

CMB Newsletter

Issue 14 | Spring | 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!



Tips for Communicating as a Student of Science: An Interview with Dr. Marilee Long

By Kai Lelewi



Effective communication is crucial for success as a student and a professional, a notion clear to me now more than ever. In my first year as a CMB student, written and verbal conveyance of understanding has become intrinsic in my daily routine. Students must present research and summarize it in concise posters and publications. Professional communication of scientific ideas will continue through our careers and define how we're perceived by colleagues and employers. Insight gained from an interview with a professional communicator in science, Dr. Marilee Long, is outlined here. The hope – to provide a unique perspective on quality scientific communication to the CMB community, and to present resources to those interested in pursuing a scientific writing career. Dr. Long is a professor in the Journalism and Media Communication Department and is

affiliated with the Colorado School of Public Health. Her research interest is health and science communication, and most recently, she has embarked on a collaborative venture looking at air quality data collected by citizen scientists. How people from the community access and act on air quality information pertaining to their respective neighborhoods is of particular interest to her.

1. Know Your Audience!

When asked what communication behavior, approach, or practice Dr. Long would most recommend a first-year graduate student embrace, she answered:

"Know your audience and know your goals in communicating with them" – Dr. Long

Whether writing or speaking, it is paramount to know who you're communicating with and adjust your language accordingly. A concept should be expressed differently in accordance with the audience's background and comprehension of the subject. A lay audience may be confused by field-specific jargon. It's best to keep your language simple, and focus on an efficient exchange of ideas. That said, when speaking to fellow researchers familiar with the words, field-specific jargon can greatly enhance the efficiency and depth with which an idea is conveyed.

Tips for Communicating as a Student of Science: An Interview with Dr. Marilee Long

Continued

By Kai Lelewi

2. Become Involved with a Professional Writing Association

Dr. Long suggests that science students interested in writing become involved with professional writing associations. Organizations offer opportunity and community for the burgeoning scientific writer and the experienced wordsmith alike. Fellowship and grant opportunities from these associations are also available.

[National Association of Science Writers](#)

[Society of Environmental Journalists](#)

[American Association for the Advancement of Science](#)

3. Cater your Studies to your Interests

I asked Dr. Long for her recommendations to CMB students interested in scientific writing careers. She responded:

"...read that which you want to do." – Dr. Long

If your goals are to write articles for [Scientific American](#), start by reading Scientific American. If you want to write a book about science written for a general audience, then read those types of books (examples: [10% Human: How Your Body's Microbes Hold the Key to Health and Happiness](#), [The Mosquito: A Human History of Our Deadliest Predator](#)).

Dr. Long also recommended that those interested in a writing career cater their studies to reflect such. One class at CSU that she suggested, [JTC 461 Writing About Science, Health, and Environment](#), can provide a journalistic aspect to a science degree. She also mentioned informational interviews as a quick way to gain firsthand information about a career, class, or field you're interested in.

"... do an informational interview with someone that has the job you want and find out how they got there." – Dr. Long

Interview people you want to be like, who have the job you one day want. Ask them to tell you their story, how they got where they are, and what actions they took to get their current job. Informational interviews can help with networking and finding mentors who will guide you both personally and professionally.

4. Practice

Communicating science, in writing or speech, requires practice. I asked Dr. Long about her advice to calm nerves while speaking in front of an audience, like at a conference or symposium. Her response:

"The biggest thing that will calm your nerves is practice." – Dr. Long

Dr. Long recommended practicing your speech well ahead of the presentation date. The more realistic the practice the better. Try giving your talk in front of an audience prior to the big day. Practicing in front of fellow students or people in your lab can offer opportunity to gain feedback on the content and delivery of your presentation.

Almost as important as practice, Dr. Long recommends coming to your talk well rested. She recounted how she was able to recall words much better during her lectures with a quality rest the night before. Sleep and preparation, the two keys to physical and mental wellbeing prior to a public speaking event.

