

University of Colorado  
**Department of  
Pharmacology**

NOVEMBER 2023 NEWSLETTER

*a letter from*

## THE CHAIR



Welcome to our first Pharmacology Department Newsletter! These newsletters will be sent out on a quarterly basis and will highlight recent accomplishments and successes in the Department, as well as our future goals. Since this is our first newsletter, I will summarize the many department accomplishments since I started as Chair of the department in mid 2022.

Since that time, our faculty have published 82 manuscripts, many in high profile journals that have had a significant impact in the broader scientific community. We continue to collaborate extensively, with 10 of those publications being shared amongst department members. This exceptional productivity is also seen in the 20 grants we have been awarded since mid 2022. All members of our department -- from administrative staff, to lab personnel, to faculty -- deserve credit for this accomplishment, as we know it takes a village to be successful in the grant arena. Furthermore, our trainees should get a special shout-out; 7 of them have received pre- or post-doctoral awards this year.

New department initiatives are underway, and I applaud our Wellness and DEI committees for all the work they have done this first year; this has made our department a more welcoming place for all. I also want to recognize the hard work of our recruitment committees and am excited that we will be welcoming Justin O'Hare to our faculty this coming summer. We are continuing to actively recruit moving forward.

Though we still have work to do on many fronts, I am confident that working together we will continue to make the Department of Pharmacology a top-tier department where we enjoy working together to do great science.

As I reflect on my first year as Chair of the Department, I feel honored and humbled to work with such a great group of people.

**Heide Ford, PhD**  
Professor  
CU Medicine Endowed Chair

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# Scientific Highlights

*Pharmacology in the News*

## Paradigm-Shifting Discoveries on Mechanisms Could Unlock New Therapies for Alzheimer's and Other Brain Diseases

Department of Pharmacology Professor, Dr. Ulli Bayer, recently led his team in making a paradigm shifting discovery on the mechanisms required for learning and memory that could lead to new therapies for Alzheimer's disease and potentially Down syndrome.

The study was published in August in the journal *Nature* and was featured in a press release in the CU Anschutz News.

For 30 years, researchers have believed that enzymatic CaMKII activity is required for a form of synaptic plasticity that is crucial for learning and memory (i.e. LTP, long-term potentiation). However, Dr. Bayer and his team found that LTP instead requires structural functions of CaMKII.

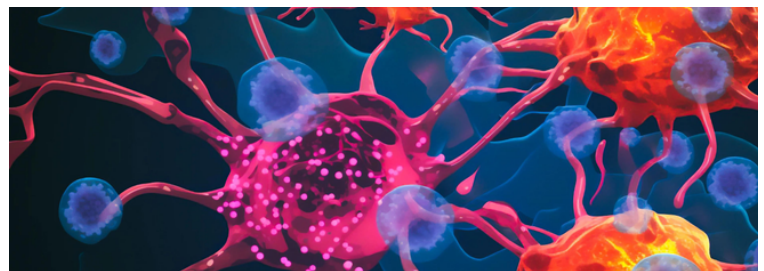
This enables a new class of CaMKII inhibitors to alleviate Alzheimer's-related impairments without interfering with LTP. Amyloid-beta (Abeta) plaques in the brain are a hallmark of Alzheimer's disease. The researchers found one group of inhibitors that protected from the Abeta effects without impairing LTP. This could be potentially useful in treating a number of brain diseases without debilitating side effects.



**Ulli Bayer, PhD**  
*Professor*

**The implications are that a certain class of CaMKII inhibitors could actually be used chronically to treat brain conditions including Alzheimer's Disease. This is super novel, as it has previously been thought that any CaMKII activity inhibitor would block synaptic plasticity that underlies learning and memory so their chronic use would be counter-indicated," said Dr. Ulli Bayer.**

Dr. Bayer said if the inhibitors work in humans, they could provide additional benefit in conjunction with any current Alzheimer's treatment strategies. The Bayer lab is now testing whether their predictions can be used for human therapy.



