



# Engel Hall News

[www.biochem.vt.edu](http://www.biochem.vt.edu)

## December 2019

Happy Holidays to Alumni and Friends of Biochemistry,

We are grateful for your support of our department this year, and hope you enjoy reading about some of the great things going on in Engel Hall. We are excited that our BS program is ranked #4 of land-grant departments in the U.S., and we continue to attract top students. If you are interested in scheduling a visit, or chatting with me about Biochemistry, please feel free to email me at [gillaspy@vt.edu](mailto:gillaspy@vt.edu) or contact Ms. Zerita Montgomery at [zerita@vt.edu](mailto:zerita@vt.edu) to schedule a time to speak with me. I love hearing from our alumni, and invite you to stop by Engel Hall when you are in town.

It is a privilege for us to educate over 450 Biochemistry undergraduate and 39 graduate students. As a parent of a college student myself, I realize the opportunity we have to change lives in our everyday pursuit of science. I also realize that the cost of college constitutes a much greater percentage of the average family income as compared to when I attended college. For this reason and others, I invite those of you who can give to consider donating to one of our scholarship or award funds, or to the Biochemistry Excellence fund.

Astrid Meenan, a Biochemistry senior who is serving as a Teaching Assistant in our First Year Experience course, and as a Howard Hughes Medical Institute Inclusion and Diversity fellow on campus, has been key in developing this newsletter. Please contact Astrid at [lastrid1@vt.edu](mailto:lastrid1@vt.edu) if you have news to share or are willing to write a story for our next newsletter!

Professor and Head, Biochemistry

### In this issue:

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- Our new undergraduate research festival engages students and alumni

#### Alumni and Others Getting Involved

- Did you know VT Biochemistry has a new Alumni Advisory Board? Read about how to share your expertise with our students

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- Class of 2023, Peer Mentors, Graduate education and Awards

#### Faculty Spotlight

- Find out how Clement Vinauger uses biochemistry, neurobiology and engineering to identify new vector-borne disease strategies

