

THE LEAFLET

Fall 2019
12th Edition

Entomology, Plant Pathology, and Weed Science

Upcoming Events

C.P Gillette Museum Open House

Sunday, September 15th

Come to the 2nd annual Museum open house from 1:00—5:00. Located at the Hartshorn building. Details on pg. 10!

AG Week Picnic

Monday, September 16th

Bring your checkered blankets! The College of Agricultural Sciences will host this annual event from 11:30 am to 1:00 pm in the Monfort Quad. This event is open to all CAS students, faculty and staff. Catering will be provided by the CSU Meat Judging Team.

Nutrien AG Day Barbecue

Saturday, September 21st

The 38th annual Ag Day tailgate and barbecue celebrates CSU's history and Colorado agriculture. Ag Day will take place on the intramural fields north of the stadium.

AG on the Plaza

Wednesday, September 18th

An opportunity for the CSU community to engage with students, faculty, and staff of the College of Agriculture.



13
INCOMING
GRAD STUDENTS



2
INCOMING
4+1 STUDENTS



6
NIFA
FELLOWSHIPS
RECEIVED



14
GRADUATED
STUDENTS

INCOMING STUDENTS



Maryam Alaryan is a masters student studying Plant Pathology in Dr. Amy Charkowski's lab. She is from Kuwait where she studied biological sciences and obtained her undergraduate degree from Kuwait University. She majored in zoology and minored in botany. In Dr. Charkowski's lab, she will be developing pathogen detection methods. Her career goal is to become a professor in Kuwait.



Jonathan Bertram is a PhD student in the Graduate Degree Program in Ecology co-advised by Dr. Jane Stewart and Dr. Anna Schoettle. He will be studying how the pathogen white pine blister rust changes as environmental factors change. He received his B.S. in Ecology in 2013 and his B.S. in Materials Science in 2010, both from the University of Minnesota in the Twin Cities. Jonathan has previously studied aquatic invasive species, particularly the microbiota associated with zebra mussels and Eurasian watermilfoil. He has also worked on ecology field projects in the remote prairies of Minnesota and the sweltering dry tropical forests of Costa Rica. He enjoys wildlife photography, cooking vegan meals from scratch, and reading fiction.



Judith Chiginsky received her undergraduate degree in 2014 at UC Davis in Entomology before having had the privilege to serve in the Peace Corps in Mozambique as a high school physics teacher. She then returned and adjusted back to life in the United States working as a research technician for Oregon State University before heading off to Mexico to work in the Yucatan Peninsula as a Tropical Pest Management Specialist. She enjoys the outdoors, fantasizing about dog ownership, good coffee, and art--and is looking forward to settling in to Fort Collins. She is excited to be joining the Nachappa and Nalam labs as a Masters student in Entomology, working with beet curly top virus and wheat stem sawfly.



Lily Durkee is a master's student in Ecology working with Dr. Ruth Hufbauer on the use of *Tribolium* flour beetles to investigate factors that facilitate colonization vs. extinction in new populations. She received her B.S. in Ecology/Evolution from the University of Maryland, College Park in May of 2018, where she gained a love and fascination for the study of insects. Her honors thesis work with the UMD Department of Entomology focused on community-level differences in arthropod colonization among vegetated and mudflat regions of a tidal freshwater marsh in Washington, DC. This study was the continuation of a long-term USGS/NPS project assessing the progress of revegetation efforts to improve urban wetlands. Through this exposure to research on the federal level that impacts local ecosystems, Lily was convinced to pursue a higher degree in ecology that has implications in habitat or population management. She hopes to pursue a career that uses ecological research to inform management policies aimed to preserve the natural world for future generations. Outside of school, you can find Lily on the river, at the local crag, on a bike trail, or at the ski slopes, enjoying the Colorado mountains in every possible way.

