Andrea J. (Ray) Etter

ORCID: 0000-0002-0204-0239
230 Marsh Life Sciences Building, 109 Carrigan Dr.
Burlington, VT, 05405
Andrea.etter@uvm.edu; (802) 656-0541

Education

Purdue University — West Lafayette
Interdisciplinary Life Sciences PhD program; Food Science Department — 2011-2017
Advisor: Dr. Haley F. Oliver

Maranatha Baptist University — Watertown, WI
BS Biology; Molecular Biology emphasis (Summa Cum Laude) — 2007- 2011

Appointments

University of Vermont — Burlington, VT
Assistant Professor, Department of Nutrition and Food Sciences; — 2019-present
Secondary appointment in Animal Sciences Department — 2022-present
Affiliated faculty with the following interdisciplinary programs:
-Gund Institute for the Environment — 2021-present
-Animal Biosciences PhD Program — 2020-present
-Cellular and Molecular Biology Interdisciplinary PhD Program — 2019-present
-Food Systems PhD program — 2019-present

Research

The University of Vermont, Nutrition and Food Sciences Department — Burlington, VT

USDA NIFA-AFRI Seed Grant (PI)
Identifying Gene Expression Profiles Associated with Enhanced Stress Tolerance in Outbreak and Non-Outbreak Associated *Salmonella enterica.* ($200,000). *Award No: 2019-06903* — 2020-2022

George Walker Milk Fund (PI)
-Assessing genetic evolution, virulence and antimicrobial resistance of *Listeria monocytogenes* in Vermont cheesemaking facilities, cattle and dairy products ($30,864). — 2022-2023
-Understanding mechanisms of *Listeria monocytogenes* persistence and sanitizer tolerance in small dairies ($19,158) — 2021

VT Agricultural Experiment Station:
Prevalence of *Salmonella enterica* in backyard chicken flocks in VT and associated husbandry characteristics. *Multistate Project S1077; Award No.VT-H02812MS (2021-)* — 2019-present

Purdue University — West Lafayette

USDA-NIFA-AFRI Pre-doctoral Fellowship
Stress Tolerance, Attachment Capacity, and Virulence of *Salmonella* Heidelberg Outbreak-Related Food Isolates Compared to Non Outbreak-Related Strains. $45,324. *Award No.: 2017-67011-26041* — 2015-2017

Dissertation:
"Determining variation in virulence, persistence, and stress tolerance among *Salmonella enterica* and *Listeria monocytogenes* from food and food-associated environments" — 2013-2017

Teaching

University of Vermont, Nutrition and Food Science Department
NFS 203: Food Microbiology Lecture. — Fall 2022

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Instructor; revised and updated course design Foodborne pathogens and spoilage microorganisms of commercial and epidemiological relevance. Conditions favorable to microbial growth, evaluation of foods for microbial content, positive uses of microbes in the production of foods, and measures to prevent/reduce/eliminate potential microbe related food borne illness.

NFS 213: Food microbiology lab — Fall 2022

Instructor; revised and updated laboratory experiments and schedules. Introduces microbiological techniques to enrich for and study foodborne bacteria. Includes selective enrichments, biofilm study, antimicrobial resistance assessment, and PCR.

NFS 195/156 Deadly Food: outbreak investigations — Spring 2022, 2021, 2020

Designer, Instructor. How U.S. public health officials discover, investigate, and solve foodborne outbreaks. This course introduces common pathogens and foods involved in outbreaks in the U.S., the laboratory and investigative methods officials use to solve the outbreaks, the government agencies involved and uses case studies to investigate how this plays out in the real world

NFS 295/254 Global Food Safety (3 credits) — Fall 2021, 2019

Designer, Instructor. An overview of food safety issues, policies, and opportunities around the globe, with a focus on bacterial, viral, and parasite-based food safety challenges. Grad & upper-level undergraduate combined.

BCORE 011: Biology — Fall 2020

Taught 46 student lecture section with mixed modes (online and in-person)

Shoreline Community College, Associate Faculty — Summer 2018

BIOL260 (Microbiology lecture and lab)

Instructor of record. Developed and taught lectures and labs for 20 students for summer quarter.