### **Dr. James Costello highlights the importance of data science and collaborative science**

#### **What do you consider to be the importance of data science and collaborative science?**

The major challenges in biomedical research require many experts to collaborate and make decisions based on strong and reproducible data. So, the integration of collaborative and data sciences into the questions that we all study will provide the opportunity for greater scientific advancements and deep insights. We often try to reduce our questions into the most simplified systems so that we can control confounding variables and draw conclusions based on the results from our experiments. Science has come a long way with this approach and will continue in this manner into the future.

Collaborative and data sciences provide a different paradigm of addressing these questions and can be used to find patterns, identify novel relationships, and draw new insights as the questions we aim to address become more complex and the systems used try to account for more confounding variables. There is an old adage, "If you want to go fast, go alone, If you want to go far, go together."

Collaborative and data science approaches will hopefully facilitate the long journey to address the big challenges in biomedical research.

#### **What would you suggest to a junior faculty looking to collaborate within their research?**

There is no shortcut or secret to developing effective collaborative relationships. Ultimately, a collaboration is a mutual agreement between peers to work together to address a shared goal. This takes time, effort, and commitment. Some factors do help collaborations start and develop. First, there must be a common goal, or a shared vision of the collaborative project that will result in a benefit to both individuals or the group. I think we all know this, but asking directly if there is a shared goal or what the shared goal is can shed light on the thinking of the two researchers. It is important to leverage your current resources and network. A relationship fostered by a mentor or colleague is a good place to start, particularly if you do not know the other person well. Start a collaboration with a small goal. There is nothing that keeps the relationship going like successfully generating new data that addresses the goals of both research groups. Being proactive is a necessity. It is much easier to let things pass and not get to items on our long list of items. If the relationship stagnates, it is less likely to succeed, hence generating small data wins helps. All of this is predicated on clear communications and expectations. For a junior person, the expectations are very important to make sure there is an equal contribution from both sides. Finally, nothing keeps the work together like money, so get a small pilot grant to start and build on that. Again, small wins. In the end, collaborations can come in many forms, and being clear on that form is a big part of being a good collaborator.

#### **How have you managed to integrate data and collaborative science into your research?**

Our lab, and I would say all Pharmacology labs, integrate data and collaborative science into their research programs. From the collaborative science perspective, we have developed working relationships with collaborators with shared goals and mutually beneficial interactions. We try to partner with labs that complement our expertise and can address an aspect of the research question that we cannot. At least from our perspective, working with other investigators is both fun, can be highly productive, and we have benefited greatly from our collaborators in the Department.

The scale may vary between labs, but the approaches we take to "make sense" of the data we generate is data science. Just as we use qPCR or western blots as a technique to address a specific question data mining, statistical models, and similar approaches are just more tools that we have in our toolkit to address the questions we study. With data science approaches, we are able not only to analyze our own data, but we can leverage publicly accessible datasets to generate novel hypotheses or to generate additional supporting results.



**James Costello, PhD**  
Associate Professor

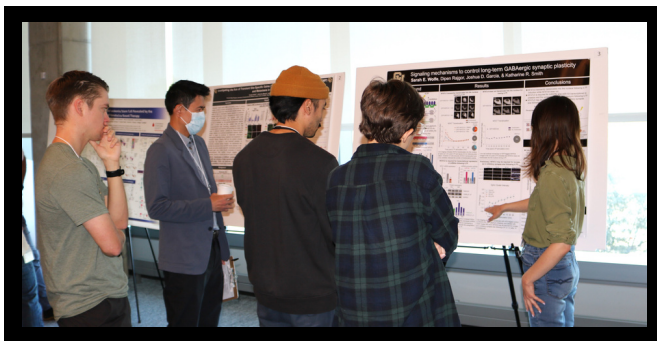
# Student Research Day

September 25, 2023

The Pharmacology PhD Program held its 11th Annual Student Research Day on September 25. This all-day event showcased research done by students and post-docs in the program and the Pharmacology Department through poster sessions and seminars.



