

CMB Newsletter

Issue 15 | Summer | 2020



The CMB Newsletter is written and published by graduate students of the CMB program. Our mission is to create a more closely-knit CMB community by providing students, faculty, friends, family, and alumni with current information about the Cell and Molecular Biology Program at Colorado State University. This newsletter looks to emphasize accomplishments and activities of the CMB community as well as highlight future events. Please email Heather Deel (hdeel@rams.colostate.edu) or Hannah Berry (hmberry@colostate.edu) with news or if you want to become involved in future editions!

CMB has a new email address: grad_cellmobio@Mail.colostate.edu

Life During Lockdown

By Kayl Ecton

I was in the middle of pipetting sodium nitroprusside to the vessel bath when my PI walked in announcing CU Boulder research is likely to be suspended by the end of the day. Within days COVID splintered CSU's campus into spring break. The ten days following were tireless to prepare for a graduate teaching assistantship position for three online sections and hundreds of students. The emails were overflowing, and my courses were lost in translation. The semester fumbled along, and the early weeks of summer were tormented by a suffocating silence until 8:00 sharp. Howling became the highlight of the day and emptiness overtook the hours of lab work.

As a scientist I strive to believe I am doing bench top work for the betterment of society. I work with hope that the strenuous hours or emotional turmoil will have an everlasting impact, somewhere, someday. Without the mentoring and teaching, hours in the day lost vitality. With research suspended I began working as a phlebotomist and medical assistant at one of the first drive up COVID test centers in Colorado.

The ghost town of Fort Collins continued into Longmont and passed into Denver. Interstate 25 was empty, my first few drives I could count on two hands the vehicles I passed. Life was on lockdown. The PPE gear was extensive, working outside in the 95-degree Colorado heat for hours on end without access to water or much shade was tumultuous. Three layers of gloves made it difficult to feel a vein, threatening the phlebotomist's lifeline for efficient, painless work. Client's stories tore at our hearts, but the pleading looks of hope and the grateful spirits they emanated shocked the sense of fear and exhaustion from our station.

Distress clung to the new simplified lifestyle of lockdown. Empty shelves and limited access drew upon the abnormality of the situation. The foreboding, unknown and devastating mood flourished. Yet, this novel disease encouraged a return to roots, a focus on people and communication. Perhaps shockingly, it highlighted the pitfalls of technology and how we as humans thrive for connectedness. Frustrations have led to appreciation, just maybe we will emerge more unified and grateful.



Congratulations Graduating CMB Students!

Spring 2020 Graduates



Sara Oehmke, M.S.

Medford Lab

Design and quantification of a cell type specific genetic circuit in plants



Josh Svendsen, Ph.D.

Montgomery Lab

Small RNA Methylation in *C. elegans*

Summer 2020 Graduates



Neha Ahuja, Ph.D.

Garrity Lab

Myocardial Afterload Regulates Atrioventricular Valve Development



Kelly Hassell, Ph.D.

Crans Lab

Strategies for Targeting Cancer: small molecules, epigenetics and drug design

The Responsibility of Doing Reproducible Science

By Ikaia Lelewi

Pressure to produce results is the ever-present companion of a research scientist. Success in academia or industry relies on the ability to tell a story with data, and to do so while meeting deadlines. It can be very rewarding, pushing towards a milestone and reaching it, embracing challenge and growing as a scientist. Importantly, the integrity of the science must be upheld, even if that means missing a deadline or presenting unfavorable results. There are instances of questionable science at all levels of research¹, rationalized by scientists with deadlines to publish and procure more funding. Considering the unrelenting pressure to publish and secure grants, it's not surprising that research reproducibility suffers. A study published in *Research Integrity and Peer Review* sampled 400 neurology publications and found only 9.2% provided raw data access and a shocking 0.7% linked to their experimental protocol². Bias of journals to preferentially publish positive results is widely observed³, a notion with potential to motivate researchers to data snoop or coerce their numbers. If published research is not reproducible and honest, faith in the literature erodes and so too does the foundation of future work. Public sentiment is affected, and anti-science rhetoric is emboldened by lack of reproducibility or instances of fraud in science.