Purdue University, Graduate Assistant — 2011-2017

USWPD Short Course on Food Technology and Food Safety — June 2015, 2016

Designed and led 2016 project to compare total microbial count, coliform load, and yeast and mold counts on fresh produce obtained from local farmer's markets and grocery stores. Worked with Afghan faculty to adapt it for use in their transitional food technology program. Co-designed and led additional laboratory trainings in food science, produce safety, and microbiology in 2015-2016.

<u>Co-instructor (with Dr. Haley Oliver)</u>

Introduction to Peer Review and Proposal Writing in Food Safety — Spring 2017

Developed and taught discussion and writing-based course on developing skills in literature analysis and scientific writing through peer review of published literature on food safety and development of an original pre-proposal in a food safety research area.

Food Microbiology (FS 36200) and graduate miniseries (FS 55301) — Fall 2015

Lectured, assisted in redesigning courses to run simultaneously, developed new assignments, updated lecture materials, tests, and quizzes, held office hours, and graded student assignments and assessments.

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Teaching Assistant

General Microbiology Lab (BIOL 43900) — Fall 2013, 2014
Assisted students with laboratory protocols, held weekly help sessions (2014) and office hours by appointment, graded laboratory notebooks and student laboratory papers, and advised students on developing and completing their final projects.

Microbiology (BIOL 22100) Grading assistant — Spring 2013
Responsible for entering student quiz grades into online grading repository (Blackboard) and assisting with grading student exams

Purdue's Annual Aseptic Processing and Packing Workshop — 2014-2016

Maranatha Baptist University

Supplemental Instructor: Anatomy and Physiology 1 & 2 — 2009- 2011

Peer-Reviewed Publications

Larsen, K.M.,* DeCicco, M.,* Hood, Katherine, Etter, A. J. *Salmonella enterica* Frequency in Backyard Chickens in Vermont and Biosecurity Knowledge and Practices of Owners. *Frontiers in Veterinary Science*. 9:979548. DOI: 10.3389/fvets.2022.979548. ***These authors contributed equally to this work.** — 2022

Anast, J., Etter, A.J., Schmitz-Esser, S. Comparative analysis of *Listeria monocytogenes* plasmid transcriptomes reveals common and plasmid-specific gene expression patterns and high expression of non-coding RNAs. Microbiology Open. 2022;11:e1315. DOI: 10.1002/mbo3.1315 — 2022

Assisi, C., Forauer, E. C. Oliver, H.F., and **Etter, A.J.** Genomic and transcriptomic analysis of biofilm formation in persistent and transient *Listeria monocytogenes* from the retail deli environment does not yield insight into persistence mechanisms. 18(3):179-188. Published online Nov 23, 2020. PubMed PMID: 33227214 — 2021

Forauer, Emily C. Wu, S.T. **Etter, A.J.** *Listeria monocytogenes* in the retail deli environment: a review. *Food Control.* 119 (2021) 1074343. https://doi.org/10.1016/j.foodcont.2020.107443 (Published online August 2020) — 2021

Etter, A.J., West, A.M., Burnett, J.L., Wu, S.T., Veenhuizen, D., Ogas, R.A., Oliver, H.F. 2019. *Salmonella* Heidelberg food isolates associated with a foodborne outbreak have enhanced stress tolerance capabilities. *Appl. Environ. Microbiol*. 85(16): .PMID: 31175193 — 2019

Etter, A.J.,* Hammons, S.R.,* Simmons, C., Roof, S, Wu, T., Cook, P.W., Katubig, A., Stasiewicz M.J., Wright, E., Worchocki, S., Thesmar, H.S., Hollingworth, J., Wiedmann, M., and Oliver, H.F. 2017. Enhanced sanitation standard operating procedures (SSOPs) have limited impact on *Listeria monocytogenes* prevalence in retail delis. *J. Food Prot.* 80(11): 1903-1912. PMID: 29053419 ***These authors contributed equally to this work.** — 2017

Hammons, S. R., **Etter, A.J.,** Wang, J., Wu, T., Ford, T., Howard, M.T., and Oliver H.F. 2017. Evaluation of third-party deep cleaning as a *Listeria monocytogenes* control strategy in retail delis. *J. Food Prot.* 80(11): 1913-1923. PMID: 29053422 — 2017

