

# 2022 Pathobiology Newsletter



## A MESSAGE FROM THE DIRECTOR

Dear Pathobiology students, faculty, staff, and alumni,

Happy holidays and new year to everyone, and I hope that everyone is getting a chance to rest and relax with family and friends as another busy year winds down to a close.

Nearly a year into my new role as director of the Pathobiology PhD program, I continue to be impressed by the commitment and dedication from each of you to our program and to research on diseases of global health importance. As you'll see from our newsletter, we have a lot to celebrate and be thankful for, including fellowship awards, published manuscripts, new connections, new mentor-mentee pairings, and new family members. Our program continues to grow and evolve; this year we welcomed 6 new first-year students and 15 new faculty members, plus we have 5 new graduates (listed below)!

In addition to new faces, we have started some new traditions within the program, including a summer potluck picnic, faculty-sponsored happy hours, and faculty-student pods, all of which we hope to keep going into the future. As we emerge from pandemic restrictions into the brave new world of living alongside circulating SARS-CoV-2, we hope that we can reinvigorate the sense of community that I have long admired within the Pathobiology program, and so I continue to welcome suggestions for how to increase our sense of community and connection. To further enhance community and a feeling of belonging for all, the brand-new Pathobiology DEI coalition recently had its kickoff meeting, which we hope will formalize, stretch, and deepen our program commitment to diversity, equity, and inclusion. Please contact co-chairs Nhi Ho and Whitney Harrington if you'd like to get involved. Stay tuned for a draft of the Pathobiology DEI values statement and for additional updates on DEI coalition projects underway this year to ensure that our Pathobiology program continues to be a welcoming and vibrant community of exceptional and creative scientists.

Jennifer Lund, PhD ([jlund@fredhutch.org](mailto:jlund@fredhutch.org))

# PROGRAM INFORMATION

## Welcome to our new first-year PhD students!

Erin Barnett, Becca Blyn, Nhi Ho,  
Molly Kanagy, Kristine Tandoc, Aldo Trejos

## Welcome to our new 2022 Pathobiology Training Faculty!

John Aitchison  
Daniel Blanco-Melo  
Lillian Cohn  
Sean Gray  
Alexander Greninger  
Jennifer Hyde  
Christopher Johnston  
Patrick Mitchell  
Even Newell  
Alexander Paredez  
Michelle Reniere  
Jason Smith  
Jhimmy Talbot  
Ana Weil  
Josh Woodward



**31 current  
Pathobiology  
Students**

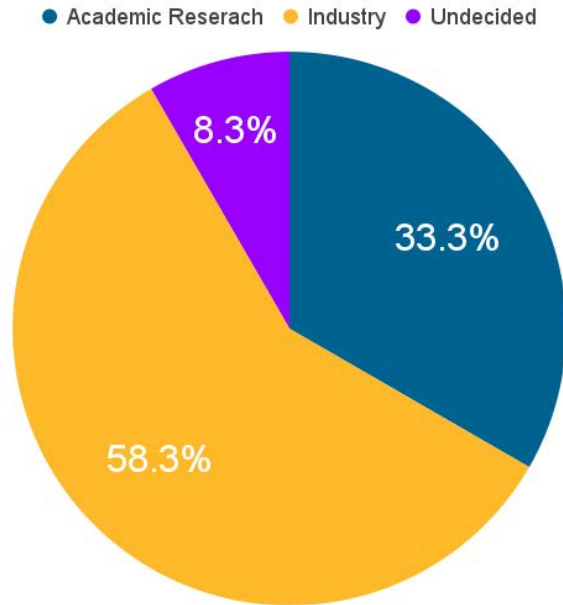
**80 total  
Pathobiology  
Training Faculty**

## Congratulations to our recent graduates!

- Tanvi Arkatkar, PhD (Mentor: Jenny Lund) [Autumn Q 2022]
- Ceejay Boyce, PhD (Mentor: Lisa Frenkel) [Autumn Q 2022]
- Alyse Douglass, MS (Mentor: Nick Crispe) [Spring Q 2022]
- Sara Ahmed, PhD (Mentor: Tanya Parish) [Winter Q 2022]
- Andrew Frando, PhD (Mentor: Christoph Grundner) [Winter Q 2022]
- Mark Fernandez, PhD (Mentor: Kevin Hybiske) [Autumn Q 2021]
- Andrew Gustin, PhD (Mentor: Michael Gale Jr & Nicole Klatt) [Autumn Q 2021]
- Brianna R. Traxinger, PhD (Mentor: Jenny Lund) [Autumn Q 2021]
- Anna Furuta, MS (Mentor: Lakshmi Rajagopal) [Autumn Q 2021]
- Jackson Stuart, MS (Mentor: Leslie Goo) [Autumn Q 2021]

