

Michael J. Brewer

Texas A&M AgriLife Research, Corpus Christi
10345 State Hwy 44, Corpus Christi, TX 78406-1412
phone: 361-265-9201, Cell: 361-244-7043, Email: mjbrewer@ag.tamu.edu
Web: <http://ccag.tamu.edu/entomology/>

Location: Texas A&M AgriLife Research and Extension Center at Corpus Christi
Academic Home: Department of Entomology, Texas A&M, College Station

Current Professional Title & Activities: Professor of Entomology, Texas A&M AgriLife Research; Regents Fellow, Texas A&M University System

Research & Outreach. Dr. Brewer conducts research and companion outreach in addressing pest management issues relevant to fiber and grain crops and regional and national goals in pest management. Insect pests targeted and research approaches used are guided by assessment of pest status including outbreak risk and crop sensitivity to insect injury, appropriateness of management techniques in low-input field crops, and input from stakeholders. Dr. Brewer places emphasis on significant pest disruptions (invasive species and perennial pests), regional pest risk assessment, and pest suppression support within large-scale agroecosystems. He publishes in regional, national, and international journals, outreach outlets, and books.

Teaching (Student Mentoring). Complementing research thrusts, Dr. Brewer develops and sponsors student learning experiences such as graduate assistantships, undergraduate internships, post-doctoral training, and other outside of classroom experiences. He provides lectures in entomology and student mentoring at three Texas A&M System Universities and one community college.

Service. Dr. Brewer emphasizes publication service, with focus on the Entomological Society of America (ESA) publication enterprise. He participates in external program reviews, formal student and faculty mentoring, and other services to Texas A&M, state/federal agencies, and commodity groups.

Educational Background

Aug. 1990	Ph.D. Entomology, University of California, Riverside, California
Dec. 1986	Master's in Applied Statistics, Louisiana State University, Baton Rouge
Aug. 1985	Master of Science, Entomology, Louisiana State University, Baton Rouge
Dec. 1981	B.S. Entomology, University of California, Davis, California

Relevant Employment:

Current: 2009--. Field Crops Entomologist

Assistant Professor (2009), Associate Professor (2015), Professor (2019), Regents Fellow (2022)

Adjunct Affiliations:

Department of Computing and Geospatial Sci., Texas A&M, Corpus Christi

Department of Agriculture, Agribusiness, and Environmental Science, Texas A&M, Kingsville

Previous Professional Employment:

2002-2009. Extension Pest Management Coordinator, Assoc. Professor. Michigan State

1991-2002. Assistant/Assoc. Professor/Extension Specialist, Entomology. U. Wyoming

1988. Lecturer. California Polytechnic University, San Louis Obispo.

Memberships and Affiliations:

Entomological Society of America (ESA), since 1983 (42 yr, 26 yr in publication service roles)

Society of Southwestern Entomologists, since 2009; president elect/president (2025/2026)

International Organization of Biological Control, 1996-1999, 2005

South Carolina Entomological Society, Central States Entomological Society, prior to 2005

Awards and Honors

State, regional, and national recognition includes recent local (Texas A&M AgriLife Extension), regional (USDA Southern IPM Center, USDA Southern Risk Management Center), and national (2019 Entomological Society of America, PIE section, Integrated Pest Management) team awards. I also received the 2019 SW Branch Entomological Society of America Excellence in IPM award for the work on sugarcane aphid and was recognized by the Entomology Graduate Students Assn. as the 2017 Outstanding Mentor in Research (mentoring six graduate students, three undergraduate interns, and one post-doc at the time). I am incoming President of the Society of Southwest Entomologists (2026) and was selected as Texas A&M System Regents Fellow in 2022.

Listing since 2015, with selected previous awards:

President of the Society of Southwest Entomologists (2026)

Regents Fellow, Texas A&M University System (designation start, 2022)

Southwestern Branch ESA Excellence in IPM, 2019.

Integrated Pest Management team award, ESA, P-IE section, 2018.

Outstanding Mentorship in Research. Entomology Graduate Student Organization, 2017.

Team Project of Excellence. Risk management and economic thresholds for sugarcane aphid on sorghum (team). USDA NIFA Southern Region Risk Management Education Center, 2017.

