

JENNIFER E. GRANT, PH.D.

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Biology Department
University of Wisconsin-Stout

I. EXECUTIVE SUMMARY

Teaching Accomplishments: Dr. Grant has taught a variety of courses including those related to biology, chemistry, and the health sciences. She has collaborated on an NSF ATE grant that resulted in the dissemination of two popular videos. One of her SoTL projects involves encouraging undergraduates, both science majors and students across campus, to write to learn how their college curriculum is relevant to both their daily lives and their careers.

Research Credentials: Dr. Grant has an expert track record in proteomics and protein chemistry. Working with models of both heart failure and multiple sclerosis, Dr. Grant has published advanced quantitative proteomics studies comparing differential protein expression between health and diseased tissue. This expertise relates directly to protein citrullination, and several additional publications relating to the use of covalent modification strategies to identify proteins and peptides in complex biological matrices. Dr. Grant has mentored more than sixty undergraduates as research assistants, supervised fifteen senior theses, and co-authored nineteen posters that were presented at national venues with undergraduates. In 2012, Dr. Grant was the UW-Stout Emerging Researcher of the Year.

Service Leadership: Dr. Grant has lead faculty in critical issues both within the Biology Department and across campus. Having served as the Chair of the Faculty Senate Personnel Policies Committee she engages in policy change that promotes faculty satisfaction and responsibility. In the Biology Department, she has invested her time in addressing critical needs such as leading a successful major revision of department By-Laws and initiating a Biology Tutoring Center. Her role as the Concentration Coordinator for APSC: BIO has opened up new opportunities to innovate in how students receive academic advising.

II. PROFESSIONAL CREDENTIALS

EDUCATION

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| Ph.D. University of Wisconsin Medical School, Madison WI | November 2004 |
| Molecular and Cellular Pharmacology | Advisor, Arnold Ruoho Ph.D. |
| Dissertation: Mapping binding surfaces between the cyclic GMP phosphodiesterase g-subunit and the transducin a-subunit using g-subunit photoprobes. | |
| M.S. Case Western Reserve University Medical School, Cleveland, OH | May 1997 |
| Biochemistry. | Advisor, Vernon Anderson Ph.D. |
| Master's Thesis: Enoyl-CoA Hydratase: Elucidation of the Chemical Mechanism | |

B.A. Oberlin College, Oberlin, OH May 1993
Biochemistry, with a minor in German Language.
Senior Thesis: Identifying Catalytic Antibodies Advisor, Miguel Mitchell Ph.D.

PROFESSIONAL APPOINTMENTS

Professor 2018-present
Department of Biology, University of Wisconsin-Stout, Menomonie, WI

Tenure August 2015
Department of Biology, University of Wisconsin-Stout, Menomonie, WI

Associate Professor 2013-2018
Department of Biology, University of Wisconsin-Stout, Menomonie, WI

Assistant Professor 2009-2013
Department of Biology, University of Wisconsin-Stout, Menomonie, WI

Postdoctoral Scholar 2007-2009
NHLBI proteomics Center at MUSC and the
Department of Cell and Molecular Pharmacology
The Medical University of South Carolina, Charleston, S.C.
Advisors: Kevin L. Schey, Ph.D. and Daniel R. Knapp, Ph.D.
Project: Investigation of differential protein expression in experimental models of
cardiac hypertrophy.

Postdoctoral Fellow 2006-2007
Center for Advanced Proteomics Research and the Department of Biochemistry
New Jersey Medical School
University of Medicine and Dentistry of New Jersey, Newark, N.J.
Advisor: Hong Li, Ph.D.
Project: Delineation of differential protein expression in experimental models of
multiple sclerosis using iTRAQ Technology.

Postdoctoral Scholar 2005-2006
Cardiovascular Training Program and the Department of Physiology
University of Wisconsin Medical School, Madison, W.I.
Advisor: Jeffery W. Walker, Ph.D.
Project: Identification of PKC phosphorylation sites on troponins using isotope
labeling strategies.

NATIONAL AND REGIONAL AWARDS AND HONORS

Chemistry Award for the iCollaborative Pre-Health Collection, the American Association of
Medical Colleges; 2013.

Earned for the collection of human health-themed graphic narratives my students authored in the Human Biology course, BIO-132.

Milton Pella Grant, Wisconsin Society of Science Teachers; 2013, \$1,000.

Front and Center Award (co-award with Diana Suilmann); Wisconsin Society of Science Teachers; 2012, \$150.

Honorable Mention, Graduate Women in Science Annual Awards; 2012.

INTERNAL AWARDS AND HONORS

Curriculum Innovation Grant, Provost's Office, UW-Stout, Fall 2023. \$4,000. An award to Dr. Patterson, Dr. Ray and myself to propose new program curriculum.

University of Wisconsin-Stout Emerging Outstanding Researcher of the Year; 2012.

University of Wisconsin Libraries Research Fellow; 2012.

Curious Stout Innovator Award, Nakatani Teaching and Learning Center, UW-Stout; 2011. \$500.

HONORS AND AWARDS PRIOR TO UW-STOUT SERVICE

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| Postdoctoral IRACDA Scholarship , NIH K12GMO81265 This award allowed Dr. Grant to teach at Claflin University, which is a Historically Black College or University (HBCU). | 2007-2009 |
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| Postdoctoral NRSA Fellowship | 2005-2006 |
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| Honors , Ph.D. Qualifying Examination Molecular and Cellular Pharmacology Department University of Wisconsin-Madison, Madison, WI | 2001 |
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| Gould AMI Academic Scholarship | 1989-1990 |
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| National Merit Scholar | 1988 |
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III. RESEARCH ACCOMPLISHMENTS

My research group engages from seven to ten undergraduates in proteomics research each year. In my view, students participating in research learn research skills, and gain greater knowledge of their strengths and weaknesses. Since 2009, I have supervised over fifty students as research assistants, with twelve Applied Science students completing a thesis as

a concentration requirement. Sixteen of my research assistants have co-authored articles or posters at national meetings. In 2016, two of my thesis students were awarded the STEM Outstanding Undergraduate Researcher Award; one was named a University of Wisconsin-Stout Outstanding Undergraduate Researcher.

RESEARCH AWARDS

University of Wisconsin-Stout Emerging Outstanding Researcher of the Year; 2012.

Honorable Mention, Graduate Women in Science Annual Awards; 2012.

University of Wisconsin Libraries Research Fellow; 2012.

PATENT APPLICATIONS

Kadnikov, D.V., and Grant (WiSys Foundation), J.E. Filed for a Patent for Citrulline Research; 7-22-2020.

Kadnikov, D.V., and Grant, J.E. (WiSys Foundation) Provisional Patent for Citrullination Research; 2019.

EXTRAMURAL FUNDING TO SUPPORT RESEARCH

(\$xxx TOTAL)

Grant, J.E.; Kadnikov, D.V.; Patterson, M.E. Submitted January 2020. *Ignite Grant, WiSys Technology Foundation*. \$49,080. *Principal Investigator*. Awarded.

Kadnikov, D.V; **Grant, J.E.** *Applied Research Grant, WiSys Technology Foundation*. June 2017-August 2018. \$48,643. *Co-Principal Investigator*. Awarded.

INTRAMURAL FUNDING TO SUPPORT RESEARCH

(\$13,000 TOTAL)

Grant, J.E. UW-Stout Student Jobs Program supporting research assistants, Intermittently over 2012-2021.

Grant, J.E.; Kirk, J.; Ray, M. To prepare an NSF Major Research Instrumentation Grant. *University of Wisconsin WiSys Foundation Assistance for Extramural Grant Applications*, 2011. \$1,500. *Principal Investigator*.

Grant, J.E.; Parsons, A.M. Collaborative Integration of Research into the Curriculum and Learning Environment (BIO-Circle). *University of Wisconsin WiSys Reassignment Time Grant*. \$3,500. *Principal Investigator*.

Grant, J.E. Aging Hearts. *Faculty Research Initiative Grant, University of Wisconsin-Stout*. Awarded 2009, \$8,000.

INTRAMURAL PROFESSIONAL DEVELOPMENT GRANTS**(\$18,836 TOTAL)**

- Grant, J.E.** A Pharmacology Initiative at Experimental Biology 2019 Conference. *Professional Development Grant*, University of Wisconsin-Stout, 2019. \$1,808.
- Grant, J.E.** To Present, and to Escort Eight Students, at Experimental Biology 2018 Conference. *Professional Development Grant*, University of Wisconsin-Stout, 2018. \$300.
- Grant, J.E.** Career Development and Research Dissemination at the Experimental Biology 2017 Conference. *Professional Development Grant*, University of Wisconsin-Stout, 2017, 2017. \$1,000.
- Grant, J.E.** Career Development and Research Dissemination at the 63rd ASMS National Conference. *Professional Development Grant*, University of Wisconsin-Stout, 2015. \$1,297.
- Grant, J.E.** Minneapolis ASMS. *Professional Development Just-In-Time Grant*, University of Wisconsin-Stout, 2013. \$900.
- Grant, J.E.** Vancouver ASMS. *Professional Development Grant*, University of Wisconsin-Stout, 2011. \$2,891.
- Grant, J.E.** Salt Lake City ASMS. *Professional Development Grant*, University Wisconsin-Stout, 2009. \$2,640.

