CAMB STUDENT NEWSLETTER

Volume 10 // Issue 3 // Aug 2025

In This Issue:

SPECIAL INTEREST
You're in Philly for Grad School. Now What?
by Katey Stone **pg 2**

RESEARCH SPOTLIGHT
Penn Scientists Develop World's First CRISPR Treatment For a Deadly,One-of-a-kind Disease
by Maya English **pg 4**

FACULTY INTERVIEW
An Interview with Dr. Craig Bassing
by Kay Labella **pg 7**

SPECIAL INTEREST
Amid Funding Cuts, How Will CAMB Students Secure a Thesis Lab?
by Ariana Majer **pg 11**

PUZZLE
Drosphila Genetic Crosses
by Maya English **pg 14**

Letter From The Editors:

Dear CAMB Students, Faculty, and Alumni,

Hello to all returning readers, and a warm welcome to those of you who have recently joined us! We are excited to share with you the August 2025 installment of the CAMB Student Newsletter!

In this month's issue, we welcome the incoming first years by providing some information about living in Philly and preparing for the start of classes and rotations. Next, we highlight the extraordinary research conducted by Penn scientists to develop and implement the first CRISPR-based personalized treatment for an incredibly rare and deadly disease. We then chat with Dr. Craig Bassing as he steps into the role of CAMB chair to hear about his path to becoming a PI, his thoughts on mentorship, his hopes for CAMB going forward, and his advice for students in these unprecedented times. We also hear from the current CAMB second years about their rotation experience amid federal funding cuts and their advice for incoming first years. Finally, we introduce the Fun Corner, a new section of the Newsletter where you will be able to find comics and puzzles, including our new Criss Cross puzzle – *Drosophila* Genetic Crosses!

For additional articles, past publications, and to learn more about the CAMB Student Newsletter team, visit our blog at https://cambnewsletter.wordpress.com/ or follow us on Instagram and Bluesky **@cambnewsletter.** The CAMB Student Newsletter is always looking for new writers and editors to join our team! Current students interested in contributing to the CAMB Student Newsletter can fill out this form or reach out to us via email at **cambstudentnewsletter@gmail.com** to learn more! You can also check us out in person — our next meeting will be Tuesday, September 9th at 3pm, in BRB 1413. Join us to brainstorm ideas for the November issue while enjoying some tasty snacks!

Sincerely,
Kay Labella, Ariana Majer, and Eva Agostino
Editors-in-Chief

SPECIAL INTEREST

You're in Philly for Grad School. Now What?

by Katey Stone
Peer Edited by Eva Agostino

The moving truck is unloaded, the boxes are half-unpacked in your new apartment, you're getting ready for CAMB orientation to begin, worrying about figuring out your life in this new city... and you find this article. Welcome to CAMB! You're here, and we're hoping to help you out by providing some information about the standout topics and worries you might be thinking about.

Public Transit

SEPTA, the public transit system in Philadelphia, consists of bus lines, subways, trolleys, and regional railway trains. Google and Apple Maps have great integrated public transit schedules; just type in your destination and toggle over to the public transit icon. Prices range between types of transit and payment method. You can get a SEPTA Keycard at some train stations, including the main hub at 30th Street, or at the kiosk at the Penn bookstore. Register your Keycard on the SEPTA app to load funds or buy passes. You can also use cash or just tap any credit or debit card to pay. Consider registering for the Penn Semester Pass for 10% off.

Grocery Shopping

Grocery shopping in a primarily walking city can be a mental shift from wherever you may have moved. Here are some options for purchasing groceries in the neighborhoods where most CAMB students reside – with notes on whether they have parking for those of you with cars.

- Rittenhouse & Clark Park farmer's markets
- Trader Joe's on 22nd: limited parking, gets crowded on the weekends
- GIANT on 23rd: parking garage with free parking
- Fresh Grocer's on Gray's Ferry: plenty of parking
- GIANT Heirloom Market on Grey's Ferry: street parking only
- South Square Market on South Street: street parking only
- Aldi on Washington: parking garage with free/validated parking
- ACME on Walnut Street: parking garage

Making Friends and Meeting People

The best part about orientation is that everyone else is brand new here, too! Go out of your way to meet as many people as you can. Lots of CAMB students say that they met their closest friends throughout graduate school during that first week. Most subprograms have socials and events, so do your best to attend those. Ask someone at your lunch table if they want to try a coffee shop together on your way into orientation tomorrow. Ask if they want to grab a treat and search for rotation labs after lunch. Ask if they want to walk around campus and check out the libraries. The point is, don't be afraid to meet people!

Coffee, Restaurants, and Bars

Now for the spots to go with your new friends! Near campus, there are lots of food trucks that are worth a try – these are great lunch spots. There are also the hospital cafeterias, Gia Pronto, and Jimmy John's located on Civic Center Blvd. For a coffee break, there's the campus Starbucks, as well as Bower Cafe in the atrium of the Pavillion. Other favorites to consider checking out:

- **West Philly:** Clarkville Pizza, Two Locals Brewing, Sabrina's, Knockbox Cafe, Carbon Copy, Cleo's Bagels, Local 44, Vietnam Cafe, Loco Pez, Don Barriga, Metropolitan Bakery, Pattaya Thai
- **Graduate Hospital/Fitler Square:** Sally Pizza and Wine, Sidecar, Dock Street Brewery South, Sabrina's, Porco's/Small Oven Pastry Kitchen, Rival Bro's Coffee, Rosy's Tacos
- **Rittenhouse/Center City:** Enswell, Vibrant Coffee, Parc, Darling Jack's Tavern, Hi-Lo Taco
- **Other:** Saigon Grace, Loretta's, The Good King Tavern

Check out our previous article, Philly Restaurants, for more suggestions.

