Wujie Zhang

[redacted]
Milwaukee, WI 53202
[redacted]
wujiez554@hotmail.com; Zhang@msoe.edu

EXPERTISE

Regenerative Medicine and Tissue Engineering

Cancer Treatment

Drug Delivery

Food Science and Engineering

Biomaterials

Micro/Nano-technology

Stem Cell Research

Cryobiology

ACADEMIC PREPARATION

2011-2012 Postdoc, Biomedical Engineering
The Ohio State University, Columbus, OH.

2008-2011 Ph.D., Biomedical Engineering
University of South Carolina, Columbia, SC.

2005-2007 M.S., Food Science
University of Shanghai for Science and Technology, Shanghai, China.

2001-2005 B.S., Food Science and Engineering
University of Shanghai for Science and Technology, Shanghai, China.
Minor: Engineering Management (Tongji University, Shanghai, China)

TEACHING EXPERIENCE

Sept 2018 – present ***Associate Professor***
Sept 2012 – Aug 2018 ***Assistant Professor***

Milwaukee School of Engineering

Courses taught:

- EB-4910/20/30 BioMolecular Engineering Design I, II, and III (2013-2018)
- EB-4000 Biopolymer Engineering (Fall 2012, 2013, 2014, 2015, 2016 and 2017)
- EB-3810 Tissue Engineering (Winter 2018)

- EB-3520/4520 Engineering Controlled Drug Delivery (including labs; Spring 2013, 2014, 2015, 2016 2017 and 2018 & Winter 2017 and 2018)
- EB-3400 Food Engineering (Spring 2019)
- EB-3300/4400 Molecular Nanotechnology (Spring 2013, 2014, 2015, 2016, 2017 and 2018 & Fall 2018)
- EB-3610 Transport Phenomena I (Fall 2018)
- EB-2250 Biopolymer Engineering (Spring 2017, 2018 and 2019)
- EB-1100 & 2100 BioMolecular Engineering Seminar I and II (Winter 2014)
- UR-4981/4982/4983 Undergraduate Research I, II and III (2016-2017, 2017-18 and 2018-2019)
- CH-223 Biochemistry (including labs) (Fall 2015)
- CH-3670 Polymer Chemistry (Winter 2013 and Spring 2019)
- BI-102 Cell Biology and Genetics (including labs; Fall 2012, 2013, 2014, 2016 and 2017 & Winter 2012, 2013, 2014, 2015, 2016, 2017 and 2018)
- BI-256 Microbiology Labs (Spring 2014)
- CH-200 Chemistry I Labs (Fall 2016)

Sept 2005 – Dec 2007 ***Teaching Assistant***
University of Shanghai for Science and Technology

- Graduate advisor for several senior design teams within the Food Science and Engineering degree program
- Lectured on a graduate course: Professional Writing

RESEARCH EXPERIENCE

Sept 2018 – present ***Associate Professor***
Sept 2012 – Aug 2018 ***Assistant Professor***

BioMolecular Engineering Program, Department of Physics and Chemistry, Milwaukee School of Engineering

- Designing pH/enzyme dual-responsive pectin-based hydrogel microcapsule systems for bioactive agent delivery
- Developing artificial red blood cells by using pectin-oligochitosan hydrogel
- Bioprinting of vascularized artificial tissue/organ
- Nanofabrication – biopolymer-based nanofibers

July 2011 – Aug 2012 ***Postdoctoral Researcher***
Department of Biomedical Engineering, College of Engineering & Davis Heart and Lung Research Institute, College of Medicine, The Ohio State University

- Conducted research on Bio-Macro/Micro/Nanotechnology for cell-based medicine and cancer treatment:

Macro: Engineering macro-vascularized 3D tissue

Micro: Stem cell microencapsulation for cell-based medicine using small (~ 100 μm) alginate microcapsules

Nano: Drug/gene delivery and bio-imaging using biocompatible nanocapsules for cellular therapy and cancer treatment

May 2011 – June 2011 ***Postdoctoral Fellow***
Department of Mechanical Engineering and Biomedical Engineering Program, College of Engineering and Computing, University of South Carolina

- Conducted research on 'Stem-cell based medicine and cancer stem cell culture and characterization'

Jan 2008 – May 2011 ***Research Assistant***
Department of Mechanical Engineering and Biomedical Engineering Program, College of Engineering and Computing, University of South Carolina

- Conducted research on 'Small stem cell/Oocyte-loaded microcapsule preparation and cryopreservation using biopolymers'
- Conducted research on 'Thermally responsive nanocapsule synthesis and its aided bioactive agent delivery as well as cancer treatment'
- Supervised undergraduate and summer students on their research

