

Allison Bistline-East

Postdoctoral Research Associate, Department of Entomology, Purdue University

ORCID: 0002-2410-909x | abistlin@purdue.edu | allison.bistlineeast.com | twitter.com/ABEntomology

EDUCATION

- 2019 **PhD** Environmental Science, National University of Ireland Galway
 Advisor: Professor Michael J. Gormally
 Thesis: Integrative evaluation of *Tetanocera elata* (Diptera: Sciomyzidae) for slug pest management in agriculture
- 2015 **MSc** Entomology, University of California Riverside
 Advisor: Dr Mark S. Hoddle
 Thesis: Trophic interactions within a parasitoid guild (Hymenoptera: Chalcidoidea) from Pakistan in the context of Asian citrus psyllid classical biological control in California
- 2008 **BSc** Biology, University of California Riverside
 Emphasis: Ecology and evolution

RESEARCH APPOINTMENTS

- Postdoctoral Research Associate** 2019 – present
 Department of Entomology, Purdue University, West Lafayette, IN.
 Investigating the intersection of native plant and pollinator conservation with values held by and impacts on local landowners and communities. Project in collaboration with USDA-NRCS to evaluate insect biodiversity in pollinator habitats established under the Conservation Reserve Program in Indiana. Advisor: Ian Kaplan.
Outputs: 1 refereed publication *in prep*, 3 conference presentations, 4 Extension/outreach presentations, 1 outreach publication, 1 Master's student and 3 undergraduate students mentored.
- Postgraduate Researcher (PhD)** 2015 – 2019
 Applied Ecology Unit, National University of Ireland Galway, Galway, Ireland.
 Examined the physiology and host/prey relationships between *Tetanocera elata* (Diptera: Sciomyzidae) and agriculturally-pestiferous slugs in western Ireland with the goal of developing a conservation biological control program for organic specialty crops. Advisor: Mike Gormally.
Outputs: 4 refereed publications (3 as first-author), 5 conference presentations, 2 Master's students and 3 undergraduate students mentored.
- Graduate Student Researcher (MSc)** 2013 – 2015
 Department of Entomology, University of California Riverside, Riverside, CA.
 Investigated natural enemies for potential inclusion in the classical biological control program of Asian citrus psyllid (*Diaphorina citri*) in California. Advisor: Mark Hoddle.
Outputs: 5 refereed publications (3 as first-author), 8 conference presentations, Environmental Impact Assessment for the biological control agent *Diaphorencyrtus aligharensis*, Extension materials.
- Biological Control Research Technician** 2008 – 2013
 Department of Entomology, University of California Riverside, Riverside, CA.
 Performed field and lab support for a variety of biological control research projects, including sticky trap and beat tray collection of insects in vineyards; sweep net collection of glassy-winged sharpshooter (*Homalodisca vitripennis*) in citrus orchards; collecting gold-spotted oak borer beetles (*Agrilus auroguttatus*) emerging from cut timber and maintaining malaise traps in Cleveland National Forest; monitoring Asian citrus psyllid (*Diaphorina citri*) population spread in urban areas in Riverside and Los Angeles; and managing numerous pest and natural enemy insect colonies in the lab and in USDA-APHIS quarantine facilities. Advisors: Nic Irvin, Mark Hoddle
- Undergraduate Research Assistant** 2006 – 2008
 Department of Nematology, University of California Riverside, Riverside, CA.
 Slide-mounted and identified terrestrial and semi-aquatic nematodes and prepared reagents for processing.
 Advisor: Paul de Ley

TEACHING EXPERIENCE

Guest Lecturer

Spring 2022, Fall 2022

Various undergraduate courses – Entomology department, Purdue University

Provided contributions to course content and delivered lectures and class discussions related to foundational concepts in insect ecology and applications in different entomological subfields. Contributions to courses including: Insect Ecology, General Entomology, Science Writing.

Instructor of Record

Fall 2018

Ecological Survey Techniques - Environmental Science undergraduate programme, NUI Galway

Designed and delivered lectures as PowerPoint presentations interspersed with group activities and discussion opportunities. Lecture topics included ecology and biodiversity, population ecology, freshwater ecology, and terrestrial invertebrate sampling techniques. Field practicals included vegetation sampling and identification, small mammal trapping for population estimates, and aquatic entomology sampling of indicator species for judging water quality. Created and marked assignments including individual presentations, scientific reports, and exam papers.