Classes

Your class schedule will be made available to you during orientation, or you can find it in Path@Penn. There are resources and prep courses for the Cell Biology lecture (CAMB6000) if you are worried about being prepared, but try not to worry too much about classes ahead of time. Once classes begin, don't hesitate to reach out to your TAs if you want extra help.

Rotations

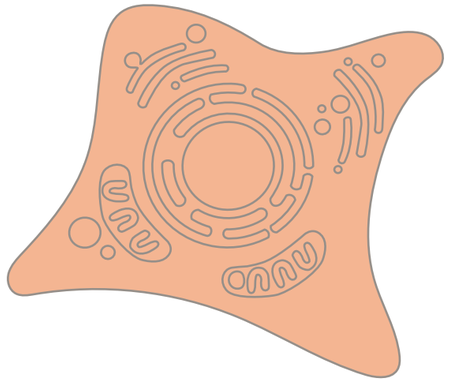
Don't hesitate to get started reading through lab websites and faculty profiles to identify labs you may want to rotate with. When you find a lab you're interested in, you can send a concise, brief email to the PI introducing yourself and asking to meet to discuss a potential rotation. Attach an up-to-date C.V. to this email. We also highly recommend using the Current CAMB Students Webpage to find peers who are in that lab or who rotated in that lab to chat with before making your decision. Go into these conversations with PIs and students prepared with questions and topics you want to discuss.

Still not sure how to move forward? Here are some other articles that might be helpful (QR codes to the right!):

- Lab Rotations: How To Choose Them and Make Them Great
- Check out the article in this issue about the second years' rotation experience and their rotating advice for more information.

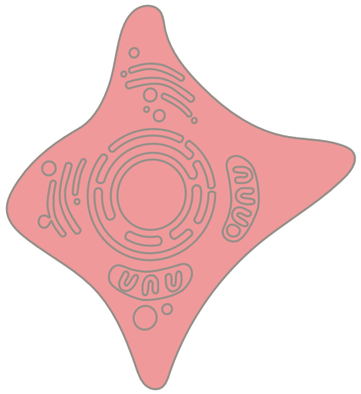
Other

- Enroll in (or waive) student health insurance (PSIP) by August 31st. Consider setting up care at Penn Student Health and Penn Dentistry during this time – you can call Penn Student Health to set up an appointment for establishing care. You need to get a written referral from Student Health to see any other providers, so do that while you're there!
- You have free access to the Penn Gyms if you're interested – they also have fitness classes.
- Update your bank information and driver's license to your new address. You can also update your voter registration with your license!
- Get your annual car inspection for the state of PA, update your plates and registration, and verify that your car insurance is up-to-date.
- Visit the Free Library of Philadelphia and get your library card.



Lab Rotations

Philly Restaurants



Penn Scientists Develop World's First CRISPR Treatment for a Deadly, One-of-a-kind Disease

by Maya English
Peer Edited by Avani Modak

All babies are one in a million, but one Children's Hospital of Philadelphia (CHOP) patient is, statistically speaking, one in eight billion. A group at Penn made national news this spring for developing a first-of-its-kind CRISPR-based treatment for a patient identified as "Baby KJ." The team, under the leadership of physician-scientists Dr. Kiran Musunuru and Dr. Rebecca Ahrens-Nicklas, included three CAMB-GTV students, one of whom was first author and two of whom worked on the project during their rotations.

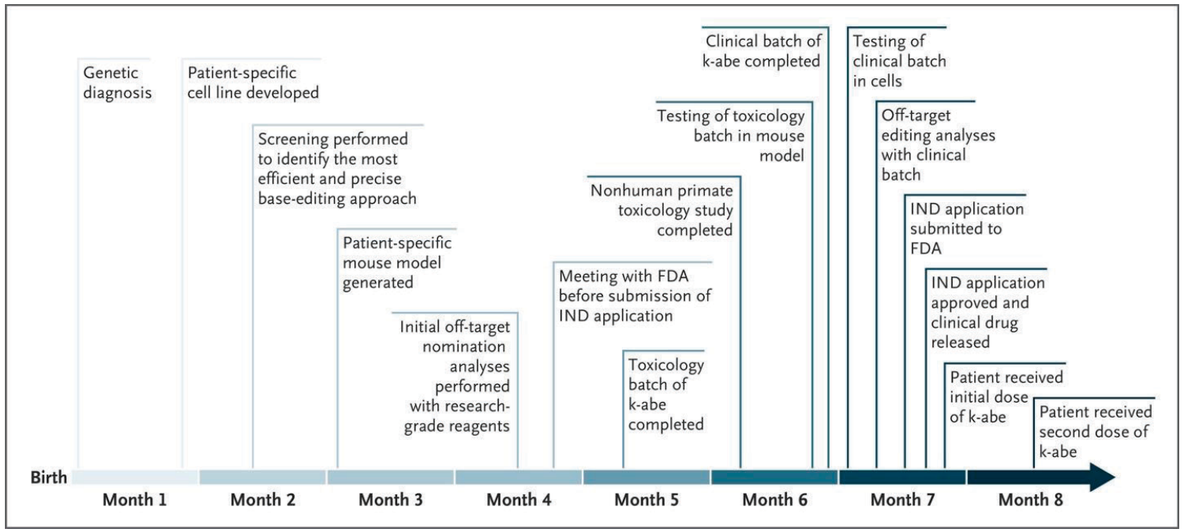
Baby KJ Muldoon was born in August 2024 with carbamoyl phosphate synthetase 1 (CPS1) deficiency, a rare and usually fatal disease. CPS1 deficiency affects the urea cycle, causing high levels of ammonia in the blood that can only be controlled with an extremely low-protein diet and liver transplant. Still, with low or no levels of functional CPS1 enzyme, about half of patients with this disease do not survive early infancy. Many different mutations might alter CPS1 expression; for a disease as rare as CPS1 deficiency, this means that only one or two patients in the world might carry any given pathogenic variant. Treating an "n=1" disease such as this calls for the most personalized of personalized medicine: the creation of a therapy that may improve or save at most a single life.