Wang, J.,* **Ray, A.J.**,* Hammons, S.R., and Oliver, H.F. Persistent and transient *Listeria monocytogenes* strains from retail deli environments vary in their — 2015

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ability to adhere and form biofilms and rarely have *inlA* premature stop codons. *Foodborne Pathog. Dis.* 2015; 12(2): 151-158. PMID: 25569840. ***These authors contributed equally to this work***

Accepted Abstracts

Herren, C. and Etter, **A.J.** Whole genome sequence analysis of *Salmonella enterica* isolated from Vermont backyard chickens. Poster. Nanopore Community Meeting, New York City.	December 2022
Larsen, K.M., Bears, J., Michaelides, A., Hood, K., Vanarsdall, V. DeCicco, M., **Etter, A.J.** 2022. "Prevalence of *Salmonella enterica* in Hatchling Chicks Sold in Vermont Agricultural Supply Stores in 2021." International Association for Food Protection Annual Meeting. Pittsburgh, PA.	August 2022
Forauer, E., **Etter, A.J.** 2021. "Mature and Immature Biofilms of *Listeria monocytogenes* isolated from Vermont Dairy Production Environments Are Susceptible to Sodium Hypochlorite." International Association for Food Protection Annual Meeting. Phoenix, AZ	July 2021
Martin, A. **Etter, A.J.** 2021. "Sanitizer Tolerance and Attachment Capacity of Non-Outbreak and Outbreak-Associated *Salmonella enterica* isolates from Multiple U.S. Outbreaks." International Association for Food Protection Annual Meeting. Phoenix, AZ.	July 2021
De Cicco, M., and **Etter, A. J.** 2020. "Prevalence of *Salmonella Enterica* in Backyard Chickens in Vermont and Survey of Owners' *Salmonella* knowledge and Biosecurity Practices." Technical Talk. International Association for Food Protection Annual Meeting. Cleveland, OH.	October 2020
Forauer, E., Cushman, L., Gilmour, A. and **Etter, A.J**. "Mature Biofilms of *Listeria Monocytogenes* isolated from Vermont Dairy Production Environments Are Resistant to QACs in Nutrient Rich Media." Technical Talk. International Association for Food Protection Annual Meeting. Cleveland, OH	October 2020
Etter, A.J., Oliver, H.F. Outbreak-Associated *Salmonella* Heidelberg Have Higher Baseline Expression of Genes Encoding Heat Shock Proteins, Stress Tolerance Mechanisms, & Virulence Systems at 37°C. Poster. International Association for Food Protection Annual Meeting, Salt Lake City, UT	July 2018
Ray, A. J., Oliver, H.F. Virulence Genes and Multi-Drug Efflux Pumps Are Differentially Expressed in *Salmonella* Heidelberg Exposed to Heat Shock. Technical talk. International Association for Food Protection Annual Meeting, Tampa, FL.	July 2017
West, A. M., **Ray, A.J.**, and H. F. Oliver. Outbreak-associated *Salmonella* Heidelberg food isolates have enhanced biofilm formation under stress conditions. Poster presentation. International Association for Food Protection Annual Meeting, Tampa, FL.	July 2017
Ray, A. J., Oliver, H.F. A Majority of *Salmonella* Heidelberg Outbreak-Associated Food Isolates Have Enhanced Heat Resistance. Technical talk. International Association for Food Protection Annual Meeting, St. Louis, MO.	July 2016
Hammons, S.R., **Ray**, **A.J.,** Wang, J., Oliver, H. F. Environmental testing models identify retail delis with highly prevalent *Listeria monocytogenes* contamination that can be reduced with enhanced SSOPs. International Symposium on Problems in Listeriosis XIX, Paris, France.	June 2016

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Ray, A.J., Hammons, S.R., Wang, J., and H.F. Oliver. Deep cleans reduce persistence of *Listeria monocytogenes* in retail delis. Technical Talk. International Association for Food Protection Annual Meeting, Portland, Oregon. — July 2015