RESEARCH PUBLICATIONS WITH UW-STOUT CO-AUTHORS

- Shipman, D.J.; Doering, S.; Hemsath, J., Lee, E.J., and **Grant, J.E.** Activity of Phosvitin in Hydroxyapatite Acid-Damage Immersion and Antimicrobial Assays. *Biochem. Res. Int.*, 2020 Oct 24; 2020:8831311. doi: 10.1155/2020/8831311. PMID: 33163234; PMCID: PMC7605931.
- Olson J.S.; Lubner, J.M.; Meyer, D.J.; **Grant, J.E.** Human Peptidyl Arginine Deiminases Types 2 and 4 Recognize Distinct Structure-Specific Citrullination Motifs. *Computational Biology and Chemistry*. **2017**, 70, 107-115.
- Samaraweera, H.; Moon, S.H.; Lee, E.J.; **Grant, J.E.**; Fouks, J.; Choi, I.; Suh, J.W.; Ahn, D.U. Characterisation of Phosvitin Phosphopeptides Using MALDI-TOF Mass Spectrometry. *Food Chem*. **2014**, 165, 98-103.

RESEARCH PUBLICATIONS; BOOKS AND BOOK CHAPTERS

- Grant, J.E.**; Li, H., editors. *Analysis of PTMs and Proteolytic Processing in Neuroscience*.

Springer Science + Business Media: New York, 2016; Volume 114. *Book volume*.

Grant, J.E.; Li, H. Identification of Citrullination Sites by Mass Spectrometry. In *Protein Deimination in Human Health and Disease*, A.P. Nicholas, Bhattacharya, S.K., Eds.; Springer Science+Business Media: New York, 2014; pp 347-365.

PRIOR RESEARCH PUBLICATIONS

Grant, J.E.; Bradshaw, A.D.; Schwacke, J.H.; Baicu, C.F.; Zile, M.R.; Schey, K.L.; Quantification of Protein Expression Changes in the Aging Left Ventricle of Ratus norvegicus. *J. Proteome Res.* **2009**, 8, 4252-4263.

Grant, J.E.; Hu, J.; Liu, T.; Jain, M.R.; Elkabes, S.; Li, H. Post-Translational Modifications in the Rat Lumbar Spinal Cord in Experimental Autoimmune Encephalomyelitis. *J. Proteome Res.* **2007**, 6, 2786-2791.

Liu, T.; Donahue, K.C.; Hu, J.; Kournellas, M.P.; **Grant, J.E.;** Li, H.; Elkabes, S. Identification of Differentially Expressed Proteins in Experimental Autoimmune Encephalomyelitis (EAE) by Proteomic Analysis of the Spinal Cord. *J. Prot. Res.* **2007**, 6, 2565-2575.

Guo, L.W.; Assadi-Porter, F.M.; **Grant, J.E.;** Wu, H.; Markley, J.L.; Ruoho, A.E. One-Step Purification of Bacterially Expressed Recombinant Transducin α -Subunit and Isotopically Labeled PDE6 g -Subunit for NMR Analysis. *Protein Expr. Purif.* **2007**, 51:187-97.

Wang, H.; **Grant, J.E.;** Doede, C.M.; Sadayappan, S.; Robbins, J.; Walker, J.W. (2006) PKC- β Sensitizes Cardiac Myofilaments to Ca^{2+} by Phosphorylating Troponin I on Threonine-144. *J. Mol. Cell. Cardiology.* **2006**, 41(5):823-833.

Geiser, A.H.; Sievert, M.K.; Guo, L.W.; **Grant, J.E.;** Krebs, M.P.; Fotiadis, D.; Engel, A.; Ruoho A.E. Bacteriorhodopsin Chimeras Containing the Third Cytoplasmic Loop of Bovine Rhodopsin Activate Transducin for GTP/GDP Exchange. *Protein Science.* **2006**, 15, 1679-1690.

Grant, J.E.; Guo, L.-W.; Vestling, M.M.; Martenyamov, K.A.; Arshavsky, V.Y.; Ruoho, A.E. The N-Terminus of the Transducin α -Subunit Interacts with the C-Terminus of the cGMP Phosphodiesterase g -Subunit. *J. Biol. Chem.* **2006**, 281, 6194-6202.

Guo, L.W.; **Grant, J.E.;** Hajipour, A.R.; Muradov, K.; Arbabian, M.; Artemyev, N.O.; Ruoho, A.E. Asymmetric Interaction Between the Rod Phosphodiesterase Inhibitory g -Subunits and the α - and β -Catalytic Subunits. *J. Biol. Chem.* **2005**, 280, 12585–12592.

RESEARCH PRESENTATIONS WITH UW-STOUT COAUTHORS

--A hallmark of my research group that I encourage students to present at national meetings—

AI-mediated structure prediction reveals patterns in prion misfolding. National Conference on Undergraduate Research, Eau Claire, WI, April 13-15, 2022. Poster. *Peer Reviewed Abstract*.

Prion Protein Structures in Misfolding. National Conference on Undergraduate Research, Eau Claire, WI, April 13-15, 2022. Poster. *Peer Reviewed Abstract*.

Optimization of

Purification of Proteins from Zebra Mussel. In Proceedings of Experimental Biology, Orlando, FL, April 5-9, 2019; Pederson, T, Ed., Federation American Societies Experimental Biology. Poster. *Peer Reviewed Abstract*.

Optimization of Shell Grinding Techniques for

Purification of Proteins from Zebra Mussel. In Proceedings of Experimental Biology, Orlando, FL, April 5-9, 2019; Pederson, T, Ed., Federation American Societies Experimental Biology. Poster. *Peer Reviewed Abstract*.

Developing SDS-PAGE Based Protocols for Visualizing

Citrulline. In *Proceedings of Experimental Biology*, San Diego, CA, April 21-25, 2018; Pederson, T, Ed. Federation American Societies Experimental Biology. Poster. *Peer Reviewed Abstract*.

Effect of Metal Binding Proteins on the Surface of

a Model of Tooth Decay. In Proceedings of Experimental Biology, San Diego, CA, April 21-25, 2018; Pederson, T, Ed. Federation American Societies Experimental Biology. Poster. *Peer Reviewed Abstract*.

Optimization of Extraction and Isolation of Proteins

from the Eggshells of Gallus gallus Domesticus. In Proceedings of Experimental Biology, San Diego, CA, April 21-25, 2018; Pederson, T, Ed. Federation American Societies Experimental Biology. Poster. *Peer Reviewed Abstract*.

Human Peptidyl Arginine Deiminase Types 2

and 4 Target Glycine-Containing Motifs for Citrullination, an in silico Study. In Proceedings of Experimental Biology, Chicago, IL, April 22-26, 2017; Pederson, T, Ed. Federation American Societies Experimental Biology. Poster. *Peer Reviewed Abstract*.

Identification of Novel Antimicrobial

Peptides to be Used in Functional Foods. In Proceedings of Experimental Biology. San Diego, CA, April 2-6, 2016; Pederson, T, Ed. Federation American Societies for Experimental Biology. Poster. *Peer Reviewed Abstract*.

Comparative Analysis of ELISA and MALDI-TOF

Mass Spectrometry Methods for Microcystins in Freshwater Samples. In Proceedings of Experimental Biology. San Diego, CA, April 2-6, 2016; Pederson, T., Ed. Federation American Societies Experimental Biology. Poster. *Peer Reviewed Abstract*

Grant, J.E. *MALDI-TOF Analysis of the*

Enrichment of Peptides Derived from Egg Yolk Phosvitin. In Proceedings of the 63rd American Society for Mass Spectrometry Conference; St. Louis, MO, May 31- June 4, 2015; Gross, M.L., Ed. Elsevier. Poster. *Peer Reviewed Abstract*.

PADlock Cryptanalysis: a Bayesian Approach to

Identifying Trends in the PTM Deimination. In Proceedings of Experimental Biology 2015; Boston, MA, March 28-April 1, 2015; Poster. *Peer-reviewed abstract*.

Increasing sequence coverage of enzymatic digests of phosvitin with an emphasis on identifying phosphopeptides. In Proceedings of the 62nd Conference for the American Society for Mass Spectrometry; Baltimore, MD, June 15-19, 2014; Gross, M.L., Ed. Elsevier. Poster. *Peer Reviewed Abstract*.