INCOMING STUDENTS

Kirsten Hein is a PhD student in BSPM program being advised by Dr. John McKay. Her studies will encompass using root genetics of maize in the field to understand drought adaptation and carbon sequestration. Recently, she attended the University of Tennessee at Chattanooga and received her B.S. in Biology. Her research experience at the University of Tennessee at Chattanooga involved a breeding and greenhouse study to identify new sources of *Phytophthora cinnamomi*-resistant germplasm for introgression into populations of *Cryphonectria parasitica*-resistant chestnut trees. Through her international research experience for undergraduates in Cádiz, Spain, she studied the eastern Atlantic and the Mediterranean flatfish, *Solea senegalensis*, chromosome organization, to characterize genes involved in sexual determination and differentiation. During her free time, she is excited to explore Fort Collins' climbing and yoga communities.



Emily Luna received a B.S. in Horticulture and M.S. in Entomology at Colorado State University from the Department of Bioagricultural Sciences Pest Management in 2012. She is pursuing a Ph.D. in Plant Pathology. Currently, Emily acts as Lab Manager for the Leach Lab and also conducts research in Dr. Leach's lab. Her main research project focuses on understanding the complex multi-trophic interactions in the wheat phytobiome with a focus on: wheat, Russian wheat aphid, and their associated bacteria. Emily also conducts research on the rice-*Xanthomonas oryzae* pathosystem. Emily's other interests include nature walks with her family, gardening and cooking.



Stephen Lunt is from Charleston, South Carolina. He served 8 years in the Marines as a civil affairs project manager alongside the army corps of engineers. His undergraduate degree is in Rangeland Ecology; where he was introduced to weed ecology and its importance in natural systems through the BSPM 308 class taught by Dr. Scott Nissen. In the 4+1 program he will be working with Dr. Todd Gaines, Dr. Frank Pears, and Brooke Alexander; to develop a pest management plan that gives managers on campus a definitive guide to non chemical measures currently practiced; and a guide to safely selecting effective reduced risk pesticides. He has a five year old son named Barrett Cash that enjoys exploring rivers and catching hatching insects with him.



Laura Mockel is a Master's student studying the plant microbiome in Dr. Pankaj Trivedi's lab. She received her B.S. in Horticulture from CSU in 2016 and is a Colorado native. She has run her own business doing landscaping/gardening since 2010. She will be working with Dr. Trivedi on finding solutions to the citrus greening problem in Florida's citrus farms. She is very interested in how the plant microbiome could make agriculture more sustainable. In her free time she loves being outdoors, hiking/walking, and drawing.



INCOMING STUDENTS



Jacob Pitt is from Kansas City, and earned his B.S. in Ecosystem Science and Sustainability here at CSU, this past May. He began working with Dr. Nalam and Dr. Nachappa near the end of his undergraduate studies, working on feeding behaviors of soybean aphids. Jacob is beginning his M.S. with Dr. Nachappa, with an interest in herbivore induced volatiles in hemp, and exploiting this tool for insect pest management. In his free time he likes to play music with his friends and go fly fishing.



Sheila Prentice is a student in the BSPM 4+1 program, pursuing an M.S. in pest management. She is originally from Durango, CO, and moved to Fort Collins in 2015. She graduated from CSU in the fall of 2018 with a B.S. in Environmental Horticulture, with a concentration in Nursery and Landscape Management. Sheila currently works in production horticulture, specializing in ornamental plants. This season, she was an assistant irrigator and container tree specialist at Fort Collins Wholesale Nursery. She is also an assistant manager at a sushi restaurant in Fort Collins. Sheila is looking forward to continuing her education in CSU's BSPM department so she can expand her knowledge and re-enter the Colorado green industry at a higher skill level.



