

Career **Exploration** and **Decision-Making**

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About Us

The Biomedical Research Education and Training (BRET) Office of Career Development provides career and professional development enrichment activities for Vanderbilt University School of Medicine and Vanderbilt University Medical Center graduate students and postdoctoral fellows. The office was recognized in 2013 for its commitment to career development for biomedical sciences PhD students and postdocs through a BEST award, a \$1.2 million, 5-year grant from the NIH Common Fund. The ASPIRE Program subsequently was awarded two Burroughs Wellcome grants for a business module and a data science module.

Dr. Kathy Gould oversees the Office of Career Development ASPIRE Program, Dr. Kim Petrie is Assistant Dean of Biomedical Career Development, Dr. Ashley Brady is Assistant Dean of Biomedical Career Engagement and Strategic Partnerships, Kate Stuart is Assistant Director, and Angela Zito is Program Manager. Dr. Gould also oversees evaluation efforts and research training, including diversity initiatives. Dr. Abigail Brown conducts outcomes evaluation and research with the project efforts of Dr. Janani Varadarajan and Lindsay Meyers.

ASPIRE Program • Office of Career Development • Biomedical Research Education and Training 340 Light Hall • 2215 Garland Avenue • Nashville, Tennessee 37232-0301 bret.career.development@vanderbilt.edu • 615-875-8981

670 Graduate **Students**

> 87% US Citizens/ Permanent Residents

Vanderbilt community, ASPIRE activities and individual advising are

POSTDOCTORAL DEPARTMENTS SERVED

Trainees We Serve

tailored for BRET PhD graduate students and postdocs.

Allergy, Pulmonary, and Critical Care

The ASPIRE Program serves PhD students and postdoctoral fellows

in the biomedical sciences. Although our events are open to the

431 **Postdoctoral Fellows**

51% US Citizens/ **Permanent Residents**

Anesthesiology Biochemistry **Biomedical Informatics Biostatistics** Cardiovascular Medicine Cell and Developmental Biology

Clinical Pharmacology

Dermatology

Diabetes, Endocrinology, and Metabolism

Epidemiology Gastroenterology Genetic Medicine

Health Policy

Hearing and Speech Sciences

Hematology/Oncology

Infectious Disease

Kennedy Center

Molecular Physiology and Biophysics

Nephrology

Neurological Surgery

Neurology

Obstetrics & Gynecology

Opthalmology & Visual Sciences

Orthopaedic Surgery and Rehabilitation

Otolaryngology

Pathology, Microbiology, and Immunology

Pediatric Cardiology, Endocrinology, Gastroenterology, Infectious Disease, and

Nephrology

Pharmacology

Psychiatry

Radiology & Radiological Sciences

Rheumatology & Immunology

Surgery

Surgical Sciences

Our Scope

Trainee Professional Development

Alumni Relations,

Outcomes, and Development

> National Career Development **Practices**

Employer

Relations and

Workforce

Development

Exploration and **Decision-Making**

Career

Campus **Partnerships** and Faculty Outreach

Research and Best

PHD PROGRAMS SERVED

Biochemistry **Biological Sciences Biomedical Informatics Biostatistics** Cancer Biology Cell & Developmental Biology Chemical & Physical Biology Epidemiology Health Policy Hearing & Speech Sciences **Human Genetics** Interdisciplinary Graduate Program Microbe-Host Interactions Molecular Pathology & Immunology Molecular Physiology & Biophysics Neuroscience Pharmacology Quantitative & Chemical Biology Program

Career Exploration and Decision-Making/

Providing opportunities to explore careers is paramount to the ASPIRE program. Many of the foundational activities of the office are aimed at instilling confidence and facilitating career decisionmaking.

I really appreciated the career seminars. I was able to narrow down what I wanted to do with my career. Additionally, the networking course gave me the skills to reach out to several people which led to many job opportunities.



((

Right, Karen
Viera, PhD,
talks about
her role as a
freelance writer
for the PhD
Career Stories





"

The ASPIRE program was critical for my career development. They helped me identify career options best suited to my needs and provided me training and opportunities to develop the skills necessary for my success in a non-academic career.

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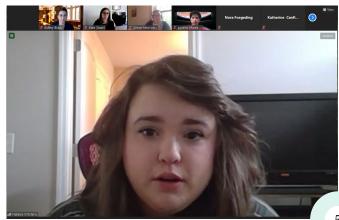
Zoom Exploration of Careers





Left hand column, top, Andrew Hastings, PhD, discusses his role as a AAAS Science and Technology Policy Fellow; middle, Heather Bloemard, PhD, shares about her role in the Office of Federal Relations; bottom, the Advocating Panel and the Writing Panel at the Annual Career Symposium with two trainee moderators each. Right hand column, top, the Educating Panel at the Career Symposium; and bottom, trainee Natalya Ortolano recaps her time as a AAAS Mass Media Fellow.





Career Exploration and Decision-Making



Attendees at Career 427 **Exploration Programs**

386 **Blog Posts**

> Individual Advising Appointments
> 198 PhD Students • 91 Postdocs • 24 Alumni 320

Note: With CV/ Resume Drop-In Clinic unavailable, the ASPIRE Team created a unique digital intake form for Individual Advising Appointments. *The pivot was met* with enthusiasm, and numbers exceeded expectations.

2,079 E-Newsletter Subscribers

56,084 Beyond the Lab Video Views

78 Beyond the Lab Podcast Episodes

Beyond the Lab 24,781 Podcast Downloads

> Followers of 623 @VUbretASPIRE

> > Followers of 691 @VUBRETPhDJobs



Annual Symposium Virtual Again: Careers for the Citizen Scientist

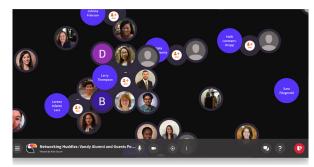
The 2021 ASPIRE Annual Career Symposium was a day and a half full of learning, networking, and exploring. The title, "Careers for the Citizen Scientist," encapsulated the program's focus. Throughout the symposium, trainees learned about the many careers where they can fully use their communication skills in various ways. The evening keynote featured Vincent Racaniello, PhD, Columbia University faculty member and host of the "This Week in Virology (TWIV)" podcast. The next day featured 12 speakers at four panels: Advocating, Educating, Managing, and Writing. At noon, participants networked with alumni and speakers using the Toucan platform. The rotations of 15-minute sessions provided an opportunity for graduate students and postdocs to meet with 4 different alumni in virtual small groups. Despite the online setting, trainees were still able to make valuable connections, continuing the annual symposium tradition!