Drs. Musunuru (left) and Ahrens-Nicklas (right) with Baby KJ (center)

Decades of research, months of breakthroughs

The research that would eventually result in a treatment for Baby KJ began long before he, and even several members of his research team, were born. CRISPR was identified in the late 1980s and characterized throughout the 2000s, eventually becoming the subject of the 2020 Nobel prize presented to Drs. Jennifer Douda and Emmanuelle Charpentier. The former of these laureates founded the Innovative Genomics Institute (IGI), which would eventually collaborate with Penn on Baby KJ's case. Base editors, a CRISPR technology that "nicks" DNA to cause a single base change and that were used in Baby KJ's treatment, were developed at Harvard's Broad Institute in 2015. The lipid nanoparticles (LNPs) that would deliver Baby KJ's therapy, a major topic of ongoing research at Penn that came into the spotlight as the delivery system for the COVID-19 mRNA vaccines, have been in development since the 1960s.

The work at Penn toward developing personalized treatment for Baby KJ began in the same week that he was born. Severe CPS1 deficiency is detectable in the first few days of life based on symptoms including high blood ammonia levels; in search of a cause, Baby KJ's genome was sequenced shortly after his birth. He had inherited two mutations in the CPS1 protein, Q335X from his father and E714X from his mother. Before he was one month old, researchers had introduced both of his mutations into cultured human HuH-7 hepatocyte cells, creating the first model of his genetic condition. By the time he was barely two months old, these same mutations had been introduced into a mouse.



From the New England Journal article originally reporting this work

Risks and rewards

The researchers raced against a ticking clock. To implement their gene-editing strategy, the team needed to address several questions: What base-editing approach would be the most efficient, with the fewest unintended effects? Which LNP packaging system would be the safest?

In under two months, the cell line containing Baby KJ's mutations had already been used to screen and select the most efficient base-editing strategy for his paternal mutation. The wheels were in motion. But in a time when the public relationship with the scientific community is increasingly unstable, it was of the utmost importance that this research be carried out safely. The researchers knew how disastrous a mistake could be; it had happened before, at Penn. In 1999, 18-year-old patient Jesse Gelsinger died after a severe immune reaction to the adeno-associated virus (AAV) intended to deliver the gene that would cure his metabolic disease. The lawsuit and government investigations that followed still shape federal guidelines surrounding gene therapy trials a quarter century later, and the loss still haunts Penn's community. A rushed misstep in this project had the potential to set back not only the field of gene editing, but also public trust in science, for decades. But time was of the essence.

At 100 days old, Baby KJ's condition worsened. He had severe episodes of hyperammonemia – high blood ammonia levels – each of which risked brain damage and possible death. At five months of age, his illness was deemed severe enough that he was put on the list for a liver transplant. Around this time, the researchers were safety testing prototype therapies in primates and mice. A month later, the clinical batch of Baby KJ's treatment was complete.

At last, a therapy was ready. Packaged in an LNP were the mRNA encoding a carefully selected adenosine-to-guanosine base editor (ABE) named "abengcemeran" and a guide RNA (gRNA) targeting his paternal mutation named "kayjayguran" (phonetically, "KJ-guran"). Doses of the complete therapy "k-abe" were administered at ages 7 and 8 months. Soon, Baby KJ's weight increased, his blood ammonia fell, and his neurologic status stabilized. At the time of this issue, Baby KJ will have celebrated his first birthday.

What's next?

Several aspects of this research represent a new wave in modern gene therapy that future studies are likely to follow. The successful use here of a base editor, which does not induce a double-strand break and therefore has fewer off-target consequences than traditional CRISPR-Cas9, presages a wave of more precise gene therapies. By permanently editing the genome, base editing has advantages over other gene therapies such as antisense oligonucleotides

(ASOs), which must be delivered repeatedly throughout a patient's life. The genome edit induced here will also not be heritable, dodging the majority of ethical dilemmas. And LNP delivery, already pushed to the forefront of biomedical technology by the COVID-19 pandemic, is now overshadowing AAV delivery as the method of choice for gene editors.

