12th Annual

WSTS

July 22-23, 2019

UW-Stout

WiSys®

#WSTS2019

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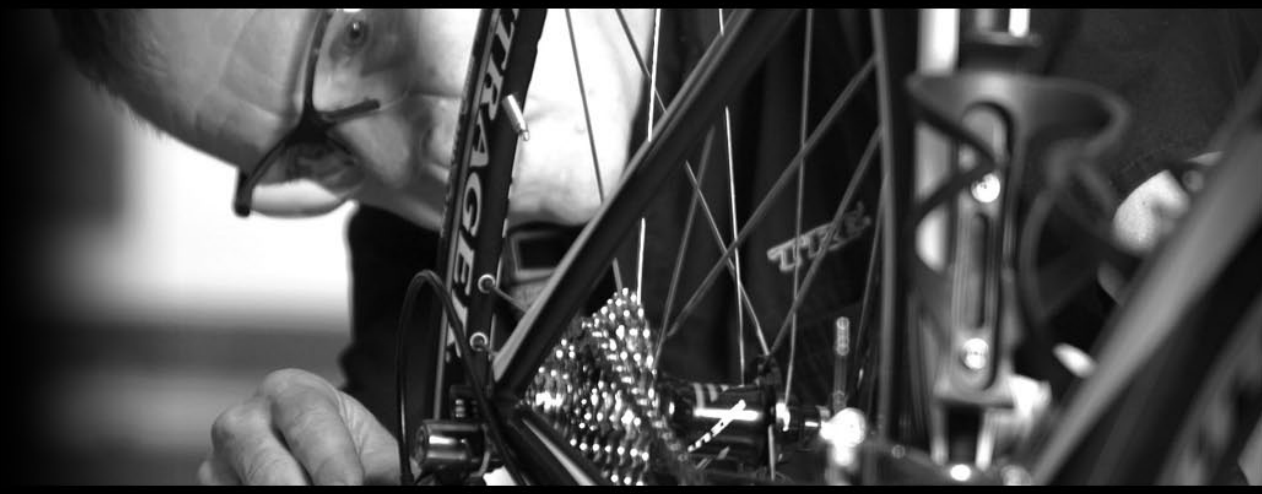

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Great ideas don't come around every day, and they can be gone in the blink of an eye if left unprotected. At Boyle Fredrickson, intellectual property law isn't a specialty, it's all we do. Whether it's patent, trademark, copyright, trade secret and unfair competition, or non-compete law, you can rest assured your ideas will receive the highest level of legal protection. You've got ideas. We protect them. It's as simple as that.

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HONOREES

Join WiSys during the Innovation Awards Banquet, sponsored by Boyle Fredrickson, Monday evening to honor innovation in the UW System. You'll help cheer on the winners of the symposium's student competitions and meet this year's Carl E. Gulbrandsen Innovators of the Year.

The award is presented to UW System faculty, staff or students making exemplary contributions as a WiSys Innovator. It was created to honor the former managing director of the Wisconsin Alumni Research Foundation who supported WiSys throughout his 16-year tenure. This year, WiSys will honor two students and a professor.

INNOVATORS OF THE YEAR

Md Maruf Hossain // UW-Green Bay

Assistant Professor of Engineering Technology Md Maruf Hossain's interest in electrical power systems and renewable energy led him to research and develop wind turbines with help from UW System and WiSys research grants. Earlier this year, Hossain filed for a patent—with support from WiSys—for an "Integrated Vertical Axis Wind Power Generation System" and recently developed a prototype to test his ideas.

In addition to pursuing his own interests, Hossain has been an advocate for student research at UW-Green Bay, encouraging students to get involved and participate in undergraduate research opportunities.

Caleb Dykema // UW-Platteville

Caleb Dykema, who plans to graduate from UW-Platteville in December with a degree in mechanical engineering, developed a business idea that garnered statewide attention and prizes in WiSys competitions. His "1Swipe" product is a full white or blackboard eraser that can be pushed across to erase everything in its path, saving time and solving the issue of inefficiency in the classroom for STEM professors.

Dykema developed a prototype for 1Swipe during the 2018 WiSys Prototype Hackathon at UW-Platteville and earned second place in the student competition. Earlier this year, Dykema and 1Swipe took second place at the 2019 Wisconsin Big Idea Tournament, presented by WiSys, a highly-competitive statewide business model competition.

Cassie Van Hoof // UW-Parkside

UW-Parkside senior Cassie Van Hoof created a product called "Purrfect Pal" to combat aggression and anxiety in cats. Her research began when she was introduced to UW-Parkside's Big Idea Competition in 2018 and began to brainstorm a possible project submission. In developing her product, Van Hoof, who is a biological sciences major and a pre-veterinary student, combined her passions for science and animal health.