A recent survey by the not-for profit biorepository, ATCC questioned 415 scientists on this very topic. Two-thirds of those surveyed strongly believe that reproducibility is an urgent problem. One-third agreed that published work lacked enough detail in the methods to be reproduced, and 57% of those surveyed felt that pressure to publish/accomplish was the leading cause of reproducibility problems in the scientific field⁴. The Chief Scientific Officer of ATCC, Dr. Mindy Goldsborough, offered her thoughts on the problem of reproducibility in science. She hopes that reports like the ATCC reproducibility survey will spark change in the scientific community. Goldsborough encourages studies to be designed with reproducibility in mind and that they are published with thorough methods sections⁵.

I believe as Dr. Goldsborough does, that change in the scientific community is necessary to address this issue. It begins in individual labs, with individual researchers, and with individual papers. National funding organizations have taken notice of the problem in recent years too. The NIH Rigor and Reproducibility initiative provides reporting guidelines and training to address the issue of research reproducibility. Similar directives have been implemented by the NSF as well, but ultimately the onus of integrity still falls on the scientist. For true change to occur, however, appropriate action must be taken by prominent journals to make reproducibility compulsory for publication.

Enterprising scientists are confronting the problem of reproducibility now in the field of computational science. Scientific computing is uniquely advantaged in its relative ease to reproduce. A computational workflow will produce the same results the first time it's run and the hundredth time, so long as the inputs are consistent (raw data and parameters) and the program versions and computing environment are the same. Recent advances in virtual machines and compute containers have catapulted scientific computing to new frontiers of reproducibility. Singularity containers, introduced in 2017, are complete compute environments that can be loaded with all the necessary tools to reproduce a computational workflow⁶. You can think of a Singularity container as a clone of the author's computer, with all of the same programs of the same versions loaded on the same operating system used to produce the original analysis. Load the container on your machine and you're able to reproduce the analysis exactly as was done in the publication. Unfortunately, this type of reproducibility may be difficult to mimic on the bench, where variation in reagent lots, environment,

The Responsibility of Doing Reproducible Science Continued

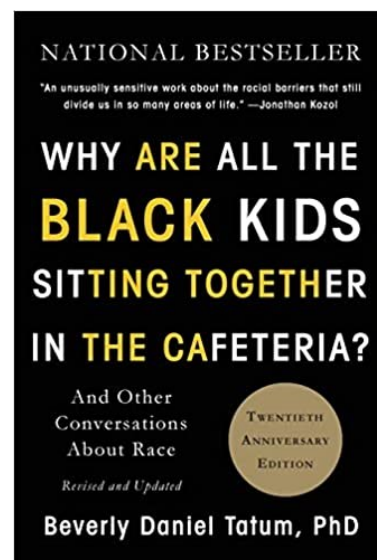
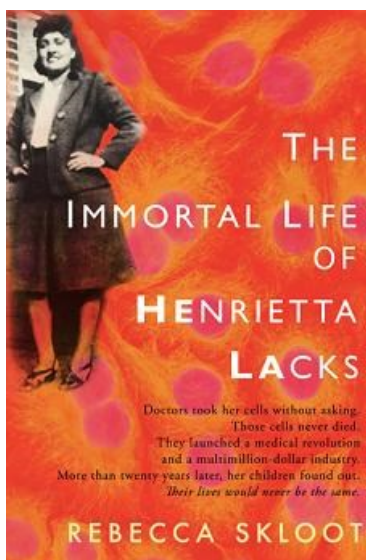
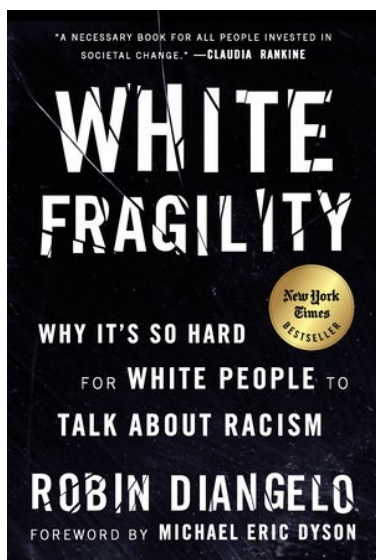
and researcher skill all factor into the data generated. Each discipline must confront the challenge of reproducibility in a way that makes sense for the type of research being done. Most importantly is that we all strive to do quality research, prioritizing integrity above achievement and publishing with the goal of reproducibility.

