# SUMMARY OF ACHIEVEMENTS


## David Julian McClements

**Distinguished Professor**
Biopolymers & Colloids Research Laboratory
Department of Food Science,
University of Massachusetts, Amherst, MA 01003
mcclemen@umass.edu (413-387-5049)


David Julian McClements is a Distinguished Professor at the Department of Food Science at the University of Massachusetts. He specializes in food biopolymers and colloids, with an emphasis on creating healthier and more sustainable foods. He received his Ph.D. in Food Science (1989) at the University of Leeds (UK) in ultrasonic spectrometry. He then did Postdoctoral research at the University of Leeds, University of California (Davis) and University College Cork (Ireland). He is the sole author of three editions of "Food Emulsions: Principles, Practice and Techniques" (1999, 2005, 2015), "Nanoparticle- and Microparticle-based Delivery Systems: Encapsulation, Protection and Release of Active Components" (2014), "Future Foods: How Modern Science is Transforming the Way We Eat" (2019), "Food Nanotechnology" (2022), "MeatLess: The New Food Revolution" (2023), and "Beyond the Ultra-processed Label: The Science Behind Food Processing and Health" (2026). He is also co-author of "How to be a Successful Scientist" (2023), "Next-generation Plant-based Foods" (2022), and "Advances in Food Colloids" (1996). He has also edited or co-edited numerous other books. He has published over 1700 scientific articles in peer-reviewed journals (H-index of 224, Citations > 230,000, Google Scholar), 13 patents, and numerous book chapters and conference proceedings. He has received awards from the *American Chemical Society, American Oil Chemists Society*, *Society of Chemical Industry (UK), Institute of Food Technologists, International Union of Food Science and Technology*, and *University of Massachusetts* in recognition of his achievements. His research has been funded by grants from the United States Department of Agriculture, National Science Foundation, US Department of Commerce, NASA, and the food industry. He has secured funding worth over $25 million as a PI or co-PI while working at UMASS. He is an editor or editorial board member of numerous journals, and has organized workshops, symposia, and international conferences in the field of food colloids, emulsions, delivery systems, and ultra-processed foods.

# DAVID JULIAN MCCLEMENTS – CURRICULUM VITAE

**Distinguished Professor, Department of Food Science, University of Massachusetts, Amherst, MA 01003**

☎ (413)-545-1019, 🖷(413)-545-1262; Email: mcclements@foodsci.umass.edu

## BACKGROUND

### EDUCATION

- **1981 – 1985:** Bachelor of Science (Hons), Department of Food Science, University of Leeds, UK
- **1985 - 1989**: Doctor of Philosophy, Department of Food Science, University of Leeds, UK

### POSTDOCTORAL RESEARCH

- **1989 - 1992**: Research Fellow/Senior Research Fellow, Department of Food Science, University of Leeds, UK
- **1992 - 1994**: Senior Research Fellow, Department of Food Science and Technology, University of California, Davis
- **1994 - 1994:** Senior Research Fellow, Department of Food Chemistry, University College Cork, Ireland

### PROFESSIONAL EXPERIENCE

- **2016-Present**: Distinguished Professor, Department of Food Science, University of Massachusetts, Amherst
- **2019-2025**: Adjunct Professor, School of Food Science and Bioengineering, Zhejiang Gongshang University, Hangzhou, Zhejiang, China.
- **2016-2021**: Visiting Professor, Center for Nanotechnology and Nanotoxicology, T.H. Chan School of Public Health, Harvard University, Boston,
- **2014 to 2016**: Adjunct Professor, Department of Biochemistry, King Abduliziz University, Jeddah, Saudi Arabia
- **2005 to 2016**: Professor, Department of Food Science, University of Massachusetts, Amherst
- **2000 to 2005:** Associate Professor, Department of Food Science, University of Massachusetts, Amherst
- **1994 to 2000**: Assistant Professor, Department of Food Science, University of Massachusetts, Amherst

### HONORS AND AWARDS

1. *Distinguished Lipid and Flavor Science Award in honor of Stephen S. Chang.* This award honors an individual who has provided innovative contributions to the advancement of lipid or flavor science and technology. Institute of Food

Technologists, 2026.

2. *Top Ranked (#1) Highly Cited Author,* Agricultural Sciences, Essential Science Indicators (Clarivate Analytics), 2017-2025.
3. *Chancellors Distinguished Professor Medal*, University of Massachusetts, Amherst, 2025.
4. *Alton Bailey Award*, American Oil Chemist's Society, for "outstanding research contributions and exceptional service in the field of fats, oils, lipids and related disciplines," 2021.
5. *Nils Foss Excellence Prize, ($110,000)* for "lifetime of pioneering work in food science and technology." Foss Award Committee, Copenhagen, Denmark, 2019
6. *Nicolas Appert Award, for* "preeminence in and contributions to the field of food technology," Institute of Food Technologists, 2019.
7. *Lifetime Achievement Award*, for "remarkable contributions in research, applications and service in food science and technology," International Union of Food Science and Technology, 2018.
8. *Distinguished Professor,* for "full professors with an extraordinary level of productivity and impact in their field of study that goes well beyond the existing high expectations for full professors on campus," University of Massachusetts, 2016.
9. *Supleco/Nicholas Pelick Research Award*, for "outstanding original research in fats, oils, lipid chemistry or biochemistry", American Oil Chemists Society, USA, 2015.
10. *Babcock-Hart Award*, for "contributions to food technology which result in improved public health through nutrition or more nutritious food," Institute of Food Technologists, USA, 2015.
11. *Hilditch Memorial Award,* for "exceptional contributions to education," Society of Chemical Industry, London, U.K, 2015.
12. *Research Award,* College of Natural Sciences, University of Massachusetts, 2010.
13. *Marcel Loncin Research Prize ($50,000)*, for excellence in "basic chemistry/physics/engineering research applied to food processing and improvement of food quality," Institute of Food Technologists, USA, 2010
14. *Academy Lectures Series Award*, ConAgra Foods, 2010.
15. *Stephen S. Chang Award,* for "outstanding accomplishments in lipid research," American Oil Chemists Society, USA, 2010.
16. *Award for Outstanding Accomplishments in Research and Creative Activity*, University of Massachusetts, Amherst Faculty Convocation, USA, 2008.
17. *Fergus M. Clydesdale Professor of Food Science,* Endowed Chair. 2007– 2012.
18. *Research and Development Award,* recognizing a scientist that "significantly advances the discipline of food science, food technology, or nutrition," Institute of Food Technologists, USA, 2007
19. *Award for the Advancement of Agricultural and Food Chemistry*, Agricultural and Food Chemistry Division, American Chemical Society, USA, 2006
20. *Food Chemicals Codex (2005-2006),* National Academies – Committee Member.
21. *Samuel Cate Prescott Award,* for "outstanding ability in research in food science and technology," Institute of Food Technologists, USA, 1999
22. *Young Scientist Award*, Agricultural and Food Chemistry Division, American Chemical Society, USA, 1996

## FELLOWSHIPS

- Elected Fellow of Royal Society of Chemistry, UK (2014).
- Elected Fellow of American Chemical Society, Agriculture and Food Chemistry Division, USA (2015).
- Elected Fellow of Institute of Food Technologists, USA (2015).

