

CBS PRESIDENT'S REPORT FOR VOLUME 66

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Dear Colleagues,

Every summer, I'm called upon to reflect on the past year of Society activities, events, and milestones, most of which rest predictably within the annual or semi-annual cycle comprised of student research awards, recruitment of new members, mixers, banquet, graduate symposium, and welcoming of new Council members. All of these categories offer happy news this year.

Most recently, in June we announced the winners of the Paul Silva Student Research Grants. The 11 proposals that were submitted were so strong that the Council wrestled mightily to select the awardees. Our aim was to offer two awards, but in the end, we awarded four grants. This year's winners will examine compelling ecological patterns and processes or explore botanical diversity in regional hotspots. I was particularly heartened by the many proposals for research that combine fieldwork with the testing of key ecological hypotheses or predictions.

For example, Lacey Benson, a Master's student at San Jose State University (advised by Dr. Susan Lambrecht), will investigate adaptation to drought in the western sword fern (*Polystichum munitum*). Her research takes a landscape-level approach to study geographic variation in the physiological and morphological traits of this fern's gametophytes, with the goals of linking desiccation tolerance, morphology, and historical exposure to drought in this highly vulnerable life stage. After collecting fertile fronds from populations along a north-south gradient ranging from Prairie Creek Redwoods State Park in Orick to Landels-Hill Big Creek Reserve in Big Sur, Lacey will cultivate gametophytes that she will then expose to cycles of drought and moisture, enabling her to examine biogeographic patterns with respect to the post-desiccation recovery rates and surface morphology of these gametophytes. Lacey's work holds the promise of helping us to understand the ecological limits and microhabitat requirements of ferns, and to recognize the complex ways in which these water-dependent taxa successfully occupy highly heterogeneous forests. Lacey's upcoming discoveries of gametophytes' adaptations to drought will help botany instructors everywhere demonstrate that there's much more to fern gametophytes than just being "heart-shaped"!

Alec Chiono, a Master's student at the University of San Francisco (advised by Dr. John Paul) will use his award to investigate differences in thermal niche breadth between coastal and inland populations of (the iconic and beautiful) *Erythranthe guttata* (aka *Mimulus guttatus*). Alec will employ a combination of growth chamber observations and ecological niche modeling to test the hypothesis that populations adapted to chronically variable conditions (i.e., inland populations) will be better able to withstand

the effects of upcoming climate change than those historically exposed to more constant climatic conditions. Demonstrating the elevated vulnerability of coastal wildflowers to climate change relative to their inland counterparts would represent an important and wide-ranging contribution to our understanding of the abiotic effects of climate warming on the California flora.

Christina Varnava, a Master's student at Claremont Graduate University and Rancho Santa Ana Botanic Garden (advised by Dr. J. Travis Columbus), will create a vascular flora of the Upper Sespe Creek Watershed, one of the unsung "black holes" of the Los Padres National Forest (in northern Ventura County) that is in urgent need of a comprehensive floristic inventory. While this watershed has been previously surveyed and sampled, most herbarium specimens from the region represent roadside collections. Accordingly, Christina will focus on the unexplored tributaries and undocumented grasslands. In addition, given the 2017 Thomas Fire's effects on the southern portion of the Upper Sespe Creek Watershed, Christina's inventory will contribute to our understanding of the effects of intense wildfires on the recovery of natives and the opportunities for invasive species to spread. The importance of new and significant collections of vouchered specimens for studies of plant phenology, biogeography, and range extensions of both rare and common species also makes Christina's project highly noteworthy.

In further support of floristic research, Maria Jesus — also a Master's student at Claremont Graduate University and Rancho Santa Ana Botanic Garden (advised by Dr. Naomi Fraga) — was granted an award to create a vascular flora of Conglomerate Mesa and Malpais Mesa in Inyo County. While meritorious in its own right as an investigation of floristic diversity, Maria's work is all the more urgent due to the fact that this region is under threat by exploratory gold-mining. Two floristic provinces (the Mojave Desert and Great Basin Desert) meet in this region as well, making it a unique and ecologically important flora in need of a baseline, and well-vouchered, floristic inventory. Maria's project will provide conservation advocates with a crucial tool with which to track and protect this region's endemic species. To learn more about these researcher's projects, please read their abstracts posted on the CBS webpage.