I'd like to thank Dr. Long for sitting with me in this interview, and for her words of wisdom to the CMB community about communication. Dr. Long, and other educators like her, are a wealth of information. They are more than happy to help you reach your scholastic and professional goals. A feat facilitated by effective communication.

Graduate Student Awards

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!

Hannah Berry - C. Argueso Lab (BSPM) - BSPM R. Ralph Baker Graduate Student Award for Research Excellence

Jared Luxton - Bailey Lab (ERHS) - PRSE - Cancer Biology and Comparative Oncology Summer Fellowship \$10,000

Jared Luxton - Bailey Lab (ERHS) - PRSE Cancer Biology and Comparative Oncology 2019-2020 qCMB Fellowship \$5,000

Alissa Mathias - Regan Lab (MIP) - PRSE – Cancer Biology and Comparative Oncology Summer Fellowship \$10,000 – Studying the tumor microenvironment and the influence of osteosarcoma cells on macrophage metabolism utilizing a multisensor platform.

Alissa Mathias - Regan Lab (MIP) - PRSE – Cancer Biology and Comparative Oncology 2019-2020 qCMB Fellowship \$5,000 – Exosomal Cargo analysis from human osteosarcoma cells and the role of these exosomes on lung metastases and drug resistances.

Katy McIntyre - C. Argueso Lab (BSPM) - BSPM Howard Schwartz Award for Excellence in Integrated Pest Management

Katy McIntyre - C. Argueso Lab (BSPM) - Elected Vice Chair of the American Society of Plant Biologists (ASPB) Ambassador Alliance

Reed Woyda - Abdo Lab (MIP) - 2nd place poster at the ASM – Rocky Mountain Branch Meeting

CMB Outstanding Student Awards

This \$250 award is given to students who apply for external fellowships. Let's hope they also receive the fellowships they have applied for! All CMB students can receive this award from the CMB Program. Submit a fellowship application to an external funding body and follow the instructions at <https://cmb.colostate.edu/fellowships-and-scholarships/>. The next deadline is May 1, 2020 for Fall 2020.

Spring 2020 Awards:

Luke Hampton, Tjalkens Lab (ERHS) – applied for NSF-GRFP

Valerie Lindstrom, Prenni Lab (HLA) – applied for NSF-GRFP

Katy McIntyre, C. Argueso Lab (BSPM) - applied for USDA-NIFA Pre-Doctoral Fellowship

Sean Merriman, L. Argueso Lab (ERHS) – applied for NSF-GRFP

Paige Ostwald, Garrity Lab (Biology) – applied for American Heart Association Pre-Doctoral Fellowship



CMB Travel Awards

CMB also offers travel awards! The next deadline is March 1st for travel through June 30, 2020. Find more information at: <https://cmb.colostate.edu/travel-awards/>

Faculty Grants and Awards

Jennifer DeLuca (BMB) received the CNS Professor Laureate Award

Erin Nishimura (BMB) received the CNS Early Career Faculty Excellence In Undergraduate Teaching Award

Jessica Metcalf (Animal Sciences) received two NIH grants: 1. Human Decomposition: Effect of Indoor Versus Outdoor Decomposition on the Microbiome of Human Cadavers and Implications for Future Forensic Research, 2. Estimating the postmortem interval of human skeletal remains using rapid, inexpensive microbiome tools

Tom Santangelo (BMB) received the CNS Faculty Excellence In Undergraduate Teaching and/or Mentoring Award

Jozsef Vigh (BMS) received an NIH R01 grant for the project Opioid Modulation Of Retinal Ganglion Cells Providing Photoentrainment Of The Circadian Clock

Chaoping Chen (BMB) received an NIH R01 HTS TARGETING HIV-1 PROTEASE AUTOPROCESSING FOR FIRST IN CLASS DRUG DISCOVERY

Dan Regan (MIP) received an NIH R03 ALVEOLAR MACROPHAGES AS SENTINELS OF OSTEOSARCOMA PULMONARY MICRO-METASTASIS

New CMB Faculty

Franck Dayan (BSPM)

Weed genomics, metabolism, and herbicide resistance



Brian Foy (MIP)

Vector-borne pathogens including malaria and West Nile virus



Michael Kirby (Computer Science and Mathematics)

Computational math, and large data modeling



Tom LaRocca (Health and Exercise Science)

Lifespan and lifestyle strategies



Charlene Van Buiten

(Food Science and Human Nutrition)

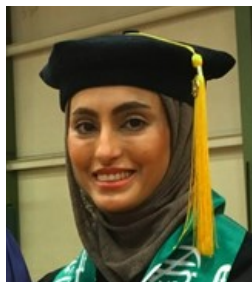
Protective role of plant-



Congrats to the Graduating CMB Students!!