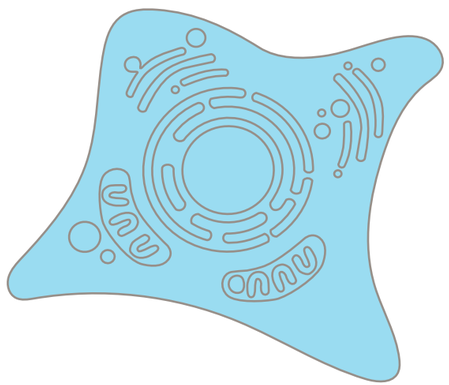
It is important to underscore the ways in which this research, and Baby KJ's treatment, would have been impossible without federal science funding. Pharmaceutical companies are unlikely to fund development of unprofitable n=1 therapies that cannot be marketed broadly. When Baby KJ was six months old, the study team submitted a single-patient, expanded-access Investigational New Drug (IND) application to the FDA. In a situation where time was of the essence, there was the risk that Baby KJ's treatment would be tied up in red tape. However, the paper acknowledges and thanks the FDA reviewers, who evaluated and approved the urgent application in just one week. In addition to research collaboration with teams at the Somatic Cell Genome Editing Consortium of the National Institutes of Health, the project and researchers were funded by six different NIH grants.

The U.S. National Institutes of Health are the largest funder of basic biomedical research in the world, and few medical breakthroughs in the last half century were accomplished without some NIH funding or expertise. At Penn, federal funding enabled the first personalized genome-editing treatment for a patient with an n=1 mutation; recent savage cuts to federal science funding threaten the projects that will follow. The department of Health and Human Services (HHS) is expected to be cut by 26.2%, with the brunt of these cuts affecting NIH (39% cut) and NSF (55% cut). As federal resources wane, it is hard to imagine the NIH funding such a risky multi-institutional effort, or the FDA approving IND applications with such alacrity.

Despite these challenges, the HHS appears ready to embrace a future in which n=1 gene editing is increasingly common. An ongoing effort to streamline this type of study, involving both Penn researchers and the IGI, would remove the need to submit INDs for each individual component of a new n=1 gene therapy. If the effort is successful, n=1 treatments for different mutations could be grouped into clinical trials, so that even these unique patients could be part of a cohort study. This would see five times greater efficiency in development and regulatory approval for this type of gene therapy, with patients who currently wait years to receive gene-editing therapies being treated as quickly as Baby KJ. At the moment, the future of American science is in flux between many possibilities; but at least for Baby KJ, the future is his to enjoy.

Baby KJ

Thank you to Sarah Grandinette for advice and feedback.



FACULTY INTERVIEW

An Interview with Dr. Craig Bassing

by Kay Labella
Peer Edited by Caroline Bickerton

Dr. Craig Bassing is, to many, a familiar face; if you didn't know him as the interim chair of GTV, then you may have met him as the vice chair of CAMB. Now, we're all excited to welcome Craig as he steps up to become CAMB's new chair. The CAMB Newsletter team is thrilled to kick things off by sitting down with Craig to talk about his path to becoming a PI, his thoughts on being a mentor, his hopes for CAMB moving forward, and his advice for students in these uncertain times.

Tell us a little bit about your scientific journey. What was your path like?

I will tell more than a little bit, because I think that students might benefit from my experience addressing this question bleeds into the next two questions.

From as early as I can remember, I liked science, particularly biology, and military history, and was thinking of a career as a scientist or military physician. For my undergraduate studies, I chose a research-focused school with strong educational programs in molecular biology, pre-medical studies, and reserve military officer training. During my undergraduate experiences and self-reflection, I learned that teaching and mentoring students in a university setting was a more appealing career option for me than a physician. As I would need a Master's or PhD degree to pursue my new goal, I decided to apply to graduate programs in molecular biology, even though I disliked my undergraduate biophysics and molecular genetics research experiences, because I recognized that I liked science enough to get through at least two years of graduate school and earn a Master's.

The summer that I joined my thesis lab, I found myself with the great fortune of being in the right place at the right time and recognized the potential benefits of aggressively pursuing the project that I conceived. This resulted in me publishing two first author papers before taking my preliminary exam. However, the next two years of graduate school were an enormous struggle for me because my thesis project died, I had trouble developing another project, and I realized that I needed to conduct a post-doctoral fellowship to obtain a university position teaching and mentoring undergraduate students. My thesis mentor had provided me opportunities to mentor undergraduate and junior graduate students in his lab, which I very much enjoyed. Therefore, despite reservations, I decided to pursue a post-doctoral fellowship, but only if I could find one studying lymphocyte antigen receptor gene assembly and diversification because this was the biological subject that interested me the most. I figured that this interest might increase my motivation for slogging through the basic science research grind to possibly become a professor.

In starting my post-doc, I chose to help and learn from a senior post-doc whose project required a time-consuming, brute-force approach to establish novel embryonic stem cell and mouse models, which together would enable elucidation of molecular mechanisms. This three-year collaboration was productive and sparked a desire to develop my own line of research and see whether I could become a competitive candidate for university faculty positions. Unfortunately, the genetic and epigenetic research that I developed over two years did not draw interest from academic search committees. Therefore, I decided to initiate a new line of research elucidating mechanisms of DNA repair and malignant cellular transformation. Fortunately, this decision, chance, and good luck opened opportunities that I pursued over a year, and my mentor leveraged for me into key publications, invited seminars, biotech consultation, and faculty offers. I felt that taking a faculty position at this point would be unwise because I needed time to develop expertise, connections, and new

experimental models that would enable me to establish a robust independent research program. Accordingly, I spent another two years as a post-doctoral fellow (eight years total), wherein my mentor provided me numerous opportunities to mentor his graduate students and post-doctoral fellows and even teach graduate school lectures and small group sessions. In my final year as a post-doc while interviewing for faculty positions, I was offered some intriguing jobs – the CSO of a new biotech company, a lead scientist position in an established biotech company, the junior founding partner of a new biotech venture capital firm, an executive position in a science policy and fund-raising institute, and a scientific journal editor position. Surprisingly to me, it was easy for me to decline these offers because I wanted to be my own boss, continue my research that I loved, and spend substantial time teaching and mentoring aspiring scientists. In the end, Penn/CHOP was the only faculty offer that I considered because of its outstanding scientific environment, great community and spirit of collaboration, and unique emphasis on the importance of teaching and training graduate students and research fellows.