Carlos Rigon Brazilian, grandson of a farmer and son of Professor, he grew up in an agricultural small city (Guarani das Missões, RS) where he studied in an agricultural technical school from pre-school until high school. He was an Undergraduate in Agronomy at the Federal University of Santa Maria, Frederico Westphalen, RS, Brazil in 2016. During the second semester at the University, he began to work with weeds, studying allelopathy of crops such as canola and sunflower on weeds and competition of weeds with crops. He did part of his undergraduate in Germany for a year and a half. During this period, he studied at the Hochschule Neubrandenburg University of Applied Science, Neubrandenburg, Germany, where he had the opportunity to learn more about the culture, the German language, and local agricultural management. For six months, he did an internship at the Max Planck Institute of Molecular Plant Physiology, in Potsdam, Germany, where he worked on the expression of MYB family transcription factors in *Arabidopsis*. After those experiences, his passion for work on the molecular biology of weeds began. In early 2017, he started his master's degree at the Federal University of Rio Grande do Sul, Porto Alegre, Brazil, under the guidance of Professor Aldo Merotto. The aim of his research was to investigate the evolution of metabolism-based herbicide resistance by the recurrent use of safener and herbicide mixture in *Echinochloa crus-galli* and the identification of the main responsible CYP and GST genes. He obtained his master's degree in May 2019. At CSU, he will be guided by Professor Todd Gaines, and will continue to work on molecular biology in weeds, studying the regulation of identified CYP genes in *Amaranthus* resistant to HPPD inhibitors herbicides. In his free time, he likes to be outside with his family and friends, and enjoys fishing, hiking, and, like most Brazilians, loves playing football.



Jennifer Rushton graduated from the University of Delaware with a B.S. in Pre-veterinary and Animal Biosciences. While studying in the College of Agriculture she had the opportunity to explore many courses related to plants and insects. She worked in plant pathology as a Cooperative Extension Intern in the Plant Diagnostics Clinic at UD. Here, she gained valuable hands-on experience and discovered her passion for plants. This past year she spent time working for a start-up plant biotechnology in Philadelphia, where she was able to explore the industry side of plants and discover their alternative uses. Both of these experiences made her realize the value of plant pathology for the future of our food and other products. She is excited to start her Masters in Plant Pathology under Dr. Vamsi Nalam, focusing on potato viruses and diseases.

INCOMING STUDENTS

Jennifer Shipp is a masters student in Dr. Jan Leach's lab studying the influence of plant defense hormones on aphid feeding and their associated microbiome. She completed her undergraduate degree in Soil and Crop Sciences at Colorado State University with a focus on biotechnology. Originally from Florida, her background includes horticulture, tissue culture, soil microbiology, epidemiology and lots of natural experience with insects. During her time spent in multiple research labs, she became fascinated by the potential for minute environmental details to have large effects on overall plant health and the degree to which these patterns appear under field conditions. She hopes to study what this responsive set of networks means for agriculture, food security, and our well being, and she believes that understanding pieces of these systems will contribute to a broader knowledge of our changing world. Jennifer also has a degree in visual communication and hopes to incorporate elements from her background in print design to help make science interesting and accessible to everyone. When she's not in the lab, you can find her making vector art and assorted illustrations, reading surrealist fiction, or looking for pockets of snow to hike through, even in summer.



Gagandeep (Gagan) Singh Brar is from India. He received his Bachelor's in Agriculture and Master's in Entomology from Punjab Agricultural University, India. During his Master's he worked on structural and functional characterization of double sex gene in *Bemisia tabaci* and RNA interference in *B. tabaci*. Currently he is enrolled in BSPM's PhD program in Entomology under the stewardship of Dr. Vamsi Nalam. His work will focus on two viral diseases in sugarbeet, Rhizomonia and beet curly top. He will also work on using RNA-Seq and CRISPR/Cas9 system to develop of virus resistance in sugar beets. He loves to interact with farmers, listen to their stories about agriculture, its changing scenario, and also the hardships faced by farmers in mitigating onslaught of various insect pests and diseases. This sparked his enchantment and curiosity to study the next level in the field of Agriculture Sciences. He also likes playing football and cricket, helping his father on his farms and surfing the internet for current information.



