



Photo by Jeff Miller/UW-Madison

# SPRING NEWSLETTER

**CMP** Cellular & Molecular  
Pathology

**2017**

## Gene Regulatory Mutation Linked to Rare Childhood Cancer ↗

May 12, 2016

[Peter Lewis](#)

A single defect in a gene that codes for a histone — a “spool” that wraps idle DNA — is linked to pediatric cancers in a study published in the journal *Science*.

## School of Medicine and Public Health to Collaborate on \$5.5 Million Alzheimer's Study ↗

May 5, 2016

[Barbara Bendlin, PhD, Shi-Jiang Li, PhD](#)

The University of Wisconsin School of Medicine and Public Health will collaborate with the Medical College of Wisconsin on a four-year, \$5.5 million grant from the National Institutes of Health's (NIH) National Institute on Aging to study Alzheimer's disease.

## Peter Lewis Named Pew Scholar in Biomedical Sciences ↗

June 10, 2016

[Peter Lewis](#), an assistant professor of biomolecular chemistry at the University of Wisconsin School of Medicine and Public Health, has been named a Pew scholar in the biomedical sciences by The Pew Charitable Trusts.

## UW-Madison Seeks to Capitalize on Push to Harness Helpful Microbes ↗

June 14, 2016

[Federico Eugenio Rey, PhD](#)

At UW-Madison, exploration of the microbiome is occurring in many different labs and contexts, ranging from surveys of the microbiomes of the bat wing, copepods and Lake Michigan algae to the gut microbiomes of the Wisconsin high school class of 1957 as part of the Wisconsin Longitudinal Study (WLS).

## Study Finds Restricting Certain Amino Acids Improves Metabolic Health ↗

June 23, 2016

[Dr. Dudley Lamming](#)

Madison, Wisconsin - Humans and mice seem to agree: not only do low-protein diets show significant health benefits, but protein quality matters as much as amount.

## Lifestyle Factors May Drive Alzheimer's Disease ↗

June 28, 2016

[Dr. Barbara Bendlin](#)

Madison, Wisconsin - Life stress, insulin resistance, and poor sleep may be precursors to Alzheimer's disease, according to University of Wisconsin-Madison research presented this week at the 2016 Alzheimer's Association International Conference (AAIC) in Toronto.

## Milwaukee Foundation Supports Early-career Faculty's Innovative Research ↗

May 26, 2016

[Feyza Engin, Srivatsan Raman](#)

For their distinct and innovative molecular research, two University of Wisconsin-Madison scientists have earned Shaw Scientist Awards from the [Greater Milwaukee Foundation](#).

## Novel Mouse Model Sheds New Light on Autism Spectrum Disorder ↗

June 3, 2016

[Luigi Puglielli](#)

A new mouse model, developed by researchers at the University of Wisconsin-Madison, is the first to show that when more of a specific biological molecule moves between different parts of nerve cells in the mouse brain, it can lead to behaviors that resembles some aspects of autism spectrum disorder (ASD) in humans.

## Lymphoma Immunotherapy Study Shows Why UW Carbone is a Leader in Cancer Virology ↗

July 5, 2016

[Dr. Shannon Kenney](#)

It may seem odd at first that there are researchers at the UW Carbone Cancer Center who study viruses, those tiny particles that do not develop cancer themselves because they are not even alive. But when they infect human cells, a subset of viruses can cause their host to develop cancer.

## UW Leading Way With Innovative Immunotherapy Trial for Colorectal Cancer ↗

July 15, 2016

[Dr. Dusty Deming](#)

Madison, Wisconsin - A UW-Madison physician-scientist who is himself a colon-cancer survivor is about to launch one of the nation's first tests of using immunotherapy to treat metastatic colon cancer.