Wang, J., **Ray, A.J.**, and Oliver, H.F. Phenotypic characterization of persistent and transient *Listeria monocytogenes* strains from retail delis. Technical Talk. International Association for Food Protection Annual Meeting, Indianapolis, Indiana. (Presenter) — July 2014

Datasets

Assisi, C., Oliver, H.F., **Etter, A.J.** Sequencing of 21 *Listeria monocytogenes* isolates from the retail deli environment. BioProject: https://www.ncbi.nlm.nih.gov/bioproject/PRJNA726543/ — 2021

Assisi, C., Oliver, H.F., **Etter, A.J.** Transcriptomic analysis of biofilm formation in persistent and transient *Listeria monocytogenes* from the retail deli environment. NCBI-GEO: https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE176617 — 2021

Etter, A.J., Oliver H.F. Comparison of gene expression profiles for heat-shocked and non-heat shocked stationary phase samples from heat tolerant isolates R1-0006 and R1-0007 and reference strain SL476. NCBI-GEO. https://www.ncbi.nlm.nih.gov/geo/query/acc.cgi?acc=GSE103418 — 2017

Preprints (not peer-reviewed)

DeCicco, M., Larsen, K.M., Hood, Katherine, Etter, A. J. *Salmonella enterica* Frequency in Backyard Chickens in Vermont and Biosecurity Knowledge and Practices of Owners. *Submitted to* Frontiers in Veterinary Science (preprint DOI: 10.13140/RG.2.2.14820.65929) — 2022

Invited Book Chapters

Assisi, C., **Etter, A.J**., and Oliver, H.F. 2018. Use and Impacts of Whole Genome Sequencing. p. 309-322. *In* Ricke et al. (ed.), Food and Feed Safety Systems and Analysis. Press (Elsevier), London. — 2017

Invited Presentations

Etter, A.J. Don't kiss your chickens! Backyard chickens and food safety. 27th Annual Current Topics in Science Speaker Series. Northern Vermont University. In-person — September 2021

Etter, A. J. *Salmonella* Outbreaks: from the Backyard Flock to the Processing Plant. Biology and Environmental Sciences Interdepartmental Seminar. University of North Carolina, Ashville (virtual). — October 2020

Etter, A.J. *Salmonella* Heidelberg Food Isolates Associated with the 2013-2014 Foster Farms Outbreak Have Enhanced Stress Tolerance Capabilities and Increased Expression of Stress Tolerance Systems, MDR Efflux Pumps, and Virulence Genes. CDC-DFWED seminar series (web presentation). — May 2018

Etter, A.J. and West, A.M. Outbreak-associated *Salmonella* Heidelberg have increased tolerance to stress. Remote USDA-FSIS presentation. — December 2017

Ray, A.J. Transcriptome of outbreak-associated *Salmonella* Heidelberg in stationary phase and during heat shock. Talk. USDA-ARS, FSIS Food Safety Meeting. Shepherdstown, WV — February 2017

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Other Presentations

Martin, A.E., Markus, S.E., Vanarsdall, V.A., Willmart, K.M., Smathers, L.S., **Etter, A.J.** Potential Enhanced Stress Tolerance of *Salmonella enterica* Outbreak-Associated Strains. Poster Presented at: 2022 Boston Bacterial Meeting; June 2022; Harvard Science Center, Cambridge, MA. — June 2022

Etter, A.J. Chicks and chickens and *Salmonella*—oh my! Webinar presentation for backyard chicken owners with Nicolle Ferrier of Sugar Feather Farm. — March 2022

Etter, A.J. Navigating the Job Market: expectations, reality, and tips. International Association of Food Protection Student PDG meeting. *Online.* — October 2020

Ray, A.J., and Oliver, H.F. RNA-sequencing of stationary phase *S.* Heidelberg isolates at 56 vs 37C. Poster presentation. USDA Center for Food Safety Engineering at Purdue annual meeting. Purdue University, West Lafayette. — October 2016

Ray, A.J., and Oliver, H.F. A majority of *Salmonella* Heidelberg isolates associated with the 2013-2014 Foster Farms outbreak have enhanced heat resistance. Poster presentation. USDA Center for Food Safety Engineering at Purdue annual meeting. Purdue University, West Lafayette. — November 2015