The ASPIRE program, particularly the annual career symposium, opened my eyes to the variety of career paths that one can take following a PhD. Career exploration through ASPIRE has reinforced my interest in an academic career while keeping other options in mind.







• 197 Zoom Webinar Attendees

13 Speakers

• 53 Average active online minutes for each 60 minute session

Attending the ASPIRE annual symposium was a great experience to learn about academic and non-academic opportunities following the PhD. It was also useful to hear about the guests' stories and how they got to where they

are right now.

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Trainee Professional Development

Skill-building, networking, negotiating, and managing a professional image are important aspects of a trainee's professional development. Our workshops, seminars, modules, and informal cafés help equip trainees for the next step in their career path.



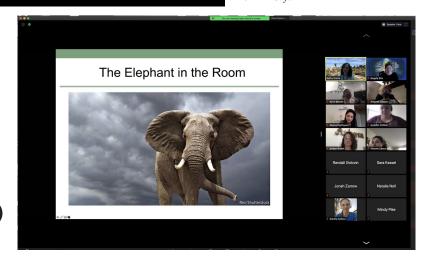
- Contact informat

- Research experience
- Leadership roles
- Outreach & service
- Other work experienc Notable honors & awards
- Teaching & mentoring Personal achievements



Left, Kim Petrie discusses resumes and industry CVs as part of the Job Search Series. Below, Kathy Gould shares how to negotiate your faculty compensation package to postdoctoral fellows at

Very positive impact. Helped me in very diverse ways, including, but not limited to: improving my presentation skills, improving my ability to network, improving my programming skills, expanding career opportunities, and more. These have helped me throughout my thesis work and for securing a job after graduate school.



Allows you to re-focu



Above, Dr. Carl M. Cohen, PhD, discusses how to handle difficult conversations. Right, top, the ASPIRE team provides resources about professional development, Dr. Borden Lacy shares her input on the academic job process, and Abigail Brown





The programs I used the most have been how to write a cover letter and how to navigate an academic career. The CV clinic has being fantastic. I learned so much from the one-on-one sessions, and every cover letter or CV they have looked at improved. My success rate in application to prizes and grants also increased. This resource should never go away! One thing I liked the most is that you could work with any of the four [ASPIRE team] members and learn something different from each of them.



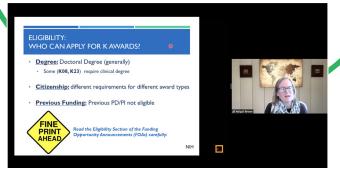
1,508

406

Attendees at Professional **Development Programs**

156

Participants in 10 Different Modules



The oral communication course was fantastic! I was a decent public speaker but learning to design slides properly and structure a talk better really helped me. I have been given a ton of compliments on my dissertation slides and structure of my talk which speaks highly to the course's impact.

Attendees at ASPIRE 354 **Job Search Series**

Attendees at ASPIRE Bistro 256 for Graduate Students

> Attendees at ASPIRE Cafe for Postdoctoral Fellows





PhD to CEO: Entrepreneurial Transformation with the ASPIRE to Innovate Postdoctoral Fellowship Program

Originally published on the School of Medicine Basic Sciences website Written by Ashley Brady

A new collaborative initiative from Vanderbilt University's School of Medicine, Basic Sciences, the BRET office of Career Development's ASPIRE Program, and Vanderbilt's Center for Technology Transfer and Commercialization (CTTC) will support a biomedical sciences postdoctoral fellow who will lead a start-up company to be formed by Vanderbilt. The goal of the program is twofold: (i) to provide a biomedical PhD scientist with extensive mentorship, supplemental training, networking opportunities with investors and potential strategic, and other assistance to successfully launch a company and (ii) to commercialize technologies discovered at Vanderbilt University.

The ASPIRE to Innovate Postdoctoral Fellowship Program will

officially commence on July 1, 2021 with Karrie Dudek, PhD, selected as its first fellow from a competitive application and interview process this spring. Dudek recently defended her dissertation after completing her PhD research training as a graduate student in the Department of Cell and Developmental Biology. During her research training, she has been actively involved in multiple initiatives around campus to augment her research skills with business and management, leadership and consulting experiences. She served as a Business Development Analyst at the local start-up, Utilize Health, through the ASPIRE Internship program where she gathered data on new markets and company profiles to aid in the development of a sales strategy for the company. More recently she has been volunteering her time with the Wond'ry Innovation Consulting Program as a consultant to a medical device company, Gait Guide, where she worked with a team of five to lead the effort in market research and

competitor analysis that was part of a detailed business plan for the company.

Dudek shared that she is both thankful and thrilled for the opportunity to be a pioneer for the ASPIRE to Innovate Program. "For me, the program offered the rare opening to take a 'not-so-risky' chance on myself to co-found a company by having an incredible level of support from across Vanderbilt built-in. Being a part of the growing entrepreneurial community here also will undoubtedly enable me to grow as a leader and further develop my business skillsets."

For the inaugural program, Dudek and her colleagues in the CTTC have elected to focus their efforts on the development of a cad biomaterial for use in regenerative medicine. The inventor of this technology is Ethan Lippmann, PhD, Assistant Professor, Department of Chemical and Biomolecular Engineering at Vanderbilt. While prior biomaterials technologies have been developed to grow capillaries, Lippmann's new biomaterial has been shown to promote growth of arterioles, which are larger and can withstand more pressure outflows and thus may be more effective in combatting ischemia resulting from aging, disease and surgeries.

Peter Rousos, Director, Economic and New Venture Development at Vanderbilt's CTTC has played a key role in helping to launch this program and is excited about the new opportunities it provides. "The term 'game changer' to describe an event or a program is often overused," he said. "However, I think the term has clear applicability to the ASPIRE to Innovate Fellowship program. Vanderbilt and other research institutions invent and discover complex technologies. In instances where the technology can be commercialized via a startup company, they will require management teams who understand both the current application and future implications of the technology. Training scientists to participate in these startups as leaders and managers will have a significant positive impact on the company's success. Additionally, it will greatly enhance the entrepreneurial ecosystem within Vanderbilt. We are very optimistic about Dudek and are convinced she will do very well as the first fellow to participate in this important program."

The ASPIRE to Innovate Postdoctoral Fellowship program will provide funding for up to two years for Dudek to work full-time on turning this idea into a company. Moreover, she will have the opportunity to become a co-founder in the new venture. She will start her fellowship this summer by working in the CTTC to learn about intellectual property rights, licensing, startup companies, and market research. She will also work directly with Lippmann and his research team to gain familiarity with the technology and form an advisory board to help guide the business formation as well as to provide mentorship.