Deciphering the Sequence

Specificity of Protein Citrullination of Glial Fibrillary Acidic Protein. In Proceedings of the 61st Conference for the American Society for Mass Spectrometry; Minneapolis, MN, June 9-13, 2013; Gross, M.L., Ed. Elsevier. Poster. *Peer Reviewed Abstract*.

Profiling Microcystin Toxins in the Red Cedar Watershed. In

Proceedings of the 60th Conference for the American Society for Mass Spec; Vancouver BC, Canada, May 19-24, 2012; Gross, M.L., Ed. Elsevier. Poster. *Peer Reviewed Abstract*.

Measuring Glycoprotein Levels in Aged Hearts Using Integrated

Lectin Chromatography Workflows. In Program of the National Conference on Undergraduate Research; Ithaca, NY, March 31- April 2, 2011. Poster.

News from the Proteomic Front Line in the

*Fight Against an Invasive Strain of *Alliaria petiolata**. National Conference on Undergraduate Research; Ithaca, NY, April 14- April 18, 2010. Poster.

Grant, J.E. *Optimization of Lectin Affinity Chromatography for Use in iTRAQ Studies:*

Integrating Research and Training in the Undergraduate Proteomics Laboratory Course. In Proceedings of the 58th Conference for the American Society for Mass Spec; Salt Lake

City, UT, May 23-27, 2010; Gross, M.L., Ed. Elsevier. Poster. *Peer Reviewed Abstract*.

RESEARCH PRESENTATIONS AT NATIONAL VENUES, DR. GRANT AS FIRST AUTHOR

Grant, J.E. Use of Deepmind Alphafold to Recreate Prion Protein Predicted Structures. In Proceedings of the Protein Society 36th Annual Symposium, San Francisco, CA, July 7-10, 2022; The Protein Society. Poster. *Peer Reviewed Abstract*.

INVITED ORAL PRESENTATIONS

Grant, J.E. *The Aging Heart's Ventricular Proteome: Diseased, Stressed or Just Senior?* Chemistry Department, Claflin University; April 20, 2009.

Grant, J.E. *Developing a Proteomics Challenge for the Undergraduate Laboratory*. In Proceedings of the 11th Annual IRACDA Conference: Chapel Hill, NC, 2008.

Grant, J.E.; Comte-Walters, S.; Bradshaw, A.; Zile, M.; Schey, K.L. *Harnessing the Power of the iTRAQ Proteomics Method to Study Disease*. In Proceedings of the First Annual South Carolina INBRE Conference; Charleston, SC, 2008.

Grant, J.E.; Guo, L.-W.; Vestling, M.M.; Ruoho, A.E. *Crosslinking of Full-Length Pg Photoprobes to the N-Terminus of Ga_t-GTPgS*. In Program of the 3rd Annual Molecular and Cellular Pharmacology Signal Transduction Symposium of the University of Wisconsin-Madison; Madison, WI, 2003.

RESEARCH SENIOR THESES SUPERVISED

Implementing a Cas-9 Expression System at UW-Stout.

Phosvitin: A Structural Stability Assessment.

Optimization of Extraction and Isolation of Intramineral Eggshell Proteins.

Use of a Two-Tier Column to Purify Pre-Stained Proteins.

Tools to Determine the Composition of Biodiesel Oils from Spectra Obtained Using MALDI-TOF MS: Searchable Mass Table & Student Manual. Senior Thesis, The University of Wisconsin-Stout.

Triglyceride Composition of Biodiesel Oils Visualized Using MALD-TOF Mass Spectrometry.

Comparative Analysis of ELISA & MALDI-TOF Mass Spectrometry Methods for

Microcystins in Freshwater Samples.

Antimicrobial Phosvitin and its Potential as a Reservoir for Bioactive Peptides.

Predicting Trends in Citrullination.

Utilizing SAX Chromatography for the Harvesting of Phosphopeptides.

MALDI-TOF Mass Spectrometry and Protein Modeling: A Multifaceted Approach to Determine the Substrate Specificity of Peptidylarginine Deiminase 4.

Evaluation of Peptides in Wisconsin Beers.

Peptide Mass Fingerprinting of Digests of Phosvitin From Egg Yolk.

Profiling Microcystin Toxins in the Red Cedar Watershed.

Comparing the Citrullination Rates of Four Peptides from GFAP, a Protein Citrullinated in MS Patients.

MEDIA INTERVIEWS ON RESEARCH

Professor Earns Honor, *Eau Claire Leader-Telegram*, April 21st, 2013.

ARTICLES INVOLVING RESEARCH ASSISTANTS

Jerry Poling. Science graduate diving into career with vaccine research, *University Communications*, May 7th, 2020.
<https://www.uwstout.edu/about-us/news-center/science-graduate-diving-career-vaccine-research>

Jerry Poling. Science graduate diving into career with vaccine research, *Volume One*, May 12th, 2020.
https://volumeone.org/articles/2020/05/12/36186_uw_stout_alumnus_dives_into_career_pursuing_covid

UW-Stout Communications. Graduate Eyes Medical School, *Eau Claire Leader-Telegram*, December 14th, 2019.

Powers, Pam. Science major tops university's first WiSys Quick Pitch competition. *UW-Stout University Communications*. May 23rd, 2018.

ARTICLES INVOLVING RESEARCH ASSISTANTS' NATIONAL PRESENTATIONS

Goers, Abbey. Seven students present at Experimental Biology 2019. *UW-Stout University Communications*. May 14th, 2019.

Powers, Pam. Students to present at biochem, molecular biology national conference. *UW-Stout University Communications*. April 2018.

University Communications. Phosvitin Research, *Stoutquest*, Volume 8, 2014-2015.

Scientific Approach, *Eau Claire Leader-Telegram*, January 6th, 2013.

UNDERGRADUATE STUDENT RESEARCH GRANTS SUPERVISED (16,267.55 TOTAL)

(2019) Characterization of Proteins from Zebra Mussel Shells. \$1,050.

(2019) To Scale Up Protein Production from the Shells of *Carcinus maenas*.
Student Research Grant. \$850.

(2019) Production and Purification of Cas9 Protein for Use in
Gene Editing. Student Dissemination Grant. \$2,000. Joint project with T. Hoage, Ph.D.

(2019) Optimization of Shell Grinding Techniques for Purification of
Proteins from Zebra Mussel Shells. UW-Stout Student Research Grant. \$985.

(2019) Identifying the Antimicrobial Properties of Phosvitin. UW-Stout Student
Research Grant. \$966.33.

(2019) Protocol Optimization for the Extraction and Purification of Proteins in
Shells of *Carcinus maenas*. UW-Stout Student Research Grant. \$445.60.

(2017) Small Bioactive Protein and Peptide Isolation from Crab Shell
Byproducts Using Dialysis and Tricine Gel Separation. UW-Stout Student Research Grant.
\$823. Joint project with E.J. Lee, Ph.D.

(2017) Optimization of Egg Shell Protein Extraction & Isolation. UW-Stout
Student Research Grant. \$1403.42. Joint project with E.J. Lee, Ph.D.

(2016) Preparing and Analyzing Micro-Scratched Discs of Tooth Decay. UW-
Stout Student Research Grant. \$300. Joint project with E.J. Lee, Ph.D.

(2015) Discovery of Antimicrobial Peptides as Functional Food Candidates.
UW-Stout Student Research Grant. \$1,497.20. Jointly advised with E.J. Lee, Ph.D.

(2015) Synthesis of a New Chemical Probe for the Detection of Citrullination of
Proteins Linked to autoimmune Diseases. UW-Stout Student Research Grant. \$800.
Jointly advised with D. Kadnikov Ph.D.

(2014) Protein Visualization with SDS Page Gel

Technology. UW-Stout Student Research Grant. \$188.

(2014) Comparison of Microcystin Quantification between ELISA method and MALDI-TOF Mass Spectrometry. UW-Stout Student Research Grant. \$481.

(2013) Determining Degrees of Peptide Citrullination in Glial Fibrillary Acidic Protein Sequences Discovered in Patients with Multiple Sclerosis. UW-Stout Student Research Grant. \$1,235.

(2012) Quantification of Microcystins in the Red Cedar Watershed Utilizing MALDI-TOF mass Spectrometry. UW-Stout Foundation Grant. \$1,200.

(2011) Profiling Cyanobacterial Toxins in the Red Cedar Watershed. UW-Stout Student Research Grant. \$1,223.

(2011) Peptides for Studying Citrullination of Arginine using MALDI-TOF Mass Spectrometry. UW-Stout Student Research Grant. \$820.

UNDERGRADUATE RESEARCHERS IN THE GRANT LABORATORY

Dr. Grant has mentored sixty undergraduate research assistants, supervised fourteen senior thesis, and co-authored nineteen undergraduate posters at national venues.

STUDENTS PRESENTATIONS AT UW-STOUT RESEARCH DAY

Production and Purification of Cas9 Protein.

