

**C.V. - R. ROGER RUAN**  
**Professor and Director of Graduate Studies**  
**Department of Bioproducts and Biosystems Engineering**  
**Director of Center for Biorefining**  
**University of Minnesota**

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Dr. Roger Ruan is a Fellow of the National Academy of Inventors (NAI) and a Fellow of several other professional organizations, including the American Society of Agricultural and Biological Engineers (ASABE), the Institute of Food Technologists (IFT), the International Association of Advanced Materials (IAAM), and Vebleo. He has also been honored with numerous awards, including the International Bioprocessing Association's Pandey Award, the CAFS Professional Achievement Award, and the Scientist of IAAM Award, among others.

Dr. Ruan's research is primarily focused on renewable energy and environmental technologies, as well as food engineering to support sustainable circular economy development. His work encompasses a wide range of areas, including the treatment and utilization of solid, liquid, and gas wastes, such as biomass and plastic waste pyrolysis and gasification for the production of chemicals, materials, fuels, and energy. He also explores innovative approaches like anaerobic digestion, microalgae, and hydroponics for municipal and animal wastewater utilization. Furthermore, his research extends to the development and application of cutting-edge technologies such as catalytic non-thermal plasma, low-temperature microwave and pulse microwave, photocatalytic intensive pulse light, and NMR/MRI in food quality improvement, safety assurance, airborne pathogen disinfection, pollutant control, and nitrogen fixation.

Dr. Ruan's academic contributions include over 600 papers published in refereed journals, 2 books, and 29 book chapters. He holds a portfolio of 20 US patents. He is also recognized as a top-cited author, ranking 83rd nationally and 190th globally in the field of Engineering and Technology according to research.com. Notably, he holds the **Number One (1) global ranking** in both microwave pyrolysis, and microalgae and wastewater treatment research fields according to Web of Science, with an h-index of 98, an i10-index of 482, and over 37,800 citations on Google Scholar.

Dr. Ruan's impact extends beyond research, as he has mentored over 75 graduate students, 140 post-doctoral fellows, and numerous other engineers and scientists, many of whom have gone on to hold positions at universities. He has been invited to deliver more than 400 keynote or plenary lectures, participate in invited symposium presentations, company seminars, and short courses. Additionally, he has provided consultancy services to government agencies and numerous local, national, and international companies in the fields of bioprocess engineering, food engineering, renewable energy, and environmental technologies.

Furthermore, Dr. Ruan's leadership is evident in his role as the recipient and manager of over 200 research projects, with a total funding exceeding \$45 million from various sources, including the USDA, DOE, DOT, DOD, LCCMR, and various industries. He has also actively contributed to the academic community by serving as a guest editor or editorial board member for many esteemed journals, including Bioresource Technology, Renewable Energy, Engineering, Applied Catalysis and Chemical Engineering, Journal of Food Process Engineering, The Open Plasma Physics Journal, and Transactions of ASABE, Engineering Applications in Agriculture, and Transactions of CSAE. He has successfully organized and chaired numerous international conferences, including the IFT-EFFoST Nonthermal Processing Workshop and Short Course (2023), Conference of Food Engineering (CoFE2018), International Conference on Environmental Pollution and Governance (ICEPG 2021), 2nd International Symposium on Environmental Protection and Chemical Engineering (ISEPCE 2021), and International Conference on Energy Engineering, New Energy Materials, and Devices (NEMD 2021), among others.

In addition to his research and leadership roles, Dr. Ruan is an educator who has taught a variety of undergraduate and graduate courses, including Renewable Energy Technologies, Biological Process Engineering, Managing Water in Food and Biological Systems, Instrumentation and Control for Biological Systems, Food Process Engineering, and Engineering Principles and Applications.

### **Synergistic Activities**

1. Started up the [Fiberstar Company](#) from our patented HRC technology in 2000, the company has annual sales in tens of millions of US\$.
2. Transferred the patented non-thermal plasma for odor control technology to SCP Control, Inc. in 2004.
3. Transferred the microwave assisted pyrolysis technology to [Resynergi, Inc.](#) in 2017, the company has received over 10 million US\$ in funding for waste plastics utilization, including Series B funding.
4. Transferred the microwave distillation/pyrolysis technology to Resynergi, Inc. in 2020.
5. Established and lead the University of Minnesota Center for Biorefining with a number of innovative bioconversion technologies and pilot facilities developed and demonstrated.
6. Established the Electric Power Research Institute (EPRI) and Northern States Power (NSP) Food Technology Center - Research and Development, and help obtained the grass status for ozone application in foods from the FDA.
7. Established and lead the St. Paul Campus Magnetic Resonance Research Laboratory with two permanent magnet NMR relaxometry and imaging systems and one low field NMR relaxometry system.
8. Served on AAAS, NSF, DOE, USDA and many other major proposal review panels. Also served in many capacities in various professional organizations.

### **Professional Employment Summary**

- 6/2001 – Present: Professor, Department of Bioproducts and Biosystems Engineering, and Department of Food Science and Nutrition  
Director, Center for Biorefining (since 2003); Director of Undergraduate Studies (1998-2003); Director of Graduate Studies (since 2020); University of Minnesota.
- 6/1998 – 6/2001: Associate Professor and Director of Undergraduate Studies, Department of Bioproducts and Biosystems Engineering, and Department of Food Science and Nutrition, University of Minnesota.
- 1/1994 – 6/1998: Assistant Professor, Department of Bioproducts and Biosystems Engineering, and Department of Food Science and Nutrition, University of Minnesota.
- 11/1991 – 1/1994: Research Associate, Department of Food Science and Nutrition, University of Minnesota, and Research Scientist, Pillsbury Technology Center, Grand Metropolitan Pillsbury Company.
- 8/1991 – 11/1991: Post-Doctoral Research Associate, Department of Agricultural and Biological Engineering, University of Illinois at Urbana-Champaign.
- 8/1988 – 8/1991: Graduate Research Assistant, Department of Agricultural and Biological Engineering, University of Illinois at Urbana-Champaign.
- 1/1987 – 8/1988: Graduate Research Assistant, Department of Biosystems and Agricultural Engineering, Oklahoma State University at Stillwater.
- 5/1986 – 1/1987: Visiting Research Associate, Department of Biological and Agricultural Engineering, University of California at Davis.
- 8/1983 – 5/1986: Research Engineer, Department of Food and Value-added Process Engineering, Nanjing Research Institute for Agricultural Mechanization, Ministry of Agriculture, China.

### Professional Preparation

China Agricultural University	Mechanical Engineering	B.S.
Oklahoma State University	Biosystems and Agricultural Engineering	M.S.
University of Illinois at Urbana-Champaign	Agricultural and Biological Engineering	Ph.D.

### Selected University and Professional Services

- American Society of Agricultural and Biological Engineers Circular Bioeconomy Systems Institute (CBSI)'s Circular Processing, Packaging, and Food Loss and Waste Workshop, invited speaker. April 22-24, 2024
- Plastic recycling/upcycling research story published in Minnesota Monthly for Earth Day. April 22, 2024
- 3M Tech Forum Feature Speaker, Sustainable technology for circular economy development, Maplewood, MN. April 22, 2024

4. Gave an interview to MinnPost on manure complete utilization. Story published on April 17, 2024 as “More than fertilizer for farm fields.” April 10, 2024
5. Judge of The China Bridge Competition organized by the College of Food, Agricultural, and Natural Sciences and China Center, UMN February, 2024
6. Invited to give a seminar to Pennsylvania State University Chemical Engineering Department. State College, PA. February 22, 2024.
7. Gave an interview to Star Tribune on manure AD for renewable Natural gas production. Story published on January 31, 2024 January 26, 2024
8. Podcast for ASABE on sustainable animal and food production technologies. Aired on January 29, 2024 November, 2023
9. USDA SBIR/STTR 8.8 Phase I review panelist Nov. – Dec., 2023
10. Conference Chair 2023 IFT-EFFoST International Nonthermal Processing Workshop & Short Course, also Chair for Session 1 – Nonthermal Food and Bioprocessing for Circular Economy, and Chair and Panelist for Breakout Session – Scientific advances and innovations in nonthermal processing for sustainable circular economy development and workforce October, 2023
11. Regional Roundtable: Fueling a low-carbon future in Minnesota, Center for Climate and Energy Solutions (C2ES) October, 2023
12. USSSTC Underrepresented Students in STEM Symposium Judge September 23, 2023
13. External reviewer for the promotion of Dr. Zhiliang Fan from associate professor to full professor September, 2023
14. External reviewer for the promotion of Dr. Wei Lin from associate professor to full professor September, 2023
15. Gave an interview to Minnesota Public Radio on Manure anaerobic digestion for methane and renewable nature gas production, story aired on September 12, 2023 September, 2023
16. External reviewer for the promotion of Dr. Carmen Gomes from associate professor to full professor August, 2023
17. 3<sup>rd</sup> International Conference on Sustainable Solid Waste Treatments And Managements (SWTM-2023) International Advisory Committee Member, Session Co-Chair, and Invited Speaker July, 2023
18. Dr. Wan-Ting (Grace) Chen's Tenure and Promotion University of Massachusetts Lowell, Department of Plastics Engineering, External evaluator June, 2023
19. IFT FED Poster and Oral Competition Judge June, 2023
20. International Conference on Solid Waste 2023: Waste Management In Circular Economy and Climate Resilience (ICSWHK2023) Thermal Treatment (Pyrolysis, Gasification & Incineration) Session Chair and Plenary Speaker, Poster Competition Judge May-June, 2023
21. Conference Chair 2023 International Joint Conference on Environmental Engineering and Biotechnology (CoEEB 2023) and Plenary Speaker May, 2023
22. Panelist, University of Minnesota Sustainability Symposium – April, 2023

- Bridging the Gap
23. Supported Dr. Sergio Capareda's ASABE Fellow nomination April, 2023
  24. Dr. Wei Du's Tenured Professor Promotion, Department of Chemical Engineering, Tsinghua University - External evaluator Spring, 2023
  25. Plenary Speaker of the 7th Edition of Global Energy Meet March 6-10, 2023, Boston, MA March, 2023
  26. Testified at the Minnesota State Legislature Environment and Natural Resources Finance and Policy Committee on the PFAS clean up using biochar absorption and catalytic microwave assisted pyrolysis. February 14, 2023. February, 2023
  27. USDA SBIR/STTR 8.8 Phase I review panelist Dec 2022 – Jan 2023
  28. BBE Space and Safety Committee member Spring, 2023 - Present
  29. Vice Chairman of the Scientific Committee, Session III Co-Chair, and Invited Speaker of the International Conference on Green Hydrogen Production (ICGHP-2022) December, 2022
  30. International Advisory Committee Member and Invited Speaker, International Conference on Biotechnology for Sustainable Bioresources and Bioeconomy (BSBB-2022) December, 2022
  31. Gave an interview to MnDrive Environment reporter on hog manure utilization. Story published on MnDrive Environment website as "Hog Manure Revisited with funding from a MnDrive Environment Demonstration Grant, UMN researcher Roger Ruan makes the most of manure." December, 2022
  32. Dr. Yen Wah Tong's Professor Promotion, Department of Chemical and Biomolecular Engineering, at the National University of Singapore (NUS) – External evaluator Fall, 2022
  33. Gave an interview to *Chemical and Engineering News* (C&EN) on waste plastics pyrolysis, story published as cover story on the August 12, 2022 issue of the magazine August, 2022
  34. Search Committee Chair, MnDRIVE faculty position in Robotics and Sensors in Sustainable Agricultural and Environmental Management Fall, 2022 – Spr, 2023
  35. IFT Food Engineering Division Chair Sept. 2022 – Aug, 23
  36. Conference General Chair and Keynote Speaker of the 2022 2<sup>nd</sup> International Conference on Environmental Pollution and Governance (ICEPG 2022) September, 2022
  37. Invited to the MN Soybean Research & Promotion Council's Cragun Retreat in Brainerd, MN as an expert panelist July, 2022
  38. Ireland BiOrbic SFI Bioeconomy Research Centre Phase I Project progress and Phase II Proposal Review Panelist Summer, 2022
  39. IFT Food Engineering Division Graduate Oral Competition Committee Co-Chair and Judge Spring – Sum, 2022
  40. 2022 ASABE Annual International Meeting Invited Speaker Session: Recent Advancement in Renewable Energy Resources and Technologies July, 2022
  41. International Symposium on Emerging Trends in Role and July, 2022

- Production of Bioenergy for Sustainable Development (ETBSD-2022), International Advisory Committee member and Invited Plenary Speaker
42. The UK Royal Academy of Engineering's Chair in Emerging Technologies scheme Reviewer May - July, 2022
  43. Organizer, Chair, and Panelist of the IFT Webinar/Panel Discussion on Food Security and Sustainable Development April, 2022
  44. Guest editor for *Journal of Analytical and Applied Pyrolysis*, Special Issue: Microwave-assisted pyrolysis of organic solid wastes for energy, fuels, chemicals, and materials recovery March, 2022
  45. Organize and give the Walmart Foundation Webinar on Innovative Technologies for A Sustainable Swine Industry March, 2022
  46. Invited Speaker, Panelist, and Session 01 Chair at Composite Materials Congress. March, 2022
  47. Organize the Walmart Project Zoom Conference on Swine Production Odor Control and Waste Treatment/Utilization with New Hope Group scientists. March, 2022
  48. Dr. Jin Liu's Associate Professor Promotion and Tenure, Peking University – External reviewer Spring, 2022
  49. NSF Proposal Reviewer Spring, 2022
  50. Dr. Xuebing Zhao's Associate Professor Promotion and Tenure, Tsinghua University – External reviewer Spring, 2022
  51. Invited speaker at the International Symposium on Biomass Refining, Nanchang University December, 2021
  52. Keynote speaker and panelist at the BESS Conference on Zero Waste and Circular Economy, National University of Singapore December, 2021
  53. Invited speaker at the 5<sup>th</sup> Conference on Health and Environment, Beijing Union University December, 2021
  54. Honorary Director of the Technical Committee of the MOE Engineering Research Center for Biomass Conversion 2021- Present
  55. Selected to attend the UN Climate Change Conference (COP 26) in Glasgow, Scotland November, 2021
  56. Invited speaker in the Fifth BUU Health and Environment Conference November, 2021
  57. Invited as the lunch speaker in the Minnesota Environmental Science and Economic Review Board (MESERB) Fall Conference November, 2021
  58. Invited Speaker in the International Pork Safety Forum October, 2021
  59. Keynote Speaker in the FoodChem-2021 (The Food Chemistry Summit), Washington, DC. September, 2021
  60. Keynote Speaker in the Chemicat-2021 (Chemical Engineering & Catalysis Conference), Washington, DC. September, 2021
  61. Continued to attend the annual USDA S-1075 committee meeting every year as the official Minnesota Representative since the initiation of the committee in 2001 July, 2021

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| 62. Supported the nomination of Dr. Yanyun Zhao for the CAFS Professional Achievement Award   | July, 2021           |
| 63. Second International Conference on Sustainable Solid Waste Treatments and Managements (SWTM-2021), International Advisory Committee member and Invited Speaker  | July, 2021           |
| 64. Conference Chairman and Keynote Speaker, the 2021 International Conference on Environmental Pollution and Governance (ICEPG 2021)   | May, 2021            |
| 65. Invited Plenary Speaker in the 5th Asia Pacific Biochar Conference (APBC2021)   | May, 2021            |
| 66. Invited to present at the USDA Food Loss and Waste Innovation Fair  | April, 2021          |
| 67. USDA NIFA NC Sun Grant Proposal Review Panelist   | April – May, 2021    |
| 68. IFT Food Engineering Division Graduate Oral Competition Committee Chair and Judge   | Spring – Sum, 2021   |
| 69. Keynote Speaker in the Fellow of Vebleo’s Webinar on Energy Materials and Technologies  | April, 2021          |
| 70. Invited Speaker in the International Conference on Sustainable Biowaste Management 2021 (SBM 2021)  | April, 2021          |
| 71. Chair for the Plenary and Keynote Session, Day-1 Moderator and Invited Keynote Speaker in the Catalysis Conference (CCE-2021), San Francisco, CA. 2/22-26/2021  | February, 2021       |
| 72. Conference Co-Chair, Oral Session Chair, and Plenary Session Keynote Speaker in the 2021 2nd International Symposium on Environmental Protection and Chemical Engineering (ISEPCE 2021), and 2021 International Conference on Energy Engineering, New Energy Materials and Devices (NEMD 2021). | January, 2021        |
| 73. Supported the nomination of Dr. Ruihong Zhang for the ASABE Award: Cyrus Hall McCormick - Jerome Increase Case Gold Medal   | October, 2020        |
| 74. Organized a virtual international workshop on Development of continuous intense pulsed light technology for non-thermal pasteurization of powdered foods.   | September, 2020      |
| 75. Gave an interview to Star Tribune on nitrogen fixation, the story entitled “On Minnesota farm, experiment could change how farmers get costly nitrogen” was published on August 16, 2020 Sunday paper.  | August, 2020         |
| 76. Foundation for Food and Agriculture Research (FFAR) 2020 Review Panel Member  | July - August, 2020  |
| 77. Dr. Christopher Simmons’ full professor promotion University of California, Davis – External reviewer   | Summer, 2020         |
| 78. Dr. Jian Shi’s associate professor promotion and tenure at University of Kentukey – External reviewer   | Summer, 2020         |
| 79. CFANS Graduate Research & Policy Review Committee   | July, 2020 - Present |
| 80. Director of Graduate Studies, Bioproducts and Biosystems Science, Engineering and   | July, 2020 - Present |

Management (BBSEM), Department of Bioproducts and Biosystems Engineering (BBE)

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| 81. BBE Executive Committee member  | July, 2020 - Present  |
| 82. Dr. Fanbin Kong's full professor promotion at University of Georgia - External reviewer   | Summer, 2020          |
| 83. Dr. Vijay Singh's named professor appointment at University of Illinois at Urbana-Champaign - External reviewer   | Summer, 2020          |
| 84. Reviewer for the Food Science and Nutrition topic area of the USDA's SBIR Competitive Grants Program.   | Spring-Summer, 2020   |
| 85. External Advisory Board Member, Center for Advanced Surface Engineering (CASE), an Arkansas NSF EPSCoR Center   | Spring, 2020          |
| 86. ASABE Fellow nominator for Prof. Kumar Mallikarjuna   | April, 2020           |
| 87. Elected to IFT Food Engineering Division Executive Committee to serve as Secretary, Chair-Elect, Chair, and Past-Chair each year  | Apr, 2020 – Jul, 2024 |
| 88. IFT Fellow Selection Committee Jury   | 2020                  |
| 89. Dr. Zhengrong Jimmy Gu's full professor promotion at South Dakota State University - External reviewer  | Fall, 2019            |
| 90. Guest Editor, Bioresource Technology Special Issue on Pyrolysis, Combustion and Gasification of Biomass (Lignocellulosic and Algal Biomass) (PCGB-2020)   | Oct, 2019 – Jul, 2020 |
| 91. International Conference on New Horizons in Biotechnology (NHBT-2019), Trivandrum, Kerala, India<br>Keynote Speaker and Poster Judger, and International Advisory Committee Member                  | November, 2019        |
| 92. Biofuels & Bioenergy and Green Energy & Expo 2019, THEME: "Accelerating Advancement in the Fields of Biofuels & Bioenergy" Rome, Italy.<br>Keynote Speaker and Session Chair                        | October, 2019         |
| 93. Search Committee Chair, UMN MnDRIVE faculty position in robotics and sensors in sustainable agricultural and environmental management   | Fall, 2019 - Sum, 20  |
| 94. Dr. Ajay Kumar's full professor promotion at Oklahoma State University - External reviewer  | Fall, 2019            |
| 95. The 10th Asia-Pacific Conference on Algal Biotechnology Nanchang, Jiangxi. Conference Executive Chair and Plenary Speaker   | September, 2019       |
| 96. International Conference on Energy and Environment 2019<br>The 1st International Conference on Energy and Environment, Nanjing, Jiangsu. Conference Scientific Committee Member and Keynote Speaker | September, 2019       |
| 97. Asst. Prof. Zhenong Jin's mentoring committee   | Fall, 2019 - Present  |
| 98. The 3rd International Conference on Bamboo Utilization – Green Circular Economy and Technology, Fuzhou, Fujian.<br>Keynote Speaker, and Section Chair   | June, 2019            |



99. IFT Symposium on Intensive Pulse Light (IPL) Technology Development and Application organize, IFT Annual Meeting, New Orleans, LA. Symposium Organizer and Speaker June, 2019
100. International Conference on Sustainable Solid Waste Treatments and Managements (SWTM-2019), Yangling, Shangxi – Invited Plentry Speaker, Anaerobic Digestion Session Chair, and Poster Judge May, 2019
101. Guest Editor, Bioresource Technology Special Issue on Algal 2019 Biorefinery Mar – Dec.,
102. BBE TA Selection Committee Member 2019 March – April,
103. Organization Committee Member, *BBC 2019 – International May, 19 Conference on Biofuels and Bioenergy*, April 29 - May 1, 2019. San Francisco, California. Organized and chaired a special symposium on Biofuels and Sustainable Development Sep. 2018 –
104. Guest Editor, JFPE special issue on Conference of Food Sept, 2019 Engineering 2018 Jul, 2018 –
105. Mathematics Modeling and Emerging Technologies Session 2018 Chair, *Conference of Food Engineering 2018* September,
106. *2nd International Conference on Bioresource Technology for 2018 Bioenergy, Bioproducts & Environmental Sustainability – Invited Speaker, and Thermo-Chemical Processing of Biomass Section Chair* September
107. Successfully nominated ph.d. candidate Mr. Peng Peng For the 2018-2019 Mistletoe Research Fellowship (\$10,000 from August, 2018 – May, 2019). Spring, 2018
108. Supported Dr. Hongda Chen’s ASABE Fellow nomination April, 2018
109. Successfully nominated Mr. Peng Peng (my ph.d. student) To receive the University’s 2018 President’s Student Leadership and Service Award Spring, 2018
110. Organization Committee Member, and Sessions I: Biomass: Biomass feed stocks for renewable energy generation – Biomass technologies Chair. *13th International Congress on Biofuels and Bioenergy*, October 18-20, 2018. Ottawa, Ontario, Canada Dec, 2017 - Oct, 2018
111. Gave a welcome speech at the Opening Ceremony and a keynote presentation at the Keynot Forum, and served as Poster Competition Judge. *Bioeneggy 2018*, July 2-4, 2018 Berlin, Germany July, 2018
112. Foundation for Food and Agriculture Research (FFAR) 2018 Review Panel Member Sept. – Oct., 2018

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| 113. Conference Chairman for Conference of Food Engineering 2018, September 8-12, 2018, Minneapolis, Minnesota, USA   | Aug, 2017 – Sep, 18   |
| 114. Elected Steering Committee member for USDA NC1023 Food Engineering Committee   | 2017 - 2019           |
| 115. USDA NIFA Lignin Utilization Proposal review panelist  | Oct – Nov, 2017       |
| 116. Elected Chair of CFANS Promotion and Tenure Committee  | Nov 2018 – Nov, 19    |
| 117. Elected CFANS Promotion and Tenure Committee member  | Nov 2017 – Nov, 19    |
| 118. IAFP 2017 Symposium on Nonthermal Plasma Technology for Improving Food Safety and Quality organizer and convener   | Jun, 2016 – Jul, 2017 |
| 119. AAAS UNC Research Opportunities Initiative Proposal Review Panel Member  | June – July, 2017     |
| 120. Gave media interviews to Minnesota Daily, Channel 11, etc. on scum to biodiesel and microwave pyrolysis of waste materials for energy, fuels, and chemicals production.    | April – July, 2017    |
| 121. EPA 13th Annual People, Prosperity, and the Planet (P3) (Phase II) Review Panel Member   | May – June, 2017      |
| 122. USDA SBIR Phase II proposal review member  | April – June, 2017    |
| 123. Foundation for Food and Agriculture Research (FFAR) 2017 Review Panel Member   | March - May, 2017     |
| 124. University of Minnesota President's Club member  | Dec, 2016 - Present   |
| 125. Guest editor, <i>Engineering!</i> A Chinese Academy of Engineering's peer-reviewed Open Access journal   | Dec, 2016 – Dec.      |
| 126. Hosted summer students from Breck School and received recognition of contribution to the Advanced Science Research Program from Head of School                             | Jun, 2016 – Mar, 17   |
| 127. 4 <sup>th</sup> Bioprocessing India Conference (BPI-2016) – Section Chair.   | December, 2016        |
| 128. International Conference on Strategies for Environmental Protection and Management (ICSEPM 2016) - Poster Program Judge  | December, 2016        |
| 129. International Conference on Current Trends in Biotechnology (ICCB-2016) - Poster Program Judge   | December, 2016        |
| 130. ASIA-Pacific Conference on Biotechnology for Waste Conversion (BioWC-2016) - Section Chair and Poster Program Judge  | December, 2016        |
| 131. Guest Editor, <i>Renewable Energy</i>  | Dec, 2016 - Present   |
| 132. Guest Editor, <i>Bioresource Technology</i>  | Dec, 2016 – Present   |
| 133. Editorial Board Member and Guest Editor, <i>Engineering</i>  | Nov, 2016 - Present   |
| 134. 1st International Conference on Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability – Invited Speaker, Section Chair and Poster Program Judge | October, 2016         |
| 135. 2016 International Seminar on Advanced Materials Research - International Advisory Committee Member  | October, 2016         |
| 136. Dr. Samir Khanal's full professor promotion at University of Hawaii - External reviewer  | Fall, 2016            |

137. Dr. Carol Lin's Associate Professor at National University of Singapore - External reviewer Fall, 2016
138. Conference of Food Engineering (CoFE) 2016 – Safety of Low Moisture Foods Section Chair September, 2016
139. International Conference on Biomass Energy and Sustainable Economy – Conference Chairman August, 2016
140. The 4th International Conference on Environmental-Ehancing Energy - Scientific Committee member and Section Chair May - July, 2016
141. DOE Sustainable Ammonia Synthesis Review Panel Member May – July, 2016
142. Co-lead fund raising effort with Ms. KaiMay Terry (lead) for The University of Minnesota Landscape Arboretum Chinese Garden Project (raised ~\$1 million in total). The Garden was successfully established on September 18<sup>th</sup>, 2017. 2016-2017
143. EPA 2016 People, Prosperity, and the Planet (P3) Review Panel Member March – June, 2016
144. New Horizons in Biotechnology – 2015 International Organizing Committee Member November, 2015
145. USDA/DOE Biomass Research and Development Initiative (BRDI) 2016 review panelist Oct, 2015 – Feb, 2016
146. Dr. Troy Runge Tenure and promotion at UW-Madison - External reviewer Fall, 2015
147. Dr. Mark Wilkins Tenure and promotion at Oklahoma State University - External reviewer Fall, 2015
148. Dr. Susie Yan Liu's Tenure and promotion at Michigan State - External reviewer Fall, 2015
149. Dr. Sergio Capareda's full professor promotion at Texas A&M University – External reviewer Summer, 2015
150. 2015 EPA P3 Competition Judge, Alexandria, VA March – April, 2015
151. EPA 2014 People, Prosperity, and the Planet (P3) Review Panel, St. Paul, MN Feb – March, 2015
152. Editorial Board Member – *Bioresource Technology* Oct, 2014 - Present
153. Vice Chair of External Advisory Committee, Tianjin Municipal Biomass Solid Waste Reclamation Technology Engineering Center, Nankai University Fall, 2014 - Fall, 2019
154. Advisory Committee Member, Tianjin Municipal Engineering Center for Biomass Derived Gas and Oils, Tianjin University Fall, 2014 - Fall, 2019
155. USDA NIFA Enhanced Food Safety through Improved Processing Technology Review Panelist Summer, 2014
156. Chairman of the Editorial Board - International Journal of Agricultural and Biological Engineering Sum, 2014 - Present
157. Organized LCCMR Site Visit to Rosemount and Metroplant Wastewater Treatment Facility in St. Paul and Rosemount on Innovative Waste Utilization Technologies Summer, 2014
158. China International Cooperation Program Renewable Renewable Energy and Environment Review and Planning July, 2014

Panelist	
159. Organized 3M-Center for Biorefining Renewable Energy and Environment Meeting, St. Paul, MN.	June, 2014
160. UMN MNDrive GFV Proposal Reviewer	May, 2014
161. China National 863 Bioresource and Medical Technology Program Review Panelist	May, 2014
162. US DOE 2014 DOE Vehicles Incubator Solicitation Reviewer	Spring, 2014
163. Netherlands Technology Foundation STW Proposal Reviewer	Spring, 2014
164. US EPA 2014 P3 Competition Judge	Spring, 2014
165. International Energy Agency (IEA) Bioenergy Task 34 - Pyrolysis, US team member	Spring, 2014
166. Dr. Nicholas Holden's Full Professor promotion at University College Dublin - international reviewer	Fall, 2013
167. Dr. Lance Schideman, U. of Illinois at Urbana – Champaign, Promotion and Tenure external reviewer	Fall, 2013
168. USDA Food Engineering Committee (NC 1023, Engineering For Food Safety and Quality) Rewrite Committee Chair	Fall, 2013 - Fall, 2015
169. BARD - The US-Israel Agricultural Research & Development Fund proposal reviewer	Fall, 2013
170. Dr. Lance Schideman, U. of Illinois at Urbana - Champaign, Promotion and Tenure external reviewer	Summer, 2013
171. Dr. Buddhi Lamsal, Iowa State U, Promotion and Tenure external reviewer	Summer, 2013
172. Dr. Yong-Su Jin, U. of Illinois at Urbana-Champaign Promotion and Tenure external reviewer	Summer, 2013
173. China National 863 Bioresource and Medical Technology Program Review Panelist	July, 2013
174. Part of University of Minnesota President Eric Kaler's Delegation to Hong Kong, Taiwan, and Mainland China	Summer, 2013
175. DOE SBIR/STTR Program Review Panelist	Spring, 2013
176. US EPA 2013 P3 Competition Judge	Spring, 2013
177. CAS Qingdao Institute of Bioenergy and Bioprocess Technology Consultative Committee member	Jan, 2013 - Present
178. USDA Food Engineering Committee (NC 1023, Engineering For Food Safety and Quality) Secretary, Chair Elect, Vice Chair, Chair and Pass Chair)	Fall, 2012 - Fall, 2015
179. BBE Biosensor and Bionanotechnology Faculty Search Committee member	Dec, 2012 - May, 13
180. USDA S1041 The Science and Engineering for the Biobased Industry and Economy Committee Rewrite Committee Member, Conversion Subcommittee Chair	Fall, 2012 - Fall, 2013
181. Dr. Sridhar Viamajala U. of Toledo, Promotion and Tenure external reviewer	Fall, 2012
182. BBE Faculty Recruitment Committee	Fall, 2012 – Present
183. DOE Advancements in Sustainable Algal Production Solicitation Merit Review Panelist	Spring, 2012

184. Organized CB 2012 Sino-USA Renewable Energy Conference in St. Paul, MN Spring, 2012
185. US AAAS EPA 2012 P3 Competition Judge Spring, 2012
186. NSF SBIR Wastewater Review Panelist Spring, 2012
187. ASABE Food and Process Engineering Division Paper Awards Judge Spring, 2012
188. CFANS Six Year Capital Plan - Lab and Specimen collection committee Dec, 2011 - Present
189. Dr. Soojin Jun, U. of Hawaii at Manoa, Promotion and Tenure external reviewer Fall, 2011
190. Co-organized an AACCI Workshop on Improving the Functionality and Health Attributes of Wheat Fall, 2011
191. UMN China Center Director Search Committee Fall, 2011
192. UMN China Center Bylaw Revision Committee Fall, 2011
193. DOE BRDI 2011 review panelist July, 2011
194. 2011 International Conference on Agricultural Engineering New Technology & Taishan Forum Academic Committee Member May, 2011
195. NSF Energy for Sustainability panel on Photobiological Production of Fuels Spring, 2011
196. NSF SBIR Biofuel Program Merit Review Panelist Spring, 2011
197. NSF SBIR Algae Program Merit Review Panelist Spring, 2011
198. USDA SBIR Biofuels Program Merit Review Panelist Winter, 2011
199. CFANS Blue Ribbon Committee member Nov. 2009 - Feb. 10
200. NSF SBIR Biofuel Program Merit Review Panelist Spring, 2010
201. NSF SBIR Algae Program Merit Review Panelist Spring, 2010
202. Asst. Prof. Bo Hu mentoring committee Fall, 2009 - Present
203. USDA SBIR Biofuels Program Merit Review Panelist Winter, 2010
204. DOE (US Department of Energy) Major Algae R&D and Demonstration review Panelist November, 2009
205. Associate Professor Dr. Steven Severtson's Full Professor promotion dossier review and mentor committee Fall, 2009
206. Dr. Hossein Nouredini, University of Nebraska - Lincoln Full Professor Promotion Committee External Reviewer Fall, 2009
207. US Recovery Act: Clean Coal Power Initiative – Round 3 review panelist Fall, 2009
208. Dr. Steve Severtson's Full Professor Promotion Mentoring Committee member Fall, 2009
209. USDA S1007 The Science and Technology for the Biobased Economy Committee-Thermochemical Conversion Subcommittee Chair Fall, 2009
210. Dr. Jian Yu, University of Hawaii Promotion and Tenure Committee External Reviewer Fall, 2009
211. DOE Carbon Capture and Sequestration from Industrial Sources and Innovative Concepts for Beneficial CO<sub>2</sub> Use review panelist Fall, 2009

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| 212. | USDA/DOE Biomass R&D Initiative review panelist   | Summer, 2009                                  |
| 213. | DOE Major Biomass Program Merit Review Panelist   | Spring, 2009                                  |
| 214. | USDA SBIR Biofuels Program Merit Review Panelist  | Winter, 2009                                  |
| 215. | Review Panel member for UMN Award for Global Engagement Committee.  | Fall, 2008                                    |
| 216. | USDA CSREES Competitive Program Biofuels and Biobased Products Review Panelist  | Spring, 2008                                  |
| 217. | USDA SBIR Biofuels Program Merit Review Panelist  | Winter, 2008                                  |
| 218. | Organized an Algae R & D & Commercialization Focus Forum – Site Visit and Discussion for DARPA and Other Opportunities  | January, 2008                                 |
| 219. | UMN International Scholarship Advisory Committee  | Fall, 2007 – Present                          |
| 220. | UMN UMore Park Task Force on Energy member  | May, 2007 - Sum, 08                           |
| 221. | NSF Biofuels (STTR and SBIR) Program Merit Review Panel   | March, 2007                                   |
| 222. | University of Minnesota China Center Director Search committee  | Spring, 2007                                  |
| 223. | Organized the USDA S1007 Annual Meeting. (The Science and Technology for the Biobased Economy) St. Paul, MN.  | September, 2006                               |
| 224. | DOE Major Biomass Program Merit Review Panel  | Summer, 2006                                  |
| 225. | DOE/USDA Biomass R&D Initiative Review Team Member, and “Integrated Feedstock Supply System for Corn Stover Biomass, Iowa State University, PI: Robert Anex” Project Review Team Leader | Spring, 2006                                  |
| 226. | ASABE Technical Paper Awards Judge<br>DOE/USDA Joint Biomass Solicitation Review Panel  | Spring, 2006<br>Spring, 2006,<br>Summer, 2007 |
| 227. | President, MN Section of ASABE  | Mar, 2003 - Apr, 06                           |
| 228. | Vice President, MN Section of ASABE   | April, 2006 – Present<br>Sum, 2001 - Mar, 03  |
| 229. | Outside Reviewer for Associate Professor Dr. Terry Walker’s (Clemson U) Promotion   | Fall, 2007                                    |
| 230. | Outside Reviewer for UI Assistant Professor Dr. Hao Feng’s Promotion and Tenure   | Summer, 2006                                  |
| 231. | Minnesota China Bioenergy Symposium Organization committee, the symposium was co-sponsored by MN DOA, IREE, China Center, and Center for Biorefining                                    | Fall, 2005 – Spr, 2006                        |
| 232. | University of Minnesota China Center Advisory Council   | Jul, 2005 – Jun, 2015                         |
| 233. | CFANS International Program Steering Committee  | Dec., 2006 – Present                          |
| 234. | Part of the Minnesota Governor Tim Pawlenty’s Trade Mission to China.   | Summer, 2005                                  |
| 235. | IFT Food Engineering Division Paper Competition Judge   | Spring, 2005                                  |
| 236. | Selection Committee for the University of Minnesota Distinguished Leadership Award for Internationals.  | Spring, 2005                                  |
| 237. | Bioproducts Engineering Faculty Search Committee  | Nov, 2004 - May, 06                           |

- member and Prof. Ping Wang's on-campus interview host
238. DOE/USDA Biomass R&D Initiative (BRDI) Review Team Member, and "Biopolymers and Other Value - Added Products from Distillers' Dried Grains (Iowa State University PI: Robert C. Brown)" Project Review Team Leader Fall, 2004 – Spr, 2005  
April, 2005
  239. USDA CSREES Food Characterization/Process/Product (71.1) Review Panel Spring, 2004
  240. United Nations Development Program (UNDP)'s Chief Technology Advisor (CTA) for Agricultural Processing Industry in China Nov., 2003 - Jan, 07
  241. Co-Leader and Coordinator, Bioenergy and Bioproducts Cluster, University of Minnesota Initiative for Renewable Energy and The Environment (IREE) Aug, 2003 – Present
  242. Director, University of Minnesota Center for Biorefining May, 2003 – Present
  243. Director of Undergraduate Studies June, 1998 - Jan, 03
  244. Distinguished Guest Professor Fall, 2002 – Present  
Nanchang University, China
  245. ASAE Technical Paper Awards Committee Chair Sum, 2002 - Sum, 03
  246. Founding Editor-in-Chief, *International Journal of Agricultural and Biological Engineering* Fall, 2007 - Fall, 2014
  247. Editorial Board, *Sensing and Instrumentation for Food Quality and Safety* Sum, 2006 - Present
  248. Editorial Board, *Journal of Food Process Engineering* Jan, 2005 - Present
  249. Associate Editor, FPEI, *Transactions of The ASABE* Sum, 2002 - Present  
Associate Editor, *Applied Engineering in Agriculture* Sum, 2002 – Present
  250. International Editor, *Transactions of The CSAE* Jan, 2007 - Present
  251. AOCABFE Publication Committee Chair Sum, 2002 - Present
  252. AOCABFE Board of Directors Sum, 2001 – Present
  253. AOCABFE Preparatory Committee Sum, 2000 – Sum, 01
  254. North/South America Director, AOCABFE Sum, 2001 – Sum, 02
  255. ASABE Section Steering Committee member Sum, 2003 – Sum., 07
  256. Committee Member of ASABE Publications Group Sum, 1998 – Present
  257. Appointed FPE representative to the ASAE Technical Paper Awards Committee Sum, 1998 – Sum, 03
  258. USDA NCDC 209 BioEnergy and BioProducts Committee member, Minnesota representative to the committee Fall, 06 – Fall, 2007
  259. USDA S1007 (then 1041) The Science and Engineering for the Biobased Industry and Economy Committee Member, Minnesota Representative to the Committee Spr, 2003 – Present
  260. USDA NC1023 Improvement of Thermal and Alternative Processes for Foods committee member, Minnesota State Representative to the committee Spr, 2005 – Present
  261. Co-organized w/ Vance Morey the Biorefining Video Conference (Co-organized by Winsconsin and U of M Center for Biorefining, involved two countries (US and Canada), five States, and eight sites). St. Paul, MN. June, 2004

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| 262. | ICC/AACC/3 <sup>rd</sup> Food Science International Symposium – Buckwheat and Cereal Grains Session Chair                                     | Fall, 2004             |
| 263. | 2004 CIGR International Conference – Section II Scientific Committee  | Spr, 2003 – Fall, 2004 |
| 264. | USDA SRDC 00-03 Biomass Conversion Planning Committee member  | Spr 2001 - Spr, 2003   |
| 265. | Panel Member, Second Annual Renewable Energy and Biorefining Workshop, Morris, MN   | March, 2003            |
| 266. | Help organized the Agricultural and Food Processing Training Program for Jiangxi’s university faculty group                                   | Fall, 2002 – Spr, 2003 |
| 267. | Help organized the International Symposium on Food Safety and Food Trade Rules, Nanchang, China   | Fall, 2002             |
| 268. | Organization Committee Member, Forum on Agricultural & Biosystem Engineering Development Strategy, Yangling, China                            | Sum, 2001 – Sum, 02    |
| 269. | International Conference on Food Science and Technology - Program Committee   | Winter & Spr, 1998     |
| 270. | Symposium on NMR Applications in Food Science and Technology - Program Committee member   | Winter & Spr, 1998     |
| 271. | International Conference on Food Science and Technology - Overall Program Committee member  | Spr & Summer, 1996     |
| 272. | Symposium on NMR and MRI Applications in Food Science and Technology - Program Committee and Session Chair, and Food Processing Section Chair | Summer, 1996           |
| 273. | EPRI Food Technology Center - Technical Advisory Council Member   | Spr, 1996 – Sum, 01    |
| 274. | Elected Chair of FPE-043 Paper Awards and Special Publications, ASAE  | Sum, 1995 – Sum, 98    |
| 275. | Committee member of FPE-043 Paper Awards and Special Publications, ASAE   | Sum, 1994 – Sum, 99    |
| 276. | BAE Graduate Program Committee  | Fall, 2002 – Present   |
| 277. | Outside Reviewer for Assistant Professor Dr. Ferenxz S. Denes’ (UW) Promotion and Tenure  | Spring, 2003           |
| 278. | Associate Professor Dr. Bruce Wilson’s promotion review committee   | Fall, 2002             |
| 279. | Outside Reviewer for Assistant Professor Dr. Danielle Bellmer’s (Oklahoma SU) Promotion and Tenure  | Fall, 2002             |
| 280. | Proposal Review Panel member for Rapid Agricultural Response Fund proposals   | Spring – Sum, 2002     |
| 281. | BAE Department Head Search Committee  | Sum, 2001              |
| 282. | COAFES Campaign Minnesota Committee   | Fall, 2000 - Sum, 01   |
| 283. | Outside Reviewer for Associate Professor Dr. Ulrike Tschirner’s tenure decision   | Fall, 2000             |
| 284. | University Senate Twin Cities Facilities and Support Services Sub-Committee member  | Sum, 2000 – Sum, 02    |
| 285. | College Prioritization Themes Group – Agricultural,   | May, 2000 - May, 05    |



	Food and Human Health member	
286.	OIAP China Faculty Advisory Committee member	April, 2000 – Present
287.	CSREES Comprehensive Review Planning Committee Member	Spr, 1998 - Spr, 1999
288.	Asst. Prof. Dr. Jun Zhu’s Mentoring Committee	Sum, 1999 – Fall, 04
289.	Asso. Prof. Dr. Jun Zhu’s Mentoring Committee	Fall, 2004 - Fall, 2008
290.	Asso. Prof. Dr. Ping Wang’s Mentoring Committee	Fall, 2006 - Fall, 2009
291.	Asst. Prof. Dr. Sangwon Suh’s Mentoring Committee	Fall, 2006 - Spr, 2010
292.	Department Seminar Committee - Co-chair	Sum, 1996 – Spr, 97
293.	Department Faculty Consultative Committee	Sum, 1996 – Sum, 99
294.	Faculty Advisory Committee of IT Libraries	Spr, 1994 – Sum, 98
295.	EPRI/NSP Food Technology Center Director Search Committee	Fall, 1995

### Current Professional Affiliations and Membership in Honorary Societies

American Society of Agricultural and Biological Engineers (ASABE) – Fellow and Lifetime member  
 Institute of Food Technologists (IFT) – Fellow  
 International Association of Advanced Materials - Fellow  
 American Association for the Advancement of Science (AAAS) Professional Member  
 American Institute of Chemical Engineers (AIChE)  
 American Chemical Society (ACS)  
 Association of Oversea Chinese Agricultural, Food and Biological Engineers (AOCAFBE)  
 Chinese American Food Society (CAFS) – Lifetime member  
 American Association of Cereal Chemists (AACC)  
 Tau Beta Pi  
 Alpha Epsilon

### Honors and Awards

**2023 National Academy of Inventors (NAI) Fellow**, for having demonstrated a highly prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on the quality of life, economic development, and welfare of society.