In the fall, she will take part in Vanderbilt's Wondr'y Ideator program with the goal of applying to the National Science Foundation's I-Corps Program. From there, she will participate

in subsequent programming at the Wond'ry including the Builder and Founder programs over the following year and a half. There will be many opportunities for self-directed learning and growing her network of mentors and advisors. During this period, she will also be part of the team that decides when and how to start the company that will commercialize Lippman's technology.

Deliverables for this program will include creating a market research and customer discovery presentation, developing a business plan and financial model, building a pitch deck for speaking to investors and delivering at various business pitch competitions, and submitting an application for a Launch TN microgrant and a Small Business Innovation Research (SBIR) grant to secure future funding.

"We are very excited to be able to launch this fellowship, not only as a training opportunity for a biomedical postdoc, but also to assist in stimulating an entrepreneurial culture in the basic sciences community. We are grateful to Dean Marnett, School of Medicine Basic Sciences, for his support in launching this outstanding program, as well as the CTTC, the Wond'ry and Dr. Lippmann for their support of this new initiative," says Kathy Gould, PhD, Senior Associate Dean for Biomedical Research, Education and Training, Vanderbilt University BRET Office.



Karrie Dudek, PhD, is the inaugural ASPIRE to Innovate Postdoctoral Fellow.

National Career Development Research and Best Practices

Career and professional development trends and best practices are constantly evolving.
To continue to provide outstanding services and remain at the forefront of graduate and postdoctoral career development, we cultivate partnerships and participate in professional organizations to share our work.

National Leadership

- National Science Foundation Reviewer
 Host Committee Member for Leadership Alliance 2021 Annual Career Development Workshop
- Governance Committee Member of Graduate Career Consortium

Papers

Biomedical Graduate Student Experiences During the COVID-19 University Closure

Jan Varadarajan, Abigail Brown, Roger Chalkley PLOS One (2021)

A Cross-Institutional
Analysis of the Effects of
Broadening Trainee Professional
Development on Research
Productivity

Brandt PD, Sturzenegger VS, Brown AM, Petrie KA, et al. F1000 Research (2020) Insights and
Perspectives from the
PhD to Employee Forum

Emily Bell, Helen Miliotis, Lorna MacEachern, Luciana Longo, Costas Karatzas, Ashley Brady Canadian Journal of Career Development (2021)



 $Above, \ representatives \ from \ Burroughs \ Wellcome \ Funde explain \ the \ CASI \ Initiative.$

External Partners

The ASPIRE Program maintains many relationships with external graduate level career development organizations at the local and national level:

The Graduate Career Consortium
Burroughs Wellcome Fund
Life Science Tennessee
Nashville Software School

Professional Development Activities for ASPIRE Staff

This year, the ASPIRE team discovered the many opportunities to learn from home while working from home! The team attended many different professional conferences, workshops, and training programs and earned extra certifications, all from the comforts of the home office. From resilience to leadership development to funding, the learning opportunities abounded! Where travel may have hindered opportunities previously, the increase in virtual options allowed the team to focus on expanding their knowledge base and adding to their toolbox of skills and content to share with trainees. The team enthusiastically embraced this shift in learning as a welcome change!



- The ability to:
- adapt and grow through adversity
- navigate difficult challenges with awareness, intention, and skill
- find a constructive way forward during challenging times
- A set of attitudes and behaviors that can be learned and developed through education, self-reflection, and practice

http://www.apa.org/helpcenter/road-resilience.aspx





On Twitter @SHARONMILGRAM and @NIH_C On Instagram SHARON_MILGRAM_NIH



Employer Relations and Workforce Development

Partnerships with companies and organizations lead to exciting exploratory visits, internships, and externships for our trainees. Employer Relations and Workforce Development also includes:

- Meetings with potential and current employer contacts
- Hosting employer information sessions
- Speaking at conferences and giving invited talks
- Serving on committees to represent Vanderbilt biomedical trainees

Through the ASPIRE program, I have been able to make critical connections in the community and gain experience outside of the lab that has enhanced my career prospects. BRET leadership was also a great source for general advice and feedback.

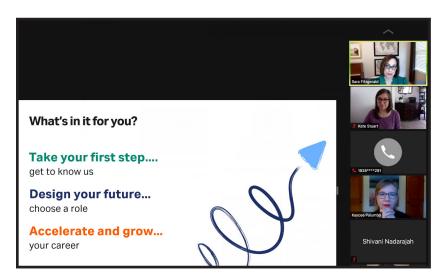
38 Employer Partner Meetings

4 Employer Information Sessions

Trainees Participating in Internships

8 Employer Hosts for Internships

Employer Information Sessions





Top, the Cytiva employer information session featured alumna Sara Perlacky Fitzgerald, PhD. Second above, Whitsell Innovations explained the process of medical writing and how to excel at their company. Below, Poly-Med, Inc. featured their leadership team, recruiting representatives, and alumnus Corey Seacrist, PhD, at the Employee Information Session.



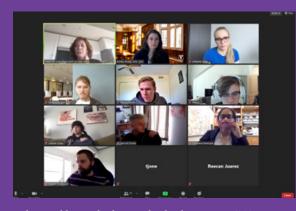
ASPIRE Internship Program

Since the Internship Program began in Fall 2015, the ASPIRE Program has had 146 trainees participate as interns -- 99 (68%) graduate students, 47 (32%) postdocs -- from a total of 299 applicants -- 203 (68%) graduate students and 85 (32%) postdocs. Over this time, we have partnered with 37 different companies and nonprofits that have hosted our trainees as interns. Despite the unconventional past year, we were still able to maintain robust program participation with exclusively remote opportunities for our trainees.

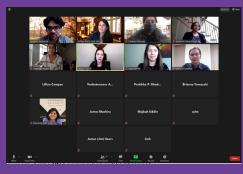
2020-2021 Internship Hosts at a Glance

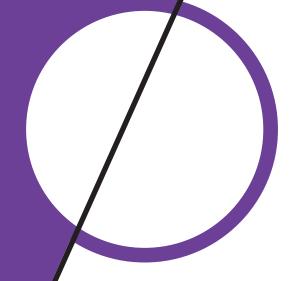
American Heart Association of Middle Tennessee
BioCentury, Inc.
DADA2 Foundation
Decode Health/iQuity Labs
Nashville Biosciences
TCS Alliance
Vanderbilt School of Medicine Basic Sciences
VI4/PMI/VUMC

Campus Partnerships and Faculty Outreach



Above, Ashley Brady discusses biosketches at IMPACT Session. in November 2020. Below, the ASPIRE team participates in events for postdoctoral fellows including the Vanderbilt Postdoctoral Association Symposium in October 2020.





