Innovation, passion and creativity are the cornerstones of foundational research. To make significant discoveries, it is important to be able to challenge previous assumptions with new solutions and new approaches. This can be especially true in the fields of biotechnology and biosciences where demand for cutting-edge technologies and therapeutics drives the growth of the industry.

Tom Skalak, the Executive Director of the Paul G. Allen Frontiers Group, is quite familiar with the fast-growing landscape of the biosciences field. Previously Vice President for Research at the University of Virginia and Professor of Biomedical Engineering, his lab research interests included biomechanics of the cardiovascular system, angiogenesis, computational modeling, systems biology and regenerative medicine. Tom took advantage of the collaborative and interdisciplinary aspects of the university and led the launch of the OpenGrounds collaboration initiative, the i6 Virginia Innovation Partnership and the Global Water Games. His accomplishments also include Past President of the American Institute of Medical and Biological Engineering and Biomedical Engineering Society as well as Fellow of the National Academy of Inventors.

In order to advance the knowledge of the scientific community, Tom believes it is imperative to “have lots of ideas” and “share freely.” Through collaboration, which can be as easy as walking down the hall and learning about what others around are working on, is where the “most disrupting and fun innovations happen.” Certainly, he recognizes that the field of biology is still relatively new and makes it more difficult to progress. For this reason, Tom believes that this is an “exponential time of growth in bioscience.” At the Paul G. Allen Frontiers Group, Tom is able to apply his diverse academic background towards traveling the world to look for the “frontiers of bioscience,” meeting a variety of people worldwide and investing in ideas regarding clean energy and climate change. Additionally, being able to balance the low risk data-driven choices with the creative and exploratory ones allows for innovative discoveries to come to fruition.

In the end, the strength of the scientific engineering community is the diversity of it. At the center of it all, it is important to have faith in the future and trust in your ideas. As Tom notes, “universities are ecosystems” with access to unbelievable talent. Share freely and share often. Explore. Look widely. Read widely. And if you are ever looking for something to do, take part in some of Tom’s favorite activities - reading, surfing, boating, watching movies, riding your bike to work, or exploring the “deep waters of the Pacific Northwest.”
EVENTS:

Day of Caring

*Contributed by Elizabeth Herbst*

On September 20th, 2017, BTP Program Director Gordon Laurie and 11 BTP trainees joined hundreds of volunteers to participate in the 25th Annual United Way Day of Caring event. The Day of Caring was established in 1992 by the United Way-Thomas Jefferson Area to promote the spirit and value of volunteerism.

This year, BTP contributed at Camp Albemarle, a local 4H camp and community resource that provides a unique natural setting where school, community, and business groups can participate in experiential learning. Using loppers and handsaws, they cleared brush and felled small trees which were at risk of damaging the camp buildings at the camp. Volunteers from other organizations also joined to pull weeds, scrub out camp buildings, and haul brush and tree limbs.

The BTP volunteer group, organized and led by first-year trainee Elizabeth Herbst, also included Maria Ali, Kristen Fread, Faith Karanja, Mitch Granade, Erica Hui, Alex Keller, Jennifer Ortiz, Kris Rawls, Mahmoud Saleh, and Lee Talman. Around 1,100 UVa employees participated in the event held in varies locations throughout Charlottesville and the surrounding communities.

BTP New Student Lunch

*Contributed by Gordon Laurie*

Each year, the UVa BTP hosts a “New Student Lunch” in which an invited speaker presentation is coupled with short talks from those who have externed over the past year. This year, the lunch was held on September 29th, 2017 with keynote speaker Robbie Barbero, a MIT BTP graduate, who is currently the Chief Business Officer of Ceres Nanosciences Inc. Previously, he held the role of Assistant Director for Biological Innovation in the Obama White House Office of Science and Technology Policy. Externship recaps were also given by Lee Talman (MedImmune) and Bruce Corliss (Luna Innovations).
FDA Trip  
*Contributed by Alex Keller*

A dozen BTP students visited the US Food & Drug Administration (FDA) headquarters in White Oak, Maryland on June 14th, 2017. During the visit, they met with FDA officers who spoke about the FDA’s many roles beyond approving drugs. Topics of particular interest that were discussed were the FDA’s guidance for the development and approval of biosimilar products, the Center for Biologics Evaluation and Research (CBER)’s use of regulatory science to advance medical product development, the role of communication in protecting public health, and FDA research fellowships. BTP students left with a broader understanding of the FDA’s work and the career opportunities it offers both in regulatory science and in research.

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**2018 Biennial BTP Symposium**  
*Contributed by Mitch Granade*

Planning for the 8th Biennial Symposium of the Biotechnology Training Program (BTP) is now underway. The date for the symposium has been set for Friday, November 9th, 2018, and will tentatively be held in UVa’s Newcomb Hall. The theme of "Herding Cats: Convincing Your Immune Cells to Work for You,” will provide a broad exploration of some of the challenges and benefits of immune therapy and immunoengineering. Immune therapies make up a large sector within biotech, and the goal of the symposium will be to offer viewpoints from academia, industry, and government regulation and cover a wide range of disease contexts in which immune therapy is currently being investigated.