Crystal Sparks is commencing the pursuit of a PhD in molecular weed science, mentored by Dr. Todd Gaines. Her main objective is investigating the mechanisms that underly a rapid necrosis response and ultimately resistance to glyphosate, in *Ambrosia trifida* (giant ragweed). Utilizing various branches of study such as bioinformatics, genetics, physiology, and proteomics, she will characterize molecular pathways and players that appear to contribute to this response. Crystal obtained her bachelor's degree here at CSU, with a major in biochemistry and a minor in molecular biology. She is interested in understanding the molecular mechanisms and evolution of traits that weeds use to proliferate under various conditions. She hopes to use this knowledge to aid in the development of agricultural technologies, products, and procedures that better diagnose and reconcile issues faced by growers while helping to foster sustainable agricultural practices.



NEW FRONT OFFICE STUDENT EMPLOYEE!

Adam Hochberg is an incoming transfer student majoring in psychology. Originally from the Washington DC area, he has lived in Denver for the past 3 years and is looking forward to living in Fort Collins. When not working or in class Adam likes to spend time outdoors hiking, biking, and playing soccer with friends. He is also an avid cook, and loves watching the food network.



GRADUATES

On to Bigger and Better Things

In the past year, BSPM had 14 hard-working and successful students obtain their Masters or Doctoral degrees. We are fortunate to have had you as students in our department. We are proud of your accomplishments and we wish you the very best in your future endeavors.

FALL 2018

Franz Lichtner	Ph.D. Plant Pathology	Advisor: Dr. Broders
"Soil microbial community dynamics associated with agricultural crops"		
Zach Longtine	M.S. Entomology	Advisor: Dr. Cranshaw
"Evaluation of factors that contribute to the expansion and control of brassica insect pests in northern Colorado"		
Rachael Stoudt	M.S. Pest Management	Advisor: Dr. Stewart
"Internship experience in the plant diagnostic clinic with an emphasis on diagnosing pests and pathogens of conifer trees"		

SPRING 2019

Shannon Clark	Ph.D. Weed Science	Advisor: Dr. Nissen
"A new paradigm in invasive plant management: using a pre-emergent herbicide to establish and preserve rangeland vegetation"		
Stephen Cohen	Ph.D. Cell and Molecular Biology	Advisor: Dr. Leach
"How stress affects rice: a characterization of the rice transcriptome during single and simultaneous abiotic and biotic stresses"		
Alison Hogeboom	M.S. GDPE	Advisor: Dr. Norton
"Phytochemicals enhance survival and pathogen tolerance in the European honey bee: a structure-function study"		
Bradley Lalande	M.S. Plant Pathology	Advisor: Dr. Stewart
"Abiotic and biotic factors influencing western United States coniferous forests"		
Grey Monroe	Ph.D. Ecology	Advisor: Dr. McKay
"From satellites to sequences: studying climate adaptation by genetic loss-of-function"		
Taylor Person	M.S. Bioagricultural Sciences	Advisor: Dr. Jahn
"Characterization of Sorghum bicolor genotypes under varying water regimes"		
Brittany Smith	M.S. Ecology	Advisor: Dr. Ode
"Multitrophic community interactions: herbivory effects on pollinator diversity and plant performance in cow parsnip"		

SUMMER 2019

Brian Campbell	Ph.D. Bioagricultural Sciences	Advisor: Dr. McKay
"Plasticity and genetic architecture of agronomic and biochemical traits of industrial hemp (<i>Cannabis sativa L.</i>)"		
Amy Clark	M.S. Plant Pathology	Advisor: Dr. Jahn & Dr. Norton
"Initiating plant herbivory response increases impact of fungal pathogens on a clonal thistle"		
Mary Ortiz Castro	M.S. Plant Pathology	Advisor: Dr. Leach
"Understanding the disease ecology of the corn bacterial leaf streak pathogen, <i>Xanthomonas vasicola pv. Vasculorum</i> "		
Ian Sexton	M.S. GDPE	Advisor: Dr. Brown
"Pile burn scar restoration at lily lake: tradeoffs between abundance of non-native and native species"		

AWARDS

National Institute of Food and Agriculture (NIFA) Fellowships

2019 Recipients:

Hannah Berry Pursuing Ph.D. Cell & Molecular Biology, Argueso Lab

Predoctoral Fellowship: Elucidating Hormonal Crosstalk During Tomato Development and Disease