**UW Department of Global Health**

## Current student career interests



## Student outreach and science commuication

- Volunteered for middle school science outreach day with HUSCI (<https://linktr.ee/husci>)
- NWBAR science ambassador program (talk science to middle school students) (**Nika Hajari**)
- ComSciCon 2022 Flagship program (intensive science communication workshop at MIT) (**Nika Hajari**)
- Communicating Science to the Public Effectively course (CENV 500) (**Olivia Kern**)
- **Caroline Duncombe** is the producer of Mad Science, a science improv comedy show (see below). She pitched this idea for a science-comedy collaboration and is now a producer for Bandit Theater's Mad Science.

## Come see Mad Science: a crash course in science and comedy!

There is a plethora of fascinating, whacky, and thought-provoking research underway in Seattle, directed by equally talented scientists. A Mad Science show invites two Seattle-based scientists to give a short talk slanted toward lay audiences. Then our team of professional improv comedians at Bandit Theater riff off their research through the magic of improv. Our goal for MAD SCIENCE is to communicate science to the general public through the lens of comedy. We want to make people who attend to both think and laugh. Smile and learn. And maybe even be inspired.

### Upcoming shows:

**Jan 28:** 7:00pm, Fremont Abbey

**Feb 3:** 7:00pm, The Crocodile: Here-After

**Mar 3:** 7:00pm, The Crocodile: Here-After

**Purchasing tickets in advance is recommended due to limited seating**

**See website for ticket information:**

<https://www.bandittheater.org/>

**Questions? contact Caroline Duncombe**



**"The show is great! Highly recommend attending and bringing all your science and non-science friends!" -Felicia Watson**

## 2022 Grants, Awards, Honors, Achievements:

- **Irene Cruz Talavera** received the UW STD/AIDS T32 Research Training Predoctoral Fellowship and **Joy Twentyman** received the T32 Viral Pathogenesis and Evolution Training Grant!
- **Nika Hajari** received the ComSciCon flagship fellowship through a competitive application. Nika and 50 PhD students from US and Canada were flown to MIT in Boston and learned about science communication. Cost of travel, stay, and food was covered!
- **Nicole Potchen** received the Business Development Fellowship at Fred Hutch and the TL1 Translational Health Science training grant!
- **Sean Windle** and **Felicia Watson** received NIAID F31 Individual Predoctoral Fellowships!
- **Caroline Duncombe** received the National Science Foundation Graduate Research Fellowship!