Demonstrator (Teaching Assistant)

Spring 2018

Sustainable Resource Management - Master's degree programme, NUI Galway

Led practical field exercises demonstrating invertebrate sampling and habitat restoration and evaluation techniques; provided laboratory support for insect identification, taxonomy, and use of dichotomous keys.

Instructor of Record

AY2016 – 2017, 2017 – 2018

Biology - Access Programme, NUI Galway

Developed curriculum for Irish NFQ Level 5 (US equivalent: community college level) non-traditional students beginning or returning to university to complete an undergraduate degree in sciences. Created and delivered lectures in general biology, including topics in human anatomy and physiology, cell biology, genetics, and evolution. Designed and ran laboratory practicals to reinforce concepts of cell biology and human anatomy. Created and marked continuous assessment assignments and exam papers and gave feedback to guide students throughout the course. Managed classrooms with special accommodation for students with physical disabilities, learning disabilities, and mental illness.

Demonstrator (Teaching Assistant)

2015 – 2019

Various courses - Environmental Science undergraduate programme, NUI Galway

Revised or created laboratory exercises and aided undergraduate students in practicals in laboratories, computer labs, and in the field. Courses include: Bioinformatics, Environmental Census Techniques, Habitat Management Planning, Using Microsoft Excel (tutorial).

Graduate Teaching Assistant

Fall 2014

General Entomology - Department of Entomology, UC Riverside

Delivered class lectures in the professor's absence, managed setup and supervision of instructional labs, graded assignments/exams, wrote lab quizzes/practicals, and held office hours for supplementary student instruction.

STUDENT MENTORSHIP

Master of Science (Entomology), dissertation co-advisor, Purdue University

2022 Hannah Kernen, Research topic: Bee diversity and museum collections in the Midwest

Bachelor of Science, Capstone Project advisor, Purdue University

2022 Maia Leach (Entomology), Thesis: "Conservation biological control services in CRP habitats"

2022 Nathan Ballard (Entomology), Thesis: "Seed mix efficacy for establishing Conservation Reserve habitats in Indiana"

2021 William A. Le Van (Entomology), Thesis: "Arthropod biodiversity in Indiana Conservation Reserve Program habitats"

Master of Science (Sustainable Resource Management), thesis co-advisor, NUI Galway

2017 Daniel Burke, Thesis: "Determining the habitat requirements of *Tetanocera elata* (Diptera: Sciomyzidae) to develop self-sustaining biological control for pestiferous slugs"

2016 Andrew Colton, Thesis: "Feeding habits and dietary preferences of Sciomyzidae (Diptera) with respect to mass rearing for the purpose of biocontrol"

Bachelor of Science, honours thesis co-advisor, NUI Galway

- 2018 Jonathan Fearon (Environmental Science), Thesis: "A study of dispersal patterns of insects in an organic Irish agroecosystem"
- 2018 Andrew Prendergast (Environmental Science), Thesis: "Assessing the factors that influence invertebrate community structure, with a focus on the slug-killing fly *Tetanocera elata* (Diptera: Sciomyzidae)"
- 2017 Paul Lund (Zoology), Thesis: "Observation of the feeding behaviour of third instar larva of *Tetanocera elata* on *Deroceras reticulatum* to analyse patterns and predatory techniques"

GRANTS & RESEARCH FUNDING (total = \$325,957, USD equivalent)

