JASON P. OLIVER

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Education

Science Education, SUNY Cortland (2021)
- Pedagogical coursework.

PhD, Biosystems Science, Engineering & Management, University of Minnesota (2015)
- Advisor: Dr. Jonathan Schilling

MS, Ecology & Environmental Science, University of Maine (2008)
- Advisor: Dr. Jody Jellison

BS, Environmental & Forest Biology, SUNY Environmental Science & Forestry (2006)
- Advisor: Dr. Thomas Horton

Research Experience

Cornell PRO-DAIRY, Dairy Environmental Systems, Program Lead (2022-current)
- Applied research/outreach, manure management, advanced manure treatments, manure-to-energy systems, air and water quality, GHG mitigation, climate resilience, farm sustainability.

SPRUCE | Spruce Peatland Responses Under Climatic & Environmental Change, CoPI (2015-Current)
- Coarse wood decay and microbial community response under long-term climate manipulation.

Cornell PRO-DAIRY, Dairy Environmental Systems, Postdoctoral Researcher (2015-2018)
- Manure management, biofiltration, and antibiotic resistance mitigation

Environmental Microbiologists, Bluepoint Environmental, Syracuse, NY (2009-2010)
- Indoor air quality

Teaching Experience

Adjunct Professor/Instructor
- Human Genetics (SUNY Cortland, 2018-Current)

Agricultural Sciences Teacher (Groton JrSr High, 2018-2022)
- Career & Technical Education in Agricultural Production, Trans A (NYSED)
- Animal, Food and Natural Resources (Curriculum for Agricultural Science Education)
- Courses developed: Intro to Agriculture, Animal Science & Industry[1], US Food Systems[2], Environmental Science[2], Botany[2] ([1] dual @ SUNY Morrisville*, [2] dual @ TC3)

Lecturing & Teaching Assistant Experiences *[Partial list]*
- Summer Dairy Institute (Cornell, Summer 2023)
- Dairy Fellows (Cornell, Winter 2023)
- Biological Processes (Cornell, Spring 2017)
- Animal Health Diseases (Cornell, Spring 2017)
- Veterinary Perspectives on Pathogen Control (Cornell, 2016)
- Forest and plant pathology (U. Minnesota, 2014, 2015)
- Environmental & Industrial Microbiology (U. Minnesota, 2014)
- Biodegradation of Bioproducts (U. Minnesota, 2012- 2015)

Service Activities

Secretary, ASABE NRES-27 Ag By-products & Animal Mortality Management Systems (2023-Current)

Planning Committee, Northeast Manure Expo (2023-Current)

Diversity and Inclusions Committee, Cornell Department of Animal Science (2022-current)

Advisory Committee, Ruminant Farm Systems (RuFaS) Manure (2022-current)

Department Chair, Groton HS Science Dept. (2020-2022)

Current Affiliations

- American Society of Agricultural and Biological Engineers (ASABE)
- NY Farm Bureau Tompkins County
- NY Assoc. of Agricultural Educators (NYAAE)
- National Assoc. of Agricultural Educators (NAAE)

Grants

Interactions between dietary fatty acids, Asparagopsis taxiformis, and bromoform on enteric and manure methane emissions and energetic conversion in lactating dairy cows (2023) McFadden J, Van Amburgh M, Oliver JP, Sprague L, Huson H, Reed K, Overton T, Mason C, Vagnoni D, Budine M, DeGroot M. $1,500,000 ($3,268,613 with matching funds)

Manure mesocosms: Test systems to inform sustainable dairy manure management. (2023) Oliver JP, Ray L, Staggs A, Ray P. The Nature Conservancy + Cornell Atkinson Center for Sustainability. $274,000

Evaluating Environmental and Economic Benefits of Nitrogen Conservation through the N2 Applied Technology. (2023) Stoermann M, Porter J, Kopman C, Ray L, Oliver JP. New York Farm Viability Institute. $51,520

Analytical support to enhance quantification of GHG emissions from long-term dairy manure storage systems pursuant to achievement of the dairy industry's Net Zero Initiative 2050 environmental goals. (2023) Oliver JP. Dairy Management Inc. $60,000.

Ammonia emissions associated with NY dairy manure systems – An initial survey. (2023) Oliver JP, Rudek J. Environmental Defense Fund. $82,800.