## 2022 Publications:

- **Cervantes O, Cruz Talavera I, Every E, Coler B, Li M, Li A, Li H, Adams Waldorf K.** "Role of hormones in the pregnancy and sex-specific outcomes to infections with respiratory viruses" *Immunological Reviews*, 2022. PMID: 35373371
- Wagoner J, **Herring S**, Hsiang TY, Ianevski A, Biering SB, Xu S, Hoffmann M, Pöhlmann S, Gale M Jr, Aittokallio T, Schiffer JT, White JM, **Polyak SJ.** "Combinations of Host- and Virus-Targeting Antiviral Drugs Confer Synergistic Suppression of SARS-CoV-2" *Microbiology Spectrum*, 2022. PMID: 36190406.
- **Andrew T. Gustin** et al, **Michael Gale Jr.**, Nichole R. Klatt, **James G. Kublin**, Jennifer A. Manuzak. "High-risk microbial signatures are associated with severe parasitemia in controlled *Plasmodium* infections of both humans and rhesus macaques" bioRxiv, 2022. doi: <https://doi.org/10.1101/2022.09.06.506695>
- **Gustin AT**, Thurman AR, Chandra N, Schifanella L, Alcaide M, Fichorova R, Doncel GF, **Gale M Jr**, Klatt NR. "Recurrent bacterial vaginosis following metronidazole treatment is associated with microbiota richness at diagnosis" *Am J Obstet Gynecol.* 2022. PMID: 34560047.
- Davis M, Voss K, Turnbull JB, **Gustin AT**, Knoll M, Muruato A, Hsiang TY, Dinnon IKH, Leist SR, Nickel K, Baric RS, Ladiges W, Akilesh S, Smith KD, **Gale M Jr.** "A C57BL/6 Mouse model of SARS-CoV-2 infection recapitulates age- and sex-based differences in human COVID-19 disease and recovery" *Res Sq [Preprint]*. 2022. PMID: 36415465.
- **Davé VA**, Klein RS. "The multitaskers of the brain: Glial responses to viral infections and associated post-infectious neurologic sequelae" *Glia*. 2022. PMID: 36334073.
- **Traxinger B, Vick SC**, Woodward-Davis A, Voillet V, Erickson JR, Czartoski J, Teague C, **Prlic M, Lund JM.** "Mucosal viral infection induces a regulatory T cell activation phenotype distinct from tissue residency in mouse and human tissues" *Mucosal Immunol*, 2022. PMID: 35821289.
- **Traxinger BR**, Richert-Spuhler LE, **Lund JM.** "Mucosal tissue regulatory T cells are integral in balancing immunity and tolerance at portals of antigen entry" *Mucosal Immunol*, 2022. PMID: 34845322.
- Mayer-Blackwell K, Johnson AM, **Potchen N**, Minot SS, Heptinstall J, Seaton K, Sawant S, Shen X, Tomaras GD, Fiore-Gartland A, **Kublin JG.** "Multi-trial analysis of HIV-1 envelope gp41-reactive antibodies among global recipients of candidate HIV-1 vaccines" *Front Immunol*, 2022. PMID: 36311720.
- **Watson FN**, Shears M, Matsubara J, Kalata A, Seilie A, **Cruz Talavera I**, Olsen T, Tsuji M, Chakravarty S, Sim BKL, Hoffman S, **Murphy SC.** "Cryopreserved Sporozoites with and without the Glycolipid Adjuvant 7DW8-5 Protect in Prime-and-Trap Malaria Vaccination" *Am J Trop Med Hyg*, 2022. PMID: 35226868.
- **Watson FN, Duncombe CJ**, Kalata, A, Conrad, E, Chakravarty S, Sim BKL, Hoffman S, Tsuji M, Shears M, **Murphy SC.** "Sex-specific differences in cytokine induction by the glycolipid adjuvant 7DW8-5 in mice" *Accepted Biomolecules*, 2022.
- **Duncombe CJ**, McCulloch DJ, Shuey KD, Logue JK, Franko NM, Wolf CR, Frivold CJ, **Chu HY.** "Dynamics of breast milk antibody titer in the six months following SARS-CoV-2 infection" *J Clin Virol*, 2021. PMID: 34315010.
- Su Y, et al, **Duncombe CJ** et al., **Chu HY**, Hood L, Gottardo R, Greenberg PD, Davis MM, Goldman JD, Heath JR. "Multiple early factors anticipate post-acute COVID-19 sequelae" *Cell*, 2022. PMID: 35216672.

### Crystal Chhan



- **When did you join the program:** I joined Pathobiology in 2021. My permanent lab is the McGuire Lab at the Fred Hutch where we study protective antibody responses against viral infections to design effective vaccines.
- **Favorite part about grad school:** I really enjoy how collaborative and helpful students and faculty are at UW! Cool science with cool people.
- **Favorite grad school memory:** My favorite graduate school memory so far has been the Friendsgiving that my cohort had together last year. It really solidified my sense of community here in Seattle. (This is me openly guilt-tripping my cohort in a program-wide newsletter for a reunion because we utterly failed this Fall Quarter. Let's meet this Winter :D).
- **Favorite grad school class:** My favorite class at UW has been PABIO 550: Diseases and Issues in Global Health. I really enjoyed the lectures from those actively working in the public health sector and seeing how biological research is implemented to improve global health.
- **Best UW Resources:** The best resources at UW have been my peers. They're such a wealth of knowledge, and they're always willing to answer questions and offer advice. My faculty interactions have also been very open and helpful. Additionally, GSEE (The Office of Graduate Student Equity and Excellence) has been a valuable resource and community for me.
- **If you did not pursue science, what other careers would you do:** If I did not pursue a career in science, I think investigative journalism would have been really cool. My alternative and super unrealistic answer is a photographer for National Geographic.
- **Favorite Hobby:** I really like playing sports outside of work. I'm waiting for better weather to pick up my tennis racket and basketball again. I'm trying to get into climbing and hiking as well.

## ALUMNA SPOTLIGHT

### Veronica Davé

- **What year did you graduate:** 2020
- **Favorite part about grad school:** The community of students in Pathobiology, and being a part of the larger science and global health community in Seattle. I loved how interdisciplinary the training was in Pathobiology. I felt like I learned how to listen to and present to colleagues across a wide spectrum of specialities within infectious disease and global health research.
- **Favorite Pathobiology memory:** I can't think of an all-time favorite, but some fun highlights were playing Powerpoint Charades during one of the early Pathobiology retreats, dressing up as VDJ recombination with Rachael Parks and Bri Traxinger, the one time we really did get to go to Pack Forest, and many informal student meet-ups through running club, happy hour, and practice talks.
- **Favorite grad school elective:** The 'vaccines' course offered by the epidemiology department, at the time taught by Anna Wald.
- **Best resources at UW:** Probably fellow students!
- **If you did not pursue science, what other careers would you do:** So many! Veterinarian, dog trainer, audiologist, park ranger, teaching...
- **Favorite Hobby:** Can't pick just one! My dog, exploring St. Louis with friends, food, running, gaming.
- **Advice for current Pathobiology students:** Work closely with your friends and colleagues, ask for help, and know that everyone's process is very different. Progress can be unpredictable and isn't always based on how much hard work you put in. Know your project's background and your techniques really well, and look for multiple teachers so that you can identify holes and get different perspectives. Try to remember (and insist upon) the fact that you're actually a student and not full-time lab staff, so enjoy your favorite parts of the grad school process as much as possible.
- **Current job/where are you now:** Post-doc at Washington University in St. Louis.