After a long path with many external obstacles and more self-doubts, I arrived at Penn/CHOP eager, but also nervous and anxious, to establish my own research program and complement this with teaching and training my thesis students. While I travelled this path, I also found myself becoming more and more involved in teaching and in mentoring and advising other graduate students. This led me into various leadership positions in IGG and CAMB, which I found much more rewarding than mentoring my thesis students, in part because I realized that I was helping more students. For this reason, I decided several years ago to wind down and ultimately close my research lab so that I could devote the time needed for graduate education and training leadership positions. I am starting enthusiastically, but also a bit nervous, down the CAMB Chair path, which for a long way behind me has imprints of Dan's very large footsteps. Fortunately for me and everyone in CAMB, Dan is walking on a new path that intertwines with mine, enabling me to engage him as a mentor and advisor for years to come. I am also fortunate and grateful that the CAMB Chair path is groomed and supported by four outstanding CAMB Office coordinators who serve as my guides and at times sherpas, and by hundreds of faculty members and students who are great scientists and even better people.

What factors influenced your decision to become a PI? When did you know it was the right path for you?

My above answer outlines many factors that influenced my decision to become a PI. Yet, I think that the single most important factor was that I had worked so long and hard to put myself into a great position to become a PI, that I did not want to look back later in life with regrets that I did not give this career a chance. This might sound weird, but I never knew if becoming a PI was the right path for me even though I chose it from other promising paths. Although I mostly did enjoy being a PI for 20 years, I also often wondered if another path would have been better for me. For example, while an Associate Professor, I found my few experiences as a consultant and expert witness for biotechnology patent infringement cases so enjoyable and interesting that I briefly considered closing my lab to join a law firm that offered to pay law school tuition for me and then hire me as a partner. I declined this offer because neither I nor my wife wanted to work and live in New York City, and I would not abandon my thesis students. In considering this question today, I consider how very happy and rewarded I was serving as CAMB Vice Chair since 2018 and how much I was looking forward to being considered and hopefully chosen as CAMB Chair to succeed Dan. Although I have been CAMB Chair for only three weeks, I already am enjoying this position more than any previous professional role. In this context, I recognize in retrospect that becoming a PI was the right path for me for it brought me to being CAMB Chair. Hopefully, the CAMB community will agree with my assessment.

What was your favorite part about being a PI?

My favorite part of being a PI was mentoring the graduate students, technicians preparing for graduate or medical school, and postdoctoral fellows who trained with me. Although this was stressful at times due to the pressure that I placed on myself to meet this immense responsibility, I found being a mentor the most meaningful and rewarding aspect of being a PI.

Between your time as a PI and as CAMB vice-chair, you've helped many students navigate the challenges of a PhD. Based on this experience, what would you say are important traits for a good mentor?

I consider several traits important for being a good mentor. One is being a great listener to learn about each mentee's unique lived experience, personality, skills, passions, goals, and concerns. Acquiring and appreciating this knowledge is critical for providing better advice for each person and their situation. Another is considering things objectively, and when necessary, investigating to obtain additional information, before proposing potential solutions for problems and paths to success. It also is important to be positive and supportive, but also candid and brutally honest with advice when the time is appropriate. However, I consider the most critical mentor traits are being available, creating a safe space, and keeping things confidential unless given permission to seek advice from someone with more experience or knowledge in a particular area.

How did you prepare for your role as chair of CAMB? What advice would you give for current students who might one day be interested in such a position?

My experiences, feedback, and hopefully improvements in teaching and mentoring diverse thesis students, directing courses, and serving leadership roles within CAMB for the past decade have prepared me for the CAMB Chair position. Notably, the most important and meaningful preparation has been my service as CAMB Vice Chair wherein I worked very closely with and learned immensely from Dan. My advice for current students who one day might be interested in such a position is to get involved in teaching, mentoring, and administrative roles outside of conducting research and training one's own students. I found plenty such opportunities at Penn and CHOP. These positions frequently involve training and continuing education in a wide range of professional, leadership, communication, and executive skills that will inform you if you truly are interested in and have the traits for such bigger roles, and if so, facilitate development of skills to succeed, or at least be a better version of yourself.

What has been one of the most challenging aspects of being part of CAMB's leadership?

The most challenging aspect of being part of CAMB leadership has been navigating through devastating impacts of external situations and forces, most notably the COVID pandemic and rapidly changing US government policies. We did not and do not have sufficient knowledge, resources, or power to support and guide our CAMB students through the complex academic and personal circumstances of each experience. In these situations, we try our best by sharing information that we accumulate ourselves or through PSOM/Penn leadership, engaging with and/or directing students to appropriate PSOM/Penn leaders or resources, and holding forums for students to vent frustrations, pose questions, and demand answers or actions. Unfortunately, an all-too-common outcome of our efforts is increased frustration of both CAMB leadership and CAMB students, and the feeling of far too many students that they cannot count on CAMB, BGS, PSOM, or Penn to fully address their concerns or support and protect them. Although I share similar overlapping social and world views with most CAMB students and faculty, I discovered that a small fraction of CAMB students have vastly different views. I have found it very challenging, but important, to support these students; I do so by acknowledging this difficulty up front with them and trying to avoid remarks that they would find inflammatory. However, I worry that trying to restrain my words and emotions when engaging many CAMB students in a public forum may be interpreted by some students that I am failing them as CAMB Chair.