## Combining Radiotherapeutic with Antitumor Antibody and IL2 to Create a Potent In Situ Cancer Vaccine ↗

July 27, 2016

- Principal investigator: [Paul Sondel](#), professor, pediatrics
- Co-principal investigators: Jamey Weichert, associate professor, radiology; Zachary Morris, assistant professor, human oncology; [Mario Otto](#), assistant professor, pediatrics; Bryan Bednarz, assistant professor, medical physics

## Macular Degeneration Insight Identifies Promising Drugs to Prevent Vision Loss ↗

July 27, 2016

In a study published this week in the [Proceedings of the National Academy of Sciences](#), a University of Wisconsin-Madison research team pinpoints how immune abnormalities beneath the retina result in macular degeneration, a common condition that often causes blindness.

## UW2020: WARF Discovery Initiative Proposals Selected [↗](#)

July 27, 2016

[Su-Chun Zhang](#)

Eight proposals involving University of Wisconsin School of Medicine and Public Health researchers are among 14 research and infrastructure projects selected by the UW-Madison Office of the Vice Chancellor for Research and Graduate Education for support from the UW2020: WARF Discovery Initiative.

## Acquisition of a Pacific Biosciences DNA Sequencer for UW-Madison Campus [↗](#)

July 27, 2016

Co-principal investigators: John M. Denu, professor, biomolecular chemistry; Colin Dewey, associate professor, biostatistics and medical informatics; [David O'Connor](#), professor, pathology and laboratory medicine; [Shelby O'Connor](#), assistant professor, pathology and laboratory medicine; [Caitlin Pepperell](#), assistant professor, medicine; Michael Sheets, professor, biomolecular chemistry; [Rupa Sridharan](#), assistant professor, cell and regenerative biology; [Xinyu Zhao](#), professor, neuroscience

## Early Stage Translational Drug Discovery: Matchmaking UW Biology and Medicinal Chemistry Resources Towards High Impact Compounds and Outcomes [↗](#)

July 27, 2016

•Co-investigator: Michael Hoffmann, professor, oncology  
•Collaborators: [Laura Knoll](#), associate professor, medical microbiology and immunology; [Paul Sondel](#), professor, pediatric oncology; John Denu, professor, biomolecular chemistry; [Xinyu Zhao](#), professor, neuroscience; Yongna Xing, associate professor, oncology; [Wei Xu](#), professor, oncology; Robert Striker, associate professor, medicine; Manish Patankar, professor, obstetrics and gynecology; Douglas Weibel, associate professor, biochemistry

## Shared Live Cell Imaging Resources for Studying HIV/AIDS [↗](#)

July 27, 2016

•Principal investigator: Nathan Sherer, assistant professor, oncology  
•Co-investigators: [Bill Sugden](#), professor, oncology; [Jenny Gumperz](#), professor, medical microbiology and immunology; [David O'Connor](#), professor, pathology and laboratory medicine; Shelby O'Connor, assistant professor, pathology and laboratory medicine; Robert Striker, associate professor, medicine; [David Evans](#), professor, pathology and laboratory medicine; Eric Johannsen, assistant professor, medicine; [Shannon Kenney](#), professor, oncology

## Reconstructions of Neural Circuits in Parkinson's Disease [↗](#)

July 27, 2016

•Principal investigator: [Su-Chun Zhang](#), professor, neuroscience  
•Co-principal investigators: [Marina Emborg](#), associate professor, medical physics; Bradley Christian, associate professor, medical physics

## Carbone Cancer Center Opens Nation's Largest Precision-Medicine Trial [↗](#)

July 29, 2016

[Dr. Dusty Deming](#), [Dr. Kari Wisinski](#)

Madison, Wisconsin - Patients at the University of Wisconsin Carbone Cancer Center can now enroll in the nation's biggest trial of precision medicine that targets the genetic mutations that drive their cancer.

## UW-Madison: A world leader in Zika virus research [↗](#)

July 28, 2016

It's no accident that researchers at UW-Madison have taken a leading role addressing the Zika virus. Many of them were already fighting viruses and mosquito-borne diseases in Central and South America. [As seen in this video](#), they are now working to screen mosquitoes for the ability to carry Zika and infect humans, and to use a harmless bacterium to block mosquito transmission of the virus. They are studying the progression of the infection and its dire consequences in pregnancy. And they're sharing their findings with public health officials and scientists around the world.