Duaa Althumairy, Ph.D. Barisas and Roess Labs:

Effects of Luteinizing Hormone Receptor Expression Levels on Receptor Aggregation and Function



Matthew Dilsaver, M.S. Marcus Lab:

Investigating the Regulators of Cytoplasmic Dynein



Fabio Fontes, Ph.D. Crick and Crans Labs:

The pH-dependance and protonophoric mechanism of pyrazinoic acid and its structural analogues



Erin Lynch, M.S. Geiss Lab:

The DXO Decapping Exonuclease is a Restriction Factor for RNA Viruses



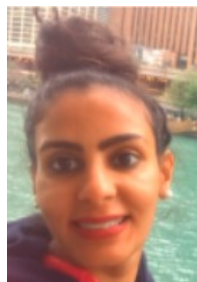
Hanan Shanta, Ph.D. Barisas and Roess Labs:

Studying the Signaling Complexes Formed when Human Chorionic Gonadotropin Binds to Luteinizing Hormone Receptors



Taghreed Al Turki, Ph.D. Bailey Lab:

Characterizing the Role of Telomeric RNA (TERRA) in Telomeric DNA Double-Strand Break (DSB) Repair



Mustafa Elramly, Ph.D. Barisas and Roess Labs:

Effect of Ageing on Metabolic Status and Hormone Responsiveness in the Ovary



Adam Heck, Ph.D. C. Wilusz Lab:

Influence and regulation of PCBP2 and YTHDF2 RNA binding proteins during self-renewal and differentiation of human induced pluripotent stem cells

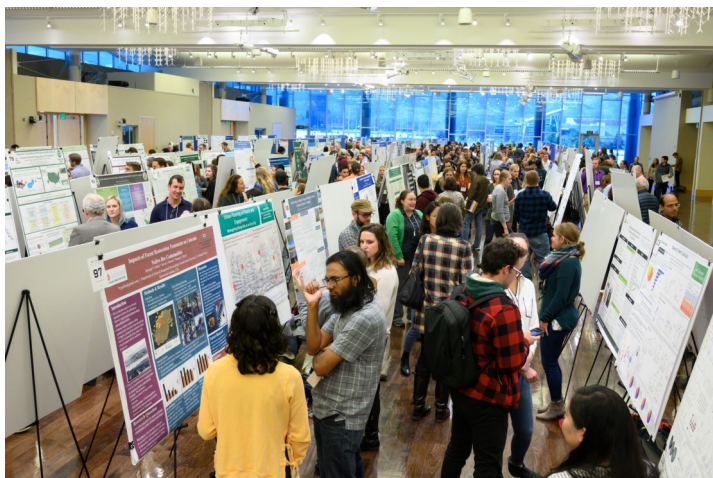


Vanessa Selwyn, Ph.D. Telling Lab:

Novel *in vitro* approaches delineate prion strain conformational variation



CMB Students Presented at the Annual Graduate Student Showcase



CMB Student Showcase Winners:

Adam Heck - C. Wilusz Lab, MIP - Undergraduate Choice Research Top Scholar

Jared Luxton - Bailey Lab, ERHS - 1st Place Top Scholar for University Wide Graduate Programs

Paige Ostwald - Garrity Lab, Bio - Undergraduate Choice Research Top Scholar

Seré Williams - Reddy Lab, Bio - New Graduate Student Award Research Top Scholar

New CMB Students

We are excited to welcome two new students to the CMB program this semester!