**2023 Poster Award – First Place**, for poster entitled “Conversion of almond hulls to functional ingredients for clean label foods and nutraceutical products” by Juer Liu, Jun An, Yiwei Ma, Dongjie Chen, Nan Zhou, Renchuan Zhang, Yanling Cheng, Peng Peng, Min Addy, Paul Chen, Chi Chen, Guangwei Huang, **Roger Ruan**, at the *IFT-EFFoST Nonthermal Processing Workshop and Short Course*, Minneapolis, MN.

**2023 Certificate of Appreciation** in gratitude for the outstanding contribution to the 2023 International Joint Conference on Environmental Engineering and Biotechnology (C0EEB 2023) as Conference Chair.

**2022 Pandey Award** from International Bioprocessing Association (*an international Forum on Industrial Bioprocesses – IBA-ICPHG-2022* in recognition of notable

- and outstanding contributions to research and development of reutilization of agricultural and municipal solid wastes.
- 2022 Fellow of IAAM** in recognition of important contributions and efforts for the advancement of materials.
- 2022 Member of EUAS** in recognition of important contribution and impacts in research and development.
- 2021 Fellow of Vebleo** in recognition of researcher or scientist who has prominence and leadership in the field of science, engineering, and technology. This award serves to honor and acknowledge career achievement.
- 2023, 2022, 2021, 2020, 2019, 2018, 2017, 2016, 2015, 2014 Top Cited Authors Award in Agricultural and Biological Sciences and in Engineering and Technology.**
- 2020 Scientist of IAAM Award** in recognition of the contribution to Advancement of Materials Science, Engineering and Technology. International Association of Advanced Materials.
- 2019 CAFS Professional Achievement Award.** The Society's highest honor.
- 2019 IFT Fellow.** The Society's highest honor.
- 2019 IFT Poster Award – Third Place,** for poster entitled “Effects of Cold Atmospheric Plasma on Cronobacter Sakazakii Inoculated in Non-Fat Dry Milk Powder” by Dongjie Chen, Peng Peng, Yanling Cheng, Yiwei Ma, Juer Liu, Yunpu Wang, Yingdan Zhu, Paul Chen, Chi Chen, Dong Li, and **Roger Ruan**, at the IFT Annual International Meeting in New Orleans, LA.
- 2019 University Inventor Recognition,** University of Minnesota 2019 Inventor Recognition Ceremony.
- 2018 Certificates of Outstanding Contribution in Reviewing Bioresource Technology, Powder Technology, Biomass and Bioenergy, Waste Management, Cleaner Production, Energy Conversion and Management, and Ultrasonics – Sonochemistry.**
- 2018 BBE Showcase Best Poster Award (First Place).** For “Integrated process for anaerobically digested swine manure treatment.” (Lu Wang, Min Addy, Paul Chen, Hualin Wang, Roger Ruan).
- 2018, 2017 Bioresource Technology Top (Most Valued) Reviewer Award.**
- 2017 Breck School Recognition.** For contribution to the Advanced Science Research Program.
- 2017 University Innovation Award. University of Minnesota 2013 Inventor Recognition Ceremony.**
- 2015 ASABE Fellow.** The Society's highest honor.
- 2015 Bioresource Technology Best Paper Award.** For “A review of catalytic hydrodeoxygenation of lignin-derived phenols from biomass pyrolysis.” (Bu, Quan; Lei, Hanwu; Zacher, Alan H.; Wang, Lu; Ren, Shoujie; Liang, Jing; Wei, Yi; Liu, Yupeng; Tang, Juming; Zhang, Qin; **Ruan, Roger**).
- 2015 Certificate of Recognition for TIB Distinguished Lecturer.** Chinese Academy of Sciences.
- 2015 Elsevier Reviewer Recognition Award.** Reviewer recognized for *Applied Surface Science; Powder Technology; Process Biochemistry; Catalysis Today* journals.
- 2015 Jiangxi International Cooperation Award.** Recognition on joint biomass waste utilization and green food research effort.

- 2015 Outstanding Reviewer Award.** Elsevier Reviewer Recognition for *Algae Research* journal.
- 2015 University Innovation Award. University of Minnesota 2013 Inventor Recognition Ceremony.**
- 2014 Outstanding Reviewer Award.** Certificate of Outstanding Contribution in Reviewing *Biomass and Bioenergy* from Elsevier.
- 2014 Elsevier Reviewer Recognition Award.** Reviewer recognized for *Journal of Analytical and Applied Pyrolysis*; *Water Research* journals.
- 2013 University Innovation Award.** University of Minnesota 2013 Inventor Recognition Ceremony.
- 2013 Certificate of Excellence in Reviewing.** In recognition of outstanding contribution to the quality of the journal of *Algal Research*, Presented by Elsevier.
- 2012 University Innovation Award.** University of Minnesota 2012 Inventor Recognition Ceremony.
- 2012 Certification of Appreciation.** In recognition of outstanding service as an Associate Editor for the Food & Process Engineering Division, Presented by ASABE.
- 2012 National Agricultural Biotechnology Council Meeting 1st Place Poster Award.** For “Wet torrefaction as a pretreatment for pyrolytic bio-oil production from microalgae.” (Z. Du, P. Chen, and R. Ruan).
- 2011 University Innovation Award.** University of Minnesota 2011 Inventor Recognition Ceremony.
- 2011 Certificate of Appreciation.** For the valuable contribution and dedicated service in the peer review of manuscripts submitted to ACS Journals.
- 2010 Ganbo 555 Talent Award,** Jiangxi Province, China. 2010.
- 2010 Distinguished McKnight University Professorship Nominee,** University of Minnesota.
- 2010 Thousand Talent Plan Expert Award,** Nanchang University, China. 2010-2013.
- 2010 Marquis Who’s Who, 2010 - Present**
- 2009 Midwest Algae Workshop 1st Place Poster Award.** For “Effect of various pretreatment on algal lipid extraction.” (Y. Li, M. Min, L. Wang, Y. Cheng, B. Martinez, P. Chen, and R. Ruan).
- 2009 Midwest Algae Workshop 2nd Place Poster Award.** For “Using Wastewater for Mass Microalgae Production as an Energy Crop.” (M. Min, Q. Kong, Y. Li, Y. Chen, L. Wang, P. Chen, A. Sealock, R. Polta, and R. Ruan).
- 2009 Distinguished McKnight University Professorship Nominee,** University of Minnesota.
- 2009 Certification of Appreciation Award** by USDA for exceptional efforts while serving as a Panelist in 2009 for the Biomass Research and Development Initiative.
- 2008 Second Place** in “AACC international protein division’s best student paper in AACC International Conference 2008 (Y. Li and R. Ruan, etc.)
- 2008 Best Student Poster Award** competition in AACC Annual International Conference 2008 (Y. Li and R. Ruan, etc.)
- 2008 University Innovation Award.** University of Minnesota 2008 Inventor Recognition Ceremony.

**2007 E3 People's Choice Poster Award** for "Comparative environmental and economic systems analysis of corn stover logistics options for cellulosic ethanol production" (Sangwon Suh and Roger Ruan) by University of Minnesota IREE.

**2006 Leaders, Innovators, Pioneers, Bioscience Companies and Institutes**, Center for Biorefining been selected as one of the Leaders, Innovators, and Pioneers of the bioscience companies and institutes by the Minnesota Biosciences, a supplement to *TwinCities Business*.

**2006 Leadership Service Award**, in recognition of leadership service as President of MN Section ASABE from 2003 to 2006.

**2005 Excellent Graduate Faculty**, in recognition of excellence in graduate advising as a guest professor at Nanchang University.

**2005 CSAE Superior Paper Award**, in recognition of authorship of a contribution to agricultural engineering literature of exceptional merit, as published by the Chinese Society of Agricultural Engineering.

**2005 ASABE Honorable Mention Paper Award**, in recognition of authorship of a contribution to agricultural engineering literature of exceptional merit, as published by the society.

**2005 University Innovation Award**, University of Minnesota 2005 Inventor Recognition Ceremony.

**2005 AOC Paper Award, Third Place**, for ASABE paper number 056113, in recognition of top AOC research papers of engineering merit.

**2005 CIFT Superior Paper Award, Second Prize**. in recognition of authorship of a contribution to food science literature of exceptional merit.

**2005 CIFT Superior Paper Award, Third Prize**. in recognition of authorship of a contribution to food science literature of exceptional merit.

**2003 Chief Technology Advisor for Agricultural Processing Industry in China, United Nations Development Program (UNDP).**

**2003 Invited Chair Professor, College of Engineering, China Agricultural University, Beijing, China.**

**2002 Medal of Recognition** in recognition for the excellent contribution to the Second International Conference on Grain, Flour and Bread Quality in Moscow by the Russia Union of Flour Mills and Cereal Plants and the International Industrial Academy in Russia.

**2002 Yangtze Scholar Distinguished Guest Professor**, Nanchang University, China, 2002-2005.

**2002, 2001 Who's Who in International Cereal Congress**

**2001 Certificate of Recognition** in recognition for the excellent contribution to the Second International Wheat Quality Conference in Manhattan, Kansas by ICC.

**2000 ASABE Superior Paper Award** in recognition of top research papers of engineering merit.

**1997 Certificate of Appreciation** for outstanding contribution to the 1997 National Imaging Technology Conference presented by the Center for Image Processing in Education, Tucson, AZ.

**1997 Certificate of Appreciation** for service and leadership in the COAFES through campus involvement.

**1997 Certificate of Appreciation** for service as an advisor to prospective students from COAFES.

- 1997 McKnight Land-Grant Professor Nominee.** University of Minnesota.
- 1995 Certificate of Appreciation** for service as an advisor to prospective students from COAFES.
- 1995 Bush Excellence in Teaching Award** in recognition of contributions to and participation in the Bush Faculty Development Program for Teaching Excellence and Diversity.
- 1990 ASABE Superior Paper Award** in recognition of top research papers of engineering merit.
- 1990 Graduate College Conference Travel Award** in recognition of outstanding research.
- 1986 Excellent Young Scholar** in 1986 (China).
- 1983, 1982, 1981 Excellent Student Award** for excellence in Academic Level, Moral Qualities, and Physical Fitness, China Agricultural University.
- 1982 Second Place in University's Advanced Mathematics Competition.** China Agricultural University.

## Peer-Reviewed Journal Publications, Books, Book Chapters, and Patents

### Books

1. **Ruan, R.** and L. Chen. 1998. *Water in Foods and Biological Materials - A Nuclear Magnetic Resonance Approach*. Technomic Publishing Co., Inc., Lancaster, Pennsylvania, USA, and Basel, Switzerland. 307 pages. ISBN: 1-56676-589-7.  
This book has been independently and favorably reviewed by Dr. Shelly J. Schmidt, Professor of Food Chemistry, University of Illinois at Urbana-Champaign (*INFORM* 9(10):1011); Dr. Arun S. Mujumdar, Professor of Chemical Engineering and Editor of *Drying Technology*, McGill University at Montreal (*Drying Technology* 16(9&10):2117-2118); Laurence Melton of *Food Technology Magazine*; and Keith W. Gates of *Journal of Aquatic Food Product Technology*.
2. **Ruan, R.**, X. Lin, J. Zhang, Y. Li, and P. Chen. 2009. *Nuclear Magnetic Resonance Technology and Its Application in Food and Biological Systems*. China Light Industry Press. 222 pages. ISBN: 978-7-5019-6856-5.

### Book Chapters

3. Pengfei Cheng, Chun Wang, Yahui Bo, Jiameng Guo, Xiaotong Song, Shengzhou Shan, Chengxu Zhou, Xiaojun Yan, **Roger Ruan**. 2023. Algae-based Aquaculture Wastewater Treatment and Resource Utilization. In *Algal Biotechnology*. Chapter 11. P154-170. Edited by Qiang Wang. ISBN-12: 9781800621930 (hardback), 9781800621947 (ePDF), 9781800621954 (ePub). Publisher: CBA International; Published: 2023. DOI: 10.1079/9781800621954.0000
4. Leilei Dai, Jianfei Guo, Junhui Chen, Kirk Cobb, Yanling Cheng, Paul Chen, Hanwu Lei, and **Roger Ruan**. 2023. Microwave-Assisted Pyrolysis of Municipal Solid Wastes for Energy, Fuels, and Chemicals Production. In *Advances in Microwave-Assisted*

*Heterogeneous Catalysis*, Chapter 8. P169-189. Edited by Jianli Hu and Benjaram M Reddy. ISBN (print): 978-1-83916-817-8. Publisher: Royal Society of Chemistry; Published: 2023. DOI: <https://doi.org/10.1039/BK9781837670277-00169>

5. Wei Liu, **Roger Ruan**. 2022. Microalgae-based biomaterials for environmental remediation and functional use. In *Algae-based biomaterial for sustainable development: biomedical, environmental remediation and sustainability assessment – Chapter 14. Book series on Current Developments in Biotechnology and Bioengineering*, Elsevier. Volume Editors: Huu Hao Ngo, Wenshan Guo, Ashok Pandey, Jo-Shu Chang, Duu-Jong Lee. ISBN (Electronic): 9780323961424, ISBN (Print): 9780323961431. 10.1016/b978-0-323-96142-4.00015-4.
6. Pengfei Cheng, Yanzhang Feng, Baoyu Xu, Yahui Bo, Chun Wang, Chengxu Zhou, Guangce Wang, Xiaojun Yan, **Roger Ruan**. 2022. Microalgae-based biomaterials for bioremediation of greenhouse gases. In *Algae-based biomaterial for sustainable development: biomedical, environmental remediation and sustainability assessment – Chapter 10. Book series on Current Developments in Biotechnology and Bioengineering*, Elsevier. Volume Editors: Huu Hao Ngo, Wenshan Guo, Ashok Pandey, Jo-Shu Chang, Duu-Jong Lee. <https://doi.org/10.1016/B978-0-323-96142-4.00013-0>.
7. Xiye Chen, Linyao Zhang, Li Liu, Chang Xing, Yan Zhao, Kirk Cobb, **Roger Ruan** and Penghua Qiu. 2021. Progress on the Co-Pyrolysis of Coal and Biomass. In *Biorefineries - Vision and Development*. Published by IntechOpen. DOI: 10.5772/intechopen.101031
8. Min Addy, Shuhao Huo, Junzhi Liu, Kun Li, Pengfei Cheng, Charles Schiappacasse, Dongjie Chen, Yanling Cheng, Yuhuan Liu, Yiwei Ma, Lu Wang, Yunpu Wang, Kirk Cobb, Paul Chen, and **Roger Ruan**. 2020. Bioconversion Technologies: Insect and Worm Farming. In *Current Developments in Biotechnology and Bioengineering: Sustainable Food Waste Management: Resource Recovery and Treatment*. Editors: Jonathan Wong, Guneet Kaur, Mohammad Taherzadeh, Ashok Pandey, Katia Lasaridi. Page: 235-273. Elsevier Publishing Company. ISBN: 978-0-12-819148-4.
9. Dongjie Chen, Juer Liu, Paul Chen, Yanling Cheng, Peng Peng, Nan Zhou, Yunpu Wang, Yuhuan Liu, **Roger Ruan**, Yuchuan Wang. 2020. Chapter 2. Novel Technologies for Milk Powder Disinfection. In *Advances in Chemistry Research*. Volume 65. Nova Publishers. ISBN: 978-1-53618-711-3
10. **Roger Ruan**, Kuan Ding, Shiyu Liu, Peng Peng, Nan Zhou, Aoxi He, Paul Chen, Yanling Cheng, Yunpu Wang, Yuhuan Liu, Hanwu Lei, Min Addy, Kirk Cobb. 2020. Gasification and pyrolysis of waste. In *Current Developments in Biotechnology and Bioengineering - Sustainable Bioresources for the Emerging Bioeconomy*, Pages 263-297. <https://doi.org/10.1016/B978-0-444-64309-4.00012-X>
11. Kirk Cobb, Erik Anderson, Min Addy, Yong Nie, Yanling Cheng, Peng Peng, Yiwei Ma, Huan Ma, Yuhuan Liu, Hanwu Lei, Paul Chen, **Roger Ruan**. 2020. Chapter 14 - Converting floating scum from municipal wastewater treatment plants to biodiesel fuel. In *Wastewater Treatment Residues as Resources for Biorefinery Products and Biofuels*, Pages 309-325. <https://doi.org/10.1016/B978-0-12-816204-0.00014-X>

12. Peng Peng, Paul Chen, Nan Zhou, Charles Schiappacasse, Yanling Cheng, Dongjie Chen, Min Addy, Yaning Zhang, Erik Anderson, Liangliang Fan, Raymond Hatzenbeller, Yuhuan Liu, **Roger Ruan**. 2020. Chapter 9. Packed food and packaging materials disinfected by cold plasma. In *Advances in Cold Plasma Applications for Food Safety and Preservation*, Editor: Daniela Bermudez-Aguirre. Elsevier Publishing Company. Pages 269-286. ISBN: 9780128149218. <https://doi.org/10.1016/B978-0-12-814921-8.00009-8>
  
13. **Roger Ruan**, Yaning Zhang, Paul Chen, Shiyu Liu, Liangliang Fan, Nan Zhou, Kuan Ding, Peng Peng, Min Addy, Yanling Cheng, Erik Anderson, Yunpu Wang, Yuhuan Liu, Hanwu Lei, Bingxi Li. 2019. Chapter 1 - Biofuels: Introduction, Editor(s): Ashok Pandey, Christian Larroche, Claude-Gilles Dussap, Edgard Gnansounou, Samir Kumar Khanal, Steven Ricke, In *Biomass, Biofuels, Biochemicals, Biofuels: Alternative Feedstocks and Conversion Processes for the Production of Liquid and Gaseous Biofuels (Second Edition)*, Academic Press, 2019, Pages 3-43. <https://doi.org/10.1016/B978-0-12-816856-1.00001-4>
  
14. Yaning Zhang, Yunlei Cui, Paul Chen, Shiyu Liu, Nan Zhou, Kuan Ding, Liangliang Fan, Peng, Min, Yanling Cheng, Yunpu Wang, Yiqin Wan, Yuhuan Liu, Bingxi Li, **Roger Ruan**. 2019. Chapter 14. Gasification Technologies and Their Energy Potentials. In *Sustainable Resource Recovery and Zero Waste approaches*. Editors: Taherzadeh, M.J., Bolton, K., Wong, J., Pandey, A. Elsevier Publishing Company.
  
15. Peng Peng, Paul Chen, Dongjie Chen, Min Addy, Yanling Cheng, Nan Zhou, Charles Schiappacasse, Yaning Zhang, Erik Anderson, Juer Liu, Yiwei Ma, **Roger Ruan**. 2019. Chapter 5. Impact of Pulsed Light on Food Constituents. In *Effect of Emerging Processing Methods on the Food Quality*. S. Roohinejad et al. (eds.), Springer Nature Switzerland AG. ISBN 978-3-030-18190-1 ISBN 978-3-030-18191-8 (eBook) <https://doi.org/10.1007/978-3-030-18191-8>.
  
16. Dongyan Mu, Sarah Mack, **Roger Ruan**, and Min Addy. 2018. Chapter 6. Life cycle assessment of beneficial reuse of waste streams for energy in municipal wastewater treatment plants. In *Life-cycle Assessment of Wastewater Treatment (CRC Series "Part of the Life Cycle Assessment and Green Chemistry Series, edited by Vera Kolb")*, edited by Dr. Mu Naushad. CRC Press (<https://www.crcpress.com/>), USA.
  
17. Yaning Zhang, Paul Chen, Shiyu Liu, Liangliang Fan, Nan Zhou, Min Min, Yanling Cheng, Peng Peng, Erik Anderson, Yunpu Wang, Yiqin Wan, Yuhuan Liu, Bingxi Li and **Roger Ruan**. 2017. Chapter 6. Microwave-Assisted Pyrolysis of Biomass for Bio-Oil Production. In *Pyrolysis*. <http://dx.doi.org/10.5772/65193>. Edited by Mohamed Samer pages: 129-166. Published by InTech.
  
18. Q. Bu, H. M. Morgan JR., J. Liang, H. Lei, **R. Ruan**. 2016. Chapter 2. Catalytic microwave pyrolysis of lignocellulosic biomass for Fuels and Chemicals. In *Advances in Bioenergy*. Volume 1, Eds. Y. Li, X. Ge. pp. 69–123. Elsevier. ISBN: 9780128095225. ISSN 2468-0125 <http://dx.doi.org/10.1016/bs.aibe.2016.09.002>

19. Shaobo Deng, Paul Chen, Yun Li, Xiaochen Ma, Yanling Cheng, Xiangyang Lin, Lloyd Metzger, and **Roger Ruan**. 2015. Non-thermal pasteurization of milk using CHIEF technology. In *Emerging Dairy Processing Technologies: Opportunities for the Dairy Industry*. Wiley-Blackwell and the Institute of Food Science and Technology, UK.
20. Lu Wang, Hanwu Lei, **Roger Ruan**. 2015. Techno-Economic Analysis of Microwave-Assisted Pyrolysis for Production of Biofuels. In “*Production of Biofuels and Chemicals with Microwave and Ultrasound*”, Springer Book Series - Biofuels and Biorefineries” Editors: Zhen Fang, Richard L. Smith, Jr., Xinhua Qi. DOI 10.1007/978-94-017-9612-5\_12
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### Patents

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### **Selected Invited Conference, Symposium and Company Presentations and Seminars**

1. **Roger Ruan.** 2024. Catalytic Microwave-assisted Pyrolysis Technology for Recycling/Upcycling Waste Plastic Packaging Materials and Mixed Packaging Wastes. *Circular Processing, Packaging, and Food Loss & Waste Workshop* organized by the American Society of Agricultural and Biological Engineers (ASABE) Circular Bioeconomy Systems Institute (CBSI). Chicago, IL. April 24, 2024.
2. **Roger Ruan.** 2024. Advancing Technologies for A Sustainable Circular Economy. 3M Tech Form Climate Chapter. Maplewood, MN. April 22, 2024.
3. **Roger Ruan.** 2024. Intervention technologies towards sustainable circular animal and food production. Tai Kun (Tycoon) Group, Chang Ji, Xinjiang, March 27, 2024.
4. **Roger Ruan,** Leilei Dai, Suman Lata, Haotian Fei, Yuxi Chen, Cassiano Oliveira, Yanling Cheng, Xiangyang Lin, Yunpu Wang, Yuhuan Liu, Kirk Cobb, Hanwu Lei. 2024. Catalytic microwave-assisted pyrolysis for sustainable PFAS remediation and waste plastics utilization. Invited speaker of the Division of Catalysis Science and Technology's session on Catalyst Development and Process Integration for Biomass and Waste Derived Fuels and Chemicals at the ACS Spring, New Orleans, LA. March 19, 2024.
5. **Roger Ruan,** Leilei Dai, Suman Lata, Haotian Fei, Yuchuan Wang, Yuxi Chen, Cassiano Oliveira, Ana Lobo-Moreira, Junhui Chen, Yanling Cheng, Xiangyang Lin, Yunpu Wang, Yuhuan Liu, Kirk Cobb, Fei Yu, Hanwu Lei. 2024. Thermochemical Conversion – Pyrolysis and Gasification - Catalytic microwave-assisted pyrolysis of solid wastes for circular economy development. Guest lecture to BBE 4713/5713. March 15, 2025.
6. **Roger Ruan.** Sustainable Dairy and Food Production Technologies and Systems. Yili and Cargill visit. St. Paul, Minnesota. March 8, 2024.

7. **Roger Ruan**, Leilei Dai, Suman Lata, Haotian Fei, Yuchuan Wang, Yuxi Chen, Cassiano Oliveira, Ana Lobo-Moreira, Junhui Chen, Yanling Cheng, Xiangyang Lin, Yunpu Wang, Yuhuan Liu, Kirk Cobb, Hanwu Lei. 2024. Catalytic microwave-assisted pyrolysis of solid waste for circular economy development. Pennsylvania State University Chemical Engineering Department seminar. State College, PA, February 22, 2024.
8. **Roger Ruan**, Jianfei Guo, Yuchuan Wang, Kirk Cobb, Juer Liu, Yanling Cheng, Yuancai Lyu, Peng Peng, Xiangyang Lin. 2024. Catalytic Nitrogen Fixation using Concentrated High Intensity Electric Field (CHIEF) Generated Non-thermal Plasma (NTP). IHI Americas Visit. Minneapolis, Minnesota. February 8, 2024.
9. **Roger Ruan**. 2024. Systematic Intervention for Sustainable Circular Animal and Food Production. Yuexiu Swine Production Company seminar. Guangzhou. January 12, 2024
10. **Roger Ruan**. 2024. Nonthermal processing technologies development and applications in food pasteurization. Nanchang University College of Food Science and Engineering seminar. Jiangxi. January 11, 2024.
11. **Roger Ruan**. 2024. Innovative Technologies for Sustainable Circular Economy Development. Putian College seminar. Fujian. January 8, 2024.
12. **Roger Ruan**. 2023. Systematic Intervention Technologies Towards Sustainable Circular Animal and Food Production. 2023 International Symposium on Animal Diseases and Food Safety. Wuhan, Hubei. November 4, 2023.
13. **Roger Ruan**, Leilei Dai, Junhui Chen, Juer Liu, Dongjie Chen, Yuchuan Wang, Suman Lata, Jianfei Guo, Frank Liu, Kirk Cobb, Mark Gino Galang, Lu Wang, Ana Beatriz, Cassiano Oliveira, Yanling Cheng, Min Addy, Paul Chen, Hanwu Lei. 2023. Nonthermal Technologies for Gas, Liquid and Solid Wastes Utilization for Sustainable Animal and Food Production and Circular Economy Development. Session 1: Nonthermal Food and Bioprocessing for Circular Economy, 2023 IFT-EFFoST Nonthermal Processing Workshop and Short Course. Minneapolis, MN. October 16, 2023.
14. **Roger Ruan**. 2023. Catalytic intense pulsed light (cIPL) and catalytic low temperature microwave (cMW) technologies for Food Safety Assurance and Quality Improvement. Pre-workshop Short Course. 2023 IFT-EFFoST Nonthermal Processing Workshop and Short Course. Minneapolis, MN. October 15, 2023.
15. **Roger Ruan**. 2023. Liquid and Solid Wastes Utilization for Biofuels Production and Sustainable Circular Economy Development. *SUST 3003 Sustainable People, Sustainable Planet - Sustainability of Modern Technologies*, Guest Lecture. October 4, 2023.
16. **Roger Ruan**, Junhui Chen, Mark Gino Galang, Pengfei Cheng, and Kirk Cobb. 2023. Current Status and Trends in Microalgal Industry and Related Standards and Regulations. World Ocean Science and Technology Conference – Marine Biomedicine Development

Forum and International Symposium on Microalgae Standards. Qingdao, Shandong, September 18, 2023.

17. **Roger Ruan**, Leilei Dai, Nan Zhou, Suman Lata, Yanling Cheng, Yunpu Wang, Yuhuan Liu, Kirk Cobb, Paul Chen, Hanwu Lei. 2023. Microwave-assisted Chemical Upcycling of Plastic Wastes for Circular Economy Development. Invited speaker of the Symposium on "Chemical Deconstruction and Upcycling of Polymer Waste," at the 266th ACS National Meeting, San Francisco, CA. August 13, 2023.
18. **Roger Ruan**, Juer Liu, Yanling Cheng, Jun An, Yiwei Ma, Paul Chen, Chi Chen, Guangwei Huang. 2023. Clean Label Food and Nutraceutical Ingredients from Almond Hulls. *First Precision Nutrition and Health Innovation Conference*. Shihezi University. August 1, 2023.
19. **Roger Ruan**, Leilei Dai, Nan Zhou, Suman Lata, Yuchuan Wang, Yanling Cheng, Xiangyang Lin, Yunpu Wang, Yuhuan Liu, Kirk Cobb, Paul Chen, Hanwu Lei. 2023. Sustainable Solid Waste Utilization for Circular Economy Development. Invited Speaker of the 3<sup>rd</sup> International Conference on Sustainable Solid Waste Treatments and Management. Yangling, China. July 29, 2023.
20. **Roger Ruan**, Leilei Dai, Nan Zhou, Suman Lata, Yuchuan Wang, Yanling Cheng, Xiangyang Lin, Yunpu Wang, Yuhuan Liu, Kirk Cobb, Paul Chen, Hanwu Lei. 2023. Catalytic Microwave-Assisted Pyrolysis/Gasification of Organic Solid Wastes for Fuels and Energy Production. Plenary Speaker of the Global Experts Conference on Renewable and Sustainable Energy, Osaka, Japan. July 27, 2023.
21. **Roger Ruan**. 2023. IFT Food Engineering Division Annual Report. IFT FIRST Professional Networking/Four Division Social Event (Food Engineering, Nonthermal Processing, Packaging, and Sustainability divisions). Chicago, IL. July 17, 2023.
22. **Roger Ruan**. 2023. S1075 Station Report - Sustainable Circular Economy Development Technologies. Annual USDA S1075 Biobased Economy Committee Meeting. Omaha, NE. July 13, 2023.
23. **Roger Ruan**, Junhui Chen, Dmitri Mataya, Lu Wang, Leilei Dai, Kirk Cobb, Yanling Cheng, Paul Chen, Frank Liu. 2023. Sustainable Safe Animal Production Technologies. 2023 ASABE Annual International Meeting, Omaha, NE. 227 Climate Smart Agrifood Production - Potential Impact on Developing Economies, E-2050-Global Engagement Guest Speaker Session. July 11, 2023, Pm.
24. **Roger Ruan**, Leilei Dai, Nan Zhou, Suman Lata, Yanling Cheng, Yunpu Wang, Yuhuan Liu, Kirk Cobb, Paul Chen, Hanwu Lei. 2023. Catalytic Microwave Assisted Pyrolysis of Organic Solid Waste for Energy, Fuels, Chemicals, and Materials Production. 2023 ASABE Annual International Meeting, Omaha, NE. 205 Recent Advancement in Renewable Energy Resources and Technologies, ES-Energy Systems Guest Speaker Session. July 11, 2023, Am.

25. **Roger Ruan**, Leilei Dai, Nan Zhou, Suman Lata, Yanling Cheng, Yunpu Wang, Yuhuan Liu, Kirk Cobb, Paul Chen, Hanwu Lei. 2023. Organic Solid Waste for Energy, Fuels, Chemicals, and Materials Production. *2023 Green Development International Symposium – Energy Transition and Innovation for Carbon Neutrality*. Chongqing. June 10, 2023.
26. **Roger Ruan**, Leilei Dai, Dmitri Mataya, Junhui Chen, Suman Lata, Nan Zhou, Renchuan Zhang, Lu Wang, Yanling Cheng, Min Addy, Yunpu Wang, Yuhuan Liu, Ozlem Jarakas, Raissa Rossi, Kirk Cobb, Paul Chen, Hanwu Lei. 2023. Research Progress in Sustainable Solid and Liquid Waste Utilization for Circular Economy Development. Shihezhi University seminar. June 6, 2023.
27. **Roger Ruan**, Leilei Dai, Dmitri Mataya, Junhui Chen, Suman Lata, Nan Zhou, Renchuan Zhang, Lu Wang, Yanling Cheng, Min Addy, Yunpu Wang, Yuhuan Liu, Ozlem Jarakas, Raissa Rossi, Kirk Cobb, Paul Chen, Hanwu Lei. 2023. Sustainable Solid and Liquid Waste Utilization for Circular Economy Development. Huadong University of Technology seminar. June 5, 2023.
28. **Roger Ruan**. 2023. Research Progress in Solid and Liquid Waste Utilization and Food Engineering. Zhongkai Agricultural Engineering University seminar. June 4, 2023.
29. **Roger Ruan**, Leilei Dai, Nan Zhou, Suman Lata, Yanling Cheng, Yunpu Wang, Yuhuan Liu, Kirk Cobb, Paul Chen, Hanwu Lei. 2023. Catalytic microwave assisted pyrolysis of organic solid waste for fuels, chemicals, and materials production. *International Conference on Solid Waste 2023: Waste Management in Circular Economy and Climate Resilience (ICSWHK2023)*, Plenary Speaker. Hong Kong, China. May 31, 2023.
30. **Roger Ruan**. 2023. Environmental Engineering and Biotechnology for a Sustainable Circular Economy Development. Opening speech at the 2023 International Joint Conference on Environmental Engineering and Biotechnology (CoEEB 2023). Malmo, Sweden. May 20, 2023.
31. **Roger Ruan**, Leilei Dai, Dmitri Mataya, Junhui Chen, Kirk Cobb, Nan Zhou, Renchuan Zhang, Lu Wang, Yanling Cheng, Min Addy, Paul Chen, Hanwu Lei. 2023. Innovative Solid and Liquid Waste Utilization for Sustainable and Circular Economy Development. Plenary Speaker at the 2023 International Joint Conference on Environmental Engineering and Biotechnology (CoEEB 2023). Malmo, Sweden. May 20, 2023.
32. **Roger Ruan**. 2023. Complete utilization of plastic waste for materials, chemicals, and hydrogen production for sustainable circular plastic economy development. Minneapolis South Rotary Club. Minneapolis, MN. May 9, 2023.
33. Junhui Chen, Leilei Dai, Dmitri Mataya, Kirk Cobb, Paul Chen, **Roger Ruan (speaker)**. 2023. Enhanced treatment of anaerobic digestion effluent through efficient nutrient utilization using stepwise microalgal cultivation. The State of Water: 2023 Water Network Virtual Poster Symposium. University of Minnesota. April 19, 2023.