1. George SL, Buyse M. Data fraud in clinical trials. *Clin Investig (Lond)*. 2015;5(2):161-173. doi:[10.4155/cli.14.116](https://doi.org/10.4155/cli.14.116) 2. Rauh S, Torgerson T, Johnson AL, Pollard J, Tritz D, Vassar M. Reproducible and transparent research practices in published neurology research. *Res Integr Peer Rev*. 2020;5. doi:[10.1186/s41073-020-0091-5](https://doi.org/10.1186/s41073-020-0091-5) 3. Mlinarić A, Horvat M, Šupak Smolčić V. Dealing with the positive publication bias: Why you should really publish your negative results. *Biochem Med (Zagreb)*. 2017;27(3). doi:[10.11613/BM.2017.030201](https://doi.org/10.11613/BM.2017.030201) 4. Goldsborough M. ATCC Reproducibility Report. ATCC; 2020. [https://www.atcc.org/~media/PDFs/MarketingMaterial/Reproducibility/Reproducibility Report.ashx](https://www.atcc.org/~media/PDFs/MarketingMaterial/Reproducibility/Reproducibility%20Report.ashx). Accessed May 29, 2020. 5. Scientific Responsibility in a Time of Crisis. *GenomeWeb*. Accessed May 29, 2020. <https://www.genomeweb.com/sponsored/scientific-responsibility-time-crisis> 6. Kurtzer GM, Sochat V, Bauer MW. Singularity: Scientific containers for mobility of compute. *PLoS One*. 2017;12(5). doi:[10.1371/journal.pone.0177459](https://doi.org/10.1371/journal.pone.0177459)

CMB Summer Book Club for Inclusivity

By Heather Deel

At the beginning of the summer, with the popularization of the Black Lives Matter movement, Carol approached some students with the idea to use CMB funds for a book club. Many students within and outside of CMB have participated, reading books including **White Fragility**, **Weapons of Math Destruction**, **Blind Spot**, **Why are All the Black Kids Sitting Together in the Cafeteria**, **The Immortal Life of Henrietta Lacks**, and **Writing Science**. As I am still very much in the phase of educating myself about black history, systemic racism, my own unconscious racism, and the BLM movement and the magnitude of its importance, reading some of these books has been very valuable to me. As a white woman, there are many instances of my past that I had no idea were racially problematic, and this book club has helped me to be open minded enough to educate myself about these instances and change. For now, my top recommendation of these books to read is **White Fragility**, as author Robin DiAngelo (also a white woman) does a wonderful job of educating while also holding herself accountable for her own racism, and she effectively teaches readers how to be accountable for their own racism. This book club has been a great step towards better educating CMB and CSU about racial disparities (primarily for black Americans), and I am more than happy to be part of that movement and a more inclusive environment. All of these books are available for check out by faculty and students to read independently or as a group. Please contact Charlene Spencer (Charlene.Spencer@colostate.edu) for info.



Graduate Student Awards and Fellowships

CMB students continue to earn grants and awards through CSU and other funding agencies for their hard work and commitment to science! Congratulations to everyone who has received an award since the last newsletter!

Noelia Altina - CSU Infectious Disease Research and Response Network (IDRRN) Program of Research and Scholarly Excellence (PRSE) Fellow, Summer 2020

Sam Brill (Joint DVM and CMB student) - NIH's Medical Scientist Training fellowship. NIH will support more than half of the cost of tuition and fees. There is a stipend of \$25,000.

Katie Cronise - CSU Cancer Biology and Comparative Oncology (CBCO) Program of Research and Scholarly Excellence (PRSE) Fellow, Summer 2020

Pablo Maldonado - McPherson Graduate Scholarship for fall 2020 and spring 2021 semesters. This scholarship consists of \$10,000 plus resident tuition.

