



Fall 2016 Montana Academy of Sciences Newsletter

Hello to all current (and past) members of the Montana Academy of Sciences (MAS)! Welcome to the first-ever MAS Newsletter! It is our goal to do this twice each year. The Board of Directors hopes that each of your summer's has been enjoyable and productive. As always, please visit our website (www.sciencemt.org) for updated news concerning MAS.

General News

This past year (just about the time of the annual meeting in April) we changed our website provider to a company in Great Falls (Shortgrass Web Development). They are working with us to keep the website current and to streamline abstract submission, registration for the Annual Meeting etc. It may take a couple of years to get all the "kinks" worked out, but we think this partnership will benefit our membership and make MAS a bit more current (web-wise). We're looking forward to a long and productive relationship with Shortgrass.

2016 Annual Meeting

Attendance at the 2016 Annual Meeting at Montana Tech in Butte (April 8 and 9, 2016) was down somewhat from past years. Fifty-six registrants viewed 14 contributed oral presentations and 14 poster presentations. As in years past, MAS provides undergraduate and graduate awards for best presentation in each category (**Laurie Henneman Outstanding Student Presentation Awards**).

Award winners from the 2016 meeting were:

Best Undergraduate Student Poster: Oscar Machado, Montana State University – Bozeman, "Determining the place of Aqp-3b in the Wnt/Ca²⁺ Noncanonical Pathway"

Best Graduate Student Poster: Medora Lachman, Montana State University – Bozeman, "The Intertwined Successional Development of Lamb Gut Microbota and Immune System"

Best Undergraduate Student Oral Presentation: Jordan Foster, Montana Tech, "Stormwater in Silver Bow and Blacktail Creeks: Implications for the Microbial Community"

Best Graduate Student Oral Presentation: M. Rashelle Herrygers, Montana State University – Bozeman, "Nuclear Magnetic Resonance Spectroscopy Metabolic Profiles to Distinguish Geographically Isolated Populations of Mountain Goats (*Oreamnos americanus*)"

Finally, as always (or at least recently) all abstracts (oral and poster) from the Annual Meeting will be published in the Intermountain Journal of Sciences (IJS). Meeting proceedings are generally published in the November issue of that journal, so keep an eye out!

Annual Meeting Sponsors

Our Annual Meeting is made possible by generous help from several sponsors. The Board of Directors would like to take this opportunity to thank the sponsors of our 2016 Annual Meeting:

Dr. Doug Coe, Dean, College of Letters, Sciences and Professional Studies, Montana Tech

Dr. Beverly Hartline, Vice Chancellor for Research, Montana Tech

Dr. Renee Reijo Pera, VP for Research, Montana State University

Dr. Beth Weatherby, Chancellor, University of Montana – Western

Dr. Tim Laurent, VP for Academic Affairs, University of Great Falls

Department of Biological and Physical Sciences, Montana State University – Billings

Small Grants Program

Each year, MAS supports science in Montana by providing small grants (up to \$1,500 each) to undergraduate and graduate students working at colleges and universities in our state. The grants are awarded on a competitive basis, with the only stipulation being that the student is required to present the results of the project at the next MAS Annual Meeting. The announcement and request for proposals generally go out on our website in Fall (November/December) with deadlines for proposal submission in February. Each proposal is scored by at least two reviewers, and scores and comments are returned to the applying student whether the proposal is funded or not. This past grant cycle (2016) we had 13 excellent proposals and were able to fund eight. The eight funded proposals were:

Alex Kurtz, Carroll College, Undergraduate Student, “Effects of Microbial Community, Skin Secretions, and Water Parameters on Chytridiomycosis in Frog Populations”

Laura Stein, University of Montana, Graduate Student, “The impacts of socioeconomic and environmental coffee certification standards for women producers in Costa Rica”

Shannon Dillard, Montana State University, Graduate Student, “Eight years later: time to look to soils to improve Yellowstone National Park's restoration goals”

Nathaniel Paul Haygood, Montana State University, Undergraduate Student, “A look at *Poa secunda* Distribution in a Sagebrush-Grassland ecotype”

Emily Jordan Hultin, Montana State University, Undergraduate Student, “Riverine Carbon Cycling as a function of Seasonality”

Kaitlyn A. See, Montana State University, Undergraduate Student, “How Aquaporins Influence Convergent Extension through Noncanonical Wnt Signaling”

Kathryn Bills Walsh, Montana State University, Graduate Student, “Reclamation on the Ranch: The role of Physical Geography, Policy and Community Capacity in Determining Reclamation Outcomes for Coalbed Methane Landscapes”

Kathryn Clark, Rocky Mountain College, Undergraduate Student, “Investigation of viral and chemical causes of tumors in Montana Fish”

Congratulations to the grant awardees! We all look forward to seeing the results of these projects at our 2017 Annual Meeting.

Junior Academy Notes:

This year we had two high school students who gave excellent oral presentations in the Senior Sectional. Timothy Small, Simms High School, presented his talk “Ozone and Methane Variation in the Atmosphere” and Jeremy Heng, Hellgate High School, presented “Analysis of Mixed Populations of Bacterial Predators and Bacterial Prey: An Investigation of Resistance to Predatory Bacteria.” Both Timothy and Jeremy were selected to attend the annual American Junior Academy of Science meeting this spring in Boston. These students were chosen based on the quality of their research papers they submitted for review by members of the MAS Board of Directors. Congratulations Jeremy and Timothy!

We need to work a bit harder on extending invitations to high school scholars to participate in research endeavors and the activities of the Junior Academy. Any thoughts on how to accomplish this would be greatly appreciated. Also the MAS board offers a grant program intended for high schools that do not have adequate funding for research in their schools. The announcement for the grant proposal is sent out in January, with the deadline for submission in early March. The last winner was Mr. Raimond Hahn who teaches at Simms High School.

Final Notes

The Board of Directors will meet in September to set the Annual Meeting Date (tentatively April 7-8, 2017). We would also like to encourage any interested faculty member from a Montana University System university or college to join the Board. We strive to have representation from all 4-year and tribal institutions in the state (public and private). Currently, we have no representatives from MSU-Northern, UM-Western, Rocky Mountain College, or any tribal college on our Board. Anyone interested can email either our President, Dr. James G. Berardinelli (jgb@montana.edu) or our Executive Director, Dr. James Barron (jbarron@msubillings.edu).