The BRET Office of Career Development strives to maintain partnerships with departments and programs across campus. We partner by providing presentations on a variety of professional and academic development topics and serving on university committees.

14 Invited Campus Talks and Presentations

Presentations to First-Year Graduate Student Groups

Campus Advisory Roles

The ASPIRE Team serves as Faculty or Staff Advisors to a number of campus organizations and initiatives:

- Dean's Advisory Council for Mental Health and Wellness
- Cancer Education Advisory Committee, Vanderbilt Ingram Cancer Center
- Provost's Women's Initiative Subcommittee on Family Friendly Policies, Parental Leave, and Childcare at Vanderbilt
- Basic Sciences Board of Visitors Workforce Development Working Group and Reputation Consulting Group 2020-2021
- Professional Development Subcommittee, IGP Curriculum Review Committee
- •Vanderbilt University Advanced Degree Consulting Club
- Vestigo Editorial Board
- Life Science Tennessee Academic Alliance
- Vanderbilt Science Policy Group

Campus Partners

Vanderbilt School of Medicine Basic Sciences Dean's Office Vanderbilt University Medical Center Vanderbilt Graduate School Vanderbilt Career Center Vanderbilt Center for Teaching Vanderbilt Center for Tech Transfer & Commercialization *Training Grants in the Biomedical & Biological Sciences Vanderbilt Corporate & Foundation Relations* Vanderbilt Creative Services Vanderbilt Development & Alumni Relations Vanderbilt Graduate Development Network Vanderbilt Graduate Leadership Institute Vanderbilt Institute for Infection, Immunology, & Inflammation (VI4) Vanderbilt International Student & Scholar Services Vanderbilt Managerial Studies Program Vanderbilt Medical Scientist Training Program Vanderbilt Office of Federal Relations Vanderbilt Office of Public Affairs Vanderbilt Office of Postdoctoral Affairs Vanderbilt Postdoctoral Association *Vanderbilt Process & Solution Implementations* Vanderbilt Research Cores & Shared Resources Vanderbilt School of Engineering Vanderbilt University Advanced Degree Consulting Club Vanderbilt Science Policy Group Vanderbilt University Psychological & Counseling Center The Vanderbilt Collaborative for STEM Education & Outreach (CSEO) Vanderbilt Writing Studio The Wond'ry

Alumni Relations, Outcomes, and Development

The Office of Career Development engages biomedical PhD and postdoctoral trainees once they complete their training. Alumni volunteer their time at career exploration and professional development events. The office also facilitates connections between alumni and current trainees. Our alumni network helps us better understand career outcomes, informs our career programming, and shapes our advice to current trainees.

The ASPIRE program
was very important!
I was part of the ASPIRE
on the Road San Diego
trip and it was critical for
understanding industry
research options for my
career.

Number of Alumni Tracked in Outcomes Database

1,127

LinkedIn Group Members
Vanderbilt University Biomedical Research
Graduate and Postdoctoral Trainees & Alumni

1,097

PhD Student Exit Surveys
Administered to Date (2007 start)

RESULTS & DISCUSSION

Results & Discussion Newsletter

- Written by current trainees
- Features trainees, faculty, and alumni
- Distributed to alumni and Vanderbilt community

Outcomes Outlook

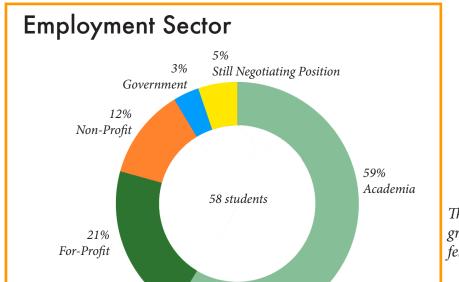
Employment Location and Sectors of Biomedical PhD Graduates

July 2020-June 2021 Defense Dates

Location of first position of biomedical PhD alumni who defended between July 2020 and June 2021.
Alumni of our programs accepted postdoctoral fellowships and employment opportunities throughout the country and around the world.



Size of the circle represents the number of graduates employed in that location (n=55)



Data about first position after graduation is collected from our predoctoral exit survey.

The majority of our 2020-2021 graduates went on to postdoctoral fellowships in academia.

Employment Role

67% Postdoctoral Fellow

10% Research Staff or Technical Director

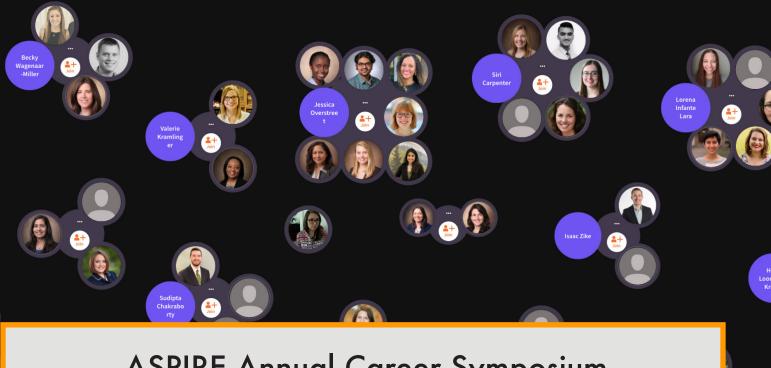
5% Principal Investigator or Group Leader

5% Data Science, Analytics, and Software Engineering

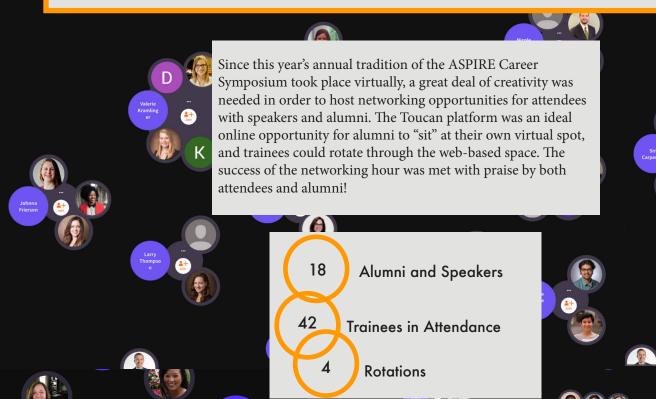
7% Other**

5% Still Negotiating Position

Other roles (denoted with **) include medical affairs, science or medical writing and communication, teaching faculty or staff, and continuing further education.