34. **Roger Ruan**, Junhui Chen, Dmitri Mataya, Lu Wang, Leilei Dai, Kirk Cobb, Yanling Cheng, Paul Chen, Frank Liu. 2023. Intervention Technologies to Ensure Pork Supply Chain Food Safety. Walmart Pork Supply Chain Food Safety Project Meeting. April 7, 2023.
35. **Roger Ruan**, Leilei Dai, Dmitri Mataya, Junhui Chen, Kirk Cobb, Nan Zhou, Renchuan Zhang, Lu Wang, Yanling Cheng, Min Addy, Xiangyang Lin, Paul Chen, Hanwu Lei. 2023 Solid and Liquid Waste Treatment through Utilization for Circular and Sustainable Economy Development. Department of Agricultural Engineering Seminar, Northeast Agricultural University, Harbin, March 20, 2023.
36. **Roger Ruan**, Leilei Dai, Leilei Dai, Dmitri Mataya, Kirk Cobb, Paul Chen, Yanling Cheng, Xiangyang Lin. 2023. Novel Refining Systems and Processes for Biomass and Solid Waste to Energy Conversion. 2023 Biomass Refining Technology Forum, Zhenzhou, March 18, 2023.
37. **Roger Ruan**, Leilei Dai, Leilei Dai, Dmitri Mataya, Kirk Cobb, Paul Chen, Yanling Cheng, and Xiangyang Lin. 2023. Novel Systems and Processes for Waste to Energy Conversion. Global Energy Meet (GEM-2023) - Converting non-recyclable waste into Advanced Biofuels. Plenary Presentation, March 6, 2023.
38. **Roger Ruan**, Leilei Dai, Nan Zhou, Paul Chen, Yanling Cheng, Hanwu Lei. 2022. Catalytic microwave-assisted pyrolysis and gasification of biomass and waste plastics for green hydrogen production. International Conference on Green Hydrogen Production (ICGHP-2022), Invited Speaker, December 19, 2022.
39. **Roger Ruan**, Leilei Dai, Dmitri Mataya, Junhui Chen, Kirk Cobb, Nan Zhou, Renchuan Zhang, Lu Wang, Yanling Cheng, Min Addy, Paul Chen, Hanwu Lei. 2022. Sustainable Solid and Liquid Waste Utilization for Circular and Sustainable Economy Development. *International Symposium on Biomass Utilization in Agriculture and Forestry (BUAF2022)*. Plenary Lecture, December 14, 2022.
40. **Roger Ruan**. 2022. Catalytic microwave-assisted pyrolysis and gasification of biomass and plastic waste for materials, chemicals and hydrogen production. *International Industry-University-Research-Application Cooperation Conference*, Kunming University of Science and Technology, Invited Speaker, December 10, 2022.
41. **Roger Ruan**, Leilei Dai, Dmitri Mataya, Junhui Chen, Kirk Cobb, Nan Zhou, Renchuan Zhang, Lu Wang, Juer Liu, Yanling Cheng, Min Addy, Paul Chen, Hanwu Lei. 2022. Complete solid, liquid and gas waste utilization for circular economy development. *International Conference on Biotechnology for Sustainable Bioresources and Bioeconomy (BSBB-2022)*. Indian Institute of Technology, Guwahati, India, Invited Lecture, December 8, 2022.
42. **Roger Ruan**. 2022. Innovative Liquid and Solid Wastes Utilization Technologies for Sustainable Circular Economy Development, Strait Green Economy Forum, Putian University. Invited Lecture, November 24, 2022.



43. **Roger Ruan**, Junhui Zhang, Dmitri Maytag, Lu Wang. 2022. Microalgae as promising biofactory for high value bioproducts and biofuels Production. The 8th Industry-University-Research Conference of Microalgae Branch of China Algae Industry Association and Algae Nutrition and Medicine Summit. Invited Lecture, November 23, 2022.
44. **Roger Ruan**. 2022. Nitrogen Fixation from Atmosphere Using Nonthermal Plasma for Green Nitrogen Fertilizer Production. Ningbo University. November 18, 2022.
45. **Roger Ruan**. 2022. Catalytic Microwave-assisted Pyrolysis and Gasification of Biomass and Plastic waste for Chemicals and Materials and Hydrogen Production. Zhoushan Ocean University. November 17, 2022.
46. **Roger Ruan**. 2022. NMR/MRI Analysis of Polymer States and Properties. Niumag Corporation. October 30, 2022.
47. **Roger Ruan**, Dmitri Mataya, Junhui Chen, Lu Wang, Kirk Cobb, Leilei Dai, Nan Zhou, Renchuan Zhang, Yanling Cheng, Min Addy, Paul Chen. 2022. Demonstrate an integrated process and system for animal wastewater treatment through utilization. International Forum on Industrial Bioprocess (IBA-IFIBiop) and X International Forum on Industrial Bioprocesses. National Kaohsiung University of Science and Technology. October 29, 2022.
48. **Roger Ruan**. 2022. Innovative fiber processing for value-added product development, and Innovative technologies for a sustainable swine industry. Innovhope joint project discussion meeting. October 18, 2022.
49. **Roger Ruan**. 2022. NMR/MRI, Nonthermal pasteurization and value-added processing progress. NC1023 station report. Annual USDA Multistate NC1023 Food Engineering Committee Meeting. Urbana-Champaign, IL. October 17, 2022.
50. **Roger Ruan**, Leilei Dai, Dmitri Mataya, Junhui Chen, Kirk Cobb, Nan Zhou, Renchuan Zhang, Lu Wang, Yanling Cheng, Min Addy, Paul Chen, Hanwu Lei. 2022. Complete gas, liquid, and solid waste utilization for sustainable development. 2nd International Conference on Environmental Pollution and Governance (ICEPG 2022). Keynote Speaker. September 24, 2022.
51. **Roger Ruan**, Leilei Dai, Dmitri Mataya, Junhui Chen, Kirk Cobb, Nan Zhou, Renchuan Zhang, Lu Wang, Yanling Cheng, Min Addy, Paul Chen, Hanwu Lei. 2022. Systems and Processes for Liquid and Solid Wastes Utilization for Sustainable Circular Economy Development. Invited Sustainability Session, Conference of Food Engineering 2022. September 20, 2022.
52. **Roger Ruan**. 2022. Research for Sustainable Circular Economy Development in Agriculture, Food, Energy, and Environment. BBE 8001 Graduate Seminar. September 12, 2022.

53. **Roger Ruan**. 2022. Complete Utilization of Food Waste through an Integrated Approach. 1st International Conference on Food Waste to Food Sustainability (FWFS2022). Keynote Speaker. August 24, 2022.
54. **Roger Ruan**, Paul Chen. 2022. Reduce raw milk microbial contamination on using non-chemical-based technique, accepted pre-proposal, Midwest Dairy Foods Research Center Annual Meeting. St. Paul, MN. July 27, 2022.
55. **Roger Ruan**, Leilei Dai, Dmitri Mataya, Junhui Chen, Kirk Cobb, Nan Zhou, Renchuan Zhang, Lu Wang, Yanling Cheng, Min Addy, Paul Chen, Hanwu Lei. 2022. Complete waste resource utilization for renewable energy production and sustainable development. Recent Advancement in Renewable Energy Resources and Technologies – Invited Guest Speaker Session, ASABE Annual International Meeting, Houston, TX. July 19, 2022.
56. **Roger Ruan**. 2022. Catalyst Development for Catalytic Microwave Assisted Pyrolysis. S1075 Station Report. Annual USDA S1075 Biobased Economy Committee Meeting. Houston, TX. July 15, 2022.
57. **Roger Ruan**, Leilei Dai, Nan Zhou, Paul Chen, Yanling Cheng, Hanwu Lei. 2022. Catalytic microwave-assisted pyrolysis/gasification of biomass and waste plastics for chemicals, materials, and hydrogen production. Plenary Presentation, International Symposium on Emerging Trends in role and production of Bioenergy for Sustainable Development (ETBSD-2022), A Flagship event of WtH Consortium (C-WtHub), UK, India, Republic of Korea, China & USA, Seoul, South Korea, July 4, 2022.
58. **Roger Ruan**, Leilei Dai, Nan Zhou, Paul Chen, Yanling Cheng, Hanwu Lei. 2022. Catalytic microwave-assisted pyrolysis/gasification of biomass and waste plastics for chemicals and hydrogen production. Waste-to-Hydrogen Utilization and Betterment Consortium (C-WtHub) Academic Seminar. June 7, 2022.
59. **Roger Ruan**, Leilei Dai, Dmitri Mataya, Junhui Chen, Kirk Cobb, Nan Zhou, Renchuan Zhang, Lu Wang, Yanling Cheng, Min Addy, Paul Chen, Hanwu Lei. 2022. Complete solid and liquid waste utilization for circular economy development. *Sixth International Symposium on Circular Economy & Urban Mining*. Capri, Italy. May 18, 2022.
60. **Roger Ruan**, Paul Chen, Leilei Dai, Kirk Cobb, Dmitri Mataya, Juer Liu. 2022. Catalytic microwave-assisted pyrolysis/gasification for hydrogen production. *C-WtHub series: Virtual Lab Visit (VLV)*. May 4th, 2022.
61. **Roger Ruan** and Xingmin Li. 2022. Intervention technologies for improving food safety in the pork supply chain. Walmart Improving food safety of pork supply chain in China Project Annual Progress Report Meeting. April 20th, 2022.
62. **Roger Ruan**. 2022. Zero Waste Approach to Circular Economy Development: Complete Solid and Liquid Waste Utilization. IFT Webinar on Food Security and Sustainable Development. April 6<sup>th</sup>, 2022.

63. **Roger Ruan**, Paul Chen, Frank Liu, Leilei Dai, Renchuan Zhang, Nan Zhou, Yanling Cheng, Juer Liu, Lu Wang, Dmitri Mataya, Yuancai Lyu, Abigail Chiaokhiao, Hanwu Lei, and Kirk Cobb. 2022. Innovative Technologies for A Sustainable Swine Industry. Walmart Foundation Webinar. March 15, 2022.
64. **Roger Ruan**, Leilei Dai, Nan Zhou, Yanling Cheng, Paul Chen, Hanwu Lei, Yunpu Wang, Yuhuan Liu. 2022. Catalytic Microwave-assisted Pyrolysis of Waste Plastics for Chemicals, Materials, and Hydrogen Production. Composite Materials Congress, New Horizon in Nanomaterials & Nanotechnology Session. March 5, 2022.
65. **Roger Ruan**. 2022. Innovative Non-thermal Technologies for Management of Small Grain Diseases. Departmental Seminar, Department of Plant Pathology, University of Minnesota. January 7, 2022.
66. **Roger Ruan**. 2021. Final Project Report: Development of a Novel Gasification Technology for Distributed Power Generation from Solid Wastes. Xcel Energy Renewable Development Fund Advisory Committee. December 29, 2021.
67. **Roger Ruan**, Paul Chen, Renchuan Zhang, Nan Zhou, Leilei Dai, Yanling Cheng, Juer Liu, Lu Wang, Dmitri Mataya, Yuancai Lyu, Abigail Chiaokhiao, Frank Liu, and Kirk Cobb. 2021. Innovative Technologies for Greenhouse Gas Reduction and Circular Economy and Sustainable Development. International Symposium on Biomass Refining, December 15, 2021
68. **Roger Ruan**, Paul Chen, Renchuan Zhang, Nan Zhou, Leilei Dai, Yanling Cheng, Juer Liu, Lu Wang, Dmitri Mataya, Yuancai Lyu, Abigail Chiaokhiao, Frank Liu, and Kirk Cobb. 2021. Waste Treatment through Complete Utilization for Circular Economy and Sustainable Development. BESS Conference on Zero Waste and Circular Economy. December 14, 2021
69. **Roger Ruan**, Paul Chen, Renchuan Zhang, Nan Zhou, Leilei Dai, Yanling Cheng, Juer Liu, Lu Wang, Dmitri Mataya, Yuancai Lyu, Abigail Chiaokhiao, Frank Liu, and Kirk Cobb. 2021. Novel Processes and Systems for Sustainable Development. The Fifth Conference on Health and Environment. December 11, 2021
70. **Roger Ruan**, Paul Chen, Renchuan Zhang, Nan Zhou, Leilei Dai, Yanling Cheng, Juer Liu, Lu Wang, Dmitri Mataya, Yuancai Lyu, Abigail Chiaokhiao, Frank Liu, and Kirk Cobb. 2021. Novel Technologies for Circular Economy and Sustainable Development. Minnesota Environmental Science and Economic Review Board (MESERB) Fall Conference. Brainerd, MN. November 4, 2021.
71. **Roger Ruan**, Paul Chen, Nan Zhou, Renchuan Zhang, Yanling Cheng, Juer Liu, Lu Wang, Leilei Dai, Dmitri Mataya, Yuancai Lyu, Abigail Chiaokhiao, Frank Liu, and Kirk Cobb. 2021. Novel intervention strategies and technologies for food safety assurance in pork supply chain - A vision and technology for a sustainable smart pork production system. International Pork Safety Forum - Improving food safety of pork supply chain in China. October 20, 2021.

72. **Roger Ruan**, Paul Chen, Nan Zhou, Renchuan Zhang, Yanling Cheng, Juer Liu, Lu Wang, Leilei Dai, Dmitri Mataya, Yuancai Lyu, Abigail Chiaokhiao, Frank Liu, Kirk Cobb. 2021. Novel intervention strategies and technologies for food safety assurance in pork supply chain. Walmart Foundation Food Safety in Pork Supply Chain Meeting with New Hope Group. September 16, 2021.
73. **Roger Ruan**. 2021. Conversion of Waste Polyolefinic Plastics to Value-added Chemicals and Materials by Pyrolysis. BASF Company Presentation. September 7, 2021.
74. **Roger Ruan**. 2021. Wastewater utilization for methane, algae and hydroponics plants production and microwave-assisted catalytic pyrolysis of solid wastes for chemicals, fuels, and materials production. 2021 S-1075 Virtual Annual Committee Meeting. July 22, 2021.
75. **Roger Ruan**. 2021. Innovative waste plastics to naphtha chemicals and materials conversion by microwave assisted pyrolysis. Mitsui Company Presentation. June 24, 2021.
76. **Roger Ruan**, Nan Zhou, Leilei Dai, Yanling Cheng, Paul Chen. 2021. Catalytic microwave assisted pyrolysis of solid waste for fuels, energy and chemicals production. Invited Speaker of Second International Conference on Sustainable Solid Waste Treatments and Managements (SWTM-2021).
77. **Roger Ruan**, Renchuan Zhang, Lu Wang, Nan Zhou, Leilei Dai, Yanling Cheng, Yiwei Ma, Peng Peng, Yunpu Wang, Feiqiang Guo, Pengfei Cheng, Xiaochen Ma, Lingqin Liu, Yiqin Wan, Xiaodan Wu, Dengle Duan, Shuhao Huo, Kun Li, Junzhi Liu, Xiye Chen, Kirk Cobb, Min Addy, Paul Chen, Yuhuan Liu, Hanwu Lei. 2021. Sustainable solid and liquid waste treatment through utilization for circular economy development. Keynote Speaker in the 2021 International Conference on Environmental Pollution and Governance (ICEPG 2021).
78. **Roger Ruan**, Nan Zhou, Leilei Dai, Yayun Zhang, Dengle Duan, Chenxi Wang, Yunfeng Zhao, Yanling Cheng, Lu Wang, Renchuan Zhang, Kirk Cobb, Paul Chen, Hanwu Lei. 2021. Biochar produced from microwave-assisted pyrolysis and its applications in catalysis and wastewater treatment. Invited Plenary Speaker in the 5th Asia Pacific Biochar Conference (APBC2021).
79. **Roger Ruan**, Juer Liu, Yanling Cheng, Jun An, Yiwei Ma, Paul Chen, Chi Chen, Guangwei Huang. 2021. Non-thermal Processes for Making Clean Label Food and Nutraceutical Ingredients from Almond Hull. USDA Food Loss and Waste Innovation Fair.
80. **Roger Ruan**, Leilei Dai, Nan Zhou, Yanling Cheng, Yuancai Lyu, Kirk Cobb, Paul Chen, Hanwu Lei. 2021. Complete utilization of plastic wastes through catalytic microwave assisted pyrolysis for upcycling chemicals, fuels and materials production. An invited keynote presentation for Fellow of Vebleo's Webinar on Energy Materials and Technologies.

81. **Roger Ruan**, Nan Zhou, Leilei Dai, Yanling Cheng, Yunpu Wang, Yuhuan Liu, Kirk Cobb, Paul Chen, Hanwu Lei. 2021. Catalytic Microwave Assisted Pyrolysis of Solid Wastes for Fuels, Energy and Chemicals Production. 2021. Plannary Session Keynote Presentation. 2nd International Symposium on Environmental Protection and Chemical Engineering (ISEPCE 2021), and 2021 International Conference on Energy Engineering, New Energy Materials and Devices (NEMD 2021).
82. **Roger Ruan**, Jianhan Lin, Paul Chen, Yuanjie Liu, Yanbin Li. 2021. Rapid Detection and Novel Intervention Strategies and Technologies. Walmart Foundation Food Safety in Pork Supply Chain Meeting with Industry. January 25, 2021
83. **Roger Ruan**, Nan Zhou, Leilei Dai, Yanling Cheng, Yunpu Wang, Yuhuan Liu, Paul Chen. 2020. Catalytic Microwave-Assisted Pyrolysis for Chemical Recycling of Plastic Wastes. IAAM Award Lecture 2020 in the Advanced Materials Lecture Series. *Vid. Proc. Adv. Mater.*, 1(1), 20082382020. DOI:10.5185/vpoam.2020.08138.
84. **Roger Ruan**. 2020. Catalytic IPL system and process development. USDA AFRI CAP Project [2016-68003-24850] Final Review Meeting. St. Paul, MN.
85. **Roger Ruan**. 2020. Introduction to the CAP project and catalytic IPL system and process development. Virtual international workshop on Development of continuous intense pulsed light technology for non-thermal pasteurization of powdered foods. St. Paul, MN.
86. **Roger Ruan**. 2020. Catalytic IPL and low temperature microwave technology for non-thermal pasteurization of pet foods. AFB International virtual meeting organized by UMN OTC. Minneapolis, MN.
87. **Roger Ruan**, Dongjie Chen, Yuancai Lyu, Peng Peng, Yanling Cheng, Nan Zhou, Leilei Dai, Yunpu Wang, Yuhuan Liu, Kirk Cobb, Mike Reese, Paul Chen. 2020. Deep Dive: On-Farm Nitrogen Fertilizer Production. *UMN Technology Commercialization Business Advisory Virtual Meeting*. Minneapolis, MN.
88. **Roger Ruan**. 2020. Microwave-assisted catalytic pyrolysis of solid wastes for chemicals, fuels, and materials production. 2020 S-1075 Virtual Annual Committee Meeting.
89. **Roger Ruan**. 2020. Nonthermal plasma-induced nitrogen fixation. Kennedy Research LLC and Lorentzen Investments virtual meeting organized by UMN OTC. Minneapolis, MN.
90. **Roger Ruan**. 2020. Microwave-assisted catalytic fast pyrolysis/gasification and syngas fermentation for complete solid wastes utilization. Municipal organic wastes gasification and syngas fermentation forum. A Tianjin Industrial Biotechnology Research Institute, CAS virtual conference.
91. **Roger Ruan**, Nan Zhou, Renchuan Zhang, Peng Peng, Yunpu Wang, Feiqiang Guo, Lingqin Liu, Leilei Dai, Shiyu Liu, Yiqin Wan, Erik Anderson, Xiaodan Wu, Dengle Duan, Shuhao

- Huo, Kun Li, Pengfei Cheng, Junzhi Liu, Xiye Chen, Yanling Cheng, Yuhuan Liu, Min Addy, Wenguang Zhou, Kirk Cobb, and Paul Chen. 2019. Sustainable circular economy technologies development and applications. NHBT-2019, Trivandrum, India.
92. **Roger Ruan**, Juer Liu, Jun An, Dongjie Chen, Peng Peng, Justin Wiertzema, Qingqing Mao, Yiwei Ma, Yanling Cheng, Paul Chen, David Baumler, Chi Chen, Joellen Freitag, Zata Vicker, Laurence Lee. 2019. Non-thermal Processes For Making Clean Label Food and Nutraceutical Ingredients from Agricultural Byproducts and Innovative catalytic intense pulsed light (cIPL) and catalytic microwave (cMW) technologies for non-thermal pasteurization of particulate and powdered foods. Beijing Gongshan University. Beijing.
  93. **Roger Ruan**, Peng Peng, Paul Chen, Yanling Cheng, Charles Schiappacasse, Nan Zhou, Renchuan Zhang, Yunpu Wang, Kirk Cobb, and Yuhuan Liu. 2019. Novel non-thermal plasma-based technologies for sustainable development and applications. *The 4<sup>th</sup> International Conference on Health and Environment*. Beijing Union University. Beijing.
  94. **Roger Ruan**. 2019. Innovative catalytic intense pulsed light (cIPL) and catalytic microwave (cMW) technologies for non-thermal pasteurization of particulate and powdered foods and Non-thermal Processes for Making Clean Label Food and Nutraceutical Ingredients from Agricultural Byproducts. Zhejiang Gongshan University. Hanzhou.
  95. **Roger Ruan**, Paul Chen, Chi Chen, Kumar Mallikarjunan. 2019. NC1023 Station Report. Annual NC-1023 Food Engineering Committee Meeting. Las Cruces, NM.
  96. **Roger Ruan**, Nan Zhou, Shiyu Liu, Paul Chen, Min Addy, Yunpu Wang, Feiqiang Guo, Yanling Cheng, Yuhuan Liu, Yingdan Zhu, Xiye Chen, Kirk Cobb. 2019. Microwave-assisted catalytic fast pyrolysis process and system for renewable energy production from solid wastes. *Biofuels & Bioenergy and Green Energy & Expo 2019*. Rome, Italy
  97. **Roger Ruan**, Renchuan Zhang, Nan Zhou, Peng Peng, Yunpu Wang, Feiqiang Guo, Lingqin Liu, Leilei Dai, Shiyu Liu, Liangliang Fan, Erik Anderson, Yiqin Wan, Hongli Zheng, Xiaodan Wu, Dengle Duan, Shuhao Huo, Kun Li, Pengfei Cheng, Junzhi Liu, Qian Lu, Xiye Chen, Yanling Cheng, Hui Liu, Qing Wang, Yuhuan Liu, Min Addy, Wenguang Zhou, Kirk Cobb, and Paul Chen. 2019. Development of sustainable circular economy technologies. *The 10<sup>th</sup> Asian-Pacific Conference on Algal Biotechnology (10<sup>th</sup> APCAB)*. Nanchang, Jiangxi.
  98. **Roger Ruan**, Renchuan Zhang, Nan Zhou, Peng Peng, Yunpu Wang, Feiqiang Guo, Lingqin Liu, Leilei Dai, Shiyu Liu, Kuan Ding, Bo Zhang, Liangliang Fan, Erik Anderson, Yiqin Wan, Hongli Zheng, Xiaodan Wu, Dengle Duan, Shuhao Huo, Kun Li, Pengfei Cheng, Junzhi Liu, Qian Lu, Xiye Chen, Yanling Cheng, Yuhuan Liu, Min Addy, Wenguang Zhou, Kirk Cobb, and Paul Chen. 2019. Sustainable Technologies Development and Applications in Complete Solid and Liquid Waste Utilization and Treatment. 2019. Southeast University, Nanjing, Jiangsu.

99. **Roger Ruan**. 2019. Biorefining Technologies Development and Applications in Complete Solid and Liquid Waste Utilization and Treatment. 2019. Nanjing Forestry University, Nanjing, Jiangsu.
100. **Roger Ruan**, Nan Zhou, Yunpu Wang, Feiqiang Guo, Kuan Ding, Yaning Zhang, Bo Zhang, Shiyu Liu, Junwen Zhou, Yanling Cheng, Peng Peng, Min Addy, Paul Chen, Yuhuan Liu, and Kirk Cobb. 2019. Catalytic fast microwave-assisted thermochemical conversion of solid wastes for energy and fuel production. *The 1st International Conference on Energy and Environment (1st ICEE)*, Nanjing, Jiangsu
101. **Roger Ruan**. 2019. Innovative Technologies Development and Applications in Complete Solid and Liquid Waste Utilization and Treatment. Nanjing Research Institute for Agricultural Mechanization, Ministry of Agriculture and Rural Affairs. Nanjing, Jiangsu
102. **Roger Ruan**. 2019. Catalytic intense pulsed light (cIPL) and catalytic microwave (cMW) technologies for non-thermal pasteurization of wheat kernels and wheat flours. VP Research, Quality, and Tech Services Meeting, Ardent Mills. St. Paul, MN.
103. **Roger Ruan**. 2019. Catalytic intense pulsed light (cIPL) and catalytic microwave (cMW) technologies for non-thermal pasteurization of particulate and powdered foods. General Mills Flour Disinfection Meeting. Golden Valley, MN.
104. **Roger Ruan** and David Baulmer. 2019. Intense pulsed light (IPL) R&D program at UMN for non-thermal pasteurization of powdered foods. McCormick & Company, Inc., Hunt Valley, MD.
105. **Roger Ruan**, N. Zhou, D. Chen, P. Peng, Y. Cheng, Y. Wang, C. Schiappacasse, R. Zhang, P. Chen. 2019. Development of catalytic intense pulsed light and microwave technologies for non-thermal pasteurization of particulate and powdered foods. *UMN Technology Commercialization Business Advisory Meeting*. McNamara Alumni Center, Minneapolis Campus.
106. **Ruan, R.** 2019. Prediction of Mixing Kinetics and Formulation of Dairy Powder Using Non-invasive NMR Techniques. *2019 MDFRC Annual Meeting*, Continuing Education & Conference Center, UMN St. Paul Campus.
107. **Ruan, R.**, N. Zhou, R. Zhang, Y. Wang, F. Guo, L. Liu, S. Huo, K. Li, P. Cheng, J. Liu, Y. Ma, S. Liu, P. Peng, Y. Cheng, M. Addy, K. Cobb, P. Chen. 2019. New solid and liquid waste utilization process and systems. *USDA S1075 Biobased Economy Committee Meeting*. DOE National Renewable Energy Laboratory, Denver, CO.
108. **Ruan, R.** 2019. Safety Assessment of Almond Hull as a Novel Food Source. *Biomass Work Group Meeting*, ABC Offices, Modesto, CA.
109. **Ruan, R.**, D. Baumler, C. Chen, P. Chen, Z. Vickers, J. Feirtag, L. Lee, Y. Cheng, P. Peng, Q. Mao, Y. Ma, J. Wiertzema, D. Chen, J. Liu, N. Zhou, C. Schiappacasse, C. Borchardt.

2019. CAP [2015- 08046] Development of continuous intense pulsed light technology for non-thermal pasteurization of powdered foods. USDA NIFA 2019 Project Directors Meeting FOR ENHANCING FOOD SAFETY THROUGH IMPROVED PROCESSING TECHNOLOGIES, And 2019 IAFP Annual Meeting, Kentucky International Convention Center in Louisville, KY.

110. **Roger Ruan**, Peng Peng, Paul Chen, Yanling Cheng, Charles Schiappacasse, Nan Zhou, Renchuan Zhang, Yunpu Wang, Kirk Cobb, and Yuhuan Liu. 2019. Nonthermal plasma-based technologies for sustainable development and applications. The 3rd International Conference on Bamboo Utilization – Green Circular Economy and Technology, Fuzhou, Fujian.
111. **Roger Ruan**. 2019. Development of intensive pulse light technology for powdered foods disinfection. *IFT Symposium on Intensive Pulse Light Technology Development and Application*. 2019 IFT International Annual Meeting, New Orleans, LA.
112. **Roger Ruan**, Paul Chen, Min Addy, Yanling Cheng, Renchuan Zhang, Lu Wang, Peng Peng, Yiwei Ma, Kirk Cobb, Kuan Ding, Aoxi He, Jie Liu, Yaning Zhang, Richard Griffith, Shiyu Liu, Nan Zhou, Xiangyuan Deng, Hunwen Zhou, Hanwu Lei, Yunpu Wang, Yuhuan Liu. 2019. Microwave-assisted catalytic fast pyrolysis process and system for complete solid wastes utilization, *Internaional Conference on Sustainable Solid Waste Treatments and Managements*, Yangling, Shangxi.
113. **Roger Ruan**. 2019. Innovative Biorefining Technologies for Complete Solid and Liquid Waste Utilization and Treatment. In Symposium on Biofuels and Sustainable Development, International conference on Biofuels and Bioenergy, Theme: Water, Food, and Energy, April 29 - May 01, 2019, San Francisco, California.
114. **Roger Ruan**, Peng Peng, Paul Chen, Charles Schiappacasse, Nan Zhou, and Yanling Cheng. 2019. Development of non-thermal plasma (NTP) for sustainable agricultural applications. *Mechanical Engineering Department Seminar*, University of Minnesota. Minneapolis, MN.
115. **Roger Ruan**. 2019. Sustainable Food Production/Processing and Circular Economy Technologies. Agricultural Research Organization – Volcani Center, Institute of Soil, Water and Environmental Science, Newe Ya'ar Research Center, Israel.
116. **Roger Ruan**, Peng Peng, Paul Chen, Charles Schiappacasse, Nan Zhou, Yanling Cheng, and Min Addy. 2019. Non-Thermal Plasma (NTP) Ammonia Synthesis and Nitrogen Fixation. *Lorentzen Investments – U of MN Ammonia Research Meeting*, Minneapolis Campus.
117. **Roger Ruan** and Brian Bauer. 2019. Biomass to Energy Conversion Technologies. *Forest Stewardship Campaign Initial Summit*, Santa Rosa, CA.
118. **Roger Ruan**. 2018. Development of continuous intense pulsed light technology for non-thermal pasteurization of powdered foods – an overview. Minnesota Session of IAFP Fall Meeting. Summit Brewing Company, St. Paul, MN.



119. **Roger Ruan**, Paul Chen, Renchuan Zhang, Yanling Cheng, Wei Hua, Jun Wei, Lu Wang, Peng Peng, Yiwei Ma, Xiaochen Ma, Min Addy, Kuan Ding, Li Huang, Aoxi He, Yaning Zhang, Richard Griffith, Shiyu Liu, Nan Zhou, Yunpu Wang, Xiangyuan Deng, Hunwen Zhou, Kirk Cobb, Wenguang Zhou, Guangwei Huang, Hanwu Lei, Yuhuan Liu. 2018. Sustainable Food Production/Processing and our Health and Environment. The 3rd International Conference on Health and Environment. Beijing Union University. Beijing.
120. **Roger Ruan**. 2018. Microwave assisted fast catalytic pyrolysis and gasification of solid wastes for biofuels and bioenergy production. Seminar at Department of Physics. Hamline University. St. Paul, MN.
121. **Roger Ruan**. 2018. Microwave assisted fast catalytic pyrolysis and gasification of biomass for biofuels and bioenergy production. *Biomass/Biomass feed stocks for renewable energy generation/Biomass technologies session. 13th International Congress on Biofuels and Bioenergy (2427th of Conference Series LLC Ltd)*. October 18-20, 2018 Ottawa, Ontario, Canada.
122. **Roger Ruan**, 2018. Non-thermal processes for food safety, health benefits, and added value. USDA/NC-1023 Committee Meeting. Orono, Maine.
123. **Roger Ruan**. 2018. Complete solid and liquid waste utilization technologies. *UMN Energy Club General Meeting*. Minneapolis, MN.
124. **Roger Ruan**. 2018. Thermochemical Conversion of Biomass for Energy and Chemicals Production. *ALLIANCE FOR PULP & PAPER TECHNOLOGY INNOVATION*. St. Paul, MN.
125. **Roger Ruan**, Kuan Ding, Yaning Zhang, Shiyu Liu, Nan Zhou, Aoxi He, Renchuan Zhang, Erik Anderson, Hunwen Zhou, Hanwu Lei, Yunpu Wang, Yuhuan Liu, Yanling Cheng, Peng Peng, Xiaodan Wu, Kirk Cobb, Paul Chen. 2018. Innovative Lignocellulosic Biomass Deconstruction technologies. *Session IA: Biomass Fractionation – Pretreatment. Invited Speaker. Processes and Technologies 2nd International Conference on Bioresource Technology for Bioenergy, Bioproducts & Environmental Sustainability*. Sitges, Spain
126. **Roger Ruan**, Paul Chen, Erik Anderson, Min Addy, Renchuan Zhang, Yanling Cheng, Lu Wang, Peng Peng, Yiwei Ma, Kirk Cobb, Kuan Ding, Aoxi He, Jie Liu, Yaning Zhang, Richard Griffith, Shiyu Liu, Nan Zhou, Xiangyuan Deng, Hunwen Zhou, Wenguang Zhou, Hanwu Lei, Yunpu Wang, Yuhuan Liu. 2018. Enhance the Sustainability of Food Production through Complete Waste Utilization. *Waste management and utilization session*. Conference of Food Engineering 2018. Minneapolis, MN.
127. **Roger Ruan**. 2018. Development of continuous intense pulsed light technology for non-thermal pasteurization of powdered foods. USDA NIFA Food Processing & Manufacturing Technology Project Director's Meeting. Natick, MA.

128. **Roger Ruan**. 2018. Biorefining processes and systems for complete liquid and solid waste utilization and treatment. College of Bioresource and Environment seminar, Fuzhou University, Fuzhou.
129. **Roger Ruan**. 2018. Innovative processes and systems for complete liquid and solid waste utilization and treatment. Institute of Tropical Agriculture and Forestry seminar, Hainan University, Hainan.
130. **Roger Ruan**. 2018. Microwave-assisted Gasification of Solid Wastes for Electricity Generation. In *Current Achievements and New R&D Trends in Renewable Energy Resources and Technologies – INVITED SPEAKERS* session. 2018 ASABE Annual International Meeting. Detroit, Michigan.
131. **Roger Ruan**, Erik Anderson, Min Addy, Renchuan Zhang, Yanling Cheng, Lu Wang, Peng Peng, Yiwei Ma, Xiaochen Ma, Liangliang Fan, Kuan Ding, Aoxi He, Yaning Zhang, Chunhua Xin, Shiyu Liu, Nan Zhou, Xiangyuan Deng, Hunwen Zhou, Wenguang Zhou, Muhammad Omar, Richard Griffith, Faryal Kabir, Hanwu Lei, Yunpu Wang, Yuhuan Liu, Paul Chen. 2018. Innovative biorefining processes and systems for complete liquid and solid waste utilization and treatment. Keynote Forum, *BioEnergy 2018*, Berlin.
132. **Roger Ruan** and Paul Chen. 2018. Bioenergy: A great promise for our economy, environment, and society. Opening Ceremony speech, *BioEnergy 2018*, Berlin.
133. **Roger Ruan**, Paul Chen, Juer Liu, Li Huang, Yanling Cheng, Yiwei Ma, Chi Chen, Guangwei Huang. 2018. Non-thermal Processes for Making Clean Label Food and Nutraceutical Ingredients from Almond Hull. *20th Annual Almond Quality & Food Safety Symposium*. Modesto, CA.
134. **Roger Ruan**. 2018. CAP [2015 - 08046]: Development of a continuous intense pulsed light technology for non-thermal pasteurization of powdered foods. USDA Mid Year CAP Project Review Video Conference. St. Paul, MN.
135. **Roger Ruan**, Erik Anderson, Min Addy, Renchuan Zhang, Yanling Cheng, Lu Wang, Peng Peng, Yiwei Ma, Xiaochen Ma, Liangliang Fan, Kuan Ding, Aoxi He, Yaning Zhang, Richard Griffith, Shiyu Liu, Nan Zhou, Xiangyuan Deng, Hunwen Zhou, Chunhua Xin, Wenguang Zhou, Muhammad Omar, Richard Griffith, Faryal Kabir, Paul Chen, Hanwu Lei, Yunpu Wang, Yuhuan Liu. 2018. Innovative processes and systems for solid waste utilization and treatment: model, technology and economic analysis. Beijing University of Mining, Beijing.
136. **Roger Ruan**, Erik Anderson, Min Addy, Renchuan Zhang, Yanling Cheng, Lu Wang, Peng Peng, Yiwei Ma, Xiaochen Ma, Liangliang Fan, Kuan Ding, Aoxi He, Yaning Zhang, Chunhua Xin, Richard Griffith, Shiyu Liu, Nan Zhou, Xiangyuan Deng, Hunwen Zhou, Wenguang Zhou, Muhammad Omar, Richard Griffith, Faryal Kabir, Paul Chen, Hanwu Lei, Yunpu Wang, Yuhuan Liu. 2018. Innovative processes and systems for liquid waste

utilization and treatment: model, technology and economic analysis. Beijing University of Mining, Beijing.

137. **Roger Ruan**. 2018. Development of a continuous intense pulsed light technology for non-thermal pasteurization of powdered foods. USDA CAP Project Advisory Council Meeting. St. Paul, MN.
138. **Roger Ruan**, Paul Chen, Erik Anderson, Min Addy, Renchuan Zhang, Yanling Cheng, Lu Wang, Peng Peng, Yiwei Ma, Xiaochen Ma, Liangliang Fan, Kuan Ding, Aoxi He, Yaning Zhang, Richard Griffith, Shiyu Liu, Nan Zhou, Xiangyuan Deng, Hunwen Zhou, Wenguang Zhou, Muhammad Omar, Richard Griffith, Faryal Kabir, Hanwu Lei, Yunpu Wang, Yuhuan Liu. 2018. Innovative Biorefining Processes and Systems for Complete Waste Utilization and Treatment. *The 1<sup>st</sup> Forum on the Test Area Construction (Jiangxi) of National Ecological Civilization & Promotion Conference on Ecological Civilization Construction Technologies*. Nanchang, Jiangxi.
139. **Roger Ruan**. 2018. Microwave assisted catalytic conversion of waste plastics for fuels and energy production. Resynergi Industrial Waste Plastics Utilization Meeting. Twin Cities.
140. **Roger Ruan**. 2017. Innovative biorefining technologies for complete waste utilization and treatment. First International Industry, Research and Education Open Innovation Cooperation Forum. Beijing Union University. Beijing.
141. **Roger Ruan**. 2017. Conference of Food Engineering (CoFE) 2018. NC-1023 Committee Meeting, Washington State University. Pullman, WA.
142. **Roger Ruan**. 2017. Intensive pulsed light technology for non-thermal pasteurization of powdered foods. NC-1023 Committee Meeting, Washington State University. Pullman, WA.
143. **Roger Ruan**. 2017. Sustainable and complete chicken waste utilization and treatment. Forsman Farms (one of the largest egg producers in the world). Howard Lake, Minnesota.
144. **Roger Ruan**. 2017. Shiyu Liu, Yaning Zhang, Liangliang Fan, Nan Zhou, Erik Anderson, Peng Peng, Yanling Cheng, Min Addy, Kuan Ding, Hanwu Lei, Yunpu Wang, Yuhuan Liu, Paul Chen. Microwave Assisted Fast Catalytic Pyrolysis and Gasification for Solid Wastes Conversion and Utilization. *AICHE Annual Meeting*, Minneapolis, Minnesota.
145. **Roger Ruan**, Paul Chen, Erik Anderson, Min Addy, Renchuan Zhang, Yanling Cheng, Peng Peng, Yiwei Ma, Liangliang Fan, Yaning Zhang, Qian Lu, Shiyu Liu, Nan Zhou, Xiangyuan Deng, Wenguang Zhou, Muhammad Omar, Richard Griffith, Faryal Kabir, Hanwu Lei, Yunpu Wang, Yuhuan Liu. 2017. A biorefining approach to treatment and utilization of solid and liquid wastes. CAE International High-level Conference on Green Industrial Process. Jieshou, Anhui.
146. **Ruan R.**, Paul Chen, Erik Anderson, Min Addy, Renchuan Zhang, Yanling Cheng, Peng Peng, Yiwei Ma, Liangliang Fan, Yaning Zhang, Qian Lu, Shiyu Liu, Nan Zhou, Xiangyuan

Deng, Wenguang Zhou, Muhammad Omar, Richard Griffith, Faryal Kabir, Hanwu Lei, Yunpu Wang, Yuhuan Liu. 2017. Innovative Biorefining Processes and Systems for Complete Waste Utilization and Treatment.