#### Fall Tweets

- Biochemistry in the news and social media

#### Donor Impacts

- Ways that alumni and donor giving are transforming VT Biochemistry



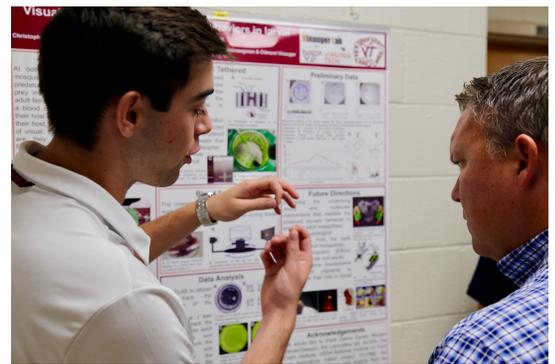
# ENGELPALOOZA

VT Biochemistry's new undergraduate research festival

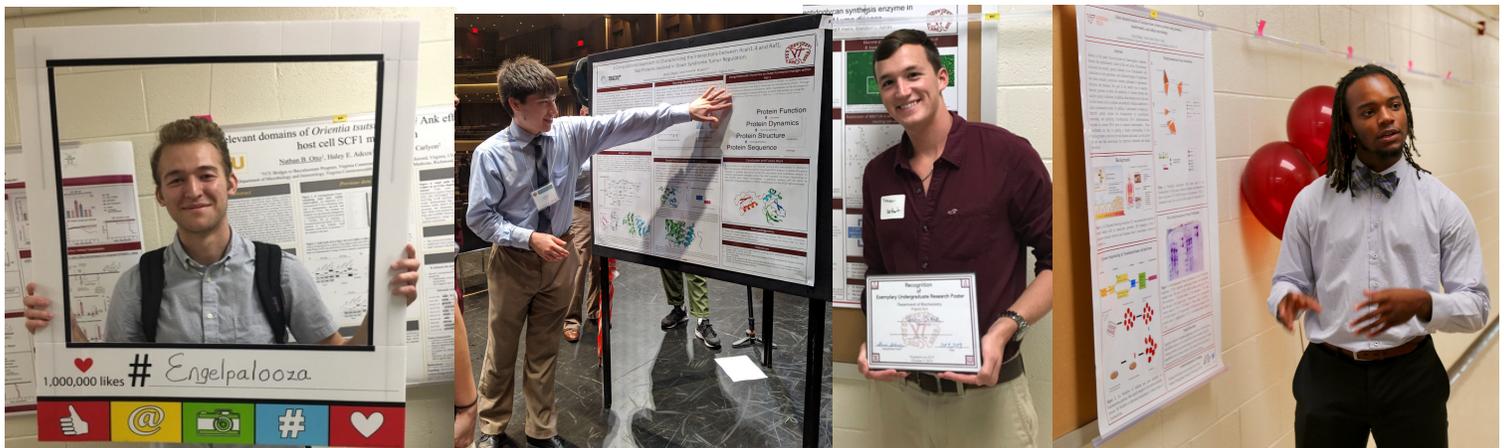
Derived from the word Lollapalooza which means: one that is extraordinarily impressive (Merriam Webster), our new undergraduate research festival engaged Biochemistry majors and other undergraduates working in Biochemistry labs in a dynamic poster session. More than 200 attendees packed the halls of Engel to view undergraduate researcher posters. There was discussion, lunch, laughter, and questions all around.

More than half of VT Biochemistry students engage in undergraduate research. Along with our 6 credit majors lab course (BCHM 4124), this allows Biochemistry students an opportunity for meaningful experiential learning, and acquisition of skills to become a practicing biochemist. Engelpalooza was made possible by a grant from the Howard Hughes Medical Institute.

Our new Alumni Advisory Board and guest alumni did a remarkable and efficient job judging the posters. The winners were: 1st place: Nathan Otto, Junior and new transfer student; 2nd place: Tanner DeHart (Jutras lab), Senior; 3rd place: Jared Okada (Brown lab), Senior; and People's Choice Award: Kevin Williams (Slade lab), Junior (pictured from left to right, below).



Eric Collins from the Bevan and Brown lab describes her work to poster judge Dr. Stephanie Lewis. Christopher Bonilla from the Vinauger lab explains his work to Advisory Board president Dr. Ryan Burnette (BS '99, PhD '03).



COLLEGE OF AGRICULTURE AND LIFE SCIENCES  
**BIOCHEMISTRY**  
 VIRGINIA TECH.



# Ways to give back your time and expertise

Professor Emeritus and former dept. head John Hess and Taylan Tunckanat at Engelpalooza.

## Meet Our First VT-Biochemistry Advisory Board

Dr. Ryan Burnette (BS '99, PhD '03), Merrick and Company, is an international biosecurity and biosafety expert and entrepreneur. Dr. Patricia Erickson (BS '90), is Professor of Biology at Salisbury University, and is an expert in science learning and pedagogy. Anh Tran (BS '06) is Senior Research Associate at Novozymes Biological, Inc. These three dedicated alumni met with the department in October, and provided us with feedback on a variety of topics. First and foremost, our developing Advisory Board is helping us to enhance career opportunities for both undergraduate and graduate students in Biochemistry. Caitlin O'Connell, J.D. (BS '13), Dr. Barbara Solow (PhD '97), and Mr. William B. Downey will be joining the board in 2020. If you are interested in sharing your expertise and serving on our board, please email Dr. Gillaspay at [gillaspy@vt.edu](mailto:gillaspy@vt.edu).

## Zoom Connect with our Careers Course

Several alumni have given their time back to VT in our undergraduate Career's class. You can participate from anywhere in the world with an internet connection, and share your career experiences. Please contact Ms. Amy Rasor, our undergraduate advisor at [arasor@vt.edu](mailto:arasor@vt.edu). Hokie Mentorship Connect is a new service that matches alumni mentors with VT students. For more info see <https://mentoring.career.vt.edu>. Biochemistry is particularly interested in Flash Mentoring, which only takes 1-2 hours. Please consider joining our Virginia Tech Department of Biochemistry LinkedIn site at: <https://www.linkedin.com/groups/7063375/>