ASPIRE Annual Career Symposium **Networking Power Hour**





KATHY GOULD, PHD

Senior Associate Dean, Biomedical Research Education and Training Development Louise B. McGavock Chair Professor, Department of Cell and Developmental Biology kathy.gould@vanderbilt.edu



Kim Petrie, PhD

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Meet the Team



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Senior Associate Dean of Basic Sciences Roger Chalkley Retires

Originally published on the School of Medicine Basic Sciences website Written by Lorena Infante Lara, PhD

Roger Chalkley, professor of molecular physiology "I said to myself at the time, 'I've got to do someand biophysics and senior associate dean for biomedical research education and training, retired June 30, 2021.

Chalkley, who has been at Vanderbilt since 1986, is also a co-PI of the Initiative for Maximizing Student Diversity alongside his wife Linda Sealy. Sealy, associate professor emerita of molecular physiology and biophysics and senior advisor to the dean for diversity, equity, and inclusion, retired last May, but remains involved with the IMSD.

"Roger leaves a legacy in graduate education that few individuals anywhere in the country can match," Larry Marnett, dean of basic sciences, doctoral education in the biomedical sciences at Vanderbilt from a regional to a national program and established new paradigms for recruiting and training Ph.D. students."

Although Chalkley is known for his role in supporting graduate students who come in through Vanderbilt's biomedical research umbrella programs—the Interdisciplinary Graduate Program and the Quantitative and Chemical Biology Program—and the IMSD, few of the current students realize that he himself was a prolific scientist.

"I worked in gene regulation," Chalkley said. "I was one of the very earliest people working on histone modifications when people didn't really know about them." Histones are the proteins that the DNA wraps around so as to be compact enough to fit in a cell nucleus. Chalkley's research group, which he started while a faculty member at that estradiol, the major female sex hormone, is transported into the cell and into the nucleus when it is exposed to endometrial tissue.

At the time of Chalkley's arrival at Vanderbilt, research at the school was not graduate student centric, relying heavily on postdocs instead. Each department recruited students individually and suffered high turnover rates; one in particular would lose half its matriculated students each year. This was due, in part, to the fact that students were not covered by training grants, and the research mentors were responsible for a large fraction of the tuition.

thing about graduate students.' They were really not a strong part of Vanderbilt's academic activity," Chalkley said.

"Most of the current members of the Vanderbilt community don't realize that we didn't always have the outstanding graduate programs that we have today. The programs were small, fragmented, and uneven," Marnett said.

Vanderbilt's umbrella-type program in biomedical sciences—the IGP— was conceived by Chalkley as a result of discussions with John Perkins, who was Biomedical Sciences at the time. The IGP allowed all basic sciences departments to recruit together and to teach students a shared curriculum during their first year. Most importantly, it helped guarantee that the students' tuition would be covered, in part through financial commitments from the School of Medicine and in part through the indi-

The redesign of the graduate training program improved the caliber of recruited students, which in turn improved the caliber of recruited faculty. It also helped with diversifying the student body. biomedical science Ph.D. had been granted to a Black student; three Black students were welcomed into the first IGP class. In time, Vanderbilt began recruiting more traditionally underserved students so that, at the time of writing, over 150 Ph.D.'s have been granted to individuals from diverse backgrounds, thanks in large part to Chalkley's involvement in the creation and management of the IMSD.

Today, between the IGP, IMSD, and QCB, which was established in the mid 2000s to serve students coming from a physical science or math background, Vanderbilt welcomes upward of 80 students each year—with a smaller than 5%

"It is hard to imagine Vanderbilt without Roger Chalkley directing graduate education through the BRET Office. His contributions are legendary not only at Vanderbilt but also nationally. We will miss him greatly but wish him the very best for the next chapter in his life," Marnett said.

Appendix



A1 Annual Career Symposium

2021 ASPIRE An	nual Career Symposium: Careers for the Citizen Scientist	
Keynote		
Vincent Racaniello, PhD	Host, "This Week in Virology" podcast, Higgins Professor of Microbiology & Immunology at Columbia University Medical Center	
Panel 1: ADVOCATING		
Denise Zannino Childree, PhD	Science Policy and Communications Strategist, National Science Foundation (NSF)	
Julie E. Fischer, PhD	Senior Technical Advisor for Global Health, CRDF Global	
Shobhana Gupta, MD PhD	Open Innovation and Community Applications Manager, Applied Sciences Program, NASA Earth Science Division	
Panel 2: EDUCATING		
Emily Dilger, PhD	Chief Education Officer, Ignited	
Johnna Frierson, PhD	Assistant Dean of Graduate and Postdoctoral Diversity and Inclusion, Duke University School of Medicine	
Whitney Holden, PhD	Life Science Specialist, Arkansas School for Mathematics, Sciences, and the Art	
Networking	Power Hour (Toucan Platform) 18 Alumni, 42 Trainees	
Panel 3: MANAGING		
Zusi Andrews, PhD	Biologist and Medical Writer, NIH/NCI	
Trenis Palmer, PhD	Senior Clinical Research Associate, Inhibrx, Inc	
Sara Yin, PhD	Senior Director of Access Marketing, Epizyme	
Panel 4: WRITING		
Christopher Arnette, PhD	Developmental Editor for Current Protocols, Wiley	
Siri Carpenter, PhD	Editor-in-Chief, The Open Notebook	
Sudipta Chakraborty, PhD	Clinical Trial Transparency Manager, PRA Health Sciences	

A2 Other Career Exploration Events

Date	Topic	Attendance	Speaker
July 1, 8, 15, 22, and 29, 2020	Wednesdays with ASPIRE	7	ASPIRE Team
August 5, 2020	Burroughs Wellcome Fund Career Awards at the Scientific Interface (CASI)	52	Louis Muglia, MD PhD, President and CEO of Burroughs Wellcome Fund Kelly Rose, CASI Program Officer Melanie Scott, Senior Program Associate
November 5, 2020	AAAS Mass Media Fellowship Panel	32	Lorena Infante Lara, PhD; Simon Morrow, PhD; and Natalya Ortolano
December 10, 2020	Transitioning to a Career in Regulatory Affairs and FDA	22	Linda Bowen, RAC, FRAPS, SeaGen