Student Research Day was organized by students Maddy Rodriguez, Amber Stewart, and Lorena Alamillo and Program Administrator, Shanelle Felder (pictured above). Special thank you to the organizers for their hard work!



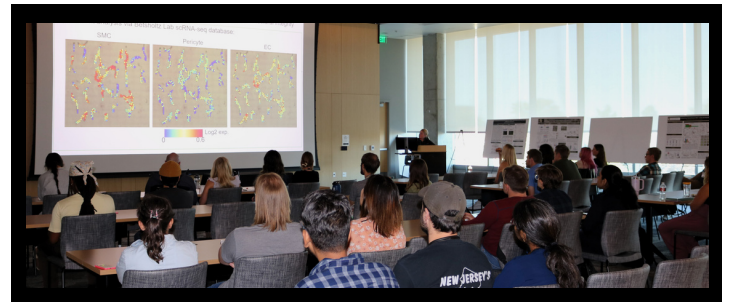
## *Student Research Day Award Winners*

**BEST GRADUATE STUDENT TALK**  
**DILLON BOUTLON**  
6TH YEAR, CAINO LAB

**BEST GRADUATE STUDENT POSTER**  
**SPENCER HALL**  
3RD YEAR, VERNERIS LAB & DAVILA LAB

**BEST POSTDOC TALK**  
**SAMANTHA OLAH**  
POSTDOC, KENNEDY LAB

**BEST POSTDOC POSTER**  
**KARTHIK SELVAM**  
POSTDOC, KUTATELADZE LAB



# CELEBRATIONS

*Cheers!*

The Department of Pharmacology Recently celebrated the retirement of Paula Hoffman, PhD.

Dr. Hoffman has committed more than 30 years of service to the University of Colorado. She is known for her research related to the neurobiological effects of alcohol, where she has spent many years focusing on the neuroadaptive mechanisms that lead to either tolerance or withdrawal.

We thank Dr. Hoffman for her service and commitment to the University of Colorado and the Department of Pharmacology and wish her all the best in retirement!



**Paula Hoffman, PhD**  
Professor Emerita



Fall has been full of fun events for the Department of Pharmacology, including a department happy hour, a hot drink cart to celebrate the beginning of the school year, and Pharm Fall Fest 2023!



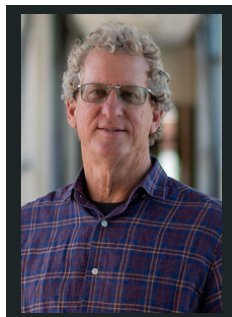
# DEI & Wellness Updates

*From the DEI & Wellness Committee Chairs*

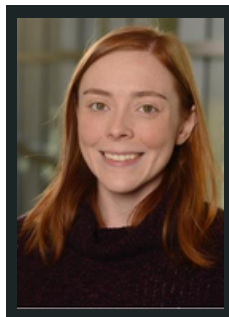
The Department of Pharmacology's Diversity, Equity, and Inclusion and Wellness Committees were founded in July 2022. Both committees have aided in creating a sense of connection in a post-pandemic environment. They have decorated our walls and educated us in ways that we can improve our health, wellbeing, and potential. We can't wait to see what the next fiscal year brings!

## *Diversity, Equity, and Inclusion (DEI) Committee*

Drs. Scott Cramer and Katherine Waugh founded the department's DEI committee. Claire Gillette has replaced Dr. Waugh's seat in fiscal year 2024. The DEI Committee is constituted by Jason Aoto, Stephanie Baker, Lily Feldman, Sara Gookin, Tyler Martinez, and Kaitlynn O'Leary. Throughout the year, the committee crafted a vision and mission statement specific to our department. They added resources to the department's DEI webpage, created a visual representation of important DEI terminology, and added a Teams channel for all members. Their goal in the first year was to establish presence and ensure all voices were heard. The goals of fiscal year 2024 include intentional recruitment of faculty, post-docs, and students.