- 2020 AgSEED – Agricultural Research and Extension Leading to Economic Development in Indiana Agriculture and Rural Communities grant, Purdue University: "The Bees of Indiana: Creating a New Statewide Platform for Pollinator Research, Extension, and Outreach". PI: I. Kaplan; Co-PI: B. Harpur, A. Smith, **A. Bistline-East**, G. Anderson, R. Grundel, B. Lowe, and D. Robertson-Thompson, (\$75,000)
- 2019 Postdoctoral Supplemental Travel Grant, Purdue University (\$650) *deferred due to COVID-19*
- 2018 Thomas Crawford Hayes Research Fund, National University of Ireland Galway (€3,468)
- 2017 Thomas Crawford Hayes Travel Fund, National University of Ireland Galway (€570)
- 2016 Postgraduate Travel Support Scheme, Martin Ryan Institute, NUI Galway (€850)
- 2016 Training and Travel Grant, British Ecological Society (£500)
- 2016 Thomas Crawford Hayes Research Fund, National University of Ireland Galway (€4,974)
- 2016 Government of Ireland Postgraduate Research Fellowship, Irish Research Council (€72,000)
- 2015 Student Travel Grant, Entomological Society of America (\$350)
- 2015 Hardiman Research Scholarship, National University of Ireland Galway (€82,100)
- 2013 Dean's Distinguished Graduate Fellowship, University of California Riverside (\$67,273)

AWARDS

- 2018 Student Presentation Award (Best Poster), XI European Congress of Entomology
- 2015 First Place Presentation, Pacific Branch Entomological Society of America Student Competition

PUBLICATIONS

Refereed Publications

- Bistline-East, A.**, D. Burke*, C.D. Williams, and M.J. Gormally. 2020. Habitat requirements of *Tetanocera elata* (Diptera: Sciomyzidae): Case study of a dry meadow in western Ireland. *Agricultural and Forest Entomology* 22: 250-262. DOI: [10.1111/afe.12378](https://doi.org/10.1111/afe.12378).
- Milosavljević I., K.A. McCalla, **A. Bistline-East**, and M.S. Hoddle. 2020. Threshold temperatures and thermal requirements of *Psyllaphycus diaphorinae* (Hymenoptera: Encyrtidae), a hyperparasitoid of *Diaphorencyrtus aligarhensis* (Hymenoptera: Encyrtidae) and *Tamarixia radiata* (Hymenoptera: Eulophidae). *Florida Entomologist* 103(1): 23-31. DOI: [10.1653/024.103.0404](https://doi.org/10.1653/024.103.0404).
- Bistline-East, A.**, C.D. Williams, and M.J. Gormally. 2020. Nutritional ecology of predaceous *Tetanocera elata* (Diptera: Sciomyzidae) larvae and the physiological effects of prey utilisation. *BioControl* 65: 285-296. DOI: [10.1007/s10526-020-09997-8](https://doi.org/10.1007/s10526-020-09997-8).
- D'Ahmed, K.S., C. Stephens, **A. Bistline-East**, C.D. Williams, R.J. McDonnell, M. Carnaghi, D. ÓhUallacháin, and M.J. Gormally. 2019. Biological control of pestiferous slugs using *Tetanocera elata* (Fabricius) (Diptera: Sciomyzidae): Larval behavior and feeding on slugs exposed to *Phasmarhabditis hermaphrodita* (Schneider, 1859) (Rhabditida: Rhabditidae) with notes on adult egg-laying. *Biological Control* 135: 1-8. DOI: [10.1016/j.biocontrol.2019.04.003](https://doi.org/10.1016/j.biocontrol.2019.04.003).
- Bistline-East, A.**, J.G.J. Carey, A. Colton*, M. Day**, and M.J. Gormally. 2018. Catching flies with honey(dew): Marsh flies (Diptera: Sciomyzidae) utilize sugary secretions for high-carbohydrate diets. *Environmental Entomology* 47(6): 1632-1641. DOI: [10.1093/ee/nvy155](https://doi.org/10.1093/ee/nvy155).
- Irvin, N.A., **A. Bistline-East**, and M.S. Hoddle. 2016. The effect of an irrigated buckwheat and vetch cover crop on grape yield, berry quality, vine vigor, and abundance of beneficial insects and grape pests in California. *Biological Control* 93: 72-83. DOI: [10.1016/j.biocontrol.2015.11.009](https://doi.org/10.1016/j.biocontrol.2015.11.009).