## Visit Us!

The department welcomes visitors. Each year we host alumni visitors who are willing to give a seminar, meet with students, and talk about careers or other professional development issues. Please contact Dr. Mukhopadhyay if interested at [bmukhopa@vt.edu](mailto:bmukhopa@vt.edu). If you are interested in dropping by the department, please feel free to do so; please contact Ms. Zerita Montgomery at [zerita@vt.edu](mailto:zerita@vt.edu)



# Student Highlights



## 2019 Peer Mentors

To find out more about these talented students, please see <https://www.biochem.vt.edu/undergraduates/Peermentoring.html>

## Peer Mentoring Program Enters 8<sup>th</sup> Year

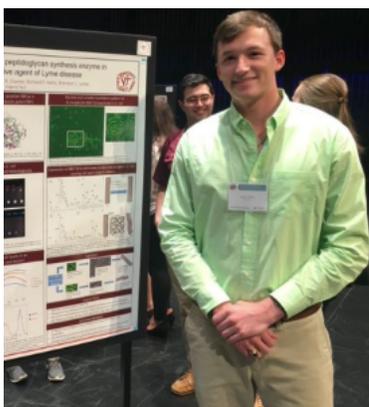
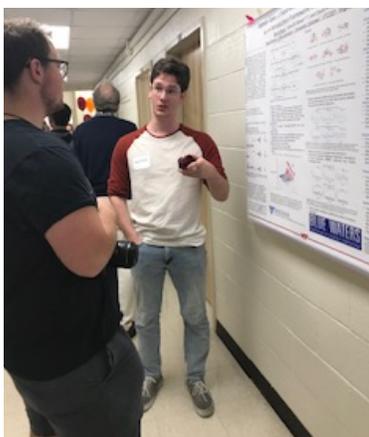
The primary role of the Biochemistry Peer mentors is to engage our First Year students in our BCHM 1014: First Year Experience (FYE) in Biochemistry course. In this course Peer Mentors interact with first year and transfer students, help to provide support, direction and guidance, as well as demonstrate maturity of judgment, objectivity, integrity, and academic honesty. Peer Mentors assist in the development of skills necessary for success in college in one of the toughest majors at Virginia Tech. Special funding from VT's FYE program allows us to assign a Peer Mentor to every incoming new Biochemistry student.

The Peer Mentoring program was initiated in the Fall of 2012 by the then instructor of the first Year Experience course, Dr. Glenda Gillaspay. The first Biochemistry undergraduate students to serve as Peer Mentors have graduated from Virginia Tech. Many have earned advanced degrees and are pursuing a variety of careers including: a PhD scientist working on the epigenome of plants, a PhD scientist working on metabolic engineering of microbes, a PharmD scientist working at Innova Health Systems, a Project Manager at Tecan Labwerx, a PhD scientist working on Protein Engineering at Cellibre, an MD pursuing a medical residency at Tufts, an MD pursuing a residency in Surgery at University of Maryland, and a DMD with a practice in Minneapolis.

## Class of 2023

We welcomed 146 new biochemistry majors this Fall. We continue to have one of the most diverse undergraduate populations within a science-focused department at Virginia Tech. Our students are: 59.6% female, 38.7% are members of an ethnic or racial minority, 21% are first generation college students, and 64.5% are either veterans or have a parent who served in the military. Our scholarships are key to many of these students. For more information see <https://www.biochem.vt.edu/undergraduates/ScholarshipsandAwards.html>

# Supporting our Undergraduates



## Undergraduate Scholarships

Esther Wisdom (left), Vincent Kim, Rebecca Delisio, and Victoria Fillipone were awarded **William Burns Downey Memorial scholarships** in 2018-19, due to a generous endowment from the Downey family. Esther is currently a Goldwater fellow. Darren Doughtary won the **Thomas O. Sitz scholarship**. Darren is shown in the second panel in Tom's former lab in Engel Hall. Emma Wilkinson and Maryam Hassan were awarded **Kendall W. King memorial scholarships**, and Cameron Hart, Erin Collins, Alisa Bondar, Alexie Hernandez, Prattyak Mukhopadhyay and Rahaf Rousan were awarded **R.W. and Frances H. Engel scholarships** in 2018-2019. Madison Brooks and Evita Huang were awarded **Bruce and Connie Anderson scholarships**.