Pulling Together Award, Sugarcane Aphid Team. USDA NIFA Southern IPM Center, 2016.

Superior Service Award, Sugarcane aphid Team. Texas A&M AgriLife Extension, 2015.

EPA Region VIII Outstanding Achievement Award (team), 1995.

New Faculty Award, Cooperative Extension, College of Agriculture, U. Wyoming, 1994.

Briefs of Experience, Skills, and Accomplishments

Recent Research and Outreach/Extension

(citations can be found in Publication section, p.12):

Given the large-scale and low-input nature of field crop agroecosystems and ongoing pest invasions affecting U.S. agriculture, goals of my research program have been two-fold: develop sustainable farm to area-wide approaches to managing pests in agroecosystems and increase understanding of plant-insect-natural enemy interactions and pest regulation that affect pest outbreak, severity, and regulation. Developing sustainable pest management tools to address invasive and other major pest concerns provides near-term benefits of protecting yield and increases understanding of pest regulation resiliency in managed systems that serves to buffer impact of pest invasions and recurring pests. This approach is appropriate across pest taxa including weeds, arthropod pests, and plant diseases within cropland, rangeland, and adjoining semi-natural and stewarded grassland ecosystems. Experiences include invasive pest management and supporting beneficial insects (predators, parasitoids, pollinators) in several large-scale cropland and rangeland systems including wheat, soybean, sorghum, and conservation grasslands from the southern to northern Great Plains, and from the intermountain region of the Rockies to the Mid-west. An agroecosystem approach has broad applications across pest taxa (insects, weeds, disease), geography (cropland, rangeland, and adjoining semi-natural and stewarded grassland), and other agriculture disciplines (mariculture, animal science) that positions us well to seek win (agriculture) - win (environmental health) – win (community health) scenarios.

Sugarcane aphid on sorghum is the most recent example of my special focus on invasive pest disruptions and regulation in large-scale agroecosystems. Best pest management practices have been developed in response to an invasion by a sorghum aphid pest (scientific name *Melanaphis sorghi*) that first appeared in Texas in 2013 and quickly spread across the Great Plains and other regions of North America within a few years. We now understand why this sorghum aphid poses a lowered risk to sorghum in several regions of the Great Plains compared with early outbreak years of the mid-2010s.

Natural enemies native to the Great Plains (*small wasps that parasitize the aphid and predators like lady bugs*) are common across land-use and weather conditions seen in sorghum production areas, especially in the warm temperate and subtropical regions of Texas where sorghum was initially expected to be severely affected by this aphid. *Although economic outbreaks occurred soon after the aphid invasion, natural enemy suppression of the aphid now commonly maintains aphid populations below economic concern.*

These findings are applicable nationally, as supported by commodity groups, industry, and several federal grants (USDA Southern IPM, USDA NIFA CPPM, USDA Risk Management). Transformation of this work continues for field crop applications, as exemplified by sugarcane aphid decision-making management (2016: J. Integr. Pest Manage. 7:12, doi.org/10.1093/jipm/pnw011), and as facilitated by information dissemination through Extension publications, webinars, and society and grower-sponsored presentations (2018: J. Integr. Pest Manage. 9:2; doi:10.1093/jipm/pmx030).

Agricultural impact of sugarcane aphid research and outreach is indicated by increasing grower success in managing sugarcane aphid. Our research working with sorghum producers supports that the lower Great Plains agroecosystem is resilient to aphid invasions, which aided the return to a sustainable pest management system based on natural enemies and supplemented with aphid targeted insecticides and planting partially aphid-resistant sorghum. Agricultural community stability has returned with the result being little grain sorghum acreage reduction attributed to this aphid in the Great Plains. Environmental and economic benefits include insecticide use declining and reducing frequency of grain loss from uncontrolled aphid outbreaks. Working from the basis of a previous economic analysis conducted in the Rio Grande Valley by AgriLife Extension, the improved control of this sorghum aphid equates to a direct annual grain revenue increase and insecticide cost savings of \$24.4 million where about 350,00 acres of sorghum are grown in the subtropical sorghum production region of south Texas.

