Molly A. Bassette

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Education

NSF GRFP Fellow ***2021***
University of California San Francisco, San Francisco, CA ***Expected May 2025***
Biomedical Sciences PhD Program

Kansas State University, Manhattan, KS *December 2018*
Bachelor of Science in Medical Biochemistry and Biology *summa cum laude*
Minor in Business

Academic Recognition

Barry M Goldwater Scholar Honorable Mention *2017*
KSU Division of Biology Most Promising Student Award *2016*
Sherrid Scholarship Recipient 2014
4-year merit-based academic tuition scholarship
Putnam Scholarship Recipient 2014
4-year merit-based academic tuition scholarship

Research Experience

Course Assistant; Physical Biology of the Cell Course *August 2020*
Dr. Rob Phillips, Dr. Hernan Garcia
Marine Biological Laboratory, Woods Hole, MA

- Assisted in execution of a 3-week virtual speaker series for members of the scientific community and the public
- Managed webinars, coordinated speakers, and troubleshooted program errors
- Built, organized, and managed regular updates to the course website
- Disseminated recorded talks and course information to increase access to the course

Laboratory Technician *January 2020 – March 2020*
Dr. Rob Phillips
California Institute of Technology

- Studied transcriptional regulation in prokaryotes to address important questions in population genetics
- Independently performed experiments using various PCR and molecular biology techniques
- Participated in weekly group meetings and project-specific meetings
- Audited and co-facilitated lab exercises in population genetics for undergraduates in the Evolution course at Caltech

Course Assistant; Physical Biology of the Cell Course *August 2019*
Dr. Rob Phillips, Dr. Hernan Garcia
Marine Biological Laboratory, Woods Hole, MA

- Assisted in execution of a 3-week graduate research theory course
- Executed laboratory managerial tasks; course set-up and break down, day-to-day organization and scheduling, inventory management, and planning and facilitation of course activities
- Facilitated and organized complete turnover of all staff and inventory for three separate segments of the course
- Participated in all course activities and completed all course projects and presentations as an unofficial student

Research Assistant *August 2018 – March 2019*
Student Research Assistant; K-INBRE Kansas Scholar's Program *August 2017 – May 2018*
Dr. Masaaki Tamura *January 2017 – May 2017*
Kansas State University, Manhattan, KS

- Tested novel approach to cancer immunotherapy via PD-1/PD-L1 inhibitory checkpoint blockade
- Utilized mentorship to propose, design, and perform various wet lab experiments including tissue culture and *in vivo* experiments
- Assisted with organizational and managerial tasks in the laboratory
- Participated in weekly journal club and progress report meetings; presented journal articles monthly
- Trained and mentored other students in the lab in research science and the specifics of the PD-1/PD-L1 project
- Created and presented a poster about the project at multiple scientific conferences

Course Assistant; Cell Physiology Course *June 2018 – August 2018*
Dr. Carolyn Ott
Marine Biological Laboratory, Woods Hole, MA

- Assisted in execution of 7-week graduate research methods course in Cell Physiology
- Executed laboratory managerial tasks; day-to-day organization and scheduling, inventory management, and facilitation of various course activities
- Co-planned and executed nightly and weekend leisure activities for students
- Co-facilitated and organized complete turnover of all staff and inventory for four separate segments of the course

Amgen Scholar's Program; UCSF Summer Research Training Program *June 2017 – August 2017*
Dr. Martin Kampmann
University of California San Francisco, San Francisco, CA

- Identified vulnerabilities in Multiple Myeloma in a pilot screen using a functional CRISPR genomics platform developed at UCSF and analyzed data with basic Python program use
- Utilized mentorship to perform various wet lab experiments including tissue culture and benchwork
- Created and presented a poster and oral talk about the project to the scientific community at UCSF

Scripps Summer Undergraduate Research Fellowship *June 2016 – August 2016*
Dr. Laura Solt
The Scripps Research Institute, Jupiter, FL

- Studied the role of nuclear receptors in the process of T_H17 cellular differentiation, and the contribution of these nuclear receptors to the development of Inflammatory Bowel Disease
- Utilized mentorship to perform various wet lab experiments including benchwork and *in vivo* experiments
- Created and presented a poster about the project to the scientific community at The Scripps Research Institute

SSU Bridge to Research in Marine Sciences *May 2015 – July 2015*
Dr. Marc Frischer
Skidaway Institute of Oceanography, Savannah, GA
Savannah State University, Savannah, GA