147. **Ruan, R.**, S. Liu, Y. Zhang, L. Fan, N. Zhou, P. Peng, Y. Cheng, M. Omar, E. Anderson, P. Chen, Y. Wang, Y. Liu. 2017. Innovative Fast Microwave Assisted Catalytic Pyrolysis of Biomass for Energy, Fuels, Chemicals and Materials Production. HIT Summer School on Energy 2017. Harbin, Heilongjiang.
148. **Ruan, R.** 2017. Thermochemical Conversion of Biomass for Energy, Fuels, Chemicals and Materials Production. HIT Summer School on Energy 2017. Harbin, Heilongjiang.
149. **Ruan, R.**, Peng Peng, Yanling Cheng, Nan Zhou, Charles Schiappacasse, Yiwei Ma, and Paul Chen. 2017. Nonthermal Plasma Technology Application and Industrial Implementation. *IAFP 2017 Symposium on Non-Thermal Plasma Technology for Improving Food Safety and Quality*. Tampa, FL.
150. **Ruan, R.**, D. Baumler, C. Chen, P. Chen, Z. Vickers, J. Feirtag, L. Lee, Y. Cheng, P. Peng, Q. Mao, Y. Ma, J. Wiertzema, D. Chen, J. Liu, N. Zhou, C. Schiappacasse, C. Borchardt. 2017. CAP [2015- 08046] Development of continuous intense pulsed light technology for non-thermal pasteurization of powdered foods. USDA NIFA 2017 Project Directors Meeting FOR ENHANCING FOOD SAFETY THROUGH IMPROVED PROCESSING TECHNOLOGIES, Tampa Convention Center, July 8, 2017, Tampa, FL.
151. **Ruan, R.** 2017. Fast Microwave Assisted Catalytic Conversion of Biomass for Biofuels and Biochemicals Production. *British Petroleum (BP) Executives R&D Visit Meeting*. Minneapolis, MN.
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162. **Ruan, R.,** S. Liu, L. Fan, N. Zhou, E. Anderson, P. Peng, Y. Cheng, Y. Wang, Y. Liu, Y. Wan, J. Zhou, G. Chen, P. Chen. 2016. Distributed fast microwave assisted conversion of solid wastes for materials, chemicals, and energy production. *2016 International Seminar on Advanced Materials Research*. Kunming University of Science & Technology, Kunming.
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- 175.**Ruan, R.** 2015. Wastewater-to-Algae Technologies for Biofuels and Biochemicals Production and Wastewater Treatment. *Advances in Algal Biotechnology Workshop*. IIT Bombay, Mumbai, India.
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- 178.**Ruan, R.** 2015. Innovative microwave-assisted fast gasification of biomass and solid wastes for biofuels and biochemicals production. *2015 International Conference for Bioeconomy - Green Biological Manufacturing*. Tianjin, China.
- 179.**Ruan, R.** 2015. Innovative rural eco-township-a truly sustainable development model. *TIB Distinguished Lecture Series*. Chinese Academy of Sciences. Tianjin, China.
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- 181.**Ruan, R., E. Anderson, M. Addy, Y. Nie, C. Bi, N. Onuma, X. Ma, H. Zheng, P. Chen, D. Li.** 2015. Conversion of scum to biodiesel. LCCMR and MCES Demonstration and Site Visit. St. Paul, MN.
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- 183.**Ruan, R.** 2015. Shelf-life study of raw and roasted almonds for Chinese market - A report to the Almond Board of California, ABC *Almond Quality & Food Safety Committee Meeting*. Modesto, CA.
- 184.**Ruan, R., P. Chen, Q. Xie, P. Peng, S. Liu, B. Zhang, E. Anderson, Y. Cheng, Y. Liu, K. Muthukumarappan.** 2015. Distributed production of DME based fuels using microwave technology and direct catalytic synthesis. *2015 North Central Regional Sun Grant Center Annual Meeting*, Bloomington, MN.
- 185.**Ruan, R., P. Chen, Q. Xie, S. Liu, B. Zhang, P. Peng, E. Anderson, Y. Cheng, Y. Liu, Min Min, Nonso Onuma.** 2015. Development of Novel Fast Pyrolysis and Gasification Processes. *2015 North Central Regional Sun Grant Center Annual Meeting*, Bloomington, MN.
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- 187.**Ruan, R.** 2015. Innovative thermochemical and biological technologies for waste utilization and renewable energy and chemicals production. Taiyuan University of Technology, Shangxi, China.

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189. **Ruan, R.** 2015. Innovative dynamic high pressure nonthermal extraction and pasteurization technology for bioavailability improvement and safety assurance. Emerging Food Technology Workshop, Seoul, South Korea.
190. **Ruan, R.** 2015. Development and application of fast microwave assisted gasification technology for biomass utilization. Sinopec Star Petroleum Co., Ltd. Beijing, China
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192. **Ruan, R.** 2014. Innovative thermochemical and biological technologies for waste utilization and renewable energy and chemicals production. Shandong University, Jinan, China.
193. **Ruan, R.** 2014. Solid, liquid, and gas waste utilization and control technologies. Nantong Qingbo Environmental Science and Technology Company, Nantong, China.
194. **Ruan, R.** 2014. Innovative Technologies for Solid Waste Utilization and Renewable Energy and Chemicals Production. A plenary speech at the *International Workshop on Bioenergy and Environment*. Tianjin University, Tianjin, China.
195. **Ruan, R.** 2014. Innovative Production and Waste Utilization Systems for Healthy Ecosystem and Sustainable Economic Development. International Ecoenvironment and Resource Recycling Forum, 14<sup>th</sup> Annual Conference of Fujian Association of Science and Technology. Fuzhou, China.
196. **Ruan, R.** 2014. Innovative Technologies for Waste Utilization and Renewable Energy and Chemicals Production. College of Environmental Science and Engineering and Tianjin Municipal Solid Waste Resources Technology and Engineering Center, NanKai University. Tianjin, China.
197. **Ruan, R.** and P. Chen. 2014. Innovative Waste Utilization Technologies. LCCMR Site Visit. St. Paul and Rosemount, MN.
198. **Ruan, R.** 2014. Innovative Bio-renewable Energy and Chemicals Production Research. MOST International Cooperation Program Planning and Discussion Meeting. Tianjin, China.
199. **Ruan, R.** 2014. Innovative Technologies for Waste Utilization and Renewable Energy and Chemicals Production. Tianjin Bohai PetroChem Company. Tianjin, China.



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201. **Ruan, R.** 2014. Improving and Maintaining Bioavailability of Phytochemicals and Solublized Fibers in Plant Materials. 16<sup>th</sup> Annual Meeting of China Association for Science and Technology. Kunming, China.
202. **Ruan, R.** 2014. Renewable energy and biobased economy research and development. Minnesota Bipartisan Issues Group, Minneapolis, MN.
203. **Ruan, R.** 2014. fMAP and fMAG for brewery byproducts utilization. Luzhou Laojiao Liquor Company, Sichuan, China.
204. **Ruan, R.** 2014. Fast microwave pyrolysis and gasification technology for solid waste utilization. Fujian Institute of Research on the Structure of Matter, CAS, Fuzhou, China
205. **Ruan, R.** 2014. Innovative distributed technologies for renewable energy production. 11<sup>th</sup> Tactical Power Sources Submit. Washington, DC.
206. **Ruan, R.** 2014. Improving bioavailability of phytochemicals and solublized fibers in plant materials. Seminar at Yunnan Minzu University. Kunming, China.
207. **Ruan, R.** 2013. Microwave Assisted Conversion and Algae for Biofuels and Biochemicals Production and Wastewater Treatment. Seminar at Beijing University of Science and Technology. Beijing, China
208. **Ruan, R.** 2013. Algae for Biofuels and Biochemicals Production and Wastewater Treatment. International Conference on Beneficial Uses of Algal Biomass. Hong Kong
209. **Ruan, R.** Q. Xie, X. Ma, Y. Li, Y. Cheng, Y. Nie, M. Mohr, R. Griffith, Y. Liu, Y. Wan, R. Zhu, Y. Wang, X. Lin, P. Peng, M. Min, W. Zhou, Q. Wang, J. Shi, Y. Sun, Y. Jiang, Z. Fu, P. Chen. 2013. Microwave Assisted Fast Catalytic Pyrolysis and Gasification of Solid Wastes. TAPPI 2013 International Bioenergy and Bioproducts Conference, Green Bay, WI.
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211. **Ruan, R.** 2013. Innovative Waste Utilization Technologies for Renewable Energy Production and Waste Treatment. Biomass Energy Engineering Research Centre Seminar, Shanghai Jiao Tong University, Shanghai, China

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216. **Ruan, R.** 2013. Innovative Technologies for Sustainable Energy, Environment, and Economy. *Bioproducts and Biosystems Engineering Departmental Seminar Series*. St. Paul, MN.
217. **Ruan, R.** 2013. Catalytic Microwave Assisted Fast Thermochemical Conversion of Biomass and Solid Wastes for Energy Production. Tactical Power Source Submit. Washington, DC.
218. **Ruan, R.** 2012. Catalytic Microwave Assisted Fast Thermochemical Conversion and Wastewater Algae Production. Fushun Research Institute of Petroleum and Petrochemicals (FRIPP), SINOPEC. Fushun, Liaoning.
219. **Ruan, R.** 2012. Catalytic Microwave Assisted Fast Thermochemical Conversion of Biomass for Biofuels Production. Ninth National Microwave Chemistry and Sample Preparation Conference. Kunming, Yunan.
220. **Ruan, R.** 2012. Catalytic Microwave Assisted Fast Thermochemical Conversion and Wastewater Algae Production. Qingdao Institute of Bioenergy and Bioprocess Technology (QIBEBT), Chinese Academy of Sciences (CAS). Qingdao, Shandong.
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- 224.**Ruan, R.** 2012. Producing Bio-oil and Chemicals through In-situ Microwave Assisted Catalytic Pyrolysis. Southease Biofuels and Renewable Energy Conference. Jackson, MS.
- 225.**Ruan, R.** 2012. Trends in Thermochemical Conversion of Biomass. S-1041 Bioeconomy Symposium. Washington, DC.
- 226.**Ruan, R.** 2012. Catalytic microwave-assisted pyrolysis of biomass for distributed biofuels and chemicals production. *National Science Foundatoin Workshop on Lignocellulosic Biofuels using Thermochemical Converson.* Auburn, AL.
- 227.**Ruan, R.** 2012. Innovative waste treatment and renewable energy production. Elite forum of China Environmental Protection. Fuzhou, China.
- 228.**Ruan, R.** 2012. Coupling wastewater treatment and biofuel production. Chinese Academy of Agricultural Mechanization Science. Beijing, China.
- 229.**Ruan, R.,** P. Chen., L. Schmidt, D. Kittelson, D. Tiffany, D. Raynie, W. Gibbons, K. Muthukumarappan. 2012. Develop Sustainable Renewable Energy Systems for Practical Utilization of Bulky Biomass. Sun Grant Annual Meeting. Indianapolis, IN.
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- 231.**Ruan, R.,** P. Chen, W. Zhou, M. Min, Y. Li, B. Hu, M. Mohr, Y. Cheng, X. Ma, L. Li, Y. Zhao, B. Wang, Z. Du, Y. Li, A. Shi, H. Lei, S. Deng, Y. Wan, Y. Liu, X. Lin, B. Martinez. 2011. Mass Culture of Mixotrophic Algae for Biofuels Production and Wastewater Treatment in Northern Climates. Algae Biomass Submit. Minneapolis, MN.
- 232.**Ruan, R.** 2011. Biofuels Research Renewable Energy and Bio-based Products Innovation. Univeristy Health and Safety Retreat. Minneapolis, MN.
- 233.**Ruan, R.,** P. Chen, K. Petrofsky, I. Zhang, M. Guo, Y. Li, A. Shi, and A. Hohn. 2011. Improving the Functionality and Bioactivity in Wheat Bran – An Overview. AACCI Workshop, Palm Springs, CA.
- 234.**Ruan, R.** 2011. Distributed ammonia production using catalytic non-thermal plasma assisted synthesis technology. Minnesota Department of Commerce Commissioner Michael Rothman’s visit. Minneapolis, MN.

235. **Ruan, R.** 2011. Innovative Wastewater Treatment and Algal Biomass Production and Conversion Systems. Minnesota Water Technology Export Roundtable. Organized by Minnesota Department of employment and Economic Development, Minnesota Trade Office. St. Paul, MN.
236. **Ruan, R.** 2011. Innovative Wastewater Biomass Production and Conversion Systems. Seminar on Application and Industrialization of Municipal Water Treatment Equipment and Technology. The Six International Conference on China Urban Water Development and Expo of New Technologies and Facilities. Jinan, Shangdong, China.
237. **Ruan, R.,** P. Chen, W. Zhou, M. Min, Q. Chen, Y. Li, B. Hu, Y. Cheng, X. Ma, L. Li, Y. Zhao, H. Lei, Z. Du, S. Deng, Y. Wan, Y. Liu, X. Lin, B. Martinez, R. Polta and A. Sealock. 2011. Mass Culture of Algae for Biofuel Production and Wastewater Treatment. Section 8: Industrial Biotechnology. BioEco 2011. Tianjin, China.
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240. **Ruan, R.,** W. Zhou, M. Min, Y. Li, B. Hu, M. Mohr, Y. Chen, X. Ma, L. Li, Y. Liu, Y. Wan, X. Lin, B. Martinez, P. Chen. 2011. Local Bioprospecting for High lipid Producing Microalgal Strains to be Grown in Concentrated Municipal Wastewater for Biofuel Production. 4<sup>th</sup> Congress of the International Society for Applied Phycology, Halifax, NS, Canada.
241. **Ruan, R.** 2011. Distributed biomass production, conversion and utilization. 2011 International Conference on Agricultural Engineering New Technology & Taishan Forum. Zibo, China.
242. **Ruan, R.** 2011. Distributed energy crop production and conversion. IDGA's 9<sup>th</sup> Tactical Power Sources Summit - Alternative Fuels focus Day. Washington, DC.
243. **Ruan, R.** 2011. Mass culture of algae from wastewater for energy production and wastewater treatment. 28<sup>th</sup> Annual Conference on Innovative approaches to wastewater operational problems. St. Cloud, MN.
244. **Ruan, R.** 2010. Biomass Energy Technology Options. Biomass Energy: Where are we now? Workshop, Maplewood, MN.

245. **Ruan, R.** 2010. Algae from Wastewater as an Energy Crop, Moderator for the Wastewater Treatment Operators' Perspective on their Role in the Value Chain panel at the Algae World Submit 2010. San Diego, CA.
246. **Ruan, R.,** P. Chen, X. Wang, Y. Wan, Y. Cheng, X. Lin, and Y. Liu. 2010. Microwave Gasification and Pyrolysis of solid wastes. Exploring Waste-to-energy Technologies. Half Moon Seminars, Bloomington, MN.
247. **Ruan, R.** 2010. Alternatives in food Processing. *Hot Topics and Opportunities: Academic & Industry Perspectives* Presenter and Panelists, Food Industry Networking Social by CFANES. St. Paul, MN.
248. **Ruan, R.** 2010. Distributed Biomass Production and Conversions. Rosemount Research and Outreach Center at UMore Park Advisory Committee Meeting. Rosemount, MN.
249. **Ruan, R.** 2010. Mass culture of algae as an energy crop for biofuel production. China Agricultural University. Beijing, China.
250. **Ruan, R.** 2010. Distributed biomass production and thermochemical conversion technologies. Fuzhou University, Fujian, China.
251. **Ruan, R.** and Y. Cheng. 2009. Distributed biomass production and catalytic thermochemical conversion technologies. Guangdong Department of Economic Development. Guangzhou, China.
252. **Ruan, R.** and Y. Cheng. 2009. Mass culture of algae as an energy crop for biofuel production. Beijing University of Science and Technology. Beijing, China.
253. Shihau Own and **R. Ruan**, 2009. Biofuels production from nonedible biooils. Advanced Propulsion Mid Year Review. Office of Naval Research (ONR), Washington, DC.
254. **Ruan, R.** 2009. Catalytic reforming of biooil for fuel production. UMN Extension Service and IREE Biorenewable Conference, St. Paul, MN.
255. **Ruan, R.** and P. Chen. 2009. Biomass pyrolysis technology research and development. Growing the Bioeconomy: Solutions for Sustainability. Fargo, ND.
256. **Ruan, R.** 2009. Mass culture of algae as an energy crop for biofuel production in Jamaica. Jamaica Energy Independence Forum. Kingston, Jamaica.
257. **Ruan, R.,** 2009. Mass culture of alge as an energy crop for biofuel production. The 9<sup>th</sup> BioCycle Annual Conference: Renewable Energy From Organics Recycling. Bloomington, MN.
258. **Ruan, R.** 2009. Distributed biomass production and conversion technologies. Key Note Presentation of the First South America Bioenergy Conference. Guayaquil, Ecuador.

259. **Ruan, R.**, 2009. Mass Production of algae as an energy crop for biofuel production. Midwest Algae Commercialization Workshop. Minneapolis, MN.
260. **Ruan, R.** 2009. Mass Production of algae as an energy crop for biofuel production and wastewater treatment. Metro Council Environmental Service, St. Paul, MN.
261. **Ruan, R.** 2009. Thermochemical biomass conversion for energy, biofuel, and chemical production. BioEco 2009, Tianjin, China.
262. **Ruan, R.** 2009. NMR development and Applications in foods and biopolymers. First Low Field NMR Technology and Application conference, Hanzhou, China.
263. **Ruan, R.** 2009. MRI development and Applications in foods and biopolymers. First Low Field NMR Technology and Application conference, Hanzhou, China.
264. **Ruan, R.** 2009. Mass culture of algae from wastewater for biofuels production. 47<sup>th</sup> Annual Rural Energy Conference. Bloomington, MN.
265. **Ruan, R.** 2009. Distributed biomass production and conversion technology development. Applied Plant Science Seminar Series, University of Minnesota, St. Paul, MN.
266. **Ruan, R.** 2009. Biomass to Energy and other Bio-based Products. 5<sup>th</sup> annual Third Crop Producer Meeting, Fairmont, MN.
267. **Ruan, R.** 2008. Mass culture of algae as an energy crop for biofuel production. EcoWatch's Forum. November 25, 2008. Minneapolis, MN.
268. **Ruan, R.** 2008. SBIR and innovative distributed biomass production and conversion system. The Fifth Oversea Chinese Forum Worldwide. Beijing, China.
269. **Ruan, R.** 2008. Production of algae from wastewater. UMN IREE Algae Submit. Minneapolis, MN.
270. **Ruan, R.** 2008. Wastewater for algae production as an energy crop. Hennepin County Environmental Science. August, 2008. Minneapolis, MN.
271. **Ruan, R.** 2008. Production of algae as an energy crop from wastewater. Faculty in the Media for Student Welcome Week. St. Paul, MN.
272. **Ruan, R.** 2008. Magnetic resonance imaging of foods. *Symposium on Water in foods*. IFT Annual Meeting, New Orleans, LA.
273. **Ruan, R.** 2008. High pressure homonization and enzyme treatment of bran. *Symposium on Designing and delivering whole grains with enhanced health attributes*. IFT Annual Meeting, New Orleans, LA.

- 274.**Ruan, R.** 2008. Dielectric barrier discharge eliminates *E. coli* on almonds. *Symposium on cold plasma: an emerging technology for food processing*. IFT Annual Meeting, New Orleans, LA.
- 275.**Ruan, R.** 2008. Distributed biomass production and conversion system. BIO 2008 International Convention, State of Minnesota Exhibition, San Diego, CA.
- 276.**Ruan, R.** 2008. Concentrated high intensity electric field (CHIEF) technology for milk processing. Dairy Center Annual Meeting, St. Paul, MN.
- 277.**Ruan, R.** 2008. Mobile microwave assisted biomass pyrolysis and wastewater for algae production. LCCMR Meeting, Waseca, MN.
- 278.**Ruan, R.** and L. Zhang, 2008. High oil corn refining. IOE Seminar Series. May 7<sup>th</sup>, 2008, St. Paul, MN.
- 279.**Ruan, R.** Thermochemical conversion of biomass for biofuels production. 3<sup>rd</sup> Crop Producer Meeting. February 25<sup>th</sup>, 2008. Fairmont, MN.
- 280.**Ruan, R.**, 2008. Small distributed biofuels production systems. BBI International Biomass Conference & Trade Show, Minneapolis, MN.
- 281.**Ruan, R.** 2008. Magnetic resonance imaging of foods. State Key Laboratory of Food Science annual meeting. Wuxi, China.
- 282.**Ruan, R.** 2008. Algae for a Better Environment and Energy Security. MN State Legislature joint senate and house budget committee hearing. St. Paul, MN.
- 283.**Ruan, R.** 2008. Distributed Energy with Pyrolysis & Gasification. 3<sup>rd</sup> Crop Producer Meetings. Fairmont, MN.
- 284.**Ruan, R.** 2007. Overview of biorefining research. The 22<sup>nd</sup> Annual Conference on the Environment – Addressing Current Environment Issues. Brooklyn Center, MN.
- 285.**Ruan, R.** 2007. Develop sustainable renewable energy systems for practical utilization of bulky biomass. North Center Regional Sun Grant Meeting. Ames, IA.
- 286.**Ruan, R.** 2007. Opportunities in biorefining. 2007 Biobased Industry Outlook Conference, Thermochemical Processing. Ames, IA.
- 287.**Ruan, R.** 2007. Progress in food engineering research. USDA NC-1023 Annual Meeting. State College, PA.
- 288.**Ruan, R.** 2007. Energy for green environment and healthy life. BBE Information Exchange Seminar Series, St. Paul, MN.

289. **Ruan, R.** 2007. Progress in biomass thermochemical conversion. USDA S-1007 Annual Meeting. Perioa, IL.
290. **Ruan, R.** 2007. Challenges and opportunities in thermochemical conversion of biomass. Solution Driven Symposium Series – Biofuel Symposium. St. Paul, MN.
291. **Ruan, R.** and P. Chen. 2007. Magnetic resonance imaging of foods. *Structural and Chemical Imaging Techniques in Cereal Science: Beyond Conventional Microscopy Symposium*. AACC International Annal Meeting, San Antonio, TX.
292. **Ruan, R.** 2007. Renewable energy technology development. Australia Department of Transport and Regional Services Sactreary Michael Taylor’s Minnisota renewalbe energy visit meeting. St. Paul, MN.
293. Petter Heyerdahl and Geoffrey Gilpin, **Roger Ruan**, Paul Chen, Fei Yu, Kevin Hennessy, Yuanhua Wang, Jianping Wu, Alf Tunheim. 2007. Distributed biomass conversion. Biotechnology and Bioenergy Workshop. St. Paul, MN.
294. **Ruan, R.** 2007. New techniques in biomass pyrolysis. Renewable Energy Forum. St. Paul, MN.
295. **Ruan, R.** 2006. Renewable energy research and development. Renewable Energy Conference. The Great Hall of the People, Beijing, China.
296. **R. Ruan**, X. Lin, J. Zhang, Y. Li, P. Chen. 2006. Applications of NMR/MRI in the study of food polymers and processes. Plant Polysaccharide Workshop 2006: Plant Carbohydrates in Foods and Fuel. Winnipeg, Manitoba, Canada.
297. **Ruan, R.** 2006. Hydrothermal treatment and microwave assisted pyrolysis for biofuel production from biomass. USDA S1007 Subommittee on the Science and Technology of the Biobased Economy Annual Meeting. St. Paul, MN.
298. **Ruan, R.** 2006. Conversion of biomass into biofuels. Norwegian Biofuels North Americ Study Tours. St. Paul, MN.
299. Heyerdehl, P. and **R. Ruan**. 2006. Hydrothermal treatment and microwave assisted pyrolysis of biomass for bio-fuel production. Joint Norwegian and University of Minnesota Research Conference. Aas, Norway.
300. **Ruan, R.** 2006. Development and application of non-thermal plasma (NTP) technology for liquid pasteurization. MN-SD Dairy Center Annual Meeting. St. Paul, MN.
301. **Ruan, R.** 2006. Alternative technologies for converting biomass into bio-oil. International Conference on Bioethanol and the Road to Sustainable Transport, Tsinghua University, Beijing, China.



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303. **Ruan, R.** 2006. Development of nonthermal plasma technology. AICHE Minnesota Section Spring Meeting, St. Paul, MN.
304. **Ruan, R.** 2006. Novel Technologies for converting biomass into bio-oil and biopolymers. 5<sup>th</sup> Degussa's R&D Conference "Exploring Biorenewable Materials". St. Paul, MN.
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306. **Ruan R.,** S. Deng, P. Chen, X. Lin, H. Lei, and L. Metzger. 2006. Non-Thermal Plasma (NTP) Processes for Food Preservation. *ACS symposium on nonthermal processin*, ACS Annual Meeting, Atlanta, GA.
307. **Ruan, R.** 2006. NMR/MRI applications in the study of food polymer properties and processes. The Solae Company, St. Louis, MO.
308. **Ruan, R.** 2006. Applications of NMR/MRI in the Study of Biopolymer Properties and Processes. Biomedical Imaging Seminar. Department of Biomedical Engineering. Minneapolis, MN.
309. **Ruan, R.** 2005. NMR/MRI applications in high proten snack bar research. The Solae Company, St. Louis, MO.
310. **Ruan, R.** 2005. Biorefining approach for renewable energy production. IREE 2005 Research Symposium. Minneapolis, MN.
311. **Ruan, R.** 2005. Biorefining approach for biomass utilization. Department of Thermal Energy seminar, Thinghua University. Beijing, China.
312. **Ruan, R.** 2005. Renewable energy research and development. Workshop by Graudate University of Chinese Academy of Sciences and University of Monnesota. Beijing, China
313. **Ruan, R.,** 2005. NMR applications in dry bean storage study. Bush Brothers and Company, Knoxville, TN.
314. **Ruan, R.** and P. Heyerdahl. 2005. On Farm Biomass Energy Conversion Technlogy Development. The Norwegian Research & Technology Forum in the U.S./Canada and University of Minnesota: The Environmental Impact of Agriculture and Energy Use: Genomics and biomass/bioenergy, Minneapolis, MN.

315. **Ruan, R.**, 2005. Pressure liquefaction and microwave pyrolysis of biomass into bio-crude oils. USDA S1007 The Science and Engineering for the Biobased Industry and Economy Committee Meeting. Knoxville, TN.
316. **Ruan, R.** and P. Chen. 2005. Applications of NMR and MRI in the study of biopolymers. AIChE Annual Symposium, Bloomington, MN.
317. **Ruan, R.** 2005. Biorefinery technologies overview. Minnesota Corn Growers Association Expanded Uses Focus Team Meeting. Minneapolis, MN.
318. **Ruan, R.** 2004. An overview of biomass conversion technology for fuel and materials. Agricultural and Forestry Biomass Engineering Symposium. Beijing, China.
319. **Ruan, R.**, X. Lin, R. Zhu, P. Chen, J. Qi. 2004. An overview of NMR and MRI applications in cereal foods. ICC/AACC/3<sup>rd</sup> Food Science International Symposium. Tianjing, China.
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321. **Ruan, R.**, 2004. Atmospheric pressure liquefaction of biomass into bio-crude oils. USDA S1007 The Science and Engineering for the Biobased Industry and Economy Committee Meeting. Denver, CO.
322. **Ruan, R.** 2004. NMR application in dry bean longitudinal storage study. Bush Brothers and Company's Research Council Meeting. September, 2004. Knoxville, TN.
323. **Ruan, R.** 2004. Evaluation of emerging non-thermal processes for almond pasteurization. Almond Board of California's Research Council Meeting. September, 2004. Modesto, CA.
324. **Ruan, R.**, P. Heyerdahl, E. Fjermestad Hagen, L. Schmidt. 2004. Combined Biomass Refining Scheme for Conversion of Biomass into Bioenergy and Bioproducts. The Environmental Impact of Agriculture and Energy Use: How new technologies, including biotechnology, can provide sustainable solutions, Staur Gjestegard, Stange, Norway.
325. **Ruan, R.**, P. Chen, S. Deng, X. Lin. 2004. Non-Thermal Plasma (NTP) Technology for Food Processing. IFT Symposium: *Inactivating pathogens, parasites, and viruses using high pressure and other emerging nonthermal technologies*, Las Vegas, NV.
326. **Ruan, R.** 2004. Biorefining – Minnesota Perspective. Biorefining Videoconference (two countries, USA and Canada, five States, eight sites). St. Paul, MN.
327. **Ruan, R.** 2004. Bioconversion and biorefining technologies. China Agricultural University. Beijing, China.

328. **Ruan, R.** 2004. Value-added processing technologies. Nanchang University. Nanchang, Jiangxi, China.
329. **Ruan, R.** 2004. Thermochemical conversion of biomass into energy fuels and bioproducts. Hawaii Natural Energy Institute (HNEI) and the Department of Molecular Bioscience and Bioengineering (MBBE), University of Hawaii at Honolulu, Oahu, HI.
330. **Ruan, R.** 2004. DOD biomass liquefaction technology development and application in sugarcane waste conversion. Hawaiian Commercial and Sugar Company, Maui, HI.
331. **Ruan, R.** 2004. IREE Bioproenergy and Bioproducts Cluster. Department of Applied Economics and IREE Policy cluster. St. Paul, MN.
332. **Ruan, R.** 2004. Overview of biorefining technologies. Department of Chemical Engineering and Material Science Senior Design Seminar. University of Minnesota. Minneapolis, MN.
333. **Ruan, R.** 2003. Supporting Minnesota's bioenergy and bioproducts industries. Wood and Paper Science Department Seminar. St. Paul, MN.
334. **Ruan, R.** 2003. IREE Bioenergy and Bioproducts. BAE Department Seminar. St. Paul, MN.
335. **Ruan, R.** 2003. Vision for Bioprocessing and Food Engineering. BAE Vision Presentation Series. St. Paul, MN.
336. **Ruan, R.** 2003. Bioenergy and Bioproducts. Bioindustrial Development Coalition Meeting. St. Paul, MN.
337. **Ruan, R.** 2003. Center for Biorefining: Heading into a bioeconomy era. COAFES Leadership Council Meeting. St. Paul, MN.
338. **Ruan, R.** 2003. NMR/MRI development and applications in foods. Cargill Research Center, Wayzata, MN.
339. **Ruan, R.** 2003. Biomass research and development progress. USDA S1007 Committee on The Science and Engineering for the Biobased Industry and Economy. Washington, DC.
340. **Ruan, R.** 2003. Biobased industrial products. Renewable Energy and the Environment Workshop Series - Initiative Introduction and Planning Workshop. Minneapolis, MN.
341. **Ruan, R.** 2003. Utilization of lignocellulosic materials - Progress and future work. Empowering the Countryside with Renewable Energy II, 2003 Renewable Energy and Biorefining Workshop. Biorefining: Products, Processes, and Potential. Morris, MN.
342. **Ruan, R.** 2003. Recent NMR/MRI development and applications in foods. General Mills Technology Center, Minneapolis, MN.

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344. **Ruan, R.** 2002. Nonthermal plasma technology for liquid nonthermal pasteurization. Sota Tec Fund, Inc. Roseville, MN.
345. **Ruan, R.** 2002. Emerging non-thermal processes for food preservation. International Symposium on Food Safety and Food Trade Rules. Nanchang, China.
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348. **Ruan, R.** 2002. Biorefinery and the future of agricultural engineering. Forum on Agricultural and Biosystems Engineering Development Strategy. Yangling, China.
349. **Ruan, R.** 2002. NIR, computer vision and neural network techniques for scab inspection. 2<sup>nd</sup> International Conference on Grain, Flour and Bread Quality, Moscow, Russia.
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351. **Ruan, R.** 2002. Development of nonthermal plasma technology for nonthermal pasteurization of liquid foods. University of Minnesota COAFES Technology Workshop for the Investment Committee, Minneapolis, MN.
352. **Ruan, R.** 2002. Conversion of biomass into biofuels and biomaterials. Spring Minnesota Section of ASABE Meeting. St. Paul, MN.
353. **Ruan, R.** 2001. Non-thermal plasma and ozone technologies for the food industry. National Food Processors Association Annual Meeting. Washington, DC.
354. **Ruan, R.** 2001. Overview of biomass conversion technologies. Fuzhou University, Fuzhou, China.
355. **Ruan, R.** 2001. Advanced electro-technology and bioconversion technology for bioprocessing and environmental engineering. Nanchang University, Nanchang, China.
356. **Ruan, R.** 2001. Biomass utilization: conversion of biomass into biofuels and biomaterials. International Conference on Agricultural Science & Technology. Beijing, China.
357. **Ruan, R.** 2001. Nonthermal plasma and ozone technology and applications. Ecolab, St. Paul, MN.

358. **Ruan, R.** 2001. Application of Near Infrared, Machine Vision, and Neural Networks in Scab Research. Second International Wheat Quality Conference, Manhattan, KS.
359. Peterson C. and **R. Ruan.** 2001. Non-thermal Plasma Technologies for the Food Industry. Non-thermal Food Processing Workshop, Newark, DE.
360. **Ruan, R.** 2000. Cold processes are just getting hotter. Land O'Lakes, Inc. St. Paul, MN.
361. **Ruan, R.** 2000. Ozone technology for wet milling applications. Colorado Sweet Gold, LLC. Johnstown, CO.
362. **Ruan, R.** and P. Chen. 2000. Nonthermal plasma and ozone technology for the food industry. *Novel non-thermal approaches to process foods symposium*, IFT Annual Meeting, Dallas, TX.
363. Montenegro, J. and **R. Ruan.** 2000. Development of a pulsed non-thermal plasma system for treatment of liquid food products. EPRI/NSP Electrotechnology Update – Pillsbury, Minneapolis, MN.
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366. **Ruan, R.** 2000. Mobility of water molecules in gummy bears. General Mills, St. Paul, MN.
367. **Ruan, R.** 2000. Development of a rapid computer vision and neural network system for scabby wheat estimation. Scab Research Forum, University of Minnesota, St. Paul, MN.
368. **Ruan, R.** 1999. Nonthermal plasma systems for odor control. Second International Science and Technology Convention, Guangzhou, China.
369. **Ruan, R.** and P. Chen. 1999. Ozone for food processing. Second International Science and Technology Convention, Guangzhou, China.
370. **Ruan, R.** 1999. Advanced electro-technology application in food and environmental engineering. China Agricultural University, Beijing, China
371. **Ruan, R.** 1999. Management of water in foods and biological materials. Chinese Academy of Agricultural Science, Beijing, China.
372. **Ruan, R.** 1999. Ozone application in food safety control. Fuzhou University, Fuzhou, China.

- 373.**Ruan, R.** 1999. Millisecond pasturization technology. Ratheron Corp, Philadelphia, PA.
- 374.**Ruan, R.** 1999. Ozone application in ready-to-eat meat processing. Lloyd's Barbeque Company, St. Paul, MN.
- 375.**Ruan, R.** 1999. MRI and NMR study of popcorn moisture and water mobility distributions. General Mills James Ford Technology Center, Golden Valley, MN.
- 376.**Ruan, R.** 1998. Study of water solid interaction in dough using NMR. The Pillsbury Technology Center, Minneapolis, MN.
- 377.**Ruan, R.** 1998. Interactions of carbohydrate, fats and their replacers in confectionery products – A polymer science and NMR approach. NCA Annual Research Meeting, Washington, DC.
- 378.**Ruan, R.** 1998. Odor control using nonthermal plasma. Current Technology in Odor Control, Allen D. Lemman Swine Conference, Brooklyn Park, MN.
- 379.**Ruan, R.** 1998. New Electrotechnologies for food industrial applications. EPRI food Technology Center, St. Paul, MN.
- 380.**Ruan, R.** 1998. New NMR and MRI technologies for food research. US Army Natick Research Development and Engineering Center, Natick, MA.
- 381.**Ruan, R.** 1998. Non-thermal application in odor control. UIE/EPRI's International Conference on Creating Customer Business Opportunities Through International Collaboration on Industrial Electrotechnologies, Orlando, FL.
- 382.**Ruan, R.** 1997. NMR and MRI study of water and pore size distribution in dough. Pillsbury Technology Center, Minneapolis, MN.
- 383.**Ruan, R.** 1997. Moisture control during soybean dehulling process. Oil Milling, Buhler Inc., Minneapolis, MN.
- 384.**Ruan, R.** 1997. Non-destructive analysis and monitoring of biological materials and processes using NMR and MRI. Institute of Biological Engineering (IBE) Annual Meeting (keynote presentation), Minneapolis, MN.
- 385.**Ruan, R.** 1997. Imaging solution to problems in agricultural and food industries. 1997 National Imaging Technology Conference, Rochester, MN.
- 386.**Ruan, R.** 1997. An Innovative non-thermal plasma technique for odor control. EPRI Food Technology Center Technical Advisory Council Meeting, Orlando, FL.
- 387.**Ruan, R.** 1997. MRI temperature mapping of foods undergoing ohmic heating. EPRI Food Technology Center Technical Advisory Council Meeting, Orlando, FL.