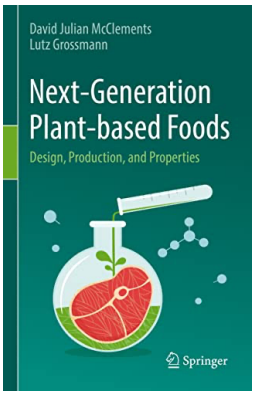
## MEMBERSHIPS

- American Association for the Advancement of Science
- American Chemical Society
- American Oil Chemists Society
- Institute of Food Technologists
- Royal Society of Chemistry
- Center for Bioactive Delivery, UMASS, Amherst
- Cancer Center of Excellence, UMASS, Amherst

# RESEARCH

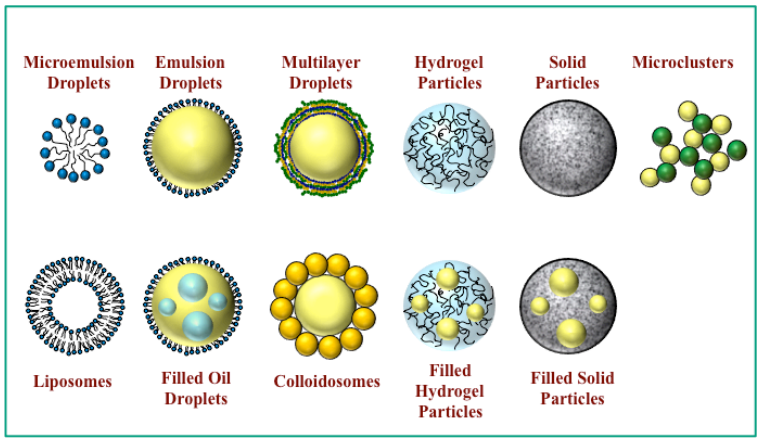
## MAJOR RESEARCH AREAS

My current major research areas are focused on understanding the molecular-colloidal basis for the physicochemical and physiological properties of foods and their components, such as their texture, flavor, appearance, shelf-life, and nutrition. A better understanding of this subject enables food scientists to design and manufacture high-quality healthful and sustainable food products in a more systematic and cost-effective fashion. A few examples of my research activities are described here.

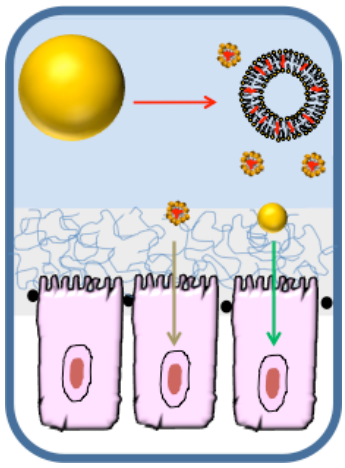



*Next-generation plant-based foods*: Animal-based foods, such as meat, seafood, eggs, and dairy products, have been linked to environmental, health, and animal welfare concerns. From an environmental perspective, these products are responsible for greenhouse gas emissions, pollution, land use, and water use. Consequently, there is interest in replacing them with plant-based alternatives. Our laboratory is isolating, characterizing, and utilizing different kinds of alternative proteins to assemble plant-based foods with improved quality, sensory, and nutritional attributes. For instance, we are using soft-matter physics principles to create meat-like microstructures from plant proteins and polysaccharides to simulate the optical, rheological, fluid holding, and sensory characteristics of real meat. We are also using plant proteins to create milk and egg analogs that are nutritionally fortified with vitamins and nutraceuticals to improve their health profile.

*Development of Structured Colloidal Delivery Systems:* One of the areas that my research group has helped pioneer has been the utilization of structural design principles to create food-grade colloidal delivery systems. Many bioactive food components cannot easily be incorporated into foods at present due to a variety of issues: poor solubility; adverse impact on appearance, texture or flavor; physical or chemical instability; undesirable interactions with other food components; off-flavors. In addition, the effectiveness of many bioactive components is limited by low bioavailability or instability in the gastrointestinal tract due to enzymatic degradation or microbial fermentation. Development of structured colloidal delivery systems to encapsulate, stabilize and release functional food components, such as flavors, colors, antimicrobials, and nutraceuticals can be critical for the successful incorporation of efficacious bioactive components into functional foods. My research has developed a wide range of different delivery systems, including microemulsions, emulsions, nanoemulsions, hydrogel particles, protein nanoparticles, filled microgels, colloidosomes, microclusters, and multiple emulsions to encapsulate, protect and deliver different kinds of bioactive agents, including antimicrobials, nutraceuticals, vitamins, colors, and flavors. My research group is therefore an important component of the Bioactive Delivery program in the IALS program at UMASS.

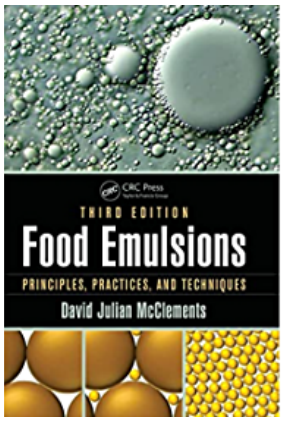



*Physicochemical Basis for the Gastrointestinal Fate of Foods:* Foods are exposed to a complex series of environments as they pass through the human gastrointestinal tract (GIT), which vary in their compositions, structures, and dynamic properties. The chemical, enzymatic, and mechanical forces that foods are exposed to lead to the disruption of food structures and the degradation of major food components (lipids, proteins, and polysaccharides). My research group has been at the forefront of research in understanding the physicochemical and structural processes that occur within the GIT and in the development of *in vitro* models to simulate gastrointestinal conditions. For example, in recent years we have identified many factors that impact the gastrointestinal fate of lipids, proteins, and dietary fibers. The knowledge gained from this research may lead to the development of functional foods with improved nutritional properties, such as the ability to induce satiety, reduced cholesterol levels, inhibit cancer, and prevent diabetes. Indeed, we recently developed the concept of "excipient foods" based on this knowledge. Excipient foods are designed

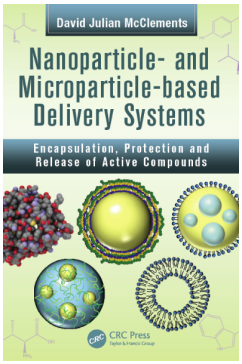


to increase the bioavailability of nutraceuticals and vitamins in fresh fruits and vegetables by controlling their bioaccessibility, absorption, and transformation within the GIT.

*Physicochemical Properties of Food Emulsions:* Many foods consist either partly or wholly as emulsions, or have been in an emulsified state sometime during their manufacture, including milk, cream, salad cream, mayonnaise, salad dressings, soups, sauces, butter, margarine, low-fat spreads, ice cream and coffee whitener. The bulk physicochemical properties of these foods (appearance, flavor, rheology and stability) depend on colloidal properties, such as droplet concentration, size and physical state, interactions and interfacial properties. My laboratory has worked on a number of projects supported by government and industry aimed at improving the understanding of the molecular-colloidal basis of the bulk physicochemical properties of food emulsions. The influence of pH, ionic strength, cosolvents, thermal processing, freeze-thaw cycling, mechanical stress, drying and ingredient interactions on the rheology, stability and appearance of emulsions is being investigated using a variety of experimental methods, including light scattering, laser scanning, dynamic shear rheometry, ultrasonic spectroscopy, ultrasonic imaging, particle electrophoresis and microscopy. The knowledge gained from these studies can be used to develop higher quality, healthier, and less expensive food products. In particular, we have used our knowledge of the roles that lipid droplets play in determining food emulsion properties to develop reduced calorie foods with desirable quality attributes.




*Functional Properties of Food Biopolymers*: The aqueous phases of many foods contain biopolymers that impart desirable functional properties, such as thickening, gelling, water-holding and flavor binding. In addition, biopolymers are important nutritional components in many types of food products, *e.g.,* by providing energy or maintaining proper gut function. The properties of an aqueous biopolymer solution are determined by the type and nature of the biopolymer interactions, *e.g.,* hydrogen bonding, hydrophobic interactions, van der Waals forces, electrostatic interactions and disulfide bond formation. My research group has made major contributions to understanding the molecular basis of the bulk physicochemical properties of biopolymer solutions and in understanding the gastrointestinal fate of food biopolymers. This knowledge is being used to design functional ingredients and foods with improved functional performance.