Ray, A.J., Hammons, S.R., Wang, J., Oliver, and H.F. Virulence-attenuating *inlA* mutations are rare in *Listeria monocytogenes* isolates from retail delis. Poster presentation. USDA Center for Food Safety Engineering at Purdue annual meeting. Purdue University, West Lafayette. — November 2014

Ray, A.J., Hammons, S. R., Wang, J., and Oliver, H. F. *Listeria monocytogenes* isolates from retail deli surfaces rarely contain virulence-attenuating *inlA* mutations. Poster presentation. NNEAFF Farm to Fork Symposium, University of Illinois, Urbana-Champaign. — October 2014

Ray, A.J., Hammons, S.R., Wang, J., and Oliver, H.F. Deli SNaPshots: assessing the virulence risk of *Listeria monocytogenes* in retail delis. Poster presentation Purdue Office of Interdisciplinary Graduate Programs Spring Reception. Purdue University, West Lafayette. — March 2014

Grants, Fellowships and Awards

George Walker Milk Fund (PI). "Assessing genetic evolution, virulence and antimicrobial resistance of *Listeria monocytogenes* in Vermont cheesemaking facilities, cattle and dairy products." ($30,864). — 2022-2023

George Walker Milk Fund (Co-PI). Gift funds. "Understanding mechanisms of *Listeria monocytogenes* persistence and sanitizer tolerance in small dairies ($19,158). — 2021-2022

USDA NIFA-AFRI Seed Grant (PI). USDA National Institute of Food and Agriculture-Agriculture and Food Research Initiative. "Identifying Gene Expression Profiles Associated with Enhanced Stress Tolerance in Outbreak and Non-Outbreak Associated *Salmonella enterica."* ($200,000). *Award No: 2019-06903* — 2020-2022

USDA NIFA-AFRI Seed Grant (PI of record). "Elderberry consumption and human health: a preliminary investigation into effects on indirect calorimetry, insulin sensitivity, and microbiome." Subcontracted majority out to original PI, Patrick Solverson. ($194,003). *Award No: 2020-67018-30851* — 2020-2022

Predoctoral Research Fellowship: USDA National Institute of Food and Agriculture-Agriculture and Food Research Initiative (NIFA-AFRI). $45,324. *Award No.: 2017-67011-26041* — 2016-2018

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J. Mac Goepfert Developing Scientist Awards: Technical Talk Award. July 2017
Award for best graduate student oral presentation at IAFP's Annual Meeting. This award and the accompanying $1500 cash prize recognize excellent graduate student research and presentation ability.

Purdue Interdisciplinary Life Sciences Travel Scholarship 2015
Scholarship for travel to the IAFP Annual Meeting

University of Washington Scholarship to Summer Institute in Statistical Genetics 2013
Covered tuition and $400 in travel expenses for three short courses on applying the R platform to statistical analysis

National Science and Mathematics Access to Retain Talent (SMART) Grant 2009-2011
Federal grant for 3rd-5th year undergraduate students with GPA >3.0 and eligibility for Pell Grant.

Dr. Robert Hanneman Memorial Scholarship 2010
MBU scholarship for exemplary upperclassmen in the sciences

Mentee's Awards

Warren R. Stinebring Outstanding Senior in Microbiology Award—**Katalin Larsen** Sp 2022

UVM Food Systems Research Center Summer Undergraduate Research Fellowship awardee—**Lauren Smathers** Su 2022

Microbiology and Molecular Genetics Ferland and DUSRA Summer Undergraduate Research Fellowship Awardee—**Calleigh Herren** Su 2022

Microbiology and Molecular Genetics Ferland and DUSRA Summer Undergraduate Research Fellowship *Finalist*—**Lauren Smathers** Sp 2022

Fellowships, Opportunities and Undergraduate Research (FOUR) Mini-Grant for investigating prevalence of pathogens in hobby dairy farm raw milk—**Lauren Smathers** Fa 2021

CALS Leadership in Life Science awards Summer Undergraduate Research Fellowship—**Katalin Larsen** Su 2021

Microbiology and Molecular Genetics Ferland and DUSRA Summer Undergraduate Research Fellowship *Finalist*—**Katalin Larsen** Sp 2020