- 388.**Ruan, R.** 1997. Application of ozone technology in wastewater treatment in food processing industry. EPRI Food Technology Center Technical Advisory Council Meeting, Orlando, FL.
- 389.Labuza, T. and **R. Ruan.** 1997. A Comparison of various rheological methods for measuring the state diagram (T<sub>g</sub> vs moisture) of solid & powdered foods. IFT-IUFoST Basic Symposium: Phase/State Transitions in Food: Chemical, Structural, and Rheological Changes, Orlando, FL.
- 390.**Ruan, R.** 1997. Discussion on highly-refined cellulose processing and applications. Columbus Potato Processing Company, Columbus, OH.
- 391.**Ruan, R.** 1997. Discussion on pulse electric power principles, instrumentation, and applications. Pulsed Electric Field International Workshop, San Diego, CA.
- 392.**Ruan, R.** 1996. Water activity, glass transition, and water mobility. Symposium on phase transitions: effect on textural properties of cereal foods. 81st AACC Annual Meeting, Baltimore, MD.
- 393.**Ruan, R.** 1996. Waster water and odor treatment using pulsed electric power. EPRI-NSP Food Process Wastewater Treatment Workshop, Shakopee, MN.
- 394.**Ruan, R.** 1996. Making HRC as a filter aid. Carlson Filtration, Ltd, Manchester, England.
- 395.**Ruan, R.** 1995. New technology development in food engineering. Pillsbury International R&D, Minneapolis, MN.
- 396.**Ruan, R.** 1995. Utilization of agricultural fibrous residues and application of neural networks. Department of Biosystems and Agricultural Engineering, University of Minnesota, St. Paul, MN.
- 397.**Ruan, R.** 1995. Microfibrillated cellulose - A potential food ingredient. Hormel R&D Center, Hormel Corp., Austin, MN.
- 398.**Ruan, R.** 1995. NMR and water binding. Department of Food Science and Nutrition - Food Physical Chemistry, University of Minnesota, St. Paul, MN.
- 399.**Ruan, R.** 1995. Basic principles of neural network and its applications in biological and food systems. Department of Chemical Engineering and Material Science, University of Minnesota, Minneapolis, MN.
- 400.**Ruan, R.** 1994. Development and application of MRI in biological, agricultural and food systems. Department of Soil Science Seminar, University of Minnesota.

401. **Ruan, R.** 1994. Introduction to neural network applications in food processing and control. Pillsbury Technology Center, Minneapolis, MN.
402. **Ruan, R.** 1993. Development and application of MRI and low field NMR in the study of structural and functional relationships in foods. Symposium on Food Microstructure: From Molecular to Macroscopic. 78th AACC Annual Meeting, Miami Beach, FL.
403. **Ruan, R.** 1993. Challenges of applying MRI in the study of food and agricultural systems. Food Preservation 2000 Conference, Natick, MA.
404. **Ruan, R.** 1992. Development and applications of MRI in the study of the structure-function relationships in foods. Department of Food Science and Nutrition Seminar, University of Minnesota, St. Paul, MN.
405. **Ruan, R.** 1992. Basic principle of NMR and MRI and their applications in the study of food systems. Pillsbury Technology Center, Minneapolis, MN.

#### **Invited Conference Contributions and Proceedings Publication (not updated)**

1. **Ruan, R.**, L. Chen, and X. Lin. 2008. SBIR and innovative distributed biomass production and conversion system. In the *Proceeding of The Fifth Oversea Chinese Forum Worldwide*. Beijing, China.
2. **Ruan, R.**, L. Metzger, P. Chen, and S. Deng. 2008. Nonthermal pasteurization of milk using plasma technology. In *Midwest Dairy Foods Research Center 208 Annual Report*. Page 115-121.
3. Liu, Y., A. Luo, C. Li, L. Gao, J. Luo, Y. Wan, **R. Ruan**, C. Liu. 2007. Polyurethane foams from combined liquefaction mixtures of bamboo residues and corn starch. In *The Proceeding of the Second National Symposium on Resources Biotech and Carbohydrate Engineering*, Weihai, China, Page 279-286.
4. Li, C., Y. Liu, A. Luo, L. Gao, J. Luo, Y. Wan, **R. Ruan**, C. Liu. 2007. Preparation of biodiesel from waste cooking oil by novel two-step catalytic process. In *Proceedings of International Symposium on Clean Energy Technology*.
5. Luo, A., Y. Liu, Y. Wan, L. Gao, J. Luo, **R. Ruan**, C. Liu. 2007. Experimental study on the microwave pyrolysis of bamboo residues. In *The proceeding of the Second National Symposium on Resources Biotech and Carbohydrate Engineering*, Weihai, China, Page 267-274.
6. Li, C., Y. Liu, A. Luo, L. Gao, J. Luo, Y. Wan, **R. Ruan**. 2007. Preparation of biodiesel from waste restaurant oil by novel two-step catalytic process. In *The proceeding of the Second National Symposium on Resources Biotech and Carbohydrate Engineering*, Weihai, China, Page:261~266.



7. Luo, A., Y. Liu, Y. Wan, C. Li, **R. Ruan**, L. Gao, J. Luo. 2007. Study on the products from microwave pyrolysis of bamboo residues. 2007. In *International Symposium on Clean Energy Technology in conjunction with The 3rd International Symposium on Bioenergy and Bioprocess Engineering*, Shanghai, China.
8. Gao, L., Y. Liu, A. Luo, J. Luo, Y. Wan, **R. Ruan**, C. Liu. 2007. Production of dimethyl ether by indirect liquefaction of lignocellulose. In *The Proceeding of the Second National Symposium on Resources Biotech and Carbohydrate Engineering*, Weihai, China, Page 287-292.
9. Luo, J., Y. Liu, L. Gao, A. Luo, Y. Wan, **R. Ruan**, C. Liu. 2007. The relationship between the biomass compositions and the growth of edible mushroom: A review. In *The proceeding of the Second National Symposium on Resources Biotech and Carbohydrate Engineering*, Weihai, China, 24-129.
10. **Ruan, R.**, L. Metzger, P. Chen, and S. Deng. 2006. Nonthermal plasma pasteurization of milk using plasma technology. *Midwest Dairy Foods Research Center 2006 Annual Report* 92-98.
11. **Ruan, R.**, F. Yu, Y. Liu, X. Lin, S. Bai, P. Chen, X. Pan. 2005. Liquefaction of corn stover and preparation of polyester from its liquefied polyol. In *Proceeding of the Second China International Renewable Energy Equipment & Technology Exhibition and Conference*, Beijing, China.
12. Gao, Y., W. Chen, X. Lin, **R. Ruan**, C. Chen. 2005. Making biodiesel from Chinese tallow kernel oil with nano magnetic catalyst. In *Proceeding of the Second China International Renewable Energy Equipment & Technology Exhibition and Conference*, Beijing, China.
13. Chen, W., Y. Gao, X. Lin, H. Xie, and **R. Ruan**. 2005. Making biodiesel from waste restaurant grease. In *Proceeding of the Second China International Renewable Energy Equipment & Technology Exhibition and Conference*, Beijing, China.
14. Yu, F., **R. Ruan**, X. Lin, Y. Liu, D. Zhen, P. Chen, E. Hare. 2005. Reaction kinetics of stover liquefaction in recycled stover polyol. In *Proceeding of the Second China International Renewable Energy Equipment & Technology Exhibition and Conference*, Beijing, China.
15. Bai, S., **R. Ruan**, X. Lin, Y. Liu, Y. Gao. 2005. Effect of properties of waste oils and fats on the biodiesel process and product quality. In *Proceeding of the Second China International Renewable Energy Equipment & Technology Exhibition and Conference*, Beijing, China.
16. Chen, W., Y. Gao, X. Lin, D. Xia, and **R. Ruan**. 2005. Refining technology for glycerol from byproducts of biodiesel. In *Proceeding of the Second China International Renewable Energy Equipment & Technology Exhibition and Conference*, Beijing, China.

17. Lin, X., **R. Ruan**, Z. Li, H. Xiong, C. Liu, and Y. Liu. 2005. Production of fuel alcohol from lignocellulosic biomass. In *Proceeding of the Second China International Renewable Energy Equipment & Technology Exhibition and Conference*, Beijing, China.
18. Zhen, D., **R. Ruan**, Y. Liu, X. Lin, S. Bai. 2005. Thermo-chemical liquefaction of lignocellulose with catalyst. In *Proceeding of the Second China International Renewable Energy Equipment & Technology Exhibition and Conference*, Beijing, China.
19. Fu, R., F. Yu, Y.H. Li, X. Lin, Y. Liu, Z. Li, P. Chen, **R. Ruan**. 2005. Ethylene glycol phenyl ether as a solvent in biomass liquefaction under atmospheric pressure. In *Proceeding of the Second China International Renewable Energy Equipment & Technology Exhibition and Conference*, Beijing, China.
20. Li, Z., **R. Ruan**, C. Liu, Y. Liu, X. Lin. 2005. Current development and issues on biomass rapid liquefaction. In *Proceeding of the Second China International Renewable Energy Equipment & Technology Exhibition and Conference*, Beijing, China.
21. Liu, Y., **R. Ruan**, D. Zhen, X. Lin, S. Bai. 2005. Sustainable point of view for bio-energy development. In *Proceeding of the Second China International Renewable Energy Equipment & Technology Exhibition and Conference*, Beijing, China.
22. Li, Z., **R. Ruan**, Y. Liu, X. Lin, C. Liu. 2005. Optimization of process parameters for corn stover rapid liquefaction under atmospheric pressure. In *Proceeding of the Second China International Renewable Energy Equipment & Technology Exhibition and Conference*, Beijing, China.
23. **Ruan, R.**, Z. Liu, S. Deng, X. Lin, F. Yu, Y. Li, and P. Chen. 2004. Removal of pesticides residue in produce with ozonated water wash. In *Proceedings of the CIGR International Conference*. Beijing, China.
24. Deng, S., **R. Ruan**, P. Chen, X. Lin, F. Yu, Y. Li. 2004. Non-thermal Plasma Pasteurization for Liquid Foods. In *Proceedings of the CIGR International Conference*. Beijing, China.
25. Yu, F., **R. Ruan**, Y. Liu, P. Chen, X. Lin, S. Deng, E. Hare, R.V. Morey, T. Yang, C. Chen, C. Liu, and Y. Gao. 2004. Preparation of biopolymer from liquefied corn stover. In *Proceedings of the CIGR International Conference*. Beijing, China.
26. **Ruan, R.**, X. Lin, Z. Liu, S. Deng, Y. Li, and P. Chen. 2003. Ozone decomposition of pesticides in produce. In *Proceedings of International Conference of Food Science and Technology*. Wuxi, China.
27. **Ruan, R.**, P. Chen, M. Chung, X. Lin, Y. Liu, C. Liu, Y. Gao, and C. Chen. 2003. NMR state diagram concept. In *Proceedings of International Conference of Food Science and Technology*. Wuxi, China.

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30. **Ruan, R.**, P. Chen, Y. Li, and X. Lin. 2002. NIR, computer vision and neural network techniques for scab inspection. In *Proceeding of Second International Conference on Grain, Flour and Bread Quality*, Moscow, Russia.
31. **Ruan, R.** H. Ma, X. Lin, S. Deng, P. Chen. 2002. Non-thermal Pasteurization of Liquid Foods Using Nonthermal Plasma. In *Proceeding of Forum on Agricultural and Biosystems Engineering Development Strategy*. Yangling, China.
32. Li, R., Y. Li, **R. Ruan**. 2001. Vacuum Infusion of Liquid Ingredient into Feed Pellets. In *Proceeding of International Conference on Agricultural Science & Technology*. Beijing, China.
33. **Ruan, R.**, K. Ning, P. Chen, M. Zhang, X. Lin, and Y. Li. 2001. A machine vision system for objective quality inspection of dry beans. In *Proceeding of International Conference on Agricultural Science & Technology*. Beijing, China.
34. Li, Y., **R. Ruan**, P. Chen, X. Lin, and H. Ma. 2001. Physical processes improve enzymatic hydrolysis of corn stover. In *Proceeding of International Conference on Agricultural Science & Technology*. Beijing, China.
35. Ye, X., **R. Ruan**, P. Chen, and Y. Li. 2001. A fast magnetic resonance imaging-based method for determination of convective heat transfer coefficient in ohmically heated food system. In *Proceeding of International Conference on Agricultural Science & Technology*. Beijing, China.
36. Ma, H., P. Chen, Y. Li, X. Lin, and **R. Ruan**. 2001. Treatment of H<sub>2</sub>S and NH<sub>3</sub> using Ozone and Silent Discharge Plasma. In *Proceeding of International Conference on Agricultural Science & Technology*. Beijing, China.
37. **Ruan, R.**, Y. Li, X. Lin, and P. Chen. 2001. Development of Neural Network Model to Predicate Deoxynivalenol (DON) Levels by Near-Infrared Spectroscopy. In *Proceeding of Second International Wheat Quality Conference*, Manhattan, KS.
38. **Ruan, R.** and P. Chen. 2000. Nonthermal plasma demo system for odor control. In *AFTA Spring 2000 Proceedings*. Page 40-46. EPRI Publication.

39. **Ruan, R.**, S. Deng, and P. Chen. 2000. Automatic ozonated water generation system for sanitizing foods and food processing facilities. In *Proceedings of the Oriental Foods International Conference*, Beijing, China.
40. **Ruan, R.**, L. Gu, B. Lundberg, and P. Chen. 2000. Functional and physical properties of highly refined cellulose. In *Proceedings of the Oriental Foods International Conference*, Beijing, China.
41. **Ruan, R.** and P. Chen. 2000. Nonthermal plasma demo system for odor control. In *EPRI's Agricultural and Food Technology Alliances Joint Meeting*. Fall Meeting. EPRI Publication No. TE-114846.
42. **Ruan, R.** and S. Deng. 1999. An automatic ozonated water generation system for sanitizing foods and food processing facilities. In *Food & Machinery* 73(5):13.
43. **Ruan, R.**, K. Chang, P. Chen, and X. Ye. 1999. Fast MRI temperature mapping techniques for foods during dynamic processing. Proceedings of the 6<sup>th</sup> Conference of Food Engineering, Dallas, TX.
44. **Ruan, R.** 1999. A preliminary study on ozone applications in malting. In *EPRI's Agricultural and Food Technology Alliances Joint Meeting*. Spring Meeting. EPRI Publication No. TR-113380.
45. **Ruan, R.** 1999. Nonthermal plasma technique for odor control. In *EPRI's Agricultural and Food Technology Alliances Joint Meeting*. Spring Meeting. EPRI Publication No. TR-113380.
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**Grants and Research Proposals Funded** (all lead PI unless noted otherwise)

1. AY24-25 MnDRIVE Global Food Ventures Graduate Student Professional Development Program Fellowship for Suman Lata. Waste plastics utilization. With Suman Lata lead. 9/26/2024 – 8/24/2025. \$14,000.
2. Undergraduate Research Opportunities Program (UROP). Eradicating PFAS from Soil and Water Ecosystems with Phytoremediation and Catalytic Pyrolysis. With Yuxi Chen lead. 05/25/2024 to 08/31/2024. \$2,100.
3. UMN MVP Challenge. Applications of Plasma Generated by Concentrated High Intensity Electric Field (CHIEF) in Nitrogen Fixation. 1/6/-5/31/2024. \$5,000.
4. Private Industry Gifts. Value-added fiber research. 2/23/2024 – open. \$12,500.
5. Environment and Natural Resources Trust Fund. Microwave assisted pyrolysis for prion remediation. 1/1/2024 – 6/30/2025. \$103,374.
6. UMN CFANS. IFT-EFFoST 2023 International Nonthermal Processing Workshop & Short Courses. Conference support. 9/1/2023 – 8/31/2024. \$1,000.
7. Cargill Inc. Nonthermal Plasma Hydrogenation of Oils. 05/31/2023 - 11/30/2023. \$48, 282.
8. Ardent Mills. Microwave Disinfection of Wheat Kernels. 05/31/2023 - 11/30/2023. \$48, 282.

9. Elsevier Limited. 2023-03855, IFT-EFFoST 2023 International Nonthermal Processing Workshop & Short Courses. Conference grant. 9/1/2023 – 8/31/2024. €1000 (One thousand euro).
10. USDA NIFA. 2023-03855, IFT-EFFoST 2023 International Nonthermal Processing Workshop & Short Courses. An Agriculture and Food Research Initiative (AFRI) Competitive Grants Program (A1364 Novel Foods and Innovative Manufacturing Technologies) award. Conference grant. 9/1/2023 – 8/31/2024. \$50,000.
11. Institute of Food Technologists (IFT). 2023-03855, IFT-EFFoST 2023 International Nonthermal Processing Workshop & Short Courses. Conference grant. 9/1/2023 – 8/31/2024. \$5,000.
12. BBE Fred G. & Marty P. Bergsrud Fellowship for Suman Lata. Waste plastics utilization. With Suman Lata lead. May 29, 2023 - August 27, 2023. \$6,806.80.
13. Private Industry Gifts. Waste refining research. 4/27/2023 – open. \$10,000.
14. MnDRIVE GFV Graduate Student Professional Development Program. Apply non-thermal plasma to nitrogen fixation: one-step synthesis of nitrogen compound from atmospheric air and water. With graduate student Jianfei Guo lead. 8/28/2023 – 8/25/2024. \$13,000.
15. Private Industry Gifts. Value added fiber processing research. 9/15/2022 – open. \$25,000.
16. USDA/SBIR. Highly functional weighting agent by green modification of natural fibers to stabilize flavored oils in beverages. Phase II. Lead by Brock Lundberg of Fiberstar. 9/1/2022-8/31/2024. \$600,000
17. Undergraduate Research Opportunities Program (UROP). Understanding the effect of magnetic field treatment on liquid swine manure wastewater properties in order to optimize hydroponic plant growth. With Rachel Runzheimer lead. 09/06/22 to 12/20/22. \$1,800.
18. LCCMR. Destruct Per/Polyfluoroalkyl Substances (PFAS) in Landfill Leachates. 7/1/22 – 6/31/25. \$200,000.
19. LCCMR. Fungal-woodchips Filtering System for PFAS Remediation. With Jiwei Zhang lead. 7/1/22 – 6/30/24. \$189,000.
20. Supergen Bioenergy. Consortium for Waste-to-Hydrogen betterment and utilization and betterment (C-WtHub). Lead by Dr. Siming You of University of Glasgow, Scotland. 4/1-9/30/2022. £25,000.
21. USDA/Almond Board of California. Safety Assessment of Almond Hull as a Novel Food and Food Ingredient. 4/1/2022 – 1/1/2024. \$235,000.

22. Private Industry Gifts. Refining research. 2/10/2022 – open. \$50,000.
23. Private Industry Gifts. Value added processing research. 1/15/2022 – open. \$10,000.
24. USDA/SBIR. Natural emulsifier that is instantaneous and energy efficient, produced from sustainable fibrous agricultural byproducts. Phase I. Lead by Brock Lundberg of Fiberstar. 7/1/2021-8/31/2022. \$100,000.
25. Small Grains Initiative (SGI). Control of fusarium seedling blight in wheat through fast physical seed treatment. 7/1/2021-6/30/2023. \$140,000.
26. Private Industry Gifts. Waste plastics pyrolysis research. 3/11/2021 – open. \$90,000.
27. Walmart Foundation. Improving Food Safety of Pork Supply Chains in China. Lead by Yanbin Li of University of Arkansas. 10/15/2020 – 4/28/2024. \$3,200,000.
28. MNDrive Demonstration Program. Demonstrate an integrated biological system for animal wastewater treatment through utilization. 1/1/2021 – 12/31/2023. \$500,000.
29. Undergraduate Research Opportunities Program (UROP). Increasing Acetogenic Bacterial Density for Syngas Conversion Using a Porous Membrane. With Abigail Chiaokhiao lead. 01/19/21to 05/12/21. \$1,800.
30. Undergraduate Research Opportunities Program (UROP). Use of Copper and Silver as Catalysts to Reduce Energy Consumed in Avian Influenza Virus Filters. With Sarah Kinney lead. 01/19/21to 05/12/21. \$1,800.
31. CFANS Graduate Student Board/Ralph & Mildred Garber Research Award Fund. Development of a catalytic microwave-assisted pyrolysis-based waste plastic-to-naphtha technology. With Leilei Dai lead. 1/1/2021-6/15/2021. \$1,000.
32. Private Industry Gifts. Pyrolysis research. 10/16/2020 – open. \$35,000.
33. National Science Foundation. SitS: Spatial and Temporal Patterns of Soil N and P Cycles Quantified by a Sensor-Model Fusion Framework: Implications for Sustainable Nutrient Management. Award number: 2034385. With Zhenong Jin lead. 01/01/2020 – 12/31/2024. \$1,199,919.00
34. Dairy Management, Inc. Evaluation of intense pulsed light technologies for non-thermal processing to kill spore forming spoilage organisms in dry milk powders-continuation. With David Baumler lead. 10/1/18 – 12/31/20. \$19,948.
35. General Mills. Monitoring the Relationship between Ingredient and Hardening of Food Bars during Storage Using the NMR State Diagram Technique (Phase II). 2/1/2020 – 7/31/2020. \$60,000.



36. Private Industry Gifts. Food Safety and Engineering Research. 1/2020 - open. \$20,000.
37. MDA/MAES. Effective process and system for inactivation of avian influenza viruses. 1/1/2020 – 12/31/2023. \$198,853.
38. UMN CFANS Faculty Development Fund. Catalytic microwave processing for food pasteurization. 1/21/21 – 5/12/22. \$10,163.
39. Private Industry Gifts. Food Engineering Research. 3/2019 - open. \$10,000.
40. General Mills. Monitoring the Relationship between Ingredient and Hardening of Food Bars during the Storage by NMR State Diagram. 3/1/19 – 6/30/19. \$30,000.
41. Dairy Management Inc. (DMI). Evaluation of intense pulsed light technologies for non-thermal processing to kill spore forming spoilage organisms in dry milk powders. With David Baumler lead. 10/1/18 – 12/31/21. \$79,148.
42. Mistletoe Post-Doctoral Research Fellowship for Peng Peng. Sustainability research and development. With Peng Peng lead. 8/2018-5/2019. \$10,000.
43. Private Industry Gifts. Food Engineering Research and Communications. 5/2018 - open. \$12,000.
44. Undergraduate Research Opportunities Program (UROP). Comparison of Biofuel Production from Cooking Oil Using Acid and Alkaline Esterification and Glycerolysis and Alkaline Esterification. For Avi Limer lead. 9/9/18 – 2/28/19. \$1,800.
45. Undergraduate Research Opportunities Program (UROP). Production and Environmental Analysis of Bio-Oil from HDPE Waste. For Madison Best lead. 9/4/18 – 12/14/18. \$1,800.
46. MDA/UMN CFANS. Novel Microwave Inactivation of Avian Influenza Viruses. 3/1/18 – 2/28/21. \$300,000.
47. Minnesota Biofuel Association. Gift for Biofuel Plant Tours. 3/1/18. \$445.
48. USDA/Almond Board of California. Non-thermal Processes for Making Clean Label Food and Nutraceutical Ingredients from Almond Hull. 3/1/18 – 2/28/21. \$200,463.
49. Midwest Dairy Association. Evaluation of intense pulsed light technologies for non-thermal processing to kill spore forming spoilage organisms in dry milk powders. With David Baumler lead. 1/1/18 – 12/31/18. \$39,816.
50. Private Industry Gifts. Microwave assisted waste plastics conversion and utilization. 7/2017 – open. \$5,000.

51. Minnesota Department of Agriculture/Rapid Agricultural Response Fund. Atmospheric Pressure Nonthermal Plasma for Sanitizing Animal Production Facility Air. 6/1/2017 – 6/1/2019. \$200,000.
52. Xcel Energy RDF. Development of a Novel Gasification Technology for Distributed Power Generation from Solid Wastes. 1/4/2017 – 1/3/2022. \$999,999.
53. Private Industry Gifts. Barley malting research. 11/2016 – open. \$10,219.
54. Private Industry Gifts. Fiber utilization research. 8/2016 – open. \$6,587.63.
55. Private Industry Gifts. Fiber utilization research. 2/2016 – open. \$4,500.
56. LCCMR. Tiny Cheap Sensors for Pollutants Monitoring in Waters. With Tianhong Cui lead. 7/1/16 – 6/30/19. \$509,000.
57. LCCMR. Utilization of Dairy Farm Wastewater for Sustainable Production. With Brad Heins lead. 7/1/16 – 6/30/19. \$475,000.
58. MDA. Sustainable Protein for Aquaculture from Alfalfa. 3/1/16 – 2/28/17. With Deborah Samac lead. \$100,000.
59. Serendipity Grant 2015. Building Partnerships for Complete Utilization of Municipal Wastewater Streams. 2/1/16 – 1/31/17. \$25,000.
60. NIFA/USDA/Agriculture & Food Research Initiative (AFRI). Development of continuous intense pulsed light technology for non-thermal pasteurization of powdered foods. 1/31/2016-2/1/2023. \$3,595,390.
61. MNDrive. Building an Integrated Aquaponics System to Meet Health, Nutrition and Employment Objectives in Local Minority Communities. With Dean Current lead. 7/1/15 – 6/31/16. \$150,000.
62. LCCMR. Renewable and Sustainable Fertilizers Produced Locally. With Alon McCormick lead. 7/1/15 – 6/31/18. \$1,000,000.
63. Land O'Lakes, Inc. Non-thermal plasma technology for non-thermal pasteurization of milk powder. Phase I and II. 5/22/2015 – 10/13/2017. \$336,480.
64. MNDrive. Developing a unique non-thermal processing platform to improve nutritional value and microbial safety of food products. 8/1/14 – 7/31/14. \$125,910.
65. Vietnam Education Foundation (VEF). Visiting Scholarship for Dr. Doan Thi Thai Yen. With Dr. Doan Thi Thai Yen lead. 8/1/14 – 7/31/15. \$31,700.

66. MNDrive. The Green Nutrient Revolution - Development of Renewable and Sustainable Fertilizers. With Mike Reese lead. 8/1/14 – 7/31/16. \$500,000.
67. Metropolitan Council Environmental Services. Municipal wastewater scum to biodiesel production system. 8/1/14 – 7/31/15. \$50,000.
68. MNDrive. Waste Not: Closing the Loop on Organics Wastes. With Lawrence Baker lead. 7/1/14-6/30/16. \$622,972.
69. LCCMR. Demonstrating innovative technologies to fully utilize wastewater resources. 7/1/14 – 6/30/17. \$1,000,000. (total \$1.4 million.)
70. MNDrive. Creating Added Value from Minnesota Food and Agricultural Waste Streams by Recycling Nutrients through Microalgae Production. With Gerald Shurson lead. 7/1/14-6/30/15. \$184,108.
71. USDA/MN Corn Crowers/AURI/IREE. Adding value to corn and agricultural byproducts through production of biochar and bio-oil: Step Two. 4/1/14 – 3/31/15. \$63,338
72. USDA NIFA/Sun Grant. Development of novel fast pyrolysis and gasification processes. 2/14/14 – 2/13/15. \$140,108
73. MAES. Conversion of turnkey wastes to energy via fast pyrolysis and gasification. 7/1/13 – 6/30/15. \$184,366.
74. Private Industry Gifts. Renewable resources utilization. 5/20/13 – open. \$210,000.
75. CFANS. Graduate Research Assistantship Award for renewable energy and nonthermal pasteurization research. 10/15/12 – 9/30/13. \$15,000.
76. DOT/Sun Grant. Distributed production of DME based fuels using microwave technology and direct catalytic synthesis. 4/20/12-12/31/16. \$473,546.
77. Almond Board of California. Shelflife study of raw and roasted almonds for Chinese market. With Xiangyang Lin of Fuzhou University lead. 4/15/12-4/14/14. \$127,825.
78. Graduate School/BBE. Incoming Graduate Students Scholarship for Qinglong Xie, 3/12-2/13. \$25,000.
79. National Agricultural Biotechnology Council. The Student Voice at NABC – Graduate Student Scholarship Award for travel/lodging and registration for Zhenyi Du, 6/12, \$750.
80. University of Minnesota IREE. Wind to Ammonia with absorbents. 11/1/11-10/31/14. With Alon McCormic (lead), Mike Reese, Paul Chen, and Doug Tiffany. \$400,000.

81. Minnesota Corn Research and Promotion Council. Economic Evaluation of Deploying Small- to Moderate-Scale Nitrogen Fertilizer Production Plants in Minnesota Using Wind and Grid-Based Electrical Energy Sources. With Mike Reese and Paul Chen. 6/1/2011-10/31/2014. \$144,000.
82. UMN UROP. Catalyst Research of Methanol from Pyrolysis Produced Syngas. With Peter Larson. 1/18/2011 to 4/11/2011. \$1,700.
83. Minnesota Corn Growers Association. Adding value to ethanol production byproducts (dried distillers' grain) through production of biochar and bio-oil. With Kurt Spokas of USDA lead. 9/1/10 – 8/31/12. \$60,000.
84. LCCMR. Wastewater algae pilot project. 7/1/10 – 6/30/14. \$900,000. (total \$1.35 million).
85. Minnesota Corn Research and Promotion Council. Transforming corn from a commodity crop to a higher-energy, multipurpose biofuel crop. With R. Bernardo lead. 7/1/10 – 7/30/12. \$455,513
86. University of Minnesota IREE. Algae Production System Using Centrate Wastewater from Met Council Treatment Plant. 4/1/10 – 6/30/13. \$156,840.
87. DMI/MN-SD Dairy Center. Development of Stable Flavored Whey Protein Beverages. 1/1/2010 – 12/31/2010. \$27,500.
88. MCES. Mass culture of algae on wastewater as an energy crop for biofuel production. 11/1/09 – 6/30/10. \$50,000.
89. Office of Naval Research (ONR) & Luna Innovations. Biofuels production from nonedible biooils. Phase I. 8/1/09 – 7/31/10. \$37,000.
90. USDA/DMI. Non-thermal pasteurization of Milk using CHIEF technology. 10/19/09 – 12/31/10. \$99,620.
91. Almond Board of California. Odor control for NTP disinfection of almonds. 7/1/09 – 6/30/10. \$45,000.
92. Almond Board of California. Study of simultaneous migration of moisture and oil in almond during Storage under different Conditions. 7/1/09 – 6/30/11. With Xiangyang Lin of Fuzhou University lead. \$84,211.
93. University of Minnesota IREE. Catalytic reforming of liquids and gases from thermochemical and biological conversion of biomass. 7/1/09 – 6/30/11. \$250,000.
94. Minnesota Corn Research and Promotion Council. High oil corn as a higher value commodity. 7/1/09 – 6/30/10. Ron Phillips lead. \$80,545.

95. USDA NRI. Whole Grain Ingredients: Health Benefits of Bioactive Phytonutrients and Dietary Fibers from Cereal Grains. 12/1/08 – 11/30/12. \$750,000. (Total \$1.1 million).
96. USDA/DOE. Development of Scalable Biorefining Processes for Distributed Biomass Conversion. 01/01/2007 - 06/30/2012. \$1,224,055.
97. Green Energy Group. Algae photobioreactor testing. 11/7/2008 – open. \$23,800.
98. USDA FAS. 2008. Latin American Biofuel Training Grant. With John Verynes. Summer-Fall, 2008. \$25,000.
99. Cargill Inc. Concentrated High Intensity Electric Field (CHIEF) technology for juice processing. 8/1/08 – open. \$20,000.
100. Minnesota Legislature, MCES, and IREE. Mass culture of algae on wastewater as an energy crop for biofuel production. 7/1/08 – 12/31/09. \$1,000,000.
101. Xcel Energy. Mass production of algae as energy crop. 1/11/08 – open. \$150,000.
102. US DOT and Sun Grant Initiative. Develop sustainable renewable energy systems for practical utilization of bulky biomass. 9/1/07 – 8/31/12. \$1,186,084.
103. UM Institute on the Environment. Dual renewable biofuels from a single source. 7/1/07-6/30/09. With Ron Phillips lead. \$300,000.
104. LCCMR. Mobil biomass pyrolysis system development and demonstration. 7/1/07 – 6/30/11. \$500,000. (total \$750,000.)
105. Special Hatch Fund, Minnesota Agricultural Experiment Station (MAES). Advancing the Science and Utilization of Biomass and Bioproducts by Strengthening Materials Characterization Research Capability. With William Tze lead. 2007. \$253,000.
106. UMN UROP. Extraction of Oil from Microalgae. With Leo Kucek. 7/8/2008 to 8/31/2008. \$1,700.
107. UMN UROP. Mass Production of Biodiesel Using Algae. With Steven Biorn. 7/8/2008 to 8/31/2008. \$1,700.
108. UM CFANS Minnesota Agricultural Experiment Station Fellowship – a two-year scholarship for a ph.d. student to work on biofuels. 9/1/08 -8/31/10. \$60,000.
109. UM Graduate School Grant-in-Aid Program. Viscous Dietary Fibers and Novel Processed Grain Ingredients for Increasing Satiety. With Len Marquart and Dan Gallaher (FScN). 9/1/07 – 8/31/08. \$26,000.
110. Hormel Foods Corporation. Oil refining. 6/25/07 – open. \$7,500.

111. Metropolitan Council Environmental Services. Algae literature review and preliminary study on mass production of algae for biodiesel and biooil production. 2/1/07 – 6/30/07. \$20,000.
112. Source Food Technology, Inc. Oil quality improvement using advanced distillation technology. 3/8/07 – open. \$10,000.
113. Kellogg Company. Whole grain biorefining. 12/27/06 – open. \$100,000.
114. Southwest Corn Utilization Corp. Biorefining of Red Corn, Phase II. Extraction, characterization and utilization of anthocyanins from red corn. 11/1/06 – 10/31/07. \$120,000.
115. University of Minnesota IREE. Comparative Environmental and Economic Systems Analysis of Corn Stover Logistics Options for Cellulosic Ethanol Production. With Sangwon Suh lead. 11/21/06 – 11/20/07. \$49,599.
116. USDA and DMI. Non-thermal plasma treatment of milk. 10/26/06 – 12/31/08. \$ 275,584.
117. Bush Brothers & Company. NMR study of dry bean storage technology, Phase IV. 7/15/06 - open. \$12,500.
118. Red Oak Management. Purification and analysis Fagopyritols from buck wheat. 7/1/06 - open. \$5,000.
119. University of Minnesota IREE. Developing and Demonstrating a Scalable Renewable-Hydrogen-to-Ammonia System. 5/15/06 – 5/14/08. \$147,961.
120. North Central Companies. Making biodiesel from animal fat. 3/7/06 – open. \$1,500.
121. eYou Beijing Yizhongyou Information Technology, Ltd. NMR software development for food analysis. 2/20/06 – open. \$5,000.
122. University of Minnesota IREE Equipment Fund. Biorefining equipment. 12/12/05 – open. \$186,625.
123. Zanker Road Resource Management, Ltd. and CalRecovery, Inc. Microwave pyrolysis of municipal solid waste. 12/5/05 – open. \$5,000.
124. Biorefining, Inc. High pressure extraction applications in sugar beet pulp processing. 7/29/05 – open. \$13,000.
125. Bixby Energy Systems and UM IREE. Development of Commercially Transferable Thermochemical Conversion Technologies. 7/1/05-6/30/08. \$1,260,000.

126. Almond Board of California and SCP Control. Non-thermal plasma technology for almond disinfection – fundamental feasibility study – Phase II, step one. 5/15/05 – 2/14/06. \$55,605.
127. ConocoPhillips. Preliminary NMR and MRI applications in petroleum exploration. 5/2/05 – open. \$1,200.
128. Source Food Technology, Inc. Oil quality improvement using advanced distillation technology. 1/15/05 – open. \$15,000.
129. Norwegian Government and Norway University of Life Sciences (UMB). Liquefaction of Biomass for Biofuel Production Research Cooperation U of M and UMB. With Professor Petter Hieronymus Heyerdahl of Department of Mathematical Sciences and Technology, Norway University of Life Sciences lead. 3/4/05 – 3/3/06. \$690,000.
130. University of Minnesota IREE Special Opportunity Fund. Thermochemical Conversion and Biorefining of Biomass and Wastes - A Multidisciplinary and Collaborative Research between University of Minnesota and Agricultural University of Norway. 2/22/05 – 2/21/06. \$120,000.
131. Bush Brothers & Company. NMR study of dry bean storage technology, Phase III. 2/1/05 - open. \$35,000.
132. DMI. Non-thermal pasteurization of milk using non-thermal plasma technology. 1/1/05 – 6/30/06. \$50,000.
133. University of Minnesota IREE. Bioenergy and Bioproducts Cluster operation fund. With David Kittelson, Don Wyse, Don Fosnacht, Larry Wackett. 1/1/05 – 6/30/05. \$12,000.
134. Almond Board of California. Non-thermal plasma technology for almond disinfection – fundamental feasibility study. 9/1/04 – 6/30/05. \$39,500.
135. Biorefining, Inc. Grain biorefining product analysis. 1/15/04 – open. \$5,000.
136. Source Food Technology, Inc. Oil quality improvement using advanced distillation technology. 1/15/04 – open. \$25,000.
137. Land O'Lakes. NMR assessment of cheese quality. 4/15/04 – open. \$1,000.
138. Southwest Corn Utilization Corporation. Red Corn Quality Characterization. With Gary Fulcher lead. 9/15/04 - 9/14/06. \$89,998.
139. University of Minnesota IREE. Bioenergy and Bioproducts Cluster operation fund. With David Kittelson, Don Wyse, Don Fosnacht, Larry Wackett. 2/1/04 – 12/31/04. \$20,000.

140. University of Minnesota IREE. Making biodiesel from crop residues. 2/1/04 – 1/31/05. \$29,232.
141. Bush Brothers & Company. NMR study of dry bean storage technology, Phase II. 2/1/04 - open. \$25,000.
142. University of Minnesota IREE. Development of A Biorefining Model for Corn Processing. 12/15/03 – 12/14/04. \$24,920.
143. USDOD. Value-added biomass conversion technologies for utilizing of crop byproducts and residues. with Tom Yang of Natick. 11/3/03-11/2/05. \$610,000.
144. University of Minnesota IREE. USDOD Value added biomass conversion technologies matching fund. 11/1/03 – open. \$100,000.
145. DOD US Army Natick Solcier Systems Center. Studies of shelf stability of food systems Using Advanced NMR and MRI Tehniques. 7/1/03-7/31/04. \$50,000.
146. Bush Brothers & Company. NMR study of dry bean storage technology, Phase I. 8/1/03 - open. \$12,000.
147. General Mills. 23MHz Maran Drx Benchtop MRI Spectrometer. 6/1/03 - open. \$165,000.
148. University of Minnesota. MRI Facility Matching Support. 7/1/03 - open. \$120,000.
149. UM Biotechnology Institute. Value Added Processing of Minnesota Cereals. With G. Fulcher (lead) and L. Marquart. 3/1/03-2/28/04. \$43,000.
150. Novozymes A/S. NMR methods and applications in bread products. 9/15/02- open. \$7,500.
151. Generation II Ethanol. Value-added process and product development for corn germ protein isolates. 9/1/2002 – open. \$2,500.
152. Sota Tec Fund. Non-thermal disinfection of blood using non-thermal plasma (NTP). 9/1/02 – 8/31/03. \$105,610.
153. AURI. Converting minnesota biomasses including DDGS to biopolymers. 4/15/02 – 4/14/04. \$88,375.
154. Source Food Technology. Oil quality improvement using advanced distillation technology. 7/1/02 – open. \$33,000.
155. DQCI Services, Inc. Automatic dairy product filling and labling system development. 2/1/02 – open. \$35,000.