Career-length scholarly impact includes research and review of aphid ecology and management, and IPM implementation, as synthesized in three Annual Review of Entomology articles (2004, 49: 219-42; 2012, 57: 41-59; 2019, 64: 73-93) and most recently the scheduled release of the book '*Arthropod management and landscape considerations in large-scale agroecosystems*' (CABI, M. Brewer and G. Hein editors). These have contributed to the advancement of IPM and applied insect ecology through study of aphid invasions affecting cereal crops focusing on the North American Great Plains, and more broadly to arthropod management across large-scale agroecosystems from North America, Africa, to Australia.

Recent Supervision, Collaboration, and Mentoring:

I am an avid believer of Land-Grant cross-mission synergies. Working groups and committees of unit personnel and collaborators are best suited to provide direction to address ongoing and emerging issues affecting U.S. agriculture, to improve good stewardship functions such as maintaining good communications across units, agencies, Universities, industry, and commodity groups, and to nurture and seek cross-mission synergies within the core work force and with collaborators. My experiences (addressing three invasive aphids of cereals and soybean in North America) include research on conservation of beneficial insects and small mammals, and experience in establishing collaborations (among universities, agencies, commodity groups, and industry).

I have led the Field Crops Entomology Research Program for the Texas Gulf Coast area for the last 14 years. I have maintained a USDA NIFA Hatch project in my current appointment and prior Hatch projects across 18 years at two other Land-Grants. I have been a member and chair of several Multi-State (Director appointed) and multiple agency (NIFA appointed) committees.

I have supported projects with funding from internal University programs, external competitive federal programs, and industry contracts. I am finalizing a significant phase of a nationally recognized research program to address sugarcane aphid as an invasive pest of sorghum and sucking bug management in cotton. The program has been sponsored externally by four USDA (NIFA and ARS) grants programs and two Texas Ag. Experiment Station (AgriLife) internal programs, five commodity groups, and several industry contracts. During this period, five Ph.D. students, two M.S. students, and two post-docs have completed their research and training under my supervision and mentoring, while two Ph.D. and one M.S. students are current. Research and outreach collaborations have been established with interdisciplinary teams of agricultural scientists and technical experts across Universities (Oklahoma State, U. Arkansas, U. Georgia), agencies (USDA NIFA, ARS; Texas Dep. Ag.), industry (Bayer Crop Science, Corteva, among others), and commodity groups (Cotton Inc., United Sorghum; Texas commodity groups in cotton, sorghum, and corn). As example within the sorghum pest management effort (see also above section 'Recent Research and Outreach'), 32 journal articles, 7 extension publications, and 2 web resources have been published, of which 10 articles were led by students and 2 articles and an edited book were invited. Within cotton pest management, 16 journal articles have been published, which include 9 led by students.

I have also worked closely with interdisciplinary groups in planning and evaluating research programs and collaborations. Collaborations have been established with crop breeders and geneticists, fellow entomologists including insect systematists, biological control specialists, and geneticists, and landscape and environmental modelling ecologists. Collaborative accomplishments include moving forward the concept of area-wide pest management of invasive aphids and other sucking bugs in large-acreage cereal and cotton production systems, and the release of and research on biological control agents to control established invasive pest aphids. A synthesis of this approach is presented in an Annual Review of Entomology article on invasive aphid pests of cereal in North America serving as lead author (vol. 64: 73-93), a cotton pest management chapter serving as junior author, and the book '*Arthropod management and landscape considerations in large-scale agroecosystems*' (CABI, M. Brewer and G. Hein editors) released in August 2024.

Service also extends to professional societies. Most recently is my involvement with the Entomological Society of America. I was recommended by the Publication Council to serve as co-Editor-in-Chief of the *Journal of Economic Entomology*. Now in my second 4-yr term, the *Journal* is an international publication enterprise that is the primary outlet for primary research in economic entomology published by Oxford University Press in cooperation with the Entomological Society of America. The *Journal* ranks as the most cited journal in entomology, and it publishes more articles annually than all other entomology journals. Beginning in spring 2019, I have worked within a co-Editor-in-Chief team of three along with journal staff to maintain and improve journal standards and policy (ensure article quality) and propose and launch initiatives (increase impact and service to our readership). Under a new Editorial Board structure, the co-Editor-in-Chief team seeks advice on standards and initiatives, followed by the team working with journal staff on implementation and subsequent evaluation and assessment. *Journal* evaluation and assessment occur annually as performance metrics are compared to annual goals. During 2019, we have launched a new section of the journal and several Special Collections of articles. Working as part of the co-Editors-in-Chief team along with a subject editor team of 50 and the Editorial Board has been productive and essential to maintain and grow the quality of this publication enterprise.

