

**Min DeGruson, Ph.D.**  
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## **EDUCATION**

### **Ph.D., Pennsylvania State University, 2014**

- Major: Food Science
- Support Area: Bio-based polymer for food packaging applications
- Dissertation Title: Synthesis of bio-based nanocomposites for controlled release of antimicrobial agents in food packaging.

Dissertation Chair: Dr. Greg Ziegler and Dr. John Floros

### **M.S., Pittsburg State University, 2008**

- Major: Engineering and Technology
- Concentration: Plastics Engineering

### **B.S., Shanghai Jiao Tong University, 2006**

- Major: Food Science and Technology

## **TEACHING EXPERIENCE**

- **Undergraduate Teaching:** UW-Stout Packaging Fundamental, Packaging Materials: Polymer and Glass, Medical Device Packaging, Packaging Development, and Packaging Research Seminar.
- **Teaching assistant:** 2011 Penn State's Ice Cream Short Course, Penn State Introductory Food Science Practicum and Managing Food Quality.

## **WORK EXPERIENCE**

### *Assistant Professor, University of Wisconsin-Stout, 2015-present*

- Undergraduate teaching in Packaging program and research

### *Graduate Assistant, Penn State, Department of Food Science, 2009-2013*

- Research project to develop bio-based films, functionalize them with antimicrobial agents, and improve their mechanical, thermal, and barrier properties, along with the controlled release rate of antimicrobial agents for foodborne pathogens inhibition.
- Food processing pilot plant experience: hands on experience on extrusion (twin screw), vacuum steam kettle, UHT processor, confectionery processing, ice cream processing, and cryogenic chamber, etc.

### *Research Assistant, Kansas Polymer Research Center, 2008-2009*

- Worked on projects: Synthesis and Characterization of Bio-based nano-composites: Polyurethane foams and Cast Resins from Soy polyol and nano-clays.

### *Graduate Assistant, Food Biotechnology Lab at South China University of Technology, 2006-2007*

- Research on main components of soy sauce representing antioxidative activity, which focused on preliminary grading using organic solvent extraction and antioxidant activity assessment.

## RESEARCH INTERESTS

- Food packaging
- Active packaging
- Nanocomposites
- Bio-based polymers

## HONORS AND AWARDS

- UW-Stout Research Fellowship 2020-2021
- UW-Stout Research Fellowship 2018-2019
- Janet G. and Frank J. Dudek Graduate Scholarship in Food Science, PSU 2012-2013
- Ira W. Minter Memorial Award, PSU 2012-2013
- Graduate Student Oral Presentation Competition, 2<sup>nd</sup> Prize, 11<sup>th</sup> Conference of Food Engineering 2012
- Research Poster Competition, 1<sup>st</sup> Prize in Physical and Engineering Sciences, Gamma Sigma Delta Honor Society 18<sup>th</sup> Annual Research Exhibition, PSU 2012
- Feeding Tomorrow Scholarship, Institute of Food Technologist in Food Packaging Division 2011-2012
- Excellent Award of Campus “Challenge Cup” in Science and Technology, 2<sup>nd</sup>Prize, SCUT 2007
- Excellent Undergraduate Research Project, SJTU 2006
- Excellent Academic scholarship (B-class), SJTU (top5%) 2003-2005
- Outstanding Student Leader, SJTU 2004

## GRANTS

- Valentina Trinetta (Kansas State University), M.L. DeGruson, Development and Application of Functionalized Bio-Based By-Layer Films and Fibers for Food Packaging Applications, USDA NIFA 2019, Submitted on July 2019
- M.L. DeGruson, Traditional Professional Development Grant by UW-Stout 2017, \$1,000 (Funded)
- M.L. DeGruson & K. Taejo, College Collaboration Grant 2016. Granted by UW-Stout, \$2,000 (Funded)
- M.L. DeGruson, Development of Bio-based Antimicrobial Food Packaging by Incorporating Antimicrobial Molecule-Nanoparticles Systems in Starch. Granted by WiSys ARG/AR-WiTAG (June 30, 2016-July 1, 2017), \$47,500 (Funded)
- M.L. DeGruson, Traditional Professional Development Grant. Granted by UW-Stout (March, 2016), \$1,000 (Funded)

## PUBLICATIONS

- M.L. DeGruson, D. TRIVEDI, & P. Thapaliya. 2018. Mechanical and Barrier Properties of Bio-based Antimicrobial Nanocomposite Films for Food Packaging Applications. Packaging Technology and Science.