7. **Bistline-East, A.** and M.S. Hoddle. 2015. Biology of *Psyllaphycus diaphorinae* (Hymenoptera: Encyrtidae), a hyperparasitoid of *Diaphorencyrtus aligarhensis* (Hymenoptera: Encyrtidae) and *Tamarixia radiata* (Hymenoptera: Eulophidae). *Annals of the Entomological Society of America* 109(1): 22-28. DOI: [10.1093/aesa/sav113](https://doi.org/10.1093/aesa/sav113).
8. **Bistline-East, A.**, R. Pandey, M. Kececi, and M.S. Hoddle. 2015. Host range testing of *Diaphorencyrtus aligarhensis* (Hymenoptera: Encyrtidae) for use in classical biological control of *Diaphorina citri* (Hemiptera: Liviidae) in California. *Journal of Economic Entomology* 108(3): 940-950. DOI: [10.1093/jee/tov020](https://doi.org/10.1093/jee/tov020).
9. **Bistline-East, A.** and M.S. Hoddle. 2014. *Chartocerus* sp. (Hymenoptera: Signiphoridae) and *Pachyneuron crassiculme* (Hymenoptera: Pteromalidae) are obligate hyperparasitoids of *Diaphorencyrtus aligarhensis* (Hymenoptera: Encyrtidae) and possibly *Tamarixia radiata* (Hymenoptera: Eulophidae). *Florida Entomologist* 97(2): 562-566. DOI: [10.1653/024.097.0230](https://doi.org/10.1653/024.097.0230).

Extension/Outreach Materials

1. **Bistline-East, A.** 2021. Pollinator Research One-Year Update. Stakeholder newsletter. Department of Entomology, Purdue University.
2. **Bistline-East, A.** 2017. Bugs & Slugs: Biological control & sustainable agriculture in Ireland. Outreach flyer. Applied Ecology Unit, National University of Ireland Galway.
3. **Bistline-East, A.** 11 Jan 2016. *Psyllaphycus diaphorinae*: Another natural enemy from Pakistan for ACP biocontrol? Center for Invasive Species Research blog. <https://cisir.ucr.edu/blog/2016/01/11/psyllaphycus-diaphorinae-another-natural-enemy-pakistan-acp-biocontrol>.
4. Hoddle, M.S., **A. Bistline-East**, C.D. Hoddle, and M. Lewis. 2015. Enlisting a second natural enemy species for ACP biocontrol. *Citrograph* 6(2): 58-63.

*graduate student mentee **undergraduate student mentee

TALKS & PRESENTATIONS

Invited Seminars & Presentations

1. **Bistline-East, A.** Pests, parasitoids, & pollinators: Harnessing ecosystem services to elevate sustainability in agriculture. Entomology Seminar Series, University of Minnesota, St. Paul, MN. 01 Feb 2022. (virtual)
2. **Bistline-East, A.** Insect conservation to enhance ecosystem services in agriculture. Biology Seminar Series, Purdue University Northwest, Hammond, IN. 21 January 2022.
3. **Bistline-East, A.** Perspectives in biological control approaches and application. *Symposium: Biological Control in Agroecosystems and Natural Areas: Highlighting the Work of a New Generation of Biocontrol Scientists*. Branch Meeting, NC/SW Entomological Society of America (virtual). 5 May 2020.
4. **Bistline-East, A.** Integrative evaluation of *Tetanocera elata* (Diptera: Sciomyzidae) for slug pest management in agriculture. Department of Entomology Seminar Series, Purdue University, 17 Oct 2019.

Conference Presentations

1. **Bistline-East, A.** and I. Kaplan. The bees' knees or total buzzkill? Comparing outcomes for native plant and pollinator communities across conservation practices. Entomological Society of America Joint Annual Meeting. Vancouver, BC, Canada. 13 – 16 November 2022.
2. **Bistline-East, A.** and I. Kaplan. Quantitative evaluation of the efficacy of prairie conservation grasslands for native pollinator biodiversity in intensive agriculture. Entomological Society of America 2021. Denver, CO. 31 October – 3 November 2021.
3. **Bistline-East, A.** and M.J. Gormally. Molluscs on the menu: Predation behaviour and preference of the slug-killing fly *Tetanocera elata* (Diptera: Sciomyzidae). 2nd Ecology & Evolution Ireland Conference. National University of Ireland Galway, Ireland. 10 – 12 Jan 2019.
4. **Bistline-East, A.**, A. Volpato*, and M.J. Gormally. Fitness factors: Effect of diet and cage structure on longevity and fecundity of adult *Tetanocera elata* (Diptera: Sciomyzidae). 66th Annual Meeting, Entomological Society of America (jointly with ESC and ESBC). Vancouver, BC, Canada. 11-14 November 2018. (virtual poster)