The symposium will comprise of a full day of talks, a student poster competition, and will likely include a discussion panel to be determined. Breakfast and lunch will be provided, and dinner/evening activities are currently in the planning stages. The co-chairs of the BTP symposium committee are BTPer Mitch Granade and BTP faculty Steven Caliari. Other BTPer’s serving on the committee include Kristen Fread, Kristopher Rawls, Lauren Russell, Mahmoud Saleh, and Nicole Swope. Other BTP faculty on the committee include Cristian Danna, Adrian Halme, Thurl Harris, Sarah Kucenas, and Rebecca Pompano.
BTP Industry Career Panel

Contributed by Maria Ali & Jennifer Ortiz

The BTP Industry Career Panel took place on Monday, November 27th, 2017. The panel featured prominent researchers representing both biotechnology and academia. The panelists included Dr. Anna Pomés, Director of Research at Indoor Biotechnologies, Dr. Mike Simmers, Head of Technology and Operations at HemoShear Therapeutics, and Dr. Jason Papin, Professor of Biomedical Engineering at UVa and recent founder and Chief Executive of Cerillo. Each of the panelists provided unique insight into a wide variety of topics including navigating between big pharma and biotech startups, the question of whether post-docs are necessary for everyone, and the importance of professional development during doctoral training. Additionally, the panel was attended by students from the Virginia Tech Initiative for Maximizing Student Development (VT-IMSD) group. The lunch following the panel provided a great opportunity for BTPers to interact with the panelists and the students from VT.

BTP NEWS:

New Additions to the BTP Family

BTP fellows Alexandra Harris and Adrienne Williams welcomed new members, Oliver and Naomi, respectively, to their family this past year. Congratulations! We wish your families a lifetime of health and happiness.

Oliver Mitchell Harris was born on June 4th, 2017 at the Martha Jefferson Hospital in Charlottesville, VA. At 10 months, his favorite things are eating avocado, wearing UVA apparel, climbing on people, and yelling “mama” as often and loudly as possible.

Naomi Williams was born on January 5th, 2018 at 7 lbs 1 oz. She is pictured with her mother, Adrienne Williams, a BTP trainee and PhD candidate in the BME program.
BTP GRADUATES & APPOINTEES:

Recent BTP Graduates

**Joanna Adadevoh** (2017)
*Department/Degree:* Chemical Engineering, PhD
*Current Position:* Intel Corporation

**Glen Hirsh** (2017)
*Department/Degree:* Cell Biology, PhD
*Current Position:* Post-doctoral researcher at UPenn (Advisor: Thomas Leung)

2017 BTP Appointees

**Kristen Fread**
*Undergraduate Institution:* Virginia Polytechnic Institute and State University
*Department/Degree:* Biochemistry, Chemistry, Spanish (BS)
*PhD Department/Lab:* Biomedical Engineering, Eli Zunder

**Mitchell Granade**
*Undergraduate Institution:* University of South Carolina
*Department/Degree:* Biology, Chemistry (BS)
*PhD Department/Lab:* Pharmacology, Thurl Harris

**Elizabeth Herbst**
*Undergraduate Institution:* University of Virginia
*Department/Degree:* Biomedical Engineering (BS)
*PhD Department/Lab:* Biomedical Engineering, John Hossack

**Erica Hui**
*Undergraduate Institution:* University of Kansas
*Department/Degree:* Chemical Engineering (BS)
*PhD Department/Lab:* Chemical Engineering, Steven Caliari

**Adrienne Williams**
*Undergraduate Institution:* University of the West Indies, Mona
*Department/Degree:* Medical Physics, Alternative Energy, Spanish (BS); Bioengineering (MS)
*PhD Department/Lab:* Biomedical Engineering, Silvia Blemker
Recent Publications

2018


2017


Keller AS and Isakson BE. The evolving role of diverse gaseous transmitters mediating heterocellular communication within the vasculature. Antiox Redox Sign. 2017; 26(16):881-885.


2016


Recent Invited Scientific Presentations

2018

2017
LN Russell, Meghan Pinezich, KJ Lampe, “Oligodendrocyte precursor cell maturation in a 3D hydrogel system through the incorporation of drug delivery nanoparticles or topographical cues,” American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, November 2017.
Mahmoud Saleh and William Petri, Jr. “Understanding Inflammatory Bowel Disease as a Risk Factor for Clostridium difficile Infection.” NIF Winter School on Advanced Immunology, Hobart, Tasmania, Australia, July 2017.

2016
Recent Poster Presentations

2017
LN Russell, Meghan Pinezich, KJ Lampe, “Oligodendrocyte precursor cell maturation in a 3D hydrogel system through the incorporation of drug delivery nanoparticles or topographical cues,” American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, November 2017.

2016
Mahmoud Saleh and William Petri, Jr. “Understanding Inflammatory Bowel Disease as a Risk Factor for Clostridium difficile Infection.” Mucosal Immunology Course and Symposium, Toronto, Ontario, Canada, July 2016.

The University of Virginia Biotechnology Training Program
BTP Newsletter, Spring 2018
Website: faculty.virginia.edu/biotech
Applications due: May 4th, 2018
Twitter: @UVaBTP

Gordon Laurie, Program Director
glaurie@virginia.edu

Phillis Hynes, Program Administrator
ph6se@virginia.edu

Lois Rowsey, Administrative Director
lmr@virginia.edu

Erica Hui, Newsletter Editor
eh3ja@virginia.edu

Board of Corporate Advisors
George R. Martin, PhD, Chief Technical Officer and Co-Founder of TechnoVax, Former Scientific Director for the National Institute of Aging
gmartin@nidcr.nih.gov

Robert McKown, PhD, JMU Professor, Former Member of the Virginia Biotechnology Association Board of Directors, 2003 VaBio Educator of the Year
mckownrl@jmu.edu

David Patteson, Chief Executive Officer of Advion BioSciences, Former Member of the University of Virginia Foundation Board of Directors
pattesod@advion.com

Michael Stern, PhD, Chief Scientific Officer of ImmunEyez LLC, Former Head of the Inflammation Research Program, Allergan Inc.
michaelestern@gmail.com