Sept 2005 – Dec 2007 ***Research Assistant***
Institute of Cryomedical Technology and Food Freezing, University of Shanghai for Science and Technology

- Collaborated with Shanghai Key Laboratory of Orthopaedic Implant of Shanghai Ninth People's Hospital on the research project 'Microencapsulation of transgenic stem cells for bone tissue engineering'
- Conducted major research on a scientific career-creation project of Shanghai college students entitled 'Magnetic cold storage of fruits and vegetables'

HONORS & AWARDS

2019 40 Under 40, Milwaukee Business Journal

2019 Chair-Elect 2020, American Chemical Society (ACS) Milwaukee Section

2018	20 Under 40, ASEE Prism magazine
2018-present	CREATE Faculty Fellow Appointment, MSOE
2016	Karl O. Werwath Engineering Research Award, MSOE
2016	Falk Engineering Educator Award, MSOE
2016-present	Carter Academy Faculty Fellow Appointment, MSOE
2015, 16 & 17	ASEE BED Biomedical Engineering Teaching Award (nominee)
2014 & 15	Falk Engineering Educator Award, MSOE (finalist)
2014 & 15	Karl O. Werwath Engineering Research Award, MSOE (finalist)
2011	Travel Award (NSF CBET) and PhD Level Student Paper Competition (finalist), 2011 ASME Summer Bioengineering Conference, PA
2011	Dean's Award for Excellence in Graduate Study, University of South Carolina (nominee)
2010	Poster Award, 12th Annual Conference of the North Carolina Tissue Engineering and Regenerative Medicine Society, Co-author
2009	Excellent Thesis/Dissertation Award, University of Shanghai for Science and Technology
2008	Outstanding Graduate Award, University of Shanghai for Science and Technology
2007	The Academic Star of Graduate Students (ranked 1st), University of Shanghai for Science and Technology
2002 – 2007	Excellent Student Award and Scholarship, University of Shanghai for Science and Technology

PROFESSIONAL ASSOCIATIONS

American Association for the Advancement of Science (AAAS)

American Association of Pharmaceutical Scientists (AAPS)

American Chemical Society (ACS)

American Heart Association (AHA)/American Stroke Association

American Institute of Chemical Engineers (AIChE)

American Society of Agricultural & Biological Engineers (ASABE)

American Society for Engineer Education (ASEE)

Biomedical Engineering Society (BMES)

Controlled Release Society (CRS)

Españoles Cientificos en USA (ECUSA)

European Society for Artificial Organs (ESAO)

Society for Biological Engineers (SBE)

Society for Cryobiology – International Society for Low-Temperature Biology

SELECTED PUBLICATIONS

REFEREED JOURNAL ARTICLES *In Print*

Samuel Stealey, Xiaoru Guo, Lixia Ren, Elizabeth Bryant, Matey Kaltchev, Junhong Chen, Subha Kumpaty, Xiaolin Hua*, and **Wujie Zhang***. Stability improvement and characterization of bioprinted pectin-based scaffold. ***Journal of Applied Biomaterials & Functional Materials***; 2019.
Corresponding authors

Devon McCune, Xiaoru Guo, Tong Shi, Samuel Stealey, Romare Antrobus, Matey Kaltchev, Junhong Chen, Subha Kumpaty, Xiaolin Hua, Weiping Ren, and **Wujie Zhang***. Electrospinning Pectin-Based Nanofibers: A Parametric and Cross-linker Study. ***Applied Nanoscience***; 2018, 8(1-2): 33-40.
Corresponding author

Amanda Banks, Xiaoru Guo, Junhong Chen, Subha Kumpaty, and **Wujie Zhang***. Novel Bioprinting Method Using a Pectin Based Bioink. ***Technology and Health Care***; 2017, 25(4): 651-5.
Corresponding author

Wujie Zhang*, Jung Choi, and Xiaoming He*. Engineering Microvascularized 3D Tissue Using Alginate-Chitosan Microcapsules. ***Journal of Biomaterials and Tissue Engineering***; 2017, 7(2):170-3.
Cover story: http://www.aspbs.com/jbt/jbt72.pdf
Corresponding author