## Monkey study shows Zika infection prolonged in pregnancy [↗](#)

July 27, 2016

[Dr. O'Connor](#)/Zika

## UW Launches \$15 Million Research Effort on Head and Neck Cancer [↗](#)

August 5, 2016

[Dr. Paul Harari](#)

Madison, Wisconsin - [The University of Wisconsin Carbone Cancer Center](#) has been awarded a five-year, \$12 million Specialized Programs of Research Excellence (SPORE) grant from the National Cancer Institute to improve treatments and outcomes for head and neck cancer patients.

## UW Carbone Researchers Report Myeloma Advance [↗](#)

August 17, 2016

[Dr. Fotis Asimakopoulos](#)

Madison, Wisconsin - A research team from the University of Wisconsin Carbone Cancer Center has discovered a way to make the cancer cells of multiple myeloma more vulnerable to immunotherapy.

## UW Research Team Identifies Mechanism Driving Leukemia Development [↗](#)

August 18, 2016

[Dr. Emery H. Bresnick](#)

Madison, Wisconsin - In another step toward unraveling the causes of serious blood disorders, a UW-Madison research team has identified how a genetic network in certain blood cells can be disrupted and go on to promote the development of certain forms of leukemia.

## Dr. David Gamm's Team Awarded NIH Grant to Reverse Blindness [↗](#)

September 1, 2016

Madison, Wisconsin, A UW-Madison research team has been selected to work on one of six projects aimed at restoring vision by regenerating light-sensing photoreceptor cells in the eye.

## Dr. Jacques Galipeau Brings Personalized Stem Cell Treatment to UW Carbone [↗](#)

September 6, 2016

Madison, Wisconsin - An international leader in harnessing a patient's own stem cells to fight cancer and autoimmune diseases joined the faculty of the University of Wisconsin Carbone Cancer Center on September 1.

## Innate Natural Killer T Cell Research Featured in Journal Cell Reports [↗](#)

September 20, 2016

Madison, Wisconsin - A paper examining the relationship of innate natural killer T (iNKT) cells to inflammation was featured Sept. 20 in the journal Cell Reports.

## Stem Cell 'Heart Patch' Moves Closer to Clinic [↗](#)

September 21, 2016

[Dr. Timothy Kamp and Dr. William Burlingham](#)

Cardiomyocytes, the beating workhorse cells of the heart, along with endothelial cells and fibroblasts, will be built into a three-dimensional heart patch for testing in a large animal heart attack model.

## \$15 Million Grant to Study How Environmental Exposures Affect Childhood Asthma [↗](#)

September 22, 2016

[Dr. James Gern](#)

Madison, Wisconsin - The National Institutes of Health (NIH) has awarded the University of Wisconsin School of Medicine and Public Health a two-year, \$15 million grant to establish and oversee the Children's Respiratory Research and Environment Workgroup (CREW) - a national consortium of 14 institutions that will study how genetics interact with environmental exposures during the prenatal and early childhood years to cause specific subtypes of childhood asthma.

## Researchers Identify Mechanism Controlling Red Blood Cell Development [↗](#)

October 7, 2016

[Dr. Emery Bresnick](#)

Madison, Wisconsin - A research team at University of Wisconsin School of Medicine and Public Health has identified how a particular collection of proteins plays a critical role in the development of red blood cells, which carry oxygen to body tissues so organisms can survive.

## Higher Education, Higher Weight Trends Linked with Lower Dementia Rates [↗](#)

November 21, 2016

[Dr. Sanjay Asthana](#)

Can staying in school when you're young and gaining weight when you're old cut your chances for developing dementia?

## Yeast Knockouts Peel Back Secrets of Cell Protein Function [↗](#)

September 26, 2016

[Joshua Coon, David Pagliarini](#)

Proteins are the hammers and tongs of life, with fundamental roles in most of what happens in biology. But biologists still don't know what thousands of proteins do, and how their presence or absence affects the cell.