Additional evidence that the next generation of western U.S. botanists is poised to do creative and outstanding work was on display at this year's Graduate Student Symposium — the 27th such event — held at California Polytechnic University, San Luis Obispo from April 5–7, 2019 along with pre- and post-symposium field trips. In part due to its accessibility

from both northern and southern California, and in part due to the stellar organizational efforts of three faculty members — Drs. Jenn Yost, Dena Grossenbacher, and Matt Ritter — as well as the tireless assistance of graduate student Dena Paolilli, the meeting was very well attended by students from all over California and beyond. If you're a faculty member seeking REU students, Master's or Ph.D. students, or postdocs who are familiar with the California flora and are already accomplished public speakers, attending the CBS Graduate Student Symposium is a great way to meet splendid candidates.

High points of the symposium (in addition to the uniformly high spirits, ample time for conversation, 160 registered attendees, 37 oral presentations, and 33 posters) were the field trips to the Serpentine Irish Hills, to Shell Creek, and to Poly Canyon at peak wildflower season; the annual banquet and the keynote address by Dr. David Lowry (now at Michigan State University), who treated us to an overview of genetic, ecological, and physiological variation among the yellow monkeyflowers of western North America; and, of course, the challenge of selecting the prize-winning talks from among so many engaging presentations. Prize winners this year were Natalie Love (University of California, Santa Barbara) for Best Overall Presentation; Emily Cox (UC Berkeley – undergraduate!) for Best Talk; and Erin Coltharp and Chloe Knowd (California Polytechnic State University, SLO), and Nancy Conejo (San Francisco State University) for joint winners of Best Posters. Because we were so impressed with the quality of presentations, we created an Honorable Mention category, in which we acknowledged the following: Ryan Buck (San Diego State University); Andy Siekkinen (Rancho Santa Ana Botanic Garden/Claremont Graduate University), and Dena Paolilli (California Polytechnic State University, SLO) for Honorable Mention Talks; and Drew Gilberti (California State University, Chico), and Vivian Avila and Elias Acosta-Mendoza (Santa Clara University) for their eye-catching posters.

One of the Society's most promising outreach activities in both 2018 and 2019 resulted from our presence at two large Science Fairs. Due to the joint work of *Madroño* Editor-in-Chief, Dr. Justen Whittall, and *Nemophila* editor, Josie Lesage, in March 2019 we presented awards to 13 students who individually and as teams represented nine botanical entries at the Synopsys Championship (Santa Clara County) and the Santa Cruz County Science & Engineering Fair. The excitement and smiles among the winners raises our hope that the availability of these awards will ignite and elevate interest in botanical research among budding (sorry about the pun) scientists ranging from elementary to high school students. And who *wouldn't* want to know whether plants absorb microplastics? If you'd like to serve as a judge in your county's Science Fairs, please contact Justen Whittall who can provide you with judging and

awards materials on behalf of the California Botanical Society.

Looking towards the future, now is the time to start planning your attendance at the 2020 annual banquet (the next Graduate Symposium will be in 2021), which will be hosted by the Arboretum at the University of California, Santa Cruz. Brett Hall (California Native Plant Program Director) has graciously offered to organize this event, and I'm looking forward to wildflower-dominated field trips and time to explore the Arboretum. We plan to schedule plenty of time before the banquet for attendees to bring picnic lunches and to stroll around the Arboretum grounds. Please mark your calendars for this event; encourage your students, postdocs and colleagues to participate; and help them to arrange transportation to and from the Arboretum.

Finally, please talk with your students and colleagues about submitting their manuscripts to *Madroño* for publication, and if you're considering publishing in *Madroño* yourself, we're eager to receive your manuscripts. Our esteemed peer-reviewed quarterly journal offers color plates and open access with an average time from submission to print delivery of less than six months (available online sooner!).

This letter wouldn't be complete without pausing to acknowledge the tragedy that touched many California Botanical Society members last October: the murder of Jessica Orozco, a young botanist who completed her Master's degree in 2016 at Claremont Graduate University/Rancho Santa Ana Botanic Garden and had begun her career as a Range Land Specialist for the Hualapai Tribe in Kingman, Arizona. Jessica's fledgling career was the perfect match for her interests and expertise in rangeland monitoring, plant identification, land and livestock management, and working with Tribal communities. While the personal loss to her friends and family is incalculable, when such a bright, joyful, and high-spirited beacon is lost from our community at such a young age, I can't help but think of all of the people who Jessica had not yet met, but with whom she would have shared her unbridled enthusiasm and love of plants, particularly those for whom she would have been the one to provide an initial spark of botanical interest. It now falls on all of us to help to tend and fill the gap that Jessica's passing left behind. Please read more about Jessica's life and influence in the dedication of volume 66 in *Madroño* 66(1): 1–3.

Until our paths cross again, I hope you have a great winter and, if we haven't yet met, please introduce yourself to me at next year's annual banquet in Santa Cruz.



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