Wujie Zhang*, Matthew Bissen, Emily Savela, Joshua Clausen, Samantha Fredrick, Xiaoru Guo, Zachary Paquin, Ryan Dohn, Ian Pavelich, Alec Polovchak, Michael Wedemeyer, Brock Shilling, Emily Dufner, Anna O'Donnell, Gerardo Rubio, Logan Readnour, Tyler Brown, Jung Lee, Matey Kaltchev, Charles Tritt, and Junhong Chen. Design of Artificial Red Blood Cells using Polymeric Hydrogel Microcapsules: A Study on Hydrogel Stability Improvement and Polymer Selection. ***International Journal of Artificial Organs***; 2016, 39(10): 518-23.
Corresponding author

Rebecca Majewski, **Wujie Zhang***, Xiaojun Ma, Zhanfeng Cui, Weiping Ren, David Markel. Bioencapsulation Technologies in Tissue Engineering. ***Journal of Applied Biomaterials & Functional Materials***; 2016, 14(4):e395-403.
Corresponding author

Wujie Zhang*, Kirsten Mary Mahuta, Brandon Anthony Mikulski, Jenna Nicole Harvestine, James Zachary Crouse, Jung Chull Lee, Matey Georgiev Kaltchev, Charles Samuel Tritt.

Novel pectin-based carriers for colonic drug delivery. ***Pharmaceutical Development and Technology***; 2016, 21(1):127-30.
****Corresponding author***

James Zachary Crouse, Kirsten Mary Mahuta, Brandon Anthony Mikulski, Jenna Nicole Harvestine, Xiaoru Guo, Jung Chull Lee, Matey Georgiev Kaltchev, Katarina Senn Midelfort, Charles Samuel Tritt, Junhong Chen, **Wujie Zhang***. Development of a microscale red blood cell-shaped pectin-oligochitosan hydrogel system using an electrospray-vibration method: preparation and characterization. ***Journal of Applied Biomaterials & Functional Materials***; 2015, 13(4):e326-31.
****Corresponding author***

Wei Rao, Hai Wang, Jianfeng Han, Shuting Zhao, Jenna Dumbleton, Pranay Agarwal, **Wujie Zhang**, Gang Zhao, Jianhua Yu, Debra L. Zynger, Xiongbin Lu, and Xiaoming. Chitosan-Decorated Doxorubicin-Encapsulated Nanoparticle Targets and Eliminates Tumor Reinitiating Cancer Stem-Like Cells. ***ACS Nano***; 2015, 9(6):5725-40.

Wujie Zhang, Shuting Zhao, and Xiaoming He. Proliferation and Differentiation of Mesenchymal Stem Cells Encapsulated in Miniaturized 3D Liquid Core of Alginate-Chitosan-Alginate (ACA) Microcapsules. ***Archives of Stem Cell Research;*** 2015, 2(1):1004.

Shuting Zhao, Pranay Agarwal, Wei Rao, Haishui Huang, Renliang Zhang, Zhenguo Liu, Jianhua Yu, Noah Weisleder, **Wujie Zhang**, and Xiaoming He. Coaxial electrospray of liquid core-hydrogel shell microcapsules for encapsulation and miniaturized 3D culture of pluripotent stem cells. ***Integrative Biology***; 2014, 6:874-84.

Jenna Harvestine, Brandon Mikulski, Kirsten Mahuta, Zachary Crouse, Xiaoru Guo, Jung Lee, Katarina Midelfort, Junhong Chen, and **Wujie Zhang***. A Novel Red Blood Cell-Shaped Pectin-Oligochitosan Hydrogel System. ***Particle and Particle Systems Characterization***; 2014, 31(9):955-9.
Cover story: http://onlinelibrary.wiley.com/doi/10.1002/ppsc.201470035/abstract
****Corresponding author***

Wei Rao, **Wujie Zhang**, Izmarie Poventud-Fuentes, Yongchen Wang, Yifeng Lei, Benjamin Weekes, Chenglong Li, Xiongbin Lu, Jianhua Yu, and Xiaoming He. Thermally Responsive Nanoparticle-Encapsulated Curcumin and Its Combination with Mild Hyperthermia for Enhanced Cancer Cell Destruction. ***Acta Biomaterialia***; 2014, 10(2):831-42.

Pranay Agarwal, Shuting Zhao, Peter Bielecki, Wei Rao, Jung K. Choi, Yi Zhao, Jianhua Yu, **Wujie Zhang**, and Xiaoming He. One-Step Microfluidic Generation of Pre-Hatching Embryo-Like Core-Shell Microcapsules for Miniaturized 3D Culture of Pluripotent Stem Cells. ***Lab on a Chip***; 2013, 13(23): 4525-33.

