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Welcome from the Chair:



Dr. Michael F. Antolin

Dear Friends,

We hope all of you are enjoying your summers, taking long walks and refreshing swims at your favorite mountain hideaway, or at the beach and lagoon of some tropical paradise. Perhaps you're reading this on your tablet under an umbrella on your back deck. Wherever and however this finds you, we have lots to share, even as we're a bit more relaxed during our summers in Fort Collins. As for me, I write this on July 23, the 22nd anniversary of my arrival in Colorado to begin my time in the Biology Department!

First, we have truly exciting news! After almost a decade of lobbying, pleading, and cajoling, the Department of Biology and the College of Natural Sciences are pleased to announce that plans and funding for a new biology building have moved into place. This spring the students of Colorado State University agreed to a \$5.51/credit hour increase in facilities fees, providing about 70% of the funds needed for the project. This will be the first major facilities upgrade for our department since Yates Hall in 2002, and the first major research upgrade for the Department of Biology since the Anatomy/Zoology Building opened in 1974. See a description of the new biology building below, and I look forward to your involvement as we keep momentum and raise funds to bring the project to life.

Second, we share with you news about the people in Biology, and their award-winning ways! Besides securing million\$ in grant funds, our folks have been recognized for research and scholarly excellence within the Department and the College of Natural Sciences, across the University and across Colorado, and even nationally and internationally. Of special note are the elections of University Distinguished Prof. Diana Wall into the U.S. Academy of Arts and Sciences and of Prof. Anireddy S. Reddy as a foreign member of the Indian Academy of Sciences.

Continued page 2

For up-to-the-minute late-breaking news in the Department of Biology, visit:

<http://www.biology.colostate.edu/news/>

WELCOME FROM THE CHAIR CONTINUED

But, it's with sadness that we note the passing of three Emeritus faculty earlier this year: Dave Pettus, Dick Ward, and Bill Marquardt. These outstanding individuals were responsible for bringing the Biology Department and Colorado State University to the forefront of research and education in the life sciences. We owe them a great debt, and we will miss them.

As always, I am heartened by the notes and letters you send in. We want your stories, and with your permission we'll include them in future newsletters. And please let us know if you're coming to visit. We love to see our graduates when they come back to the "nest."

We are proud to be the Department of Biology, we are proud to call you our own, and we wish you all the best.

CONCEPTUAL DRAWINGS OF PROPOSED NEW BIOLOGY BUILDING

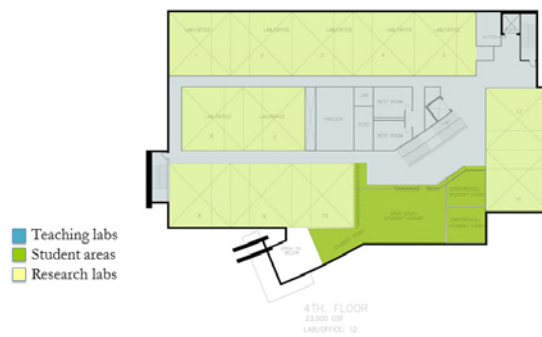


Main Floor



BIOLOGY BUILDING

Top Floor



BIOLOGY BUILDING

NEW BIOLOGY HOME ON THE HORIZON

We are pleased to announce that, in April 2014, students at Colorado State University approved a facilities fee increase that will provide \$57M of the estimated \$81M needed to build a brand-new biology building to open by Fall of 2017. We are initiating a campaign to raise the remaining \$24M, and will be looking to you, our alumni and friends, to help in this effort.

In science, students learn by doing science, and an elemental goal of the new facility is to increase opportunities for students to gain hands-on work experiences. We see the building as a workshop and home for our student apprentices, where we stand shoulder-to-shoulder forging the future.

The design encompasses five stories and 147,000 square feet, and besides up-to-date research labs, it dedicates a third for state-of-the-art classroom and teaching facilities. The spaces include labs for training in emerging biotechnologies, for student advising suites, and for “soft teaching” study lounges where students can network with each other and with faculty.