Cameron Pearce

I'm from Meridian, Idaho. Most people recognize Idaho as the boring potato state, but I grew up with an endless wilderness at my backdoor and quick access to skiing, fishing, and trails. Right out of high school, I moved to Fort Collins to pursue a B.S. in Biochemistry and enjoy the outdoors in the Colorado. Along the way, I got a student research position in a tuberculosis research lab. This led me to discover my passion for research, and eventually pursue a thesis-based M.S. in Microbiology. My research projects have ranged from anti-tuberculosis drug discovery, to imaging fluorescent bacilli within lung alveolar macrophages. I'm eager to continue my research under Dr. Gonzalez-Juarrero at CSU and further contribute to the progression of disease research.



Carlos Juarez-Guzman

I grew up in the town of Brighton, Colorado. I graduated with a B.S. in microbiology from Colorado State University. At CSU, I worked in several research environments and labs, most notably with the Microbial Ecology Group and Dr. Paul Morley. There, I helped investigate microbiomes of food production systems. I will continue my academic career pursuing an M.S. at CSU where I'll be working with Dr. Cris Argueso. I look forward to contributing to the development of more sustainable food production systems.

CMB Students Traveled to Conferences around the World to Share their Research!

These students have received a CMB Travel Award to attend these conferences/workshops.

Alissa Mathias - Bioenergetics Master Class, San Francisco, CA

In March, I attended a bioinformatics conference at the Buck Institute in San Francisco, California to learn more about bioenergetics and how it applies to current research in the field of studying metabolism. This course was geared towards the use of Seahorse metabolic analyzers and other instruments including Oroboros oxygraph. This course helped me with the understanding of how the data generated from the oxygen and pH sensors could help reveal some of the metabolic characteristics of a specific cell type. This course also showed how when adding varying substrates and inhibitors can play a role in altering the metabolic profile. This information was then used for a summer collaborative project I'm currently working on utilizing a multisensor platform manufactured by the engineering department at Colorado State that can measure variables like oxygen, glucose, pH, lactate production, and hydrogen peroxide production simultaneously in the same well. The novelty to this instrument is the capability to measure multiple variables at the same time and the ability for the sensor to work with smaller cell numbers or smaller sample sizes.



Dr. Mike Story, Distinguished Chair of Radiation Oncology at UT Southwestern, and Jared Luxton at RADRES 2019

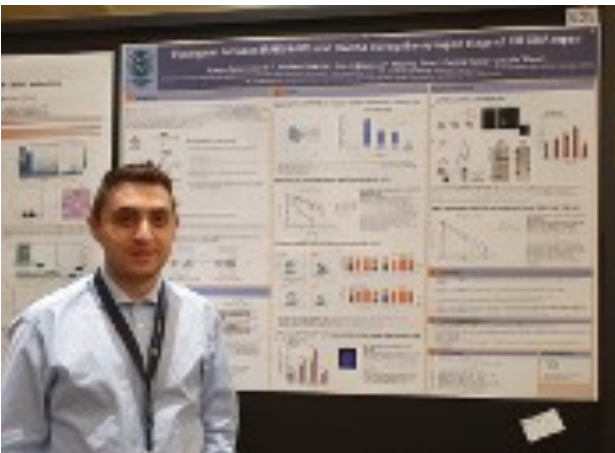
Jared Luxton - Radiation Research Society Annual Meeting 2019, San Diego, CA

The Radiation Research Society is an international group of academics and industry professionals, focused on the research and use of radiation, particularly for biological applications. I gave an oral presentation on my research on the impacts of space radiation on the health of astronauts aboard the International Space Station, during a NASA co-sponsored session. The session focused on the known impacts of spaceflight on human health, and what research directions should be undertaken to ensure astronaut safety and performance in-flight, as we approach the 2024 lunar missions associated with the Artemis program. I returned from the meeting with a number of new ideas for my own research (notably new applications of machine learning) and new professional contacts. Well worth the time!