After her idea won Parkside's Big Idea Competition, Van Hoof continued to develop her idea into a business called Efoxen LLC.

SCHEDULE

Monday, July 22

8–9 a.m. | Great Hall
Registration & Breakfast

8–8:45 a.m. | Willow/Walnut
WSTS First Timers
Tips for getting the most out of your first WSTS.

9–10 a.m. | Great Hall
Opening Remarks & Keynote
Following a welcome to UW-Stout, innovation and collaboration expert Timm Boettcher delivers his talk "Bringing Ideas to Life by Working With Others."

- **Arjun Sanga**, WiSys
- **Chancellor Bob Meyer**, UW-Stout
- **Timm Boettcher**, Realityworks

10–11 a.m. | Great Hall
Research Mashup: From Quantum Dots to Aminonaphthalimides
WiSys Spark Grant recipients discuss their varied projects.

- **Samuel Alvarado,** UW-River Falls
  "Producing Polymer-quantum Dot Composite Materials Through Direct Ligand Reaction"

- **Paul Schweiger**, UW-La Crosse
  "Engineering a One-pot Vitamin C Synthesis Platform"

- **Casie Bass**, UW-River Falls
  "Research Using Undergraduate Students and Horses: Does It Work?"

- **Mohammad Rabbani**, UW-Platteville
  "Functionalized Nanoporous Metal-Organic Frameworks (MOFs) to Separate Toxic Heavy Metals From Water"

- **David Lewis** (UW-Eau Claire)
  "New, Sterically-hindered Fluorescent Aminonaphthalimides"

11–11:15 a.m. | **Break**

11:15 a.m.–12 p.m. | Great Hall
Research Mashup: Projects Making a Difference
WiSys- and UW System-funded researchers and innovators share their projects to solve a problem.

- **Dmitry Kadnikov**, UW-Stout
  "Detection of Amino Acid Citrulline Using Modular Chemical Probes"

- **James Boulter**, UW-Eau Claire
  "Next-generation Instrument to Continuously Monitor Airborne Silica for Worker Safety and Regulatory Compliance"

- **Whitney George Dregne**, UW-La Crosse
  "APPStart Challenge: Student Loan Predictor"

12–1 p.m. | Great Hall
Luncheon
Sponsored by WARF

1:10–2:30 p.m. | Great Hall
WiSys Quick Pitch State Final
Sponsored by WEDC
Students from across the UW System, who won local competitions, race the clock to expertly explain their research or innovation in three minutes or less to a panel of judges.

- **Halee Behrens & Katlyn Tappy**, UW-Green Bay
- **Hannah Bryson**, UW-Eau Claire
- **Roy Cornett**, UW-Eau Claire

- **Anthony Craig**, UW-River Falls
- **Tabitha Echols**, UW-Parkside
- **Lucas Frey**, UW-Platteville
- **Emily Lehmann**, UW-Stout
- **Opeyemi Omiwale**, UW-Superior
- **Alexander Siebers**, UW Oshkosh
- **Salvatore Skare**, UW-La Crosse

2:30–2:45 p.m. | **Break**

2:45–4 p.m. | Ballroom
Poster Symposium & Innovation Showcase
Students present their research on posters or showcase their innovation (everything from engineering to gaming) via a prototype, application storyboard or a computer.

4–5 p.m. | Great Hall & Ballroom
Networking Reception

5–7 p.m. | Great Hall
Innovation Awards Banquet
Sponsored by Boyle Fredrickson
Join WiSys for an evening of celebration to honor innovation in the UW System. Meet the Innovators of the Year, cheer on the winners of the symposium's student competitions and continue your networking conversations over dinner.

Tuesday, July 23

8–9 a.m. | Great Hall
Breakfast & Networking

9–9:30 a.m. | Great Hall
WiSys Update by Arjun Sanga

9:30–10:45 a.m. | Great Hall
BREAKOUT: Faculty 'Open Mic'
Faculty, who signed up, have five minutes and three slides to share what they've been working on.

9:30–10:45 a.m. | Jarvis Hall, Room 110
BREAKOUT: Student Career Panel
Experts from diverse fields provide insight to students on career development.

10:45–11 a.m. | **Break**

11–12 p.m. | Great Hall
Student Researchers, Innovators and Entrepreneurs
Students feature their undergraduate research projects and innovative business ideas.

- **Stem Cell Research:** Directed differentiation of human embryonic stem cells to functional cardiomyocytes (Colton Lysaker // UW-Platteville)
- **Scan Shield:** A safe debit card designed for the elderly (Emily Lautenschlager, Jenna Bares, Thomas Mlodzik // UW-Green Bay)
- **Slik:** An app for arranging oil changes (Justin Prochaska // UW-Platteville)
- **Hive Central:** A device to protect beehives from winter weather (Parker Schmidt, Jessica Tarter, Macall Hill // UW Oshkosh)
  Video Presentation

12–1 p.m. | Great Hall
Luncheon & Closing Remarks
UW-Stout Provost and Vice Chancellor for Academic Affairs Patrick Guifoile wraps up WSTS 2019.