The same approach applies to national engagement in integrated pest management research, collaboration, and policy discussion. I have been a member of the National IPM committee sponsored by USDA NIFA and EPA and an ad-hoc committee on IPM policy and agency interaction among USDA NIFA, NRCS, and EPA. I have prepared reports and published articles reviewing USDA NRCS and European Union policies and programs to incentivize use of integrated pest management to address

conservation (land, water, air, and wildlife) concerns (2012: *Ann. Rev. Entomol.* 57:41-59). I have co-authored a book chapter on cotton insect pest management (Luttrell, Teague, and Brewer 2015). I also participated in a team addressing sugarcane aphid insecticide registration issues for the state of Texas, which focused on application of EPA Section 18 allowances for insecticide use while minimizing pest regulation by natural enemies in the system.

Recent Committee and Team Roles:

I express my interests and document my expertise in leading and contributing to committee work involving project and program planning, evaluation, and communications, following my servant leadership and cross-mission philosophy in program building and improving processes. I have experiences at the regional Research and Extension Center level (Field Crops Entomology Research Program for south Texas), state University level (Faculty Advisory Committee, Council of Principle Investigators, Promotion and Tenure Peer Review committees, both Department and College), and national level (National IPM committee sponsored by USDA NIFA and EPA, ad-hoc committee on IPM policy and agency interaction among USDA NIFA, NRCS, and EPA). Leadership positions include Co-Editor-in-Chief service for a journal of the Entomological Society of America) and incoming President of the Society of Southwest Entomologist (2026). These experiences are inclusive of project research planning and review, developing collaborations, seeking stakeholder input and maintaining effective communications, participating in research initiatives across institutions and agencies, and evaluating program, project, and personnel impact. I believe that these team and partner activities are essential and important professional services. The interactions also provide opportunities to link focused activities to national agricultural initiatives and needs, including response to pest invasions and conservation natural resources on which agriculture depends.

I have served two terms during the last ten years (six years total) as a member (elected by peer departmental faculty) of the Faculty Advisory Committee that advises the Unit Head of the TAMU Entomology Department. The role is to provide advice on departmental policy involving personnel assessment, evaluation, and hires (including service as ad-hoc search committee member for special hires), on departmental special initiatives, and on time-sensitive matters involving opportunities and challenges presented to the Department Head. Related to recruitment, I have served on eight faculty searches (one serving as chair) and one Department of Entomology Head search. I was elected by my peers to serve as co-Chair (2020) and Chair (2021) of the Promotion and Tenure Committee of the Department of Entomology (TAMU). The Chairs coordinate with promotion candidates in preparation of their promotion dossiers and facilitates the evaluation committee's assessment of external reviews and candidate dossiers. I was appointed to the Peer Review Committee of the College of Agriculture and Life Sciences / AgriLife at TAMU as member to review promotion dossiers across the College, Extension Service, and Ag. Experiment Station.

University committee service work spans my career. I served as member (elected by peer Texas Ag. Experiment Station [AgriLife] faculty) on the Council of Principle Investigators. This is a University-wide body that represents faculty who are principle investigators of external contracts and grants. This body serves as a sounding-board to administrative units that support principal investigator functions, such a Contract/Grant services, Library services, and University and agency research offices. The Council membership also provides advice through the preparation of white papers on research engagement and support in the University System. I was active in a sub-committee that reviewed interdisciplinary interactions and provided recommendations to increase research and educational activities and accomplishments across units (i.e., across departments, Colleges, and agencies and Universities in the A&M System). Related to agricultural sponsored activities, administrative services in AgriLife and the Contracts/Grants office have begun discussions to revise processes to facilitate cross-agency (AgriLife Research and AgriLife Extension) contracts and grants administration. I am on the Plant

Release Committee (AgriLife Research) and served on two Task Forces (Leadership and AgriLife Research Faculty Development). These interests have spanned my career. In the past, I served on the Faculty Senate of the University of Wyoming as a junior faculty member, and the University Computer Committee at the U. California, Riverside, as a graduate student member.