We envision a “campus destination” and home for ALL students. Some will attend lectures or recitations, some will come for upper division lab classes, and others will use general-access computer labs. It's a place to find a quiet study corner or to meet friends and classmates.

The new building is sorely needed, both now and for future growth, and is critical if we in the Department of Biology are to meet the teaching and research missions of a modern and forward-looking life sciences program.



If you've been a regular reader of this newsletter, you already know that in recent years the Biology Department has increased by about 30% in undergraduate and graduate majors (~1,500), in research staff (~100), and in funded research projects (about 60 grants totaling \$10M each year).

All told, 57% of students at Colorado State enroll in a course taught by the Biology Department during some part of their time at CSU. We employ ~100 work-study and hourly students in our labs, and 150 Honors students work on Honors theses. And the benefits extend beyond the Biology Department and the College of Natural Sciences: our move from current space in the Anatomy/Zoology building will provide space for the College of Veterinary Medicine and Biomedical Sciences, mainly for critical growth of the Biomedical Sciences Department.

These projects synergize with the proposed new chemistry addition, also recently funded by the Colorado Legislature. The chemistry project will be physically linked to the new biology building, which will save costs for site planning and utilities. The proposed buildings and renovations will create a Science Quad between Pitkin and Lake Streets, adding to the concept of creating an on-campus destination.

To donate toward the Biology Building Enhancement fund, please visit:

https://advancing.colostate.edu/BIOLOGY_BUILDING_ENHANCEMENT

KUDOS FOR OUR AWARDS RECIPIENTS

BIOLOGY AWARDS FOR EXCELLENCE IN TEACHING AND MENTORING

Graduate Student Excellence in Teaching: Postdoc/Graduate Student Excellence	Corey Handelsman & Jenna McAleer
In Undergraduate Research Mentoring:	Sarah Fitzpatrick
Faculty Excellence in Undergraduate Teaching:	Prof. Marinus Pilon
Faculty Excellence in Undergraduate Research Mentoring:	Assoc. Prof. Shane Kanatous
Faculty Excellence in Graduate Education and Mentoring:	Assoc. Prof. Cameron Ghalambor

COLLEGE OF NATURAL SCIENCES AWARDS

Postdoc/Graduate Student Excellence in Undergraduate Research Mentoring:	Sarah Fitzpatrick
Recognition of U.S. Patent:	Prof. June Medford

UNIVERSITY RECOGNITION

Colorado School of Public Health: Excellence in Clinical/Affiliated Faculty Teaching Award:	Dan Salkeld
Distinguished Administrative Professional Award:	Donna Weedman



COLORADO AND NATIONAL AWARDS

Colorado Women's Hall of Fame:	Distinguished Prof. Diana Wall
Elected to American Academy of Arts and Sciences:	Distinguished Prof. Diana Wall
National Science Foundation Graduate Research Fellowships	
James Craven - Adviser: Prof. Anireddy Reddy	
May Gamboa - Adviser: Assoc. Prof. Ghalambor	
Annie Kellner - Adviser: Prof. Antolin	

INTERNATIONAL AWARDS

<i>2013 Foreign Fellow of the National Academy of Sciences, India:</i>	Prof. Anireddy S. Reddy
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DEPARTMENT OF BIOLOGY SCHOLARSHIP AWARDS

Undergraduate

Robert E. Cooper Scholarship:	Adrienne Renee Prucitt
Bruno Klinger Memorial Scholarship:	Zane Moore
Peitersen Memorial Scholarship:	Kathryn Cleary

Graduate

Sharon E. and David E. Kabes Scholarship:	Ava Hoffman
Edward and Phyllis Reed Fellowship:	Sarah Fitzpatrick
Harold Harrington Fellowship:	Luke Tembrock
Stavros Family Fund:	Ava Hoffman & Jiameng Wang

BIOLOGY RESEARCH HITS THE ROAD

You may have seen a Google car roaming your neighborhood. For the past year, Google Street Views cars have been roaming Indianapolis, Boston and New York's Staten Island creating the street views for Google Maps, but they are capturing more than just images.