More CMB Student Travel

James Curlin - 37th Annual Symposium on Non-human Primate Models for AIDS, San Antonio, TX

Attending a conference for a second time in a row is arguably more rewarding than attending it the first time around. I arrived in San Antonio this past November in order to attend the 37th Annual Symposium on Nonhuman Primate Models for AIDS and was greeted with weather more appropriate for springtime in Colorado than November in Texas. Over the course of the week I was able to reconnect with colleagues I met the previous year, hear some groundbreaking research in the field of HIV, and I presented a poster of my work detailing the evolution of SIVsm into HIV-2 using humanized mice. The staff scientist in our lab, Kimberly Schmitt, also attended the conference and was selected to display our work with an oral presentation. During the downtime available, I was able to explore the famous "Riverwalk" of San Antonio, and despite the weather I got a fantastic history lesson at the Alamo. The conference was wrapped up with a banquet at the Briscoe Western Art Museum, where I got to view historic images of Cowboys and Native Americans while also dancing to the cupid shuffle. Our banquet speaker was Alan Shulz who showcased the impact that nonhuman primate research has had over the past 40 years. Overall, 10/10 experience, would attend again.



Platon Selemenakis - Radiation Research Society Annual Meeting 2019, San Diego, CA

This past November I visited San Diego, California to attend the 65th annual Radiation Research Society meeting. I was fortunate enough to be awarded the CMB travel award that covered part of the expenses. In this meeting, I had the opportunity to meet, interact, and exchange ideas with other peers in the field, PhDs, and Postdocs. This meeting was really interesting since a lot of the ongoing research that was presented in the conference applies to my project and helped to move my project forward. Also, the conference was really helpful as

they organized a workshop for career opportunities in the field of radiation biology. Finally, I got to interact with CSU alumni from my department in Environmental and Radiological Health Sciences.

Lisa Schlein - American College of Veterinary Pathologists Conference, San Antonio, TX

This past fall, I attended my professional organization's conference - American College of Veterinary Pathologists. While there, I got to present a poster on my PhD poster, engaging with other clinicians and scientists, and I was fortunate to meet Dr. Mary Anna Thrall, a well-known veterinary clinical pathologist who has contributed to over 300 publications and scientific presentations over her career. Dr. Thrall actually spent 32 years at Colorado State University, but my time as a veterinary student did not overlap with her tenure. She is currently working as a pathologist at Ross University in the West Indies. Despite specifically meeting Dr. Thrall for the purposes of getting a selfie for CMB, I failed to actually obtain a photo of us at the conference. ACVP was a great opportunity to network with others and learn a great deal about some emerging cancer therapeutics. Thank you for your support, CMB!

More CMB Student Travel

Sara Oehmke - 3rd International Conference on Plant Synthetic Biology, Bioengineering, and Biotechnology, Cambridge, UK

Last October, I received a CMB Travel Award to attend the 3rd International Conference on Plant Synthetic Biology, Bioengineering, and Biotechnology in Cambridge, UK. The conference was coordinated by AIChE, an international and vast community of chemical engineers and related engineers and scientists. What stood out about this conference was the focus on plant biotechnology, unlike most biotechnology conferences which focus on unicellular organisms with plant researchers sprinkled here and there. With the smaller scope of this conference I was able to attend talks and chat with and present research to a variety of scientists all studying plants including Christine Raines and Andrew Hanson. Plus, Cambridge was a beautiful town with wonderful gardens.



Upcoming Events and Opportunities

CSU Speaks Round 2

We want YOU to promote your AWESOME research by presenting at **CSU Speaks round 2**! Please submit a jargon-free abstract (300 words) describing the 15-minute talk that you would like to give to a broad audience at New Belgium on April 18th from 1-5 PM.

Science in Action is inviting researchers from all around CSU to present at a “TED Talks”-like interdisciplinary conference at New Belgium Brewery. **CSU Speaks** encourages graduate students, postdoctoral researchers, and professors across the university to present their work to the public in an easily accessible, 15-minute talk. This event will serve three important purposes: 1) encouraging scientists to communicate their work in a clear, jargon-free manner to members of their community, 2) showcasing CSU research, thereby gaining community support for science and research funding and 3) developing connections between scientific organizations and the local community.