A3 PhD Career Stories

Date	Торіс	Attendance	Speaker Details
August 14, 2020	Business Development	34	Rachel Skelton, PhD, Director of Business Development for Pharma Partnerships, Leica Biosystems
September 18, 2020	Freelance Medical Writing	19	Karen Vieira, PhD, CEO, The Med Writers
October 19, 2020	Science Policy: AAAS Science & Technology Policy Fellows Panel	26	Loren LaPointe, PhD, Environmental Protection Specialist, US Environmental Protection Agency Stephanie DeLuca, PhD, Senior Legislative Aide, Office of Senator Bob Casey Andrew Hastings, PhD, Public Health Analyst, NIH/ National Institute of Allergy and Infectious Disease Joe Rustick, PhD, Physical Scientist, US Environmental Protection Agency
November 6, 2020	Regulatory Affairs	17	Patricia Costa-Giomi, PhD, Executive Director, International Regulatory Affairs, Ultragenyx Pharmaceuticals
December 11, 2020	Research at a Research Institution	21	Rachel Lippert, PhD, NeuroCure Junior Research Group Leader, Neurocircuit Development and Function (NDF), German Institute for Human Nutrition
January 15, 2021	Technical Sales and Business Development	19	William Johnson, PhD, Technical Sales and Business Development
February 12, 2021	Think Tank	30	Sylvie Raver, PhD, Associate Director, Milken Institute Center for Strategic Philanthropy
March 26, 2021	Medical Science Liaison Panel	50	Carl Darris, PhD, Allergan Tammy Sobolik, PhD, G1 Therapeutics Branden Stansley, PhD, Biogen
April 23, 2021	Data Science	31	Tim Shaver, PhD, Computational Scientist, Inscripta, Inc.

A4 Beyond the Lab Podcast

Season 4			
Date	Topic	Alumnus Guest	
November 3, 2020	Industry	Ramya Chandrasakan, PhD	
November 10, 2020	Government Administration	Rubin Baskir, PhD	
November 17, 2020	Biotech	Jud Schneider, PhD	
December 1, 2020	Technical Support	Chris Jarrett, PhD	
December 8, 2020	Big Pharma	Renee Bailey Iacono, PhD	
December 15, 2020	Grants Administration	Barbara Natalizio, PhD	
January 5, 2021	Patent Agent	Miranda Hallett, PhD	
January 12, 2021	Acadmic Administration	Colleen Piersen, PhD	
January 26, 2021	Academic Faculty of Government Institution	Kari Johnson, PhD	
Febraury 4, 2021	Genomics Laboratory Management	Ryan Bender, PhD	
February 11, 2021	Diversity and Academic Success	D'Anne Duncan, PhD	



Enhanced Career Exploration

Course Title	Director	Participants	Frequency and Dates
Data Science Essentials	Mary van Valkenburg, Analytics and Data Science Program Manager, Instructor, Nashville Software School Ashley Brady, PhD, Assistant Dean for Biomedical Career Engagement and Strategic Partnerships (Kate Stuart also assisted with sessions)	16	August 2020-March 2021
Technology Commercialization			Sept 29-Nov 10, 2020
SciComm for All Abby Olena, PhD, Alumna 2015, correspondent for The Scientist		10 (capped)	Sept 29-Dec 15, 2020
Clinical Microbiology: Applying Your PhD to Patient Care Jonathan Schmitz, MD, PhD, Assistant Professor, Pathology, Microbiology, and Immunology, VUMC Ferrin Wheeler, PhD, Medical Director, Cytogenetics, VUMC		2 (capped)	Continued from 2020 Individual Rotations Jan-Feb 2021
Management and Business Principles for Scientists Joe Rando, MBA, Associate Professor of the Practice, Managerial Studies, Vanderbilt University		19	Jan 14-Apr 14, 2021

Essential Skill Building

Networking Pacing	Ashley Brady, PhD, Assistant Dean for Biomedical Career Engagement and Strategic Partnerships		Sept 1-Oct 20, 2020
Creating Effective Scientific Talks and Delivering Them with Confidence	s and Kathy Gould, PhD. Senior Associate Dean, BRET		Sept 28-Oct 12, 2020
Maximizing Your Potential: Leading and Managing People, Projects, and Your Career	Kathy Gould, PhD, Senior Associate Dean, BRET Beth Bowman, PhD, Associate Director, Graduate Student Support	21	Sept 29-Dec 15, 2020
Practical Strategies for	Beth Estes, PhD, Academic Support Coordinator, The Writing	21	Sept 29-Oct 13, 2020 (Fall Session)
Strong Writing	Studio, Vanderbilt University	22	Mar 16-30, 2021 (Spring Session)
EQ + IQ = Career Success	Kate Stuart , Assistant Director, BRET Office of Career Development	11	Oct 27-Dec 1, 2020

A6 ASPIRE Job Search Series

Date	Торіс	Presenter	Attendance
9/3/20	Leveraging LinkedIn	Ashley Brady, PhD	34
9/17/20	Preparing for a Teaching Demo	Cynthia Brame, PhD, Center for Teaching	29
10/22/20	Writing a Better Cover Letter	Kate Stuart	42
11/19/20	Resumes/Industry CVs	Kim Petrie, PhD	29
12/17/20	Informational Interviews	Ashley Brady, PhD	39
1/21/21	Interviewing 101	Ashley Brady, PhD	42
2/18/21	Behavioral Interviewing	Kim Petrie, PhD	43
4/1/21	Interviewing and Onboarding Virtually	Ashley Brady, PhD	28
4/22/21	Writing a Better Cover Letter	Kate Stuart	38
5/20/21	Resumes/Industry CVs	Kim Petrie, PhD	30



ASPIRE Bistro for PhD Students

Date	Topic	Presenter	Attendance
8/20/20	ASPIRE for Career Planning	ASPIRE Team	37
10/8/20	The Next Step: Applying for a Postdoc or Post-Grad Job	Kathy Gould, PhD	41
11/5/20	Applying for Fellowships & NRSAs	Kim Petrie, PhD	29
12/3/20	Savvy Science: Professionalism Strategies for Success	Kate Stuart	22
1/7/21	Exploring and Preparing for Faculty Careers	Kathy Gould, PhD	23
2/4/21	Maximizing Your Research Efforts	Kathy Gould, PhD	33
3/4/21	The Next Step: Applying for a Post-Grad Job	Kathy Gould, PhD	38
4/8/21	Preparing to Mentor	Kathy Gould, PhD	17
5/6/21	A Fair Look: How to Review a Paper	Kathy Gould, PhD	16