Biology Associate Professor Joe von Fischer and his team have helped develop the routes the cars drive for a purpose larger than mapping. They are also measuring where and how much methane is leaking from the miles of underground pipes that deliver natural gas to customers in those cities.



The Environmental Defense Fund (EDF) used the data collected from more than 15,000,000 data points to create interactive maps that depict the thousands of leaks beneath the streets of these three cities. EDF approached von Fischer, who has long studied methane gas and developed new techniques in which to measure natural and man-made sources, to participate in the project nearly two years ago.



As von Fischer explains, "This complex project started with a rather simple question: can we map and quantify methane leaks in an urban environment?"

"Researchers, including me, have measured methane concentrations in cities before. The challenge has been the ability to translate methane concentration into understandable leak rate estimates. This effort not only makes a significant scientific advancement, it helps raise awareness of how much methane is escaping from pipelines in our cities."

Von Fischer said the analytical tools the CSU team helped develop for EDF and Google's methane mapping project make it much easier to find and assess the size of a leak. He added that the Google Street View cars won't replace the detailed surveys utilities perform, but they will complement them.

For more, please visit: <http://www.today.colostate.edu/story.aspx?id=10267>

SUMMER CLASS IN ECUADOR TEACHES RESEARCH

Earlier this summer, biology Associate Professor Chris Funk accompanied an intrepid group of 11 undergraduate students to study firsthand the rich ecosystem of Ecuador. Ecuador is an ideal location to learn about tropical biodiversity because it houses an enormous diversity of tropical ecosystems in a relatively small geographic area, all of which are very accessible.

During the course of BZ 482, Ecology, Evolution, and Conservation of Ecuadorian Biodiversity (worth 4 credits if you want to sign up!), these students visited several diverse ecosystems including coastal, cloud forest, páramo, and lowland Amazonian rainforest habitats—and learned how to conduct ecological research along the way.

Course details can be found on the CSU education abroad website: <http://educationabroad.colostate.edu/>



KEVIN WILCOX: ECOLOGIST OF THE FUTURE



When Kevin Wilcox was considering which graduate school would be best to continue his studies, his undergrad mentor gave him some advice. He said, “There are three factors to consider: the research you’ll be doing, who your advisor is, and whether you like the city. If you don’t like at least two of these, the program isn’t for you.”

Taking his advice, Kevin did a review of the outstanding faculty in the ecology field and noticed that many were CSU graduates. When Kevin checked out CSU, he discovered Dr. Alan Knapp, a highly productive professor in biology researching grassland ecology. Then he checked out Fort Collins. Who knew he’d find all three factors in one place? That was four years ago, and he’s never looked back. In fact, he’s looking forward – to graduating in May 2015.

He was especially inspired by one of his undergraduate professors who talked about science as a way to extend the boundaries of human knowledge. He finished one lecture with “That’s about all we know on this subject; go and find out more!”

Kevin, along with Prof. Knapp and Prof. von Fischer, recently collaborated on a large project studying short grass, mixed grass and tall grass prairies to record the magnitude of plant responses to altered precipitation amounts and patterns. He adds, “To properly predict how important services, such as forage production, that ecosystems provide will change along with a changing climate, we need to identify broad patterns of sensitivity across ecosystems; this is a difficult task but our results provide important pieces to fit into that puzzle.”

In reflecting on his experience as a graduate student here at CSU, Kevin emphasized that the collaborative atmosphere of the department is what sets us apart. He explains, “If I want to learn a new skill, there’s an expert down the hall willing to teach me. There are a lot of amazing people here who are friendly and excited to help.”

Kevin also praised the networking opportunities with professors and other grad students at events that are sponsored by the department. Monthly, during the school year, a professor will host an after-hours “party” in their lab, creating a relaxed atmosphere to talk science and get to know each other’s interests. The collegial feel continues at our annual BBQ and holiday potluck.

The department also supports grad students by offering teaching assistantships. Kevin says, “Having a teaching stipend allowed me to work on my research instead of flipping burgers to make ends meet.” This summer Kevin is presenting his work at the Ecological Society of America (ESA) conference. Through a competitive process, biology also supports grad student travel to conferences .