- Studied ethics in scientific research, and techniques in writing scientific papers
- Identified the origins of an unknown pathogenic ciliate affecting White Shrimp in coastal Georgia waters
- Utilized mentorship to learn various wet lab benchwork techniques
- Created and presented an oral talk about the project to the scientific and public community at Savannah State University; awarded Best Presentation of intern cohort

Presentations/Conferences

Travel, lodging, and/or attendance funding awarded for the following:

17th Annual K-INBRE Symposium *January 2019*
Overland Park, KS
Poster Presentation: *A novel PD-L1 inhibitory peptide enhances CD8+ T cell-dependent cell death against lung cancer cells*

- Received Award of Excellence for poster presentation

National IDeA Symposium of Biomedical Research Excellence *June 2018*
Washington, D.C.
Poster Presentation: *Investigation of the effect of novel PD-L1 inhibitory peptide on CD8+ T cell-dependent cell death in human lung cancer cells*

Kansas State University Division of Biology 50th Anniversary Symposium *April 2018*
Manhattan, KS
Poster Presentation: *Investigation of the effect of novel PD-L1 inhibitory peptides on CD8+ T cell-dependent cell death in human lung cancer cells*

Society for Advancement for Chicanos/Hispanics and Native Americans in Science (SACNAS) *October 2017*
Salt Lake City, UT
Poster Presentation: *Identifying vulnerabilities in Multiple Myeloma using CRISPR-based functional genomics platform*

Annual Biomedical Research Conference for Minority Students (ABRCMS) *October 2017*
Phoenix, AZ
Poster Presentation: *Identifying vulnerabilities in Multiple Myeloma using CRISPR-based functional genomics platform*

US Amgen Symposium *July 2017*
Los Angeles, CA

- Professional development conference hosted by Amgen Pharmaceuticals for Amgen Scholar's Program participants
- Attended workshops directed at preparing attendees for graduate school and careers in science
- Networked with established scientists and attended peer-lead round-table discussion of student summer research projects
- Exposed to education regarding scientific careers in industry, and operations of pharmaceutical companies

Ocean Sciences Meeting (AGU, ASLO, The Oceanographic Society) *February 2016*
New Orleans, LA
Oral Presentation: *Identification of the Causal Agent of Shrimp Black Gill in the Coastal Southeast USA*

Publications

Chang, C-Y. (in press). Top-down engineering of complex communities by directed evolution. *Nature Ecology And Evolution.*

Comer, J., **Molly Bassette**, Riley Burghart, Mayme Lloyd, Susumu Ishiguro, Ettayapuram Ramaprasad Azhagiya Singam, Ariela Vergara-Jaque, Ayaka Nakashima, Kengo Suzuki, Brian V. Geisbrecht, Masaaki Tamura. (2021). Beta-1,3 Oligoglucans Specifically Bind to Immune Receptor CD28 and May Enhance T Cell Activation. *Int. J. Mol. Sci., 22(6):3124.*

Wang, R., Sean Campbell, Mohammed Amir, Sarah A. Mosure, **Molly A. Bassette**, Amber Eliason, Mark S. Sundrud, Theodore M. Kamenecka, Laura A. Solt. (2021). Genetic and pharmacological inhibition of the nuclear receptor RORα regulates T_H17 driven inflammatory disorders. *Nature Communications, 12(1): 76.*

Frischer, Marc E., Richard F. Lee, Ashleigh R. Price, Tina L. Walter, **Molly A. Bassette**, Rufat Verdiyev, Michael C. Torris, Darrie Bulski, Patrick J. Geer, Shirley A. Powell, Anna N. Walker, Stephen C. Landers. (2017). Causes, Diagnostics, and Distribution of an Ongoing Penaeid Shrimp Black Gill Epidemic in the U.S. South Atlantic Bight. *Journal of Shellfish Research, 36*(2): 487-500.

Funding Awarded

NSF GRFP Fellowship *March 2021 – Present*
University of California San Francisco, San Francisco, CA

NIH Immunology Pre-Doctoral Training Grant (T32) *September 2020 - Present*
University of California San Francisco, San Francisco, CA

K-INBRE Scholar's Program *September 2017 – May 2018*
Kansas State University, Manhattan, KS

Amgen Scholar's Program; Summer Research Training Program *June 2017 – August 2017*
University of California San Francisco, San Francisco, CA

Summer Undergraduate Research Fellowship *June 2016 – August 2016*
The Scripps Research Institute, Jupiter, FL

Bridge to Research in Marine Sciences *May 2015 – July 2015*
Savannah State University, Savannah, GA