Trainee Professional Development Additional Events

Date	Торіс	Attendance	Speaker
September 22, 2020	Difficult Conversations	24 (capped)	Carl M. Cohen, PhD, speaker and author of Lab Dynamics
October 1, 2020	Leading Scientific Teams and Project Meetings	15 (capped)	Carl M. Cohen, PhD, speaker and author of Lab Dynamics
April 29, 2021	Capitalizing on Opportunities: Making the Most of the 2021 ASPIRE Virtual Career Symposium	36	Ashley Brady and Kate Stuart



A9 ASPIRE Cafe for Postdoctoral Fellows

Date	Topic	Presenter	Attendance
8/27/20	Orientation to BRET Career Development Resources for Postdocs	Ashley Brady, PhD	22
9/10/20	Preparing a Faculty Position Application Package	Rafael Arrojo e Drigo, PhD; Nancy Carrasco, MD; Kathleen DelGiorno, PhD	38
10/15/20	What to Expect from a Faculty Interview	Nancy Carrasco, MD; Walter Chazin, PhD; Katherine L. Friedman, PhD	41
10/29/20	Grant Resources at Vanderbilt	Abby Brown, PhD	28
11/12/20	How to Give a Chalk Talk	Borden Lacy, PhD; Chris Wright, D. Phil.; Elma Zaganjor, PhD	38
12/10/20	K Awards: Which One is Right for You?	Abby Brown, PhD	30
1/14/21	Negotiating Your Faculty Compensation and Start-Up Package	Kathy Gould, PhD	41
1/28/21	Orientation to BRET Career Development Resources for Postdocs	Ashley Brady, PhD	13
2/11/21	Exploring the Nontenure Faculty Track	Kimberly Dahlman, PhD; Lourdes Estrada, PhD; Mark Woelfle, PhD	34
2/25/21	A Fair Look: How to Review A Paper	Kathy Gould, PhD	25
3/11/21	Developing Your Mentoring Style	Kathy Gould, PhD	18
3/25/21	Fellowships and F32 NRSAs	Kim Petrie, PhD	24
5/13/21	Setting Up and Running a New Lab	Kristopher Burkewitz, PhD; William Wan, PhD; Qiangjun Zhou, PhD	33
5/27/21	Exploring and Preparing for Faculty Careers	Kathy Gould, PhD	21



A10 Conference Poster Presentations

"Tailoring an Individual Development Plan for Veterinary Residents"

Jones CP, McCallum PK, Gould KL, and Petrie KA.

Health Professionals Research and Education Day, Vanderbilt University, Nashville, TN (December 2020)

All Peer-Reviewed Publications and Books

Brandt, PD, Sturzenegger, VS, Petrie KA, Brown AM, et. al. A cross-institutional analysis of the effects of broadening trainee professional development on research productivity. PLOS Biology 9(7): e3000956. https://doi.org/10.1371/journal.pbio.3000956

Emily Bell, Helen Miliotis, Lorna MacEachern, Luciana Longo, Costas Karatzas, Ashley Brady. Insights and Perspectives from the PhD to Employee Forum, Canadian Journal of Career Development. (2021)

A12 In the Press

"Data-driven advice for grad school" Abigail Brown ScienceCareers (September 2020)	"Training the biomedical workforce of the future" Ashley Brady Vestigo (Winter 2021)
"Time well spent: tending to your career and professional development" Kim Petrie American Society for Cell Biology blog (November 2020)	"Strategies for starting a job while remote" Ashley Brady Carpe Careers, Inside Higher Education (February 2021)
"Maximizing Your Virtual Networking Potential" Ashley Brady American Society for Cell Biology blog (November 2020)	"Insights and Perspectives from the PhD to Employee Forum" Emily Bell, Helen Miliotis, Lorna MacEachern, Luciana Longo, Costas Karatzas, Ashley Brady Canadian Journal of Career Development (April 2021)



A13 ASPIRE Advisory Committee

The ASPIRE Program Advisory Committee consists of external advisors from various industries, as well as Vanderbilt faculty and trainees.

ROB CARNAHAN, PHD (Vanderbilt University) MANNY ASCANO, PHD (Vanderbilt University) SAM DOOYEMA (Vanderbilt University) DALE EDGAR, PHD (Eli Lilly, retired) EFRAIN GARCIA, PHD (Health & Human Services) BRIAN LADEN, PHD (TriStar Technology Ventures) LORENA INFANTE LARA, PHD (Vanderbilt University) INES MACIAS-PEREZ, PHD (Cumberland Pharmaceuticals)

ALAN MARNETT, PHD (Benchfly) RICHARD O'BRIEN, PHD (Vanderbilt University) MICHAEL R. OTTO, PHD (Quidel) MARGARET READ, PHD (Vanderbilt University) STEVE ROBERDS, PHD (TSC Alliance) ABBY TROTTER (Life Science Tennessee) LAURIE VANDERVEEN, PHD (Nektar Therapeutics) CHRIS WRIGHT, D.PHIL (Vanderbilt University)

A14 Invited National and Regional Talks

2020

"How to Approach Relationship Building in Developing Strategic Partnerships" Launch TN Student Mentor Network Workshop

Ashley Brady

"Challenges, Innovations, Futures: Serving Trainees in a Hybrid and Online Environment" Graduate Career Consortium Southeast Regional Meeting Ashley Brady

04 2021 "ASPIRE to Innovate Postdoctoral Fellowship"

Entrepreneurship Advisory Council for Center for Technology Transfer and Commercialization Ashley Brady



A15 Professional Development Activities for ASPIRE Staff

Date	Topic	Speaker
July 27, 2020	AAUW Start Smart Salary Negotiation Workshop	Ashley Brady
Late Summer 2020	The Science of Well-Being from Yale University Coursera	Ashley Brady, Kate Stuart
October 27-28, 2020	LST-CON	Ashley Brady
Fall	NIH Regional Seminar on Funding	Ashley Brady
November 16, 2020	CIMER Facilitating Entering Mentoring Training	Ashley Brady, Kathy Gould
January 5-May 31, 2021	OITE /NIGMS Resilience Training Program (BARS- Building a Resilient Scientist)	Ashley Brady, Kate Stuart
January 27, 2021	Coaching Conversations: Creating Space from the Graduate Career Consortium	Ashley Brady, Kim Petrie, Kate Stuart, Angela Zito
February 18-19, 2021	Collaborative Communication Workshop led by MWI from The Graduate School Academic Life Coach	Ashley Brady
March 2, 2021	Graduate Career Consortium Southeast Regional Meeting: Challenges, Innovations, Futures: Serving Trainees in a Hybrid and Online Environment: Meeting Them Where They Are: Career Advising in the Virtual World	Ashley Brady, Kim Petrie, Kate Stuart, Angela Zito
May 10, 2021	Train-the-Trainer Workshop: Leadership and Management in Action Program	Kate Stuart
May 24-28, 2021	Gallup StrengthsFinder Training	Angela Zito
June 23-25, 2021	Graduate Career Consortium National Meeting	Angela Zito
June 2021	"Emerging Scientists" Train the Trainers Conference on Professional Development, Responsible Conduct, and Inclusion	Kathy Gould, Kim Petrie