**Scott Cramer, PhD**  
*Professor*  
*DEI Committee Co-Chair*



**Claire Gillette, PhD**  
*Post Doc*  
*DEI Committee Co-Chair*

## *Wellness Committee*

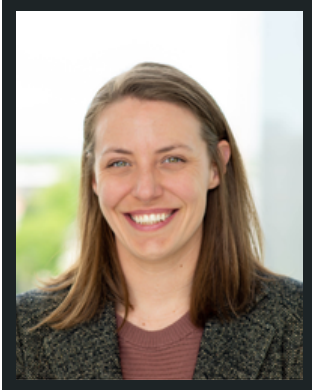
The department's Wellness committee was founded by Dr. Cecilia Caino and constituted by Mair Churchill, Moriah Denler, Moli Joshi, Austin Kovac, Emily Sullivan, and Amber Truitt. The committee kicked off the year with a costume contest at the first annual Fall lunch. They held a variety of events including a kindness campaign; Anschutz Faculty and Staff from the Mental Health Clinic presented a seminar on Stress, Anxiety, and Self Care; a photo contest; and a lunch celebration of culture and international heritage. The committee will continue to focus on the overall Occupational/Social wellness of the employees in our workplace.



**Cecilia Caino, PhD**  
*Associate Professor*  
*Wellness Committee Chair*

# New Grants Awarded

July-November 2023



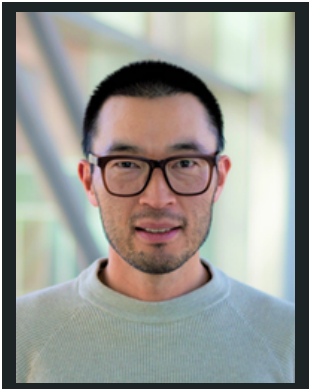
**Parkinson's Foundation Postdoctoral Fellowship Award**  
"A novel genetic toolkit to manipulate dopamine release and receptor trafficking"  
2 years awarded

**Chelsie Kadgien, PhD**  
Post Doc  
Kennedy Lab



**National Institutes of Health**  
"Elucidating the role of EYA2 at centrosomes in glioblastoma stem cells"  
NIH NRSA F31  
2 years awarded

**Art Wolin, MS**  
Pre-Doctoral Fellow  
H. Ford Lab



**National Institutes of Health**  
"A new approach to understanding cognitive disabilities in Down syndrome"  
NIH R21  
2 years awarded

**Won Chan Oh, PhD**  
Assistant Professor

**The Ludeman Center's Early-Career Faculty Research Development Awards**  
"Defining how maternal cannabidiol (CBD) consumption during pregnancy affects female offspring cognition and mental health"  
1 year awarded



**National Institutes of Health**  
"APP as a mediator of amyloid beta effects on CaMKII synaptic functions"  
NIH NRSA F31  
3 years awarded

**Matt Larsen**  
Graduate Student  
Bayer Lab



**National Institutes of Health**  
"Trisomy 21 Model Atlas"  
NIH MPI R24  
4 years awarded

**Matthew Galbraith, PhD**  
Assistant Professor

# Publications

July-November 2023

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## Department of Pharmacology Career Opportunities

The Department of Pharmacology is actively recruiting for the following positions (all job postings are linked below):

- **Assistant/Associate Professor in Cancer Biology - Pharmacology**
- **Assistant/Associate Professor in Neuroscience - Pharmacology**
- **Post-Award/Payroll Program Manager - Pharmacology**

Visit the [Department of Pharmacology website](#) to explore these opportunities further and submit an application.

**Please feel free to share these open roles with your network!**