Katy McIntyre - American Society of Plant Biologists Travel Award

Katy McIntyre - 2020 USDA-NIFA Predoctoral Fellowship, \$120,000 funding for two years, for Understanding Cytokinin-Induced Priming of Plant Defense in *Brassica napus*

Sam Ogden - McPherson Graduate Scholarship for fall 2020 and spring 2021 semesters. This scholarship consists of \$10,000 plus resident tuition.

Paige Ostwald - Competed in the Fall 2019 Graduate Student Showcase and qualified to compete in the 3-Minute Thesis Competition. Through this competition, she qualified to become part of the 2020-2021 cohort of the Vice President for Research Graduate Fellows Program! This includes a \$4000 scholarship and monthly opportunities for professional development, workshops, and travel support.

T32 New Fellows: NIH will support more than half of the cost of tuition and fees. They will receive a stipend of \$30,000 and a travel stipend of \$300.

Casey-Tyler Berezin
Ikaia Leleiwi

Seré Williams
Reed Woyda

CMB mentors helped undergraduate students win poster awards at the Virtual CURC:

Neha Ahuja
James Curlin
Kaitlin Doucette

Kayl Ecton
Julie Moreno

Winners from the Virtual qCMB-GAUSSI Symposium

Neha Ahuja - 2nd Place Student Talk (\$150) - Garrity Lab - CMB/Biology

Luke Hampton - 2nd Place Student Poster (\$150) - Tjalkens Lab - CMB/ERHS

Valerie Lindstrom - 1st Place Student Poster (\$250) - Prenni Lab - CMB/HLA

Paige Ostwald - 1st Place Student Talk (\$250) - Garrity Lab - CMB/Biology

CMB Travel Award

Ikaia Leleiwi - \$500 to attend and present research at the American Society for Microbiology National Meeting (currently postponed due to Covid)

Graduate Student News Continued

CMB Extracurriculars

- **Katy McIntyre** - Put on a networking workshop at the Plant Biology conference called Careers Beyond Academia, where early career scientists speak to professionals outside of academia to get career advice on alternate paths.

Starting a career before finishing the PhD: mid-pandemic

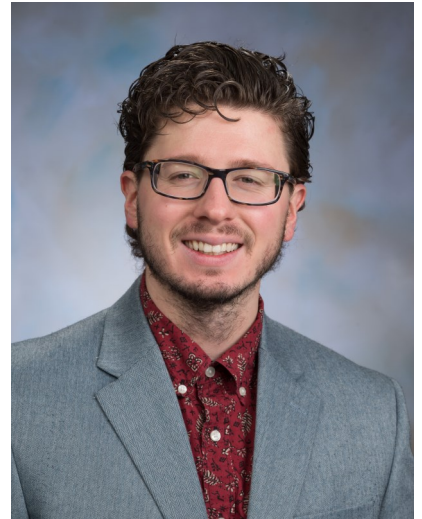
By Jared Luxton

I started my job search back in September of 2019: updating my LinkedIn, resume(s), and CV; thinking about articulating my skillset and accomplishments; taking cues and advice from Rich Feller and Kate Sherill in the qCMB/ GAUSSI sessions; and leveraging my personal and professional network (LinkedIn) for advice on the data science job search (especially Kristen Brown). I had a number of successful interviews and professional communications for various data-related positions across the country before my wife serendipitously Googled “Fort Collins Data Scientist” and found the USAJOBS listing for my current position. She and I noted that the job description perfectly aligned with the experiences and skillset I’ve cultivated during my PhD and our plan for the future. I applied in January and interviewed in March.

In April of 2020 I started my career in the USDA as a Data Scientist - the past few months have flown by and have been the most enjoyable, rewarding, and transformative time for my professional life, bar none. I work with an incredible group of people. I greatly admire my supervisor - she successfully on-boarded me and has enabled my continued success and achievements despite the unique challenges posed by teleworking and the pandemic. My core mission is to safeguard American agricultural interests through data. My core objectives are enabling access, usage, and interpretability of data for stakeholders and groups across various agencies. Meeting these objectives involves the use of programming languages (e.g Python, JavaScript), various software and data-centric platforms, and leveraging communication and project management skills. I serve on a number of projects with responsibilities varying from point of contact, building or maintaining data pipelines, or project management-type functions. Suffice to say that I am incredibly happy in my position and career trajectory, and highly recommend and encourage CMB students to consider the USDA and Federal Government for job prospects.

