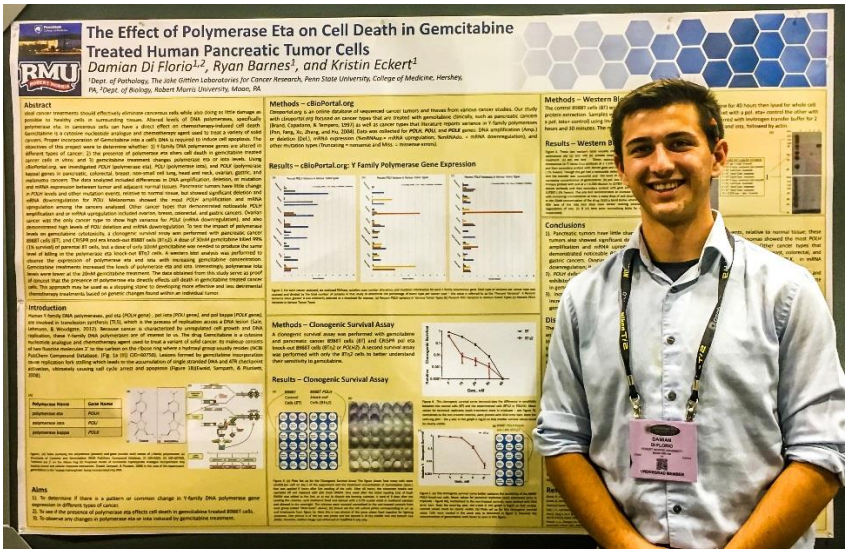
ASCB Conference – Damian Di Florio

December 3rd-5th I had the great opportunity to attend the American Society for Cell Biology's (ASCB) 56th Annual Meeting in San Francisco. After completing my 3rd summer of research at the Penn State College of Medicine in Dr. Kristin Eckert's lab, financed by the Gittlen Cancer Research Foundation, I was referred to the ASCB's conference and society. I joined the society as an undergraduate member and submitted an abstract of my work to present at the conference. My abstract was accepted to the conference in early November. The first weekend of December I flew out to San Francisco early Friday morning without a clue of what to expect – the furthest West I had ever been was San Antonio, TX. When I had finally arrived in San Francisco, I was absolutely amazed with my surroundings.



The conference was a gathering of some of the greatest researchers in cell biology from all over the world. The focus of this year's meeting was the use of the CRISPR Cas-9 gene editing system which was has recently been utilized to create protocols that edit genes with high precision and accuracy. My project utilized CRISPR Cas-9 technology to genetically modify one of the cell lines Dr. Eckert's lab has used for other experiments in the past.

The first day of the conference, I attended several symposiums discussing current research surrounding the genome editing tool, CRISPR Cas-9, and its applications for microscopy and other visualization tools. Later that day, I attended the undergraduate program which featured Dr. Janet Iwasa, a Technology Entertainment and Design in Education (TEDed) 2014 fellow, who has made a career of animating molecular biological processes. She spent several months of her post-doc fellowship in California learning how to use the animation software used by Pixar.

After attending Dr. Iwasa's talk, I presented my poster at the undergraduate section of the conference. This smaller session allowed me to present my work to a broad audience. I used this experience to better prepare for a larger session later during the conference, which I was invited to participate in on the topic of Cancer Therapy.

On Saturday, I was also able to catch the keynote speaker, Dr. Richard P. Lifton, who presented his compiled research efforts from the past several years on *Genes, Genomes, and the Future of Medicine*. Dr. Lifton is a leader in the field of molecular biological research and developed "whole exome sequencing", which is a faster and cheaper alternative to "whole genome sequencing". His work focuses on learning the genetic basis and pathways of major health conditions such as pathological hypertension.

Sunday was perhaps the most enjoyable day in San Francisco. I had the entire day to peruse exhibitor booths and have a close-up look at some of the most advanced technologies in cell biology research – including a virtual reality software that allows you to interact with cells under a microscope in a 3D environment in real time (this technology is arguably the most expensive AND coolest thing I have ever experienced).

Monday, it was back to business as it was time for me to present the work I had done this summer at the main section of the conference alongside graduate students, Ph.D. candidates and post-doc fellows. I received comments and visits at my poster from several other members who were interested in Dr. Eckert's labs approach to make chemotherapy drugs *more effective and targeted* which has implications for future cancer treatment methods.

My interactions were mainly positive, and other individuals were very impressed with the techniques I had implemented in my study – most of them seemed to have particular interest in the bioinformatics section of my poster which RMU undergraduate Corey McCurdy, RMU's Professor Buxton and I will be pursuing in greater detail. We hope to utilize the information from cBioPortal.org, which is an online database of sequenced tumors, to create a method of fingerprinting different cancer types based on certain gene expression levels as well as patient information. The hope is that our work will provide a tool for a more tailored and personalized approach to cancer therapy in the near future.

My trip to San Francisco was unforgettable, just as the road to such a great opportunity will be as well. Best of all, this conference gave me some insight into my future career as a cancer researcher and the future looks bright.

I would like to offer gratitude to RMU's SEMS Dean, Dr. Kalevitch as well as RMU Biology Department Head, Dr. Dress for providing travel funds for me and making this whole experience possible. I am highly grateful to Warren Gittlen and the Gittlen cancer research foundation for financial support which has allowed me to continually work in the lab and pursue my research goals. I would also like to thank RMU's Dr. Harold, Lindsey Sobolosky, and the RMU Honor's department for providing my food for the trip and the funds to print my poster. Again, this whole journey demonstrates that you don't need to go to a huge state school to have awesome experiences and opportunities as an undergraduate student, you just need to go to RMU. Go Colonials!

Damian Di Florio