Applicability and roll out of covered manure storages with flaring system among Nestle US dairy farms. (2023) Oliver JP. Nestle Research & Development. $20,000

Methane and nitrous oxide measurement on NYS dairy farms and manure systems. (2022) Ray L, Wright P, Oliver JP, Leibensperger E. NYS Dept. of Agriculture and Markets. $819,200

System solutions to dairy manure management: Characterizing and reporting on innovative manure management manure treatment equipment. (2022) Oliver JP. Smith-Lever. $25,000

Educational grants to support agricultural science. (2018-2021) Oliver JP. Various funding from FFA, Agriculture in the Classroom, Park Foundation to implement project-based learning oportunities at Groton High School. > $50,000 collectively

Quantifying cattle manure-AMR perceptions and treatment system variabilities to develop a novel communication framework for conveying AMR science and mitigation. (2018) Lansing S, Gooch C, Oliver J, Gayeski D, Stowell R, Lansing D. USDA-NIFA. Food Safety Challenge Area: Effective Mitigation Strategies for Antimicrobial Resistance. $1,200,000

Biofouling in H2S biotrickling filters and a test of biological "self-cleaning" strategy. (2017) Gooch C, Oliver J. , NYSERDA. Anaerobic Digestion Assistance Initiative Agreement No. 59850. $35,000

Microbial analyses to better target integrated efforts for methane biofiltration in livestock systems. (2012) Schilling J, Janni K, Jacobson L, Oliver J. USDA-NIFA Seed Grant. $150,000

Technical Presentations

Current and emerging manure treatments impact manure nutrient composition. Oliver JP. South Central New York Dairy and Field Crops Winter Crop Meeting. Dryden, NY. Jan. 19, 2024.

Challenges and opportunities with dairy manure management. Oliver JP. Cayuga marketing crop and shop series. Auburn, NY. Jan. 11, 2024.

Maure storage cover and flare systems, design and costs. Oliver JP. Applied Agricultural Engineering Continuing Education Series #22. Ithaca, NY. Dec. 20, 2023.

Maure storage measurements and methodology. Oliver JP, George A. Applied Agricultural Engineering Continuing Education Series #22. Ithaca, NY. Dec 20, 2023.

Practices and technologies for manure and nutrient management. Oliver J, Ray L, Workman K, Wright P. Agricultural Food and Environmental Systems In-Service. Ithaca, NY. Nov. 9, 2023.

The influence of treatment and storage conditions on the emission of methane from long-term dairy manure storages. Oliver JP. Ray L, Leibensperger E., George A. Annual ASABE International Meeting. Omaha, NE. July 9, 2023. & Annual NABEC International Meeting. Guelph, Ontario. July 30, 2023.

Biofilters for odor and emissions reductions. Oliver JP. Applied Agricultural Engineering Continuing Education Series #22. Ithaca, NY. April 20, 2023.

Helping Dairy Farmers and Industry Advance sustainability Efforts. Department of Biological and Environmental Engineering Research Symposium. Ithaca, NY. February 24, 2023.

Greenhouse gas mitigation options during dairy manure storage. Oliver JP. CAFO education meeting. Saratoga Cooperative Extension. Ballston Spa, NY. Dec 8, 2022.

Agricultural engineer bioreactor operations short course. Oliver JP. Applied Agricultural Continuing Education Series. Ithaca, NY. July 26, 2018.

Antibiotic resistance in dairy manure treatment systems. Oliver JP, Hurst JJ, Schuller J, Crossette EM, Gooch CA, Sassoubre L, Lansing S, Raskin L, Wigginton KR & Aga DS. 2nd Annual Antimicrobial Resistance Symposium. Weill Cornell Medicine, New York, NY. March 8-9, 2018.

Extension agent training on managing emissions and effluents from dairy farms. Oliver JP. Cornell Agriculture, Food & Environmental Systems In-Service. Ithaca, NY. Nov. 9-10, 2017.

The effect of manure collection and inherent variability on antibiotic testing of dairy manure systems. Lansing S, Oliver J, Schueler J, Gooch C, Felton G, Raskin L, Wigginton K, Crossette E, Langenfeld K, Sassoubre L, Hurst J & Aga D. 4th International Symposium on the Environmental Dimension of Antibiotic Resistance Lansing, MI. Aug. 13–17, 2017.

