

Greetings from the Department of Molecular Biology! We dedicate this issue of *THE MESSENGER RNA* to the MB majors and minors of the class of 2020. We are sorry that we had to cancel the 2020 Molecular Biology Day and that there was no opportunity to celebrate your graduation. We hope that there will be a celebration for the graduates of 2020 back on campus at some point in the not-to-distant future. For all alumni, here is an update from MB since our last newsletter in Spring 2020.

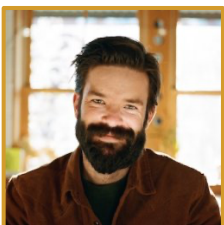
New Faces in the Department



Carrie Moon, Ph.D. is the new Technical Director for MB. Carrie joined the dept in September of 2017. Carrie earned a BA in Biology and Chemistry from UCCS, an MS in bioethics from Trinity International University, and a Ph.D. in Molecular and Cellular Biophysics from the University of Denver.



Janna Brown is the new Laboratory Coordinator in MB. Prior to arriving at CC in April of 2020, Janna earned a BS in Biology, a BA in Political Science, and worked in a few different research labs at the University of Alabama gaining diverse experiences including *Drosophila* genetics.



Matt Bowers, Ph.D. joins us for the '20-21 academic year as a visiting professor. In addition to contributing to our core courses, Matt will be teaching an upper-level elective called "Molecules to Memory", and a non-majors course in genetics. Matt received his BA from Bowdoin College and recently completed his Ph.D. Colorado State University in the Department of Biomedical Sciences.



Sara Worsham joined us as the MB paraprofessional for the '19-20 academic year and stayed on for more fun in '20-21. Sara graduated from CC as an MB major in 2019 and did her senior thesis on research she did with Phoebe Lostroh and Kristine Lang (Physics). This will be Sara's last year as paraprof as she has been accepted to medical school for the fall of 2021 – Congrats Sara!

Congratulations Professor Ralph Bertrand!

Professor and Chair Ralph Bertrand is in his final semester at the college with his sights set on retirement in December 2020. Ralph started at CC in 1991 and has taught a wide range of courses such as Genetics, Cell Biology, Advanced Genetic Analysis, Human Evolution, and the Science and Ethics of Genetics. Ralph served as the Director of the Howard Hughes Undergraduate Program at CC for over a decade, directed CC's Biology in Chinese Culture Program for several years, and is the author of 27 peer-reviewed research articles and two books.



Recent Publications, Research Grants, and Achievements by MB Faculty, Students, & Recent Graduates

Emma Carlson '20 was awarded a Fulbright scholarship to study antimicrobial drug resistance at the University of Sheffield.

Allie Kreitman '21 was recently named as a 2020-2021 Barry Goldwater Scholar. The Goldwater Scholarship Program “seeks to identify and support college sophomores and juniors who show exceptional promise of becoming this Nation’s next generation of research leaders in these fields.”

Carissa Sherman '21 won first place in the Arkansas Medical Dental and Pharmaceutical Association's student essay contest where she wrote about social justice in healthcare to help reduce healthcare disparities.

Jia Mei '21 was awarded a 2019 Gilman International Scholarship to study at Fudan University in Shanghai, China.



Emma Carlson, '20



Allie Kreitman, '21



Carissa Sherman '21



Jia Mei '21

Assistant Professor Olivia Hatton and her collaborators at Stanford had an article on the NK cell response to EBV accepted at *Scientific Reports* in October 2020.

Associate Professor Darrell Killian recently published on the role of the RNA-binding protein Orb in neuron development in *Gene* (2020).

Assistant Professor Jennifer Garcia was recently awarded a Boettcher Webb Waring Award for \$235,000 to support her work on autophagic RNA decay.



Amyotrophic Lateral Sclerosis (ALS) is a neurodegenerative disorder with no curative treatment. Mutations in genes that play roles in ribonucleoprotein particle (RNP) formation, autophagy, and mitochondrial function have been implicated in ALS. Dr. Jenn proposes to use the yeast, *S. cerevisiae*, to explore the relationship between these pathways. Importantly, Dr. Jenn will incorporate students into her research project.

“My hope is that these research experiences will help foster the growth of our students to become contributing members of the biomedical community in Colorado and beyond.”

– Dr. Jenn



MB497: Senior Capstone in Molecular Biology

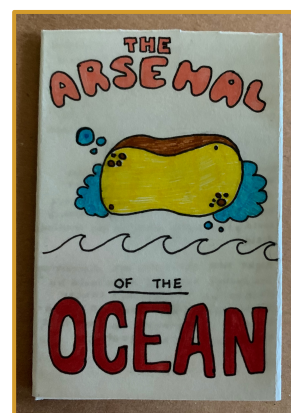
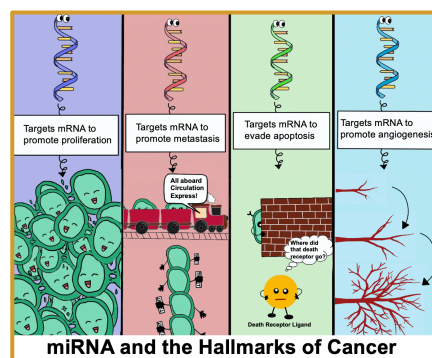
Happy MB seniors in Block 6 of 2020 at a Breaking Bread Breakfast right before the pandemic shutdown went into effect.

Back (left to right): Jio Chang, Peter Lehman, Lucia Costanza, Amy Ladd, Haley Harris, Elizabeth Wagner.

Front (left to right): Charmie Vang, Maddie Smith, Ida Maung, Alex Barone-Camp.

Teaching and Distance Learning During the Pandemic

- All courses in Block 7 and 8 in the Spring of 2020 were online.
- MB Faculty are adapting to teaching online using a mix of technologies and pedagogical approaches while students likewise are adapting to distance learning. Professors are using a combination of synchronous lectures with Zoom, pre-recorded asynchronous lectures posted to the cloud, and many creative assignment ideas, like the Choose Your Own Adventure projects in MB401 – The Molecular and Cellular Biology of Cancer course. Excerpts from the projects of Faith Kim '21 (top) and Dervla Moore-Frederick '21 (bottom) shown on the right.
- The professors that teach the MB201 lab course worked with MB staff to make “lab kits” to send to students taking the course via distance learning to enable hand-on experiences with tasks such as accurate pipetting and loading an agarose DNA gel.
- In Fall 2020, most courses have been online. However, Sara Hanson is teaching the MB201 lab course as a hybrid course to allow for hands-on lab instruction. Several students are also working in research labs with the appropriate precautions such as wearing masks and social distancing.
- What are the challenges? Zoom fatigue, students spread out across many time zones, old professors learning new tricks, and family members and pets Zoom bombing class!



Research at a Distance

Taking a break from their working on their review article on EBV and the Hallmarks of Cancer, the Hatton Lab did a virtual escape room for fun and community building during the summer of 2020. Shown here: Allie Kreitman, Olivia Hatton, and Mahala Moran. Did they escape?