Always a multi-tasker, Kevin is completing his research and writing his dissertation while also writing a proposal to the NSF for support as a postdoctoral fellow. His eventual goal is a professorship of his own. He feels he has had a top notch graduate experience; as he says, “I love what I do – and I’m willing to work hard to extend those boundaries of what we know!”

Want more on grad student research?: <http://www.biology.colostate.edu/graduates/graduate-students/>

SEEING THINGS DIFFERENTLY: AMBER WEIMER SETS HER SIGHTS ON OPTOMETRY



Amber Weimer with her honors project in the greenhouse

When you're interested in a lot of things, it can be both a blessing and a curse. Just ask Amber Weimer, a senior majoring in biological sciences. As a kid growing up in Alaska, she wanted to be either a prima ballerina or a doctor. She spent a lot of time with her grandfather, a Lions Club member and avid gardener. With him she remembers both participating in eyeglasses drives for those in need, and many long days spent in his strawberry patch. Growing up spending lots of time in the wild outdoors, Amber was always interested in the environment.

Taking a cue from her upbringing, plus wanting to attend school out of state, she did a lot of research to find a school that matched her interests yet still had the outdoor experiences of her youth. She began her time at CSU majoring in natural resource management. After taking a required course, BZ120, Principles of Plant Biology, her interest in research was piqued. She began studying evolutionary ecology in the Angert lab under the direction of Seema Sheth, and changed her major to biology.



Amber with Grandpa Pete and Grandma Judy celebrating their 50th wedding anniversary in Europe

In her sophomore year, she began attending the monthly Women in Sciences lunches, a platform for senior female scientists to discuss their experiences and offer advice. There was a lot of discussion about "work/life" balance, which, for her, seemed a little annoying at first. She said, "In retrospect, what I took away from it was that if you want to start a family in this career, or if you want to do something for yourself, it's just like research – you have to make time for it."

Amber's Aunt Leola taught her that it's OK to take risks, be creative and to pursue your dreams. Leola studied political science and Japanese with the intention of becoming active in politics. Instead, life happened. She married a fisherman and became a successful potter – pursuing a life rich in creativity and the natural world. Amber says her aunt is one of the happiest people she knows and learned from her that if she wants to do something that seems a little crazy, it's OK.

As she says, "Education was always down my path, but I never considered 'scientist' as a job title." Her original thought was that she would work for the State of Alaska in some capacity relating to environmental issues. Instead, doing research opened her eyes – literally. Returning to the experiences with the Lions Club, she now volunteers for the Enight Skills Center for low-vision adults and regularly helps with local vision screenings and health fairs. Now she has set her sights on becoming an optometrist.

Amber will be graduating in December and is currently spending the summer exploring Colorado and studying for the Optometry Admissions Test (OAT) to continue her studies.

Her advice to incoming students is simple: "If someone offers an opportunity and you think it might be the least bit interesting, jump on it. What have you got to lose?"

EMERITUS DR. WILLIAM MARQUARDT



Bill Marquardt in 2006

On the morning of June 19, 2014, Professor Emeritus William C. (Bill) Marquardt III, passed away from pancreatic cancer while being comforted by family members at Poudre Valley Memorial Hospital in Fort Collins. Bill was 89 years old.

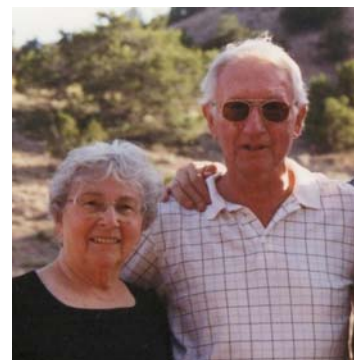
In addition to his immense curiosity about scientific study, Bill applied that same curiosity to all aspects of his life. His children could identify small slimy bugs found under the loose rocks in the hundreds of streams that Bill was always exploring and explaining.