Wujie Zhang*, Shuting Zhao*, Wei Rao, Jedidiah Snyder, Jung K. Choi, Jifu Wang, Iftheker Khan, Navid Saleh, Peter J. Mohler, Jianhua Yu, Thomas J. Hund, Chuanbing Tang and Xiaoming He. A novel core-shell microcapsule for encapsulation and 3D culture of embryonic stem cells. ***Journal of Materials Chemistry B***; 2013, 1(7): 1002-9. *Contributed equally.

Wang Jifu, Yungpin Chen, KejianYao, Perry Wilbon, **Wujie Zhang**, Lixia Ren, Juhua Zhou, Mitzi Nagarkatti, Chunpeng Wang, Fuxiang Chu, Xiaoming He, Alan W. Decho and

Chuanbing Tang. Robust antimicrobial compounds and polymers derived from resin acids. ***Chemical Communications***; 2012, 48: 916-8.

Wujie Zhang and Xiaoming He. Microencapsulating and banking living cells for cell-based medicine. ***Journal of Healthcare Engineering***; 2011, 2(4): 427-46.

Kejian Yao, Jifu Wang, **Wujie Zhang**, James S. Lee, Chunpeng Wang, Fuxiang Chu, Xiaoming He and ChuanbingTang. Degradable Rosin Ester-Caprolactone Graft Copolymers. ***Biomacromolecules***; 2011, 12: 2171-7.

Wujie Zhang, Kyle Gilstrap, Laying Wu, Remant Bahadur K. C., Melissa A. Moss, Qian Wang, Xiongbin Lu, and Xiaomng He. Synthesis and characterization of thermally responsive Pluronic F127-Chitosan nanocapsules for controlled release and intracellular delivery of small molecules. ***ACS Nano***; 2010, 4(11): 6747-59.

Wujie Zhang*, Geer Yang*, Aili Zhang, Lisa X. Xu, and Xiaoming He. Preferential vitrification of water in small alginate microcapsules significantly augments cell cryopreservation by vitrification. ***Biomedical Microdevices***; 2010, 12(1): 89-96. *Contributed equally.

Wujie Zhang and Xiaoming He. Encapsulation of living cells in small (~100 μm) alginate microcapsules by electrostatic spraying: a parametric study. ***Journal of Biomechanical Engineering***; 2009, 131(7): 074515.

Wujie Zhang, Jianhua Rong, Qian Wang, and Xiaoming He. The encapsulation and intracellular delivery of trehalose using a thermally responsive nanocapsule. ***Nanotechnology***; 2009, 20 (27): 275101.
News highlights of this article: nanotechweb.org/cws/article/lab/39621

Wu-jie Zhang, Bao-guo Li, Chao Zhang, Xin-hui Xie, and Ting-ting Tang. Biocompatibility and membrane strength of C3H10T1/2-cell loaded alginate-based microcapsules. ***Cytotherapy***; 2008, 10(1): 90-7.

Bao-guo Li, Yan Zhang, **Wu-jie Zhang**, and Ze-zhao Hua. Supercritical CO_2 spray drying of ethyl cellulose (EC) for preparing microparticles. ***Drying Technology***; 2008, 26(4): 464-9.

Wu-jie Zhang, Bao-guo Li, Chao Zhang, Xin-hui Xie, and Ting-ting Tang. Preparation of MSCs loaded sodium alginate-chitosan microcapsules and process optimization. ***Journal of Cellular and Molecular Immunology (Chinese)***; 2007, 23(9): 864-6.

Wu-jie Zhang, Bao-guo Li, Xin-hui Xie, and Ting-ting Tang. Application of purified sodium alginate in mesenchymal stem cells microencapsulation. ***Journal of Shanghai Jiaotong University (Medical Science)***; 2007, 27(6): 673-6.

Wu-jie Zhang, Bao-guo Li, Chao Zhang, Xin-hui Xie, and Ting-ting Tang. Optimizing technological parameters for preparing calcium alginate-sodium carboxymethyl cellulose liquid core microcapsules by using electrostatic spray. ***Journal of University of Shanghai for Science and Technology***; 2007, 29(4):349-52.

Wu-jie Zhang, Bao-guo Li, Yi-peng Zhang, Zhi-qiang Huang, Yi Xu, and Ning Zhou. Study on effects of magnetic field in fruits and vegetables cold storage. ***Food Science (Chinese)***; 2007, 28(5): 335-8.