## Study to look at Alzheimer's Risks in African-Americans [↗](#)

October 3, 2016

[Dr. Carey Gleason](#)

Madison, Wisconsin - A large study of Alzheimer's disease in the African-American community is among those funded in a series of grants awarded to University of Wisconsin School of Medicine and Public Health (SMPH)

# CMP TRAINER NEWS SUMMER/FALL 2016

CMP Trainer news Summer/Fall 2016 as published in the UW-Madison School of Medicine and Public Health News

## Carbone Cancer Center Finds a New Biomarker for Fatal Brain Cancer

October 19, 2016

[Dr. Kelli Pointer, Dr. John Kuo](#)

Madison, Wisconsin — A whimsically named gene coding for an ion channel associated with irregular heart rhythm risk may also help predict survival in patients with the most malignant type of brain cancer, according to new research from the University of Wisconsin Carbone Cancer Center.

## Gut's Microbial Community Shown to Influence Host Gene Expression

November 23, 2016

[Dr. John Denu, Dr. Federico E. Rey](#)

In our guts, and in the guts of all animals, resides a robust ecosystem of microbes known as the microbiome. Consisting of trillions of organisms — bacteria, fungi and viruses — the microbiome is essential for host health, providing important services ranging from nutrient processing to immune system development and maintenance.

## Paul Sondel Wins Prestigious Award for Pioneering Cancer Research

December 7, 2016

The Society for Immunotherapy of Cancer (SITC) announced that Sondel, a pediatric oncologist, has received the group's top award for decades of work in developing immunotherapies for childhood cancers, especially neuroblastoma.

## UW-Led Study Shows Potential Strategy for Treating Aggressive Form of Lymphoma

November 23, 2016

[Dr. Lixin Rui](#)

A research team at the University of Wisconsin Carbone Cancer Center has found a new signaling mechanism that contributes to the development of a type of non-Hodgkin's lymphoma.

# CMP TRAINER NEWS 2017

2017 CMP Trainer News as published in the UW-Madison School of Medicine and Public Health News

## To Detect Early Alzheimer's Disease, Keep White Matter in Mind

Intervening early in Alzheimer's disease promotes better outcomes for patient care and public health, but sleuthing out the first signals of this disease in the brain has been difficult. Now, there's new hope: a research team led by [Barbara Bendlin, PhD](#), associate professor, Geriatrics and Gerontology, has capitalized on a new brain imaging method that detects structural changes in white matter, specifically in myelin.

## Immunotherapy: Harnessing Cellular Systems to Fight Deadly Diseases

January 2, 2017

A dedicated army of UW-Madison researchers is perfecting how to use immunotherapy and searching for new ways to do so. Ken DeSantes, MD; [Paul Sondel, MD, PhD '75 \(PG '80\)](#); [Peiman Hematti, MD](#); [Christian Capitini, MD](#); [Mario Otto, MD, PhD](#); [Douglas McNeel, MD, PhD](#); [Jacques Galipeau, MD](#); and many others synergistically have combined forces around the newest frontier in the war on cancer and other diseases.

## Collagen Linked to Growth of Breast Cancer Type

February 2, 2017

[Daniel Greenspan](#)

Madison, Wisconsin - Researchers at the University of Wisconsin School of Medicine and Public Health have found that removing a specific type of collagen can dramatically reduce the growth of one form of breast cancer.

## Carbone Cancer Center Finds a New Biomarker for Fatal Brain Cancer

January 25, 2017

Madison, Wisconsin — A whimsically named gene coding for an ion channel associated with irregular heart rhythm risk may also help predict survival in patients with the most malignant type of brain cancer, according to new research from the University of Wisconsin Carbone Cancer Center.

## Coming Soon: Glow-in-the-Dark Cancer Surgery

January 20, 2017

[Dr. Jamey Weichert](#)

A near future when surgeons can see cancer cells glow in the operating room is outlined this week by a team of University of Wisconsin Carbone Cancer Center researchers.