## FUNDING

My research has been funded by numerous grants from federal, commodity, non-profit, and industry sources, including the United States Department of Agriculture, National

Science Foundation, NASA, United States Department of Commerce, the Dairy Management, Good Food Institute, and the food industry. I have received over $25 million dollars as a PI or co-PI on these grants.

## Principal Investigator

| Title | Budget |
|---|---|
| **Competitive Grants: Federal, Commodity, Non-profit** | |
| *1.* DJ McClements. *Development of Rapid Nondestructive Device for Measuring the Fat Content of Mackerel*. U.S. Department of Commerce, National Marine Fisheries Service, Saltonstall-Kennedy Program (1995-1997). | $50,700 |
| 2. DJ McClements. Influence of Processing Conditions on the Physicochemical Properties of Protein Stabilized Emulsions. USDA, Hatch Grant (1994-2001). | $95,000 |
| *3.* DJ McClements. *Nondestructive Characterization of Food Emulsions using Ultrasound.* USDA-National Research Initiative, Competitive Grants Program, $110,000 (1996-1997). | $110,000 |
| *4.* DJ McClements. *Commercialization of Ultrasonic Device for Measuring the Fat Content of Mackerel*. U.S. Department of Commerce, National Marine Fisheries Service, Saltonstall-Kennedy Program (1997-1998). | $68,500 |
| *5.* DJ McClements. *Nondestructive Characterization of Food Emulsions using Ultrasound (Renewal).* USDA - National Research National Research Initiative, Competitive Grants Program, $125,000 (1997-2000). | $125,000 |
| *6.* DJ McClements. *Application of Whey Proteins as Emulsifiers in Foods*. Dairy Management Incorporated (1998- 2001). | $61,000 |
| 7. DJ McClements. *Influence of Cosolvents on Protein Functionality in Food Emulsions and Gels.* USDA, Hatch Grant (2002-2007). | $95,000 |
| *8.* DJ McClements. *Utilization of Interfacial Engineering to Improve Emulsion Stability.* USDA-National Research Initiative, Competitive Grants Program (2002-2005) | $175,000 |
| 9. DJ McClements. *Utilization of Interfacial Engineering to Improve Emulsion Stability - Renewal.* USDA-National Research Initiative, Competitive Grants Program (2005-2008). | $355,000 |
| 10. DJ McClements. *Controlling Lipid Oxidation in Foods.* United States Department of Agriculture, Cooperative State Research, Extension, Education Service, Hatch Grant (2008-2015). | |
| 11. DJ McClements. *Design of Nano-laminated Coatings to Control Bioavailability of Lipophilic Food Components.* USDA-National Research Initiative, Competitive Grants Program (2009-2011). | $335,000 |

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| 12. DJ McClements. *Designing Novel Food Functionality through Controlled Biopolymer Phase Separation.* USDA-National Research Initiative, Competitive Grants Program (2009-2011). | $362,000 |
| 13. DJ McClements. Is Smaller Better? Structure and Phase Behavior Effects on the Efficacy of Emulsion-Based Delivery Systems. USDA-National Research Initiative, Competitive Grants Program (2009-2012). | $182,000 |
| 14. DJ McClements. Bioactive Encapsulation for Military Food Applications: Request for Enhanced Nano- & Micro-particle Fabrication & Characterization Facilities. US Army (2012). | $249,000 |
| 15. DJ McClements. Fabrication, Characterization & Toxicology of Antimicrobial Nanoparticle Delivery Systems. USDA-National Research Initiative, Competitive Grants Program (2010-2015). | $454,000 |
| 16. DJ McClements. Rationalization of Lipid Nanoparticle Formation. USDA-National Research Initiative, Competitive Grants Program. (2012-2015) | $380,000 |
| 17. DJ McClements. Development of Nanoemulsion-based Delivery Systems for Functional Lipids. USDA-National Research Initiative, Competitive Grants Program (2014-2017). | $496,000 |
| 18. DJ McClements. Potential Adverse Effects of Consuming Edible Nanoemulsions: Enhanced Pesticide Uptake. USDA-National Research Initiative, Competitive Grants Program (2017-2020). | $445,000 |
| 19. DJ McClements. Nanotechnology to Improve Food Safety, Quality, and Nutrition. United States Department of Agriculture, Cooperative State Research, Extension, Education Service, Hatch Grant (2014-2024). | $150,000 |
| 20. DJ McClements. Enhancing bioavailability of bioactive agents. National Science Foundation (2020-2021) | $50,000 |
| 21. DJ McClements. Optimization of Soft Matter Physics Approaches for the Creation of Next-generation Plant-based Meats. USDA-National Research Initiative, Competitive Grants Program (2020-2023). | $474,000 |
| 22. DJ McClements. Innovative Structural Design Approach for Creating Meat-Substitutes. Good Food Institute, (2021-2023) | $250,000 |
| 23. DJ McClements. Development of Standardized Quantitative Tests to Facilitate Creation of Plant-based Meats Good Food Institute, (2021-2023) | $50,000 |
| 24. DJ McClements. Innovative Structural Design Approach for Creating Meat-Substitutes, Good Food Institute (2020-2022) | $250,000 |
| 25. DJ McClements. Development of Standardized Quantitative Tests to Facilitate Creation of Plant-based Meats, Good Food Institute (2020-2022) | $50,000 |
| 26. DJ McClements*. Double-Network Composite Biopolymer Hydrogels as Next-generation Meat Analogs, USDA (2023-2026) | $551,000 |

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| **TOTAL** | **$5,863,200** |
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| **Non-competitive Grants: Industry** | |
| 27. DJ McClements. Research on Food Emulsions, PepsiCo | $234,000 |
| 28. DJ McClements. Research on Food Emulsions, PepsiCo | $88,000 |
| 29. DJ McClements. Research on Food Emulsions, PepsiCo | $45,000 |
| 30. DJ McClements. Research on Food Emulsions, Compass Foods | $3,000 |
| 31. DJ McClements. Research on Food Emulsions, International Flavors and Fragrances | $33,000 |
| 32. DJ McClements. Research on Food Emulsions, PepsiCo | $97,000 |
| 33. DJ McClements. Research on Food Emulsions, PepsiCo | $94,000 |
| 34. DJ McClements. Research on Food Emulsions, National Starch | $25,000 |
| 35. DJ McClements. Research on Food Emulsions, Compass Foods | $66,000 |
| 36. DJ McClements. Research on Food Emulsions, Institute of Food Technologists. | $50,000 |
| 37. DJ McClements. Research on Food Emulsions, PepsiCo | $10,000 |
| 38. DJ McClements. Research on Food Emulsions, Nestle | $50,000 |
| 39. DJ McClements. Research on Food Emulsions, Wild Flavors | $32,000 |
| 40. DJ McClements. Research on Food Emulsions, PepsiCo | $20,000 |
| 41. DJ McClements. Research on Food Emulsions, ConAgra Foods | $15,000 |
| 42. DJ McClements. Research on Food Emulsions, Wild Flavors | $30,000 |
| 43. DJ McClements. Research on Food Emulsions, ConAgra Foods | $150,000 |
| 44. DJ McClements. Research on Food Emulsions, ConAgra Foods | $151,000 |
| 45. DJ McClements. Research on Food Emulsions, Wild Flavors | $6,000 |
| 46. DJ McClements. Research on Food Emulsions, Proctor & Gamble | $10,000 |
| 47. DJ McClements. Research on Food Emulsions, ConAgra Foods | $50,000 |
| 48. DJ McClements. Research on Food Emulsions, Kraft Foods | $89,000 |
| 49. DJ McClements. Research on Food Emulsions, Hills Pet Foods | $15,000 |
| 50. DJ McClements. Research on Food Emulsions, Glanbia Foods | $5,000 |
| 51. DJ McClements. Research on Food Emulsions, Ajinomoto | $383,916 |
| 52. DJ McClements. Research on Food Emulsions, Nestle | $191,400 |
| 53. DJ McClements. Research on Food Emulsions, DSM | $75,000 |
| 54. DJ McClements. Research on Food Emulsions, PepsiCo | $122,126 |
| 55. DJ McClements. Research on Food Emulsions, Nestle | $50,000 |
| 56. DJ McClements. Research on Food Emulsions, PepsiCo | $146,206 |
| 57. DJ McClements. Research on Food Emulsions, Nestle | $62,227 |
| **TOTAL** | **$2,398,875** |
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| **Support for Researchers in My Laboratory*** | |
| 58. DJ McClements. Research on Nutraceutical Delivery Systems, King Abduladiz University, Saudi Arabia. Fund to UMASS. | $27,000 |