UW-Stout Research Day: Menomonie, WI, 2020. *Poster.*

UW-Stout Research Day: Menomonie, WI, 2016. *Poster.*

Comparative Analysis of ELISA and MALDI-TOF mass

spectrometry methods for microcystins in freshwater samples. UW-Stout Research Day: Menomonie, WI, 2016. *Poster.*

Identification Of Casein-Derived Phosphopeptides In Bovine Milk.

UW-Stout Research Day: Menomonie, WI, 2014. *Poster.*

Separation of Phosvitin Peptides Through

Chromatography. UW-Stout Research Day: Menomonie, WI, 2014. *Poster.*

Deciphering the sequence specificity of protein citrullination of glial fibrillary acidic protein. UW-Stout Research Day: Menomonie, WI, 2012. *Poster.*

Comparing the Citrullination Rates of Four Peptides from GFAP. UW-Stout Research Day: Menomonie, WI, 2012. *Poster.*

Profiling microcystin toxins in the Red Cedar Watershed. UW-Stout Research Day: Menomonie, WI, 2012. *Poster.*

Evaluation of Peptides in Wisconsin Beer. UW-Stout Research Day: Menomonie, WI, 2012. *Poster.*

Glycoprotein Levels In Hearts: Using An Integrated Lectin Chromatography Workflow. UW-Stout Research Day: Menomonie, WI, 2012. *Poster.*

IV. ACCOMPLISHMENTS IN TEACHING

COURSES TAUGHT AT UW-STOUT

I have taught, and excelled at, a wide variety of classes including science majors' courses and general education courses:

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| Advanced Biotechnology (BIO-470) | ABMB Introduction to Research (ABMB-201) |
| ABMB Senior Capstone (ABMB-470) | Applied Science Profession I (APSC-101) |
| Applied Science Profession II (APSC-401) | Biochemistry, with laboratory (CHEM-311) |
| Biology of Aging (BIO-125) | Concepts & Issues in Biotechnology (BIO-210) |
| General Chemistry (CHEM-135) | Human Biology, with laboratory (BIO-132) |
| Human Biology, Stout Online (BIO-132) | Introduction to Research in ABMB (ABMB-201) |
| Introductory Biology, with laboratory (BIO-101) | Introductory Pharmacology (BIO-358 or BIO-258) |
| Proteomics, with laboratory section (BIO-425) | |

TEACHING-RELATED GRANTS AWARDED

Lutz, C.; **Grant, J.E.** MALDI-based Research-like Experiences in a 2YC/4YC Collaboration with a Renewable Fuels Industry Partner. *Advanced Technology Education Grant, National Science Foundation* (DUE 1400885). Awarded 2014, \$128,253. *Co-Principal Investigator.* Funding rate for the ATE grants reported at approximately 22%.

As result, the following two videos were produced and published on YouTube:

Aspaas, A.; Pieper, P.; **Grant, J.E.**; Lutz, C. Theory of MALDI-TOF Mass Spectrometry. 2016. <https://www.youtube.com/watch?v=8R1Oyqx5KfE>.

Based on analytics, this video was the most-watched YouTube video on MALDI-TOF MS in 2016 having 32,236 views over 11 countries.

Aspaas, A.; Pieper, P.; **Grant, J.E.**; Lutz, C. Sample Preparation for MALDI-TOF Mass Spectrometry. 2016. <https://www.youtube.com/watch?v=-PlrQVxtVE0>.

TEACHING AWARDS AND HONORS

Biology Department Nominee for CSTEMM Outstanding Teacher Award; 2017.

Honors College Faculty, UW-Stout Honors College; inducted 2016.

Chemistry Award for the iCollaborative Pre-Health Collection, the American Association of Medical Colleges; 2013.

This award was earned for the collection of human health-themed graphic narratives my students authored in the Human Biology course, BIO-132.

Milton Pella Grant, Wisconsin Society of Science Teachers; 2013, \$1,000.

Front and Center Award (co-award with Diana Suilmann), Wisconsin Society of Science Teachers; 2012.

Curious Stout Innovator Award, Nakatani Teaching and Learning Center UW-Stout; 2011, \$500.

EXTRAMURAL FUNDING SUPPORTING TEACHING EXCELLENCE

Lutz, C.; **Grant, J.E.** MALDI-based Research-like Experiences in a 2YC/4YC Collaboration with a Renewable Fuels Industry Partner. NSF ATE Grant (DUE 1400885). \$128,253. (2014-2018). *Co-Principal Investigator.*

INTRAMURAL FUNDING SUPPORTING TEACHING EXCELLENCE

Grant, J.E. (2016-2017) "Video and Stillshot Capture of Biology Experiments for BIO-132 Online", UW-Stout Online Teaching Professional Development Grant, \$1,374.19.

Grant, J.E.; Murray-Husted, U. (2014) "Interdisciplinary STEAM Research- Illustrating Exemplary Medical Graphic Narratives". Biology Department Indirect Costs Innovation Funds, 2014. \$1,000.

SCHOLARSHIP OF TEACHING AND LEARNING PRESENTATIONS AT NATIONAL VENUES

Grant, J.E.; Lutz, C.M.; Inspiring Undergraduates Through Problem-Solving Using the PDB. In Proceedings of PDB50: A Special Symposium Celebrating the 50th Anniversary of

the Protein Data Bank. Virtual Online. May 4th-5th, 2021; American Society for Biochemistry and Molecular Biology. Poster. *Peer Reviewed Abstract*.

Grant, J.E.; Lutz, C.M.; Huffman, D. Understanding Curriculum Effectiveness and the Student Experience in a Modular Undergraduate Laboratory Experience Integrating Research and MALDI-TOF Mass Spectrometry. In Proceedings of Experimental Biology, San Diego, CA, April 22-26, 2018; Pederson, T., Ed. Federation American Societies for Experimental Biology. Poster. *Peer Reviewed Abstract*.

Grant, J.E.; Lutz, C.; Aspaas A.; Pieper, P. *A Research-like Experience using MALDI-TOF MS within a 2 Year College Organic Chemistry II laboratory: Curriculum and Implementation* (2017) 65th American Society for Mass Spectrometry Conference; Indianapolis, IN. Special Poster #2. *Peer-reviewed abstract*.

Shipman, R.; **Grant J.E.;** *Assessing Student Competencies Using Rubrics Associated with Figure Legends and Ability to Perform the Bradford Assay in a 400-level Undergraduate Course on Proteomics*. In Proceedings of Experimental Biology, Chicago, IL, April 22-26, 2017; Pederson, T., Ed. Federation American Societies for Experimental Biology. Poster. *Peer Reviewed Abstract*.

Jaco N.; Sonsalla, D.; Lutz, C.; Pieper, P.; Aspaas A.; **Grant, J.E.** *Implementing a Research-like Experience using MALDI-TOF MS within a 2 Year College Organic Chemistry II laboratory*. (2017) Experimental Biology 2017; Chicago, IL. Poster. *Peer-reviewed abstract*.

Lutz, C.; **Grant, J.E.;** Pieper, P.; Aspaas, A. *Curriculum Innovation Through Collaborative Introduction of MALDI-TOF Mass Spectrometry, Undergraduate Research Methodologies, and POGIL Instructional Methods*. In Abstracts of Papers, 253rd ACS National Meeting and Exposition, San Francisco, CA, April 2-6, 2017, CHED-307. Oral presentation. *Invited. Peer Reviewed Abstract*.

Lutz, C.; **Grant, J.E.;** Aspaas, A; Pieper, P. (2016) *MALDI-based Research-like Experiences in a 2YC/4YC Collaboration with a Renewable Fuels Industry Partner*. In Program of the National Science Foundation Advanced Technology Education Conference 2016. Washington D.C., October 26-28, 2016. Showcase presentation.

Aspaas, A.; Lutz, C.; Pieper, P.; **Grant, J.E.** *A Collaborative Approach to Incorporating Undergraduate Research and MALDI-TOF Mass Spectrometry Into a Two-Year College*. In Program of the 213th 2YC3 Conference, San Diego, CA, March 11-12, 2016. Oral Presentation. *Peer Reviewed Abstract*.

Lutz, C.; **Grant, J.E.;** Aspaas, A.; and Pieper, P. *MALDI-based Research-like Experiences in a 2YC/4YC Collaboration with a Renewable Fuels Industry Partner*. In Program of the

National Science Foundation Advanced Technology Education Principal Investigator's Meeting. Washington D.C., October 21-23, 2015. Showcase presentation.

Lutz, C.; Pieper, P.; Aspaas, A.; **Grant, J.E.**; and Pieper, P. *A Collaborative Approach to Overcoming Barriers to Undergraduate Research in 2-year Colleges*. In Program of the 210th 2YC3 Conference, Kaneohe, HI, May 20-23. Oral Presentation. *Peer Reviewed abstract*.