5. **Bistline-East, A.** and M.J. Gormally. Molluscs on the menu: Prey preference and predating behaviours of a slug-killing fly. XI European Congress of Entomology. Naples, Italy. 2-6 July 2018. (poster)
6. **Bistline-East, A.**, J.G.J. Carey, A. Colton*, D. Naughton**, and M.J. Gormally. Catching flies with honey(dew): Determination of sugar-rich dietary components of marsh flies (Diptera: Sciomyzidae), potential biocontrol agents of pestiferous molluscs. ENTO'17. Newcastle University, Newcastle upon Tyne, UK. 12-14 Nov 2017.
7. **Bistline-East, A.** and M.J. Gormally. Habitat surveys for *Tetanocera elata* (Diptera: Sciomyzidae) to develop sustainable slug pest management in Ireland. 1st Ecology and Evolution Ireland Conference. Institute of Technology Sligo, Ireland. 24-26 Nov 2016.
8. **Bistline-East, A.** and M.J. Gormally. Field collections and habitat surveys of *Tetanocera elata* (Diptera: Sciomyzidae) to develop sustainable slug pest management in Ireland. XXV International Congress of Entomology. Orlando, Florida, USA. 25-30 Sept 2016.
9. **Bistline-East, A.** and M.S. Hoddle. Host range evaluation of *Diaphorencyrtus aligarhensis* (Hymenoptera: Encyrtidae) for biological control of Asian citrus psyllid in California. Colloquium for Animal and Plant Ecological Research. National University of Ireland, Galway, Ireland. 4 Dec 2015.
10. **Bistline-East, A.** and M.S. Hoddle. *Psyllaphycus diaphorinae*: a new enemy for ACP biocontrol? Colloquium for Animal and Plant Ecological Research. National University of Ireland, Galway, Ireland. 4 Dec 2015. (poster)
11. **Bistline-East, A.** and M.S. Hoddle. Host range evaluation of *Diaphorencyrtus aligarhensis* (Hymenoptera: Encyrtidae) for biological control of Asian citrus psyllid in California. 99th Annual Meeting, Pacific Branch Entomological Society of America. Coeur d'Alene, Idaho, USA. 12-15 Apr 2015.
12. **Bistline-East, A.** and M.S. Hoddle. Assassins Unmasked: Revealing the biology of the hyperparasitoid *Psyllaphycus diaphorinae*. 62nd Annual Meeting, Entomological Society of America. Portland, Oregon, USA. 16-19 Nov 2014.
13. **Bistline-East, A.** and M.S. Hoddle. Determining the host range of *Diaphorencyrtus aligarhensis*, a parasitoid of Asian citrus psyllid. University of California, Riverside Entomology Department Student Seminar Day. Riverside, California, USA. 25 Sept 2014.
14. **Bistline-East, A.** and M.S. Hoddle. Hyper Alert: Confirming two Pakistani wasps are hyperparasitoids of valuable ACP biological control agents. 98th Annual Meeting, Pacific Branch Entomological Society of America. Tucson, Arizona, USA. 6-9 Apr 2014. (poster)
15. **Bistline, A.** and M.S. Hoddle. *Chartocerus* sp. (Hymenoptera: Signiphoridae) and *Pachyneuron crassiculme* (Hymenoptera: Pteromalidae): obligate hyperparasitoids within the *Diaphorina citri* (Hemiptera: Liviidae) system in Pakistan. University of California, Riverside Entomology Department Student Seminar Day. Riverside, California, USA. 19 Sept 2013.