What are you most excited about as you take up the role of CAMB chair?

It is an honor and privilege to be elected Chair by the CAMB Executive Committee (the six program chairs). I am most excited about engaging and supporting the amazing CAMB students and faculty. I am enthusiastic about getting (or at least striving) to know all CAMB students and their thesis research and finally seeing their thesis defense seminars and careers after earning their PhD degree.

What are your favorite CAMB moments to look back on?

My favorite CAMB moments to look back on, and forward to, are the annual CAMB symposium and new student recruitment. I enjoy hearing a research talk from a student in each program and listening to (or later reading on my own) as many student poster presentations as possible. I find it amazing to learn the outstanding science conducted and excellently communicated by CAMB students. I also take pleasure in meeting the newly accepted student recruits and learning about them and their experiences and hopefully convincing them to join our academic family. While both moments bring me much joy, they also make me experience a dash of imposter syndrome because I realize that I was never as accomplished as a graduate school student or applicant.

What do you enjoy doing outside of work?

I enjoy spending time with my wife, daughter, and son, largely doing with or for them whatever makes them happy. When they don't want/need me for anything or ask me to go away and stop annoying them, I enjoy swimming, reading, or watching a movie or football (Go Birds!!!).

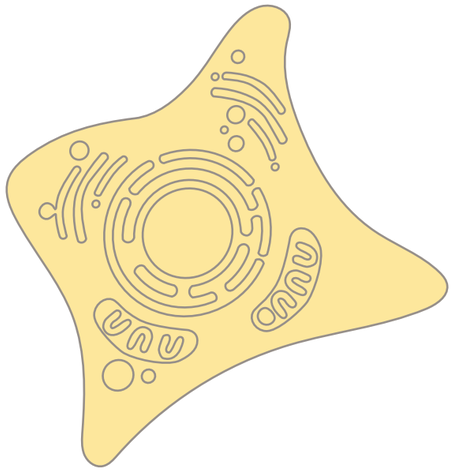
What is one thing you hope every CAMB student will take away from their time at Penn?

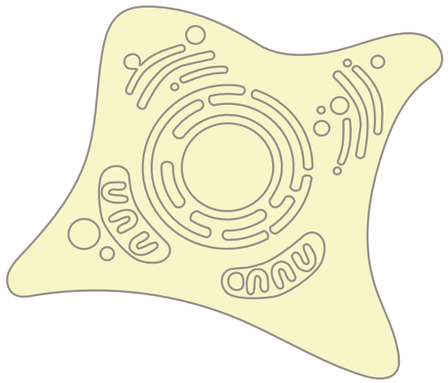
That the opportunities, resources, colleagues, and friends that they experience at Penn will enrich their professional and personal lives to an extent and in manners that they never thought possible when arriving on campus.

Any closing words of advice for the current cohort of CAMB PhD students?

Try and focus on what you can control, minimize worry over what you cannot control, and take care of your physical, mental, and emotional health. Do not be afraid to try new things and take risks. Be sure to advocate adamantly yet respectfully for yourself, while respecting, accepting, and being kind to everyone else, even people who have views that you consider repulsive. I find that this approach works best for me and those around me in my professional and personal lives.

Anyone interested in reaching out to Craig can contact him at bassing@pennmedicine.upenn.edu.





SPECIAL INTEREST

Amid Funding Cuts, How Will CAMB Students Secure a Thesis Lab?

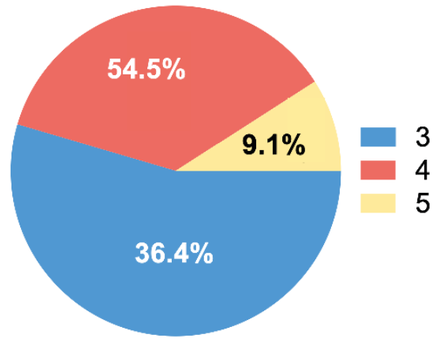
by Ariana Majer
Peer Edited by Maya English

Funding cuts instituted by the current administration have significantly impacted scientific research. Many CAMB students have already felt these effects, and this is especially true for the second years who matriculated in August 2024. Funding uncertainties have made the rotation process even more difficult, limiting the number of PIs who are able and willing to take on students.

Given the unprecedented nature of rotating this past academic year, we asked CAMB second years to share their rotation experiences with us. Here is a summary of their responses. You can find the unabridged responses on our blog.