Stephen Cohen Ph.D. Cell & Molecular Biology, Leach Lab

Post Doctoral Fellowship: Defining Plant-Induced Mutagenesis Dynamics of Bacterial Crop Pathogens

Magda Garbowski Pursuing Ph.D. GDPE, Brown Lab

Predoctoral Fellowship: Targeting Functional Trait and Genetic Variability for Improved Establishment of Restoration Species

Kevin Lehner Ph.D. Genetics and Genomics, McKay Lab

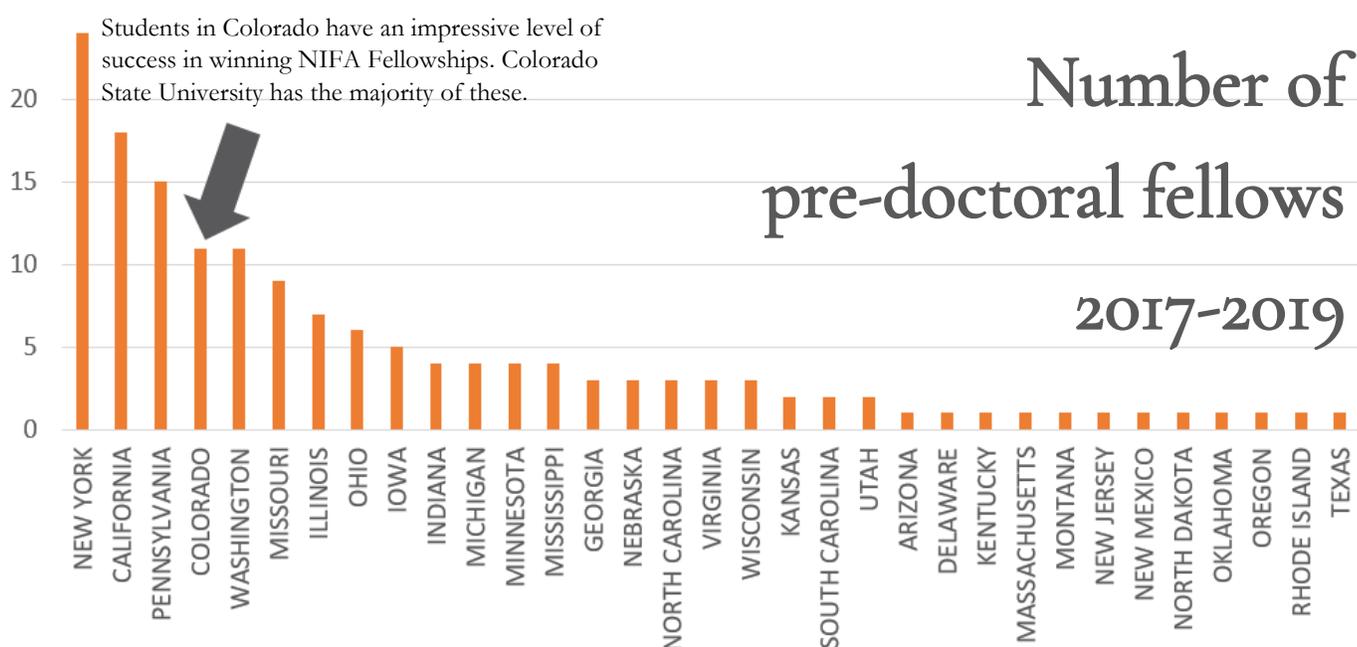
Post Doctoral Fellowship: A Dynamic Genotype-by-Environment (GxE) Analysis of Sorghum Tillering Under Drought Stress

Alyx Shigenaga Pursuing Ph.D. Plant Pathology, Argueso Lab

Predoctoral Fellowship: Agriculture in a Changing Climate: A Novel Approach to Reduce Heat-Induced Disease Susceptibility of Brassicaceae Hosts to Bacterial Pathogens

Stephen Wyka Pursuing Ph.D. Plant Pathology, Nalam Lab

Predoctoral Fellowship: Friend Or Enemy: Understanding The Evolutionary Life Strategy Of Claviceps Purpurea On Its Grass Hosts



AWARDS

At the 59th Meeting of Aquatic Plant Management Society (July 2019), **Mirella Farinelli Ortiz** won 1st place for her Oral Presentation; the Barbra H. Mullin Travel Award; and received a plaque for service and leadership as a student board member.