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| 59. DJ McClements. Thailand Research Exchange Program. Funds provided to UMASS. | $82,000 |
| 60. DJ McClements, Chinese Research Scholarship, Funding for Graduate Students, Visiting Scholars, and Postdocs, China (2010-2026). Funds provided to researchers to cover their stay in USA. | $1,950,000 |
| 61. DJ McClements. Thailand Research Exchange Program. Funds provided to UMASS. | $82,000 |
| 62. DJ McClements, Thailand Research Funds, Funding for Graduate Students, Visiting Scholars, and Postdocs, China (2000-2026). Estimated funds to researchers to cover their stay in USA. | $600,000 |
| 63. DJ McClements, Korean Research Funds, Funding for Graduate Students, Visiting Scholars, and Postdocs, Korea (2000-2026). Estimated funds to researchers to cover their stay in USA. | $350,000 |
| 64. DJ McClements, Turkish Research Funds, Funding for Graduate Students, Visiting Scholars, and Postdocs, Turkey (2010-2026). Estimated funds to researchers to cover their stay in USA. | $300,000 |
| 65. DJ McClements, Indian Research Funds, Funding for Graduate Students, Visiting Scholars, and Postdocs, India (2010-2026). Estimated funds to researchers to cover their stay in USA | $200,000 |
| 66. DJ McClements, Spain Research Funds, Funding for Postdoc, Spain (2010-2026). Estimated funds to researchers to cover their stay in USA | $50,000 |
| 67. DJ McClements, Israel Research Funds, Funding for Postdoc, Israel (2010-2026). Estimated funds to researchers to cover their stay in USA | $50,000 |
| 68. DJ McClements, European Union Research Funds, Funding for Postdoc, EU (2010-2026). Estimated funds to researchers to cover their stay in USA | $50,000 |
| **TOTAL** | **$3,741,000** |

- Estimated at $25,000 per person per year

## Co-principal Investigator

| Title | Budget |
|---|---|
| **Competitive Grants: Federal, Commodity, Non-profit** | |
| 69. L. Grossmann* and DJ McClements. Reducing the Environmental Impact of Plant-based Meat Extrusion Processes by Self-Aggregating Proteins Good Food Institute, (2021-2023) | $248,725 |
| 70. S. Park* and DJ McClements. Enabling production of whole-cut meat and seafood products made from alternative proteins. Good Food Institute, (2021-2023) | $249,687 |
| 71. EA Decker* and DJ McClements. Characterizing the emulsifying, gelling or crosslinking, antimicrobial and | $407,762 |

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| antioxidant properties of food-grade proteins at low protein concentrations, Motif Foods (2019-2022) | |
| 72. Charmaine Koo* and DJ McClements. Fine-tuned delivery bacteriophages in livestock reduce shedding pathogens. USDA-NIFA (2019-2022) | $160,000 |
| 73. H Xiao* and DJ McClements. Functionality-guided smart fermentation of soybean meal, USDA-NIFA (2023-2027) | $600,000 |
| 74. L Grossmann* and DJ McClements. Design of Novel Post-Processing Diffusional Tenderization Techniques to Advance Anisotropic Plant Protein Textures, USDA-NIFA (2023-2027). | $601,000 |
| 75. L Grossmann* and DJ McClements. Strengthening Microscale Imaging Capabilities for Food and Agricultural Materials through 3D X-Ray Microtomography, USDA (2025-2029) | $400,000 |
| 76. L Grossmann* and DJ McClements. Harnessing Fermentation Technology to Overcome Functionality, Nutritional, and Sensory Challenges in Pulse Protein Ingredients for Food Applications, USDA (2024-2026). | $154,672 |
| 77. H Xiao* and DJ McClements. Conversion of Fruit Waste into Novel Multifunctional Bioproducts, USDA (2026-2029) | $591,473 |
| 78. Lu, J*. and DJ McClements. Innovative Structuring-Layering Technology for Large-Scale Production of Fish Analog, Good Food Institute (2022-2024) | $269,960 |
| 79. L Grossmann* and DJ McClements. Plant Whey: Value-Added Food Ingredients from Plant Protein Precipitation Side-streams, USDA (2022-2027) | $596,050 |
| 80. A Kinchla, A.* and DJ McClements. Improving sanitation practices in food processing facilities using fluorescent visual tools, USDA (2022-2024) | $296,448 |
| 81. L. Grossmann* and DJ McClements. Reducing the Environmental Impact of Plant-based Meat Extrusion Processes by Self-Aggregating Proteins Good Food Institute, (2021-2023) | $248,725 |
| 82. S. Park* and DJ McClements. Enabling production of whole-cut meat and seafood products made from alternative proteins. Good Food Institute, (2021-2023) | $249,687 |
| 83. H Xiao* and DJ McClements. Vitamins B1 and K Degradation in Spaceflight Foods: Establishment of Mechanisms and Prevention Strategies, NASA (2015-2017) | $340,000 |
| 84. H Xiao* and DJ McClements. Elucidation of absorption, accumulation, and toxicity mechanisms of titanium dioxide nanoparticles present in foods. USDA-NIFA, (2016-2020) | $479,000 |
| 85. H Xiao* and DJ McClements. Intestinal absorption and toxicity of foodborne inorganic nanoparticles. USDA-NIFA, (2016-2019) | $479,000 |

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| 86. H Xiao* and DJ McClements. Directed assembly of lipid nanoparticles in gastrointestinal tract to enhance health benefits of lipophilic dietary components USDA-NIFA (2014-2017) | $491,000 |
| 87. E. Decker* and DJ McClements. Lipid oxidation in low moisture foods: Developing technologies for improving nutritional composition without negatively impacting quality USDA-NIFA (2016-2019). | $469,775 |
| 88. H Xiao* and DJ McClements. Influence of Nanoparticle Characteristics on Fate, Bioavailability, and Toxicity of Food-Grade Nanoemulsions: USDA/EPA/NSF (2010-2013). | $600,000 |
| 89. E. Decker* and DJ McClements. Bioactive Foods Research for Health and Food Safety, Federal line item with Congressman Olver (2010-2012). | $525,000 |
| 90. H Xiao* and DJ McClements. Food Science Graduate Training in Food and Health with Emphasis on Ingredient Delivery Systems and Food Policy. USDA/CSREES Higher Education Food and Agricultural Sciences National Needs Graduate and Postgraduate Fellowship Grants Program. (2010 - 2014). | $234,000 |
| 91. M Henson* and DJ McClements. Integrated Product and Process Design for Structured Products. National Science Foundation, GOALI (2007-2011). | $316,365 |
| 92. EA Decker* and DJ McClements. Utilization of Emulsion Interface Engineering to Improve the Oxidative Stability of Food Emulsions: The Role of Antioxidant Proteins. USDA, (2004-2008). | $304,000 |
| 93. EA Decker* and DJ McClements. Role of Physical Structures in Food Oils on Lipid Oxidation. USDA-NIFA (2007-2010). | $293,094 |
| 94. J. Weiss* and DJ McClements. Antimicrobial delivery systems to improve food safety. USDA-NIFS (2003-2006). | $338,000 |
| 95. EA Decker* and DJ McClements. Efficacy of Producing Stable Omega-3 Fatty Acid-Enhanced Foods to Improve Human Health. E.A. Decker. USDA-IFAFS (2001-2005) | $1,722,000 |
| 96. EA Decker* and DJ McClements. Impact of emulsifiers on oxidation in lipid dispersions. USDA (1999-2002). | $140,000 |
| 97. EA Decker* and DJ McClements. Impact of emulsifiers on oxidation in lipid dispersions (Renewal). USDA (2004-2008). | $304,000 |
| 98. P Chinachoti* and DJ McClements. Improvement of Oxidative Stability of Encapsulated Fish Oil in Food Powders. U.S. Department of Commerce, National Marine Fisheries Service, Saltonstall-Kennedy Program (2000-2002). | $92,073 |
| 99. R. Levin* and DJ McClements. Seafood safety, USDA (2002-2009). | $1,598,651 |
| **TOTAL** | **$13,800,147** |