*Schedule is subject to change.

SPEAKERS

Opening Remarks & Keynote

Arjun Sanga // WiSys

WiSys President Arjun Sanga is an expert in technology transfer, intellectual property management and commercialization. Sanga has more than 20 years of experience leading research collaborations, managing intellectual property, closing licensing deals and fostering startup companies. He spearheaded major deals and sought to balance the needs of different stakeholders, including faculty, state government, industry and investors. He is a registered patent attorney and has a background in chemistry and computer science.

Bob Meyer // UW-Stout

Bob Meyer became the seventh chancellor at UW-Stout in 2014. Previously, he worked for UW-Stout in various capacities (professor, college dean and special assistant to the chancellor) for 25 years. He left UW-Stout in 2006 to become president of the Wisconsin Indianhead Technical College in Shell Lake, Wisconsin, prior to returning as chancellor. Meyer holds a Ph.D. in industrial engineering from the University of Minnesota. He earned an M.S. in management technology and a B.S. in industrial education, both from UW-Stout.

Timm Boettcher // Realityworks

During his tenure, Realityworks—a learning solutions provider—achieved significant growth in revenues, along with dramatic profit and cash flow improvement. In recent years, revenue from domestic markets doubled through rapid innovation and development of the company's products. Boettcher has a passion for innovation and fostering strong collaboration between educators and business leaders to prepare young people for a successful future. He has expertise in product development and strategic corporate planning, as well as leading and advising various education and non-profit organizations. He has presented on the topics of education and workforce development numerous times, including at the national level.

Research Mashup: From Quantum Dots to Aminonaphthalimides

Sam Alvarado // UW-River Falls

Dr. Sam Alvarado has been an assistant professor at UW-River Falls since 2016. Prior to River Falls, he was a visiting assistant professor at Carthage College in Kenosha, Wisconsin. He earned his Ph.D. in inorganic chemistry from Iowa State University with work on molecular precursor reactivity in the formation of colloidal nanocrystals. His current research interests are in the synthesis, surface chemistry and electronic structure of magic-sized nanoclusters.

Paul Schweiger // UW-La Crosse

UW-La Crosse Assistant Professor Paul Schweiger holds a B.S. in biotechnology from St. Cloud State University and a Ph.D. from UW-Milwaukee. He spent four years as a postdoc at the Institute for Microbiology and Biotechnology within the Universität Bonn, Germany before joining the faculty at Missouri State University. He later moved to UW-La Crosse. He has 15 years of experience studying how genes and proteins influence microbial metabolism and how to manipulate these systems to produce end-products that have industrial application. His research combines microbiological, molecular biology, biochemical and systems approaches to engineer microbes for novel and increased production of value-added products.

SPEAKERS

Casie Bass // UW-River Falls

Casie Bass earned her M.S. degree from Southern Illinois University-Carbondale in animal science, specializing in equine science and reproductive physiology. She then earned a Ph.D. from North Dakota State University, again focusing on animal science and reproductive physiology. In the fall, she will be starting her fifth year as an assistant professor at UW-River Falls. In 2018, she received the school's Distinguished Teacher Award. Her research interests include mare reproduction, the maternal recognition of pregnancy signal and various teaching applications in the laboratory setting.

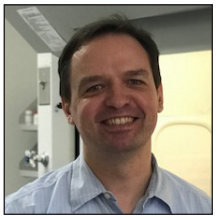
Mohammad Rabbani // UW-Platteville

Dr. Mohammad Rabbani is an assistant professor of chemistry at UW-Platteville. He completed his undergraduate degree in chemistry from the University of Dhaka, Bangladesh and then earned a Ph.D. in materials science from Osaka City University, Japan. He spent several years as a postdoctoral fellow in Japan and the U.S. Before joining UW-Platteville, he also worked as a senior research scientist at Virginia Commonwealth University. His current research focus is the synthesis of porous materials and studies of their diverse applications. He was named UW System Regent Scholar in 2016 and has received UW System ARG and WiSys Spark grants.

David E. Lewis // UW-Eau Claire

David E. Lewis holds B.Sc., Ph.D. and D.Sc. degrees from the University of Adelaide in South Australia. He is the recipient of the 2018 HIST Award and the 2019 V. V. Markovnikov Diploma and Medal. Lewis is the author of more than 100 papers and book chapters and six books. His research interests are in the synthesis and applications of chiral organocatalysts and fluorescent aminonaphthalimides, as well as in the history of organic chemistry in Russia.