REFEREED JOURNAL ARTICLES ***Under Review***

Samuel Stealey, Xiaoru Guo, Rebecca Majewski, Alexander Dyble, Kendra Lehman, Michael Wedemeyer, Douglas A. Steeber, Matey G. Kaltchev, Junhong Chen, and **Wujie Zhang***. A Novel Pectin-Oligochitosan-Calcium Microcarrier for Colonic Drug Delivery. 2018.
Corresponding author

BOOKS/BOOK CHAPTERS

Wujie Zhang. Encapsulation of Transgenic Cells for Gene Therapy, ***Gene Therapy - Principles and Challenges***, pages 191-208, Dr. Doaa Hashad (Ed.), ISBN: 978-953-51-2221-0, InTech, 2015.

Wujie Zhang and Gul Afshan. Engineering Controlled Drug Delivery Lab Manual. Milwaukee School of Engineering. 2012.

PRESENTATIONS & INVITED TALKS

Wujie Zhang. Genetically Modified Foods. University of Wisconsin Milwaukee, April 2017, Milwaukee, WI.

Central Collaboratory. October 2016, Milwaukee WI.

Wujie Zhang. Solubility in Drug Development. ***MSOE Biophysics Conference of 2016,*** March 2016, Milwaukee, WI.

Wujie Zhang. The Rise of Tissue Engineering and the Explosive Innovations that Could Transform Lives. MSOE, July 2016, Milwaukee, WI.

Healthcare Innovation Pitch Event. September-December 2015, Milwaukee WI.

Wujie Zhang. Bioencapsulation and Bioprinting: Applications for Regenerative Medicine and Tissue Engineering. ***36th Great Lakes Biomedical Conference;*** May 2015, Milwaukee, WI.

Department of Biomedical Engineering, Wayne State University, 2013, Detroit, MI.

LOCI (Laboratory for Optical and Computational Instrumentation) Collaborator Meeting, University of Wisconsin-Madison, 2012, Madison, WI.

Department of Physics and Chemistry & Biomolecular Engineering Program, Milwaukee School of Engineering, 2012, Milwaukee, WI.

Division of Mathematics and Natural Sciences, Allen University, 2011, Columbia, SC.

Wujie Zhang, Kyle Gilstrap, Laying Wu, Melissa A. Moss, Qian Wang, Xiongbin Lu, and Xiaoming He. Controlled Release and Intracellular Delivery of Small Hydrophilic Molecules Using Thermally Responsive Nanocapsules. ***ASME 2011 Summer Bioengineering Conference;*** June 2011, Farmington, PA.

Wujie Zhang, Jianhua Rong, Qian Wang, and Xiaoming He. Intracellular delivery and controlled release of trehalose using a thermally responsive nanocapsule. ***South Carolina Science, Technology and Health Conference***; April 2009, Columbia, SC.

Baoguo Li, Qiong Feng and **Wujie Zhang**. Experimental study on preparation of sustained-release insulin microspheres using low temperature spray drying. ***45th Annual Meeting of the Society for Cryobiology***; July 2008, Charlotte, NC.

Wu-jie Zhang, Bao-guo Li, Xin-hui Xie, and Ting-ting Tang. Preparation of MSCs Alginate-based Microcapsules for Gene Therapy. ***The 1st International Conference on Bioinformatics and Biomedical Engineering***; July 2007, Wuhan, China.

CONFERENCE ABSTRACTS & PAPERS

Wujie Zhang and Samuel Stealey. Design Pectin-Based Microcarriers for Colonic Drug Delivery. ***45th Annual Meeting & Exposition of the Controlled Release Society***; 2018, New York, NY.

Wujie Zhang, Anne Alexander, Gina Mazzone, Daniel Meisner. Engaging undergraduates in a chemistry prep course by making the skill mastery more adaptive and the content more career-relevant. ***25th Biennial Conference on Chemical Education***; 2018, Notre Damme, IN.

Elizabeth Bryant, **Wujie Zhang**, and Subha Kumpaty. Characterization of Pluronic F-127/Pectin Hydrogel for Potential Tissue Engineering Applications. ***National Conference on Undergraduate Research (NCUR)***; 2018, Edmond, OK.

Marquis Henderson, **Wujie Zhang**, and Subha Kumpaty. Characterization and Modification of Pectin-Based Nanofibers. ***National Conference on Undergraduate Research (NCUR)***; 2018, Edmond, Ok.

Devon McCune, Matey Kaltchev, and **Wujie Zhang**. A Parametric Study of Electrospinning of Pectin-Based Nanofibers. ***International Conference on Bioengineering and Nanotechnology***; 2017, Chicago, IL.