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| **Non-competitive Grants: Industry** | |
| 100. J Weiss * and DJ McClements. Research on cationic surfactants. Vedesqa Foods, Spain. | $75,000 |
| 101. J Weiss * and DJ McClements. Research on acoustic methods in foods. Harris Acoustics. | $15,000 |
| 102. EA Decker* and DJ McClements. Research on food colors. Sensient Technologies. | $55,045 |
| 103. J. Weiss* and DJ McClements. Research on natural preservatives. PepsiCo | $194,020 |
| 104. E Decker and DJ McClements. Research on natural colors. PepsiCo | $40,000 |
| 105. EA Decker* and DJ McClements. Control of flavor oxidation in emulsions. Kraft Foods | $40,000 |
| 106. C. Chinachoti* and DJ McClements. Research on Spray-Dried Creamers. Dairy Management Inc. | $120,000 |
| 107. EA Decker* and DJ McClements. Research on delivery systems. DSM Nutritional. | $120,000 |
| 108. EA Decker* and DJ McClements. Research on delivery systems. Wesfolk | $122,965 |
| 109. EA Decker* and DJ McClements. Research on food lipids, Bunge | $ 216,017 |
| 110. EA Decker* and DJ McClements. Research on food lipids, Cargill. | $100,000 |
| 111. M Henson* and DJ McClements. Research on food emulsions, Unilever. | $90,000 |
| 112. A Kinchla* and DJ McClements. Research on food emulsions, American River Nutrition | $82,500 |
| **TOTAL** | **$1,270,547** |
| | |
| **University Grants** | |
| 113. H Xiao* and DJ McClements. Tributyrin delivery systems for the colon, UMASS CVIP Fund, Amherst (2009-2011). | $30,000 |
| 114. EA Decker* and DJ McClements. New Technology for Encapsulation of Emulsified Lipids in Food Beverages, CVIP Fund, UMASS, Amherst (2007-2008). | $ 100,000 |
| 115. J. Weiss* and DJ McClements. Food-Based Solutions to Health and Wellness Proposal for Academic-Industry Strategic Alliance. UMASS Science and Technology Initiatives Fund. (2005-2007). | $100,000 |
| **TOTAL** | **$230,000** |

## Funding Summary

Total Funds as Principal Investigator: $12,003,075
Total Funds as Co-Investigator: $15,300,694
**Total Grant Funds: > $25,000,000**

## PUBLICATIONS SUMMARY

- 21 Books: 11 as Author or co-Author; 10 as Editor or co-Editor.
- 13 Patents
- > 1900 Journal Articles; > 220,000 citations (h-index 218– Google Scholar)
- > 70 Book Chapters
- Google Scholar: DJM Google Scholar articles
- Orcid: https://orcid.org/0000-0002-9016-1291

## AUTHORED BOOKS

1. D.J. McClements (2026). Beyond the Ultra-processed Label: The Science Behind Food Processing and Health. Springer Scientific, New York.
2. D.J. McClements, I.F. McClements, and J. McClements (2024). How to be a Successful Scientist: A Guide for Graduate Students, Postdocs, and Professors. Springer Scientific, New York.
3. D.J. McClements (2023). *Meat Less: The Next Food Revolution*, 350 pages. Springer Scientific, New York.
4. D.J. McClements (2022). *Food Nanotechnology*, De Gruyter, Boston.
5. D.J. McClements and L. Grossmann (2022). *Next-generation Plant-based Foods: Design, Production, and Properties*, 572 pages. Springer, New York, NY.
6. D.J. McClements (2019). *Future Foods: How Modern Science Is Transforming the Way We Eat*, 400 pages. Springer Scientific, New York.
7. D.J. McClements (2015). *Food Emulsions: Principles, Practice and Techniques, 3rd Edition*, 609 pages. CRC Press. Boca Raton, Florida.
8. D.J. McClements (2014). Nanoparticle- and Microparticle-based Delivery Systems: Encapsulation, Protection and Release of Active Components, 546 pages, CRC Press. Boca Raton, Florida.
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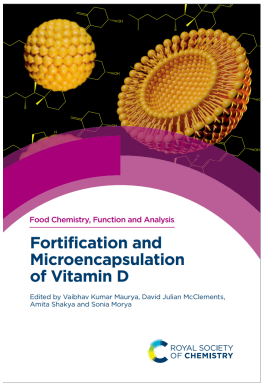


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2. Khalid Bashir, Kulsum Jan, Shumaila Jan, Ab Lateef Khan, David Julian McClements (2023). *Biodegradable and Edible Food Packaging*: *Trends and Technologies*, Elsevier, New York, NY.
3. Long Chen, Miao Ming, and David Julian McClements (2023). Bioactive Delivery Systems: Formulation, Fabrication, and Application, Published, Royal Society of Chemistry, Cambridge, UK.
4. S.M. Jafari and D.J. McClements (2018). *Nanoemulsions,* Elsevier.
5. N. Garti and D.J. McClements (2012). Encapsulation and Delivery Systems for Food Ingredients and Nutraceuticals. Editors. Woodhead Publishing, Cambridge, UK.
6. R. Elias, D.J. McClements & E.A. Decker (2010). *Oxidation in foods and beverages and antioxidant applications (I)*. Editors. Woodhead Publishing, Cambridge, UK.
7. R. Elias, D.J. McClements & E.A. Decker (2010). *Oxidation in foods and beverages and antioxidant applications (II)*. Woodhead Publishing, Cambridge, UK.
8. D.J. McClements & E.A. Decker (2009). *Designing Functional Foods*. Editors. Woodhead Publishing, Cambridge, UK.
9. D.J. McClements (2007). *Understanding and Controlling the Microstructure of Complex Foods*. Woodhead Publishing, Cambridge, UK
10. M.J.W. Povey and D.J. McClements (1992). *Developments in Acoustics and Ultrasonics*. Institute of Physics Publishing Ltd, U.K.

## ARTICLES PUBLISHED IN PEER-REVIEWED JOURNALS

1. Aayush, K., D. J. **McClements**, S. Sharma, R. Sharma, G. P. Singh, K. Sharma and K. Oberoi (2022). "Innovations in the development and application of edible coatings for fresh and minimally processed Apple." *Food Control* **141**.
2. Abedini, A., Sadighara, P., Sani, M. A., & **McClements**, D. J. (2023). The impact of synthetic and natural additives on biogenic amine production in food products. *Food Bioscience, 56*.
3. Aboalnaja, K. O., Yaghmoor, S., Kumosani, T. A., & **McClements**, D. J. (2016). Utilization of nanoemulsions to enhance bioactivity of pharmaceuticals, supplements, and nutraceuticals: Nanoemulsion delivery systems and nanoemulsion excipient systems. *Expert Opinion on Drug Delivery, 13*(9), 1327-1336.
4. Aghababaei, F., **McClements**, D. J., & Hadidi, M. (2024). Ultrasound processing for enhanced digestibility of plant proteins. *Food Hydrocolloids, 155*.
5. Aghababaei, F., **McClements**, D. J., & Hadidi, M. (2025). Strategies to overcome nutritional and technological limitations of pulse proteins. *Future Foods, 11*.
6. Aghababaei, F., **McClements**, D. J., Martinez, M. M., & Hadidi, M. (2024). Electrospun plant protein-based nanofibers in food packaging. *Food Chemistry, 432*.
7. Aghababaei, F., **McClements**, D. J., Pignitter, M., & Hadidi, M. (2024). A comprehensive review of processing, functionality, and potential applications of lentil proteins in the food industry. *Advances in Colloid and Interface Science, 333*.