Research Mashup: Projects Making a Difference



Dmitry Kadnikov // UW-Stout

Dmitry Kadnikov received a Ph.D. in organic chemistry from Iowa State University where his work focused on the development of novel palladium-catalyzed reactions. He then spent four years as a postdoctoral scholar in the University of California–San Francisco's Department of Pharmaceutical Chemistry, studying new small molecule antiprostate cancer agents. Since 2013 he has been a faculty member at UW-Stout. His research focuses on design and synthesis of biologically-active small molecules to either affect the biological processes or detect important biological transformations.

James Boulter // UW-Eau Claire

Dr. James Boulter joined the faculty of the UW-Eau Claire in 2004 and now holds a joint appointment in the Watershed Institute for Collaborative Environmental Studies and Department of Chemistry. He received a Ph.D. in analytical chemistry with an emphasis in atmospheric sciences from the University of Colorado, Boulder. He teaches classes in general, analytical and environmental chemistry, radiation, air pollution and sustainability. His research activities are split between laboratory studies of atmospheric particulate matter related to climate and human health and public surveys in the U.S. and China focused on climate change.

SPEAKERS

Whitney George Dregne // UW-La Crosse

Whitney George Dregne received a Ph.D. in mathematics from the University of Georgia in 2012 and is interested in student-centered teaching strategies. Dregne began teaching a new liberal arts general education mathematics course titled “Mathematics for Decision Making” at UW-La Crosse in Fall 2017 and discovered that many students lack financial literacy, especially about student loans. This led her to create instructional materials about student loans that are at the center of an app that Dregne is developing through the WiSys AppStart Challenge.

Student Researchers, Innovators and Entrepreneurs

Stem Cell Research // UW-Platteville

Working with UW-Platteville Assistant Professor Mark Levenstein, student and WiSys Ambassador Colton Lysaker is researching “directed differentiation of human embryonic stem cells to functional cardiomyocytes” this summer. Lysaker’s work is being supported by a new WiSys Ambassador Grant Program.

Scan Shield // UW-Green Bay

Scan Shield—a safe debit card designed specifically for the elderly—was the winning entry into the 2019 WiSys Innovation in Aging student idea competition at UW-Green Bay. The Scan Shield team includes Emily Lautenschlager, Jenna Bares and Thomas Mlodzik.

Slik // UW-Platteville

UW-Platteville senior Justin Prochaska’s “Uber of auto oil changes” platform won the 2019 WiSys Prototype Hackathon. Prochaska’s project, called “Slik,” allows customers to use a mobile app to schedule an oil change for their vehicles—wherever those vehicles are parked—and arrange for an “oil change expert” to perform the service.

Hive Central // UW Oshkosh

Leveraging a WiSys technology developed at UW-Superior, this UW Oshkosh student startup’s product is a bee shield that helps keep cold winds out of beehives, increasing winter survival. The Hive Central team includes Parker Schmidt, Jessica Tarter and Macall Hill.

Closing Remarks

Patrick Guilfoile // UW-Stout

UW-Stout Provost and Vice Chancellor for Academic Affairs Patrick Guilfoile has extensive leadership experience in higher education. Guilfoile obtained a B.S. in biology and outdoor education from Northland College, an M.A. in teaching in biology from UW-Eau Claire and a Ph.D. in bacteriology from UW-Madison. He worked as a postdoctoral fellow at the Whitehead Institute at Massachusetts Institute of Technology and also spent more than 20 years in different roles at Bemidji State University in Bemidji, Minnesota.

All In Wisconsin

Innovative Research

THE UW SYSTEM IS A NATIONAL LEADER IN UNDERGRADUATE, GRADUATE, AND FACULTY RESEARCH. Our universities are committed to providing the talent and resources Wisconsin needs to change lives and improve communities.

The UW System is expanding innovative scientific research that stimulates job creation and business growth. In addition to supporting Wisconsin's staple industries, such as agriculture and manufacturing, our universities are graduating more students in computer science, nanotechnology, biotechnology, and other high-growth fields.

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WIFI

1. Open Internet Explorer or any web browser and go to the UW-Stout homepage: www.uwstout.edu.
2. Enter your email address into the sign-in field. A valid email address is necessary for use of the StoutGuest network.
3. After 4 hours, (or each time you attempt to access the internet if your device goes to “sleep”) you will need to enter your email address again in order to re-authenticate.
4. If you are still unable to access the internet, please go to the information desk or dial x2000 from any campus phone.

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SAVE THE DATE 11.5.19

INNOVATION DAY

Join us for a look at some of the most
commercially promising technologies
from campuses across the state.

- Quick pitches from WARF Accelerator, WiSys and UW-Milwaukee
- Featured speakers
- WARF Innovation Awards, recognizing early stage innovation

warf.org/**innovationday**

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