## Awards

David Barto (left) won the **William Newton award** for outstanding undergraduate research in the Bevan and Brown lab. Tanner DeHart (bottom) won the **David Bevan award** for his undergraduate research in the Jutras lab. The **Ann and John Hess Education Fund** supports awards to PhD students who work with and mentor a promising undergraduate student. Shown are Hannah Valentino, a graduate student in the Sobrado lab, and her mentee, Eric Merten.

Awards and scholarships can be supported by annual giving. To give, please see: <https://www.biochem.vt.edu/giving.html>

# Graduate Education



## Engaging Globally

The department has been fortunate to receive gifts that support graduate student professional development activities. The **Kamal Abdo fund** supports graduate student travel to scientific meetings each year. The Biochemistry graduate student association (BcGSA) holds 3 travel grants competitions a year, which allows for peer selection of these travel awards. The BcGSA also holds professional networking events, a departmental tailgate, along with hosting an invited seminar speaker each year.

Three graduate students won awards that allowed them to engage globally. Shown below are Catherine Freed (Gillaspy lab) who participated in the interdisciplinary, three-week exchange INSPIRED program at the Technische Universität Darmstadt (TU Darmstadt) to develop an interstellar pharmacy; Caitlin Cridland (Gillaspy lab) gave a talk on her Mass Spectrometry work performed with Dr. Richard Helm at the International Plant Lipids meeting in Canberra, Australia; Diane Eilerts (Vinauger lab) spent the semester at the Research Institute for Insect Biology (IRBI) at the University of Tours in Tours, France, working with IRBI Team Leader Claudio Lazzari, an expert in oxidative stress and metabolism in blood-feeding insects.

Special gifts this year from Judith and Gaylen Bond and Richard and Cathy Easterday are supporting new professional development activities designed to give our students exposure to new technologies, and to explore and prepare for careers.



## Graduate Awards

Aleksei Gendron (top left), and Amanda Sharp (top right) won the **Bruce Anderson award** for outstanding 1<sup>st</sup> year PhD and MS student, respectively. Also shown are their mentors, Drs. Kylie Allen and Anne Brown. Blake Sanders won the **Kendall W. King award** for the outstanding advanced graduate student in the department. Blake (second from left) is shown with his mentor Dr. Daniel Slade (left) and the Slade lab.

These awards are supported by annual giving to the Anderson and King funds. Please see:

<https://www.biochem.vt.edu/giving.html>





# Faculty Spotlight

## Clement Vinauger, Assistant Professor

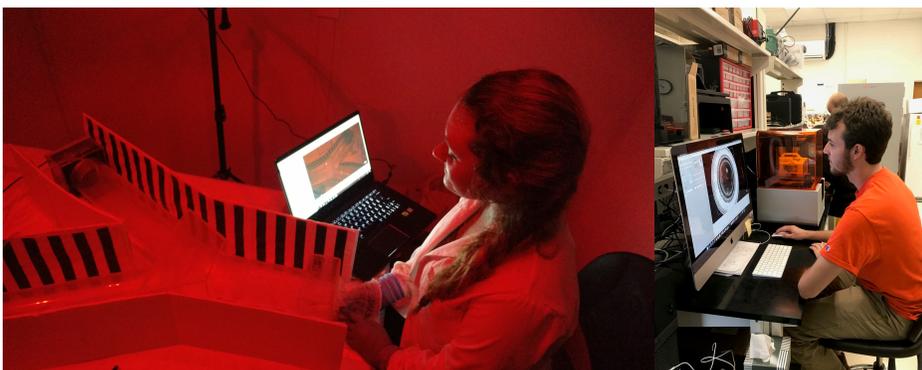
How mosquitoes integrate vision and smell to track victims

With two papers published in the last 2 years in Current Biology, and a collaborative paper soon to be published in PNAS, the Vinauger lab is quickly establishing that combining biochemistry, neurobiology and engineering to study mosquito behavior can be powerful. The Vinauger lab is interested in how mosquitos use both vision and smell to recognize, track, and find a host. Their recent work has used imaging of the mosquito's brain activity, tracking of mosquito movement in response to CO<sub>2</sub> emission, and applications of computational modeling to gain understanding of how a free-flying mosquito makes choices. By knowing more about neural pathways of mosquito choice, we can eventually design new strategies to repel mosquitos, and reduce the incidence of mosquito-borne diseases, like Malaria.

