

## Letter from the Head: Ron Hartman Retires

This past year marked the end of an era, as **Professor Ron Hartman** retired from the faculty in December 2015 after 38 years as the curator and director of the Rocky Mountain Herbarium (RM). Herbaria like the RM serve to document the diversity, evolution, and change of Earth's botanical resources. We are still learning about all the creative ways that herbarium collections can be used. Through Ron's leadership and vision over the last several decades, the RM has developed into one of the most significant collections in the world. It's a national treasure and a jewel in UW's crown.

I like to tell undergraduates who take my plant ecology courses how Alexander von Humboldt, the great plant geographer of the early 19<sup>th</sup> century, meticulously documented the flora and habitat relationships in the new colonies of Spain in the Americas. And I emphasize that von Humboldt collected more than 12,000 plant specimens and mapped the distribution of many of those plants over gradients of elevation and climate. My students are quite impressed.

Let me give you a perspective on the magnitude of Ron's contributions to the understanding of our nation's botanical heritage. When Ron took over as curator and director in 1977, the RM had about 300,000 specimens. Ron proceeded to develop what became the top floristic program in the country. Over the years he has trained over 50 master's students who now occupy key positions in universities, NGO's, and federal and state agencies. Many of Ron's students collected and documented thousands of taxa, rivaling the scope of von Humboldt's collections from New Spain! Through Ron and his collaborator's efforts, and with the acquisition of some smaller herbaria, the RM has grown to about 1.4 million specimens! This makes our herbarium the largest between the Missouri Botanical Garden in St. Louis and UC-Berkeley. Moreover, it's the world's largest collection documenting plant biodiversity in the Rocky Mountains.

Now if we do the math, the growth rate of the Rocky Mountain Herbarium equates to about 290,000 specimens per year during Ron's tenure as curator, or a little over 95 specimens per day. Ron personally collected and documented close to 100,000 specimens over his career at UW, and he has collected more plant specimens (some 55,000) from Wyoming than any other person. Of course he did this while also serving as the curator of the herbarium, publishing, teaching, and serving as an editor for the multi-volume Flora of North America.

Ron's lifetime achievements have not gone unnoticed by his professional colleagues. Ron was recently recognized by the American Society of Plant Taxonomists with their Distinguished Service Award, and by the Wyoming Native Plant Society with a new award—the Ronald L. Hartman Excellence in Wyoming Botany Award.

I'm sure that Aven Nelson, the founder of the RM, is smiling down on Ron from plant systematist heaven. We are proud of Ron's achievements and what he did for the prestige of our department and the University of Wyoming. I suspect Alexander von Humboldt would be impressed as well.

Thanks Ron!

**Dave Williams, Professor and Head**

## Artistic side of Science

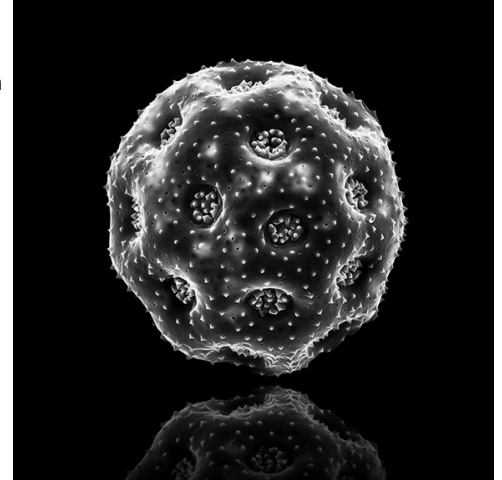
Using images acquired from landscape photography to electron microscopy, UW Botany researchers **Dr. Marc Brock** and **Dr. Robert Baker** share their perspectives on plant diversity and beauty.

These stunning images range from the natural aesthetics of the Snowy Range to abstract displays that are the products of microscope investigation.

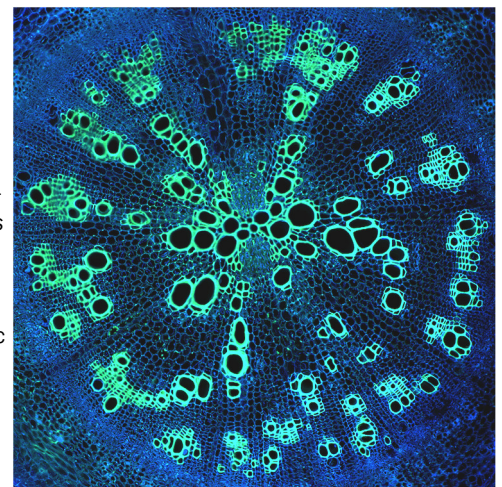
Using Black & White photos and scanning electron microscopy, Brock explores the intricate architecture of pollen grains harvested from plants growing within his landscape images.