This is an opportunity to share your research with the Fort Collins community, help involve people in the work we do and make some new friends in the process! We welcome abstracts of both empirical and philosophical natures to showcase the diverse body of research that is happening at CSU. Investigators at all stages are encouraged to submit an abstract.

Your abstract will be peer-reviewed. Abstracts will be accepted based on content, available space, and diversity of subject matter.

Guidelines for abstract submissions:

1. The abstract must be fewer than 300 words and be jargon-free (language that is accessible to the general public attending the event).
2. The abstract should be single-spaced, 12pt font.
3. The title must be fewer than 80 characters.
4. Please submit your abstracts to: <http://gsc.colostate.edu/csu-speaks/> by Feb 10 2020

Upcoming Events and Opportunities Continued

CMB Recruitment

This year at least 25 potential new recruits will be visiting CSU on **February 9 - 10, 2020**. There are multiple events to meet the students, please make an effort to attend! Please be on the lookout for emails with more details.

Sunday, February 9, 3-6:45pm Open House Check in at Student Services 133. Current students are encouraged to attend, please bring your choice of board or card games, or just drop by to visit. **7-9pm** Current CMB students will bring recruits to Beau Jo's downtown for dinner

Monday, February 10, 6-9pm Program wide gathering at Coopersmith's, Pool Side

Science on Tap

Stop by Wolverine Farm Letterpress & Publick House in Fort Collins every third Monday of the month from 6:30-7:30pm to hear about research in a fun and relaxed environment. See <https://www.facebook.com/SoTFoCo/> for scheduled talks.

Colorado Science and Engineering Fair

When: Thursday, April 2, 2020

Where: Colorado State University

What: Sign up to volunteer and judge or attend and meet the next generation of future scientists.

See <http://www.csef.colostate.edu/> for more details.

Front Range Microbiome Symposium

When: April 23-24, 2020

<http://fronrangemicrobiomesymposium.com/>

Keynote speakers Rob Knight and Margaret McFall-Ngai. Registration is now open! Register early to attend as the conference reaches capacity most years.

39th Annual Meeting of the American Society for Virology (ASV)

When: June 13-17, 2020

Where: Colorado State University

Volunteer: At least 125 volunteers are needed to support workshop and speaker ready rooms, act as ushers for plenary sessions, assist with directions around campus and poster sessions. Volunteers will receive free registration!! Email Rushika Perera (Rushika.Perera@colostate.edu) to volunteer.

Attend: Submit an abstract by January 31, 2020

qCMB Summer Symposium

On **May 20, 2020**, the qCMB training program will be hosting its first summer symposium with [Anne Carpenter from the Broad Institute](#) as Keynote Speaker. Dr. Carpenter develops advanced methods and software tools to quantify and mine the rich information present in cellular images to yield biological discoveries. Her laboratory is best known for developing [CellProfiler](#) and [CellProfiler Analyst](#). More details will be shared very soon. Contact [Alissa Williams](#) or [Jared Luxton](#).

CSU Demo Day

Sponsored by CSU Ventures, CSU Demo Day celebrates innovation and entrepreneurship on campus and Northern Colorado. Submit an abstract by March 6, 2020 to present your original ideas on April 23, 2020. Over \$30,000 in cash prizes will be awarded.

For more information, visit <https://www.csudemoday.org/>.

CMB Newsletter Writers and Editors

Student Editors: Hannah Berry and Heather Deel

Student Writers: Casey Berezin, Heather Deel, Ikaia Leleiw, Kailee Reed, and Seré Williams

Faculty Editor: Carol Wilusz

CMB Publication Highlights

Current and Former CMB Students. CMB Faculty

Thamm DH. Canine Cancer: Strategies in Experimental Therapeutics. *Front Oncol.* 2019 Nov 15; 9:1257. doi: 10.3389/fonc.2019.01257. eCollection 2019. Review. PubMed PMID: 31803625; PubMed Central PMCID: PMC6873901.

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