Effect of high-calcium quicklime treatment on bacteria and antimicrobial resistance genes in dairy manure solids. Sassoubre L, Alcazaren K, Hurst J, Oliver J, Aga D & Davis B. 4th International Symposium on the Environmental Dimension of Antibiotic Resistance, Lansing, MI. Aug. 13–17, 2017.

Assessing dairy manure management strategies for removal of antimicrobials. Hurst J, Oliver J, Schueler J, Lansing S, Gooch C, Sassoubre L & Aga D. 4th International Symposium on the Environmental Dimension of Antibiotic Resistance, Lansing, MI. Aug. 13–17, 2017.

Antibiotics & antibiotic resistant bacteria and genes in northeastern dairy manure management systems – Project overview and preliminary findings from an 11 farm case study. Oliver JP, Schueler J, Hurst J, Crossette E, Langenfeld K, Gooch C, Lansing S, Wigginton K, Raskin L, Sassoubre L & Aga D. Annual ASABE International Meeting. Spokane, WA. July 16-19, 2017.

Estimating the economic value of the GHG emission reductions associated with on-farm dairy manure AD systems in NYS. Oliver JP, Wright P & Gooch C. Annual ASABE International Meeting. Spokane, WA. July 16-19, 2017.

Peer Reviewed Publications

10. Oliver JP, Hurst J, Gooch CA, Stappenbeck A, Sassoubre L. (2021) On-farm screw-press/rotary drum treatment of dairy manure associated antibiotic residues and resistance. *Journal of Environmental Quality.* 50(1):134-143

9. Oliver JP, Gooch CA, Hurst JJ, Schueler J, Lansing S, Sassoubre L, Crossette E, Aga DS. (2020) Fate of antibiotic residues, resistant bacteria and resistance genes in the manure management systems of US dairy operations. *Journal of Dairy Science*. 103(2):1051-1071 *Invited review

8. Hurst JJ, Oliver JP, Crossette E, Schueler J, Gooch C, Lansing S, Wigginton K, Raskin L, Aga DS & Sassoubre L. (2019) Trends in antimicrobial resistance genes among untreated and long-term storage dairy manure across US farms with comparisons to antimicrobial usage and residual concentrations. *Environmental Science & Technology*. 53(5):2405-2415.

7. Oliver JP, Schueler J, Lansing S, Gooch CA & Aga DS. (2018) Quantifying the performance of manure management systems at 11 Northeastern US dairy farms. *Applied Engineering in Agriculture*. 34(6): 973-1000.

6. Oliver JP & Schilling JS. (2018) Harnessing fungi to mitigate CH4 in natural and engineered systems. *Applied Microbiology & Biotechnology.* 102(17): 7365–7375.

5. Oliver JP & Schilling JS. (2016) Capture of methane by fungi – Evidence from laboratory-scale biofilter and chromatographic isotherm studies. *Transactions of the ASABE.* 59(6): 1791-1801. *Special climate change issue.

4. Oliver JP, Janni KA & Schilling JS. (2016) Bait and scrape: An approach for assessing biofilm microbial communities on organic media used for gas-phase biofiltration. *Ecological Engineering.* 91:50-57.

3. Oliver JP & Schilling JS. (2015) Applying trait-function relationships for microbial plant decomposition to predict media longevity in engineered bioreactors. *Applied Microbiology & Biotechnology.* 100(6): 2843-2853.

2. Janni KA, Jacobsen L, Hetchler B, Oliver JP & Johnston L. (2014) Semi-continuous air sampling versus 24-hour bag samples to evaluate biofilters on a swine nursery in warm weather. *Transactions of the ASABE*. 57(5): 1501-1515.

1. Oliver J, Perkins J & Jellison J. (2010) Effect of fungal pretreatment of wood on successional decay by several inky cap mushroom species. *International Biodeterioration & Biodegradation.* 64:646-651.