## Researchers Map a New Cellular Pathway of Cancer Therapy Resistance

January 3, 2017

"Nuclear localized RTKs can mediate resistance to therapeutics used to treat cancer, such as radiation therapy, chemotherapy or antibody-based therapies that directly block RTKs on the cell surface," said [Dr. Toni Brand](#), a former UW-Madison CMP graduate student in [Dr. Deric Wheeler's lab](#) and lead author of the study. "We wanted to identify how RTKs move to the nucleus so that we can design therapies to block their transport and hopefully enhance the efficacy of antibody-based therapies in the future."

## Professor honored by American Academy of Microbiology [↗](#)

March 28, 2017

[David Andes](#), a University of Wisconsin School of Medicine and Public Health professor of medical microbiology, has been elected as a fellow of the American Academy of Microbiology. Formed in 1955, the AAM recognizes outstanding contributions to the microbiological sciences.

## Cell Therapy Could Reduce Bone-Marrow Transplant, Radiation Injury Complications [↗](#)

April 12, 2017

[Dr. Peiman Hematti](#), [Dr. Christian Capitini](#)

A cell-therapy approach first discovered at the UW Carbone Cancer Center (UWCCC) in 2009 may reduce complications from bone marrow transplant (BMT) and radiation injury in the future, according to a new study.

## Study Sheds Light on Function of Protein Associated with High-Risk Breast Cancers [↗](#)

May 24, 2017

[Dr. Wei Xu](#), [Dr. Joshua Coon](#)

## Carbone Experts Present Latest Research at World's Largest Cancer Meeting [↗](#)

June 1, 2017

[Dr. Mark Burkard](#)

## Viral Infection Found to Increase Therapeutic Resistance of Glioblastoma Cells [↗](#)

June 29, 2017

[Dr. John Kuo](#)

## Poor Sleep Linked to Multiple Brain Changes Associated with Alzheimer's Disease [↗](#)

July 5, 2017

[Dr. Barbara Bendlin](#)

## New Method of Viral Maintenance in Cancer Cells Identified in UW Study [↗](#)

July 11, 2017

[Dr. Bill Sugden](#)



Photo by Jeff Miller/UW-Madison

# Graduates & Student News

## Student Paper is Editor's Pick [↗](#)

March 10, 2017

Third year CMP student, [Bryce Wolfe's](#) 1st author paper is an editors' pick and is featured on the front page of the American Society for Microbiology's website.

## This Year's Graduates

### Summer 2016

**Chelsea Hope** – Post Doc in Asimakopoulos Lab, UW Madison

**Danny LeBert** – Post Doc in Huttenlocher lab

**Melissa Wilking** - Associate Research Scientist at PPD in Middleton, WI

**Wei Wang** – Post Doc in Sondel Lab

### Fall 2016

**Bowen Wang** (in Ohio) Post Doc in Ohio/Kent Lab

**Matt Brown** - Postdoctoral T32 Fellowship, with Drs. James Thomson and William Burlingham University of Wisconsin, Madison

**Zulmarie Perez Horta** – AAAS Science and Technology Fellow for the incoming class of 2017-2018, joining the Radiation and Nuclear Countermeasures Program at the National Institute of Allergy and Infectious Diseases, Washington DC

### 2017

**Joseph Ma** – Postdoc in the Svaren Lab, UW Madison

**Gene Uenishi** - Scientist at Casebia Therapeutics, San Francisco Bay Area

**Stephanie Lawry** - Senior Scientist at PPD in Middleton wi (pharmaceutical product development, Inc.)

**Maggie Maes** – Post Doc. With Dr. Sandra Siegert at the Institute of Science and Technology (IST) Austria, in Vienna, Austria

**Monica Montano** – California Council of Science and Technology (CCST) policy fellowship

**Pansakorn Tanratana** – returning to Thailand for Teaching Position

**Chelsie Sievers** – starting UW Medical School

**Erin Theisen** – returns to UW medical school

**Mirnal Chaudhary** - returns to medical residency

**Jose Rodriguez Molina** - Moving to Washington DC

## Student Conferences

### Chelsie Sievers

The American Association for Cancer Research Annual meeting April 1 - 5, 2017 in Washington DC.