Amanda Banks, **Wujie Zhang**, and Subha Kumpaty. Bioprinting Methodology Using a Pectin Based Bioink. ***National Conference on Undergraduate Research (NCUR)***; 2017, Memphis, TN.

Romare Antrobus, **Wujie Zhang**, and Subha Kumpaty. Electrospinning of pectin-based nanofibers for biological and medical applications.
National Conference on Undergraduate Research (NCUR); 2017, Memphis, TN.

Wujie Zhang and Xiaoming He. A novel 3D microcapsule system for stem cell culture and differentiation. ***2012 BMES Annual Meeting***; October 2012, Atlanta, GA.

Wujie Zhang, and Xiaoming He. Encapsulation of Embryonic Stem (ES) Cells in Alginate-Chitosan-Alginate (ACA) Microcapsules for Cell-Based Medicine. ***5th Annual Translational to Clinical (T2C) Regenerative Medicine Wound Care Conference***; March 2012, Columbus, OH.

Wujie Zhang, Geer Yang, and Xiaoming He. Preferential Vitrification of Water in Small Alginate Microcapsules Significantly Augments Cell Cryopreservation by Vitrification. ***ASME 2010 Summer Bioengineering Conference;*** June 2010, Naples, FL.

Wujie Zhang, Jianhua Rong, Qian Wang, and Xiaoming He. Encapsulation of Trehalose for Intracellular Delivery and Controlled Release Using a Thermally Responsive Polymeric Nanocapsule. ***238th ACS National Meeting;*** August 2009, Washington, DC.

Wujie Zhang, Jianhua Rong, Qian Wang, and Xiaoming He. Synthesis, Cellular Uptake, and Cytotoxicity of a Thermally Responsive Nanocapsule. ***ASME 2009 Summer Bioengineering Conference***; June 2009, Lake Tahoe, CA.

Wujie Zhang, and Xiaoming He. Encapsulation of Living Cells in Small (~ 100 μm) Alginate Microcapsules by Electrostatic Spraying. ***South Carolina Science, Technology and Health Conference***; April 2009, Columbia, SC.

Wujie Zhang, Geer Yang, Aili Zhang, Lisa X. Xu, and Xiaoming He. Cryopreservation of Small (< 100 μm) Alginate Microcapsules: A Cryomicroscopy and DSC study. ***South Carolina Science, Technology and Health Conference***; April 2009, Columbia, SC.

Wu-jie Zhang, Bao-guo Li, Tse-chao Hua, and Ting-ting Tang. Encapsulation of MSCs Using Alginate-based Microcapsules. ***44th Annual Meeting of the Society for Cryobiology***; June 2007, Lake Louise, Alberta Canada.

Wu-jie Zhang, Bao-guo Li, Rong Liu, Tse-chao Hua and Ting-ting Tang. Encapsulation Viability and Proliferation of MSCs with Three Different Structural Microcapsules *In Vitro*. ***44th Annual Meeting of the Society for Cryobiology***, June 2007, Lake Louise, Alberta Canada.

Bao-guo Li, **Wu-jie Zhang**, and Tse-chao Hua. Prepartion of BSA Microcapsules with High-voltage Electric Field and It's Prolonging Release Property. ***44th Annual Meeting of the Society for Cryobiology***; June 2007, Lake Louise, Alberta Canada.

Wu-jie Zhang, Bao-guo Li, Chao Zhang, Xin-hui Xie, and Ting-ting Tang. Chemical Modification of MSCs Alginate-Chitosan Microcapsules. ***The 1st International Conference on Bioinformatics and Biomedical Engineering***; July 2007, Wuhan, China.

Baoguo Li, **Wujie Zhang**, and Zhongli Pan. A Novel Method for Microencapsulation of Protein Using High-voltage Electrostatic Field System. ***2006 ASABE (American Society of Agricultural & Biological Engineers) Annual International Meeting***; July 2006, Portland, OR.