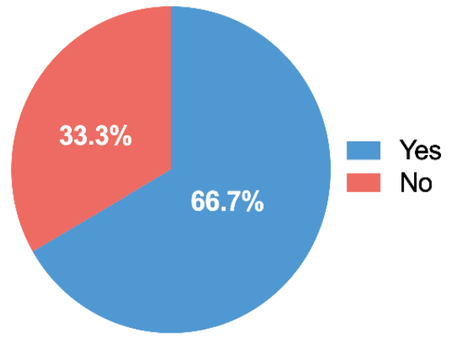
> "I honestly don't blame anyone (except the people responsible for the funding cuts) for what happened. I was in the middle of my second rotation when the cuts were announced and that PI realized he could no longer take me on as a grad student."
>
> "...I emailed 26 faculty in my search for a 4th rotation – blindly because I had no resources..."
>
> "I am very grateful to have found a lab that has the funding to take me in."
>
> "My original choice faced funding challenges and worried about hiring senior staff to help guide me in the lab. This along with my other two rotations not being quite the right fit led me to do a fourth rotation."
>
> "...Many [of my peers] had labs that they planned to join in mind...but then were suddenly left hanging in the last few months... I know that the PIs couldn't have predicted what was going to happen, but it is still frustrating how much things changed so quickly."

How many rotations did you do?



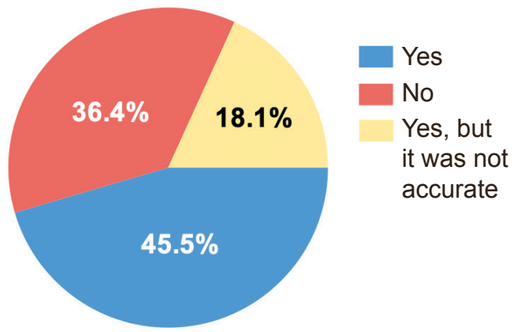
n=11

If you did a fourth or fifth rotation, did funding play a role in your decisions to complete additional rotations?



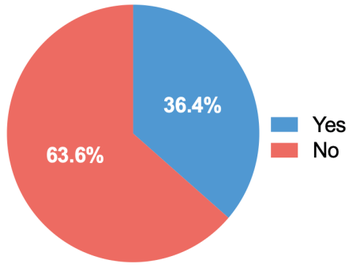
n=6

Have you been made aware of any circulating lists of PIs with enough funding to take on thesis students?



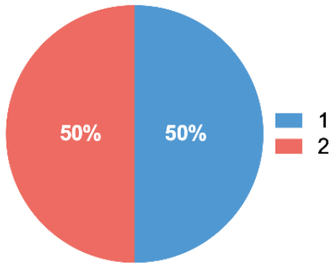
n=11

Did any of your rotation PIs tell you they could no longer accept you as a thesis student due to changes in funding during or after your rotation?



n=11

If so, how many rotations was this the case for?



n=4

During the 2024–2025 academic year, many CAMB second years had to do more than the required three rotations.

With the unexpected federal funding cuts for scientific research, many CAMB first years ended up in a position where one or two of their rotation labs were no longer viable options for their thesis lab due to insufficient funding.

> "All of my options fell through towards the end of (what I was hoping to be) my last rotation"
>
> "The PIs of my regular 3 rotations were misleading – no one communicated their funding clearly and some took on students... knowing they don't have secure funding."
>
> "I had one rotation I didn't like, one where there was only space for two and people who rotated previously decided to join while I was there. The PI for the remaining rotation... wanted me to be co-mentored from the start. So my additional rotations are about finding a co-mentorship situation."

The second years have mixed feelings about their rotations.

Some second years were fortunate enough to have multiple positive rotations in labs with sufficient resources to take them on as thesis students. Unfortunately, other second years struggled to find a lab to call home for the duration of their thesis research. Understandably, many of these students feel disheartened by their experiences, with some even reconsidering their decision to pursue a PhD.

> "I felt great about my personal experience with rotations because I was lucky to have three really positive experiences and three viable options. However, I recognize that this was not the case for most of my cohort."
>
> "I am very grateful to have found a lab that has the funding to take me in..."
>
> "Honestly, I find it really frustrating and disheartening. One reason I chose UPenn was the variety of PIs to choose from, and I felt all my choices were taken away. I am on my fourth rotation and initially I felt embarrassed thinking I was the only one and imposter syndrome started to set in..."
>
> "...Many of the people in my cohort had to hear from our chair that the PIs we rotated with cannot take us...There is no clear guidance, leaving myself and others in my cohort in the dark."
>
> "[I feel] exhausted. Unappreciated, and not treated like a person... Though I am rotating and will join this [4th rotation] lab, the science is very different than what I am interested in, but I have no choice... I have to be okay with it..."

When asked if there was anything CAMB or BGS could be doing differently to better support first years during their rotations, CAMB second years suggested the following:

- Generate more detailed lists of PIs with funding to take on thesis students and make sure these lists are publicly available and able to be edited in real time.
  - While CAMB did generate lists of PIs with enough funding to take on thesis students following the announcement of federal funding cuts, the lists were not widely distributed to the second years. Furthermore, some students found the lists to be inaccurate, with some of the PIs they contacted from the list telling them they were not actually able to take on a thesis student.
  - Students feel the lists could be further improved by including information such as 1) the timeframe in which each PI is able to take on a student, 2) conservative estimates of the number of students each PI is able to take, and 3) the number of students who have already rotated or expressed interest in rotating in a given lab.
- Provide buffer funding to PIs in the event of unexpected funding loss, as many CAMB students found themselves no longer able to join their intended thesis lab due to unanticipated changes in funding.
- Make rotations shorter or alter their timing.
- Vet PIs before they are able to take on a rotation student.
- Pair first year students with more senior students with similar scientific interests or similar lab preferences in order to better advise rotation students in choosing their rotations.

What advice do you have for incoming first year students as they begin the process of choosing rotations?