Grant, J.E. *The Illustrated Novel Mastery Project in Biology Enhances Critical Thinking and Student Engagement in a General Education Course*. In Proceedings of the International Society for the Scholarship of Teaching and Learning, Hamilton, Canada, October 24-27, 2012. Oral Presentation. *Peer Reviewed Abstract*.

Grant, J.E.; Doerr, K.W.; Kadlec, K.; Lauersdorf, T. (2012) *MALDI Mass Spectrometry in the Age of Undergraduate Research*. In Proceedings of the 2nd STEM Agenda Conference for the American Society for Quality "Advancing the STEM Agenda", Menomonie, WI, July 16-17, 2012; Veenstra, C., Ed. Menomonie, WI. Poster. *Peer Reviewed Abstract*.

Grant, J.E.; Suilmann, D; Hashmi, M. *Inspiring Non-Major Students in STEM Courses: The Illustrated Novel Mastery Project*. (2011) In Proceedings of the International Society for the Scholarship of Teaching and Learning, Milwaukee, WI, October 20-23, 2011. Oral Presentation. *Peer Reviewed Abstract*.

Thomas, K.; Klefstad, J.; **Grant, J.E.**; Schumacker, J. (2011) *Should Colleges require reading and writing?* In Proceedings of the International Society for the Scholarship of Teaching and Learning, Milwaukee, WI, October 20-23, 2011. Oral Presentation. *Peer Reviewed Abstract*.

Little, A.; Hashmi, M.; **Grant, J.E.** (2011) *Interdisciplinary lesson study: Using case studies to build graph interpretation and web evaluation skills, and student enthusiasm*. In Proceedings of the International Society for the Scholarship of Teaching and Learning, Milwaukee, WI, October 20-23, 2011. Oral Presentation. *Peer Reviewed Abstract*.

SCHOLARSHIP OF TEACHING AND LEARNING PRESENTATIONS AT STATE VENUES

Grant, J.E. (2014) Student Authored Graphic Narratives to Increase Student Engagement. Wisconsin Society of Science Teachers Convention, Appleton, WI. Workshop. Presentation. *Peer-reviewed abstract*.

Suilmann, D **Grant, J.E.** (2012). *Use of Graphic Novels in a High School Classroom*. Wisconsin Society of Science Teachers Convention, Madison, WI. Workshop. Presentation. *Peer-reviewed abstract*.

Grant, J.E. (2012) Collaborating with Universities to Bring MALDI-TOF Mass

Spectrometry Into the Classroom. Annual Conference of the Wisconsin Society of Science Teachers. Madison, WI. Presentation.

Hashmi, M.; **Grant J.E.**; Suilmann, D. (2011) An Innovative Teaching Tool for STEM Disciplines: The Illustrated Novel. 2011 ASQ STEM Agenda Conference, Menomonie, WI. Presentation. *Equal Co-Author and Project Inventor.*

Hashmi, M.; Little, A.; **Grant, J.** (2011) Interdisciplinary lesson study: Using case studies to build graph interpretation and web evaluation skills, and student enthusiasm. 2011 ASQ STEM Agenda Conference, Menomonie, WI. Oral Presentation. *Equal Co-Author.*

Hashmi, M.; **Grant, J.E.**; Little, A. (2011) Interdisciplinary lesson study: plants, drugs, and depression. UW-System President's Summit, Madison, WI. Oral Presentation. *Equal Co-Author.*

PUBLICATIONS IN THE SCHOLARSHIP OF TEACHING AND LEARNING

Berg, R.; **Grant, J.E.**; Kirk, J.S.; Zimmerman, T. Leveraging Recorded Mini-Lectures to Increase Student Learning. *Online Classroom.* 2015, 14, 5-8.

Hashmi, M.P.; **Grant, J.E.**; Suilmann, D. Inspiring Non-Science Students in STEM Courses: Illustrated Novels in Two Linked Learning Communities. In *Advancing the STEM Agenda: Quality Improvement Supports STEM*: Veenstra, C.P., Padró, F.F., and Furst-Bowe, J.A. Eds.; Quality Press: Milwaukee, WI, 2012; pp 97-112.

PUBLISHED INSTRUCTIONAL VIDEOS

Contributor, in Berg, R. (2017) What You Can Do in Camtasia (2017). UW-Stout Video Tutorial.

Aspaas, A.; Pieper, P.; **Grant, J.E.**; Lutz, C. (2016) Theory of MALDI-TOF Mass Spectrometry. <https://www.youtube.com/watch?v=8R1Oyqx5KfE>

Aspaas, A.; Pieper, P.; **Grant, J.E.**; Lutz, C., (2016) Sample Preparation for MALDI-TOF Mass Spectrometry. <https://www.youtube.com/watch?v=-PIrQVxtVE0>
Most-watched YouTube video on "MALDI TOF MS" in 2016

CURRICULUM DEVELOPMENT

Revision Leader, Introductory Pharmacology; Fall 2020.

Revision Leader, Human Biology BIO-132; Spring 2019. Led a team of three instructors.

Course Developer, Proteomics BIO-425; Fall 2009.

TEACHING-RELATED MEDIA INTERVIEWS AND ARTICLES

“UW-Stout's Baldrige award continues to pay dividends”. UW-Stout University Communications. January 2017.

“Laboratory Experiences at UW-Stout”. Video Interview, UW-Stout Alumni Foundation. August 2015.

“Writing Through It”, a highlight article in “Getting over the Ph.D. Hump”. ASBMB Today, the American Society for Biochemistry & Molecular Biology. August 2015.

The Illustrated Novel Mastery Project; Wisconsin Public Radio *Spectrum West*, June 2012.

V. SERVICE

MENTORING

I have mentored people of all types and from a variety of backgrounds, including formal and informal mentoring roles. More formal roles include service as a departmental mentor to new faculty, and responsibilities to undergraduate science students as both a research mentor, and academic advisor, and a champion of student self-fulfillment of career goals. I have also served in various informal roles, mentoring both junior faculty and level-appropriate peers in my capacity as the Personnel Policies Committee Chair, as a senior faculty member, and as a champion of thoughtful consideration in decision-making.

SERVICE-RELATED GRANTS

Grant, J.E. Online Advising Technology and Protocols *Chancellor's Innovation Fund*. Awarded 2020, \$2,100. *Principal Investigator*.

INTERNATIONAL SERVICE

Dr. Grant has reviewed for international scientific organizations, but was asked to hold the information in reserve.

FEDERAL SERVICE

Grant Reviewer, Division of Undergraduate Education, at the National Science Foundation, Education and Human Resources; 2020.

HIGHLIGHTS OF LEADERSHIP WITH NATIONAL ORGANIZATIONS

Panelist, "PhD Job Search Panel Series: Science in Academia." Graduate Women in Science; April 2019.

Chair, Co-Chair and Founder, Undergraduate Research in Mass Spectrometry Interest Group, American Society for Mass Spectrometry; 2009-2012.

Led the charge to form this interest group. We developed and implemented a workshop geared towards undergraduate students.

HIGHLIGHTS OF SERVICE WITH NATIONAL IMPACTS

Poster Judge, The Protein Society 36th Annual Symposium, San Francisco, CA, July 7-10, 2022.

Poster Judge, American Society for Biochemistry and Molecular Biology Annual Meeting; April 2021.

Participant, Focus Group on Undergraduate Expansion American Chemical Society; June 2020.

Presenter, *Career Paths Seminar*, NeXXt Scholars Program, February. 2014.

NeXXt Fellow, New York Academy of Sciences and the US Department of State; 2013-2015.
I served as the mentor for a female undergraduate student under this program that matched mentors with students from Muslim-majority countries. My student was a muslim student from Malaysia studying STEM at Smith College.

Panelist, "The Academic Job Search" panel discussion, the 2009 IRACDA Conference; June 2009.

COMMITTEE WORK WITH NATIONAL ORGANIZATIONS

Accreditation Committee, American Society for Biochemistry and Molecular Biology; 2017-present.

Member, Task Force on Undergraduate Education, ASPET; Sept. 2019-2020.

Session Chair, *Identification of Post-Translational Modifications*, American Society for Mass Spectrometry Conference; Baltimore, MD; 2014.

Scientific Reviewer, *Postdoctoral Grant Award Committee*, American Society for Mass Spectrometry; 2015 and 2016.

Education Committee, American Society for Mass Spectrometry; 2013.

HIGHLIGHTS OF TEXTBOOK AND JOURNAL REVIEW ACTIVITY

Review Board Member, *Journal of Scholarship of Teaching and Learning*; 2017-present.

Reviewer, *Lehninger's Principles of Biochemistry 17th Edition* by Nelson and Cox. MacMillon Publishing.

Reviewer, *Human Biology 15th Edition* by Sylvia Mader. McGraw Hill Publishing.