IAFP Student Professional Development Group 3 Minute Thesis competition Judges Choice Awardee—**Melissa De Cicco** Fa 2020

IAFP Student Travel scholarship—**Emily Forauer** Sp 2020

Mentoring

Graduate students:

Chelsey Patch (MS student, ABIO; thesis advisor)	Fall 2022-
Daria Clinkscales (MS student, ABIO; thesis advisor)	Fall 2022-
Ariel Martin (MS student, NFS; thesis advisor)	Fall 2021-curr
Eurydice Aboagye (Food Systems PhD; thesis advisor)	Fall 2021-curr
Melissa de Cicco (MS student NFS; thesis advisor)	Jan 2019-2021
Emily Forauer (MS student NFS; thesis adviser; defended June 2021)	2019-2021
Lukas Emerson-Mason (MS student NFS; thesis advisor; defended Dec 2019)	Sp-Fa 2019

Undergraduate research assistants:

Ryan Pham (Microbiology)	Fall 2022
Tobey Lowe (NFS)	Fall 2022
Annie Lamson (Microbiology)	Fall 2022
Olivia Noyes (CALS Biosciences)	Su 2022-curr

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Guillermo "Willy" Whitney (Microbiology)	Su 2022-curr
Maddie Houston (MGEN)	Su 2022
Kyra Willmart (DNFS; research internship)	Sp 2022
Alia Lunna (Nutrition and Food Sciences)	Sp 2022-curr
Hannah Blackwell (CALS Biosciences)	Sp 2022-curr
Anna Penny (Nutrition and Food Sciences	Sp 2022-curr
Calleigh Herren (Microbiology; **Ferland and DUSRA SURF; DUR**)	Fall 2021-curr
Alessandra Michaelides (Animal Sciences; **DUR**)	Fall 2021-curr
Jake Bears (Microbiology); **Undergraduate TA award (MMG)**	June 2021-22
Matthew Kinahan (Molecular Genetics)	Apr-Aug 2021
Sophia Markus (Biological Sciences)	2021-Sp 2022
Valorie Vanarsdall (Biological Sciences)	Sp 2021-curr
Katherine Hood (Molecular Genetics)	Sp 2021-curr
Lauren Smathers (Microbiology; **FOUR Mini Grant, Foods SURF**)	Sp 2021-curr
Alannah Garrison (Molecular Genetics)	Fall 2020
Victoria Rodenburg (Nutrition and Food Sciences)	Fall 2020
Jennilee Stocker (Nutrition and Food Sciences)	Spring 2020
Katalin Larsen (Microbiology; **Distinguished Undergraduate Research Award**; **Warren R. Stinebring Outstanding Senior in Microbiology Award**)	Sp 2020-22
Aislinn Gilmour (Microbiology & Molecular Genetics; **Distinguished Undergraduate Research Award**)	Su 2019-21
Melissa de Cicco (Animal Science, Microbiology)	Su-Fall 2019
Lara Cushman (Microbiology & Molecular Genetics)	Su-Fall 2019
Caitlinn Lineback (Food Science)	Fall 2017
Raeya Ogas (Pre-Pharmacy)	Summer 2017
Deklin Veenhuizen (Food Science)	Spring 2017
Alyssa M. West (Food Science, Honors student)	2015-2016
Alex Katubig (Biological Sciences, Pre-Med)	2014-2015
Erin Christian (Nursing)	Spring 2014
Daniel Moore (Food Science)	Fall 2014

Visiting students

Sophia Denaro (recent high school graduate); volunteer	Su 2022

Thesis committees:

Ally Bain (NFS AMP; committee member)	2022-2023
Jacob Mackinder (Cellular and Molecular Biology PhD; committee chair)	2022-curr
Abby Biron (NFS Masters student; committee member)	2021-2022
Stina Sickmueller (NFS Accelerated Master's Program; committee member)	2021
Ashma Chakrawarti (Animal Biosciences PhD; committee member)	2020-curr
Cari Reynolds (Animal Bioscience PhD; committee member)	2020-curr
Maryann Makosiej (Biological Sciences; Honor's thesis committee)	2020-2021
Jessica Gavell (NFS Accelerated Masters Program; thesis committee member)	Spring 2020
Sofia Maranto (NFS Honor's Thesis; member)	Fall 2019