I received our internal CMP travel award to attend this meeting.

### Monica Montano

I gave an oral presentation at the SACNAS conference in Long Beach, CA this past fall (10/13-10/15). I also received conference presentation funds from the grad school to attend.

### Kirst Walker and Caity Holmes

Research Training in Hematology T32 spots:

#### Kirsti Walker

IMMUNOLOGY 2017 Meeting, Washington DC May 11-May 16, 2017

#### Mengxue Zhang

ATVB meeting 2017 in May 4 – 6, 2017

#### Mary Lopez

receives American Society for Neurochemistry Young Investigator Educational Enhancement Award (YIEE)

**Jeanette Shultz:** awards this year:

- Travel award to attend Society for Neuroscience (SfN), San Deigo, CA, Nov 12-16, 2016

- Travel award to attend The American Society for Neural Therapy and Repair (ASNTR) conference in Clearwater, FL April 27-29, 2017.

- NIH F31, project titled “ncRNAs and PPAR $\gamma$  induced sympathetic neuroprotection in an NHP model of cardiac neurodegeneration”

- CMP Poster Award (used for SfN)

- CMP Travel Award (used for SfN)

- Cardiovascular Research Center (CVRC) Poster Award

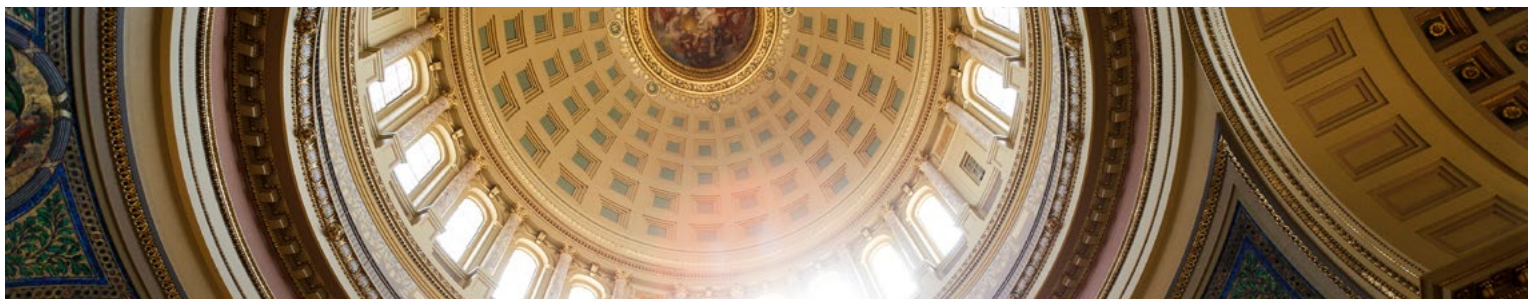
#### Bryce Wolfe

presented a poster at ISOPOL XIX: Problems of Listeriosis at the Pasteur Institute in Paris, France in June 2016

- Attended IFPA (International Federation of Placenta Associations) in Portland, Oregon in September 2016

- Received a National Institutes of Health New Investigator Travel Award for travel to Portland

- Received the Elsevier Placenta New Investigator Award for best oral presentation by an early career researcher.



# Graduates & Student News

## Student Conferences Continued

### Heather Schmitt

- Won top poster presenter award at the Midwest Eye Research Symposium in Iowa City, Iowa in August of 2016
- Won the top abstract award at a talk at the Association for Ocular Pharmacology and Therapeutics conference in Florence, Italy in February of 2017
- Travel award for travel to the Association for Ocular Pharmacology and Therapeutics Meeting where she was invited to publish our work in the Journal of Ocular Pharmacology and Therapeutics

### James Romero

- Awarded Cancer Biology T32 spot
- Gave a talk and presented a poster. International Herpesvirus Workshop (IHW), Madison, WI July 23rd-27th