Reviewer, averaging two articles per year for prestigious journals including journals within my discipline, including but not limited to:

| | |
|--|--------------------------------|
| Journal of Proteomics Research | Proteomics (Journal) |
| Journal of the ASMS | Nature Communications |
| Journal of Teaching and Learning with Technology | Journal of Alzheimer's Disease |
| Current Bioinformatics | JOTL |

HIGHLIGHTS OF SERVICE AT THE STATE LEVEL

Grant, J.E. *Introduction to Portfolios*. Wisconsin Association of Educational Opportunity Program Personnel's McNair/Student Support Services Retreat. September 24-25, 2021.

Grant, J.E. *Asking for a Letter of Recommendation*. Wisconsin Association of Educational Opportunity Program Personnel's McNair/Student Support Services Retreat. September 24-25, 2021.

Panelist, Mentoring Undergraduate Research Remotely during COVID-19 and Beyond; Wisconsin Council on Undergraduate Research (WisCUR) workshop (virtual). August 18, 2020.

UW-Stout Delegate, 2020 Forward UW-System HIPS Initiative Meeting #1, Fall 2020.

Poster Judge, 12th Annual Wisconsin System Technology Symposium; Menomonie, WI. July 22-23; 2019.

HIGHLIGHTS OF REVIEWER SERVICE AT THE STATE LEVEL

Reviewer, Wisconsin System Ignite Grant; 2022.

Reviewer, Wisconsin System Wis-Arg Grant; 2017-2019.

Reviewer, Improving Teacher Quality Program, The University of Wisconsin System, 2012.

HIGHLIGHTS OF INTERCOLLEGIATE SERVICE

Mentor, Oberlin Connection Fair (Science and Technology), Oberlin College, 2021.

Recommender, Letter recommending Tenure for Andrew Ottens, Ph.D. at Virginia Commonwealth University; 2015.

Lead, Collaborations Task Force, Wisconsin Council for Undergraduate Research; 2014.

Participant, Wisconsin Council for Undergraduate Research (WisCUR) URSCA Meeting, Lacrosse, WI; 2014.

Event Supervisor, Science Olympiad for Wisconsin State Event for Protein Structure; 2012.

HIGHLIGHTS OF LEADERSHIP AT THE UNIVERSITY LEVEL AT UW-STOUT

Chair, Personnel Policies Committee; 2020-present. Elected.

Supervised the committee of 12-15 faculty.

Mentored peers and junior faculty in the promotion process. Supervised the Sabbaticals

process (AY 2021). Supervised revisions to the Promotions, Sabbaticals, Grievances, Tenure Postponement and Post-Tenure Review policies.

Led creation of the first Faculty Annual Performance Evaluation Policy

Personally consulted with one Dean-led and one Provost-led committee to ensure an equitable Annual Performance Evaluation form (APEF) for the faculty. Ensured implementation of the shared-governance-approved form by serving on the APEF Implementation ad hoc Committee.

Supervised creation of timelines of major personnel policies, annually.

Co-Moderator with Sylvia Tiala, Panel Discussion on Excellence in Tenure and Promotion Documents. A joint venture between the Nakatani Teaching & Learning Center and Faculty Senate. Dec. 20, 2022.

Presenter, Annual Performance Evaluation Policy Listening Session. October 4th, 2022.

Member, Faculty Senate Executive Committee; 2020-present.

Chair, Sabbatical Committee; Fall 2020-Spring 2022. Elected

Chair and CSTEMM Representative, Research Fellows Appointment Committee, 2019-2020. Elected.

Chair and CSTEMM Representative, Sabbatical Review Committee, 2019-2020. Elected.

Vice-Chair and CSTEMM Representative, Sabbatical Review Committee, 2018-2019. Elected.

Assistant Trip Leader, Comics in Iceland- UW-Stout Study Abroad, Summer 2018.

Chair and CSTEMM Representative, All-University Associate Professor Promotion Committee, 2017-2018. Elected.

Responsible for deciding on candidates' application for promotion to associate professor at the university level.

Chair, Personnel Policies Committee; 2016-2017.

Led major revisions to promotion and sabbatical processes. Changes to the promotion process included deep structural changes to the committee structure and process.

Member, Faculty Senate Executive Committee; 2016-2017. Elected.

Founding Student Club Advisor, UW-Stout American Society for Biochemistry and Molecular Biology Chapter; 2014-present.

Chair, Grant-Writing Community of Practice, Nakatani Teaching & Learning Center,

Fall 2012-Spring 2013.

Lead Chair, Illustrated Novels Community of Practice, Nakatani Teaching & Learning Center, 2011-2012.

Founding Student Club Advisor, UW-Stout Pre-Pharmacy Club, 2010-2015.

HIGHLIGHTS OF COMMITTEE SERVICE AT THE UNIVERSITY LEVEL AT UW-STOUT

Member, Salary Equity Committee; Fall 2023.

Member, Long Range Planning Committee, Fall 2023.

Member, Outstanding Researcher Award Committee; Spring 2023.

Member, Faculty Senate By-Laws Workshop. Spring 2022.

Faculty At-Large Representative, Comprehensive Academic Plan Committee. Spring 2022-present. Elected.

Faculty Representative, Student Research Grant Committee Spring 2022-Summer 2022. Appointed.

Faculty Representative, Annual Performance Evaluation Form Implementation Committee. Spring 2022-Summer. Appointed.

Member, Outstanding Researcher Award Committee; Spring 2022.

Member, All-University Full Professor Promotion Committee; 2020-2021. Elected.

Committee Member, Termination of Employment Committee Action in 2019, Spring 2019.

External Reviewer, Senior Capstone Midterm Review, Animation Class; Spring 2019.

CSTEMM Representative, All-University Associate Professor Promotion Committee, 2018-2019. Elected.

STEMM Representative, Planning and Review Committee, 2018-2021. Elected.

STEMM Representative, Personnel Policies Committee, 2018. Elected.

Senator Alternate, STEM College Representative to Faculty Senate; 2017-2019.

Member, Termination of Employment Committee; 2017-2019.

Faculty Senator, Biology Department; 2015-2017.

CSTEM Representative, University Promotions Committee for Associate Professor; 2013-14 and 2015-2016.

Faculty Member At Large, Faculty Senate Election Committee, 2013-2016.

CSTEM Representative, Curriculum and Instruction Committee; 2013-2014.

Voting Member, Outstanding Researcher Selection Committee, 2013-2014.

Member, Bachelor of Science in Professional Communications and Emerging Media Advisory Board 2013-2014.

Member, Stout Advising Network, 2012-2013.

CSTEM Representative, RESA/GLP Advisory Committee, 2012-2013.

Alternate Senator for Biology, UW-Stout Faculty Senate, 2012-2014.

Member, Positive Action Committee, 2012-2013.

Faculty Mentor for Biology, Get Professors Back in Dorms Program, Fall 2011.

Interviewer, Stout Scholars' Day, 2011, 2012, 2014.

HIGHLIGHTS OF PRESENTATIONS TO THE UNIVERSITY OF WISCONSIN-STOUT

Co-Presenter, "SMART Methods to improve teaching practices", August Professional Developments, August 30th, 2022.

Co-Presenter, "You Said We Did", January Professional Development Week, January 2017.

Panelist, "Making a Difference through Student Org. Advising", January Professional Development Week, January 2014.

Guest Speaker, "Ins and Outs of Grant Writing", UW-Stout Research Club, November 2013.

Presenter, NTLC New Instructors' Workshop. August 2013.

Presenter, with Julie Peterson. "Scholarship and Research". New Instructor's Workshops, Fall 2012.

Lead Presenter, “The Illustrated Novel Mastery Project”, January Professional Development Week, UW-Stout, January 2011.

HIGHLIGHTS OF PRESENTATIONS TO UNIVERSITY-WIDE STUDENT GROUPS

Consultant, Quickpich Presentations at UW-Stout, Menomonie, WI. April 19, 2023.

Panelist, McNair Panel Discussion: “Preparing Grad School Applications”, McNair Program, Menomonie, WI; August 2016, August 2018, May 2019, May 2020, May 2021.

Panelist, Honors College Colloquium “The Death and Life of the Great Lakes.” Spring 2019.

Discussion Leader, Honors College Colloquium, Fall 202, Fall 2021, Fall 2020, Spring 2019, Fall 2018, Spring 2017, Fall 2016, Fall 2015, Fall 2012, Fall 2010.

HIGHLIGHTS OF SERVICE TO THE STEMM COLLEGE OF UW-STOUT

Member, 2YC Transfer Student Committee of the Sciences Departments; 2021-2023.

Peer Reviewer, “Best Teaching Practices for Online Laboratory Instruction” Document, Nakatani Teaching and Learning Center, Summer 2020.

Reviewer, Invited Peer Reviewer for a Senior Faculty’s online course, Spring 2020.