Academic Advising:

14 undergraduate NFS and DNFS students	Fall 2022
14 undergraduate NFS and DNFS students	Spring 2022

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18 undergraduate NFS and DNFS students	Fall 2021
17 undergraduate NFS and DNFS students	Spring 2021
19 undergraduate NFS and DNFS students	Fall 2020
8 undergraduate NFS and DNFS students	Spring 2020
10 undergraduate NFS and DNFS students	Fall 2019
12 undergraduate NFS and DNFS students	Spring 2019

Internal Service

Academic committees:

CALS Curriculum Committee	Fall 2021
Honors College Council	Fall 2020-curr
Food Systems Project and Thesis/Student Development and Evaluation Committee	Fall 2019-present
Studies Committee, UVM	2019-2020

Ad hoc committees:

Faculty search (NFS) for assistant professor in community nutrition	2022-2023
Faculty search (NFS) for assistant professor in nutritional epidemiology	Spring 2022

Facilitator for College of Agriculture and Life Sciences (CALSX) strategic planning brainstorming sessions — Spring 2021

- ***Diversity goal***—led group of 10 faculty and staff in 2.5-hr brainstorming session on increasing diversity training and diverse populations in CALS
- ***Research goal***—led group of 10 faculty and staff in 2.5-hr brainstorming session on increasing number and size of grants coming to CALSX faculty and increasing extension integration into CALSX
- ***Student goal***—led group of 10 faculty and staff in 2.5 hr brainstorming session on increasing recruitment and retention of students, optimizing course offerings to attract non-traditional students, increasing philanthropy and corporate sponsorship, and optimizing connections with extension and external partners

Nutrition and Food Sciences representative on committee to develop a Biosecurity minor in UVM-CALS — 2019

External Service

Grant Review

Invited grant reviewer for UVM Food Systems Research Center PhD Fellowship UVM (6 applications)	2022
Invited grant reviewer for Ontario Agri-Food Research Initiative grant program (OMAFRA). Ontario, Canada.	2021
Invited grant reviewer for the Polish National Science Center (OPUS-19 and SONATA BIS-10 programs)	2020
Invited grant reviewer for the French National Research Agency (ANR)	2020

Journal and Abstract reviews

Journal of Food Protection Editorial Board 3- year terms; agreement to peer review up to 12 papers/year	2020-2025
Ad hoc Reviewer for PLOS ONE	2022-curr

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Ad hoc Reviewer Foodborne Pathogens and Disease — 2019-curr
Abstract reviewer for ASM MICROBE 2019; reviewed 62 abstracts — 2019

Miscellaneous service

Vermont Livestock Care and Standards Advisory Council food safety expert. — 2022-2024
Appointed by Governor's office, Speaker of the House, and Senate Committee on Committees.

International Association for Food Protection Developing Future Food Safety Professionals PDG — 2018
- Convenor for "Help! I'm New Management. How do I Convince My Colleagues Food Safety is Important?" Roundtable at IAFP 2018
- Proposed and co-developed webinar "Starting Bioinformatics from Zero as a Biologist" with Jessica Chen. Presented along with Jessica Chen and Peter Cook. Seminar had 176 attendees — 2018

International Association for Food Protection Food Hygiene and Sanitation PDG — 2018
Moderator for Spanish-language webinar "Cleaning, Sanitizing and the Seven Steps of Sanitation" presented by Frank De La Guardia Venzal. Spanish-language webinar had 340 attendees.