I continue to work on my PhD in the evenings and on the weekends. I have found that balancing the transition and handling the dual responsibilities to be relatively easy, thanks entirely to my wife’s unending support. A great thanks is also owed to my PI Susan Bailey for enabling and encouraging me to pursue learning and applying Python to our research – all starting from Erin Nishimura & Tai Montgomery’s Python course. As well, my personal mentors David Maranon and Paula Genik provided consistent advice and encouragement to always advocate for my career. I did it – and I achieved everything that I wanted! I’m always available to provide advice and guidance for others who wish to follow a similar path.

Thanks,
Jared



Jared will be presenting virtually on “Advice from the other side” in CM510 at 12pm on September 2nd. Be on the look out for a zoom invitation!

Sharing Science on the Radio Gives Broader Perspective for Scientists in Society

By Seré Williams

I was awarded the [AAAS Mass Media Fellowship](#) and got to write about science with our local public radio station, [KUNC](#). For 10 weeks this summer, I worked with the news team to write about current, local science-related news for the radio and web.

I applied for the fellowship because writing about science seemed fun, but I learned so much more. Here are some tips: Write for your audience. If a story was not Colorado centric and happening currently, it didn't matter how cool and interesting it was, it wouldn't get out there. Figure out what is happening and then tell your audience why to care about it; every story should include an "ah ha" moment. While writing may be a way to get thoughts down on paper, the first pass is seldom the best. Writing is a process: write, read, re-write, re-read, write again. Be clear and concise with words. Reorganize, shorten, and get to the point. Lastly, to all of the CMB scientists reading this, remember that science news is not written for you -- it's written for the accountants and lawyers and grocery store workers who know things that you probably don't.

Lastly, I gained a new understanding of the role that news plays in our country: it is a right protected by the first amendment and we must participate in it. If we despise, reject, or are infuriated with "the media," we are cutting off our own legs. Instead, if you take issue with news that you read, contact the news outlet and respectfully share your perspective. Or, try writing a piece and submit it to an outlet. [The Conversation](#) is a great outlet for academics. We -- especially scientists -- need to engage in journalism, because it plays a crucial role in democracy.

Links to my pieces can be found [here](#).



New CMB Students



Nick Berning

I will be starting the M.S program at CSU this fall with Dr. June Medford. I moved to Fort Collins four years ago, and got my bachelor's in biology with concentration in botany. Before this I lived in Bend, Oregon where I went to high school. I am very excited to continue my academic career at CSU with the CMB program and Dr. Medford. Inside the lab, I am interested in plant biology, synthetic biology, and gene editing. Outside of the lab, I enjoy gardening, cooking, and being outdoors.

New CMB Students



Lexi Keene

I am coming from Flagstaff, Arizona where I have spent the majority of my life. Most people think of Arizona as dry desert but Flagstaff is a mecca for runners, mountain bikers and climbers as it is situated in the San Francisco Peaks at 7,000 feet. I myself am an avid rock climber and have been part of the climbing community since I was twelve. I received my B.S. at Northern Arizona University in Biomedical Science in December of 2017. For the past two years I have been working as a Research Associate I at The Translational Genomics Research Institute, Pathogen and Microbiome Center in Flagstaff. While there, I worked on various BioDefense and *Mycobacterium tuberculosis* research before joining the clinical team at the start of the pandemic to process patient samples. I am excited to continue my educational journey at CSU and look forward to becoming part of this wonderful research community.



Kaz Knight

Originally from West Michigan, I graduated from Michigan State University with a B.S. in Biochemistry & Molecular Biology. I have spent the last four years working at the University of Colorado Anschutz Medical Campus, focusing on primary mitochondrial disease. My research has been concentrated in genetic variant characterization and functional assay development. I look forward to being part of the CMB program and contributing to innovative research at CSU!