Presenter, STOUT Connects You, STEMM College; October 2019, February 2020.

Presenter, Science Olympiad Pre-Event Workshop, STEMM College, March 2019.

Presenter, STEM Day, STEMM College, November 2017.

Event Supervisor, Protein Modeling Event, Science Olympiad Regionals, 2015, 2009-2011.

Host, Spring Meeting of the Wis-Share Group, Spring 2013.

Presenter, Protein Structure, Menomonie Girl Scouts Day, 2012.

Presenter, Protein Modeling, UW-Stout STEM Career Day, 2011.

Presenter, UW-Manitowoc Day at UW-Stout, 2011.

Presenter, STEM Career Day, UW-Stout STEM College, 2011.

Event Supervisor, Protein Modeling Event, Science Olympiad Boyceville Invitational, 2011.

Co-Chair, University of Wisconsin-Stout Adventures with Women in Science Day, 2010.

With the event chair, organized and supervised science activities for middle-school girls.

HIGHLIGHTS OF LEADERSHIP AT THE PROGRAM LEVEL

Participant in Idea Generation: Minor curriculum Proposals for Nanopharmacology and also Semiconductor Manufacturing; Summer 2023.

Interim Program Director, Applied Science Program; August – January 4, 2022.

Proposed the beginning idea of evolving the APSC program into distinct Chemistry, Biology, and Physics majors to PRC after discussions with concentration leads. Solved forty undergraduate student cases. Supervised two cooperative education experiences. Met with several APSC prospectives, prospective sports team members, and transfer students. Led Applied Science through fall discussions as a focus program.

Prepared the 2022 action plan and the Fall 2022 statement to the program advisory committee. Reinstated the APSC Newsletter.

Member, STEMM Council; Fall 2022.

Member, Program Director Ad Hoc Committee, UW-Stout STEMM College.

Founding Columnist, Alumni Spotlight, Applied Science Program Newsletter; 2020.

Founding Columnist, Career Corner, Applied Science Program Newsletter; 2020.

Founding Concentration Coordinator, Biology Concentration, Applied Science Program; 2019-present. Participated in creation of the concentration. Led in generating an interactive course planner Excel document for the concentration and career-focused advising materials.

Chair, ABMB Program Educational Objectives Sub-Committee, Fall 2018.

Concentration Coordinator, Interdisciplinary Science Concentration, Applied Science Program; 2014-2018. Spear-headed a revision to this concentration that streamlined requirements and created two tracks within the concentration.

LEADERSHIP IN THE BIOLOGY DEPARTMENT AT UW-STOUT

Chair, Biology Department Departmental Personnel Committee; 2021-2022.

Chair, Biology Department Departmental Priorities Committee; Spring 2020.

Founding Lead of the Biology Tutoring Resource; Fall 2019-Spring 2021.

Departmental Mentor to Brian Teague, Ph.D.; 2018-2019.

Chair, By-Laws Committee, Biology Department; 2014-2018; 2021-2022.
Led a successful revision of departmental bylaws (2018).

CURRICULUM LEADERSHIP IN THE BIOLOGY DEPARTMENT AT UW-STOUT

Course Revision Author, Introductory Pharmacology; Fall 2019.

Course Proposal Developer, ABMB Senior Capstone (ABMB470), 2016-2017.

Lead Instructor, Human Biology, 2015-2022.

Led the first revision of this course since 1998. The revision was used by the university as an example proposal for a GE ARNS course. Approved Fall 2019. Spear-headed a backwards-design initiative to revise the laboratory experiences in this course in 2019. Also, revised labs for the fully online Human Biology courses. Led generation of the first multi-instructor General Education Assessment Survey for BIO-132 in 2018.

Course Proposal Developer, Proteomics (BIO-425) Course Proposal; 2009-2010.

HIGHLIGHTS OF SERVICE TO THE BIOLOGY DEPARTMENT.

APSC Representative, Biology Department Scheduling Committee; Fall 2018 – Spring 2022.

Member, Biology Department Budget Committee; Fall 2018- Spring 2022.

Member, Biology Department Lab Safety Reopening Committee; Summer 2020.

Member, Post-Tenure Review Committee for Amanda Little, Ph.D.; December 2019.

Member, Biology Department Academic Staff Committee; 2018-2019, 2020-2021.

Member, Biology Department Curriculum Revision Committee; 2018.

Member, Cell and Molecular Biologist Search Committee; 2017.

Member, Biology Department Personnel Committee; 2015-2017.

STUDENT DISSEMINATION GRANTS SUPERVISED

(\$19,715 TOTAL)

Publication Fees for Manuscript on Prion Proteins. \$1500.

Request for Travel to Experimental Biology 2019. UW-Stout ASBMB Student Chapter Travel Award. \$500.

Request for Travel to Experimental Biology 2019. UW-Stout ASBMB Student Chapter Travel Award. \$500.

To Sponsor the Presentations of Six Students from Three Research Groups at Experimental Biology 2019. \$4,056.

To Sponsor the Presentations of Eight Students from Three Research Groups at Experimental Biology 2018. Experimental Biology Conference in San Diego, CA. UW-Stout Dissemination Grant, \$5,538.

Request for Travel to Experimental Biology 2018. UW-Stout Dissemination Grant, \$1,000.

UW-Stout ASBMB Student Chapter Travel Award for Experimental Biology 2018. \$500.

To present outreach information at the 2017 American Society for Biochemistry and Molecular Biology (ASBMB) Annual Meeting. Experimental Biology Conference in Chicago, IL. UW-Stout Dissemination Grant, \$860.

To present data on student success in a Proteomics Course at Experimental Biology 2017. Experimental Biology Conference, Chicago, IL. UW-Stout Dissemination Grant, \$1,255.

Identification of Novel Antimicrobial Peptides to be used in Functional Foods. Experimental Biology Conference, San Diego, CA. UW-Stout Dissemination Grant, \$1,000.

Participation at 2016 American Society for Biochemistry and Molecular Biology. Experimental Biology Conference, San Diego, CA. UW-Stout Dissemination Grant, \$700.

MALDI-TOF Analysis of the Enrichment of Phosvitin Peptides Using Affinity Micro-Chromatography Techniques. UW-Stout Dissemination Grant, \$1,000.

Developing Statistical Methods for Identifying Modifications sites of Neuronal Proteins. American Society of Biochemistry and Molecular Biology. Boston, MA. UW-Stout Dissemination Grant, \$1,000.

Dissemination of Undergraduate Peptide Research at the

61st Annual American Society for Mass Spectrometry Conference. Minneapolis, MN. UW-Stout Dissemination Grant, \$287.

Student Travel: To Present Undergraduate Research on Microcystins at the 60th Annual ASMS Conference. National Conference of the American Society for Mass Spectrometry. Vancouver, CA. UW-Stout Dissemination Grant, \$1,519.

SERVICE-RELATED ARTICLES AND MEDIA INTERVIEWS

Goers, Abbey. Seven students present at Experimental Biology 2019. *UW-Stout University Communications*. May 14, 2019.

Powers, Pam. Students to present at biochem, molecular biology national conference. *UW-Stout University Communications*. April 2018.

PROFESSIONAL AFFILIATIONS (WITHIN THE LAST FIVE YEARS)

The American Chemical Society

The American Society for Biochemistry and Molecular Biology

The American Society for Pharmacology and Experimental Therapeutics

The American Society for Mass Spectrometry

Graduate Women in Science

VI. FACULTY DEVELOPMENT

NATIONAL ACTIVITIES AND COURSE PARTICIPATION BENEFITING TEACHING EFFORTS

Identifying and overcoming barriers to CURE implementation at your institution. Virtual Workshop. The American Society for Biochemistry and Molecular Biology. June 9th, 2020. A Virtual Event.

PULSE MWGP Workshop on Creative Problem-Solving and Facilitative Leadership. PULSE Midwest and Great Plains Virtual Summer Conference. July 29, 2020. A Virtual Event.

PULSE MWGP Workshop on Diversity, Equity, and Inclusion, PULSE Midwest and Great Plains Virtual Summer Conference. July 21, 2020. A Virtual Event.

Best practices in online teaching for BMB classrooms Virtual Workshop. The American Society for Biochemistry and Molecular Biology. July 10, 2020. A Virtual Event.

Threshold Concepts in Biochemistry Workshop, Seattle, WA; June 2016. *NSF-funded workshop*.

Midwest Regional Meeting, Partnerships for Undergraduate Life Science Education (PULSE). St. Louis, MO, June 2014.

STATE-LEVEL AND REGIONAL ACTIVITIES AND COURSE PARTICIPATION BENEFITING TEACHING EFFORTS

Problem Based Learning Workshop with Kristin Woebbe. CVTC, Eac Claire, May 30th and 31st, 2023.