156. AURI. Comparison of different agricultural residues for making biomaterials. 11/1/01 – 5/31/02. \$15,000.
157. SCP Control, Inc. Nonthermal plasma and ozone system development. 10/15/01 – open. \$4,000.
158. DQCI Services, Inc. Automatic dairy product filling and labling prototype system development. 6/1/01 – open. \$45,000.
159. USDOD. Value-added technologies for utilizing of crop byproducts and residues in Hawaii. Phase I. Study of production of highly refined cellulose (HRC) from Lignocellulosic Materials. 3/9/01 – 3/8/03. \$560,000.
160. Bush Brothers & Company. Study of dry bean processing technology. 8/1/00 – open. \$15,000.
161. Colorado Sweet Gold, LLC. Ozone applications in corn wet milling. 8/1/00 - 12/31/00. \$20,000.
162. Sota Tec Fund. Non-thermal discharge plasma system for liquid pasteurization and sterilization. 6/15/2000 – 12/31/2003. \$208,007.
163. IB2, Inc. Evaluation of milli-second pasteurization technology. 2/15/2000 – 6/30/2001. \$294,336.
164. USDA ARS. Determination of DON and scab in barley using near-infrared and neural networks. 2/15/00 – 3/15/01. \$30,000.
165. SCP Control, Inc. NTP and ozone for odor control. 2/1/00 – open. \$9,000.
166. AURI. Utilization of food and agricultural fibrous byproducts. 7/15/99 – 1/14/01. \$60,000.
167. The FiberStar Corp. Making highly refined cellulose materials. 1/1/99 – 12/31/99. \$23,500.
168. Minnesota Institute for Sustainable Agriculture Summer Undergraduate Research Program. Highly refined cellulose process development and market analysis. With Jashua Goplin and Tracy Scheffer. 6/1/99 – 12/31/99. \$6,000.
169. Minnesota Small Grain Research and Promotion Council. Development of an automatic computer vision and neural network-based system for determination of scab weight percentage of wheat. 7/1/99 – 6/30/00. \$40,000.
170. The Portugal Government. Development and modeling of a pulsed nonthermal plasma system for treatment of liquid foods. 1/1/99 – 5/15/01. \$54,856.

171. US Army Natick Research, Development and Engineering Center. Application of magnetic resonance imaging in studying of ohmic heating process. 9/15/1998 - 8/14/2000. \$40,000.
172. The DAR Technology Company. Nonthermal plasma treatment of hazardous gases emitted from burning high sulphur containing fuels. 8/1/1998 - 5/31/2000. \$198,812.
173. COAFES. Major Coordinator Fund. 7/1/98 – 1/31/03. \$15,750.
174. The FiberStar Corp. Ozone digestion of agricultural fibrous materials. 7/1/98 – 12/31/98. \$40,065.
175. Roche Vitamins Inc. The ASAP 200 Micromeritics particle, surface, and porosity analysis system. 6/1/98 - open. \$50,000.
176. Apple Growers Association and Minnesota State Legislature. Ozone cleaning of apple for juice making. 7/1/98 - 7/30/99. \$24,000.
177. Long Prairie Packing Co., NSP, EPRI FTA, and Agricultural Utilization Research Institute. A feasibility study on applications of ozone in beef processing. 4/15/98 - 10/14/98. \$30,000.
178. The Sota Tec Fund. An innovative non-thermal plasma system for farm odor control. 2/1/98 - 12/31/2000. \$199,577.
179. The Pillsbury Company. NMR study of water-solid interactions in dough. 2/5/98 - 8/4/98. \$25,000.
180. EPRI Food Technology Alliance. MRI temperature mapping of foods. 1/1/98-12/31/98. \$17,500.
181. Ottogi Food Company Ltd. Study of caking of freeze-dried soups. 12/15/97 - 12/14/99. \$86,354.
182. US Army Natick Research, Development and Engineering Center. MRI applications in ohmic heating modeling and multi-component food stability study. 9/19/97 - 9/18/99. \$93,048.
183. Northern States Power and Northern Star Potato Products. Development of low cost nonthermal plasma systems for H<sub>2</sub>S control. 9/2/97 - 12/31/97. \$37,500.
184. Minnesota State Legislature. Scabby wheat assessment using machine vision and neural networks. With J.V. Wiersma, W. Wilcke, V. Morey, and R. Jones. 7/1/97 - 6/31/99. \$128,000.

185. EPRI - Food Technology Center. Application of ozone technology in wastewater treatment in food processing industry. 9/1/97 - 8/31/98. \$45,000.
186. Agricultural Utilization Research Institute. Utilization of food and agricultural fibrous byproducts (Phase I). 8/29/96 - 10/31/97. \$26,498.
187. US Army Natick Research, Development and Engineering Center. Application of magnetic resonance imaging in modeling of ohmic heating process. 2/15/97 - 1/14/98. \$25,500.
188. National Confectioners Association. Study of interactions of fat and carbohydrate replacers in confectionery products using NMR, MRI and food polymer science theory. With P. Addis and T. Labuza. 8/1/96 - 9/31/98. \$52,590.
189. Minnesota State Legislature. Scabby wheat assessment using machine vision and neural networks (preliminary work). 9/1/96 - 6/30/97. \$12,000.
190. Agri-Scan, Inc. Plasma treatment of potato blight and removal of SOx from exhausted streams. 9/1/96 - 8/31/99. \$300,000.
191. EPRI Food Technology Center, Minnesota Agricultural Experiment Station, and The State of Minnesota (Legislature). Application of high voltage electric power in odor reduction of biological and food processing wastes. With P. Goodrich and R. Zhang (UC Davis). 8/1/96 - 12/31/98. \$120,000.
192. Hunt-Wesson, Inc. MRI applications in food process control and quality improvement. 2/15/96 - open. \$6,850.
193. University of Minnesota Graduate School Grant-in-Aid. Study of properties of novel temperature-sensitive hydrogels. 12/16/95 - 12/15/96. \$9,500.
194. General Mills, Inc. MRI applications in cereal process control and quality improvement. 12/1/95 - open. \$40,000.
195. Minnesota Wheat Research and Promotion Council. Scabby wheat assessment using machine vision and neural networks. 6/15/96 - 12/14/97. \$2,500.
196. The State of Minnesota (Legislature). Odor reduction in swine manure using electromagnetic energy. With P.R. Goodrich. 7/1/96 - 6/31/98. \$15,000.
197. Grand Metropolitan/Pillsbury Company. MRI and neural networks - applications in food process control and quality improvement. 1/1/94 - open. \$100,000.
198. University of Minnesota/College of Biological Science. NIH/NSF Young Scholars/USDA Research Apprenticeship Program. High School Summer Science Research Program. Summer, 1995; Summer, 1996; Summer, 1997; Summer, 1998; Summer 1999. \$1,800.

199. Department of Energy. Injection molding of plastics from agricultural materials. With M. Bhattacharya (lead). 1/2/96 - 1/1/99. \$507,071.
200. USDA National Needs Fellowship. MRI and polymer science applications in the study of food materials. With T. Labuza. 9/15/95 - 9/14/99. \$54,000.
201. Agricultural Utilization Research Institute. Utilization of agricultural waste fibrous materials. With M. Bhattacharya. 2/1/95 - 1/31/96. \$9,500.
202. Electric Power Research Institute (EPRI) and Northern States Power. Food Technology Center - Research and Development. With F. Busta and R.V. Morey. 4/1/95 - 12/31/98. \$1,213,000.
203. Minnesota Pork Producers Association. Odor reduction in swine manure using electromagnetic energy. With P.R. Goodrich (lead). 5/1/95-8/30/96. \$7,500.
204. Minnesota Corn Research and Promotion Council. Odor reduction in swine manure using electromagnetic energy. With P.R. Goodrich (lead). 6/1/95-8/30/96. \$7,500.
205. Filter Corporation. Study of microfibrillated cellulose as filter aid. With P. Addis. 8/1/94-7/31/97. \$114,834.
206. Minnesota Cultivated Wild Rice Council. Study of wild rice water holding capacity. (Supplement to AURI wild rice project). 3/15/95 - 8/31/95. \$2,000.
207. US Army Natick Research, Development and Engineering Center. Application of magnetic resonance imaging and polymer science theory to the study of storage stability in combat ration systems. With T. Labuza. 11/03/94 - 2/04/97. \$101,748.
208. Canada Malting Co. Structure/function relationships in barley. With R.G. Fulcher (lead). 7/1/93 - 6/30/98. \$370,000.
209. University of Minnesota Graduate School Grant-in-Aid. Study of structure-function relationships in microfibrillated cellulose. 7/1/94 - 12/31/95. \$16,600.
210. National Institute for Occupational Safety and Health. Agricultural Safety Zone Technology. With J.M. Shutske (lead), J. Chaplin, and W. Wilcke. 94-95. \$116,607.
211. MN-SD Dairy Research Center. Study of moisture profiles, temperature, water mobility, and structure of cheese blocks during cooling using MRI. With R.G. Fulcher and E. Bastian. 7/1/94 - 12/31/96. \$109,059.
212. University of Minnesota. Department start-up Funds. 1/1/94 - 12/31/95. \$100,000.

213. Agricultural Utilization Research Institute. Study of wild rice water holding capability using NMR and MRI technology. With P. Addis. 10/1/94 - 9/30/95. \$9,500.
214. Minnesota Soybean Research and Promotion Council. Study of soybean seedcoat cracking using magnetic resonance imaging. With R.G. Fulcher. 10/1/92 - 12/31/94. \$36,536.
215. Grand Metropolitan/Pillsbury Company. Development of magnetic resonance imaging (MRI) for moisture and fat management of Grand Metropolitan food products. With R.G. Fulcher and E. Davis. 5/18/1992 - 11/18/93. \$143,000.

### **Professional Development Workshops Attended**

1. Participated and attended IFT-EFFoST Nonthermal Processing Short Course. Minneapolis, MN. 2023.
2. Participated and attended 5 virtual lab visits (VLV) and 8 academic seminars (AS) organized by the Consortium for Waste-to-Hydrogen Utilization and Betterment, University of Glasgow, UK. 2022.
3. National Academy of Engineering (NAE) FOCUS - Complex Food and Agricultural Systems. September 9, 2021.
4. Virtual leadership trainings organized by IFT, 2020, 2021.
5. AURI New Uses Forum. Plymouth, MN, March, 2017.
6. Agriculture & Environment Innovation Commercialization Bootcamp. St. Paul, MN. January, 2017.
7. Algae Biofuels World Summit. By Information Forecase, Inc. New York, NY. March, 2009.
8. Talking charge of your academic career: Lifelong planning for success. COAFES Faculty Development Workshop. St. Paul, MN. March, 2005.
9. Almond Board of California's Pasteurization Technology Workshop. Modesto, CA. September, 2004.
10. National Planning Workshop on Nanoscale Science and Engineering for Agriculture and Food Systems, Washington, DC. November, 2002.
11. Successful Selling Strategies Workshop. By Ryan Partnership, Washington, DC. November, 2001.
12. High Voltage Pulsed Power System Workshop. By Professor James Sergient, Director of High Voltage Electronics Institute, Department of Electrical Engineering, State University of New York at Buffalo, Buffalo, NY. Summer, 1999.

13. Discharge physics and plasma chemistry of dielectric-barrier discharges. By Ulrich Kogelschatz, BBB Corporate Research, Ltd., 5405 Baden, Switzerland. Modern developemnts in Mechanical Engineering Lecture Series, University of Minnesota, Spring, 1998.
14. Pulsed Electric Field International Workshop III, Columbus, OH, March, 1998.
15. Pulsed Electric Field International Workshop II, Chicago, IL, October, 1997.
16. Pulsed Electric Field International Workshop, Orlando, FL, June, 1997.
17. Minnesota Workshop on Principles and Applications of High Field Magnetic Resonance Imaging and Spectroscopy Techniques, Minneapolis, MN, March, 1997.
18. Pulsed Electric Field International Workshop I, San Diego, CA, March, 1997.
19. Whole Crop Biorefinery - Future Directions in Biomass Refining: Perspectives and Opportunities for North America. Workshop by BPTI, AURI, and Rahr Malting Company. University of Minnesota, Summer, 1996.
20. Aseptic Processing of Multiphase Foods Workshop II. By National Center for Food Safety and Technology and Center for Aseptic Processing and Packaging Studies. Chicago, IL, Spring, 1996.
21. Artificial Neural Networks. Workshop by Richard D. De Veaux and Lyle H. Ungar. Minneapolis, MN, Fall, 1995.
22. Fuzzy Logic Control. By Lofti A. Zadeh. Mechanical Engineering Distinguished Lecture Series, University of Minnesota, Spring, 1994.
23. Modeling of Plasma Processes. By John J. Lowke. Mechanical Engineering Distinguished Lecture Series, University of Minnesota, Spring, 1994.
24. Water/Macromolecule Magnetization Transfer in Magnetic Resonance Imaging (MRI). Workshop by The Society of Magnetic Resonance Imaging and the Society of Magnetic Resonance in Medicine, Hood College, Frederick, MD, Summer, 1993.

## EDUCATION/TEACHING

### Overview

I have a diverse range of educational and teaching experiences and responsibilities that have allowed me to work with students at different levels of education. As BBE Director of Undergraduate Studies and Director of Graduate Studies, I have been responsible for overseeing the education of undergraduate and graduate students in the department. In addition to this, I have taught several courses at different levels, ranging from introductory to advanced courses.

At the beginning of each course, I send out a questionnaire and a copy of the syllabus to each student to understand their needs, interests, and background. This helps me adjust my teaching approach to meet individual student needs and interests, and provide comprehensive lecture handouts for each course. I also use group problem-solving sets to develop students' communication and problem-solving skills.

As an advisor for undergraduate and graduate students, I help students plan their course schedule, identify electives, and arrange internships. I encourage students to have sufficient fundamentals and breadth in related fields, while also developing a clear focus that aligns with their individual interests and background. In addition to advising individual students, I served as the BAE Department Director of Undergraduate Studies from July 1998 to July 2003 and BBSEM Director of Graduate Studies since 2020, during which time I have helped many students clear graduation requirements and provided orientations to various new and transferred students.

I advise over 20 graduate students, research fellows, postdoctoral research associates, and visiting scholars each year. We have regular group meetings to encourage communication, collaboration, and discuss general research problems. I also meet with each member regularly to discuss various issues and their progress. In advising graduate students, I assist them in planning their coursework and developing their thesis topics, ensuring that they do quality research as evidenced by their peer-reviewed publication records.

Overall, my teaching and advising experiences have provided me with the tools to help students at all levels develop the skills and knowledge necessary to excel in their fields.

### Teaching and Advising Improvement Activities

1. Attend two Canvas related training. 2018. St. Paul Campus.
2. Designing Your Course for Flipped & Online Learning. November, 2016. Teaching Support @ UMN, Office of Information Technology, Minneapolis Campus, University of Minnesota.
3. Future Leaders – curriculum sustainability. CFANS Undergraduate Curriculum Event. February, 2011, St. Paul Campus, University Of Minnesota.
4. An Overview of the Digital Idea Stream: 8 emerging technologing technologies for teaching, learning, and research. Office of Information Tehnology. October, 2009.

5. In-Class Writing: Brief, Low-Stakes, & Potent. January, 2007. Center for Writing, Minneapolis Campus, University of Minnesota.
6. Center for Writing. Writing assignments and activities. 2006. St. Paul Campus, University of Minnesota.
7. Conference on Video and Wireless Technology, October, 2003, Coffman Memorial Union, Minneapolis Campus, University of Minnesota.
8. Teaching with Writing. November, 2002. Center for Interdisciplinary Studies of Writing (CISW), University of Minnesota.
9. University of Minnesota Study Abroad Curriculum Integration Major Advising Start-up Retreat. Fall, 2002. Ruttger's Bay Lake Lodge, MN.
10. Bush Faculty Mid-Career Teaching Program. 2001-2002. University of Minnesota.
11. Global Campus Study Abroad Curriculum Integration Workshops. Spring, 2002. University of Minnesota.
12. Teaching Instrumentation and Control. ASABE Annual Meeting. Summer, 2001. Sacramento, CA.
13. Teaching and Learning with Cases: Promoting Active Learning in Agricultural, Food and Natural Resources Education. Summer, 1995. Chaska, MN.
14. Bush Faculty Development Teaching Excellence Program focus group. 1994-1995. University of Minnesota.
15. Informal Writing: a Teaching Tool. October, 1994. Teaching Assistant Development Program, Office of Human Resources, University of Minnesota.

### **Regular Courses Taught to On-Campus Students**

<b>BBE4733/5733</b>	Renewable Energy Technologies. 3 semester cr., Spring, 2023. 30 students.
<b>BBE 4723/5723</b>	Food Processing Engineering. 3 semester cr. Spring, 2023. 16 students.
<b>BBE 8703</b>	Managing Water in Food and Biological Systems. 3 semester cr., Fall, 2022. 5 students.
<b>BBE4733/5733</b>	Renewable Energy Technologies. 3 semester cr., Spring, 2022. 23 students.
<b>BBE 4723/5723</b>	Food Processing Engineering. 3 semester cr. Spring, 2022. 5 students.



<b>BBE4733/5733</b>	Renewable Energy Technologies. 3 semester cr., Spring, 2021. 46 students.
<b>BBE 4723/5723</b>	Food Processing Engineering. 3 semester cr. Spring, 2021. 10 students.
<b>BBE4733/5733</b>	Renewable Energy Technologies. 3 semester cr., Spring, 2020. 39 students.
<b>BBE 4723/5723</b>	Food Processing Engineering. 3 semester cr. Spring, 2020. 11 students.
<b>BBE 8703</b>	Managing Water in Food and Biological Systems. 3 semester cr., Fall, 2018, 2020. 1 student each.
<b>BBE4733/5733</b>	Renewable Energy Technologies. 3 semester cr., Spring, 2019. 33 students.
<b>BBE 4723/5723</b>	Food Processing Engineering. 3 semester cr. Spring, 2019. 10 students.
<b>BBE4733/5733</b>	Renewable Energy Technologies. 3 semester cr., Spring, 2018. 45 students.
<b>BBE 4723/5723</b>	Food Processing Engineering. 3 semester cr. Spring, 2018. 12 students.
<b>BBE4733/5733</b>	Renewable Energy Technologies. 3 semester cr., Spring and Fall, 2017. 40 students.
<b>BBE 4723/5723</b>	Food Processing Engineering. 3 semester cr. Spring, 2017. 8 students.
<b>BBE 8703</b>	Managing Water in Food and Biological Systems. 3 semester cr., Fall, 2016. 5 students.
<b>BBE4733/5733</b>	Renewable Energy Technologies. 3 semester cr., Spring, 2016. 40 students.
<b>BBE 4723/5723</b>	Food Processing Engineering. 3 semester cr. Spring, 2016. 10 students.
<b>BBE4733/5733</b>	Renewable Energy Technologies. 3 semester cr., Spring and Fall, 2015. 64 students.
<b>BBE 4723/5723</b>	Food Processing Engineering. 3 semester cr. Spring, 2015. 8 students.
<b>BAE 5095</b>	<i>Special Problems</i> , 3 semester cr., Spring and Fall, 2015. 2 students.
<b>BBE 8703</b>	Managing Water in Food and Biological Systems. 3 semester cr., Fall, 2014. 9 students including 1 visiting.
<b>BBE4733/5733</b>	Renewable Energy Technologies. 3 semester cr., Spring, 2014. 33 students.
<b>BBE 4723/5723</b>	Food Processing Engineering. 3 semester cr. Spring, 2014. 10 students.
<b>BAE 5095</b>	<i>Special Problems</i> , 3 semester cr., Spring and Fall, 2014. 2 students.
<b>BBE4733/5733</b>	Renewable Energy Technologies. 3 semester cr., Spring, 2013. 28 students.
<b>BBE 4723/5723</b>	Food Processing Engineering. 3 semester cr. Spring, 2013. 8 students.
<b>BBE 8703</b>	Managing Water in Food and Biological Systems. 3 semester cr., Fall, 2012. 5 students including 1 visiting.

**BAE 5095** *Special Problems*, 3 semester cr., Spring and Fall, 2013. 2 students.  
**BBE4733/5733** *Renewable Energy Technologies*. 3 semester cr., Spring, 2012. 40 students.  
**BBE 4723/5723** *Food Processing Engineering*. 3 semester cr. Spring, 2012. 16 students.  
**BAE 5095** *Special Problems*, 3 semester cr., Spring and Fall, 2012. 2 students.  
**BBE4733/5733** *Renewable Energy Technologies*. 3 semester cr., Spring, 2011. 36 students.  
**BBE 4723/5723** *Food Processing Engineering*. 3 semester cr. Spring, 2011. 15 students.  
**BBE 8703** *Managing Water in Food and Biological Systems*. 3 semester cr., Fall, 2010. 9 students including 1 visiting.  
**BBE 4733** *Renewable Energy Technologies*. 3 semester cr., Spring, 2010. 40 students.  
**BBE 4723** *Food Processing Engineering*. 3 semester cr., Spring, 2010. 6 students.  
**BBE 8703** *Managing Water in Food and Biological Systems*. 3 semester cr., Fall, 2008. 5 students.  
**BBE 4723** *Food Processing Engineering*. 3 semester cr. Fall, 2008. 16 students. (Newly developed).  
**BBE 4733** *Renewable Energy Technologies*. 3 semester cr., Spring, 2008. 14 students.  
**BBE 4733** *Renewable Energy Technologies*. 3 semester cr., Spring, 2007. 24 students. (Newly developed).  
**BBE 8703** *Managing Water in Food and Biological Systems*. 3 semester cr., Fall, 2006. 4 students.  
**BAE 4713** *Biological Processing Engineering*. 3 semester cr., Spring, 2006. 14 students.  
**BAE 5095** *Special Problems*, 3 semester cr., Spring, 2006. 1 student.  
**BAE 3213** *Engineering Principles and Applications*. 3 semester cr., Spring, 2005, 3 students.  
**BAE 5095** *Special Problems*, 3 semester cr., Fall, 2004. 1 student.  
**BAE 8703** *Managing Water in Food and Biological Systems*. 3 semester cr., Fall, 2004. 2 students.  
**AGET 3213** *Engineering Principles and Applications*. 3 semester cr., Spring, 2004. 8 students.  
**BAE 4713** *Biological Processing Engineering*. 3 semester cr., Spring, 2004. 8 students.  
**AGET 3213** *Engineering Principles and Applications*. 3 semester cr., Spring, 2003. 6 students.  
**BAE 5095** *Special Problems*, 3 semester cr., Spring, 2003. 1 student.  
**BAE 8703** *Managing Water in Food and Biological Systems*. 3 semester cr., Fall, 2002. 7 students.  
**BAE 4713** *Biological Processing Engineering*. 3 semester cr., Spring, 2002. New course. 15 students.

<b>AGET 3213</b>	<i>Engineering Principles and Applications.</i> 3 semester cr., Spring, 2002. 14 students.
<b>BAE 4023</b>	<i>Instrumentation and Control for Biological Systems.</i> 3 semester cr., Spring, 2001. 9 students.
<b>AGET 3213</b>	<i>Engineering Principles and Applications.</i> 3 semester cr., Spring, 2001. 18 students.
<b>BAE 5095</b>	<i>Special Problems,</i> 1 semester cr., Spring, 2001. 1 student.
<b>BAE 8703</b>	<i>Managing Water in Food and Biological Systems.</i> 3 semester cr., Fall, 2000. New course. 5 students.
<b>BAE 4023</b>	<i>Instrumentation and Control for Biological Systems.</i> 3 semester cr., Spring, 2000. 15 students.
<b>AGET 3213</b>	<i>Engineering Principles and Applications.</i> 3 semester cr., Spring, 2000. 28 students.
<b>BAE 5095</b>	<i>Special Problems,</i> 5 semester cr., Fall, 1999. 2 students.
<b>BAE 5070</b>	<i>Instrumentation and Control for Biological Systems.</i> 4 quarter cr., Spring, 1999. 8 students.
<b>BAE 5191</b>	<i>Special Problems in Biosystems and Agricultural Engineering.</i> 4 quarter cr., Summer, 1999. 1 student.
<b>AGET 3025</b>	<i>Engineering Principles and Applications.</i> 4 quarter cr., Winter, 1999. 36 students.
<b>BAE 5070</b>	<i>Instrumentation and Control for Biological Systems.</i> 4 quarter cr., Spring, 1998. 24 students.
<b>BAE 8191</b>	<i>Advanced Problems and Research.</i> 5 quarter cr., Spring, 1998, 1 student.
<b>BAE 5191</b>	<i>Special Problems in Biosystems and Agricultural Engineering.</i> 4 quarter cr., Spring, 1998. 1 student.
<b>AGET 3025</b>	<i>Engineering Principles and Applications.</i> 4 quarter cr., Winter, 1998. 45 students.
<b>BAE 8191</b>	<i>Advanced Problems and Research.</i> 4 quarter cr., Winter, 1998, 3 students.
<b>BAE 5070</b>	<i>Instrumentation and Control for Biological Systems.</i> 4 quarter cr., Spring, 1997. 14 students.
<b>FScN 5316</b>	<i>Quantitative Light Microscopy in Agriculture and Food Research.</i> 4 quarter cr., Spring, 1997. 7 students. Taught 2 weeks lecture.
<b>AGET 3025</b>	<i>Engineering Principles and Applications.</i> 4 quarter cr., Winter, 1997. 40 students.
<b>BAE 5191</b>	<i>Special Problems in Biosystems and Agricultural Engineering.</i> 2 quarter cr., Fall, 1996. 3 students.
<b>BAE 5192</b>	<i>Special Problems in Biosystems and Agricultural Engineering.</i> 2 quarter cr., Fall, 1996. 1 student.
<b>BAE 5191</b>	<i>Special Problems in Biosystems and Agricultural Engineering.</i> 2 quarter cr., Summer, 1996. 1 student.
<b>BAE 5070</b>	<i>Instrumentation and Control for Biological Systems.</i> 4 quarter cr., Spring, 1996. 14 students.
<b>BAE 5191</b>	<i>Special Problems in Biosystems and Agricultural Engineering.</i> 4 quarter cr., Summer, 1995. 2 students.

<b>BAE 5070</b>	<i>Instrumentation and Control for Biological Systems</i> . 4 cr., Spring, 1995. 20 students.
<b>FScN 5316</b>	<i>Quantitative Light Microscopy in Agriculture and Food Research</i> . 4 quarter cr., Spring, 1995. 10 students. Taught 2 weeks lecture and 4 hrs lab, and graded homework and lab reports.
<b>AGET 3030</b>	<i>Introduction to Problem Solving Using Computers</i> . 4 quarter cr., Winter, 1994. 35 students. Taught 3 weeks lecture and all labs, graded exams and half of the homework, and prepared final grades.

### **Guest Lectures to On-Campus Students**

<b>BBE 1011</b>	Bioproducts and Biosystems Engineering Orientation. Video introduction of solid, liquid waste utilization and food engineering research. Fall, 2020.
<b>BBE 4502</b>	<i>Capstone Design</i> , Design project advisor, 3 students, Spring, 2017.
<b>BBE 4502</b>	<i>Capstone Design</i> , Design project advisor, 4 students, Spring, 2016.
<b>BBE 4502</b>	<i>Capstone Design</i> , Design project advisor, Spring, 2015.
<b>BBE 4502</b>	<i>Capstone Design</i> , Design project advisor, Spring, 2014.
<b>CHEN 5551</b>	Survey of Renewable Energy Technologies, One, one and a half hour lectures on wastewater algae production and thermochemical algal biofuel conversion, Fall, 2013.
<b>BBE 4502</b>	<i>Capstone Design</i> , Design project advisor, Spring, 2013.
<b>CHEN 5551</b>	Survey of Renewable Energy Technologies, One, one and a half hour lectures on wastewater algae production and algal biofuel conversion, Fall, 2012.
<b>BBE 4502</b>	<i>Capstone Design</i> , Design project ideas, Spring, 2012.
<b>BBE 1011</b>	Bioproducts and Biosystems Engineering Orientation. Lab tours and algae and pyrolysis research introduction. Fall, 2009, Fall, 2010, Fall, 2011, Fall, 2012 (8 tours).
<b>CHEN 5551</b>	<i>Survey of Renewable Energy Technologies</i> , One, one and a half hour lecture on wastewater algae production and algal biofuel conversion, Fall, 2011.
<b>FSCN 4732</b>	<i>Food and Nutrition Management</i> , one lecture, Spring, 2011.
<b>BBE 4502</b>	<i>Capstone Design</i> , Design project ideas, Spring, 2011.
<b>CHEN 5551</b>	<i>Survey of Renewable Energy Technologies</i> , One, one and a half hour lecture on thermochemical conversions and algae, Fall, 2010.
<b>BBE 4733</b>	<i>Renewable Energy Technologies</i> . 3 semester cr., one week lectures. Spring, 2009.
<b>CHEN 5551</b>	<i>Survey of Renewable Energy Technologies</i> , One, one and a half hour lecture on thermochemical conversions and algae, Fall, 2009.
<b>BBE 2113</b>	Design project ideas, Fall, 2008.
<b>BBE 1011</b>	<i>Bioproducts and Biosystems Engineering Orientation</i> . One, one-hour lecture. Fall, 2008
<b>BBE 1011</b>	<i>Bioproducts and Biosystems Engineering Orientation</i> . One, one-hour lecture. Fall, 2007

<b>CHEN 5595/8995</b>	<i>Introduction to Renewable Energy</i> . Birefining and thermochemical conversion technology. Fall, 2007.
<b>BAE 2113</b>	<i>Introduction to Design</i> . Engineering project ideas. Fall, 2007
<b>BBE 4723</b>	<i>Food Process Engineering</i> , One and a half-hour lecture on Emerging non-thermal processes for food preservation, Spring, 2007.
<b>CHEN 5595/8995</b>	<i>Introduction to Renewable Energy</i> . Birefining and thermochemical conversion technology. Fall, 2006.
<b>BBE 1011</b>	<i>Bioproducts and Biosystems Engineering Orientation</i> . One, one-hour lecture. Fall, 2006
<b>BBE 4401/5401</b>	<i>Biobased Product Engineering</i> . Thermochemical conversion technology. Fall, 2006.
<b>CHEN 4502W</b>	<i>Chemical Engineering Process Design II</i> . Overview of biorefining technologies. Spring, 2006.
<b>BAE 4023</b>	<i>Instrumentation and Control for Biological Systems</i> . Two, one-hour lectures and one lab. Fall, 2005.
<b>BAE 2113</b>	<i>Introduction to Design</i> . Food engineering project ideas. Fall, 2005
<b>BAE 4023</b>	<i>Instrumentation and Control for Biological Systems</i> . Two, one-hour lectures and one lab. Spring, 2005.
<b>CHEN 4502W</b>	<i>Chemical Engineering Process Design II</i> . Overview of biorefining technologies. Spring, 2005.
<b>BAE 2113</b>	<i>Introduction to Design</i> . Food engineering project ideas. Fall, 2004
<b>BAE 4023</b>	<i>Instrumentation and Control for Biological Systems</i> . Two, one-hour lectures and one lab. Spring, 2004.
<b>CHEN 4502W</b>	<i>Chemical Engineering Process Design II</i> . Overview of biorefining technologies. Spring, 2004.
<b>BAE 3013</b>	<i>Engineering Principles of Molecular and Cellular Processes</i> , One-hour lecture. Spring, 2004.
<b>BAE 4723</b>	<i>Food Process Engineering</i> , Two, one and a half-hour lectures, Spring, 2003.
<b>BAE 4023</b>	<i>Instrumentation and Control for Biological Systems</i> . Two, one-hour lectures and one lab. Spring, 2003.
<b>BAE 1011</b>	<i>Biosystems and Agricultural Engineering Orientation</i> . One, one-hour lecture. Spring, 2003.
<b>BAE 4112 &amp; BAE 2113</b>	<i>Senior Design I and Introduction to Design</i> . One lecture introducing design project ideas. Fall, 2002.
<b>BAE 1011</b>	<i>Biosystems and Agricultural Engineering Orientation</i> . One, one-hour lecture. Spring, 2002.
<b>BAE 4023</b>	<i>Instrumentation and Control for Biological Systems</i> . Two, one-hour lectures and one lab. Spring, 2002.
<b>BAE 1011</b>	<i>Biosystems and Agricultural Engineering Orientation</i> . One, one-hour lecture. Fall, 2001.
<b>BAE 2113</b>	<i>Introduction to Design</i> . Food engineering project ideas. Fall, 2001
<b>BAE 1011</b>	<i>Biosystems and Agricultural Engineering Orientation</i> . One, one-hour lecture. Spring, 2001.
<b>BAE 2113</b>	<i>Introduction to Design</i> . Food engineering project ideas. Fall, 2000

<b>BAE 1011</b>	<i>Biosystems and Agricultural Engineering Orientation</i> . One, one-hour lecture. Fall, 2000.
<b>BAE 2113</b>	<i>Introduction to Design</i> . Food engineering project ideas. Fall, 1999
<b>BAE 1011</b>	<i>Biosystems and Agricultural Engineering Orientation</i> . One, one-hour lecture. Fall, 1999.
<b>BAE 1060</b>	<i>Biosystems and Agricultural Engineering Orientation</i> . One, one-hour lecture. Fall, 1998.
<b>FScN 5555</b>	<i>Freezing and Dehydration of Foods</i> . One, one-hour lecture. Winter, 1997.
<b>BAE 1060</b>	<i>Biosystems and Agricultural Engineering Orientation</i> . One, one-hour lecture. Spring, 1996.
<b>AGET 3025</b>	<i>Engineering Principles and Applications</i> . Three, one-hour lectures. Winter, 1996.
<b>FScN 5135</b>	<i>Food Engineering Unit Operations</i> . Two, one-hour lectures. Fall, 1995.
<b>BAE 1060</b>	<i>Agricultural Engineering Orientation</i> . One, one-hour lecture. Spring, 1995.
<b>BAE 5070</b>	<i>Automatic Control and Instrumentation</i> . One, one-hour lecture; assisted with lab. Spring, 1994.
<b>FScN 5312</b>	<i>Instrumental Analysis</i> . One, two-hour lecture. Fall, 1993.

### Short Courses Taught to Industry Professionals (20)

<b>IFT-EFFoST Nothermal Processing Workshop and Short Course</b>	Catalytic intense pulsed light (cIPL) and catalytic microwave (cMW) technologies for non-thermal pasteurization of foods October, 2023
<b>International IPL Workshop</b>	Development of continuous intense pulsed light technology for non-thermal pasteurization of powdered foods. September, 2020
<b>HIT Summer School on Energy 2017</b>	Thermochemical Conversion of Biomass for Energy, Fuels, Chemicals and Materials Production. July, 2017.
<b>AACCI Workshop</b>	Improving the Functionality and Health Attributes of Wheat. October, 2011
<b>TD-NMR Short Course</b>	Structure, composition, and mobility of water: Theory and Analysis of glass transition. May, 2011.
<b>General Mills NMR/MRI Short Course</b>	Development and Applications of NMR/MRI in the study of food polymers and food processes. December, 2005.
<b>Donaldson Company, Inc. Short Course</b>	NMR and MRI development and applications and fiber technology, May, 2005.
<b>Almond Board of California Pasteurization Technology Workshop</b>	Emerging non-thermal processes for food preservation, September, 2004.
<b>Food Processing Training Program for Jiangxi's University Faculty Group</b>	Recent development in food processing technology, February, 2003.
<b>UNDP – Agricultural and Food Processing Project</b>	Overview of agricultural and food processing technology and industry. December, 2002.

<b>EPRI/NSP Electro-Technology Update - Pillsbury</b>	<i>Non-thermal Plasma and Ozone Technology for Food Industry.</i> June, 2000.
<b>EPRI/NSP Electro-Technology Update - General Mills</b>	<i>Non-thermal Plasma and Ozone Technology for Food Industry.</i> June, 2000.
<b>EPRI/NSP Short Course</b>	<i>Pulsed Power Technology and Applications.</i> May, 1999.
<b>AACC Short Course</b>	<i>Water Activity and Stability of Drugs, Foods, and Biologics.</i> April, 1998. NMR, MRI, and water mobility demo, display, and discussion.
<b>ASABE/NSP Short Course</b>	<i>Pulsed Electric Field and Non-Thermal Plasma Technology for Microorganism and Odor Control.</i> August, 1997.
<b>EPRI Food Technology Center Short Course</b>	<i>Use of Electricity in Preserving Foods/Use of Pulsed Electromagnetic Energy.</i> April, 1996.
<b>AACC Short Course</b>	<i>Water Activity and Stability of Drugs, Foods, and Biologics.</i> May, 1995. NMR, MRI, and water mobility demo, display, and discussion.
<b>AACC Short Course</b>	<i>Quantitative Light Microscopy of Foods.</i> October, 1992.
<b>Pillsbury Short Course</b>	<i>NMR/MRI Principles and Applications.</i> October, 1992.
<b>Cargill Short Course</b>	<i>Introduction to Grain Structure and Organization.</i> July, 1992.

#### **Teaching Administration and Service Activities (not updated)**

1. Chair of College Biotechnology Core Committee November, 2003 – March, 2004  
Coordinator of Biotechnology Lab Course Development
2. Development of Bioprocessing and Engineering Summer Principles 1/3 of the new course, *Biotechnology Labs* 2003 – Spring, 2004
3. College Biotechnology Core Committee Spring, 2002 – Present
4. College Career Services Advisory Committee August, 2001 – August, 2003
5. Director of Undergraduate Studies July, 1998 - January, 2003
6. IT Academic Standards and Student Affairs Committee July, 1998 - January, 2003
7. College Curriculum Committee Fall, 1998 – January, 2003
8. Department Student Branch Advisor Fall, 1995 – Fall, 2005
9. IT Open House (IT Week) Committee Spring, 1995 – Spring, 2005
10. BBE Graduate Faculty – Senior Member Winter, 1994 - Present
11. Departmental Undergraduate Program and Winter, 1994 - Present

## Advising Team

12. Departmental Undergraduate Student Board                      Fall, 1995 – Fall, 2003
13. Departmental Undergraduate Recruiting Team                      Fall, 1995 – Present
14. Departmental Undergraduate Honors Program Team                      Fall, 1995 – Fall, 2003
15. Departmental Undergraduate Scholarships Team                      Fall, 1995 – Fall, 2003
16. Graduate Manual and Procedures Committee,  
    Food Science and Nutrition Department                      Summer, 1995 – Summer, 2000
17. Food Science and Nutrition Graduate Faculty -  
    Senior Member                      January, 1994 – Present
18. Gave tours of the Center for Biorefining's renewable energy lab and explain about the wastewater algae and microwave pyrolysis related projects to many groups of the Saturday Sneak Preview prospective student and parent visitors each Fall.
19. Represented BAE and ASABE Student Branch at the COAFES 2003-2004 Kick Off event for students, faculty and staff. St. Paul, MN. September, 2003.
20. Gave a tour of the bioprocessing and food engineering lab and explain about the biorefining and food safety related projects to a group of the MN Agricultural Academy students. May, 2003.
21. Gave a bioprocessing lab and pilot plant tour to the IT career exploration class. Spring, 2003.
22. Prepared a display and gave a lunch-time presentation on making biodegradable materials and fuels from biomass materials and introduction to Biosystems and Agricultural Engineering Department to 50 high school students and their teachers at the AFSA Day on Campus event. May, 2002.
23. Represented BAE at the COAFES Spring Welcome Reception for Fall 2002 Admitted Freshmen and their parents. St. Paul, MN. April, 2002.
24. Represented BAE at both of the IT "Commitment Event" for Fall 2002 Admitted Freshmen and their parents. Minneapolis, MN. March, 2002.
25. Participated in the Annual Dinner with IT Deans, Faculty, and Students, Minneapolis, MN. Spring, 2002.
26. Participated in the National College Fair, Minneapolis Convention Center, Minneapolis, MN. Fall, 2001, Fall, 2002.