Daniel Kunk

I'm originally from Washington D.C. After high school, I attended CSU in Fort Collins and graduated in 2020 with a BS in biology with a botany concentration. During my undergraduate career I worked in labs at CSU and abroad, focusing on synthetic biology and plant-insect interactions. Currently I am pursuing a PhD in the CMB program. In my free time I enjoy fishing and growing plants.

New CMB Students



Naly Torres Mangual

Growing up in Puerto Rico, a place with remarkable biodiversity, I have always had an adventurous soul and extreme curiosity for natural phenomena. The combination of this curiosity and deep love for science led my path into a Bacterial Toxins' lab at The University of Central Florida—where I developed an interest for Infectious Diseases. My desire to engage in this field is the reason why I decided to join the Cell and Molecular Biology program at CSU; striving to join a virology lab where I can get elite mentorship in this area. I strongly believe that CMB is the optimal place to transform my passion for discovery into necessary insights for defeating the molecular mechanism of diseases. I am grateful for the opportunity to become a member of the CSU graduate community, and cannot wait to meet all of you!



Pablo Maldonado Jr.

I'm originally from southern California and grew up in Los Angeles. I received a B.S in Cell and Molecular Biology and a B.A in Allied Health Chemistry in May of 2020 from Adams State University. I moved to Colorado in 2016 and was a collegiate athlete at ASU through 2018. My last two years at Adams State consisted of several independent, group, and intern research projects. These research topics ranged from meta-analysis, anti-bacterial resistance, gene identification, and monolayer analysis. Aside from research, my interests include fishing, paddle boarding, new food spots, and golfing. I hope to leave a great impression on the CMB, and further my personal and academic growth with my time here.



Angel McKay Whiteman

I grew up in the small town of Ridgway, Colorado, and moved to Fort Collins to pursue a B.S. in Horticulture at CSU. I began working in the Cancer Prevention Lab at the end of my sophomore year where I aided in multiple preclinical studies. In one of the most notable studies I was a part of, we used rat models to look at differences in susceptibility to cancer between those with high inherent aerobic capacity, low inherent aerobic capacity, and improved aerobic capacity due to exercise. I discovered a passion for molecular biology while working at the Cancer Prevention Lab, and am excited to continue my education in that area by pursuing an M.S. under Dr. June Medford. I look forward to contributing to the desalination genetic circuit being developed for use in *Arabidopsis*.

New CMB Students

Gaby Ramirez



Hello! I was born and raised in Michoacán, México but I have been in the States since 2010. I attended Front Range Community College and then transferred to Colorado State University where I graduated with a B.Sc. in Biochemistry and Molecular Biology. The first time I was exposed to research was during a research experience for undergraduates (REU) in the Biochemistry Department at CSU. My research projects have involved studying the contribution of a motor protein in the mitotic cycle and the role of a group of enzymes involved in metabolic pathways during the viral life cycle of dengue viruses. Most recently, I have been testing inhalants and disinfectants against SARS-CoV2. I am beyond excited to start this journey and I am looking forward to contributing to the scientific field.

Kyle Pfeiffer



I'm a California native turned Coloradoan when I was 13. I was a mover at my neighbors piano moving company for a few years, and now I've found my calling in CMB. I took kind of an odd path through the Front Range (Westminster), Metro State (Denver), and finally CSU but that only allowed me to meet even more great people with the passion I continuously look up to. I was an intern over at the Gardens on Spring Creek, slung cinnamon rolls at Silver Grill in my spare time, fed fish at the Hoke lab, and now I'm currently working in the Nalam lab on CRISPR Cas-9 suppression of viral replication in *Nicotiana*. Times are strange right now, but that hasn't quelled my excitement for the coming years and being a part of this team.