## FACULTY SPOTLIGHT

### Leslie Goo



- **How did you become interested in biological research?** As an undergrad at the University of Michigan, Ann Arbor, I majored in Microbiology but did not become aware of career paths until relatively late. During my senior year, I took a graduate level Microbiology course taught by a group of professors, one of whom (Dr. Alice Telesnitsky) would subsequently invite me to join her lab as a research tech. It was in the Telesnitsky lab that I was first introduced to biomedical research and was quickly drawn to the thrill of discovery. With Alice's encouragement, I eventually applied to PhD programs.

- **What is your favorite part about working at UW:** Its location in beautiful Seattle and the opportunity to interact closely with a local network of research institutes.
- **What is your favorite part about working with grad students:** Helping them realize their potential and grow in self-efficacy.
- **If you did not pursue science, what other careers would you do:** Being a writer or owning a bookstore/cafe.
- **Favorite Hobby:** Discovering new music or bakeries with my family.
- **Advice for current Pathobiology students:** Stay curious, build relationships, and learn how to code.

## PABIO T32 TRAINING GRANT

### Post-docs on the grant:

- Blair Armistead, PhD (PABIO Alumni – Graduated Winter Q 2020; PhD Mentor: Lakshmi Rajagopal) – now in Whitney Harrington Lab
- Fermin Guerra, PhD; in Ferric Fang Lab
- Sarah Vick, PhD; in Jenny Lund Lab

### PABIO PhD Students on the grant:

- Orlando Cervantes (Mentor: Kristina Adams-Waldorf)
- Kristina Edwards (Mentor: Andy McGuire)
- Brittany Williams (Mentor: Rhea Coler)

## JOB INFORMATION

- Joshua Lieberman in UW Lab Medicine and Pathology is looking to hire an RS3 mostly focused on diagnostic test development for infectious diseases such as Syphilis, Leishmaniasis, etc.
- Bioinformatician: Gale Lab
- An opportunity to work in interdisciplinary research and indigenous health - <http://iwri.org/research/luna/>
- FIUTS student board's leadership committee is looking for members! If you are interested in helping to build and support a team of facilitators while making friends from all around the world, contact Nika!

## PROGRAM PHOTOS





## UPCOMING EVENTS

- **Feb 6-7:** PABIO Open House Recruitment for Autumn 2023
- **Feb 10:** PABIO PhD Student Winter Quarter Symposium
- **April 28:** PABIO PhD Student Spring Quarter Symposium
- **June 2:** PABIO 1st Year PhD Student Talks Symposium
- **June 2023:** DGH Graduation & Reception
  - Final date TBD (~June 5-9)
  - Graduates/mentors should communicate directly with Ernie to coordinate and organize PABIO graduation event involvement
- **Oct 20-21:** PABIO overnight Retreat at Pack Forest

## SHOUT-OUTS!

Anonymous shout-outs to any students, alumni, faculty, or staff that have been especially supportive, helpful, kind, etc. in 2022

- Shout-out to **Jenny Lund** for being incredibly responsive to student feedback and for her efforts to improve our program since becoming Director just under a year ago!
- Thanks **Noah Sather**
- **Jenny Lund** has been a great leader for our group in the DEI work needed
- **Andrew Frando** (Pabio alum) has been so helpful over the last year connecting me to protocols and strains that have been essential to get my project off the ground and running!
- **Alyssa Brokaw** is great! Also all the first years are awesome!
- Thanks to **Andrew Gustin** and **Blair Armistead** for their feedback on my ComSciCon application.
- Shout-out to **Jenny Lund** for taking the role of Pathobiology director head on and making a positive impact on our program. I appreciate the work you do for our students and am glad we have you on our side helping us through graduate school.
- Congratulations to recent graduate **Tanvi Arkatkar** who gave birth on December 11th, 2022 to a baby boy, named Aadi!
- Thanks **Lakshmi Warriier** for organizing the student/faculty pods

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