Relationship- Rich Education Book Club. Wisconsin System OPID, Virtual Workshop, Spring 2023.

HIPs Workshop Webinar. UW-System, Virtual Event, April 30th, 2021.

Faculty College, Wisconsin System OPID, Richland Center, WI, 2011.

PARTICIPATION IN UW-STOUT ACTIVITIES BENEFITING TEACHING EFFORTS

Planning Coherent Instruction with Backward Design: Why, How, Tips and Tricks. August Professional Development. UW-Stout. January 19th, 2022.

Designing Inclusive Syllabi: Why, How, Tips and Tricks. January Professional Development, UW-Stout. January 19th, 2022.

Teaching the Adult Learner Sharing Community, UW-Stout Nakatani Teaching and Learning Center. AY 2021-2022.

Successful and Healthy Virtual Leadership. UW-Stout. Sept. 8th, 2020.

Online Teaching Sharing Community. UW-Stout Nakatani Teaching and Learning Center. Menomonie, WI. Summer 2020.

Book Discussion: Teaching About Race and Racism. UW-Stout Nakatani Teaching and Learning Center. Menomonie, WI. April 2020.

Teaching to All Students: Universal Design for Learning and Accessibility. UW-Stout. Menomonie, WI. April 19, 2019.

STEM Workshop with Robert Felder and Rebecca Brent. UW-Stout. Menomonie, WI. January 2019.

Anxiety in the College Classroom: Insights and Supportive Teaching Practices, UW-Stout. Menomonie, WI. January 2019.

Understanding iGeneration/Generation Z Students - Deep Dive Workshop w/ Mary Beth Liebham, UW-Stout. Menomonie, WI. August 2018.

Online Teaching Short Course, UW-Stout. Menomonie, WI. June 2018

Integrating and Evaluating Writing Across Diverse Disciplines Workshop by Dominic DelliCarpini, UW-Stout. Menomonie, WI. January 2017.

Intrinsic Motivation & Engagement Workshop by Mary Beth Liebham, UW-Stout. Menomonie, WI. January 2017.

Mental Health First Aid Training Workshop, Dunn County Mental Health Improvement Project. UW-Stout. Menomonie, WI. January 2017.

General Education Assessment Workshop II with Susan Hatfield. UW-Stout. Menomonie, WI. Fall 2016.

General Education Assessment Workshop I with Susan Hatfield. UW-Stout. Menomonie, WI. Summer 2016.

Ethics across the Curriculum Workshop. UW-Stout. Menomonie, WI. Spring 2016

Whistling Vivaldi Book Discussion, NTLC. UW-Stout. Menomonie, WI. Spring 2014.

Value Neutrality vs. Value Transparency Workshop Center for Applied Ethics. UW-Stout. Menomonie, WI. September 2013.

More Effective Assessment by Design Workshop by Tom Angelo. UW-Stout. Menomonie, WI. May 2013.

The Flipped Classroom Workshop. UW-Stout. Menomonie, WI. 2013.

Online Teaching Short Course. UW-Stout. Menomonie, WI. June 2012.

Honors College Workshop: "City as Text". UW-Stout. Menomonie, WI. 2012.

Practical, Effective Strategies for Assessment and Grading Workshop by Tom Angelo. UW-Stout. Menomonie, WI. May 2012.

Workshop: "Using Informal Writing as a Tool for Learning in Any Classroom". UW-Stout. Menomonie, WI. January 2012.

Nakatani Teaching and Learning Center, Community of Practice: "Lesson Study". UW-Stout. Menomonie, WI. 2010.

Sharing Community: “What the Best Teachers Do”. UW-Stout. Menomonie, WI. Spring 2010.

Assessment Institute with Barbara Walvoord. UW-Stout. Menomonie. Summer 2010.

ACTIVITIES AND COURSE PARTICIPATION BENEFITING TEACHING EFFORTS PRIOR TO STOUT

Teaching Techniques Course, the Medical University of South Carolina, Fall 2007.

SEMINAR ATTENDANCE PROMOTING EQUITY, DIVERSITY AND INCLUSION

Embodying the Power of Our Roots Monthly Meetings, UW-Stout, Spring Workshop, Spring Semester, 2023.

EDI Cases: What Would You Do? (Hybrid). UW-Stout, Spring Professional Development, January 2023.

Inclusive Workspaces Supervisor Training in Canvas. Virtual training from UW-Stout, Fall Semester, 2022.

Centering DEI: Practical Tools for Sustaining - Transformative Racial Equity in Undergraduate Research Programs Workshop, Council for Undergraduate Research, October 19, 2022.

UW System Implicit Bias Workshop, UW System Alliance for Inclusion. Diversity, and Advancement in STEM, Ideas Alliance, Virtual from UW-Oshkosh, June 6th, 2022.

Practical Tips and Strategies for a Culturally Responsive Approach to Supporting students. UW-Stout, Spring 2022, Recorded Presentation.

EDI Cases: What would you do?, Professional Development, UW-Stout, April 13th, 2022.

Inclusivity Amongst Multi-Cultural/Ethnic Students, January Professional Development, UW-Stout, January 20th, 2022.

Incongruity of Intersectional Belonging, January Professional Development, UW-Stout, January 20th, 2022.

Senior Diversity Office Panel, January Professional Development, UW-Stout, January 19th, 2022.

Designing Inclusive Syllabus, January Professional Development, UW-Stout, January 19th, 2022.

Confronting Problematic Behaviors, January Professional Development, UW-Stout, January 19th, 2022.

Authentic Leadership with Julie A. Landry, January Professional Development, UW-Stout, January 19th, 2022.

Equity in the College Classroom Conference, UW-System, Online Conference. October 1st and 15th, 2021.

Equity-Minded Wellness and Pedagogy, UW-System Faculty College, Online Workshop, May 24th-27th, 2021.

Inclusive Excellence in the Hiring Process & Beyond Workshop! UW-Stout, August 28, 2020.

The Multigenerational Workplace. January Professional Development, UW-Stout, January 2020.

Resetting the Professional Climate for Inclusive Success, UW-Stout, January 2020.

Civility in the Workplace. August Professional Development, UW-Stout. August, 2019.

Shift Credentials. January Professional Development, UW-Stout, January 2018.

IDI Bystander Response. IDI Seminar at UW-Stout, October 2017.

Managing Critical Conversations with Respect, Civility and Trust. January Professional Development, UW-Stout, January 2017.

Intercultural Communication – Time Management (IDI2) Workshop, Group Session, November 2016.

Intercultural Development Inventory (IDI) Workshop: Phyllis Braxton and PINK Consulting, May 2015.

SEED for Change conference, Phyllis Braxton and PINK Consulting at UW-Stout, January 2015.

Introduction to Intercultural Development Workshop by Phyllis Braxton and PINK Consulting, UW-Stout. October 2014.

NATIONWIDE WORKSHOPS BENEFITING TEACHING EFFORTS

Beyond Qualifying to Thriving in Graduate School Webinar, ASBMB. June 22, 2022.

SEMINARS AND WORKSHOP ATTENDANCE BENEFITING RESEARCH

BOLD Innovation That Matters: Episode II, WuXi AppTec. Virtual Seminar. April 17, 2023.

12th Annual Wisconsin System Technology Symposium, Menomonie, WI. July 22-23; 2019.

1st Annual International Conference on Animal Health
Nutraceuticals Symposium, Menomonie, WI. July 22-23; 2019.

SEMINARS AND WORKSHOPS BENEFITING SERVICE

Stellic Training, August Opening Activities, UW-Stout. Menomonie, WI. August 2023.

EAB Navigate Next Steps, August Opening Activities, UW-Stout. Menomonie, WI. August 2022.

ONLINE COURSES COMPLETED WITH CERTIFICATE

Good Laboratory Practices (GLPs) Regulatory Affairs Professionals Society. April 2021, 2022.

ONLINE COURSES COMPLETED (AUDITED)

Introduction to Online Education & Course Planning, WisconsinX on edX, Summer 2023.

Craft of Storytelling, University of Alaska-Fairbanks on edX, Summer 2023.

Leading with Effective Communication. CatalystX on edX, Summer 2022.

Drug Discovery and Medicinal Chemistry: The Molecular Basis of Drug Discovery, by Dr. Erland Stevens, DavidsonX on edX, Fall 2021.

Medicinal Chemistry: The Molecular Basis of Drug Discovery, by Dr. Erland Stevens, DavidsonX on edX, Spring 2020.

Agile Leadership Principles and Practice, by John Johnson, USMx on edX, Spring 2020.

The FDA and Prescription Drugs: Current Controversies in Context, by Aaron Kesselheim, Jonathan Darrow, and Ameet Sarpatwari, HarvardX on EdX; Summer 2019.

Fundamentals of Neuroscience Part III: The Brain, by Dr. David Cox, HarvardX on EdX. Spring 2019.