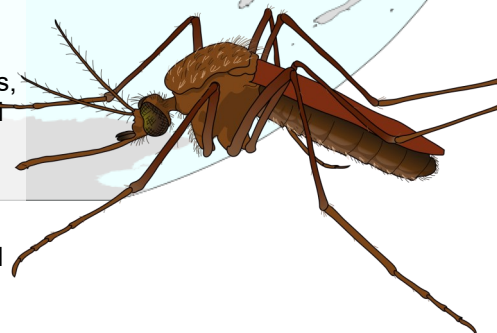
Science Hot Topics

Zika virus: where are we now?

Written by Beth McKenney

Zika virus (ZIKV) made headline news in late 2015 after acute infection was linked to increased incidence of microcephaly in infants in Brazil, leading to the World Health Organization (WHO) declaring a Public Health Emergency of International Concern (PHEIC). ZIKV spread rapidly in the Americas due to the prevalence of its vectors, primarily the *Aedes aegypti* mosquito. In addition to vector-borne transmission, ZIKV can be spread from a pregnant woman to her fetus and can be sexually transmitted. Although ZIKV typically causes mild disease in humans, circumstantial evidence suggests potential for a more severe effect on the developing fetal brain. In early 2016, researchers demonstrated that ZIKV preferentially infects neural progenitor cells, but does not readily infect fetal kidney cells or embryonic stem cells. In December 2016, Brasil et al. published a report in the *New England Journal of Medicine* demonstrating a correlation between acute ZIKV infection in pregnant women and adverse birth outcomes in Rio de Janeiro, including premature birth and

microcephaly. Additionally, Colombia has seen a 400% increase in reported cases of microcephaly between January and November 2016, compared to the same months in 2015, per a recent *Morbidity and Mortality Weekly Report* from the CDC. These cases coincided with 105,000 suspected cases of ZIKV disease, almost 20,000 of which were pregnant women, further suggesting correlation between ZIKV infection and birth defects. In the United States, active transmission of ZIKV has been reported in southern Florida and Texas. President Obama asked Congress for \$1.9 billion to go towards ZIKV research, and in September, Congress voted to allocate \$1.1 billion to the effort, including funds for mosquito control and vaccine development. Although the WHO has canceled the PHEIC, officials maintain that ZIKV remains “a highly significant and a long-term problem.” Global collaboration is necessary to prevent enduring public health effects of ZIKV epidemics.



Sources:

- Tang, et al (2016). Zika virus infects human cortical neural progenitors and attenuates their growth. *Cell Stem Cell*. 18(5):587-90.
- Brasil, et al (2016). Zika virus infection in pregnant women in Rio de Janeiro. *N Engl J Med*. 375(24):2321-2334.
- Cuevas EL, Tong VT, Rozo N, et al (2016). Preliminary report of microcephaly potentially associated with Zika virus infection during pregnancy — Colombia, January–November 2016. *MMWR Morb Mortal Wkly Rep*. 65:1409–1413. DOI: <http://dx.doi.org/10.15585/mmwr.mm6549e1>

Science In Review

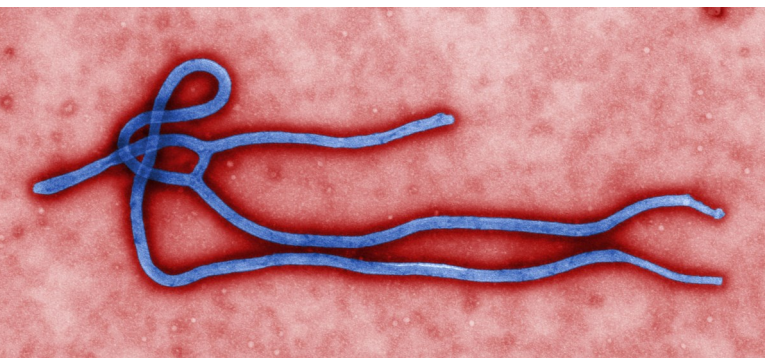
Compiled by M. Schappe

We have compiled a brief collection of stories from the past month that you may have missed. Ranging from year-in-review to headlines to food-for-thought, we hope you find something interesting.

2017 Sneak Peek: What the new year holds for science

Nature profiles exciting stories that are emerging in 2017. These short news blurbs highlight developments across scientific disciplines: the microbiome, black hole behavior, CRISPR-Cas9 patents, material science, quantum computing, and much more. Although we dig our minds into the biological sciences, 2017 will yield a breadth of discoveries worth-knowing.