Invited Outreach & Extension Talks

1. **Bistline-East, A.** Where the wild bees are: Improving native pollinator conservation in Indiana agriculture. Indiana Small Farms Conference, West Lafayette, IN. 8 March 2022.
2. **Bistline-East, A.** Indiana native habitats: Importance to plants and pollinators. October 2021. Morgan County Soil and Water Conservation District, Martinsville, IN.
3. **Bistline-East, A.** and J. Pecenka*. Native plants and pollinators of Indiana. May 2021. Tippecanoe Native Plant Fest, Lafayette, IN
4. **Bistline-East, A.** Insects and agriculture farm talk. Sept 2018. Beechlawn Organic Farm Open Day, Ballinasloe, IE
5. **Bistline-East, A.** Slugs & the flies that eat them community seminar. Sept 2017. Go Wild! Galway, Ireland

Extension Presentations

1. **Bistline-East, A.**, L. Taylor**, and I. Kaplan. Evaluating the effectiveness of constructed prairie grasslands for pollinator conservation in Indiana agroecosystems. Indiana Small Farms Conference, West Lafayette, IN. 5 March 2021.
2. **Bistline-East, A.** and M.S. Hoddle. Is *Psyllaphycus diaphorinae* a primary parasitoid of Asian citrus psyllid? Citrus Research Board Biocontrol Task Force Meeting, Riverside, California. 4 Dec 2014.

*graduate student mentee **undergraduate student mentee

SERVICE

Reviewer Service

MDPI Insects (2); BioControl (1); Annals of the Entomological Society of America (1); Arthropod-Plant Interactions (2)

Outreach & Community Activities

2018 – present Skype a Scientist
 June 2019 Speaker, Soapbox Science Galway
 June 2019 Radio interview, RTÉ 1 "CountryWide" (<https://bit.ly/3bY3bCl>)
 2019 Galway Event Coordinator, Pint of Science Ireland
 April 2019 Speaker, Bright Club Galway
 Sept 2018 Speaker, PubhD Galway
 2018 Galway Regional Coordinator, Pint of Science Ireland
 July 2017 Support and logistics volunteer, Soapbox Science (Galway)
 Apr 2015 Co-chair, 1st Annual Riverside Insect Fair
 Jan 2015 Judge, Riverside Unified School District Science Fair

University Activities

2019 – present Lab Safety Officer, Insect Ecology Lab, Purdue University
 May 2021 Panelist (Science Writing), Entomology Writing Festival, Purdue University
 2017 – 2018 Field Based Research cluster meeting co-curator, NUI Galway
 2016 – 2019 Health & Safety Coordinator, Applied Ecology Unit, NUI Galway
 2016 – 2017 Demonstrator, "Science Experience!" NUIG Open Day events, Microbiology, NUI Galway
 Dec 2015 Organising Committee member, Colloquium for Animal and Plant Ecological Research NUIG
 2013 – 2015 Public education outreach volunteer, UCR Entomology Graduate Student Association

Professional Society Activities

2022 Student competition judge, Entomological Society of America National Meeting
 2021 – present Women and Allies in Entomology Breakfast organizing committee member
 2021 Student competition judge, Entomological Society of America National Meeting
 2021 Session moderator, Entomological Society of America National Meeting
 2020 Student competition judge, Entomological Society of America NC-S Branch Meeting

PROFESSIONAL MEMBERSHIPS

- » Entomological Society of America (2013 – present)
- » British Ecological Society (2016 – present)
- » Irish Ecological Association (2017 – present)
- » Society for Conservation Biology (2021 – present)
- » Ecological Society of America (2021 – present)

PROFESSIONAL DEVELOPMENT & CERTIFICATIONS

- » Postgraduate Teaching Practicum, Center for the Integration of Research, Teaching, & Learning; facilitated through the University of British Columbia (September – December 2022)
- » Promoting LGBTQIA+ Student Success in the Classroom workshop, Purdue University (August 2021)
- » Mentorship Training for Postdocs workshop series, Purdue University (March – August 2021)
- » Responsible Conduct of Research Field-Specific Training, Purdue University (April 2021)
- » Mental Health First Aid Certification, Purdue University (February 2020)
- » Trans* Inclusivity Training, Purdue University (November 2019)
- » "Presenting Research with Confidence" Hugh Kearns seminar, NUI Galway (February 2019)
- » Fieldwork First Aid certification, NUI Galway (November 2018)
- » The Diverse Classroom and Inclusive Teaching Practice workshop, NUI Galway (January 2018)
- » Teaching & Learning certification, NUI Galway (April 2017)
- » "Invasive non-native species and the law, regulations and policy in the UK and Ireland –", CIEEM online seminar (January 2017)