Extension Articles & Meeting Papers

14. Oliver JP, Ray L. (2023) Manure storage impermeable cover and flare systesm – Potntial climate benefits and considerations. *The Manager*. pp. 12-13. Republished in *Progressive Dairy.* November 25, 2023. https://www.agproud.com/articles/58855-manure-storage-impermeable-cover-and-flare-systems-potential-climate-benefits-and-considerations

13. Ray L, Oliver JP, Workman K. (2023) Greenhouse gas emissions from dairy and agriculture. *The Manager*. pp. 6-8. Republished in *Progressive Dairy.* November 25, 2023. https://www.agproud.com/articles/58846-greenhouse-gas-emissions-from-dairy-and-agriculture

12. Oliver JP. (2023) How Do You Manage Dairy Manure Storage to Reduce Methane Emissions? Decode 6. September 21, 2023. https://decode6.org/articles/dairy-manure-storage-to-reduce-methane-emissions/

11. Oliver JP, Ray L, Workman K. (2023). Best management practices for dairy producers to reduce their GHG emissions from manure. *The Manager.* pp. 3-5. Republished in *Progressive Dairy*. March 11, 2023. https://www.agproud.com/articles/57315-best-management-practices-for-dairy-producers-to-reduce-their-ghg-emissions-from-manure

10. Oliver JP, Workman K. (2023). Usage of imported food processing waste and food wastes on dairy CAFO farms. *PRO-DAIRY e-leader.* Jan 9, 2023. https://cals.cornell.edu/news/2023/01/usage-imported-food-processing-waste-and-food-wastes-dairy-cafo-farms.

9. Oliver JP, Hurst JJ, Schuller J, Crossette EM, Gooch CA, Sassoubre L, Lansing S, Raskin L, Wigginton KR & Aga DS. (2018) Antibiotic resistance in dairy manure treatment systems. 2nd Annual Antimicrobial Resistance Symposium. Weill Cornell Medicine, New York, NY. March 8-9, 2018.

8. Lansing S, Oliver J, Schueler J, Gooch C, Felton G, Raskin L, Wigginton K, Crossette E, Langenfeld K, Sassoubre L, Hurst J & Aga D. (2017) The effect of manure collection and inherent variability on antibiotic testing of dairy manure systems. 4th International Symposium on the Environmental Dimension of Antibiotic Resistance Lansing, MI. Aug. 13–17, 2017.

7. Sassoubre L, Alcazaren K, Hurst J, Oliver J, Aga D & Davis B. (2017) Investigating the effect of high-calcium quicklime treatment on bacteria and antimicrobial resistance genes in dairy manure solids. 4th International Symposium on the Environmental Dimension of Antibiotic Resistance, Lansing, MI. Aug. 13–17, 2017.

6. Hurst J, Oliver J, Schueler J, Lansing S, Gooch C, Sassoubre L & Aga D. (2017) Assessing dairy manure management strategies for removal of antimicrobials. 4th International Symposium on the Environmental Dimension of Antibiotic Resistance, Lansing, MI. Aug. 13–17, 2017.

5. Oliver JP, Schueler J, Hurst J, Crossette E, Langenfeld K, Gooch C, Lansing S, Felton G, Wigginton K, Raskin L, Sassoubre L, Aga D. (2017) Antibiotics and antibiotic resistant bacteria and genes in northeastern dairy manure management systems – Project overview and preliminary findings from an 11 farm case study. ASABE International Meeting, Spokane, Washington (PDF)

4. Oliver JP, Gooch C. (2017) Effectiveness of different dairy manure management practices in controlling the spread of antibiotics and antibiotic resistance. Waste-to-Worth Annual Conference, Cary, NC. Apr. 18-21, 2017 (Link to proceedings)

3. Oliver JP, Schilling JS. (2015) Capture of methane by biofilter fungi - A chromatographic isotherm study (#2121469). ASABE 1st Climate Change Symposium: Adaptation and Mitigation, Chicago, Illinois, USA, May 3-5, 2015 (PDF)

2. Janni KA, Jacobson LD, Hetchler BP, Oliver JP, Johnston LJ. (2013) Comparing semi-continuous air sampling versus 24-hour bag samples to monitor gas emissions and treatment from a swine nursery with biofilters. ASABE Annual International Meeting, Kansas City, Missouri, July 21-24, 2013. doi: http://dx.doi.org/10.13031/aim.20131605534

1. Janni KA, Jacobson LD, Hetchler BP, Oliver JP, Johnston LJ. (2012) Comparing semi-continuous air sampling versus 24-hour bag samples from two flat-bed biofilters with new woodchip media. ASABE Annual International Meeting, Dallas, Texas, July 29-August 1, 2012. doi: 10.13031/2013.41824