Research Publications Overview. Selected publication metrics as of March 2025.
 Career h-index = 36. Career i10-index = 103. Career citations 5131.

Publication Type (review type)	Career
Journal article (editor, peer anon)	138
Book chapter (editor, peer anon)	11
Book, editor	1
Abstracts/proceedings (editor only)	72
University Pubs (peer, not anon)	50

Summary of Presentations and Posters

Type	Career	
	Invited	Submitted
Seminars/key notes:		
International	3	
National	17	
State	15	
Symposium papers		
International	10	
National	30	
Local	1	
Research papers/poster		
International	9	12
National	28	143
State	32	32
Research Total	144	187
Program outreach total	217	

Organizer of symposia and organized meetings: (since 2015)

Advances in areawide pest management of invasive and endemic pests in agroecosystems. PIE section symposium for ESA national meeting, 2025 (submitted, co-organized with S. Dorman and G. Shrestha)

Reviewers’ Workshop: how reviewing can help you publish, Workshop, Southwestern Branch ESA meeting, 2024 (organizer).

Advancements and current trends in cropping systems integrated pest management in the Southwestern region, Symposium, Southwestern Branch ESA meeting, 2025 (co-organized with A. Faris).

Integrated pest management of arthropod pests in large scale agroecosystems. PIE section symposium for ESA national meeting, 2021 (co-organized with A. Faris and G. Hein).

Environmental Entomology & Journal of Economic Entomology Awards and Overview. ESA organized meeting (organizers: M. Keena, T. Poland, F. Zalom, N-Y Su. L. Neven)(virtual 2020/21, live 2022-24).

Ecology and management of cereal aphid invasions, crossing the Great Plains borders from Mexico to Canada. ESA/Ent. Soc. of Canada Joint Meeting, 2018 (co-organized symposium with F. Peairs).

An integrated regional response to an invasive aphid pest of sorghum, Symposium, Southwestern Branch ESA meeting, 2015 (organizer).

Service emphasizing Peer/Program review, and Mentoring

Selected Elected and Appointed Service Positions (2012 onward):

Promotion Guidance for Research Faculty Task Force, member (Texas A&M AgriLife, 2021)
Leadership Task Force, member (Texas A&M AgriLife, 2021)
Department Promotion and Tenure (2020/2021, co-chair/chair)
College/AgriLife Promotion and Tenure (2020/2021, member).
Council of Principle Investigators, representative (AgriLife faculty elected, 2017-2020).
Faculty Advisory Committee, Entomology, Texas A&M, elected (2012-14), re-elected (2015-17).

Service emphasizing ESA Meeting and Publication Service

Meeting Service

Moderated 11 student competitions and general sessions for 3 Branches and national meetings
Organizer/co-organizer of symposia (9)
Member, Entomology Games (UC Riverside team)

Committee Service

3 Awards Committee terms at national and branch levels
Editorial Board Member. Journal of Integrated Pest Management. Elected 2014-2017, Re-elected 2017-2019 (chair 2017) (ESA PI-E section representative)
Publication Council. 2019. (Journal of Economic Entomology representative)

Publication Service

Elected and Appointed Editorial Positions

Co-Editor-in-Chief, Journal of Economic Entomology, (appointed, 2019, reappointed 2023, current)
Associate Editor, Frontiers in Insect Science, Invasive Species section (appointed 2022-current)
Subject Editor. Insects (appointed, 2019-2025)
Subject Editor, Journal of Economic Entomology (appointed, 2002-2019)

Highlighted Publication Service (26 year time frame for ESA publication service)

Editing Service (Article Specific and Collections)

Lead editor (with S. Dorman) of a research topic: *Areawide pest management and agroecosystem resilience to suppress invasive insects*. Frontiers in Insect Science, 2025.

Lead editor (with G. Hein) of the book 'Arthropod management and landscape considerations in large-scale agroecosystems' (CABI, 2024, 33 book chapter authors).

Co-editor of a special collection of articles: *Spodoptera frugiperda: ecology and management of its world-scale invasion outside of the Americas*. J. Econ. Entomol. 2022.