GDPE at CSU awarded **Kirsten Hein** the Programs for Research and Scholarly Excellence Fellowship.

Dr. Ruth Hufbauer was awarded an NSF grant as well as a National Urban and Community Forestry Advisory Council (NUCFAC) grant.

Ruth was also nominated for an awarded CSU support to attend HERS (Higher Education Resource Services).

Afnan Nasaruddin did amazing on 3-Minute Thesis (3MT) Competitions in the past year, winning 4 !!

- People's Choice Award: BSPM 3-Minute Thesis Competition
- People's Choice Award: Vice President for Research (VPR) 3-Minute Challenge
- People's Choice Award: Western Association of Graduate Schools (WAGS) 3rd Annual Regional Grad Slam Competition
- 1st Place Winner: 1st Annual Colorado Statewide 3-Minute Talk Competition

→ [Watch Afnan's Presentation](#)

Olivia Todd won 1st place in the Ph.D. Oral Presentation category at Weed Science Society of America meeting (February 2019).

Alyx Shigenaga received Tex Baker Graduate Student Award for Excellence in Plant Pathology, for the second time!!

Jennifer Shipp won the College Honors Award for her poster in the Celebrate Undergraduate Research Symposium.

Both **Marcel Jardeleza & Eliza Clark** were awarded Research Mentoring to Advance Inclusivity in Stem (RMAIS) awards from GDPE.

Katy McIntyre was selected to give a talk in the Meeting of International Society of Molecular Plant-Microbe Interaction in Glasgow, Scotland, UK (July 2019).

Both **Afnan Nasaruddin & Magda Garbowski** were selected as 2019-2020 Vice President for Research (VPR) Graduate Student Fellows.

Hayley Bubb was awarded the Department of Biology's Rookie of the Year Award for first year GTAs.

Erika Pierce was awarded the Sigma Xi Grant-in-aid-of-Research (GIAR).

Ryan Paul received the American Chemical Society AGRO Division 2019 Education Travel Award.

Dhaval Vyas was awarded the NSF Postdoctoral Research Fellowship.

Theresa Barosh received the GDPE Science Communication Fellowship for Spring 2019.

Alejandra Huerta received the 2019 IS-MPMI Congress: Shimamoto Travel Award.

AWARDS

Hannah Berry

received the Undergraduate Choice Top Scholar Award from the Graduate Showcase Graduate Student research competition at CSU (November 2018), received the Outstanding Student Scholarship Award from the Cell and Molecular Biology Program at CSU (December 2018), and was selected as SOGES 2019-2020 Sustainability Fellow (April 2019).

Janet Dill was awarded the College of Ag Community Excellence Service award.

Teddy Borland received the APS Foundation Undergraduate Student Travel Award.

Dr. Whitney Cranshaw was awarded the Lee Sommers Agricultural Sciences Distinguished Career Award from The College of Agricultural Sciences. This award recognizes a senior faculty member in the College of Agricultural Sciences (CAS) for their long and distinguished career based on excellence in teaching, research, and/or outreach.

Stephen Cohen won the I.E. Melhus Graduate Student Symposium Award from APS. It is a travel award with an invitation to give a talk at the APS Plant Health 2019 in Cleveland

Maia Holmes won the Charles Shepardson Graduate Student Teaching Award. This honor is awarded to one College of Agricultural Sciences student who has demonstrated excellence in classroom teaching of agriculture related courses at CSU within the past academic year.

Dr. Paul Opler was honored as a Fellow of the Royal Entomological Society (May 2019).

Dr. Jan Leach received the Agropolis Louis Malassis International Scientific Prize for Agriculture and Food in the category of Distinguished Scientist.