27. Organized the BAE Spring Semester Group Advising section, Spring 2001; Spring, 2002.
28. Gave a presentation to a group of prospective students and their parents on BAE undergraduate programs at the Ag. Ambassador Shadowing Day. Spring, 2000; Spring, 2001.
29. Organized a plant field trip to Buhler Inc. for BAE 1011 students. Spring, 2001.
30. Meeting and hosting prospective students in classroom teaching. Spring, 2001.
31. Participated in the COAFES Summer Sneak Preview for high school students. Summer, 2000; Fall, 2000; Fall, 2001
32. Student design evaluator, "AccuraFlow - design of a flowmeter" by Brandon Jacobsen. Fall, 2000.
33. Senior design project "Quality Dough Processors" faculty mentor, report evaluator. Fall, 1998 – Winter, 1999.
34. Help organized the ASABE student branch display at the New Student Convocation event of the University of Minnesota, September 1998.
35. High School Summer Science Research Program Mentor, NIH Research Apprenticeship Program. Summer, 1997, 1998, and 1999.
36. Participated in advising the Undergraduate Research Opportunities Program (UROP). June – November 1998.
37. Participated in the IT Summer Sneak Preview for high school students. Summer, 1998, 1999, and 2000.
38. Organized a Student Branch tour of Rahr Malting Co. April, 1998.
39. Advisor for Raj Pai on the non-thermal plasma project, which competed at the Twin Cities Regional Science Fair in both engineering and physics category and won an MTS Systems Corp. Award, a United States Marine Award, and a First Place Award, in addition to an all expense paid trip to international competition (ISEF) in Ft. Worth, Texas, where countries from all over the world will send delegates to compete, and many Nobel laureates will be judges. He also won a Second Place Award at the state competition in Rochester with the project. April, 1998.
40. Organized and presented two lab demonstrations of machine vision and neural networks application in scabby wheat prediction for the small grain growers, barley and wheat industry leaders, and legislators. February, 1998.
41. Organized Biosystems and Agricultural Engineering IT Week displays and set up a biodegradable materials display. May, 1997; May, 1998; May, 1999; April, 2000.

42. Organized a Student Branch tour of Pillsbury Technology Center. February, 1997.
43. Participated in St. Paul Student Leaders Fall Gathering, sponsored by the St. Paul Student Center and the Board of Governors. October, 1996.
44. High School Summer Science Research Program Mentor, NSF Young Scholars/USDA Research Apprenticeship Program. Summer, 1995 and 1996.
45. Organized Biosystems and Agricultural Engineering IT Week displays and set up a hands-on neural network for corn quality classification demonstration. May, 1995; May, 1996.
46. Coordinated the discussion and formulation of the BAE 3150: Biology for Engineers course. 1995.
47. Roundtable discussion group leader at the CIC (Committee on Institutional Cooperation) Summer Research Opportunities Program Conference. 1994.
48. COAFES High School and Transfer Visit Day faculty host. 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001.
49. Represented Biosystems and Agricultural Engineering at IT Week departmental exhibits. May, 1994.
50. Visited with over thirty (30) prospective students
51. Gave orientation to over fifty (50) new and transferred students
52. Cleared over thirty (30) BAE students for graduation as DUGS

### **Individual Undergraduate Students Advised**

Over one hundred (200) undergraduate students advised

### **Post-Doctors, Research Associates, Research Fellows, Engineers, Scientists, Visiting Professors, Visiting Scholars, and Consultants Advised**

Jun An	Visiting Scholar Beijing Forestry University	Dec., 2018 – Dec., 2019
Erik Anderson	Post-Doctoral Research Associate Current employment: New Leaf Biofuel, San Diego, CA	January, 2018 – August, 2018
Min M. Addy	Post-Doctoral Research Associate Ph.D. in Biosystems and Agricultural Engineering	December, 2007 – Present
Ana Beatriz	Visiting Scholar State University of Goiás, Post-Graduate Program in Natural Resources of Cerrado Brazil	September, 2023 – May, 2024

Regina Bertoldo de Barros	Assistant Scientist Food Science and Nutrition	January, 2005 – January, 2007
Chonghao Bi	Visiting Scholar China Agricultural University	October, 2013- October, 2014
Fernanda Borges	Visiting Scholar Federal University of Rio Grande do Sul (UFRGS)	August, 2012 – August, 2013
Xiaoli Cao	Visiting Professor Ph.D. in analytic chemistry from CAS	February, 2008 – Sept., 2008
Manoj Chamlagain	Exchange Research Hong Kong Baptist University Department of Biology	June, 2022 – August, 2022
Ceria Chandra	Visiting Scholar Chemical Engineering, UMN	October, 2014 – September, 2016
Caishui Chen	Consultant Professor of Food Engineering	Sept., 2002 – Sept., 2003
Dongjie Chen	Post-doctoral research associate Ph.D. in Food Science and Nutrition (Current Employment: InnovHope, Inc, Boston, MA)	January, 2020 – May, 2020
Dongjie Chen	Post-Doctoral Research Associate	September, 2023 - Present
Junhui Chen	Post-Doctoral Scholar Ph.D. in Food Science and Engineering South China University of Technology	March, 2022 - Present
Lide Chen	Research Fellow, Associate Professor of Mechanical Engineering (Current Employment: Assistant Professor, University of Idaho)	April, 2003 – September, 2004
Ling (Paul) Chen	Research Associate, Research Professor Ph.D. in Food Science and Technology	Nov., 1994 - Present
Qin Chen	Post-doctoral research associate Ph.D. in Agricultural and Biological Engineering	August, 2009 – November, 2010
Xia Chen	Visiting Professor Professor of Information Science	Feb., 1997 - Dec., 1998
Xiye Chen	Visiting Scholar Harbin Institute of Technology	October, 2018 – October, 2019
Yi-feng Chen	Post-Doctoral Research Associate Ph.D. in Chemistry	November, 2008 – July, 2010
Yu Chen	Visiting Professor Ph.D. in Ecology	February, 2015 – January, 2016
Zhongxiu Chen	Visiting Professor Ph.D. in Chemical Engineering	October, 2008 – December, 2008
Yanling Cheng	Visiting Professor Ph.D. in Chemical Engineering	May, 2008 - December, 2013
Yanling Cheng	Visiting Professor	January, 2015 – August, 2020

Abigail Chiaokhiao	Ph.D. in Chemical Engineering Undergraduate Research Assistant	Fall, 2020 – Summer, 2021
Myong-Soo Chung	Post-Doctoral Research Associate Ph.D. in Biosystems and Ag. Engr. (Current Employment: Faculty of Food Packaging Department, Yonsei University, South Korea)	March, 2000 – Jan., 2001
Kirk Cobb	Research Engineer M.S. Chemical Engineering	July, 2018 – Present
Leilei Dai	Post-Doctoral Research Associate Ph.D. Bioproducts and Biosystems Engineering	October, 2022 - Present
Shaobo Deng	Research Engineer Ph.D. C. in BBE	January, 2002 – February, 2013
Wenyi Deng	Visiting Associate Professor Ph.D. in Power Engineering and Engineering Thermophysics. Zhejiang University, currently faculty of Donghua University	July, 2019 – October, 2020
Xiangyuan Deng	Visit Scholar Ph.D. in Marine Biology	February, 2014 – August, 2014
Xiangyuan Deng	Visiting Professor Jiangsu University of Science and Technology	Sept., 2016 – Sept., 2017
Kuan Ding	Post-Doctoral Research Associate Ph.D. in Power Engineering and Engineering Thermophysics Southwest University Current position: Faculty at Nanjing Forestry University	Sept. 2017 – January, 2019
Liangliang Fan	Visiting Scholar Ph.D., Nanchang University	February, 2016 – January, 2018
Haotian Fei	Visiting Scholar Chemical Engineering and Technology Zhejiang University of Technology	December, 2023 – June, 2024
Michelle French	Assistant Scientist Food Science and Nutrition	January, 2005 – January, 2007
Rong Fu	Research Fellow M.S. Chemical Engineering	May, 2004 – June, 2005
Zongqiang Fu	Visiting Scholar Ph.D., China Agricultural University	Sept., 2012 – Sept., 2013
Kun Gao	Visiting Professor Jiangsu University of Science and Technology	Sept., 2016 – Sept., 2017
Yinyu Gao	Consultant Professor of Food Engineering	Sept., 2002 – Sept., 2003
Feiqiang Guo	Visiting Professor	November, 2018 – Nov., 2019

	School of Electrical and Power Engineering, China University of Mining and Technology	
Hans Ragnar Gislerød	Visiting Professor (sabbatical leave) Norwegian University of Life Sciences, Universitetstunet 3, Norway	October, 2013 – July, 2014
Li Huang	Visiting Professor, Binzhou University Ph.D. in Food Sci & Engr.	September, 2017-Sept. 2018
Fida Hussain	Ph.D., Visiting Scholar Islamia College Peshawar, Pakistan	July, 2013 – Jan., 2014
Kevin Hennessy	Research Fellow M.S. Bioproducts and Biosystems Engineering	Dec. 2008 – Jan. 2011
Erik Hare	Research Scientist Ph.D. in Chemical Engineering	February, 2004 – Dec., 2004
Aoxi He	Visiting Scholar Yunnan Minzu University	December, 2017 – Dec. 2018
Wei Hua	Visiting Scholar Ph.D., Beijing Union University	September, 2018 – March, 2019
Shuhao Huo	Visiting Professor Jiangsu University	Jan., 2019 – Jan. 2020
Gi-Chul Jang	Post-Doctoral Research Associate Ph.D. in Agricultural Chemistry	May, 1996 - June, 1997
Xuanli Jiang	Visiting Professor	April, 2008 – October, 2008
Yongcheng Jiang	Visiting Professor Ph.D. in Mechanical Engineering and Automation, Jiamusi University	Sept., 2012 – Sept., 2013
Faryal Kabir	Visiting Scholar PMAS University of Arid Agriculture Rawalpindi, Pakistan	November, 2016 – May, 2017
Sarah Kinney	Undergraduate Research Assistant	Fall, 2020 – Summer, 2021
Qingxue Kong	Scientist, Post-Doctor Ph.D. in Bioscience and Professor (Current Employment: Assistant Professor, Tianjin Agricultural University, China)	September, 2006 – January, 2009
Mark Gino Galang	Visiting Scholar University of Salerno, Italy	December, 2022 – Dec., 2023
Zhiping Le	Engineer Ph.D. in Chemical Engineering, Professor	October, 2006 – July, 2010
Hanwu Lei	Post-Doctoral Research Associate (Current Employment: Professor, Washington State University)	January, 2006 – December, 2007
Hui Li	Post-doctoral associate School of Energy and Power Engineering, Shandong University	August, 2019 – August, 2020

	Currently faculty of Shandong Jianzhu University	
Junrong Li	Scientist Jinhua Polytechnic University	January, 2008 – November, 2008
Kun Li	Visiting Professor Nanchang University	November, 2018 – Nov., 2019
Ling Li	Assistant Scientist	March, 2008 – December, 2008
Shangwei Li	Visiting Professor	April, 2008 – October, 2008
Yebo Li	Post-Doctoral Research Associate Ph.D. and Associate Professor (Current Employment: Professor, Ohio State University)	December, 1999 – Dec., 2002
Yuhong Li	Research Fellow Lecture and Assistant Director	March, 2002 – April, 2006
Yuhong Li	Research Associate Bio-techne, Inc., Minneapolis, MN	January, 2020 – present
Xiangyang Lin	Research Fellow Lecturer and Associate Dean	February, 2001 – January, 2003
Xiangyang Lin	Ph.D., Consultant	January, 2003 – September, 2010
Chenghui Liu	Visiting Scholar, Ph.D., faculty of Yunnan Minzu University	August, 2019 – August, 2020
Frank Liu	Research Associate Ph.D. in Environmental Physiology and MBA	November, 2020 – Present
Hui Liu	Visiting Professor Ph.D. in Environmental Science	April, 2015 – November, 2016
Jie Liu	Visiting Scholar Beijing Union University	March, 2018 – September, 2018
Junzhi Liu	Visiting Professor Zhejiang Ocean University	October, 2018 – October, 2019
Lingqin Liu	Visiting Scholar School of Energy and Environment, Southeast University	March, 2019 – March, 2020
Yuhuan Liu	Visiting Associate Professor Associate Professor	June, 2001 – July, 2002
Shiyu Liu	Graduate Intern MS in Chemical Engineering, Syracuse University, NY	June, 2014 – September, 2014
Wei Liu	Visiting Professor Shandong Analysis and Test Center, Shandong Academy of Sciences	October, 2019 – October, 2020
Xianghong Lu	Visiting Associate Professor Ph.D. in Chem. Engr. and Asso. Prof. of Zhejiang Univ. of Technology	May, 2009 – May, 2010
Zejian Lu	Visiting Professor Professor of Agri-Processing	January, 2004 – July, 2004

Yuancai Lyu	Visiting Professor Professor of Environmental Engineering Fuzhou University	Dec., 2019 – Dec., 2021
Henrik Lundqvist	Visiting Assistant Professor Ph.D. in starch-lipid interaction	September, 2002 – Nov., 2002
Hongbin Ma	Research Associate Ph.D. in High Voltage Engineering	Jan., 1999 – September, 2002
Huan Ma	Visiting Assistant Professor Ph.D. in Biophysics	March, 2015 – March, 2016
Tanushree Maheshwari	Teaching/Research Assistant	January, 2023 – June, 2023
Blanca Martinez	Scientist Ph.D. in Pharmacy	Jan., 1994 – September, 2011
Chul Kyoon Mok	Sabbatical leave/Visiting Professor Ph.D. in Food Engineering	August, 2003 – August, 2004
Chul Kyoon Mok	Visiting Professor Kyungwon University	January, 2005 – September, 2008
Johannes Moen	Research Fellow Norwegian University of Life Sciences	June, 2007 – July, 2008
Yong Nie	Visiting Professor Ph.D. in Chemical Engineering, Zhejiang University of Technology	June, 2012 – June, 2013
Anrong Ning	Visiting Professor Ph.D. in Electrical Engineering, Tsinghua University	June, 1995 – Feb., 1999
Shu Ning	Visiting Professor Professor of Mechanical Engineering, Shandong University	July, 1996 - August, 1998
Cassiano Oliveira	Visiting scholar Chemical Engineering, Federal University of Uberlândia, Brazil.	September, 2023 - March, 2024
Muhammad M. Omar	Visiting Scholar University of Agriculture, Faisalabad, Pakistan	Jan. 2017 – July, 2017
Nonso A. Onuma	M.S. Food Science and Nutrition Lab Assistant	September, 2013 - July, 2015
Wendy Ouyang	Research Scientist BS in Biotechnology	March, 2004 – September, 2004
Xuejun Pan	Research Associate Ph.D. and Prof. in Chemical Engineering (Current Employment: Assistant Professor, University of Wisconsin at Madison)	March, 2001 – August, 2002
Adolfo Posadas	Visiting Associate Professor Ph.D. and Associate Professor	Dec., 1998 - April, 1999
Peng Peng	Post-doctor associate Ph.D. in Bioproducts and Biosystems	June, 2018 – September, 2019

	Engineering (Current Employment: Columbia University in New York then Berkeley National Laboratory)	
Pu Peng	Visiting Professor Sinopec China	Sept., 2013 – December, 2013
Jining Qi	Research Associate Ph.D. of Chemistry Current Employment: faculty in Nanjing University	August, 2004 – September, 2006
Hongyan Ren	Visiting Professor Ph.D. in Process Engineering, Jiangnan University	April, 2016 – April, 2017
Fred Rigelhof	Food Engineer Food Science and Nutrition	January, 2005 – January, 2007
Raíssa Aparecida da Silveira Rossi	Federal University of Uberlândia – MG/Brazil	Sept. 2022 – March, 2023
Weijun Sang	Visiting Professor	April, 2008 – October, 2008
Aimin Shi	Visiting Scholar, Ph.D., China Agricultural University	October, 2011 – October, 2012
Yong Sun	Visiting Professor Ph.D. in Agricultural Engineering, Northeast Agricultural University	Sept., 2012 – Sept., 2013
Gaoyou Tian	Visit Professor Ph.D. in Applied Chemistry	October, 2015 – October, 2016
Yinggang Tian	Visiting Professor Nanchang University	Sept., 2013 – Sept., 2014
Alf I. M. Tunheim	Research Fellow Norwegian University of Life Sciences	August, 2005 – September, 2006
Jana Votrubova	Research Fellow Ph.D. C. in Environment Engineering	July, 1998 – July, 1999
Yiqin Wan	Research Fellow Ph.D. in Bioprocess Engineering Current employment: Faculty at Nanchang University	April, 2008 – September, 2010
Bao Wang	Visiting Scholar Ph.D., China Agricultural University	October, 2011 – October, 2012
Chenguang Wang	Post-doctoral research associate Ph.D. in Chemical Engineering	July, 2009 – November, 2010
Jinghan Wang	Visiting Scholar Tongji University	October, 2013 – October, 2014
Liang Wang	Post-doctoral research associate Ph.D. in Bioproducts and Biosystems Engineering	January, 2009 – December, 2009
Lu Wang	Visiting Scholar East China University of Science and Technology	October, 2017 – October, 2018



Lu Wang	Visiting Scholar, Ph.D., East China University of Science and Technology	October, 2019 – May, 2020
Lu Wang	Post-doctoral Research Associate	May, 2020 - Present
Qin Wang	Visiting Professor Ph.D. in Food Engineering and Professor, Zhongkai Agricultural University	October, 2008 – May, 2009
Xiaobing Wang	Ph.D. in Soil Science Yangzhou University	April 2012 – November, 2012
Xiaoquan Wang	Post-Doctor Research Associate Ph.D. in Chemical Engineering	December, 2008 – June, 2011
Yingkuan Wang	Post-doctor Research Associate Chinese Academy of Agricultural Engineering	May, 2008 – December, 2010
Yuchuan Wang	Post-doctoral research associate	June, 2023 - Present
Yunpu Wang	Visiting Professor Ph.D., Nanchang University	November, 2018 – Nov., 2019
Jun Wei	Visiting Scholar Beijing Union University	October, 2018 – March, 2019
Zuo-Jun Wei	Visiting Professor Ph.D. in Chemical and Biochemical Engineering	May, 2007 – August, 2007
Jianping Wu	Post-doctor Associate Ph.D. in Chemical Engineering	October, 2006 – December, 2007
Xiaodan Wu	Visit Professor Ph.D. in Microbiology Current Employment: Nanchang University	March, 2015 – March, 2016
Chunhua Xin	Visiting Professor Ph.D. in Management Science and Engineering, China University of Mining and Technology	March, 2015 – March, 2016
Changyan Yang	Post-doctoral Associate Ph.D. in Chemical Engineering	May, 2007 – April, 2009
Qiong Yang	Graduate Researcher	April, 2016 – June, 2017
Hong Yang	Visiting Professor	April, 2008 – October, 2008
Xiaofei Ye	Post-Doctoral Research Scientist Ph.D. in Bioproducts and Biosystems Engineering (Current Employment: Professor, University of Tennessee at Knoxville, TN)	November, 2003 – July, 2004
Doan Thi Thai Yen	Ph.D. Senior Lecturer Department of Enviromental Engineering Institute for Environmental Science and Technology (INEST), Hanoi University of Science and Technology (HUST),	July, 2014 – July, 2015

Bo Zhang	Vietnam Post-Doctoral Research Associate Ph.D. in Bioprocessing Engineering (Current Employment: Assistant Professor, North Carolina A&T University)	November, 2007 – Nov., 2008
Bo Zhang	Visiting Scholar, Ph.D. Key Laboratory of Energy Thermal Conversion and Control of MOE School of Energy and Environment, Southeast University	September, 2014 - Sept., 2015
Hong Zhang	Research Fellow	June, 2010 – December, 2010
Jingsheng Zhang	Research Fellow Ph.D. C. in Food Engineering Nanchang University	December, 2005 – June, 2006
Jixian Zhang	Visiting Professor Ph.D. in Mechanical Engineering, Jiangsu University	April, 1994 - March, 1995
Liming Zhang	Assistant Scientist	May, 2006 – May, 2008
Mingliang Zhang	Visiting Professor Ph.D. and Professor	April, 1999 – December, 2001
Renchuan Zhang	Post-Doctoral Research Associate	January, 2021 – November, 2021
Yaning Zhang	Visiting Professor Harbin Institute of Technology (HIT)	March, 2016 – March, 2018
Dajiang Zhao	Visiting Associate Professor Doctor of Medicine	February, 2005 – May, 2006
Meiyu Zhao	Post-Doctoral Research Associate Ph.D. in Physical Chemistry Current Employment: Harbin Institute of Technology	September, 2008 – April, 2009
Hongli Zheng	Post-Doctoral Research Associate Ph.D. in Physical Biochemistry Current Employment: Nanchang University	September, 2014 – Sept., 2015
Nan Zhou	Post-Doctoral Research Associate	April, 2021 – November, 2021
Wenguang Zhou	Post-Doctoral Research Associate Ph.D. in Biological Sciences Current Employment: Professor, Nanchang University	Dec., 2009 – February, 2019
Cheng Zou	Post-Doctoral Research Associate Ph.D. in Biosystems and Ag. Engr.	March, 1995 - July, 1996
Xindi Zhu	Visiting Scholar Ph.D., China Agricultural University	September, 2014- Sept., 2015
Yindan Zhu	Visiting Scholar Ph.D., China Agricultural University	October, 2018 – Oct., 2019

### **Short-Term Visits/Exchanges (16)**

Jakob von Essen	Civil Engineering of Sustainable Energy Systems, Department of Engineering Sciences and Mathematics, Lulea University of Technology, Lulea, Sweden. February, 2019
H. P. Heldt-Hansen	Ph.D., Manager, Applied Discovery, Cereal Foods, Novozymes A/S in Denmark. February, 2002
YeonKyeong Lee	Ph.D., Department of Plant Sciences, Norwegian University of Life Sciences. November, 2014.
Weizun Li	Ph.D. in Environmental Science and Engineering. Nankai University. February, 2014
Defa Li	Ph.D. Professor and Director, China Agricultural University and Ministry of Agriculture Feed Industry Center, China, February, March, 2002
Xiangyang Lin	Ph.D., Professor and Head, Food Science and Engineering Department, Fuzhou University, November, 2010.
Dehua Liu	Ph.D., Professor and Director, Chemical Engineering Department, Tsinghua University, April, 2006.
Zhihuai Mao	Ph.D., Dean and Professor of Mechanical Engineering, China Agricultural University, August - October, 2001
Hongwei Qiu	Professor and Director, Industrial Biotechnology Department, China National Center for Biotechnology Development. December 2005 and April 2006.
Pingfan Rao	Ph.D., Professor and Vice President, Fuzhou University, and Dean of Institute of Biotechnology. December, 2000, July, 2001
Bo Shi	Ph.D. and Professor, Chinese Academy of Agricultural Science, February - March, 2002
Jian Shi	Ph.D., Associate Professor and Head, Environmental Engineering Dept. Nantong University, August, 2013.
Hongguang Wang	Ph.D., Professor and Deputy Director General of the Department of Rural and Social Development, The Ministry of Science and Technology, China. July and August 2001, December 2005, and April 2006.
Maohua Wang	Academician, Chinese Academy of Engineering, China Agricultural University. August, 2002.
Lirong Yang	Ph.D. Professor and Director, Chemical Engineering, Zhengjiang University. April, 2006.
Kai Zhao	Ph.D., General Manager, Beijing Bioindustrial Incubation Center. December, 2005 and April, 2006.

### **Other Research Fellows/Teaching Assistants Advised**

Ray Anderson	Undergraduate Research Assistant, Fall, 2002 – Fall, 2003.
Yasmeen Barnes-Nkrumah	Undergraduate Summer Research Apprenticeship Program, Summer, 2000.
Andrew Berge	Undergraduate Research Assistant, Spring, 1999 – Fall, 1999.
Andrew Berge	Undergraduate Research Assistant, Spring, 2001 – Spring, 2003.
Madison Best	Chem Engr. UROP Undergraduate Research Assistant, Spr. - Fall, 2018
Andrew Bird	Undergraduate Research Assistant, Summer, 2016

Steven Biorn Undergraduate Research Assistant and UROP project recipient. June – Spring-Fall, 2008

Rajit Chakravarty NSF Young Scholars. High School Summer Science Research Program. Summer, 1998.

Glorimar Chiclana Life Sciences Summer Undergraduate Research Programs, Summer, 2002.

Michael Fuad Breck School Senior High Science Advanced Research Program, Summer, 2008.

Atishya Ghosh Undergraduate Research Assistant, Summer, 2016

Liam Gong High school summer research intern. Summer, 2014

Joshua Goplin Undergraduate Research Assistant, MISA project, Spring, 99 – Fall, 1999.

Raymond Hatzenbeller Undergraduate Research Assistant, Summer and Fall, 2016

Peter Hauck High school research apprenticeship program, Spring, 2001

Ben Henderson Chem Engr undergraduate honor thesis advisor, Fall, 2017 – Spring, 2018.

Brian Hetchler TA for Engineering Principles and Applications, Winter, 1997

Johanna Heyda TA for Engineering Principles and Applications, Winter, 1999

Sheena Hodges TA for Engineering Principles and Applications, Winter, 1999

Arush Jain High school research intern. Fall, 2014

Andrew Johnson Undergraduate Research Assistant, Spring, 2002 – Fall, 2003

Geoffrie Kramer Undergraduate Research Assistant, Fall, 2005 – Present

Leo A. Kucek Undergraduate Research Assistant and UROP project recipient. June – Spring-Fall, 2008

Jaynie Leung NSF Young Scholars/USDA Research Apprenticeship Program. High School Summer Science Research Program. Summer, 1995.

Avi Limer Chem Engr. Undergraduate Research Assistant, Fall, 2019 – Spring, 2019

Dmitriy Lis Undergraduate Research Assistant, Spring, 2007 - present

Tuo Liu Lab Assistant, Fall, 2009 – August, 2010.

Brock Lundberg Undergraduate Research Assistant and UROP project recipient. June - December, 1998. Honor thesis advisor.

Joana Montenegro TA for Engineering Principles and Applications, Spring, 2001

Vinay Nangia TA for Engineering Principles and Applications, Spring, 2000

Carrie O’Neal Undergraduate Research Assistant, Summer, 2001 – Spring, 2002.

David Necas Undergraduate Research Assistant, Fall, 2018 - present

Raj D. Pai NIH Research Apprenticeship Program. High School Summer Science Research Program. Summer, 1997.

Peng Peng Undergraduate Research Assistant, Spring, 2011 - Summer, 2014

Michael Perniel M.S. Agricultural Education, Minnesota Pollution Control Agency. Lemna (duckweed) research project, Summer, 1995 and 1996.

Reid Pulley Undergraduate Research Assistant, Spring, 1999 – Fall, 1999.

Ian Silver-Ramp Undergraduate Research Assistant, Summer, 2007 – Present.

Gerhardt Robinson Undergraduate Research Assistant, Spr., 2020

Gerhardt Robinson BBE undergraduate honor thesis advisor, Spring, 2020.

Tracy L. Scheffer Undergraduate Research Assistant, MISA project, Spr., 1999 – Fall, 1999.

Benjamin Schroeder Undergraduate Research Assistant, Spring, 2007 – present.

Nandini Singh BBE undergraduate research assistant, Spring – Fall, 2019

Sai Syhaphum Undergraduate Research Assistant, Fall, 1998 – Fall, 1999.

Seyade Tadele High school summer research intern. Summer, 2016

Aisha Toure NIH Research Apprenticeship Program. High School Summer Science Research Program. Summer, 1992-1989.

Nicole Wagner TA for Engineering Principles and Applications, Winter, 1998

Adrian Widjaja Undergraduate Research Assistant, Spring, 2014 - Summer, 2014

Brendon Xu High school summer research intern. Summer, 2014

Cassidy Yueh High school summer research intern. Summer, 2016

David Zhou Undergraduate Research Assistant, Summer, 2007

Simin Zhou NSF Young Scholars/USDA Research Apprenticeship Program. High School Summer Science Research Program. Summer, 1996.

## **Graduate Students Advised**

### ***Completed***

Erik Anderson Ph.D. Biosystems and Agricultural Engineering December, 2017  
 Thesis: New Technologies for the Complete Rendering and Economic Conversion of Waste Oils to Biofuels.  
 (Current Employment:

Changshun Bie M.S. Biosystems and Agricultural Engineering August, 1999  
 Theses: Study of States of Water in Dough using Continues NMR T<sub>2</sub> Spectra.  
 (Current Employment: Tochi, Inc., Plymouth, MN)

Leipeng Cao Ph.D. Food Engineering May, 2019  
 Nanchang University (co-advised with Professor Y. Liu)  
 Thesis: Study on the N and P recovery and Cu and Zn removal from swine wastewater and quality-safety of hydroponic water spinach.

Kehua Chang Ph.D. Biosystems and Agricultural Engineering July, 2004  
 Thesis: Moisture and Temperature Mapping of Foods during Dynamic Processes Using MRI.  
 (Current Employment: Ugs Plm Solutions, Arden Hills, MN)

Dongjie Chen Ph.D. Food Science and Nutrition January, 2020  
 Thesis: Decontamination of particulate foods using intense pulsed light and other non-thermal methods.  
 (Current Employment: InnovHope, Inc, Boston, MA)

Sibo Cheng M.S. Bioproducts and Biosystems Engineering June, 2015  
 Thesis: Techno-economic analysis of algae cultivation in wastewater.

Myong-Soo Chung Ph.D. Biosystems and Agricultural Engineering March, 2000  
 Thesis: Study of Caking in Powered Foods Using Nuclear Magnetic Resonance (NMR).  
 (Current Employment: Faculty of Food Packaging Department, Yonsei University, South Korea)

Leilei Dai Ph.D. Bioproducts and Biosystems Engineering October, 2022  
 Thesis: Catalytic microwave-assisted pyrolysis of waste plastics for fuels and chemicals

Shaobo Deng M.S. Biosystems and Agricultural Engineering January, 2001  
 Thesis: Nonthermal Plasma Development and Application in Hazardous Gas Control.  
 (Current Employment: Burma, Inc., Mounds View, MN.)

Zhenyi Du Ph.D. Bioproducts and Biosystems Engineering January, 2013  
 Thesis: Thermochemical Conversion of microalgae for biofuel production  
 (Current Employment: University of Tennessee, Knoxville, TN)

Dengle Duan      Ph.D. Food Engineering      May, 2019  
Nanchang University (co-advised with Professor Y. Liu)  
Thesis: Upgrading biooil from co-pyrolysis of lignin and food waste soapstock over corn  
stover activated carbon catalyst.  
(Current Employment: Assistant Professor at Zhongkai University of Agriculture and  
Engineering, Guangzhou, China)

Liangliang Fan      Ph.D. Food Engineering      May, 2018  
Nanchang University (co-advised with Professor Y. Liu)  
Thesis: Microwave assisted catalytic pyrolysis of lignin  
(Current Employment: Faculty at Henan University, China)

Richard Griffith      M.S. Bioproducts and Biosystems Engineering      April, 2018  
Project: Chlorella Harvest by Flotation - Electro-Flotation Process

Lin Gu      M.S. Biosystems and Agricultural Engineering      July, 2000  
Thesis: Structural-Functional Relationships of Highly Refined Cellulose.  
(Current Employment: China Agricultural University, Beijing, China)

Jianfei Guo      MS Bioproducts and Biosystems Engineering      December, 2023  
Project: Applications of Plasma Generated by Concentrated High Intensity Electric Field  
(CHIEF) in Nitrogen Fixation.

Mufan Guo      MS Food Science      January, 2012  
Thesis: Physical, Chemical, and Enzymatic Treatment of Wheat Bran to Improve  
Bioavailability and Functionality.

Jun Han      M.S. Microbial Engineering      February, 1996  
Thesis: Temperature-Sensitive Hydrogel Pore Size Characterization and Its Application  
in Bioseparation.  
(Current Employment: Scientist, Digital River, Inc., Minneapolis, MN.)

Wei Han      M.S. Biosystems and Agricultural Engineering      August, 1998  
Thesis: Application of High Voltage Electrical Power in Odor Reduction of Biological  
and Food Processing Wastes.  
(Current Employment: Engineer, Lucent Technologies, Morrow, GA.)

Bing Hu      Ph.D. Bioproducts and Biosystems Engineering      Aug., 2009-June, 2013  
Thesis: Swine manure-based algal cultivation for biofuel & animal feed production and  
wastewater treatment.  
(Current Employment: Faculty at Beijing Institute of Technology)

Kevin Hennessy      M.S. Bioproducts and Biosystems Engineering      December, 2008  
Thesis: Developing a Continuous System for the Hydrothermal Processing of Wet  
Biomass Slurries  
(Current Employment: Minnesota Department of Agriculture)

Allison Hohn      M.S. Food Science      June, 2012  
Thesis: Enzyme Treatment of Wheat Bran to Release Antioxidants  
(Current Employment: Land O'Lakes)

Fida Hussain      Ph.D. in Biological Sciences      May, 2014  
Islamia College Peshawar (A Pakistan Public Sector University)  
Thesis: Local bioprospecting for promising microalgal strains and their application in  
CO2 biomitigation  
(co-advised with Professor Syed Zahir Shah of Islamia College Peshawar  
Current Employment: Faculty at the Islamia College Peshawar, Pakistan)

- Ozlem Karakas M.S. Bioproducts and Biosystems Engineering May, 2023  
 Thesis: Thermochemical conversion of algal biomass and agricultural plastic waste to fuels and value-added materials  
 (Current Employment: Tukiye (Turkey) Ministry of Agriculture)
- Hanwu Lei M.S. Biosystems and Agricultural Engineering December, 2002  
 Thesis: Ozone aided corn steeping process.
- Hanwu Lei Ph.D. Biosystems and Agricultural Engineering January, 2006  
 Thesis: Temperature mapping and modeling of extrusion process.  
 (Current Employment: Faculty of Biological and Agricultural Engineering Department, Washington State University)
- Liang Li M.S. Bioproducts and Biosystems Engineering Aug., 2010-Sept., 2012  
 Thesis: Synthesis and Characterization of starch-based cationic flocculants for microalgae harvesting
- Yecong Li Ph.D. Bioproducts and Biosystems Engineering December, 2011  
 Thesis: Cultivation of algae on municipal wastewater as feedstock for biofuel production  
 (Current Employment: Sapphire Energy, San Diego, CA)
- Yun Li Ph.D. Bioproducts and Biosystems Engineering January, 2012  
 Thesis: Development of a low field MRI system for non-medical applications.
- Xiangyang Lin Ph.D. Food Engineering December, 2006  
 Nanchang University (co-advised with Professor Gao)  
 Thesis: Applications of NMR and MRI in food shelf stability improvement  
 (Current Employment: Faculty at Fuzhou University, China)
- Chengmei Liu Ph.D. Food Engineering December, 2006  
 Nanchang University (co-advised with Professor Gao)  
 Thesis: Instantaneous High Pressure Process: Its Sterilization Mechanisms and Effect on Quality Improvement and Property Changes of Dietary Fiber  
 (Current Employment: Faculty at Nanchang University, China)
- Shiyu Liu Ph.D. Bioproducts and Biosystems Engineering October, 2019  
 Thesis: Microwave-assisted catalytic thermochemical conversion of organic solid wastes for biofuels production  
 (Current Employment: 3M Company)
- Yuhuan Liu Ph.D. Food Engineering December, 2006  
 Nanchang University (co-advised with Professor Gao)  
 Thesis: Making formaldehyde free wood adhesives from biomass  
 (Current Employment: Faculty at Nanchang University, China)
- Zhe Liu M.S. Food Science and Nutrition January, 2004  
 Thesis: Ozone washes for pesticide removal and their effect on shelf life of fruits.  
 (Current Employment: Scientist, North Carolina A&T State University, Greensboro, NC.)
- Zhenzhong Long M.S. Biosystems and Agricultural Engineering January, 1997  
 Thesis: Application of Magnetic Resonance Imaging and Polymer Science Theory to the Study of Storage Stability in Ready-To-Eat Food Systems.  
 (Current Employment: Engineer, Safetran, Inc., Louisville, KY.)
- Brock Lundberg M.S. Biosystems and Agricultural Engineering January, 2000  
 Thesis: Development of a New Process to Make Highly Refined Cellulose.  
 (Current Employment: Vice President, Fiberstar, Inc. Hudson, WI.)
- Qian Lu Ph.D. Food Science and Nutrition January, 2018

- Thesis: Strategies to Cultivate Microalgae on Eutrophic Wastewater for Nutrients Recycling and Biomass Production.
- Liuqing Luo M.S. Biosystems and Agricultural Engineering September, 1999  
Thesis: Prediction of Scab Infection Rate in Wheat using Machine Vision and Neural Networks (Current Employment: Engineer, Active Logic Corp., Bloomington, MN.)
- Xiaochen Ma M.S. Bioproducts and Biosystems Engineering Aug., 2010 – Sept., 2012  
Thesis: Biodiesel Production from Algae through In Situ Transesterification Technology
- Xiaochen Ma Ph.D. Bioproducts and Biosystems Engineering Sept., 2012 – May, 2016  
Thesis: Utilization of Waste Resources for Low-Cost Algae-based Biofuel Production and Wastewater Bioremediation.  
(Current employment: Chinese Academy of Science, Beijing)
- Yiwei Ma M.S. Food Science and Nutrition Aug., 2013-Aug., 2016  
Thesis: Effects of Algae Feeding on Mouse Metabolome.  
(Co-advised with Prof. Chi Chen)
- Yiwei Ma Ph.D. Food Science and Nutrition Aug., 2016-Aug., 2021  
Thesis: Identification and characterization of double-edged metabolic effects of functional foods by metabolomics-based biochemical analysis.  
(Co-advised with Prof. Chi Chen)
- Dmitri Mataya M.S. Bioproducts and Biosystems Engineering Dec., 2022  
Thesis: Development of an Integrated Biological Wastewater Treatment System for the Full Utilization of High Nitrogen Livestock Waste
- Johannes Moen M.S. Mathematical Sciences and Technology June, 2008  
Norwegian University of Life Sciences  
Thesis: Microwave pyrolysis of biomass for biofuels production. (co-advised with Professor Petter Heyerdahl of UMB in Norway)
- Eric McEntyre M.S. Food Science and Nutrition May, 1995  
Thesis: Evaluation of the Physical Properties of Barley in Relation to Hydration.  
(Current Employment: Fulbright Scholar in New Zealand; Co-advised with R.G. Fulcher)
- Joana Montenegro Ph.D. Biosystems and Agricultural Engineering April, 2001  
Thesis: Development and Modeling of a Pulsed Non-Thermal Plasma System for Treatment of Liquid Foods.  
(Current Employment: James Ford Technical Center, General Mills Inc., Plymouth, MN)
- Ke Ning M.S. Biosystems and Agricultural Engineering August, 2001  
Thesis: Magnetization Transfer and its Applications in Food Engineering.  
(Current Employment: MIT, Boston, MA)
- Muhammad Mubashar Omar Ph.D. in Agricultural Engineering (Energy), December, 2018  
University of Agriculture, Faisalabad, Pakistan. (Co-advised with Dr. Anjum Munir).
- Nonso A. Onuma M.S. Food Science and Nutrition May, 2015  
Thesis: Investigation of treatment effects on biodiesel production from sludge from municipal wastewater treatment plants  
(Current Employment: Cargill Corporation)
- Peng Peng MS BBESM December, 2015  
Thesis: Modeling of Concentrated High Intensity Electric Field (CHIEF) and Its Comparison with Other Non-thermal Liquid Food Pasteurization Technologies
- Peng Peng Ph.D. Bioproducts and Biosystems Engineering June, 2018



Thesis: Sustainable atmospheric ammonia synthesis and nitrogen fixation using non-thermal plasma (NTP)  
(Current Employment: Columbia University, New York)

Keith Petrofsky Ph.D. Food Science April, 2012  
Thesis: Enhance bioavailability of whole grain ingredients  
(Current Employment: Harlan Bakeries, Indianapolis, IN; co-advised with Len Marquart)

Charles Schiappacasse M.S. Bioproducts and Biosystems Engineering December, 2019  
Thesis: Atmospheric Pressure Non-Thermal Plasma: A Tool for Airborne Pathogens  
(Current Employment: Michael Foods, Chaska, MN)

Guiwei Tan M.S. Food Science and Nutrition September, 2015  
Thesis: Development of a thin-layer chromatography-based method for structural analysis of phosphatidylcholine (PC)  
(Current Employment: Cargill Corporation)

Zongcai Tu Ph.D. Food Engineering December, 2006  
Nanchang University (co-advised with Professor Gao)  
Thesis: Improvement of Protein Properties through Dynamic High Pressure Micro-Fluidization Treatment and Preliminary Study on its Mechanism  
(Current Employment: Faculty at Nanchang University, China)

Alf I. M. Tunheim M.S. Mathematical Sciences and Technology May, 2007  
Norwegian University of Life Sciences  
Thesis: Destructive distillation of corn stover by microwave pyrolysis for the production of biofuels. (co-advised with Professor Petter Heyerdahl of UMB in Norway)

Yiqin Wan Ph.D. Food Engineering December, 2008  
Nanchang University  
Thesis: Microwave pyrolysis of biomass for energy production  
(Current Employment: Faculty at Nanchang University, China)

Xiaolan Wang M.S. Food Science and Nutrition September, 1998  
Thesis: Interactions of Fat and Carbohydrate Replacers in Confectionery Products using NMR, MRI and Food Polymer Science Theory.  
(Current Employment: Scientist, Siemens Medical, Inc., Seattle, WA.)