Victoria Nieciecki



I grew up in sunny San Diego, a city known for its zoo, Ron Burgundy, and the Los Angeles Chargers. After graduating from the University of California, Davis in 2011 with a B.A. in Genetics, I returned home and began working at MoBio Laboratories. For four years, I learned about environmental nucleic acid extraction methods and contributed to product development. In 2017 I joined Biota, an oil and gas microbiome diagnostic company. Using computational and traditional molecular biology methods, I helped improve and innovate DNA isolation techniques that target microbes found in petroleum source rock and hydrocarbon fluids. My interest in microbiome research and data science led me to pursue a graduate degree in the lab of Dr. Jessica Metcalf. I am looking forward to learning about the complex microbial communities that drive decomposition and using that knowledge to help build tools that can estimate time since death. Outside of the lab, I enjoy backpacking, traveling, and baking bread.

CMB is now a Special Academic Unit

On July 1, 2020, the Cell and Molecular Biology Program became a Special Academic Unit (SAU), representing the culmination of a lengthy process that the former Director, Howard Liber initiated in 2015. Prior to this, CMB functioned as a CIOSU (Center, Institute or Other Special Unit). The process involved changes to our Code and Policies & Procedures to bring them in line with the Faculty Manual, and creation of Memoranda of Understanding with the 16 Departments and 5 Colleges that our faculty and students hail from. While CMB members are unlikely to notice much immediate difference in the day-to-day running of the program, we will be having faculty meetings once each semester moving forward, with the first (virtual) one scheduled for September 24 at 4 pm. Other SAUs include the Graduate Degree Program in Ecology (GDPE), Molecular, Cellular & Integrative Neurosciences (MCIN) and the School of Biomedical Engineering (SBME).



CMB Seeking to Improve Research Culture at CSU

By Mark Zabel

We have seen strides being made to improve the recruitment, retention, and advancement of women and minorities in STEM fields. The advancement of URM and female PhD students to post-doctoral and faculty positions continues to lag behind that of their white male counterparts. The existence of gender, racial, and other biases persists, damaging research integrity and resulting in a completely unacceptable loss of talent.

Improving the climate and culture for women and minorities requires that individuals; especially those holding power, acknowledge that implicit and explicit biases persist in biomedical research environments. It is imperative that our colleagues acquire the ability to recognize incidents and/or a culture of bias to ensure they intervene and prevent them going forward.

In an effort to improve the culture at CSU for URM and female scientists, we will implement a program funded through a supplement awarded to the CMB T32 training grant that will benefit our entire CSU community. First we will conduct a climate survey of the biomedical researcher environments at Colorado State University to identify specific issues of explicit and implicit gender and race biases. Using this information, we will develop training videos, seminars, and workshops for faculty. Training will be provided by ADVANCE-Geo PIs directly related to qCMB faculty and these faculty will be charged with engaging other faculty, staff, and trainees in discussions surrounding climate and culture and bystander intervention training. From this training, T32 faculty preceptors will create Codes of Conduct for their labs and departments. Training materials specific to biomedical research will be developed and disseminated throughout the CSU biomedical research community.

We ask that you participate in the culture survey that will be emailed out in the coming weeks. Your input is a critical component and will be a baseline for our discussions and will shape the training videos, workshops, and seminars that will be offered throughout the academic year. We hope you, as stakeholders in this process, will offer your opinions and receive training information honestly and openly.

Thanks in advance for your participation and willingness to engage in this important process to improve the culture of biomedical research at CSU.

Faculty Awards and News

CCTSI Colorado Pilot Program Awards, each worth \$60,000

Jessica Metcalf - Animal Sciences

Dawn Duval - CVMBS

Seonil Kim - CVMBS

Jozsef Vigh - CVMBS

Newly Tenured CMB Faculty

Cris Argueso - Ag Bio

Brian Geiss - MIP

Steven Markus - Biochemistry

Candace Mathiason - MIP

Tim Stasevich - Biochemistry

Claudia Wiese - ERHS

Kelly Wrighton - Soil & Crop Sciences

2019 Teaching, Mentoring, and Other Awards

Greg Florant - Bio - Jack E. Cermak Outstanding Advisor Award, Graduate Award

Erin Nishimura - BMB - Early Career Faculty Excellence in Undergraduate Teaching and Mentoring Award

Rushika Perera - MIP - American Chemical Society Young Investigator

Tom Santangelo - BMB - Faculty Excellence in Undergraduate Teaching and Mentoring Award