International Association for Food Protection Meat and Poultry PDG — 2017
Convener for "A Paradigm Shift in Understanding and Controlling *Salmonella* of the Future" Symposium at IAFP 2017

Professional Affiliations

American Society for Microbiology; contributing member — 2022-curr
International Association for Food Protection Student Member, member — 2014-current
Dairy Safety and Quality PDG
Advanced Molecular Analytics PDG
Developing Food Safety Professionals PDG
Retail and Food Service PDG
Meat and Poultry PDG
Student Professional Development Group (PDG)
Institute of Food Technologists Student Association — 2015-2016

Outreach & Volunteering

Webinar: Chicks, Chickens and *Salmonella*—oh my! Cohosted with Nicolle Perrier of Sugar Feather Farm, VT — March 14, 2022
Sycamore School Girls STEAM Conference. Workshop Leader Food Science and microbiology — March 10, 2022
Summer of Science Virtual Teen Science Cafes (UVM extension) — Summer 2020
"Bacteria and Backyard Chickens - How Much *Salmonella* Is There?"
Skype a Scientist program
5th grade class, 3rd grade class (Spanish) — Fall 2021
4th grade class, 3rd grade class, 1st grade class — Spring 2021
9th grade class, 3rd grade class — Fall 2020
3rd grade class (2x) — Spring 2020
4th grade, 2nd grade, 4th grade, 8th grade classes — Fall 2019

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K-2 grade class, 8th grade class, 4th grade class	Spring 2019
English as a Second Language volunteer tutor, Seattle Central College	2017-2018
Center for Food Safety Engineering booth at SpringFest (Purdue University)	2014-2016
Leaf plating to show microbial diversity and illustrate food safety challenges	
Judge for Summer Undergrad Research Fellowship Poster Competition	Summer 2015

Professional Development

Alan Alda Science Communication Training Workshop: "Creating connections" (virtual, half day)	Summer 2022
Center for Teaching and Learning courses (University of Vermont)	
Team Time: learn about breakout rooms	January 2021
Active Learning in Remote Synchronous Classes	January 2021
Teaching in the Mixed Modality	Summer 2020
Teaching with Teams	Summer 2020
Teaching in the In-Person Modality	Summer 2020
Python for Everybody Coursera Series (University of Michigan)	
Using Databases with Python (Certificate No. 9NX4CHPAMWWM)	February 2018
Using Python to Access Web Data (Certificate No. 7P7H2CE6EAQ8)	February 2018
Python Data Structures (Certificate No. UT43JTH3FYKK)	January 2018
Introduction to Python (Certificate No. YJSQA8HQXYZN)	December 2017
Graduate Teaching Certificate	Completed
Teacher development program by the Center for Instructional Excellence at Purdue. Required nine hours of instructional development, classroom observations (both observing and being observed by experienced teachers), two semesters of teaching experience, use of Early Feedback and End-of-Semester feedback, and reflective essays on student and faculty feedback.	May 2016
Purdue Bioinformatics Core: Differential Gene Expression using RNA-Seq Workshop	March 2016
Half day hands-on workshop on analyzing RNA-seq data using Tophat and Cufflinks in the Unix environment of the Purdue computing core.	
Purdue Computational Interdisciplinary Graduate Programs: Next Generation Sequencing Workshop	December 2015
Hands-on introduction to RNA-sequencing data analysis using the Purdue computing core resources in Unix on the Purdue computing core.	
Conference for Pre-Tenure Women (Purdue University)	Summer 2015
Effective Teaching Workshop, (Purdue University) by Drs. Brent and Felder	February 2015
1.5 day interactive workshop on effective teaching techniques including course planning, active learning, learning styles, grading, and classroom management.	
Purdue Women in Science (WISP) program	2013-2014
Seminars on professional development and career options in science	
Graduate School Professional Development Series:	2012-2017
Ace Your Interview	Feb. 2017
Making the Most of Your Presentation	Sept. 2014
Success in Graduate School	Feb. 2014
Funding Your Graduate Education	Aug. 2012
Speed Networking	Feb. 2012
Essentials of a Graduate Student Portfolio, Part II	Feb. 2012
Essentials of a Graduate Student Portfolio, Part I	Jan. 2012
Grant and Proposal Writing Strategies	Jan. 2012

Andrea J. (Ray) Etter

ORCID: 0000-0002-0204-0239
230 Marsh Life Sciences Building, 109 Carrigan Dr.
Burlington, VT, 05405
Andrea.etter@uvm.edu; (802) 656-0541

Languages

French: intermediate; competent at reading/writing (2.5/5 on Duolinguo)	2020-current
Spanish: proficient	2010-current
Python: beginner	2017-current
Unix: competent	2016-current
R statistics: competent	2013-current