Zhen Wang M.S. Food Science January, 2014  
Thesis: Utilization of oil crop residues for enhanced algae based production of lipids, polyunsaturated fatty acids, and protein  
(Current Employment: Cornell University)

Yuanhua Wang M.S. Bioproducts and Biosystems Engineering May, 2008  
Thesis: Making biopolymers from bio-oils.  
(Current Employment: Dow Chemicals Company)

Yunpu Wang Ph.D. Food Science and Engineering May, 2020  
Nanchang University (co-advised with Professor Liu Yuhuan)  
Thesis: Production of hydrocarbon-rich bio-oil by microwave-driven catalytic pyrolysis of vegetable oil soapstock  
(Current Employment: Faculty at Nanchang University, China)

Xiaodan Wu Ph.D. Food Engineering May, 2017  
Nanchang University (co-advised with Professor Yuhuan Liu)  
Thesis: Wastewater treatment and carbon dioxide emission reduction with low-cost production of microalgae biomass

- (Current Employment: Faculty at Nanchang University, China)
- Qinglong Xie      Ph.D. BBESM      January, 2016  
 Thesis: Fast microwave-assisted thermochemical conversion of biomass for biofuel production  
 (Current Employment: Zhejiang University of Technology, Assistant Professor)
- Jianzhong Xu      M.S. Biosystems and Agricultural Engineering      November, 1996  
 Thesis: Prediction of Dough Rheological Properties Using Neural Networks.  
 (Current Employment: Senior Engineer, Seagate Inc., Bloomington, MN.)
- Li Xu      M.S. Food Science and Nutrition      December, 1996  
 Project: Properties of Novel Cellulose Based Composite Edible Films.  
 (Current Employment: Iconovex Corporation, Hopkins, MN.)
- Xiaofei Ye      Ph.D. Biosystems and Agricultural Engineering      April, 2004  
 Thesis: Fast and Accurate Mapping of Temperature and Mathematical Modeling of Liquid-Particulates System during Ohmic Heating using Magnetic Resonance Imaging.  
 (Current Employment: Faculty with BAE at University of Tennessee at Knoxville)
- Lun Yi      M.S. Food Science and Nutrition      December, 1996  
 Thesis: Preparation and properties of highly refined cellulose (HRC) gel and powder made from corncobs and husks.  
 (Current Employment: Scientist, Ultimate/ProStar Nutrition, Farmington, CT.)
- Fei Yu      Ph.D. Bioproducts and Biosystems Engineering      April, 2007  
 Thesis: Renewable Energy from Corn Residues by Thermochemical Conversion.  
 (Current Employment: Faculty of Department of Forest Products, Mississippi State University)
- X. Suzy Zeng      M.S. Food Science and Nutrition      October, 1994  
 Thesis: Study of Soybean Seedcoat Cracking Using Magnetic Resonance Imaging.  
 (Current Employment: Scientist, Pillsbury Technology Center, Minneapolis, MN; Co-advised with R.G. Fulcher)
- Jingsehnng Zhang      Ph.D. Food Engineering      December, 2007  
 Nanchang University (co-advised with Professor Y. Gao)  
 Thesis: NMR and MRI techniques application in food science  
 (Current Employment: Faculty at Nanchang University, China)
- Iris Lingyan Zhang      M.S. Bioproducts and Biosystems Engineering      January, 2010  
 Thesis: Improving Physiochemical and Sensory Properties of Wheat Bran.
- Renchuan Zhang      Ph.D. Bioproducts and Biosystems Engineering      January, 2021  
 Thesis: An innovative thermal-vacuum stripping assisted thermophilic anaerobic digestion process and system for complete utilization of liquid swine manure.
- Yuan Zhao      M.S. Bioproducts and Biosystems Engineering      Aug., 2010-Sept., 2012  
 Thesis: Heavy Metals in Wastewater: Their removal through algae cultivation and their roles in microwave-assisted pyrolysis of algae Sept. 2012
- Yunfeng Zhao      Ph.D. in Food Science and Engineering      May, 2021  
 Nanchang University (co-advised with Professor Y. Liu)  
 Thesis: Pyrolysis of polyolefin waste plastics for food packaging catalyzed by the composite nanofiber carbon and HZSM-5
- Nan Zhou      Ph.D. Bioproducts and Biosystems Engineering      April, 2021  
 Thesis: Catalytic microwave-assisted pyrolysis for energy production from biomass and plastic wastes.

### ***In Progress***

Abigail Chiaokhiao	M.S. Bioproducts and Biosystems Engineering	August, 2022
Thesis:		
Jason Guo	M.S. Bioproducts and Biosystems Engineering	August, 2022
Thesis:		
Suman Lata	M.S. Bioproducts and Biosystems Engineering	August, 2022
Thesis:		
Juer Liu	Ph.D. Food Science and Nutrition	August, 2015
Thesis:		
Jaime Thissen	M.S. Bioproducts and Biosystems Engineering	September, 2012
Thesis:		
Tom Weisbecker	M.S. Bioproducts and Biosystems Engineering	January, 2021
Thesis:		

### ***Other Advisory and/or Examination Committees***

Bryan E. Albright	B.S. Biosystems and Agricultural Engineering Senior design project advisor, 1994.
Raghu Kumar Cavatur	Ph.D. Pharmaceuticals Dossier exam committee member, 1996. Final exam committee member, 1998.
Gang Chen	M.S. Food Science and Engineering, Nanchang University, China Final exam committee chair, 2004.
Roger Chen	M.S. Food Science and Nutrition Advisory committee member, 2001 - present.
Karen E. Churchill	Ph.D. Food Science and Nutrition Advisory committee member, 1996 - 98. Thesis reader and final defense committee member, 1999
Dana M. Dronen	Ph.D. Food Science and Nutrition Final exam committee, 2003-2004.
Jodi A. Engleson	Ph.D. Food Science and Nutrition Advisory committee member, 1999 - present Dossier reader and preliminary exam committee member, 1999 Final exam committee member, 2001
Jeffrey Enz	M.S. Food Science and Nutrition Advisory committee member, 1996 - 2002. Thesis reader and exam committee member, 2002.
Daniel L. Fasold	M.S. Food Science and Nutrition Advisory committee member, 1995 - 96. Thesis reader and exam committee member, 1996.
Kerstin M. Haberer	Ph.D. Food Science and Nutrition Advisory committee member, 1995 - 97.
Jennifer J. Hommerding	M.S. Biosystems and Agricultural Engineering

Dengfeng Jiang	Advisory committee member, 1999 - 2000. M.S. Computer Science Advisory and exam committee member, 1996 -1997.
Dengfeng Jiang	M.S. Management of Technology Exam committee member, 2003
Nalladurai Kaliyan	Ph.D. Biosystems and Agricultural Engineering Dossier exam committee member, 2006.
Bikram Kapoor	M.S. Biosystems and Agricultural Engineering Advisory and exam committee member, 1997 - 1998.
Rohit Kapoor	Ph.D. Food Science and Nutrition Advisory and exam committee member, 1995 – present.
Falai Li	Ph.D. Biosystems and Agricultural Engineering Dossier exam committee member, 1994. Final exam committee member, 1997.
Minlan Li	M.S. Forest Products Advisory committee member, 1995. Thesis reader and exam committee member, 1995.
Jingyang Liu	M.S. Forestry Thesis reader and exam committee member, 1997.
Wei Liu	M.S. Food Science and Engineering, Nanchang University, China Final exam committee chair, 2004.
Chin Yang Lo	Ph.D. Food Science and Nutrition Final exam committee chair, 1996.
Zhenzhong Long	M.S. Mechanical Engineering Advisory and final exam committee member, 1996 - 98.
John David McKeechen	Ph.D. Food Science and Nutrition Preliminary oral exam committee member, 1996.
Jonathan Arthur Merkle	Ph.D. Food Science and Nutrition Dissertation reader and final exam committee member, 1996.
Hui-Fuang Ng	Ph.D. Biosystems and Agricultural Engineering Dossier exam committee chair, 1995. Preliminary oral exam committee member, 1995. Final exam committee member, 1996.
Ke Ning	M.S. Electrical and Computer Engineering. Final exam committee member, 2001.
Mike Perniel	M.S. Agricultural Education Advisory and final exam committee member, 1995 - 1998.
Timothy John Puhek	M.S. Food Science and Nutrition Final exam committee member, 2002.
Michael Chunhua Qian	Ph.D. Food Science and Nutrition Preliminary exam committee member, 1998. Final exam committee member and thesis reader, 2000.
Irma Rosalina	M.S. Biosystems and Agricultural Engineering Final exam committee member, 2000.
Eugene Roytburg	Ph.D. Biosystems and Agricultural Engineering Final exam committee member, 1997.

Craig Philip Sherwin	M.S. Food Science and Nutrition Advisory committee member, 1997-1998. Final exam committee member, 1998.
Srinivas S. Somayajula	M.S. Food Science and Nutrition Advisory and final exam committee, 1995 - 1996.
Stephanie Tandean	Undergraduate Research Assistant, 2015-2016.
Mazhar Ahmet Tutuncu	Ph.D. Food Science and Nutrition Final exam committee member, thesis reader, 1998.
Nurhan Pinar Tutuncu	Ph.D. Food Science and Nutrition Advisory committee member, 1995 - 1997. Preliminary oral exam committee member, 1996. Final exam committee member, thesis reader, 1997.
Edward C. Wanat	Ph.D. in Chemical Engineering and Material Sciences Final exam committee member, thesis reader, 2005.
Ye Wang	Ph.D. Biosystems and Agricultural Engineering Preliminary dossier written and oral exam committee chairs, 2000. Advisory and final exam committee chair, 1998 - 2001.
Ye Wang	M.S. Electrical and Computer Engineering Final exam committee member, 2001
Jianzhong Xu	M.S. Computer Science Advisory and final exam committee, 1995 - 1997.
Ying Xu	M.S. Electrical and Computer Engineering Advisory and final exam committee, 1996 - 1999.
Hai You	Ph.D. Food Science and Engineering, Nanchang University, China Thesis reader and final exam committee chair, 2002-2003.
Nese Tulay Yurttas	M.S. Food Science and Nutrition Advisory committee member, 1997 - 1998. Thesis reader and final exam committee member, 1998.
Chun Zhang	Ph.D. Chemical Engineering and Material Science Dossier exam committee member, 1994. Advisory committee member, 1994 - 1997. Thesis reader and final exam committee member, 1997.
Dongmei Zhang	Ph.D. Biosystems and Agricultural Engineering Dossier exam committee member, 1994. MS advisory committee, 1996.
Jiangsong Zhang	Ph.D. Biosystems and Agricultural Engineering Dossier exam committee chair, 1997. Advisory committee member, 1995-1997.
Feng Zhu	Ph.D. Computer Science and Engineering Thesis reader and final exam committee member, 2002.
Hong Zhu	M.S. Electrical and Computer Engineering Advisory and final exam committee, 1998 - 2000.

## SERVICE/OUTREACH

### Overview

I always consider it an honor to be invited to participate in programs and committees of the department, college, university, professional society, state and federal agencies, and public and private companies. I take my commitment to these services very seriously and always strive to fulfill my responsibilities in a professional manner.

Throughout my career, I have held numerous leadership roles, including Director of Graduate Studies, Director of Undergraduate Studies, Student Branch Advisor, and President of the Minnesota Chapter of ASABE. I have also served on various committees such as the College Promotion and Tenure Committee, the Department Faculty Consultative Committee, the Electric Power Research Institute (EPRI) Food Technology Center (FTC) Director Search Committee, and a few Faculty Search Committees. Additionally, I have been a chair or member of the Overall Program Committee for the 1996 and 1998 International Conference on Food Science and Technology, Conference of Food Engineering (CoFE 2018), the Symposium on NMR and MRI Applications in Food Science and Technology, and many others, and chaired many Technical Sections also.

I have also contributed as a technical reviewer for various technical journals and have reviewed numerous research proposals for different agencies and companies. I have given many short courses or workshops, seminars, and symposium presentations for professional societies, university departments, and companies. Additionally, I have given numerous interviews to popular media on various research activities and presented to commodity groups, county extension educators, and high school and college educators. As a consultant to several companies, I have provided valuable insights that have helped advance my research and education.

One of my significant contributions was coordinating and preparing the successful NSP/University joint proposal to attract the EPRI/NSP National Food Technology Center to the University of Minnesota. I have also represented the department in various service activities, such as the State Fair, IT Week, and the High School Summer Research Program.

### Technical Referee (not updated)

#### *Professional Journals*

*Applied Engineering in Agriculture* (1994 - present)  
*Biotechnology and Bioengineering* (2002 – present)  
*Carbohydrate Research* (2005-present)  
*Cereal Chemistry* (1994 - present)  
*CRC Press, LLC* (2003 – present)  
*Food Science and Technology International* (2001, - present)  
*Innovative Food Science and Emerging Technologies* (2001 – present)  
*International Journal of Food Science & Technology* (1997 - present)  
*Journal of Cereal Science* (1994 - present)

*Journal of Dairy Science* (1999 – present)  
*Journal of Food Engineering* (2000 – present)  
*Journal of Food Process Engineering* (1998 - present)  
*Journal of Food Science* (1994-present)  
*Journal of Magnetic Resonance* (1998 – present)  
*Journal of Rheology* (2000 – present)  
*Journal of the Science of Food and Agriculture* (2001 – present)  
*Plasma Chemistry and Plasma Processing* (2001 – present)  
*Proceedings of the Institute of Biological Engineering* (1998 – present)  
*Transactions of ASABE* (1994 - present)  
*Transactions of CSAE* (2002 - present)  
*Transactions of the Institution of Chemical Engineers* (2003 – present)  
ASABE paper awards (1994 - present)

### *Research Proposals*

NSF biofuel related proposals (over 30 proposals, 2000 – present)  
USDOE biofuel related grant proposals (over 100 proposals, 1998 – present)  
USDA biomass related grant proposals (over 100 proposals, 1998 – present)  
USDA NRICGP and Small Business Grants Program (20 proposals, 1994 - present)  
U.S. Civilian Research and Development Foundation (1 proposal, 2003 – present)  
Pillsbury Company (4 proposals, 1993 - 2001)  
Rapid Agricultural Response Fund (41 proposals, 2002 - present)  
Vermont EPSCoR (Experimental Program to Stimulate Competitive Research) Program  
(1 proposal, 1996)  
Minnesota Technology, Inc. (1 proposal, 1998 - present)

### *Minnesota Agricultural Experimental Station*

From Biosystems and Agricultural Engineering (15 papers, 1994 - 2000)  
From Food Science and Nutrition (3 papers, 5 proposals, 1994 - present)

### **Consultant and Outreach to Industry**

Gerson Lehrman Group in biorefining. 2007 – Present.

Rawhide Energy in biofuel production. 2007 – Present.

Bixby Energy Systems, Inc. in biofuel production. 2004 - Present.

Kellogg Company in NMR/MRI application in water management in food. 2005 - Present.

Generation II Ethanol, LLC. in value-added process development for byproducts from dry milling corn ethanol production. 2002 - Present.

Land O'Lakes, Inc. in NMR applications in cheese. 2004 – Present.

Sebesta Blomberg and Associates in value-added process development for byproducts from dry milling corn ethanol production and oil refinery. 2001 - Present.

Dupont Protein Technology International in NMR/MRI application in water management in food. 2002 - Present.

Source Food Technology in oil refinery. 2001- Present.

DQCI Services, Inc. in process automation and control. 2001- 2002.

Grand Metropolitan/Pillsbury Company in MRI and Neural Network applications. 1992 - 2002.

General Mills Company in MRI and digital image analysis. 1993 - Present.

Cargill Company in image analysis, NMR, NIR, visible light, and UV/fluorescence spectroscopy and microscopy applications; and fibrous by-products processing and utilization. 1992 - Present.

Bush Brothers & Company in NMR, MRI, and machine vision applications in dry bean processing. 2000 – Present.

Hunt-Wesson, Inc. in MRI and NMR applications in food process and product quality improvement. 1995 - Present.

Colorado Sweet Gold, LLC. in ozone applications in wet milling process. 2000 – Present.

SCP Control, Inc. in non-thermal plasma and ozone technology development and applications. 1999 – Present.

Land O'Lakes, Inc. in non-thermal processing technologies. 2000 – 2001.

Buhler Inc. in MRI and NMR applications in moisture control during soybean dehulling process. 1997 - Present.

Member of the Board of Directors, FiberStar, Inc. Highly refined cellulose processing. 1997 - 2000.

Member of the Scientific Advisory Board, FiberStar, Inc. Highly refined cellulose processing. 1997 - Present.

EnviroMedical Systems, Inc. Ozone application in medical equipment sterilization. 1998 - 1999.



Nestlé Company and Cereal Partners Worldwide in MRI and NMR applications in moisture and fat management in Foods. 1998 – Present.

US Army Natick Solider Systems Center in MRI and NMR applications in moisture and fat management in Foods. 1993 – Present.

### **Other Selected Service and Outreach Activities (not updated)**

1. Gave a tour to of the Rosemount wastewater algae production and mobile biomass microwave assisted pyrolysis facility to Al Juhnke, State Ag & Energy Field Rep, Office of US Senator Franken, and John Snyder and Dick Hemmingsen among others. December 1, 2011.
2. Gave an interview on Rosemount pilot algae production system, the story “Filler up ... with algae” published on October 24, 2011 of *Pioneer Press* on the front page.
3. Gave an interview to Farm Show on mobile microwave pyrolysis system for biomass conversion. Story published in *Farm Show* Vol. 35, No. 1, 2011:34.
4. Gave an interview to Fox 9 news on mobile microwave pyrolysis system for biomass conversion. Story aired on June 1st, 2010 evening new.
5. Gave an interview to Popular Science on mobile microwave pyrolysis system for biomass conversion. Story published in June, 2010 issue of the Popular Science magazine.
6. Gave a tour to Worthington Middle School students on wastewater algae production and conversion. May, 2010.
7. Gave two wastewater treatment plant field tours to the International Biomass Conference attendees on wastewater algae production and conversion. May, 2010.
8. Gave an interview on algae as an energy crop production, and the story published as “Pond scum finally gets some respect - as oil resource” on *Star Tribune* on July 17th, 2009 issue.
9. Gave an interview on wastewater for algae production, and the story published as “From the Sewage Plant, The Promise of Biofuel” on *Yale Environment 360* on July 1<sup>st</sup>, 2009 issue.
10. Gave a presentation of mass culture of algae as an energy crop for biofuel production and a tour of thermochemical biomass conversion for the Class without Quiz. Spring, 2009 on St. Paul Campus.
11. Gave an interview on mass production of algae as an energy crop for biofuel production. Story published as Pond full of scum produces a tank full of cheap diesel on 04/17/2009 issue of Boston Herald, as MINNESOTA BUSINESS: Diesel revolution on 4/17/2009 issue of Grand Forks Herald, and as Pond full of scum produces a tank full of cheap diesel on April 13, 2009 issue of Minneapolis Star Tribune.

12. Gave a tour and overview of algae for energy crop and wastewater treatment to a group of Wisconsin students on April 4<sup>th</sup>, 2009.
13. Gave an interview on mass production of algae as an energy crop for biofuel production for *Northland's Newscenter*, story aired on March 25, 2009.
14. Gave an interview on mass production of algae from wastewater for *Minnesota Daily*, story published in November 25, 2008 issue.
15. Gave an interview on biofuel production using algae from wastewater for *Momentum*, story published in Fall, 2008 issue.
16. Hosted a group from Norway for a lab tour and microwave assisted biomass pyrolysis technology discussion. August, 2008.
17. Gave a tour to Senator Coleman's staff on renewable energy development. August, 2008.
18. Gave a discussion and tour to City of Hutchinson leaders on algae for waste water treatment. August, 2008.
19. Organized a workshop and tour and gave short courses for Latin American group on renewable energy developments. August, 2008.
20. Gave a demo and tour for Bixby energy Systems on continuous microwave assisted biomass pyrolysis system. September, 2008.
21. Gave a tour and discussion to Lockheed Martin Company Twin Cities leaders on renewable energy development. September, 2008.
22. Gave a discussion to South Africa business leaders on renewable energy development. Organized by MN Department of Commerce. September 2008. St. Paul, MN.
23. Gave tours to attendees of the *5th Annual Ammonia Fuel Conference on NTP assisted NH<sub>3</sub> synthesis*. October, 2008. St. Paul, MN.
24. Gave a tour to MN State Senator Kulby on renewable energy development. October, 2008. St. Paul, MN.
25. Organized the MN ASABE Section Spring meeting. April 25, 2008. St. Paul Campus, MN.
26. Gave an overview of biomass production and conversion research programs at Center for Biorefining to the wood utilization research (WUR) initiative group. April 29, 2008.
27. Gave a tour of biorefining pilot facility and discussed advances in renewable energy and the science to the group of community leaders supporting university and extension. March, 2008.

28. Gave an interview to *America.gov*, an official US State Department web service on Algae for as energy crop research. Story aired/published as a feature video “Renewable Minnesota” on the web since March 24, 2008.
29. Gave an interview and lab tour to the *Minnesota Public Radio* on Algae for wastewater treatment and as energy crop. Story aired on Thursday, March 13, 2008 morning news and published on the station web also.
30. Gave a live interview in the Fox *TV 9* Station’s studio in Bloomington, MN and a lab tour on Algae for wastewater treatment and as energy crop. February 22, 2008.
31. Gave an interview and a lab tour to the *WCCO TV 5* on Algae for wastewater treatment and as energy crop. Story aired on February 8, 2008 evening news renewable energy series.
32. Gave an interview to the University of Minnesota news service on Algae for wastewater treatment and as energy crop. Story published as feature story on the University web home page starting Friday, January 25, 2008.
33. Gave a tour of the lab and pilot plant to a large group of Minnesota State Legislators on algae production and processing for wastewater treatment and biofuel production. January 24, 2008.
34. Gave an interview to the *Star Tribune* on Algae for wastewater treatment and as energy crop. Story published on Tuesday, January 15, 2008 issue of the newspaper.
35. Gave an interview and lab tour to the *Kare 11 TV* on Algae for wastewater treatment and as energy crop. Story aired on Tuesday, January 15, 2008 evening news.
36. Gave an interview to *Consumeraffairs.com* on algae work, and story published as “How Green Can Your Drive Get?” on January 14, 2008 issue.
37. Gave a presentation and testimony at the joint Minnesota House and Senate Budget Committees on “Algae for a better environment and energy security”. January 7, 2008.
38. Gave an hour-long live internet radio interview on algae as an energy crop on the Progressive Radio Network’s “Paradise Parking Lot” program with host Dr. Steve Barnett on December 12, 2007 from 12:00 noon to 1:00 pm.
39. Gave many interviews to Associated Press, CBC, WCCO, and many other news media on algae as an energy crop. Related stories published or showed in the *New York Times* (Sunday, December 2, 2007), *Washington Post* (Thursday, November 29, 2007), *Star Tribune* (Tuesday, December 11, 2007), *Minnesota Daily* (Monday, November 26, 2007), and hundreds of other world, US, and local leading newspapers, TV stations, and live Radio news and other programs. November and December, 2007.

40. Gave a tour and interview to MCES people on joint algae research project. Story published on the MCES web. November, 2007.
41. Organized a tour to St. Paul District Heating and Energy with 40 participants. April, 2007.
42. Gave an interview to the *Twin Cities Business* on the renewable energy from biomass, January, 2007.
43. Gave an interview to the *WCCO TV with new anchor Dan Shelby* on the biofuel production from renewable biomass, January, 2007. The *Project Energy* story aired on January 23, 2007 evening news.
44. Gave an interview to the *Minnesota Daily* on the renewable energy from biomass, March, 2006. Front page story published in April 13, 2006 issue.
45. Testified at the Minnesota House of Representatives' Higher Education Committee on the use of high temperature plasma in biomass and waste conversion and utilization for bioenergy and materials. March, 2006.
46. Gave a tour and visit with Dr. Eric Jarvis of NREL on the Center for Biorefining's biorefining and biomass energy conversion facility and projects. December, 2005.
47. Gave a tour and a presentation of the Center for Biorefining's thermochemical conversion facility and projects to the NREL visitors (George Sverdrup, Maria Ghirardi, Pin-Ching Maness, and John Turner) here to identify specific projects and funding opportunities that NREL and UMN scientists might pursue together. November, 2005.
48. Gave an interview and biorefining lab tour to French ARTE G.R.I.E. television program on renewable energy and bioeconomy. October, 2005.
49. Gave a presentation to Sichuang government training program attendees. St. Paul, MN. October, 2005.
50. Gave a tour of the Center for Biorefining's biorefining and biomass energy conversion facility and projects to the Norwegian group here for the Third Norway and UMN joint research forum. September, 2005.
51. Gave a tour of Center for Biorefining to the Minnesota Department of Agriculture's guests on bioenergy and bioproducts. Also toured Exol corn ethanol plant and SoyMor biodiesel plant in Albert Lea, MN. July, 2005.
52. Met with Thai Ambassada to the US and his staff to discuss renewable energy and bioeconomy. Bloomington, MN. July, 2005.
53. Completed more audio recording with U Relations on biomass, fuel from plant crops. May, 2005. Story used in University's interactive web site.

54. Gave an interview for Ethanol Producer Magazine and Biodiesel Magazine on biorefining applications in corn ethanol refinery and biodiesel production. May, 2005. Story published in June, 2006 issue of *Ethanol Producer Magazine*.
55. Gave a presentation and tour to Congressman Gutknecht, and his staff and others on the renewable energy and bio-based product development. April, 2005.
56. Member of Board of Directors of CAAM (Chinese American Association of Minnesota). March, 2005 – Present.
57. Organized the Minnesota Section ASABE Spring Meeting including a tour of Phoenix Solutions pilot testing facility in Hutchinson, MN and Pioneer Seed Corn facility in Dassel, MN. Spring, 2004.
58. Completed an audio recording at KATP station on renewable energy development. March, 2005. Story used in various University radio ads.
59. Gave an interview for Bixby Energy Systems' biofuel video project on renewable energy. March, 2005.
60. Gave two interviews to *Minnesota Daily* on conversion of biomass into biofuels, chemicals and materials and on proposed National Center for Biofuels Research. March, 2005. Story published in March 3<sup>rd</sup>, 2005 issue.
61. Gave an interview to U Relations on renewable energy development. February, 2005. Story and pictures used in various University print, news paper, and video ads. *Pioneer Press*, March 11, 2005 issue, *Star Tribune*, March 18, 2005 issue. *Ads on University bus stops*, March-April, 2005, and *Minnesota Monthly* magazine, and *Minnesota*, the University's alumni publication.
62. Gave an interview to *Minnesota Daily* on renewable energy development. January 2005. Story published in January 26, 2005 issue.
63. Organized the Minnesota Section ASABE Spring Meeting. April, 2004. St. Paul, MN.
64. Gave a tour of biorefining lab and biomass conversion projects to NREL visitors (Keorge Sverdrup, etc.) January, 2004.
65. Gave a presentation/discussion with the Training Delegation of Sichuan China on bioprocessing, value-added processing, organized by TBT Global Resources LLC. January, 2004.
66. Gave a tour of biorefining lab and biomass conversion projects to NREL visitors (Bob Evans, etc.) November, 2003.

67. Organized a tour and gave a presentation for the Shandong Agricultural Processing Delegation on value added processing of agricultural products. November, 2003.
68. Gave an interview to BIO on biobased fuel and products. November, 2003. Story published in Winter, 2004 issue.
69. Organized the Minnesota Section ASABE Fall Meeting. October, 2003. St. Paul, MN.
70. Gave an interview to the *Minnesota Daily* on the use of MRI for food research, October, 2003. Story published in October 30, 2003 issue.
71. Gave an interview to *Agri News* on biorefining research and development, June, 2003. Story published in the Tuesday, July 8, 2003 issue *Agri News*.
72. Gave a tour to Congressman Gutknecht's staff - Jim Beabout, "Energy Aide" in Congressman Gutknecht's D.C. office, and Malachi McNeilus from Congressman Gutknecht's Rochester office on the renewable energy and biobased product development. April, 2003.
73. Gave a tour and a presentation and organize a discussion with the UNDP Ningxia Training Group on bioprocessing, value-added processing, and ozone and nonthermal plasma applications in food safety and waste treatment. April, 2003.
74. Organized a tour of Rahr Malting Company in Shakopee, MN. for MN section ASABE members. March, 2003.
75. Organized an exhibit of NTP Liquid Disinfection System at the Research into Products Event at the McNamara Alumni Center, University of Minnesota. February, 2003.
76. Organized a tour to the Land O'Lakes Rtech Laboratories pilot facility and laboratories for Jiangxi's university faculty delegation. February, 2003.
77. Gave an interview to *AURI Ag Innovation News* on bioconversion and biorefining research and development for the special section on renewable products, October, 2002. Story published in the Jan-Mar 2003 issue 12(1).
78. Participate in the 2002 Minnesota's Tekne Awards Event recognizing technology achievements. Minneapolis Convention Center, October, 2002.
79. Gave an interview to *University of Minnesota Research & Inventions* on developing a better way to pasteurize juice – non-thermal plasma development and application. Story published in 2002 issue.
80. Participate in the COAFES Priority Kickoff 2002 event. Fall, 2002.
81. Participate in the *Blandin Thank You Video* for the Sota Tec Fund ten-year anniversary celebration. Spring, 2002.

82. Gave a tour and organize a discussion with the Japanese Ministry of Agriculture, Forestry, and Fisheries delegation on NIR, machine vision, and neural network application in scab and DON analysis. July, 2002.
83. Gave a tour to the Yantai Fruit/Vegetable Delegation from China on the nonthermal pasteurization of liquid foods and washing of fruits and vegetables using nonthermal plasma and ozone and the food science and nutrition pilot plant. April, 2002.
84. Organize a tour to the Biological Process Technology Institute pilot facility for members of the Minnesota Section ASABE, April, 2002.
85. Nominate Qinghuang (Charles) Geng to the Adjunct Faculty in Biosystems and Agricultural Engineering Department, University of Minnesota, with Vance Morey, November, 2001.
86. Represented Biosystems and Agricultural Engineering at College of Agriculture booth at the State Fair. 2001.
87. Gave a presentation to the Chinese Scab Research Delegation on the development of a rapid machine vision and neural network system for scabby wheat estimation. June, 2000.
88. Gave three presentations and tours to the wheat and barley farmers, county extension educators, and scab researchers. Spring, 2000.
89. Gave a presentation to Opta Food Ingredients, Inc. on highly refined cellulose material made from fibrous agricultural byproducts. June, 1999.
90. Gave a presentation to Agri-Fibers, LLC. on highly refined cellulose material made from fibrous agricultural byproducts. June, 1999.
91. Gave a presentation to Genesis Business Centers associates on highly refined cellulose material made from fibrous agricultural byproducts. June, 1999.
92. Serve as a tour guide for the Chinese Agricultural University Presidents' Delegation, January, 1999.
93. Gave a presentation and a tour to members of the Corn Refiners Association, September, 1998.
94. Gave a presentation on nonthermal plasma treatment of odorous gases at the *Dairy Odor Update* meeting at the University of Minnesota, July, 1998.
95. Nominate Gustavo Barbosa-Canovas to ASABE for The National Food and Energy Council Electric Technology Award, April, 1998.
96. Organized a Student Branch tour of Rahr Malting Co. April, 1998.

97. Gave an interview to *EPRI Journal* on nonthermal plasma application in odor control. Story published in *EPRI Journal* May/June, 1998 issue.
98. Gave a *WCCO Channel 4 TV* news interview on MRI applications in food safety improvement. Spring, 1998.
99. Organized and presented two lab demonstrations of machine vision and neural networks application in scabby wheat prediction for the small grain growers, barley and wheat industry leaders, and legislators. February, 1998.
100. Gave an interview on non-thermal plasma deodorization to the *IT Technology* magazine. February, 1998.
101. Gave a presentation on non-thermal plasma treatment of odorous gases at the *Odor Summit* at the University of Minnesota, January, 1998.
102. Organized two seminars on non-thermal plasma applications in odor control at UIE/EPRI's International Conference on Creating Customer Business Opportunities Through International Collaboration on Industrial Electrotechnologies. Orlando, FL. January, 1998.
103. Participated in the two-day trip organized by COAFES to visit the Morris area food producers and processors. September, 1997.
104. Gave an interview on non-thermal plasma application in farm odor control, story published in *Inventing Tomorrow*, Vol. 23, No. 1. Fall, 1997.
105. Gave a *Hogs Today* interview on non-thermal plasma application in farm odor control, story included in the Sulfide solutions article published in the environmental awareness issue of the *Hogs Today*, October, 1997, page 12-14.
106. Organized a *Utilization of Agricultural Fibrous Residues* display and demonstration for the AURI AgroMart of the Minnesota State Fair. August, 1997.
107. Organized and hosted a *Food/Feed Processing Tour* for the ASABE Annual Meeting. August, 1997.
108. Organized eight displays and a lab demonstration for the department open house during the ASABE Annual Meeting. August, 1997.
109. Gave two presentations on machine vision and MRI applications in biosystems, agricultural and food engineering to high school and college educators, Rochester, MN. July, 1997.
110. Attended the NSP Food Processing Technologies and Industrial Water Solutions Program Launch. Bloomington, MN. February, 1997.



111. Gave a demonstration on non-thermal plasma and pulsed electric fields for odor control for AICHE Symposium Tour. February, 1997.
112. In search of a crisp crust. Research featured in *Minnesota*, The Magazine of The University of Alumni Association. July-August, 1996.
113. Organized a demonstration on highly refined cellulose products and processes in Waseca for county extension educators, farmers, and businesspeople. June, 1996.
114. MRI Scans Used to Test Ice Cream. Research featured in *Minnesota - South Dakota Dairy Foods Research Center New Letter* Issue No. 25. June, 1996.
115. Gave a *KSTP Channel 5 TV* news interview on MRI applications in food process and quality improvement. Spring, 1996.
116. Immobilization of plant cells with temperature-sensitive hydrogel. 1996. Research featured in *Agricell Report* 27(3):17-18.
117. Gave a *Star Tribune* newspaper interview on MRI applications. Spring, 1996.
118. Gave a *Minnesota Public Radio* interview on MRI applications. Spring, 1996.
119. Gave a radio interview on MRI applications. Winter, 1996.
120. Gave interview and provided source for the "Smoother Ice Cream Comes from Brain Scanner" article published in *Minnesota's Future - people, land, water* No. 57. March, 1996.
121. Gave a precooked and IQF wild rice shelf-life stability presentation to the marketing personnel at the Minnesota Cultivated Wild Rice Council Meeting at Grand Rapids. Fall, 1995.
122. Gave a *Minnesota Science* interview on MRI applications: Medical Technology Aids Ice Cream and Other Foods, story published in *Minnesota Science*, volume 49, number 1, page 4. Fall, 1995.
123. Gave a biotechnology presentation to the National Association of County Agricultural Agents. Summer, 1995.
124. Coordinated the efforts in attracting the EPRI Food Technology Center to the University of Minnesota. 1994-1995.
125. Represented Biosystems and Agricultural Engineering at College of Agriculture booth at the State Fair. 1994, 1995.