He loved to hike, ski, and travel the US in a succession of RV's. In recent years he was involved in the Unitarian Church Sunday-morning discussion group, as well as the Front Range Forum where he attended and taught classes, always in search of a new approach to the subject at hand.

Bill attended Northwestern University starting in 1942, but was not able to complete his undergraduate degree until 1948 due to a walking tour of Italy with the U.S. Army Infantry during World War II. He received a M.S. degree in zoology in 1950 from the University of Illinois Urbana, and a Ph.D. in 1954 also at University of Illinois Urbana.

While employed for the summer in Charlevoix, Michigan, Bill met Barbara Ann Schucker who was also working in Charlevoix. They had a wonderful summer together and were married June 19, 1948 in Mount Carmel, Illinois. While they were in their 70's, Bill and Barbara bicycled France together. They were married 66 years.

His teaching and research career began in 1954 at the Veterinary Research Laboratory at Montana State College in Bozeman. Bill's final appointment was Professor of Zoology here at CSU, where he taught and did research from 1966 until 1992. Fifteen Ph. D students and 15 master's degree students completed their work under Bill's direction. To his professional credit, he published approximately 80 journal articles, six books, and produced reviews, writings, reports and society memberships too numerous to list here.



Barbara and Bill Marquardt 2001



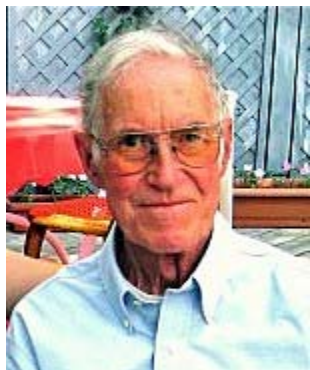
Bill, circa 1975

Upon his retirement in 1992, Bill established a fund to support biology graduate students. The income from the fund may pay for travel of graduate students to scientific meetings, help pay expenses of seminar speakers, or it can be used for other activities that will further the goals of the graduate program.

Contributions in memory of Bill Marquardt, III may be made to the Biology Graduate Program Fund at CSU. Please visit: <https://advancing.colostate.edu/CNS/BIO/GIVE> . Checks should be made out to the CSU Foundation, PO Box 1870, Fort Collins, CO 80523-1870.

Please visit <http://www.goesfuneralcare.com/obituaries/William-Marquardt/> to share remembrances, leave condolences, and read some of Bill's writings about his life.

For more please visit: <http://www.biology.colostate.edu/professor-emeritus-bill-marquardt-has-passed/>



EMERITUS DR. RICHARD WARD

Dr. Richard T. Ward, who was a member of the Department of Biology until 1990, passed on April 9, 2014. At Colorado State, Dr. Ward began his work on ecology of alpine and arctic plant ecosystems in the Department of Botany and Plant Pathology in 1958, serving as chair from 1966-1975. He became a member of the Department of Biology after a merger of departments within the College of Natural Sciences. His son Justin Ward has written an obituary, published in CSU Today on April 16 and the Fort Collins Coloradoan on April 14. That text follows:

A 56-year resident of Ft. Collins, Ward served on the faculty of Colorado State University from 1957-1990.

Ward was born Sept. 10, 1925, in Avoca, Neb., and grew up in Lincoln, Neb., with his brother David (deceased). Ward's parents, Guy and Mae, spent their retirement living in Ft. Collins. During part of his service in the U.S. Navy from 1943-1946, Ward was an Ensign aboard the Destroyer Escort U.S.S. Rudderow in the Philippines.

Ward graduated in botany from the University of Nebraska in 1948. He later received a Master's degree and a Ph.D. in Plant Ecology from the University of Minnesota and University of Wisconsin, respectively. He began his teaching career as an Assistant Professor of Biology at Beloit College in Wisconsin.

Ward's scientific research focused on the alpine tundra vegetation of Colorado, Southeast Alaska and Southwest Argentina, as well as the ecology of native grasses and American beech forests. At CSU, he was the major professor to 13 Ph.D. and 12 Master's of Science students and served as chairman of the Department of Botany and Plant Pathology from 1966-1975. He was appointed by former Colorado Governor Richard Lamm to serve on the Colorado Mined Land Reclamation Board and the Governor's Science and Technology Advisory Council.