8. Aghababaei, F., **McClements**, D. J., Pignitter, M., & Hadidi, M. (2025). Plant protein edible inks: Upgrading from 3D to 4D food printing. *Food Chemistry-X, 26*.
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13. Alavi, M., P. Kamarasu, D. J. **McClements** and M. D. Moore (2022). "Metal and metal oxide-based antiviral nanoparticles: Properties, mechanisms of action, and applications." *Advances in Colloid and Interface Science* **306**.
14. Alizadeh-Sani, M., M. Tavassoli, D. J. **McClements** and H. Hamishehkar (2021). "Multifunctional halochromic packaging materials: Saffron petal anthocyanin loaded-chitosan nanofiber/methyl cellulose matrices." *Food Hydrocolloids* **111**.
15. Alizadeh-Sani, M., Mohammadian, E., & **McClements**, D. J. (2020). Eco-friendly active packaging consisting of nanostructured biopolymer matrix reinforced with TiO2 and essential oil: Application for preservation of refrigerated meat. *Food Chemistry, 322*.
16. Almasi, L., M. Radi, S. Amiri and D. J. **McClements** (2021). "Fabrication and characterization of antimicrobial biopolymer films containing essential oil-loaded microemulsions or nanoemulsions." *Food Hydrocolloids* **117**.
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30. Ataei, M., Garekani, H. A., Sani, M. A., **McClements**, D. J., & Sadeghi, F. (2024). Evaluation of polyvinyl pyrrolidone nanofibers for encapsulation protection, and release of curcumin: Impact on in vitro bioavailability. *JOURNAL OF MOLECULAR LIQUIDS, 397*.
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1820. Zou, L., Zheng, B., Zhang, R., Zhang, Z., Liu, W., Liu, C., Xiao, H., & **McClements**, D. J. (2016b). Enhancing the bioaccessibility of hydrophobic bioactive agents using mixed colloidal dispersions: Curcumin-loaded zein nanoparticles plus digestible lipid nanoparticles. *Food Research International, 81*, 74-82.
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## Student, Research Fellow & Visiting Scholar Advising

In addition to traditional classroom teaching I also spend an appreciable amount of my time teaching, advising and mentoring students and Post-Docs who are working in my laboratory. Each student or Post-Doc that I have worked with has demonstrated their own unique skills and limitations and I have therefore recognized the importance of individually tailoring each person's educational program so as to facilitate their development into effective research scientists. In particular, I aim to provide a stimulating learning environment, which emphasizes the development of independent and rational thought, critical thinking, communication skills, creativity, and teamwork. I also actively involve students in the activities they are likely to carry out in their future careers, such as: choosing an appropriate research topic; critically evaluating previous research; clearly defining a scientific problem; designing a suitable experimental protocol to address the stated problem; analyzing, interpreting and presenting scientific data; preparing and submitting scientific manuscripts.

# TEACHING AND MENTORING

## Classroom Teaching

I have prepared and taught a variety of undergraduate and graduate courses at the University of Massachusetts:

- Food Chemistry (FD SCI 541); Food Chemistry Laboratory (FD SCI 544); Analysis of Food Products (FD SCI 581); Physical Phenomena in Foods (FD SCI 761); Graduate Seminar (FD SCI 797); Future Foods (FD SCI 791); Sustainable Foods (FD SCI 794).

I routinely receive positive student evaluations for my courses, which are appreciably higher than the department, college, and university averages for similar courses.

## Ph.D. Students

I have been the major supervisor of numerous graduate students who have received their degree from UMASS. Most of them have gone on to be Professors in US or international universities, or to work as research scientists in the food industry or government laboratories. I have also served on the PhD thesis committees of many more students (not listed).

| | Year | Student | Thesis Title | Last Known Position |
|---|---|---|---|---|
| 1 | 1998 | Kyros Demetriades (Crete) | The Effect of Processing Conditions and Ingredient Interactions on the Physicochemical Properties of Whey Protein Isolate-Stabilized Emulsions | Group Quality Assurance Manager at Photos Photiades Breweries Ltd, Cyprus |
| 2 | 1999 | Jochen Weiss (Germany) | Effect of Mass Transport Processes on Physicochemical Properties of Surfactant-Stabilized Emulsions | Vice President for Research, Professor, Food Physics and Meat Science, University of Hohenheim, Stuttgart, Germany |
| 3 | 2000 | Cory M. Bryant. (US) | Physicochemical Studies of Heat-Denatured Whey Protein Functionality | Assistant Country Director for Foods and Veterinary Medicine, FDA Center for Food Safety and Applied Nutrition, Beijing China |
| 4 | 2001 | Taygun Basaran (Turkey) | Ultrasonic And Optical Profiling Studies of Mass Transport Phenomena in Food Emulsions | Vice President of Sales at Chefmaster, Los Angeles |
| 5 | 2001 | Ratjika Chanamai (Thailand) | Characterization Of Food Emulsions Using Ultrasonic Spectroscopy | Research Scientist, Wild Flavors, Cinncinati |
| 6 | 2001 | Withida Chantrapornchai (Thailand) | Influence of Composition and Structure on Optical Properties of Food Emulsions | Assistant Professor, Food Product Development, Kasetsart University, Bangkok, Thailand |
| 7 | 2002 | Eakaphan Keowmaneechai | Influence of Protein-Mineral Interactions on | Assistant Professor, Department of Food Technology, Silpakorn |

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|---|---|---|---|---|
| | | (Thailand) | Physicochemical Properties of Model Nutritional Beverage Emulsions | University, Nakhon Pathom, Thailand. |
| 8 | 2003 | Stefan Baier (Germany) | Influence of Cosolvent Systems on the Thermostability and Heat-Induced Gelation Mechanism of Globular Proteins | Research Scientist, Pepsico, Valhalla, New York |
| 9 | 2004 | Masubon Thongngam (Thailand) | Characterization of Polysaccharide-Surfactant Interactions | Assistant Professor, Department of Food Science and Technology, Faculty of Agro-Industry, Kasetsart University. Bangkok, THAILAND |
| 10 | 2004 | Apiradee Wangsakan (Thailand) | Investigation of Molecular Origin and Characteristics of Maltodextrin-Surfactant Interactions | Researcher, Thailand |
| 11 | 2006 | Demet Guzey (Turkey) | Utilization Of Interfacial Engineering To Improve Food Emulsion Properties | Research Scientist, Unilever, The Netherlands |
| 12 | 2008 | Wanlop Chanasattru (Thailand) | Influence Of Water-Soluble Poly-Ols On Globular Protein Functionalities | Research Scientist, Food Biotechnology Research Unit, National Center for Genetic Engineering and Biotechnology, Pathum Thani, Thailand. |
| 13 | 2009 | Owen Jones (US) | Fabrication Of Protein-Polysaccharide Particulates Through Thermal Treatment Of Associative Complexes | Assistant Professor, Department of Food Science, Purdue University, West Lafayette, Indiana |
| 14 | 2009 | Young-hee Cho (Korea) | Development Of Structured Delivery Systems Using Nanolaminated Biopolymer Layers | Lecturer, Lafayette, Department of Food Science, Purdue University, West Lafayette, Indiana |
| 15 | 2011 | Alison M. Matalanis (US) | Fabrication, Characterization and Utilization of Filled Hydrogel Particles as Food Grade Delivery Systems | Quality Assurance Manager, American Lecithin Company, USA |
| 16 | 2013 | Tanushree Tokle (India) | Design And Fabrication Of Functional Lipid Nanoparticles Based On Control Of Interfacial Properties Using Biopolymers | Research Scientist, QualiTech, MN |
| 17 | 2013 | Cheng Qian (China) | Food-Grade Nanodispersions for Encapsulation, Protection and Delivery of Bioactive Food Component | Research Scientist, Coca Cola, Atlanta, Georgia |
| 18 | 2013 | Yingyi Mao (China) | Designing Novel Emulsion Performance by Controlled Hetero-Aggregation of Mixed Biopolymer Systems | Research Scientist, Abbot Nutrition, China |

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| 19 | 2013 | Jiajia Rao (China) | Rationalizing Lipid Nanoemulsion Formation for Utilization in the Food and Beverage Industry | Assistant Professor, Department of Food Science, North Dakota |
| 20 | 2014 | Ying Yang (China) | Rationalizing Nanoemulsion Formation for Encapsulation, Protection and Delivery of Bioactive Food Components | Research Scientist, Tate & Lyle, China |
| 21 | 2015 | Cynthia L. Lopez Pena (Mexico) | Physicochemical and Toxicological Assessment of Antimicrobial E-Polylysine-Pectin Complexes | Research Scientist, Nestle Nutrition, Freemont, US |
| 22 | 2015 | Bicheng Wu (China) | Structural Design Approaches for Creation of Reduced Fat Products | Research Scientist, Ingredion, New Jersey |
| 23 | 2015 | Jennifer Komaiko (US) | Optimization Of the Fabrication, Stability, and Performance of Food Grade Nanoemulsions with Low-Energy and High-Energy Methods | Research Scientist, Coca Cola, Atlanta, Georgia |
| 24 | 2019 | Ruojie Zhang (China) | Development of Excipient Emulsions to Improve the Bioavailability of Nutraceuticals in Fruits and Vegetables | Professor, Department of Food Science, University of Missouri, USA |
| 25 | 2019 | Zipei Zhang (China) | Design, Fabrication, and Utilization of Hydrogel Particles as Food-Grade Delivery Systems | Professor, Department of Food Science, University of Missouri, USA |
| 26 | 2021 | Songran Gao (China) | Development of Solid Lipid Nanoparticles for Utilization as Delivery Systems in Foods | Scientific Researcher, China |
| 27 | 2019 | Cansu Gamus (Turkey) | Identification and Characterization of Natural Emulsifiers for forming Food Grade Nanoemulsions | Associate Professor at Ankara University, Turkey |
| 28 | 2020 | Mahesh Kharat (India) | Stabilization of Curcumin in Foods and the Gastrointestinal Tract using Colloidal Delivery Systems | Senior Scientist, Nestle Research, Marysville, USA |
| 29 | 2020 | Jorge Muriel-Mundo (Puerto Rico) | Development of Vitamin C Delivery Systems | Sensor Scientist, Lucks Food Decorating Company, Washington State, USA |
| 30 | 2021 | Hualu Zhou (China) PhD | Elucidation of the Physicochemical Basis of Nanoparticle Fate in Gastrointestinal Tract | Assistant Professor, University of Georgia, GA, USA |
| 31 | 2021 | Jinning Liu (China) PhD | Creation of multiple-emulsion based delivery systems for | Senior Scientist, Formulation, Revere, MA, USA |

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| | | | improved bioactive performance. | |
| 32 | 2021 | Yunbing Tan (China) | Fabrication of nanostructured vitamin delivery systems for improved health and nutrition. | Data Scientist, Labvia, Cambridge, MA, USA |
| 33 | 2021 | Bingjing Zheng (China) | Development of novel delivery systems for hydrophobic nutraceuticals. | Food scientist<br>GNT Group, Tarrytown, NY, USA |
| 34 | 2025 | Sisheng Li (China) | Development of next-generation plant-based foods: enhancing physicochemical and nutritional properties through soft matter physics approaches | Postdoctoral researcher, China |
| 35 | Current | Xianwei Chen (China) | Creation of plant-based milk and dairy products using structural design approaches | Graduate Student, UMASS, Amherst, MA |
| 36 | 2025 | Jae Kun Ryu (Korea) | Utilization of soft matter physics to create plant-based meat analogs | Postdoctoral researcher, UMASS, Amherst, MA |
| 37 | 2024 | Xiaoyan Hu (China) | Utilization of soft matter physics to create plant-based adipose and muscle tissue | Postdoctoral researcher, Pennsylvania State University, PA, USA. |
| 38 | Current | Tian Ma (China) | Development of novel microgel technologies for creating healthier foods | Graduate Student, UMASS, Amherst, MA |

Many of the PhD students who have worked in my laboratory have gone on to be postdocs, professors, or leaders in the food industry.

## Post-Doctoral Research Fellows

I have also been a supervisor of numerous Postdoctoral researchers who have been employed to work on industrial or academic proposals. Typically, these Postdocs have worked in my laboratory for one to three years. Most of them have gone on to be Professors in US or international universities, or work as research scientists in the food industry or government laboratories.

1. John Coupland (1995-1997) (England)
2. Reza Ghaedian (1995-1996) (Iran)
3. Norbert Herrmann (1997-1998) (France)
4. Voranuch Suvanich (1997-1998) (Thailand)
5. Halldor Sigfusson (1998-1999) (Iceland)
6. Ratjika Chanamai (2000-2001) (Thailand)
7. Mark Richards (2000) (US)
8. Hyun-Jung Kim (2001-2004) (Korea)
9. Yeun-Suk Gu (2002-2004) (Korea)
10. Faraji Habibollah (2002-2004) (Iran)
11. Min Hu (2002-2004) (China)
12. Saehun Mun (2004-2005, 2011) (Korea)
13. Jeonghee Surh (2006-2008) (Thailand)
14. Darinka Djorjevic (2004-2005) (Serbia)
15. Sandra Sandra (2008-2010) (Malaysia)
16. Tarek Awad (2008-2009) (Egypt)
17. Dalal Asker (2009) (Egypt)
18. Seung Jun Choi (2010-2011) (Korea)
19. Sun Jin Hur (2011) (Korea)
20. Yan Li (2011-2012) (China)
21. Yuhua Chang (2011-2013) (China)
22. Amir Hossein Saberi (2013-2015) (Iran)
23. Thananunt Rojanasasithara (2011) (Thailand)
24. Min Hu (2010-2011) (China)
25. Uri Lesmes (2009-2010) (Israel)
26. Khalid Ziani (2011-2012) (Morocco)
27. Iris Joye (2013-2015) (Belgium)
28. Gabriel Davidov (2013-2015) (Mexico)
29. Laura Salvia Trujillo (2013-2015) (Spain)
30. Cheryl Chung (2013-2020) (Malaysia)
31. Charmaine Koo (2017-2019) (Canada)
32. Minqi Wang (2017-2019) (China)
33. Zhiyun (Kevin) Zhang (2019-2020) (China)
34. Eric Tsin (2021-2023) (China)
35. Zeynep Aksoylu (2022-2023) (Turkey)
36. Tugba Capar (2023-2024) (Turkey)
37. Xiaoyan Hu (2024-2025) (China)
38. Jeongsoo Lee (2024-2025) (Korea)
39. Minna Lu (2025) (China)

Jae Kun Ryu (2025-2026) (Korea)
Zhichang Qui (2025-2026) (China)

## Master's Students

I have mentored several master's students in my laboratory at UMASS. Most of them have gone on to work in the food industry or to do PhD studies.

1. Carlotta Cancalliare (1998-1999) (Italian)
2. David Kelley (2000-2002) (US)
3. Peter Law (2015-2018) (US)
4. Rebecca Walker (2014-2015) (US)
5. Marrisa Guttoff (2014-2015) (US)
6. Zifan Zhang (2019-2021) (China)
7. Dawn Wannasin (2021-2022) (Thailand)
8. Disha Jayakumar (2022-2023) (India)
9. Ramdattu Santhapur (2022-2023) (India)
10. Tushika Raina (2024-2025) (India)
11. Pratham Gajendragadkar (2025-2026) (India)
12. Nazerke Toktar (2025-2026) (Khazikstan)

## External Examiner

I served as External Member for a number of graduate students: Brian Degner (University of Nebraska), Amit Khosla (University of Nottingham, UK); Suumit Kiran (University of Toronto, Canada); Fulden Buyukozturk (Northwestern University, Massachusetts); SK (University College Dublin, Ireland).

## Visiting International Scholars

I served as the advisor for numerous visiting undergraduate students, graduate students, postdocs, and professors who have worked in my laboratory (typically for 6 to 24 months) as part of their programs at international universities. Some selected examples are given here. Many of them have gone on to be Professors in international universities, or to work as research scientists in the food industry or government laboratories. A number of these scholars are listed below:

1. Adrian Boldianu (Bulgaria)
2. Alessandro Gullota (Italy)
3. Amelia Torcello-Gómez (Spain)
4. Amonrat Thanonkaew (Thailand)
5. Anais Roux (France)
6. Anand Singh (Canada)
7. Andrea Esquivel (Mexico)
8. Anna Carolina de Aguira (Brazil)
9. Anna Joos (Germany)
10. Arnaud Tesson (France)
11. Asylbek Kulmyrzaev (Kyrgzstan)

12. Aurelie Berard (France)
13. Bahar Demircan (Turkey)
14. Baris Ozel (Turkey)
15. Bengu Ozturk (Turkey)
16. Benjamin Zeeb (Germany)
17. Biao Yuan (China)
18. Bingjing Zheng (China)
19. Carlos Bengoechea Ruiz (Spain)
20. Carlotta Cancalliere (Italy)
21. Celine Jamine (France)
22. Celine Laye (France)
23. Chainarong Chuajum (Thailand)
24. Chao Qiu (China)
25. Chaoerpeng Chaoerpeng (China)
26. Chaoying Qiu (China)
27. Chengzhen Liu (China)
28. Christopher Marshall (France)
29. Chunqing Bai (China)
30. Da Ma (China)
31. Diago Iwanga (Japan)
32. Ekasit Onsaard (Thailand)
33. Elizabeth Troncoso (Chile)
34. Eric Tsin (China)
35. Fang Chen (China)
36. Felix Orstag (Germany)
37. Francois Littoz (France)
38. Fuguo Liu (China)
39. Gege Sun (China)
40. Goran Vladisavljevic (Serbia)
41. Hao Xu (China)
42. Hector Pool (Mexico)
43. Hu Kun (China)
44. Irene Padro (Spain)
45. Irene Sierra (Mexico)
46. Izlia Arroyo-Maya (Mexico)
47. Izuki Bando (Japan)
48. Jeonghee Surh (Korea)
49. Jiangpin Ye (China)
50. Jianyong Wu (China)
51. Jiro Yokota (Japan)
52. Jochen Weiss (Germany)
53. Jochim Meier (Germany)
54. Jun Liu (China)
55. Korlid Thinkohkaew (Thailand)
56. Kubra Sislioglu (Turkey)
57. Larisa Schoener (Germany)

58. Laura Salvia Trujillo (Spain)
59. Lei Dai (China)
60. Li Liang (China)
61. Liqiang Zou (China)
62. Long Bai (China)
63. Long Chen (China)
64. Louisa Nouhan (France)
65. Lucile Bonnarie (France)
66. Lucile Gehin (France)
67. Luis Torres (Brazil)
68. Luping Gu (China)
69. Lydie Moreau (France)
70. Maria Ximena Quintanilla (Mexico)
71. Marialice Silvestre (Brazil)
72. Marie Dubot (France)
73. Marie-Ange Bonnaud (France)
74. Maud Beysseriat (France)
75. Maurcio Espinal-Ruiz (Columbia)
76. Meili Xin (China)
77. Moo-Yeol Baik (Korea)
78. Muhammad Imran (Pakistan)
79. Myriam Loffler (Germany)
80. Nuttinee Tangsrianugul (Thailand)
81. Olivier Kamtchueng Simo (France)
82. Patrick Chang (China)
83. Prune Baudot (France)
84. Qian Ju (China)
85. Qian Li (China)
86. Qian-Chun Deng (China)
87. Qianzhu Lin (China)
88. R. Santipanichwong (Thailand)
89. Raquel Gonçalves (Spain)
90. Ratchanee Charoen (Thailand)
91. Rodjana Noptana (Thailand)
92. Ruyi Li (China)
93. Sandra Ebert (Germany)
94. SangSoo Lim (Korea)
95. Saori Okuda (Japan)
96. Satoshi Ogawa (Japan)
97. Seung Jun Choi (Korea)
98. Shahid Iqbal (Pakistan)
99. Shanshan Lv (China)
100. Shengfeng Peng (China)
101. Shuai Chen (China)
102. Sigthor Petrusen (Iceland)
103. Sinja Meyer (Germany)

104. Solene LeMaux (France)
105. Sophie Duval (France)
106. Sophie Pallandre (France)
107. Sung Je Lee (New Zealand)
108. Supaporn Saechio (Malaysia)
109. Takahiko Doi (Japan)
110. Tanatchapond Rodsamai (Thailand)
111. Taotao Dai (China)
112. Thannalin Winuprasith (Thailand)
113. Thepkunya Harnsilawat (Thailand)
114. Thrandur Helgessen (Iceland)
115. Thunnalin Winuprasith (Thailand)
116. Tobias Schmelz (Germany)
117. Tomoko Aoki (Japan)
118. Tugba Capar (Turkey)
119. Utai Klinkesorn (Thailand)
120. Varanya Techasukthavorn (Thailand)
121. Wenjian Cheng (China)
122. Wentao Wang (China)
123. Xiang Luo (China)
124. Xiaoyan Hu (China)
125. XingFeng Xu (China)
126. Xinyi Cheng (China)
127. Xiuping Liang (China)
128. Xuan Liu (China)
129. Yajuan Li (China)
130. Yan Li (China)
131. Yaoguang Chang (China)
132. Yaqiong Pei (China)
133. Yashu Chen (China)
134. Yayuan Xu (China)
135. Youn-Ho Hong (China)
136. Yuan Fang (China)
137. Yue Gu (China)
138. Yujie Su (China)
139. Yunfei Huang (China)
140. Yuri Tashiro (Japan)
141. Yuting Wang (China)
142. Yuying Hu (China)
143. Zeynep Aksoylu (Turkey)
144. Zhen Fu (China)
145. Zhenbao Zhu (China)
146. Zhihua Pang (China)
147. Zicong Zeng (China)
148. Zhiheng Zhang (China)

### Undergraduates

My laboratory has also hosted numerous undergraduate students (> 50) who have worked on independent study projects. Most of these students have published their work in scientific journals and have gone on to graduate studies or to work in the food industry.

## SERVICE

I am currently the Editor of Annual Reviews in Food Science and Technology, one of the top journals in food science. I also serve on the editorial boards of numerous other food science and physical chemistry journals. I have organized scientific meetings and short courses on numerous occasions and have chaired many scientific sessions. At the University level, I have served on numerous department, college, and campus committees. I frequently consult for national and international food companies and have served on the scientific advisory boards of large multinational companies, as well as start-up companies. I have given numerous invited lectures at international symposia and at companies. I believe that it is critical that science is communicated to the general public in an engaging and informative manner. I have therefore written several books on food science and the scientific method for general audiences. Moreover, I have been interviewed on many radio, TV, and internet programs about my work in food science, and articles about my work have appeared in many different media formats.