Collections created by Baker include amazing confocal laser scanning micrographs of *Brassica rapa*, leaf epidermal tissue visualized with compound light microscopy, and whole plant imaging of *Arabidopsis thaliana*.

The exhibit was open to the public for several months late last year in the Berry Biodiversity Center. Visit the digital gallery to view more photos from this collection: [www.macromicroscopic.com](http://www.macromicroscopic.com)



*Silene acaulis* pollen grain



Cross section through *Brassica* roots



UNIVERSITY OF WYOMING

## New faculty and staff



Dr. Ellen Currano, Assistant Professor



Dr. Katie Wagner, Assistant Professor



**Meredith Pratt** took over management of the Williams Conservatory in September of 2015. As a former student at the University of Wyoming, she received a Bachelor's of Science degree in Zoology with a minor in Insect Biology. Her goals for the Williams Conservatory include creating an educational self-guided tour for visitors, construction of various plant science lessons to offer to public and homeschool groups, and enhancing community participation. She believes the Williams Conservatory is an integral resource for education and research and should be enjoyed by all.

**Dr. Ellen Currano** is a paleoecologist who uses fossil plants to investigate how environmental changes millions of years ago affected taxonomic diversity, ecosystem structure, plant-insect interactions, and biogeographic patterns. Her current research focuses on the Paleogene in the Western United States, particularly Wyoming, and the evolution of East African terrestrial ecosystems over the last 30 million years. One of her goals is to better predict how modern ecosystems will respond to CO<sub>2</sub>-induced global warming. Ellen studied at the University of Chicago and Pennsylvania State University, and she taught at the University of Miami-Ohio before coming to Wyoming in 2013. She has a joint appointment with Botany and the Department of Geology and Geophysics, and she is a member of our Program in Ecology. Ellen is a co-founder of The Bearded Lady Project: Challenging the Face of Science <<http://thebeardedladyproject.com>>—a documentary film and photography project that investigates stereotypes of what a field scientist looks like. She has received awards for her research, and recently she won our Promoting Intellectual Engagement Award for the way she inspires students in first-year courses. To learn more about Ellen's research and other accomplishments, visit <http://uwbotany.blogspot.com>.

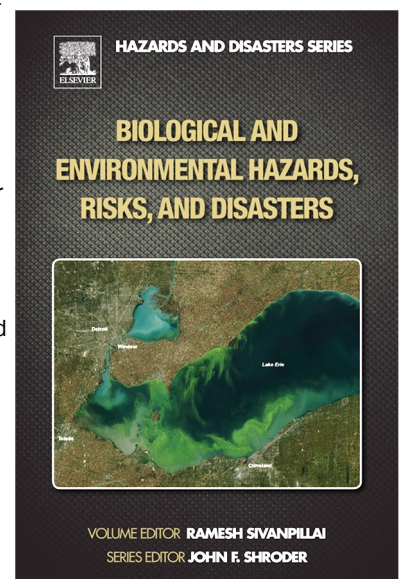
**Dr. Catherine (Katie) Wagner** joined our faculty as an assistant professor in 2015. She adds cutting edge expertise in evolutionary genetics and macroevolution. Katie is known internationally for her work on adaptive radiation in African cichlids and applying genomics tools and modeling to understand the causes of species diversification. She teaches our core undergraduate evolutionary biology course and is developing a new upper division/graduate course in macroevolution that she hopes to launch this coming academic year. Katie is from the state of Washington and earned her BA in Biology and Geology from Whitman College in Walla Walla. Her PhD is from Cornell University, where she studied in the Department of Ecology and Evolutionary Biology. Before coming to Wyoming, Katie did post-doctoral work at the Swiss Federal Institute of Aquatic Science and Technology in Bern, and last year she won the prestigious Dobzhansky Prize from the Society for the Study of Evolution, which is awarded annually to recognize the accomplishments and future promise of an outstanding young evolutionary biologist. Learn more about Katie's program at <http://www.cewagner.com/welcome.html>.