PROFESSIONAL ACTIVITIES & DEVELOPMENT

SERVICE

Dec. 2018 Organizer and host, MSOE Third Thursday Event – LGBTQ+ 101 and Panel Discussion

2018-present Faculty advisor, MSOE Sexuality and Gender Alliance (SAGA)

2018-present Faculty Development Committee, Milwaukee School of Engineering (MSOE)

2018-present Faculty Scholarly Activities Task Group, Milwaukee School of Engineering (MSOE)

2017-present Benefits Committee, Milwaukee School of Engineering (MSOE)

2017-present Higher Learning Commission (HLC) Committee, Milwaukee School of Engineering (MSOE)

2017& 2018 Student Leadership Awards Committee (MSOE)

Sep. 2016 Co-organizer and co-host, MSOE Third Thursday Event – Beyond Measure: Schools at the Heart of Change

2015-present Faculty advisor, MSOE Chinese Student Association

2015-2017 Faculty Representative, Faculty Handbook Committee, Milwaukee School of Engineering (MSOE)

2014-present Executive Committee Member, Regional Device and Drug Development Initiative (D3I), Clinical & Translational Science Institute of Southeast Wisconsin (CTSI)

2014-2016 Faculty Senator, Milwaukee School of Engineering (MSOE)

WORKSHOPS/CONFERENCES/EXPOS ATTENDED

KEEN National Conference. January 2019, Dallas, TX

KEEN National Conference. January 2018, Dallas, TX

19th HHS SBIR/STTR Conference. November 2017, Milwaukee, WI.

124th ASEE Annual Conference & Exposition. June 2017, Columbus, OH.

Medical Design & Manufacturing (MD&M) Minneapolis. October 2016, MN.

5th Drug Repositioning, Repurposing and Rescue Conference. June 2016, Chicago, IL.

The 2nd Annual Regenerative Medicine Essentials Course: From the Fundamentals to the Future. Wake Forest Institute for Regenerative Medicine; July 2015, Winston-Salem, NC.

Integrating Curriculum with Entrepreneurial-Mindset (ICE) Workshop. Lawrence Technological University; June 2015, Southfield, MI.

Medical Design & Manufacturing (MD&M) Chicago. October 2014, IL.

Albumin: The Next Generation Protein Therapeutic. 41st Annual Meeting & Exposition of the Controlled Release Society. July 2014, Chicago, IL.

Facilitating Change that Sticks: Becoming an Effective Education Change Agent. Olin College of Engineering Collaboratory Summer Institute; June 2014, Needham, MA.

TechConnect World Innovation Conference & Expo: Nano/Micro/Bio/Cleantech. June 2014, Washington, DC.

"How to Engineer Engineering Education" workshop. Bucknell University; July 2013, Lewisburg, PA.

REVIEWER FOR GRANTS, SCIENTIFIC JOURNALS AND CONFERENCES

GRANTS

National Science Foundation (NSF)

SMART Scholarship Evaluation Panel, Department of Defense (DoD)

Pilot Funding, Institute for Clinical & Translational Science (ICTS), University of California, Irvine

Pilot Award, Clinical & Translational Science Institute of Southeast Wisconsin (CTSI)