- M.L. DeGruson, J.D. Floros, & G. Ziegler. (Manuscript). Mechanical Properties and Release Kinetics of Poly(hydroxybutyrate-*co*-valerate) Films Modified with Different Antimicrobial Agents.
- M.L. DeGruson, J.D. Floros, & G. Ziegler. (Manuscript). Effect of Types and Concentrations of Modified LDH Nanoparticles of Properties of Poly(hydroxybutyrate-*co*-valerate) Films.
- M.L. DeGruson. 2015. Biobased Packaging. IN V. Trinetta (Ed.). Food Science Reference Module. Elsevier.
- M.L. DeGruson, J.D. Floros, & G. Ziegler. (Manuscript). Modification and Characterization of Layered Double Hydroxide Nanoparticles with Different Antimicrobial Agents. Applied Clay Science.
- DeGruson, M. L. (2014). Synthesis of bio-based nanocomposites for controlled release of antimicrobial agents in food packaging (Ph.D. Dissertation). The Pennsylvania State University, State College, PA
- M. Liu, & J.D. Floros. 2012. Aseptic Processing and Packaging. In: Da-Wen Sun ed. Thermal Food Processing: New Technologies and Quality Issues, 2<sup>nd</sup>edn. CRC Press.
- Q. Luo, M. Liu, Y. Xu, M. Ionescu, & Z. Petrovic. Thermosetting Allyl Resins Derived from Soybean Fatty Acids. Journal of Applied Polymer Science 2013, 127(1), 432-438
- Q. Luo, M. Liu, Y. Xu, M. Ionescu, & Z. Petrovic. Thermosetting Allyl Resins Derived from Soybean Oil. Macromolecules 2011, 44, 7149-7157
- M. Liu, Z.Petrovic, & Y.Xu. Bio-based Polyurethane-clay Nanocomposite Foams: Syntheses and Properties. Mater. Res. Soc. Symp. Proc., Warrendale, PA, 2009(1188): LL04-05
- Li Ying, Liu Min, Cui Chun, Yang Lanying&Zhao Mouming. Components Analysis and Differentiation of Retail Soy Sauce Products. China Condiment, 2008(10): 24-29
- Li Ying, Liu Min, Cui Chun&Zhao Mouming. Antioxidant Activity Assessment and Cluster Analysis of Retail Soy Sauce Products. Food and Fermentation Industries, 2008 (1):14-19.

## CONFERENCE PRESENTATIONS

- P. Thapaliya & M.L. DeGruson 2017. Modification of Layered Double Hydroxide (LDH) Nanoparticles with Antimicrobial Agents for Potential Food Packaging Applications. 10<sup>th</sup> Annual WSTS. (Poster)
- M.L. DeGruson. 2017. New Nanoparticle Technology Creates Antimicrobial Food Packaging. Packaging Integrity Insight. <https://www.packageintegrity.com/>
- D. Trivedi & M.L. DeGruson. 2017. Antimicrobial Property of Starch-based Films Incorporated with Natamycin or Modified Nanoparticles with Natamycin as Cheese Packaging. 10<sup>th</sup> Annual WSTS. (Poster)
- M.L. DeGruaon. Antimicrobial Food Packaging. IUFoST 2016 World Food Congress 2016 in Dublin, Ireland. (Oral Presentation)
- M.L. DeGruaon, J.D. Floros, & G. Ziegler. Development of Antimicrobial Food Packaging by Incorporating Antimicrobial Molecule-Nanoparticles Systems in Bio-based Polymer. Institute of Food Technologist 2016 Annual Meeting & Food Expo (Poster)
- M.L. DeGruaon. Starch-based Active Packaging for Cheese. Wisconsin Science & Technology Symposium 2016 in Oshkosh, WI. (Oral presentation)
- M. Liu, & J.D. Floros. Functionalized Bio-nanocomposite Films Have Improved Mechanical Properties and Lower Sodium Benzoate Diffusivity. Institute of Food Technologist 2012 Annual Meeting & Food Expo (Poster)

- M. Liu, & J.D. Floros. Inclusion of Layered Double Hydroxide (LDH) Nanoparticles in Polyhydroxybutyrate-valerate (PHBV) Improves the Mechanical Properties of Bio-based Films. 11<sup>th</sup> Conference of Food Engineering (oral presentation), 2012
- M. Liu, & J.D. Floros. Nanoparticles Modification Improves Mechanical and Thermal Properties of Bio-based Nanocomposites. Institute of Food Technologist 2011 Annual Meeting & Food Expo (Poster)
- M. Liu, Z.Petrovic, & Y.Xu. Bio-based Polyurethane-clay Nanocomposite Foams: Syntheses and Properties. Material Research Society 2009 (Poster)

## GRADUATE STUDENTS ADVISING

- Disha Trivedi (2018). *Development, antimicrobial properties and mechanical properties of starch-based biodegradable films incorporated with antimicrobial-nanoparticle system* (master's thesis). University of Wisconsin-Stout
- Pratigya Thapaliya (2018) *Barrier properties of starch -based antimicrobial films using antimicrobial nano-particle system* (master's thesis). University of Wisconsin-Stout

## EXTRACURRICULAR ACTIVITIES

- **Membership in Professional Societies:** Institute of Food Technologist ('09-current); Institute of Packaging Professionals (2015-current), American Chemistry Society ('08-'09); American Oil Chemists' Society ('08-'12); International Society of Food Engineering ('12-'13)
- **President:** Class of 2002 Food Science in SJTU. ('03-'05)
- **Vice president:** Students' Union of the School of Agriculture and Biology in SJTU. ('03-'04)