Hudson Takano had the Best Paper in Plant Daninha Journal between 2016-2018; Received 1st place for his Oral Presentation at the Brazilian Weed Science Congress; Won 1st place Oral Presentation at the Western Weed Science Society of America Annual Meeting; and won the New Frontiers scholarship to attend the Corteva Natural Product Discovery Conference.

Grace Johnston received College Honors at the Celebrate Undergraduate Research & Creativity at CSU.

Alyx Shigenaga and **Katy McIntyre** were awarded Travel Awards to attend the 2019 Plant Biology meeting of the American Society of Plant Biology. **Katy** also received the Ralph R. Baker Graduate Student Award for Research Excellence, as well as the Monty and Jeanice Harrison Outstanding Graduate Student Scholarship in Plant Pathology Research, for the second time!!

Chuck Harp was awarded the 2019 research contributors award for his efforts moving the Gillette Museum from Laurel Hall to Hartshorn in 2018, for acquiring 2 important insect collections as donations into the Museum; and for continuing to meet objectives for the NSF grant to complete the Lep-Net project.

Donald Brooks was awarded the Foundation for Food and Agriculture Research Award.

Abby Barker won 1st place in the Basic Biology Poster Competition at the Western Weed Science annual meeting & she won the Foundation for Food and Agriculture Research Award.

MUSEUM OPEN HOUSE

Sunday, September 15

We want to invite you to our second annual Open House on Sunday, September 15 from 1-5pm to help commemorate last year's completion of the new museum space. We want to thank those who have already enjoyed the use of the C.P. Gillette Museum of Arthropod Diversity in its new home on the bottom level of the Hartshorn Building, located at 600 Hughes Way. After residing in its prior space in Laurel Hall for the past sixteen years, we completed the move-in on July 20, 2018.

The new space gives us four times the room we previously had and allows for separate rooms for the pinned insect museum, the aquatic insect collection, and our extensive reference library. The museum houses Arthropod specimens representative of the Rocky Mountain region as well as several studies of our National Parks, National Monuments, National Grasslands, and study sites across the country. Since the move last year we have added 30 new cabinets in the main collections room, holding an additional 750 new drawers. We have added space in our Annex to hold several recent donations and to place newly donated specimens in quarantine and freeze material before it is placed in the permanent pinned collection.

The C.P. Gillette Museum houses approximately 3.5 million specimens, comprised of one of the largest aquatic insect collections in the country as well as one of the larger and most active Lepidoptera collections in the West. The collection continues to grow through the generous financial donations and through donations of specimens added throughout the past several years. Please join us by making a visit to the museum during our Open House.



Photos by Kathryn Scott, [The Colorado Sun](https://www.coloradosun.com)

CSU BUG ZOO

The mission of the CSU Bug Zoo (CSUBZ) is to bring a deeper appreciation for arthropods through hands-on learning opportunities with live animals, enthusiastic volunteers, and continuing involvement in the Fort Collins community. As of the end of the spring semester, the CSUBZ is home to 30 different species of arthropods, 10 of which are regularly used on outreach. Animals range from the western widows (*L. hesperus*), to the Madagascar hissing cockroaches (*G. portentosa*). Residents of the Zoo serve as ambassadors who help dispel common myths, fears and stereotypes about the 'dirtiness' of arthropods. During the 2018-2019 year, we were fortunate enough to share our passion with 43,000 people! To get involved or learn how to support the zoo education program through donation, please email csubugzoo@gmail.com



Photo by Nathaniel Comai

CSU ENTOMOLOGY CLUB

The CSU Entomology Club is proud to call the Hartshorn building it's new home! Located at the main kiosk space in the basement of the old health facility, the Entomology Club has been working tirelessly all summer to create a space that is both inviting and functional. Serving not only as a place to gather and interact with club officers, but the kiosk space also includes great resources. Need a quiet space to study, access to identification resources and information, or want opportunities for networking and one on one experiences with professionals at the C. P. Gillette Entomology Museum? Well, come on over and visit us at the new Entomology Club Kiosk!