### Book on hazards edited by Ramesh Sivanpillai published by Elsevier

A book on biological and environmental hazards, edited by the botany research scientist, **Ramesh Sivanpillai** (Senior Research Scientist), was published in Jan 2016.

This 8th volume in the Hazards and Disasters series published by Elsevier provides an integrated look at major impacts on the Earth's biosphere. Many of these are caused by diseases, algal blooms, insects, animals, species extinction, deforestation, land degradation, and comet and asteroid strikes that have important implications for humans..

This book provides an in-depth view of threats, ranging from microscopic organisms to celestial objects. Perspectives from both natural and social sciences provide an in-depth understanding of potential impacts.





## Highlights from 2015-16

### Rocky Mountain Herbarium Open House—Oct 1, 2015



Visitors examined old specimens collected by Aven Nelson in the early days of the University, and a young visitor (right) learned how to mount a recently collected plant.



### Professor Hartman's retirement party—Mar 23, 2016



Department head Dave Williams gave a slide show that summarized Ron's career. Those attending included former Arts & Sciences Dean **Oliver Walter**, current Arts & Sciences Dean **Paula Lutz**, retired Professors **Gene Pratt** and **Dennis Knight**, Professor Emeritus of Geology **Jay Lillegraven**, former Department Head **Greg Brown** (currently Associate Dean of A&S), Professor **Indy Burke** (Dean of Haub School of Environment and Natural Resources), Professors **Ellen Currano**, **Cynthia Weinig**, **Kate Wagner** and **Brent Ewers**.

More photos are in: <http://uwbotany.blogspot.com/p/events.html>



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# UNIVERSITY OF WYOMING

## DEPARTMENT OF BOTANY



### Summer 2016 Newsletter

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## A “new” old timer’s perspective — William Reiners, Professor Emeritus

I feel like a Johnny-Come-Lately compared with old-timers like Gene Pratt, Martha Christensen, and Dennis Knight, as I didn’t join the Botany Department until 1983. Before coming to Wyoming, I was on the faculty at the University of Minnesota for three years and Dartmouth College for seventeen. Some of our current faculty were born after I arrived, so I guess I qualify as an old-timer.

I was delighted to join a department dedicated to plants. I had learned what it was like to feel second-rated in a biology department dominated—as they always are—by zoologists. UW Botany had excellent programs in ecology (my specialty), led by Dennis Knight and Bill Smith, and I was intrigued by the ecological and systematic work that Martha was doing with fungi. Also, I was grateful to be around an active plant systematics program—and an important herbarium—with Ron Hartman and Ray Unger. Physiology was the other leg for me and I was assured that we could build in this area by replacing Tom Moore, who had left for a position at Louisiana State University. Gene Pratt was our geneticist, though by that time he also was involved with administration.

I came as head of the department, so the staff was very important to me as well. In the front office, Ramona Wilson ruled with great efficiency, in spite of (or because of) the absence of

any kind of computer. We had fewer faculty and grants at the time, but without fail Ramona got the budget reports for every account to each faculty member at the end of every month. Ramona was assisted part time by Kathy Green, a hard-working student from Albany. Good ‘ol Ernie Nelson was already serving as manager in the Rocky Mountain Herbarium, and still is; and William “Botany Bill” Higgins, recently retired, was the dedicated manager of our old, leaky greenhouse. The Williams Conservatory wasn’t constructed until 1994. Much appreciated also were two custodians dedicated to our building. We had lots of spit and polish in those days.

Joan Wadlow was Dean of Arts and Sciences during those years. She was efficient and tough as nails, and her leadership was part of what drew me to UW. She had faith in Botany and provided resources that allowed us to hire Tom Vogelmann, an unusually innovative physiologist. Tom created an exciting program that involved collaborators across the campus. Soon we also hired Greg Brown who, along with Ron Hartman, maintained our program in plant systematics. Greg eventually served as department head and is now Associate Dean of A&S. Unfortunately, we lost Tom to the University of Ver-

mont—his alma mater—where he is now Dean of the College of Agriculture and Life Sciences.

Our success as a department stemmed from the realization that we had to prove our worth in teaching, research and service. We always made a case that ours was a department deserving investment even through years of frozen budgets. We had to be nimble, flexible and adaptive to meet the needs of our students and the university. I’m pleased to see these traits perpetuated today and expect many more years of success in the always-changing academic, national and international world.