Tom Santangelo - BMB - Interdisciplinary Scholarship Award

Dan Sloan - Bio - Provost's Awards for Faculty Excellence: Provost Research Scholar

Jeff Wilusz - MIP - Oliver P. Pennock Distinguished Service Award

CMB Professors Work to fight COVID-19

In May, Dr. Rushika Perera, MIP, received a grant from the Boettcher Foundation's COVID Biomedical Research Innovation Fund to screen drugs, chemicals, and other compounds for use in fighting against the COVID-19 causing virus. Dr. Brian Geiss, MIP, is working on logistics for the project and establishing company contracts along with Dr. David Paterson, assistant vice president for research, translation, and commercialization. The Boettcher Foundation, established in the 1940's, funds biomedical research in Colorado. First year CMB student Gaby Ramirez has spent her summer working on Dr. Perera's drug testing project.

Drs. Greg Ebel and Nicole Ehrhart also received funding for COVID-19 research. Their project aims to test for asymptomatic health care workers and nursing home residents. This early detection will allow long-term care facilities to temporarily remove asymptomatic carriers of COVID-19 from the facility, preventing spread to vulnerable populations.

CMB Welcomes New Staff

CMB Newsletter Writers and Editors

Student Editors: Hannah Berry and Heather Deel

Contributors: Heather Deel, Kayl Ecton, Ikaia Lelewi, Kailee Reed, and Kate Sherrill

Faculty Editor: Carol Wilusz

Kate Sherrill has been hired as the T32 Program Manager/CMB Graduate Advisor. Her background is in counseling and career development. She will be supporting the qCMB Trainee program and providing supplemental advising as needed.

Kaidlyn McDonald is a student employee providing administrative support and outreach. She is majoring in Microbiology.

Please join us in welcoming Kate and Kaidlyn!

CMB Publication Highlights

- Ahuja N, Ostwald P, Bark D, Garrity D.** Biomechanical Cues Direct Valvulogenesis. *J Cardiovasc Dev Dis.* 2020 May 19;7(2):18. doi:10.3390/jcdd7020018.
- Reed KJ, Svendsen JM, Brown KC,** Montgomery BE, Marks TN, Vijayasathay T, Parker DM, **Nishimura EO,** Updike DL, **Montgomery TA.** Widespread roles for piRNAs and WAGO-class siRNAs in shaping the germline transcriptome of *Caenorhabditis elegans*. *Nucleic Acids Res.* 2020 Feb 28;48(4):1811-1827. doi:10.1093/nar/gkz1178.
- Althumairy D,** Postal K, **Barisas BG,** Nunes GG, Roess DA, **Crans DC.** Polyoxometalates function as indirect activators of a G protein-coupled receptor. *Metallomics.* 2020 Jul 22;12(7):1044-1061. doi:10.1039/d0mt00044b.
- Brown MA, Edwards MA, Alshiraihi I,** Geng H, Dekker JD, Tucker HO. The lysine methyltransferase SMYD2 is required for normal lymphocyte development and survival of hematopoietic leukemias. *Genes Immun.* 2020 Feb;21(2):119-130. doi:10.1038/s41435-020-0094-8.
- Althumairy D,** Murakami HA, Zhang D, **Barisas BG,** Roess DA, **Crans DC.** Effects of vanadium(IV) compounds on plasma membrane lipids lead to G protein-coupled receptor signal transduction. *J Inorg Biochem.* 2020 Feb;203:110873. doi:10.1016/j.jinorgbio.2019.110873.
- Brown MA, Alshiraihi I, Hassell K,** Lanning S. Clinical Sciences-Leading the Way in Competency-Based Biomedical Education. *Vet Sci.* 2020 Feb 17;7(1):23. doi:10.3390/vetsci7010023.
- Abdel-Ghany SE, Ullah F, Ben-Hur A, Reddy ASN.** Transcriptome Analysis of Drought-Resistant and Drought-Sensitive Sorghum Genotypes in Response to PEG-Induced Drought Stress. *Int J Mol Sci.* 2020 Jan 24;21(3):772. doi:10.3390/ijms21030772.
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