Source: <http://www.nature.com/news/2017-sneak-peek-what-the-new-year-holds-for-science-1.21231>



Merck's Ebola vaccine shows 100% efficacy

Results of a recent trial, led by the World Health Organization (WHO), provide a "silver lining" to the Ebola virus disease of 2015. In a randomized trial of over 4000 contacts, a Merck-produced vaccine demonstrated 100% efficacy in those tested, including children. "The vaccine has yet to be approved by regulatory authorities, but funding from GAVI, the Vaccine Alliance has allowed Merck to produce a stash of 300,000 doses for emergency use should the virus resurface. One drawback: It was designed specifically for the strain that hit West Africa and has not been tested against other Ebola strains."

Source: <http://www.sciencemag.org/news/sifter/final-results-are-mercks-ebola-vaccine-works-really-really-well>

Original Article: [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(16\)32621-6/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)32621-6/fulltext)

Theranos lays off 150+ employees

The beleaguered blood-testing company *Theranos Inc.* recently made additional layoffs in efforts to "re-engineer" the company, cutting 41% of their staff. Once valued at \$9 billion, the company originally promised comprehensive blood test analysis from only microliters of blood sample. However, after difficulties with their technology and fabricated test results, CEO Elizabeth Holmes (who founded the company at age 19) is facing multiple lawsuits and a two year ban from owning or operating a laboratory. Theranos is committed to developing its new "miniLab" testing technology. The company currently has one-quarter the employees as it did in August 2016.

Source: <https://www.bloomberg.com/news/articles/2017-01-06/theranos-to-fire-41-of-workforce-in-second-round-of-cuts>



ELSEVIER

German Researchers lose access to Elsevier journals

Beginning on January 1st, researchers across Germany no longer have access to *Cell*, *The Lancet*, *ScienceDirect*, and hundreds of journals published by *Elsevier*. Negotiations are ongoing between the Dutch publishing company and a German consortium of universities, libraries, and research institutes (known as "Project DEAL"). In a separate deal brokered with Elsevier, Dutch universities will pay Elsevier slightly more than the past with open access articles increasing to 30% by 2018. However, the German DEAL group believes this offer "doesn't go far enough" and allows Elsevier to "double-dip" by forcing institutions to pay for access and publishing. DEAL seeks a single fee for access and publishing and that all German articles to be open access. Negotiations resume in late January.

Source: <http://www.sciencemag.org/news/2016/12/thousands-german-researchers-set-lose-access-elsevier-journals>

Update: <http://science.sciencemag.org/content/355/6320/17>

"Science Advocacy: Get Involved" (originally published in *Nature*)

Summary: With science-based challenges impacting the world more-so than ever, there is an increasing need for those who can present science in a way policy makers can understand. *Nature* talked to three scientists (a *Dean* and *Cell* editor, a physicist, and an ecotoxicologist) about their experience shaping scientific policy and how others can learn from their experience. These scientists briefly share their stories about how they got involved in scientific policy, specific challenges they face, and the major lessons learned. In the "Related Links," this article also links to stories on scientific activism, "policy" as the art of science-to-government, and bringing science to political parties.

Source: <http://www.nature.com/naturejobs/science/articles/10.1038/nj7634-611a>



"How scientists use Slack" (originally published in *Nature*)

Summary: *Slack* is one of silicon valley's hottest companies, and one of science's rapidly adopted communication tools. Slack is a free-mium messaging platform, designed for teams to share files, chat, and organize their work. Given that email is "generally awful," Slack provides a robust alternative, with more than 3 million users worldwide. This article profiles how labs are using Slack to synthesize research papers, prep for conferences, monitor experiments, and integrate their labs. Check it out for your lab at slack.com.

Source: <http://www.nature.com/news/how-scientists-use-slack-1.21228>

GBS 2016 In Review



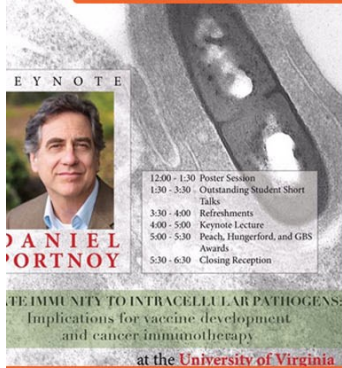
Happy Hours
and FAF



Bake Sale



BS



GBS
Symposium



Science Fairs



Alumni Career
Panel



First Year
Welcome Picnic



Winter Hot Cocoa Event



GBS Council



Ronald McDonald House
Volunteering



LVG
Site Visit

More to come
in 2017!

Acknowledgements

Thanks to everyone who contributed to Newsletter this issue!

Breanna Brenneman (brb2ty)

Riley Hannan (rth4dz)

Alex Keller (ask3mf)

Nicole McKenna (nrm2nq)

Beth McKenney (esm3bn)

Kathy Michels (krm4xz)

Tori Osinski (vo3sc)

TK Phung (tnp3ep)

Mike Schappe (ms9xb)

Jeremy Shaw (jjs3ge)

Any questions, concerns or opinions? Feel free to fill out our survey or email Tori Osinski at vo3sc@virginia.edu