Dr. Vinauger teaches an advanced course on Biochemical Communication for undergrads. In this course students learn about molecular communication pathways and they develop skill in analyzing so-called Big Data. Dr. Vinauger has 3 graduate students, and has worked with several undergraduate researchers at Virginia Tech. For more information see Dr. Vinauger's interview on Youtube: [https://www.youtube.com/watch?v=ALbA-S\\_MXRk](https://www.youtube.com/watch?v=ALbA-S_MXRk)

*Fun fact about Dr. Vinauger:* he once opened for the band Earth, Wind and Fire, as a drummer.

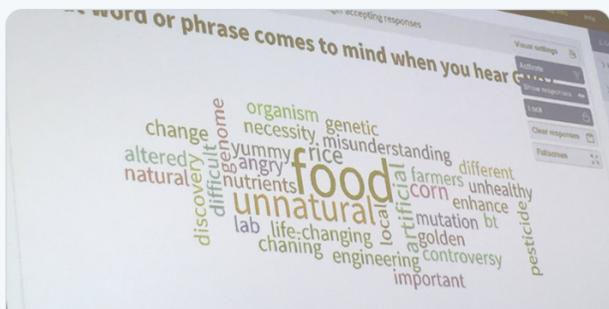
Top left: Clement Vinauger  
 Top middle: Lauren Fryzlewicz places mosquitoes in a virtual reality environment where she will be able to study how mosquitoes integrate visual and olfactory stimuli.



Top middle: Lauren Fryzlewicz places mosquitoes in a virtual reality environment where she will be able to study how mosquitoes integrate visual and olfactory stimuli. Top right: Chase Hedrick and Kyera Broxton. Left: Gretchen Pickerell uses a choice maze in functional darkness. Right: Christopher analyzes data.



**Kristopher Hite Ph.D.** @thorsonofodin · Nov 5  
 Awesome use of @polleverywhere to generate live, in-class word-cloud by guest lecturer @austc14 in FYE course! Teaching me new pedagogical techniques!



**VT Biochemistry** @vtbiochem

History was made when Desiree Velez, a Junior majoring in Biochemistry, became the FIRST Latinx person to become VT Homecoming Queen. We are incredibly proud of your accomplishment, and excited to see what you do!  
 #vtcal #vtcos



**Glenda Gillaspay** @BiochemVT · Dec 19  
 Goodluck Camille!

**VT Biochemistry** @vtbiochem · Dec 19  
 Good luck to VT Biochemistry Alumni and Miss Virginia 2019 Camille Shrier who will be competing in #MissAmerica2020! Congrats Camille! #WomenInSTEM @VT\_alumni  
[Show this thread](#)



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**Frailin Life Sciences Institute** @FrailinLifeSci · Oct 10  
 We're so proud of the @vtbiochem students who presented at #Engelpalooza! The 15 seniors, 11 juniors, 4 sophomores, and a handful of graduate students showcased their research in Engel Hall yesterday — it's great to see so many students involved in hands-on research!



**Caitlin Cridland** @CaitlinCridland · Sep 20  
 Hands up if you like SLIME 🤪🤪 Great to be back working with #VTPEERS in @giles\_schools sharing the science behind slime 🧪 Students learned about molecular interactions & chemical proprieties w @BcGSAVT today by making homemade slime from household ingredients 🧪🧪  
 #SciOutreach



🔄 BcGSA Retweeted  
**Virginia Tech News** @vtnews · Nov 25  
 Brandon Jutras and other @vtbiochem researchers are working to fight Lyme disease head on. With their various new techniques, they hope to improve the health outcomes of patients worldwide. Watch full video: [fal.cn/35gs4](https://fal.cn/35gs4)