Second only to his family, golf was Ward's passion in life. He traveled extensively in his later years, including trips to the Juneau Icefield in Southeast Alaska and to the Andes region of Argentina - both places where he had conducted field studies a half-century before. In 2013, he proudly announced his harvest of nearly 1000 tomatoes from seven plants in his back yard garden.

Not long before his death, Ward remarked that, if he had to write an obituary for himself, he would say that he was someone who didn't really go in for honors and accolades but treasured the respect of his friends. His wife Barbara said it was a privilege to have been married to him for more than 60 years. In addition to Barbara, Ward is survived by his two children -- Justin Ward of Alexandria, Virginia, and Patricia Kelly of Los Angeles, Calif. - as well as three grandchildren - Mary Cary, Charles and Katherine.

In keeping with his life-long philosophy about the importance of medical research, Ward has elected to donate his body to Science Care. No formal services are planned. In lieu of flowers, donations may be made to two organizations that were close to Ward's heart:

Education and Life Training Center: <https://www.coloradogives.org/index.php?section=organizations&action=newDonation&fwID=27915>

Colorado State University Herbarium, Department of Biology: <https://advancing.colostate.edu/CNS/BIO/GIVE> (click "support another fund" and "dedicate your gift").



EMERITUS DR. DAVID PETTUS

Dr. David Pettus, who was a member of the Department of Biology until 1989, passed away on April 2, 2014. At Colorado State, Dr. Pettus began his work on ecology and evolution of amphibians in the Department of Zoology in the College of Science and Arts in 1956. He served as assistant dean in 1965-1966. Dr. Pettus became a member of the Department of Biology after a merger of departments within the College of Natural Sciences. The following obituary was published in the Fort Collins Coloradoan on April 7:

Dr. David Pettus died at home on Wednesday, April 2, 2014, in Ft. Collins. He was born in Goliad, Texas on Nov., 1925 to Thomas and Bernice Lockhart Pettus. He served in the U.S. Navy, 1943-1946. He received his B.A. and M.A in Biology from Arizona State University in 1951 and 1952. His Ph.D. in Zoology and Genetics was earned at the University of Texas in 1956.

He was a professor of Zoology at Colorado State University from 1956 until 1989 and acted as the Assistant Dean in the College of Science and Arts at C.S.U., 1965-1966. He had a distinguished career, was published in 44 scientific journals and received the Harris T. Guard Award for Distinguished Service (an excellence in teaching award) at C.S.U. in 1973. After retirement in 1989 he became an active volunteer in the community with the Golden K Kiwanis Club. In addition, he and his first wife traveled to Europe, Africa, Central and South America, Sri Lanka, Australia, Hawaii and Mexico.

He was preceded in death by his first wife, Shirley Rose McKinley Pettus whom he married in 1947.

He is survived by his second wife, Marguerite Larson Pettus whom he married in 2006. His five children, Alana Huber (Tim), Lindy Marvin (David), Thomas "Leonard" Pettus, Bligh Pettus and Jinx Pettus also survive their dad. He had nine grandchildren and 18 great-grandchildren with 2 more on the way.

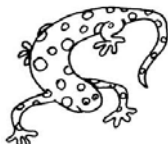
He will be missed by his family and friends. He was a brilliant man.

No services are being held.

We know he would be honored to have contributions in his name made to:

The Denver Museum of Nature and Science - checks can be made out to Denver Museum of Nature and Science and mailed to: Denver Museum of Nature and Science, Attn: Development Department, 2001 Colorado Blvd., Denver, CO 80205

The Denver Zoo - checks can be made out to The Denver Zoo and mailed to: The Denver Zoo, Care of Development Department, 2300 Steele St., Denver, CO 80205-4899; or The Denver Zoo on-line at denverzoo.org - click on the Support Us tab. Please be sure to include that you are doing this in his memory. Thank You.



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<http://www.biology.colostate.edu/news/>