Contact Us:: csuentomologyclub@gmail.com | Facebook: [CSU Entomology Club](#) | Instagram: [@csuentomologyclub](#)

DONORS

Dr. Barry Beaty	Karen Guter	Howard Schwartz, Ph.D.
Caryl Beaty	Thomas Guter	Kathryn Schwartz
Don Beaver, Ph.D.	Chuck Harp	Dr. Dale Shaner
Margaret Ann Beaver	Cindy Harp	Diana Shaner
Carolyn Bowman	Susan Harrington	Jennifer Stimson
Donald Bowman	Dr. Thomas Harrington	Carolyn Stoaks
William Brown, Jr., Ph.D.	Lionel Heyman	Dr. Ralph Stoaks
George Bryan	James Hoffman	Lydia Thompson
Nancy Bryan	Karen Hoffman	Ned Tisserat, Ph.D.
Evi Buckner-Opler	Ruth Hufbauer, Ph.D.	Jerry Vedvik, Ph.D.
Betty Jo Cahill	Kay Johnson	Aceto Agricultural Chemicals Corporation
Glen Cahill	Samuel Johnson	Albaugh LLC
Douglas Carlson	Dr. Duane Keown	Annual Reviews
Amy Charkowski, Ph.D.	Joy Keown	BASF Corporation
Janet Chu	Janet Kilgore	Bayer Corporation
Whitney Cranshaw, Ph.D.	Larry Kilgore	Cargill, Inc.
Deborah Davenport	Boris Kondratieff, Ph.D.	Dow International Finance S.a.r.l.
Ken Davenport	Jan Leach, Ph.D.	Dupont De Nemours & Company, LLC
Carrie Davis	Betty Lindsey	EMCOR Group, Inc.
Kent Davis	Donald Lindsey, Ph.D.	The Griffin Foundation, Inc.
Franck Dayan, Ph.D.	Barry Long	Limnology Information & Freshwater Ecology, Inc.
Renee Dayan	Ruth Long	Makhteshim-Agan of North America, Inc.
Gloria Dubin	Dr. Nancy Lorenzon	Nutrien Ltd
Dr. Jesse Dubin	Catherine McNary	Rocky Mountain Regional Turfgrass Assn.
Thomas Dykes	Tim McNary	SePRO Corporation
Nina Eckberg	Jane Nicolet	Sumitomo Corporation of America
Thomas Eckberg	John Nordin	Syngenta Crop Protection AG
Dr. Scott Ellis	Sylvia Nordin	United Phosphorus, Inc.
Edwin Fichtner	Andrew Norton, Ph.D.	The Vanguard Group, Inc.
Patricia Fichtner	Carole Oldemeyer	West Greeley Conservation District
Raney Fichtner	Dr. Paul Opler	Wilbur-Ellis Company, LLC
Scott Fichtner, Ph.D.	Tamar Opler	
Wayne Fithian	Hal Pearce	
Todd Gaines, Ph.D.	Cynthia Rasmussen-Dykes	
Steven Geist		

Our next priority is to endow the new BSPM Undergraduate Research Fellowship (We are 38% of the way to the \$25,000 needed). The BSPM Undergraduate Research Fellowship program was created in 2016 to promote undergraduate student research in our department. The aim of this fellowship is to attract undergraduate students that have shown commitment to diversity and support them with salary to work in BSPM labs of their choice, conducting state-of-the-art mentored research. After a few years of fundraising, the program accepted its first cohort in the fall of 2018, funding three undergraduate students for research: Miranda Flora (BSPM Fellow in Dr. Cini Brown's lab), Sophie Soward (BSPM Fellow in Cris Argueso's lab) and Jennifer Shipp (BSPM Fellow in Dr. Jan Leach's lab). After the success of our first year, we will now have five new students supported by this fellowship in its 2019-2020 cohort. Students in the BSPM Undergraduate Research Fellowship program also participate in workshops on professional development, public speaking and career paths in research and agriculture. Our goal is to prepare them to become the future leaders of agriculture research. <https://advancing.colostate.edu/BSPM/GIVE>