JOURNALS

Acta Biomaterialia

African Journal of Biotechnology

Analytical and Bioanalytical Chemistry

Annals of Biomedical Engineering

Artificial Organs

Carbohydrate Polymers

Chemical Papers

Current Drug Delivery

Drug Development and Industrial Pharmacy

Drug Delivery Letters

Food Hydrocolloids

Gels

Heat Transfer Engineering

International Journal of Biological Macromolecules

International Journal of Biomaterials

International Journal of Pharmaceutics

Journal of Applied Biomaterials and Functional Materials

Journal of Applied Polymer Science

Journal of Biomedical Materials Research: Part A

Journal of Biomaterials and Tissue Engineering

Journal of Food Process Engineering

Journal of Functional Biomaterials

Journal of Manufacturing and Materials Processing

Journal of Microencapsulation

Journal of Nanotechnology in Engineering and Medicine

Macromolecular Symposia

Materials

Materials Letters

Materials Research Innovations

Materials Science and Engineering: C

Molecules

Nanoscale

Pharmaceutical Development and Technology

Pharmaceutics

Pharmaceuticals

PLOS ONE

Polymers

Recent Patents on Nanomedicine

CONFERENCES

2019 Summer Biomechanics, Bioengineering and Biotransport (SB^3C) Conference

2019 ASEE Annual Conference & Exposition

2019 The Collaborative Network for Engineering and Computing Diversity (CoNECD)

2018 National Conferences on Undergraduate Research (NCUR)

2018 BMES Annual Meeting

2018 International Conference on Biological Information and Biomedical Engineering (ICBIBE)

2018 ASEE Annual Conference & Exposition

2017 BMES Annual Meeting

2017 National Conferences on Undergraduate Research (NCUR)

2017 ASME International Mechanical Engineering Congress & Exposition (IMECE)

2017 Summer Biomechanics, Bioengineering and Biotransport (SB^3C) Conference

2017 Sustainable Materials Processing and Manufacturing Conference (SMPM)

2016 ASME International Mechanical Engineering Congress & Exposition (IMECE)

2016 Summer Biomechanics, Bioengineering and Biotransport (SB^3C) Conference

2015 BMES Annual Meeting

2015 ASEE Annual Conference & Exposition

2014 BMES Annual Meeting

2013 ASEE Annual Conference & Exposition

EDITORIAL POSITION

Reviewer Board Member, Polymers

Editorial Board Member, International Journal of Biomedical Materials Research

Lead guest editor, special issue, BioMed Research International

CONFERENCE COMMITTEE

Technical Program Committee, 4th International Workshop on Materials Science and Engineering. May 2018, Xi'an, China

Operations Committee, 19th HHS SBIR/STTR Conference. November 2017, Milwaukee, WI.

PATENTS

- Polymeric red blood cell-like particles (Pending)
- Small Microcapsules for Cell Microencapsulation. USPTO patent application serial #: US20120231443
- Liquid Core Microcapsules Preparation Using Electrostatic Spray (No. 200610116479.0, China)

GRANTS

- National Natural Science Foundation of China Grant
  Title: Transplantation of PRP-Modified Hydrogel Scaffold Containing BMSCs and E2 for Repairing Severely Injured Endometrium
  Award Number: 81873816
  Role: Co-PI
  Period: January 2019 – December 2022
- NSF I-Corps Program
  Title: I-Corps: A Natural Polymer-Based Engineered Red Blood Cell Product
  Award Number: 1644585

Role: PI

Period: August 2016 – February 2017

- Faculty Summer Development Grant, Milwaukee School of Engineering
  Title: Bioprinting of Artificial Organs/Tissues Using A Novel Pectin-Based Bioink
  Role: Co-PI
  Period: Summer 2017
- Faculty Summer Development Grant, Milwaukee School of Engineering
  Title: Functionalization and Mechanical Stability Testing of Artificial Red Blood Cells
  Role: PI
  Period: Summer 2016 – Summer 2017
- Milwaukee NSF I-Corps Program
  Title: Developing An Artificial Red-Blood-Cell Product
  Role: PI
  Period: July 2015 - July 2016
- Kern Entrepreneurial Engineering Network (KEEN)
  Role: Curriculum developer
  Period: June 2015 - June 2016
- Faculty Summer Development Grant, Milwaukee School of Engineering
  Title: Engineering Artificial Red Blood Cells
  Role: PI
  Period: Summer 2014 and 2015
- Seed Money Grant, Rader School of Business, Milwaukee School of Engineering
  Role: Project advisor
  Periods:
    2018-19 (Project: Design of Pectin-based Bioink Containing Estradiol-loaded Microspheres for Bioprinting Towards Fertility Restoration Applications)
    2018-19 (Project: Process Optimization of a Novel Pectin-based Oxygen Therapeutic Production for Industrial Scale Up)

2017-18 (Project: Development of an Oxygen Therapeutic through Hemoglobin Encapsulation of Pectin-Oligochitosan Hydrogel Microcapsules)

2016-17 (Project: Designing Artificial Red Blood Cells from Pectin-based Hydrogel: Size Reduction and Functionalization)

2015-16 (Project: Designing Artificial Red Blood Cells from Pectin-based Hydrogel)

2015-16 (Project: Bioprinting of Vascularized Tissues for Regenerative Medicine and Tissue Engineering)

2015-16 (Project: Successful Delivery of Bacteria to the Colon via Calcium-Alginate-CMC Core-Shell Hydrogels)

2014-15 (Project: Optimization of Pectin-Based Hydrogel Carriers for Colonic Drug Delivery)

2013-14 (Project: Design of Controlled Anti-Cancer Drug Delivery Systems Using Natural Products)

STUDENT SUPERVISION

Summer 2018, Summer Research, 3 student employees

Summer 2017, NSF-REU Program, 2 students (Elizabeth Bryant (LeTourneau University) and Marquis Henderson (North Carolina A&T State University))

Summer 2017, Summer Research, 3 student employees

Summer 2016, NSF-REU Program, 2 students (Amanda Banks (Saint Louis University) and Romare Antrobus (Lawrence University))

Summer 2016, Summer Research, 4 student employees

Summer 2015, Summer Research, 13 student employees

Summer 2014, Summer Research, 7 student employees

2013-present, Undergraduate Senior Design Project Teams, 11 teams

2012-present, Academic Advisor for BioMolecular Engineering Program students

2013-2014, Freshman Mentor, 4 students