- Get started early. The sooner you start trying to establish rotations, the better, especially with the current limitations in the number of labs with funding for thesis students.
- Ask about funding upfront before starting any rotation and also periodically throughout the rotation. You can also check the NIH RePORTER to get your own idea about the PIs' funding.
- Ask the PI how many students they are able to take that year, and how many students have already rotated or have expressed interest in rotating. Clear and transparent communication is key!
- Do your due diligence before meeting with potential rotation PIs, and go into each meeting with a prepared list of questions about things that you feel are important for you to know about a potential thesis lab. Don't be shy in asking questions, as failing to ask the important questions at the beginning can lead to a wasted rotation.
- Talk to multiple people in addition to the PI before deciding to rotate, including people who rotated in the lab but decided not to join.
- Trust yourself – you know what you like, what you want, and what works for you better than anyone.

Thank you to the second years who took the time to share their experience with us. We appreciate you sharing your perspectives with us and hope you know that you are not alone – there is a whole community of CAMB students here to support you. If you need additional support, please remember there are multiple resources available to you as Penn students to improve your mental, physical, and emotional wellbeing.

NIH RePORTER

Wellness Resources

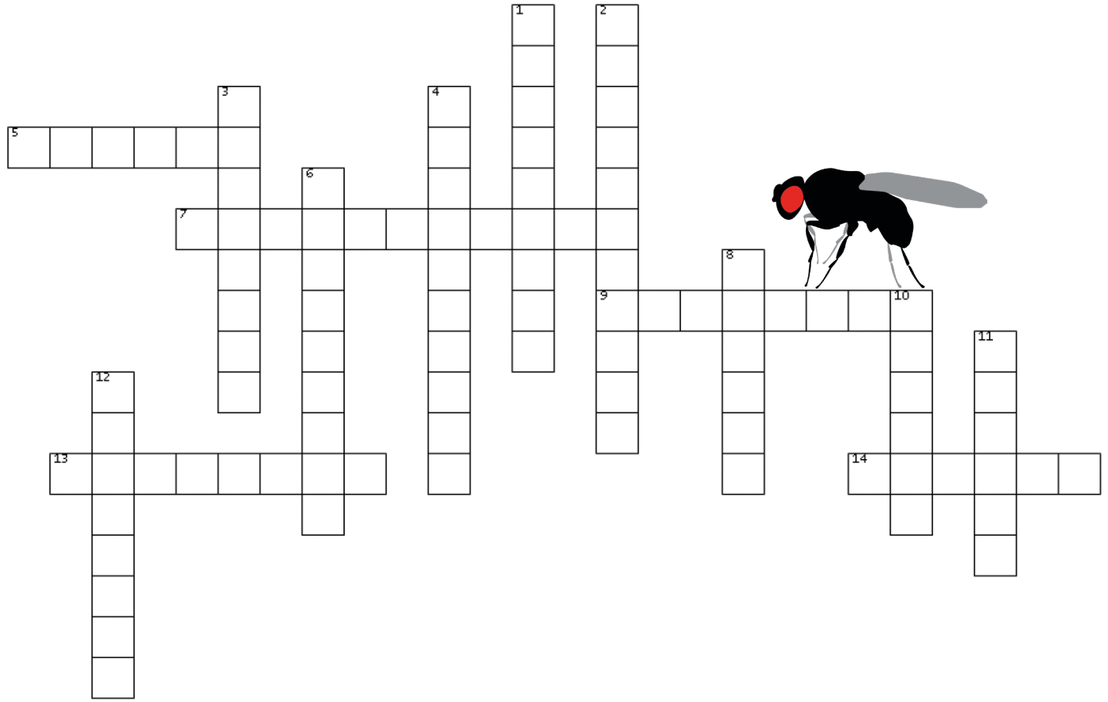
FUN CORNER

Drosphilia Genetic Crosses Puzzle

by Maya English

edited by Mia Peifer

FlyBase is an essential tool used by *Drosophila* geneticists, and contains information about all these genes and more. The grant supporting this database was terminated during a recent wave of NIH funding cuts. If you want to support their work, FlyBase is currently in the process of setting up a collection fund. Please see their website flybase.org for more details.



DOWN
1. enlarged anterior segments; Notre Dame resident
2. (2 words) neurodegeneration; provolone alternative
3. vertebrate homolog is sonic; Knuckles isn't one (he's an echidna)
4. jumbled bristle pattern; describes Hugh Grant's unkempt appearance in *Notting Hill*
6. *name changed* no offspring; like a diet low in vitamin C
8. lacks genitalia; Ken's partner
10. underdeveloped heart; a friend of Dorothy?
11. disrupted circadian clock; what you might have after a trans-Atlantic flight
12. blocks axonal transport; standstill traffic common in LA

ACROSS
5. named for exclamation upon successfully cloning it; precedes "ki yay" in *Die Hard*
7. larvae do not exit egg; like a person who does not leave their home
9. encodes a Snail-type TF; divisive French delicacy
13. cannot fly; like a horse compared to a Pegasus
14. impaired dendritic development and larval lethal; "to be or not to be"

The first three people to email their correctly filled-out puzzles to Maya (maya.english@pennmedicine.upenn.edu) will receive a shout-out in the next issue! Answers will also be included in the next issue in November and on our blog.

Thank you for reading.

For any questions, comments, concerns, please feel free to contact us at cambstudentnewsletter@gmail.com

If you're interested in joining our team, fill out this form.

Instagram
@cambnewsletter

Bluesky
@cambnewsletter.bsky.social

Blog
cambnewsletter.wordpress.com

Meet our team: