

# Michael Rogers, Ph.D.

## Title and Address:

Associate Professor  
Department of Food Science  
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## Education

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### Highest Earned Degree

Ph.D. Food Science, 2008, University of Guelph, Guelph, Ontario, Canada.

### Dissertation

Nanostructuring fiber morphology in 12HSA organogels and the development of a food grade organogelator, October 2008, Alejandro G. Marangoni, University of Guelph.

### Other Earned Degrees

M.Sc., Protein/Polysaccharide induced structural heterogeneity: implication on glass transition and enzyme kinetics in frozen food systems, 2006, H. Douglas Goff, University of Guelph.  
B.Sc. Food Science, University of Guelph, 2004.

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## Honors and Awards

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### Professional Awards and Honors

Young Research Scientist Award, American Oil Chemists Society, 2015.  
Directors Award for Scientific Excellence, New Jersey Institute of Food Nutrition, & Health, 2014.  
Endel Karmas Award for Excellence in Teaching, Department of Food Science, Rutgers University, 2013.  
Young Scientist Award, World Congress. International Union of Food Science and Technology, 2008.  
Post Graduate Scholar – Doctoral Award, Natural Science and Engineering Council, Canada, 2006.  
Ontario Graduate Scholar, Ontario Government, Canada, 2006.

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## Employment History

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### Positions Held

01/2015-current Associate Professor, University of Guelph, Department of Food Science.  
07/2012-/01/2015 Director of the Gastrointestinal Physiology Center, New Jersey Institute of Food Nutrition and Health.  
07/2011 – 01/2015 Assistant Professor, Rutgers University, Department of Food Science.  
08/2008 - 08/2011 Assistant Professor, University of Saskatchewan, Department of Food and Bioproduct Sciences.  
08/2008-08/2011 Faculty Member of Graduate Studies and Research, University of Saskatchewan.

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## Publications

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### Chapters in Books or Monographs

- [7] **Rogers, M.A.**,\* 2014. Self-assembled fibrillar networks of low molecular weight oleogelators. In Edible Nanostructures: A Bottom-Up Approach. (A.G. Marangoni & D. Pink) Royal Society of Chemistry. Cambridge, UK.
- [6] **Rogers, M.A.**,\* and Spagnuolo, P.A. 2014. Functional Foods. In Encyclopedia of Agriculture, Food and Biological Engineering, Second Edition. (D.R. Heldman & C.I. Moraru) Taylor & Francis. New York. Accepted.
- [5] **Rogers, M.A.**,\* Ceramide Oleogels. 2011. In Edible Oleogels. (A.G. Marangoni & N. Garti) AOCS Press, Urbana, IL.
- [4] **Rogers, M.A.**,\* and Marangoni, A.G. 12-Hydroxystearic Acid Oleogels. 2011. In Edible Oleogels. (A.G. Marangoni & N. Garti) AOCS Press, Urbana, IL.
- [3] **Rogers, M.A.**\* Novel Lipid Substitutes. 2011. In Comprehensive Biotechnology 2ed. Vol 4: Agricultural and Related Biotechnologies, Section 3: Food Systems. (M. Moo-Young). Elsevier, Amsterdam.
- [2] **Rogers, M.A.**, Alhamdi, L. Tang, D., and Marangoni, A.G.\* 2007. Fat Crystal Networks. In Food Material Science. (J.M. Aguilera & P.J. Lillford). Springer Verlag, Germany. Pp. 369-414.
- [1] Awad, T.S., **Rogers, M.A.**, and Marangoni, A.G.\* 2004. Scaling behavior of the elastic modulus in colloidal networks of fat crystals. In: "Fat Crystal Networks" (A.G. Marangoni) Marcel Dekker, New York. Pp. 349-380.

### Articles in Refereed Journals \* corresponding author

- [62] **Rogers, M.A.**, Feng, Q., Ladizhansky, V., Good, D., Grahame, D.A.S., Bryksa, B.C., Smith, S.A., Corridini, M, Lim, L.-T., Guild, B., Burnet, P.-G., Shim, Y.Y., Reaney, M.J.T. 2016. Self-Assembled Supramolecular Fibrillar Networks Comprised of an Orbitide. RCS Advances. Submitted.
- [61] Jensen, D.A., Rogers, M.A., **Schaffner, D.W.**, 2016. Surfactant Concentration and Type Affects the Removal of Escherichia coli from Pig Skin During a Simulated Handwash. Journal of Applied Microbiology. Submitted.
- [60] Thilakarathna, S., Rogers, M.A., Huynh, S., Lan, Y., Marangoni, A., Robinson, L., **Wright, A.J.** 2016. Investigations of in vitro bioaccessibility from interesterified stearic acid-rich blends. Food & Function. Accepted.
- [59] **Rogers, M.A.**, 2016. Naturally Occurring Food Nanomaterials. Current Opinion in Food Science. 7, 14-19.
- [58] Rogers, M.A., and **Spagnuolo, P.A.**\* 2015. Food as a Drug. Oncoscience. 2, 801-802.

- [57] **Scott, R.S.**, Derosa, K., & Rogers, M.A., 2015. Cooking and sugar bioaccessibility from starch in human evolution. *American Journal of Physical Anthropology*. 156, 283-283.
- [56] Bandali, E., Rogers, M.A., & **Shapses, S.** 2015. The higher calcium absorption associated with a high fat diet is not due to intestinal calcium availability. *The Journal of the Federation of American Societies for Experimental Biology (The FASEB Journal)*. 29, 760.2.
- [55] Wang, T.-M. and **Rogers, M.A.\*** 2015. Biomimicry – An Approach to Engineering Oils into Solid Fats. *Lipid Technology*. Feature Article. 27, 1-4.
- [54] Rogers, M.A., Liu, X., & **Weiss, R.G.\***, 2015. Dissecting the Kinetic Pathways to a Meta-Stable Gel State Using Synchrotron FT-IR to Follow SAFiN Formation. *CrystEngComm*. 17, 8085-8092.
- [53] **Rogers, M.A.\*** 2015. Innovations in Food Science: From Bioactives to Whole Foods. *Current Opinion in Food Science*. 4, 139-140.
- [52] Ting, Y., Jiang, Y., Lan, Y., Xia, C., Lin, Z., Rogers, M.A., & **Huang, Q.\*** 2015. Viscoelastic Emulsion Improved the Bioaccessibility and Oral Bioavailability of Crystalline Compound: A Mechanistic Study Using in Vitro and in Vivo Models. *Molecular Pharmaceutics*. 12, 2229-2236.
- [51] Lan, Y., and **Rogers, M.A.**, 2015. 12-Hydroxystearic acid SAFiNs in Aliphatic Diols—A Molecular Oddity. *CrystEngComm*. 17, 8031-8038.
- [50] Lan, Y., Corradini, M.G., Weiss, R.G., Raghavan, S.R., and **Rogers, M.A.** 2015. To Gel or Not to Gel: Correlating Molecular Gelation with Solvent Parameters. *Chemical Society Reviews*. 44, 6035-6058. (**Cover Article**)
- [49] Fondaco, D., AlHasawi, F., Lan, Y., Ben-Elazar, S., Connely, K., and **Rogers, M.A.\*** 2015. Biophysics of Lipid Digestion in Infant Formulas and Breast milk. *Food Biophysics*. 10, 282-291.
- [48] Liu, C. & **Rogers, M.A.\*** 2015. Self-Assembly of 12-Hydroxystearic Acid Molecular Gels in Mixed Solvent Systems Rationalized using Hansen Solubility Parameters. *Colloid and Polymer Science*. 293, 975-983.
- [47] Rogers, M.A., and **Weiss, R.G.\*** 2015. Alkane-Based Molecular Gelators and the Structures and Properties of their Gels. *New Journal of Chemistry*. 39, 785-799.
- [46] Du, H., Corradini, M.G., Ludescher, R., **Rogers, M.A.\*** 2014. Micro-Viscosity of Oil Confined in a Colloidal Fat Crystal Network. *Soft Matter*. 10, 8652-8658.
- [45] Lan, Y., Corradini, M. G., **Rogers, M.A.\*** 2014. Do Molecular Gelators Cluster in Hansen Space? *Crystal Growth & Design*. 14, 4811-4818.
- [44] **Rogers, M.A.\*** Yan, Y.-F., Ben-Elazar, K., Lan, Y., Faig, J., and Urich, K. 2014. Salicylic acid (SA) Bioaccessibility from SA-based Poly(anhydride-ester). *Biomacromolecules*. 15, 3406-3411.
- [43] Lan, Y., Corradini, M.G., Liu, X., May, T., Borondics, F., Weiss, R.G., and **Rogers, M.A.\*** 2014. Probing Solubility Parameters Governing Self-Assembly of Molecular Gels. The case of 1,3:2,4-Dibenzylidene Sorbitol. *Langmuir*. 30, 14128-14142. (**Invited Feature Article & ACS Editors Choice Article & Cover Article**)

- [42] **Rogers, M.A.\*** Strober, T., Bot, A., Toro-Vazquez, J.F., Stortz, T., and Marangoni, A.G., 2014. Edible Oleogels in Molecular Gastronomy. *International Journal of Gastronomy and Food Science*. 2, 22-31.
- [41] Szakal, C., Roberts, S., Westerhoff, P., Bartholomaeus, A., Buck, N., Illuminato, I., Canady, R., and **Rogers, M.A.\*** 2014. Measurement of Nanomaterials in Foods: Integrative Consideration of Challenges and Future Prospects. *ACS Nano*. 8, 3128-3135.
- [40] Xu, S., Cavera, V., Rogers, M.A., Huang, Q., Zubovskiy, K., and **Chikindas, M.L.\*** 2013. Benzoyl Peroxide Formulated Polycarbophil/Carbopol® 934P Hydrogel with Selective Antimicrobial Activity, Potentially Beneficial for Treatment and Prevention of Bacterial Vaginosis. *Infectious Diseases in Obstetrics and Gynecology*. 2013, 1-10.
- [39] AlHassawi, F. and **Rogers, M.A.\*** 2013. Ternary Phase Diagram of B-Sitosterol, G-Oryzanol and Canola Oil. *Journal of the American Oil Chemists Society*. 90, 1533-1540.
- [38] Sparanza, A., Corradini, M.G., Hartman, T.J., Ribnicky, D., Oren, A. and **Rogers, M.A.\*** 2013. Influence of Emulsifier Structure on Lipid Bioaccessibility in Oil/Water Emulsions. *Journal of Agriculture and Food Chemistry*. 61, 6505-6515.
- [37] Pal, A., Abraham, S., Rogers, M.A., Dey, J., **Weiss, R.G.\*** 2013. Comparison of Dipolar, H-Bonding, and Dispersive Interactions on Gelation Efficiency of Positional Isomers of Keto and Hydroxy Substituted Octadecanoic Acids. *Langmuir*. 29, 6467-6475.
- [36] Gao, J., Wu, S., Emge, T.J., and **Rogers, M.A.\*** 2013. Influence of Solvent on the Supramolecular Architectures in Molecular Gels. *Soft Matter*. 9, 5942-5950.
- [35] Wu, S., Gao, J., Emge, T.J., and **Rogers, M.A.\*** 2013. Nanoscale and Microscale Structural Changes Alter the Critical Gelator Concentration of Molecular Gels in Different Organic Solvents. *CrystEngComm*, 15, 4507-4515.
- [34] Lee, P., and **Rogers, M.A.\*** 2013. Phase Selective Sorbent Xerogels As Reclamation Agents for Oil Spills. *Langmuir*. 29, 5617-5621.
- [33] Wu, S., Gao, J., Emge, T.J., and **Rogers, M.A.\*** 2013. Solvent Induced Polymorphic Nanoscale Transitions for 12-Hydroxyoctadecanoic Acid Molecular Gels. *Crystal Growth & Design*. 13, 1360-1366.
- [32] Lee, P., and **Rogers, M.A.\*** 2012. Effect of Calcium Source and Exposure-Time on Basic Caviar Spherification Using Sodium Alginate. *International Journal of Gastronomy and Food Science*. 1, 96-100.
- [31] **Rogers, M.A.\*** Abraham, S., Bodondics, F., and Weiss, R.G. 2012. Positional Isomers of Hydroxyoctadecanoic Acid Molecular Gels and Dispersions Influence Crystallization Kinetics and Activation Energies. *Crystal Growth & Design*. 12, 5497-5504.
- [30] Gao, J., Wu, S., and **Rogers, M.A.\*** 2012. Harnessing Hansen Solubility Parameters To Predict Organogel Formation. *Journal of Materials Chemistry*. 22, 12651-12658.
- [29] Abraham, S., Lan, Y., Lam, R.S.H., Grahame, D.A.S., Kim, J.J.H., Weiss, R.G., and **Rogers, M.A.\*** 2012. Influence of Positional Isomers on the Macroscale and Nanoscale Architectures of

Hydroxyoctadecanoic Acid Molecular Gels. *Langmuir*. 28, 4955-4964.

[28] **Rogers, M.A.\*** and Kontogiorgos, V., 2012. Temperature dependence of relaxation spectra of self-assembled fibrillar networks of 12-hydroxystearic acid in canola oil organogels. *Food Biophysics*. 7, 132-137.

[27] **Rogers, M.A.\*** 2011. Co-operative self-assembly of cholesterol and  $\gamma$ -oryzanol composite crystals. *CrystEngComm*. 13, 7049-7057.

[26] Lam, R.S.H., and **Rogers, M.A.\*** 2011. Activation Energy of Crystallization for Trihydroxystearic Acid, Stearic Acid and 12-Hydroxystearic Acid under Non-Isothermal Cooling Conditions. *Crystall Growth and Design*. 11, 3593-3599.

[25] Grahame, D.A.S., Olauson, C. Lam, R.S.H., Pedersen, T., Borondics, F. Abraham, S. Weiss, R.G., and **Rogers, M.A.\*** 2011. Influence of Chirality on the Modes of Self-Assembly of 12-Hydroxystearic Acid in Molecular Gels of Mineral Oil. *Soft Matter*. 7, 7359-7365.

[24] Rutherford, H., Low, N.H., Borondics, F., Pedersen, T., and **Rogers, M.A.\*** 2011. Dependence of Liquid Crystal Morphology on Phospholipids Hydrocarbon Length. *Colloids and Surfaces: Biointerfaces*. 87, 116-121.

[23] **Rogers, M.A.\*** and Kim, J.J.H. 2011. Rheological Assessment of the Sol-Gel Transition for Self-Assembling Low Molecular Weight Gelators. *Food Research International*. 44, 1447-1451.

[22] Lam, R. and **Rogers, M.A. 2011.\*** Experimental Validation of the Modified Avrami Model for Non-Isothermal Crystallization Condition. *CrystEngComm*. 13, 866-875.

[21] **Rogers, M.A.\*** Bot, A., Lam, R., Pedersen, T., and May, T. 2010. Multi-Component Hollow Tubules Formed Using Phytosterol and  $\gamma$ -Oryzanol Based Compounds: An Understanding of their Molecular Embrace. *Journal of Physical Chemistry A*. 114, 8278-8285.

[20] Lam, R., Pederson, T., and Quaroni, L., and **Rogers, M.A.\*** 2010. A Molecular Insight Into The Nature of Crystallographic Mismatches in Self-Assembled Fibrillar Networks Under Non-Isothermal Crystallization Conditions, *Soft Matter*. 6, 404-408.

[19] Rogers, M.A., Roos, Y.H., and **Goff, H.D.\*** 2010. Structural heterogeneity and its effects on the enzyme kinetics in sucrose solutions containing protein and polysaccharide. *Food Biochemistry*. 1, 202-215.

[18] Hughes, N.E., Marangoni, A.G., Wright, A.J., Rogers, M.A., and **Rush. J.A.\*** 2009. Potential Food Applications of Edible Oil Organogels. 2010. *Trends in Food Science*. 20, 470-480.

[17] **Rogers, M.A.\*** 2009. Novel Structuring Strategies for Unsaturated Fats-- Meeting the Zero-Trans, Zero-Saturated Fat Challenge: A Review. *Food Research International*. 42, 747-753.

[16] Lam, R., Rogers, M.A., and **Marangoni, A.G.\*** 2009. Thermo-mechanical method for the determination of the fractal dimension of fat. *Journal of Thermal Analysis and Calorimetry*. 98, 7-12.

[15] **Rogers, M.A.\*** Pederson, T., and Quaroni, L. 2009. Hydrogen Bonding Density of Supramolecular Structures for Self-Assembled Fibrillar Networks Probed Using Synchrotron Infrared Spectromicroscopy.

Crystal Growth & Design. 9, 3621-3625.

[14] **Rogers, M.A.\*** and Marangoni, A.G. 2009. Solvent modulated nucleation and crystallization kinetics of 12-hydroxystearic acid: a non-isothermal approach. Langmuir's special issue on Self-Assembled Fibrillar Networks. 25, 5886-5896.

[13] Rogers, M.A., Wright, A.J., **Marangoni, A.G.\*** 2009. Oil Organogels: The Fat of the Future. Soft Matter. 5, 1594-1596.

[12] **Rogers, M.A.\*** 2009. Solidifying Unsaturated Oils Without Trans or Saturated Fats: The Hardstock of the Future? Food Engineering & Ingredients. 34, 23-25.

[11] Rogers, M.A., Wright, A.J., and **Marangoni, A.G.\*** 2009. Nanostructuring fibre morphology and solvent inclusions for 12 hydroxystearic acid/canola oil organogels. Current Opinion in Colloid and Interface Science. 14, 33-42.

[10] **Rogers, M.A.\*** and Marangoni, A.G. 2008. Non-isothermal nucleation and crystallization of 12HSA in vegetable oil. Crystal Growth and Design. 8, 4596-4601.

[9] Rogers, M.A., and **Marangoni, A.G.\*** 2008. Effect of enthalpy and entropy on SAFiN structure. Journal of Physics D. 41, 215501-215505.

[8] Rogers, M.A., Wright, A.J., and **Marangoni, A.G.\*** 2008. Crystalline stability of self-assembled fibrillar networks of 12-hydroxystearic acid in edible oils. Food Research International. 41, 1026-1034.

[7] Rogers, M.A., Wright, A.J., and **Marangoni, A.G.\*** 2008. Engineering the oil binding capacity and crystallinity of self-assembled fibrillar networks of 12-hydroxysteric acid in edible oils. Soft Matter. 4, 1483-1490.

[6] Rogers, M.A., Smith, A.S., Wright, A.J., and **Marangoni, A.G.\*** 2007. A Novel Imaging Technique for Vegetable Based Organogels. Journal of American Oil Chemists Society. 84, 899-906.

[5] Griffith, M., Timonin, M., Wong, A.C.E., Gray, G.R., Akhter, S.R., Saldanha, M., Rogers, M.A., Weretilnyk, E.A., and **Moffatt, B.\*** 2007. Adaptation of *Thellungiella salsuginea* to cold temperatures. Plant Cell and Environment. 30, 529-538

[4] Rogers, M.A., Roos, Y.H., and **Goff, H.D.\*** 2006. Structural heterogeneity and its effects on the glass transition in sucrose solutions containing protein and polysaccharide. Food Hydrocolloids. 20, 774-779.

[3] Rogers, M.A., Wright, A.J., and **Marangoni, A.G.\*** 2005. Microstructure of fat crystallizing on a collagenous surface. Special Issue on Lipid Structure and fat crystallization. European Journal of Lipid Science. 107, 684-688.

[2] Awad, T.S., Rogers, M.A., **Marangoni, A.G.\*** 2004. Scaling behavior of the elastic modulus in colloidal networks of fat crystals. Journal of Physical Chemistry B, 108. 171-179.

[1] **Marangoni, A.G.\*** and Rogers, M.A., 2003. Structural basis for the yield stress in plastic disperse systems. Applied Physics Letters. 82, 3239-3241.

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## Teaching Activities

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### Instructional Development

2015-Current Instructor. Food Chemistry II (Food\*3040, 0.5 Credit Course). University of Guelph

2015-Current Instructor. Food Chemistry I (Food\*3030, 0.5 Credit Course). University of Guelph.

2014-2015 Instructor. Principles of Food Science (16-400-201, 5 credit course). Rutgers University.

2012-2015 Co-Instructor. Food Chemistry Fundamentals (11-400-513, 3 credit course). Rutgers University. Responsible for teaching lipid chemistry, water chemistry and physical chemistry of foods (11 lectures).

2011-2015. Food Process Engineering (16-400-513, 4 credit course). Rutgers University.

2009-2010 Instructor. Unit Operations in Food Processing (FABS 345, 3 credit course) University of Saskatchewan, SK.

2008-2011 Instructor. Dimensions in Food Science (FABS 210, 3 credit course). University of Saskatchewan, SK.

2009-2009 Motivation: How Stimulating is Your Teaching. Gwenna Moss Teaching Centre. Murray Building 50, Saskatoon, SK, January 12, 2009.

2009-2009 Peer Evaluations of Teaching and their Impact on Tenure and Promotion: Gwenna Moss Teaching Centre. Murray Building 50, Saskatoon, SK, January 15, 2009.

2009-2009 When the Learner Becomes the Master: Encouraging and Helping Students to Publish. Gwenna Moss Teaching Centre. Murray Building 50, Saskatoon, SK, March 4, 2009.

2009, Blackboard Online Course Learning Management System. Gwenna Moss Teaching Centre. Murray Building 50, Saskatoon, SK, March 18, 2009.

### Teaching Other

Rogers, M.A., Fundamentals in Lipid Chemistry. Introduction to Food Science Short Course. New Jersey Agriculture Experiment Research Station. New Brunswick, NJ. August 21-24, 2014.

Rogers, M.A., Fundamentals in Lipid Chemistry. Introduction to Food Science Short Course. New Jersey Agriculture Experiment Research Station. New Brunswick, NJ. August 24-27, 2013.

Rogers, M.A., Fundamentals in Lipid Chemistry. Introduction to Food Science Short Course. New Jersey Agriculture Experiment Research Station. New Brunswick, NJ. August 20-24, 2012.

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## Conference Presentations, Lectures, Demonstrations

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### Invited Addresses

- [16] Rogers, M.A., Role of Processing in the Biophysics of Digestion--an Infant Formula Case Study. Process Expo. Chicago, IL. September 15-18, 2015.
- [15] Rogers, M.A., Biomimicry—An Approach to Engineer Fats. TechConnect World Innovation. Washington, DC. June 14-17, 2015.
- [14] Rogers, M.A. Molecular Gels Biomimicking the Stratum Corneum. Young Research Scientist Award Lecture. American Oil Chemists Society Meeting. Orlando, FL, May 3- 6, 2015
- [13] Rogers, M.A., A bit of science fiction and mimicking Infant gastrointestinal conditions in TIM. TNO User Meeting. Porto, Portugal, April 16-17. 2015.
- [12] Rogers, M.A. Probing Solubility Parameters Governing Self-Assembly of Molecular Gels. William Paterson University. Chemistry Seminar Series. Wayne, NJ. March 27, 2014.
- [11] Rogers, M.A. Harnessing Hansen Solubility Parameters to Understand Self-Assembly of Molecular Gels. Supramolecular Assembly and Gelation in Organic Solvents. American Chemical Society Meeting. Dallas, TX. March 16-20, 2014.
- [10] Rogers, M.A., Simulating the Alimentary Tract and a Lipid Digestion Case Study. Robert Wood Johnson Hospital. Gastroenterology Seminar Series. New Brunswick, NJ. April 5, 2013.
- [9] Rogers, M.A., Engineering Self-Assembled Fibrillar Networks Using Hydroxylalkanoic Acids as a Foundation for Rational Design of New Architectures in Molecular Gels. University of Waterloo. Biomedical Seminar Series. Waterloo, ON, Canada. March 25, 2013.
- [8] Rogers, M.A., Integrating Food Science and the New Jersey Institute of Food Nutrition and Health. TNO World Headquarters. Zeist, The Netherlands. March 18, 2013.
- [7] Rogers, M.A., Understanding the molecular characteristics responsible for promoting self assembly of molecular gels. Institute for Advanced Materials, Devices and Nanotechnology. Biomedical Engineering, Rutgers. New Brunswick, NJ. November 6, 2012.
- [6] Rogers, M.A., Effect of geometric and positional isomers of 12HSA molecular gels. American Chemical Society. San Diego, CA. March 24-28, 2012.
- [5] Rogers, M.A., Applications of Organogels in the Cosmetic Industry. Avon Research and Development. Suffrin, NY. February 16, 2012.
- [4] Rogers, M.A., Industrialization of the Food Supply—the Potentials of Metabolimics, Nanotechnology, and Functional Foods. NY/NJ- Institute of Food Technology. New Brunswick, NJ. February 6, 2012.
- [3] Rogers, M.A., Assessing the Dimensionality of Crystal Growth, from Hollow Nano-Fibers to Spherulitic Spheres: Insights Provided by the Avrami Model. Georgetown University. Department of Chemistry. Washington, D.C. August 5, 2010.



[2] Rogers, M.A. Understanding the Physicochemical Aspects of Food Grade Organogels. Rutgers University. Department of Food Science. New Brunswick, NJ. June 8, 2010.

[1] Rogers, M.A. 2008. Gelled Oil: The Fat of the Future? World Congress. International Union of Food Science and Technology. Young Scientist Award. Plenary Lecture. Shanghai, China. October 18-24, 2008.

### **Other Presentations, Lectures, Demonstrations**

[36] Rogers, M.A., Tweaking Molecular Gelators. American Chemical Society Middle Atlantic Regional Meeting. Riverdale, NY, June 9-12, 2016.

[35] Rogers, M.A., and Reaney, M.J.T., Organogels comprised of a Cyclic Peptide from Flaxseed Oil. . American Oil Chemists Society Meeting. Salt Lake City, UT. May 1-4, 2016.

[34] Rogers, M.A., Microviscosity of Liquid Oils in Confined Colloidal Fat Crystal Networks. American Oil Chemists Society Meeting. Salt Lake City, UT. May 1-4, 2016.

[33] Singh, A., and Rogers, M.A., Importance of pi-pi stacking in Urea and Sorbital based Gelators. American Oil Chemists Society Meeting. Salt Lake City, UT. May 1-4, 2016.

[32] Wang, T.M. and Rogers, M.A., Biomimicking the Stratum Corneum to Engineer Edible Oleogels. American Chemical Society. Boston, MA. August 16-20, 2015.

[31] Lan, Y., Corradini, and Rogers, M.A. Design of Molecular Gelator-Solvent Systems Guided by Solubility Parameters. American Chemical Society. Boston, MA. August 16-20, 2015.

[30] AlHassawi, F., Wang, T.Z., Lan, Y., and Rogers, M.A. Comparison of Lipid Digestibility for Infant Formula to Human Breast milk. American Oil Chemists Society Meeting. Orlando, FL, May 3- 6, 2015

[29] Thilakarathna, S.H., Rogers, M.A., Lan, Y., Huynh, S., and Wright, A.J. In vitro Digestion of Interesterified Stearic Acid-rich Blends: Compositional and Physical Property Investigations During Digestion. American Oil Chemists Society Meeting. Orlando, FL, May 3- 6, 2015

[28] Lan, Y., Rogers, M.A. Closing in on the Ability to Predict New Food Grade Gelators. American Oil Chemists Society Meeting. Orlando, FL, May 3- 6, 2015

[27] Scott, R.S., Derosa, K., and Rogers, M.A. Cooking and Sugar Bioaccessibility from Starch in Human Evolution. American Association of Physical Anthropologists. St. Louis, MO, March 25, 2015

[26] Lan, Y., and Rogers, M.A. Comparing Solubility Parameters to Understand Self-Assembly in Molecular Gels. American Chemical Society. 248th ACS National Meeting. San Francisco, CA, August 10-14, 2014.

[25] Rogers, M.A., Lan, Y., Sparanza, A., Influence of Emulsifier Structure on Lipid Bioaccessibility in Oil-Water Nanoemulsions. American Oil Chemists Society, San Antonio, TX, May 3-8, 2014.

[24] Du, H., and Rogers, M.A., The Effect of Liquid Oil on the Crystallization of Fat Crystal Networks. New York and Central New Jersey International Food Technologists Meeting. New Brunswick, NJ. February 20, 2014.

- [23] Lan, Y., and Rogers, M.A. Comparing Solubility Parameters to Understand Self-Assembly in Molecular Gels. The Case of 1,3:2,4-Dibenzylidene Sorbitol (DBS), A Potential Fat Replacer. New York and Central New Jersey International Food Technologists Meeting. New Brunswick, NJ. February 20, 2014.
- [22] Fondaco, D., AlHasawi, F., and Rogers, M.A. Viscoelastic Differences and Particle Size Distributions of Similac Infant Formulations and Breast Milk and their Implications for Obesity Risks. New York and Central New Jersey International Food Technologists Meeting. New Brunswick, NJ. February 20, 2014.
- [21] Rogers, M.A., and Spornaza, A. Biophysics of Lipid Digestion. TIM User Meeting. Barcelona, Spain. March 14, 2013.
- [20] Gao, J., Wu, S. and Rogers, M.A. 2013 Harnessing Hansen Solubility Parameters To Predict Organogel Formation. American Oil Chemists Society Meeting. Montreal, ON. April 28-May 1, 2013.
- [19] AlHassawi, F. and Rogers, M.A. 2013 Ternary Phase Diagram of B-Sitosterol, G-Oryzanol and Canola Oil—A Gamut of Materials from Glasses to liquid Crystals. American Oil Chemists Society Meeting. Montreal, ON. April 28-May 1, 2013.
- [18] Wu, S., Gao, J., and Rogers, M.A. Harnessing Solubility Parameters to Predict Organogel Formation. American Chemical Society. Philadelphia PA. August 2012.
- [17] Rutherford, H., Low, N.H., Rogers, M.A. Effect of chain length on liposome wall structure. International Symposium on Colloids and Materials. Amsterdam, The Netherlands. May 8-11, 2011.
- [16] Lam, R.H.S., Pedersen, T., Bot A., May, T., Rogers, M.A. Multi-Component Hollow Nano-Tubes Formed Using Phytosterol and  $\gamma$ -Oryzanol Based Compounds. Canadian Light Source Annual Users Meeting. Saskatoon, SK. June 16-18, 2010.
- [15] Lam, R.H.S., Quaroni, L., Pedersen, T., Rogers, M.A. A Molecular Insight into the Nature of Crystallographic Mismatches in Self-Assembled Fibrillar Networks. Canadian Light Source Annual Users Meeting. Saskatoon, SK. June 16-18, 2010.
- [14] Rogers, M.A. Food Grade Gelators: The Evolution of Lipid Structuring. American Oil Chemists Society. Phoenix, AZ. May 16-20, 2010.
- [13] Lam, R.H-S. And Rogers, M.A. Experimental Validation of the Modified Non-Isothermal Avrami Model for 1D Fibrillar, 2D Platelet and 3D Spherulitic Crystal Growths. American Oil Chemists Society. Phoenix, AZ. May 16-20, 2010.
- [12] Rutherford, H., Lam, R., Pederson, T., Quaroni, L. and Rogers, M.A. Engineering Crystallographic Mismatches of Self-Assembled Fibrillar Networks: Shedding Synchrotron Light on a Molecular Problem. American Oil Chemists Society. Phoenix, AZ. May 16-20, 2010.
- [11] Rogers, M.A. Ceramide Organogels. American Oil Chemists Society. Orlando, FL. May 3-6, 2009.
- [10] Rogers, M.A., Wright, A.J., and Marangoni, A.G. 2008. Gelled Oil: The Fat of the Future? World Congress. International Union of Food Science and Technology. Young Scientist Award Lecture. Shanghai, China. October 18-24, 2008.

- [9] Rogers, M.A., Wright, A.J., and Marangoni, A.G. 2008. Engineering Oil-Binding Capacity and Crystallinity of Organogels. Meeting of the American Oil Chemists Society. Seattle, WA. May 18-21, 2008.
- [8] Hughes, N.E., Rogers, M.A., and Marangoni, A.G. 2008. The Physical and Functional Properties of Vegetable Oil Organogels. Annual Meeting of the American Oil Chemists Society. Seattle, WA. May 18-21, 2008.
- [7] Marangoni, A.G., and Rogers, M.A. 2007. Exploiting Small-Molecule Self-Assembly Properties to Create Edible Supramolecular Structures. 5<sup>th</sup> EuroFed Lipid Conference. Gothenburg, Sweden, September 16-19, 2007.
- [6] Rogers, M.A., Wright, A.J., Smith, S.A., and Marangoni, A.G. 2007. A Novel Imaging Technique for Vegetable Oil Based Organogels. Annual Meeting of the American Oil Chemists Society. Quebec, QC. May 12-16, 2007.
- [5] Rogers, M.A., Wright, A.J., and Marangoni, A.G. 2006. Structure and Properties of 12-Hydroxystearic Acid/Canola Oil Gels. Annual Meeting of the American Oil Chemists Society. St. Louis, MO. May 2-5, 2006.
- [4] Rogers, M.A., and Marangoni, A.G. 2007. Nanostructuring fiber morphology and solvent inclusions for 12-hydroxystearic acid/canola oil organogels. ICMR program on polymeric and self assembled gels. University of California, Santa Barbara, CA. August 5-18, 2007.
- [3] Rogers, M.A., Goff, H.D., Roos, Y.H. Protein/polysaccharide induced structural heterogeneity: the effect on the glass transition temperature and enzyme kinetics. Annual Meeting for International Food Technology. Las Vegas, NV. July 22-24, 2004.
- [2] Awad, T., Rogers, M.A., Marangoni, A.G. . Scaling behavior of the elastic modulus with SFC in fats. Annual Meeting of the American Oil Chemists Society. Kansas City, MO. May 4-7, 2003.
- [1] Rogers, M.A. and Marangoni, A.G. Rheological determination of the fractal dimension of a fat crystal networks. Annual Meeting of the American Oil Chemists Society. Montreal, QC. May 5-8, 2002.
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## **Organizing and Chairing Activities**

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### **Participation in Organizing or Chairing Conferences, Workshops, and Organizations**

- 07/15. Panelist. DMREF Surfactants, Liquids and Assemblies (SLA) Panel. National Science Foundation.
- 05/14-ongoing. Vice Chair of the Edible Applications Division. American Oil Chemists Society.
- 05/14-05/15 Session Chair, Edible Applications, Lipid Gels – Future Applications of Oleogels. Orlando, FL., May 3- May 7, 2015.
- 01/13-12/15 State of the Science Team Member on Food Nanotechnology. ILSI Research Foundation.
- 04/13-04/13 Session Chair, Plenary Session on Engineering Food for Health. Conference of Food Engineering. Columbus, Ohio.

04/13-05/13 Session Chair, Edible Applications, Novel Edible Materials Session, American Oil Chemists Society Meeting. Montreal, Quebec, Canada April 31-May3, 2013.

04/12-05/12 Reviewer for American Oil Chemists Society Edible Applications Division Student Award.

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## **Editorial Activities**

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### **Membership on Editorial Boards of Scholarly or Professional Journals**

2014-ongoing Associate Editor, Food Biophysics

2015 Guest Editor, Innovations in Food Science, Current Opinion in Food Science.

2013-2015 Editor, International Journal of Gastronomy and Food Science.

2012-ongoing Ad-Hoc Reviewer, USDA/NIFA Small Business Innovation and Research Awards (5 Grants reviewed).

2012-ongoing Ad-Hoc Reviewer, NSF, Supramolecular Chemistry Division.