A16 Externships

Externships give trainees short-term, on-site job shadowing opportunities or support to travel to a specialized workshop or professional development event. ASPIRE travel scholarships help offset travel expenses that are associated with participating in an externship. The ongoing COVID pandemic and associated travel restrictions have significantly reduced demand for support of these kinds of activities. This past year, we provided support to one graduate student to attend the virtual American Society of Cell Biology/ Keck Institute 2020 Summer Biotech Course.



ASPIRE internships provide hands-on experience with a project in a professional work A17 Internships environment. Internships are part-time and were conducted remotely this year.

Internship Host	Number of Trainees and Internship Role
American Heart Association of Middle Tennessee	3 Health Strategies Interns
BioCentury, Inc.	3 Data Analyst Interns, 1 Science Writer Intern
DADA2 Foundation	3 Patient Registry and Biobank Interns
Decode Health/ iQuity	1 Data Science Intern
Nashville Biosciences	2 Business Development Interns
Tuberous Sclerosis Alliance	1 Digital Communications Intern
Vanderbilt School of Medicine, Basic Sciences	1 Science Communication Intern
VI4, PMI, Vanderbilt University Medical Center	6 Science Communication Interns (3 Fall 2020, 3 Spring 2021)



A18 Data Science Essentials Employer Case Sessions

Date	Company	Attendance	Speaker/Host
February 1, 2021	Code for Nashville, Part 1	12	Code for Nashville Meet Up, New Member Welcome with Wesley Duffee-Braun, MS, and Timothy Eccleston
February 22, 2021	Code for Nashville, Part 2	14	Code for Nashville IncluCivics Case Session led by Kim Stauffer, Wesley Duffee-Braun, MS, and Timothy Eccleston
March 3, 2021	Xsolis	20	Xsolis with Jason King, PhD, Ryan Craven, PhD, and Glenna Dunn, PhD
March 10, 2021	DeCode Health	19	DeCode Health with Chase Spurlock, PhD, Jamison Gray, Lukasz Wylenzinski, PhD, and Cole Harris (intern)
April 23, 2021	InScripta, Inc	14	Inscripta, Inc, with Tim Shaver, PhD (PhD Career Stories seminar followed by additional time with Data Science module participants)

A19 Employer Information Sessions

Date	Company/Event	Attendees	Guest
November 4, 2020	Whitsell Innovations Employer Information Session	11	Allie Fuller, Medical Writer and Consultant, Whitsell Innovations
March 30, 2021	Cytiva Employer Information Session	36	Sara Perlaky FitzGerald, PhD; Kaycee Palumbo, MBA; and Shivani Nadarajah, Cytiva
June 4, 2021	Pfizer Informal Employer Information Session	54	Larry Thompson, PhD, Pfizer
June 24, 2021	Poly-Med Employer Information Session	28	Corey Seacrist, PhD, Account Manager; Seth McCullen, PhD, Client Delivery Manager

A20 New Postdoctoral Mentor Lunches

Lunches to Introduce BRET Posdoctoral Fellow Services to Faculty		
Date	Number of Faculty Guests	
July 24, 2020	5	
August 28, 2020	7	
October 23, 2020	4	
December 11, 2020	4	
February 26, 2021	1	
March 26, 2021	3	

A21 Invited Internal Presentations

November 5, January 14, February 4, March 11

First-Year Grad Students Presentations (4 sessions)

"Building Your Biosketch"

Ashley Brady

09 2020	September 4, 2020 "BRET Office of Career Development & ASPIRE" Simple Beginnings PhD Ceremony Ashley Brady	12 2020	December 9, February 25, March 4, 25, April 28 "Career Planning" First-Year Grad Students Presentations (5 sessions) Kim Petrie	
	September 8, 2020 "Overview of NRSAs and the Peer Review Process" Pharmacology Department Kim Petrie	01 2021	January 14, 2021 "NRSAs and Fellowships to Fund Your Research Training" Neuroscience Department Kim Petrie	
10	October 5, 2020 "Taking It to the Next Level: A Resume Workshop" Data Science Masters Program Kate Stuart		February 9, 2021 "Your Career Starts Here: Career Planning for Early-Stage PhD Students" Informatics and Epidemiology Student Workshop Kim Petrie	
	October 20, 2020 "BRET Career Development ASPIRE Program: Resources for Postdocs and Fellows" Clinical Pharmacology Fellowship Program Ashley Brady		February 25, 2021 "Making Connections and Networking in the Era of Virtual Conferences" Chemical and Physical Biology Program Lunch and Learn	
	October 22, November 2, January 14, February 4, 25, 2020		Ashley Brady	
	"CVs" First-Year Grad Students Presentations (5 sessions) Kim Petrie		February 26, 2021 "ASPIRE to Innovate Postdoctoral Fellowship" Basic Sciences Board of Visitors Meeting Ashley Brady	
	October 28, 2020 "Leveraging LinkedIn" Masters of Publich Health Career Development Series Ashley Brady	04 2021	April 2, 2021 "Introduction to ASPIRE Resources" Fisk Master's to Bridge Program Ashley Brady	
	October 29, 2020 "BRET Career Development ASPIRE Program: Resources for Postdocs" Vanderbilt University Postdoctoral Association Symposium		April 16, 2020 "ASPIRE Overview" VUMC Epidemiology PhD Student Workshop Ashley Brady, Kim Petrie	
	Ashley Brady		April 16, 2020 "Introduction to ASPIRE for Postdoctoral Fellows"	
	October 29, 2020 "Understanding Your Strengths and StrengthsFinder 101" Medical Scientist Training Program Leadership Retreat Kate Stuart		Vanderbilt Integrated Training Alliance Symposium Ashley Brady	
	November 5 January 14 Eshavery 4 Moush 11			