Co-editor of a special collection: *Drones to improve insect pest management*. J. Econ. Entomol, 2021.

Support and Leadership for ESA Publications

Dr. Brewer's service alongside the JEE and ESA publication team has resulted in ESA maintaining its status as a primary source of literature in insect pest management worldwide (JEE as a Q1 journal, #1 or 2 in citations, IF stable in the 2.2-2.4 range the last five years, and record submission numbers approaching 1,000 annually). These successes have occurred in an expanding landscape of entomology journals launched by large publication houses that have affected society-based journals. Companion to the Publication Council's effort to align with Oxford as a society-friendly publisher, Dr. Brewer with the rest of the JEE and ESA team have met this challenge through consistency, clarity, and innovation.

Subject Editor, Journal of Economic Entomology (JEE) for 18 years, 2002 start.

Editorial Board member for Journal of Integrated Pest Management,

Dr. Brewer was elected PI-E section representative for two terms (2014-2019, chair in 2017).

Co-Editor-in-Chief, Journal of Economic Entomology over the last six years (appointed in 2019 and reappointed to a second 4-year term in 2023).

Research Publications: Publication metrics as of March 2025: H-index = 36. i10-index = 103.

Citations 5145. ESA publications are italicized. Students and post-doc are indicated by “+”. Listings in reverse chronological order, Superscripts identify contribution: ¹ led investigation/writing, ² guidance for lead graduate student, ³ conducted component experiment, ⁴ data collection and/or analyses, ⁵ input on design, data management, analyses, ⁶ guidance for lead post-doc, ⁷ guidance for lead undergraduate student, ⁸ shared writing.

Books

Brewer, M.J., and G.L. Hein (eds). 2024. Arthropod management and landscape considerations in large-scale agroecosystems. CABI Pub., Oxfordshire, UK, 282 pp. (synthesis/review)

Chapters in Books (selected):

Brewer, M.J.¹, P.A. Umina, and N.C. Elliott. 2024. Pest management for spatially variable arthropod pests in large-scale agroecosystems. In: Brewer, M.J., and G.L. Hein (eds). 2024. Arthropod management and landscape considerations in large-scale agroecosystems. CABI Pub., Oxfordshire, UK, p. 27-43.

Elliott, N.C., K. Giles, **M.J. Brewer**³, S. Elzay, and T. Royer. 2024. Aphid biological control by parasitoids in winter wheat and canola in heterogeneous agricultural landscapes. *Ibid*, p. 104-118.

Faris, A.M.⁺, **M.J. Brewer**⁶, and N.C. Elliott. 2024. Natural enemy suppression supplemented by regional pest management for the invasive *Melanaphis sorghi* on sorghum. *Ibid*, p. 151-167.

Bhandari, M., P. Pal, and **M.J. Brewer**⁵. 2024. Future of information systems for pest management: data acquisition and integration to guiding management decisions. *Ibid*, p. 251-262.

Brewer, M.J., and B.H. Elkins⁺. 2022. Recent invasions of insect pests of wheat and sorghum.

In: Eigenbrode, S., Rashed, A. (eds) *Advances in understanding insect pests affecting wheat and other cereals*. Burleigh Dodds, Cambridge, UK.

Brewer, M.J., I.L. Esquivel⁺, and J.W. Gordy⁺. 2022., *Advances in insect pest monitoring using pest population growth and geospatial data for pest risk assessment*. In: Fountain, M., Pope, J. (eds.). *Advances in monitoring of native and invasive insect pests of crops*. Burleigh Dodds, Cambridge, UK.

Luttrell, R.G., T.G. Teague, and **M.J. Brewer**. 2015. Cotton insect pest management. In D. D. Fang and R. G. Percy (Eds.) *Cotton*, 2nd Edition, Monograph 57. Madison, WI, pp. 509-546.

Refereed journal articles (since 2020 and selected prior publications with focus on pest suppression in large-scale agroecosystems).

Alwedyan, M.A.⁺, Helms, A.M., and **Brewer, M.J.**² 2025. Cotton fleahopper herbivory on cotton squares induces plant volatile emissions that repel conspecifics. *J. Chem. Ecol.* 51, in press.