2012-ongoing Reviewer Langmuir, Journal of the American Oil Chemists Society, Food Research International, Soft Matter, Food Biophysics, Journal of Physical Chemistry, Crystal Growth and Design, Journal of Agriculture and Food Chemistry, Journal of Colloid and Surfaces A, Colloids and Surfaces B, Food Research International, Chemical Society Reviews

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## **Funding**

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### **Externally-Funded Research and/or Training Grants**

2015: (Grant Amount: \$25,000) Molecular Gels Comprised of Cyclic Peptides. NSERC Engage grant, Michael Rogers (PI).

2014-2016: (Grant Amount: \$252,675) Influence of Oat and Soluble Fiber Content on the Biophysics of Digestion, PepsiCo, Michael Rogers (PI), Mukund Karwe (CO-PI), Richard Ludescher (CO-PI).

2013-2015: (Grant Amount: \$497,000) GRAS Luminescent Probes of Food Physical State. United States Department of Agriculture, National Institutes of Food and Agriculture, Richard Ludescher (PI) and Michael Rogers (CO-PI).

2009-2012 (Grant Amount: \$178,000) Saskatchewan Agriculture Development Fund, Canada, Sphingolipid content in agricultural crops and optimize their extraction from by-products, Michael Rogers (PI), Martin Reaney (CO-PI), Nicholas Low (CO-PI).

2009-2011 (Grant Amount: \$125,000) National Science and Engineering Research Council, Canada, Positional isomer synthesis for assessing the ability to act as organogels, Michael Rogers (PI).

2010-2012 (Grant Amount: \$49,607) CFI Leaders Opportunity Fund, Canada, Acquisition of a TA Instruments AR G2 Rheometer, Michael Rogers (PI).

## **Internally-Funded Research and/or Training Grants**

2012-2014 (Grant Amount: \$30,000) New Jersey Institute of Food Nutrition and Health, TIM Seed Grant, Biophysics of Lipid Digestion, Michael Rogers (PI).

**Total Grant Dollars:                   \$ 1,157,282.00**

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## **Patent Information**

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### **Patents Received**

Rogers, M.A., 2012. Thermo-reversible Phase Selective Xerogel Compositions. US Provisional Patent Application. No. 61/735731.

Rogers, M.A., Wright, A.J. and Marangoni, A.G. 2008. US Provisional Patent Application No.61/071761. Organogelator. (Abandoned)

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## **Students Supervised**

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### **Students Supervised for Independent Studies**

2015: Qi (Caitlyn) Feng (Food Science Co-Op) (URA)  
2014: Yim Fan Yan  
2014: Shirley Ben-Elazar (Honors Thesis)  
2014: Karen Ben-Elazar (George H. Cook Honors Project)  
2014: Tara Strober  
2014: Derrick Fondaco (Aresty Research Assistant)  
2014: Finterly Hu  
2014: Melissa Anne Tanchingco (Aresty Research Assistant)  
2014: Kristen Connolly  
2014: Christina Kim (Aresty Research Assistant & George H. Cook Honors Project)  
2013: Danlei Chen  
2013: Philip Lee (Bergen County High School Summer Intern)  
2013: Adrienne Speranza (George H. Cook Honors Project)  
2012: Jee-Hee Kim (University of Saskatchewan)  
2011: Trevor Martins (University of Saskatchewan)  
2011: Caitlin Olauson (University of Saskatchewan)

### **Master's or Doctoral Students by Type of Supervision**

A. Doctoral theses supervised as primary advisor.  
aCurrent: Doctoral - Primary: AlHassawi, Fatemah (Rutgers University)  
2016: Doctoral - Primary: Lan, Yaqi (Rutgers University)

B. Membership on doctoral theses committees or other (specify)

Current: Doctoral – Committee member: Pere Ramel (University of Guelph)  
2015: Doctoral – Department member: Cendy Feng (University of Guelph)  
2015: Doctoral – Department member: Gayin, Joseph (University of Guelph)  
2015: Doctoral – Department member: Hao, Heying (University of Guelph)  
2015: Doctoral – Committee member: Jansen, Dane (Rutgers University)

C. Masters theses supervised as primary advisor.

Current: Master's – Primary: Li, Nanxi (Rutgers University)  
Current: Master's – Co-Advisor: Singh, Andrew (University of Guelph)  
2015: Master's - Primary: Du, Xuixin (Rutgers University)  
2015: Master's - Primary: Lui, Chen (Rutgers University)  
2014: Master's - Primary: Wu, Songwei (Rutgers University)  
2013: Master's – Primary: Gao, Jie (Rutgers University)  
2013: Master's - Primary: AlHassawi, Fatemah (Rutgers University)  
2011: Master's - Primary: Lam, Ricky (University of Saskatchewan)  
2011: Master's - Primary: Rutherford, Hayley (University of Saskatchewan)

D. Membership on Masters theses committees or other (specify).

Current: Masters – Committee Member: Kim, Ga (University of Guelph)  
2015: Masters – Chair: Dupuis, John (University of Guelph)  
2015: Masters – Department Member: Eldemrawy, Hebatullah (University of Guelph)  
2015: Masters – Chair: Blake, Alexia (University of Guelph)  
2015: Masters – Department Member: AlHawsawi, Hanadi (University of Guelph)  
2013: Masters - Committee: Su, Xiaorong (Rutgers University)  
2012: Masters - Committee: Schultz, Lisa (Rutgers University)  
2012: Masters - Committee: Teraiya, Rajay (Rutgers University)