### Kirstan Gimse

- Received an NSF GRFP Honorable Mention.
- Travel award from the American Society for Neural Therapy and Repair to attend their conference April 26-30th in Clearwater, Florida

### Gene Uenishi

- Poster Presentation: Uenishi, G., et al. Regulation of Hematoendothelial Development of NOTCH Signaling in Human Pluripotent Stem Cell Cultures. 45th Annual Scientific Meeting, International Society of Experimental Hematology Meeting, San Diego, CA, August 2016
- Poster Presentation: Uenishi, G., et al. Notch Signaling promotes endothelial-to-hematopoietic transition and definitive hematopoiesis from arterial-type hemogenic endothelium during human pluripotent stem cell differentiation. International Symposium: Translational Opportunities in Stem Cell Research, International Society for Stem Cell Research, Basel, Switzerland, February 2017
- Cynata Therapeutics Scholarship Award, International Symposium: Translational Opportunities in Stem Cell Research, International Society for Stem Cell Research, Basel, Switzerland, February 2017

**Congrats to CMP Student Jose Rodriguez Molina** who was awarded a Professional Development Grant of \$1000.00 from the UW Graduate School for his organization, CaSP (Catalysts for Science Policy). CaSP is a student organization that Jose and his wife, CMP graduate Zulmarie Perez Horta, and a few other students organized several years ago. The two founders have now passed the baton to other students but before graduating this spring, Jose took time to submit this final grant.

## Incoming Students

### Andrew Brandl

University of Wisconsin-Milwaukee 2014  
B.S. in Biochemistry

Andrew has an interest in cell therapy. He's looking forward to learning about transplantation, cell signaling and all aspects of regenerative medicine.

### Anna Marie Rowell

University of Oklahoma 2017  
B.S. in Biochemistry

Anna Marie's interested in integrating her interests in bacterial pathogens with their established research in pathogenicity mechanisms and epidemiology of emerging diseases.

### Anil Kiran Chokkalla

Indian Institute of Technology, Madras; Chennai, 2016  
BS in Biotechnology

Anil transferred into CMP in January of 2017 and is currently a member of Dr. Raghu Vemuganti's lab. Anil will be starting his CMP coursework this fall with the rest of the incoming CMP Students.

### Andrew Lynch

University of Wisconsin – Eau Claire 2016  
B.S. in Biochemistry and Molecular Biology

Andrew has a special interest in cancer immunotherapy and tumor microenvironments as well as neurodegenerative diseases.

### Evan Flietner

University of Wisconsin-Madison 2014  
BS in Biochemistry

Evan envisions his future as having his own lab focused on creating the next generation of technology for the diagnosis and treatment of human disease, especially Cancer.

### Qujun Zhang

University of Science and Technology of China, 2017  
BS Molecular biology/Cancer

Qujun's stated interests are in Molecular biology/Cancer.

### Katie Zarbock

St. Catherine University, MN, 2016

Katie currently expresses an interest in antibiotic resistance as well as research in the intersection of diet, human microbiota and health.

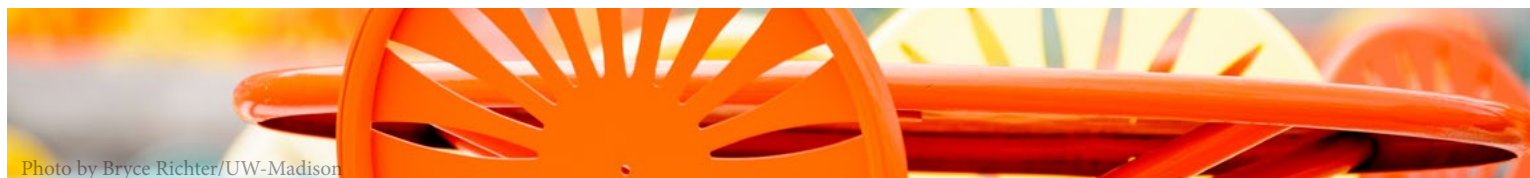


Photo by Bryce Richter/UW-Madison