Alwedyan, M.A.⁺, Helms, A.M., and **Brewer, M.J.**² 2025. Leaf-footed bugs, *Leptoglossus phyllopus* (Hemiptera: Coreidae) are attracted to volatile emissions from herbivore-damaged cotton bolls. *Insects*. 16, in press.

Alwedyan, M.A.⁺, Helms, A.M., and **Brewer, M.J.**² 2025. Response of cotton cultivars with varying maturity traits to cotton fleahopper (Hemiptera: Miridae) feeding. *J. Econ. Entomol.* 118, in press.

Koralewski, T. E., **Brewer, M.J.**⁴, Deleon, L.L, Elliott, N.C., Giles, K., et al. 2025. Activity of sorghum aphid and its natural enemies in the context of agroecological and weather conditions. *Front. Insect Sci.* 5: 1503044. doi: 10.3389/finsc.2025.1503044

Weaver, M.A., Park, L.C., **Brewer, M.J.**³, Grodowitz, M.J., Abbas, H.K. 2025. Detection, quantification, and characterization of airborne *Aspergillus flavus* within the corn canopy. *Mycotoxin Res.* doi: 10.1007/s12550-025-00581-6

Brewer, M.J.¹. 2024. Crop, semi-natural, and water features of the cotton agroecosystem as indicators of risk of infestation of two plant bug (Hemiptera: Miridae) pests. *Front. Insect Sci.* 4:1496184. doi: 10.3389/finsc.2024.1496184

Bradicich, P.A.⁺, Faris, A.M., Gordy, J.W., **Brewer, M.J.**² 2024. Natural increases in parasitoid and predator abundance and a shift in species dominance point to improved suppression of the sorghum aphid since its invasion into North America. *Insects*, 15(12), 958. doi: 10.3390/insects15120958

Garcia-Williams, I.A.⁺, M.J. Starek, **M.J. Brewer**², and J. Berryhill. 2024. UAS-based multispectral imaging for detecting iron chlorosis in grain sorghum. *Agrosyst., Geosci. & Environ.* 7,e20540. doi: 10.1002/agg2.20540

Brewer, M.J.¹, and Elliott, N.C. 2023. Recent advances in agroecological research for increasing scope of areawide pest management of arthropods in cropping systems. *Curr. Opinion in Insect Sci.* 56: 101019. doi: 10.1016/j.cois.2023.101019

Koralewski, T. E., H.-H. Wang, W. E. Grant, **M. J. Brewer**⁴, and N. C. Elliott. 2023. Error propagation in an integrated spatially-explicit individual-based model. *Ecological Modelling* 475, 110215. doi: 10.1016/j.ecolmodel.2022.110215

Grichar, W.J.; Janak, T.W.; McGinty, J.A.; and **Brewer, M.J.**³ 2023. Using biostimulants, soil additives, and plant protectants to improve corn yield in South Texas. *Agronomy* 13, 1429. doi: 10.3390/agronomy13051429

Brewer, M.J.¹, N.C. Elliott, E.L. Esquivel⁺, et al. 2022. Natural enemies, mediated by landscape and weather conditions, shape response of the sorghum agroecosystem of North America to the invasive aphid *Melanaphis sorghi*. *Front. Insect Sci.* 2, 830997. doi: 10.3389/finsc.2022.830997

Koralewski, T. E., H.-H. Wang, et al. including **M. J. Brewer**⁵. 2023. Error propagation in an integrated spatially-explicit individual-based model. *Ecol. Modelling.* 475, 110215.

*Van den Berg, J., M. J. Brewer*⁸, and D. D. Reisig. 2022. *A special collection: Spodoptera frugiperda (fall armyworm): ecology and management of its world-scale invasion outside of the Americas.* *J. Econ. Entomol.* 115: 1725-1728. doi: 10.1093/jee/toac143

Faris, A.M.⁺, N.C. Elliott, and **M.J. Brewer**⁶. 2022. Parasitoids and predators of the invasive aphid *Melanaphis sorghi* found in sorghum and non-crop vegetation of the sorghum agroecosystem. *Insects.* 13, 606. doi: 10.3390/insects13070606

Elkins, B.H.⁺, *M.D. Eubanks, A.M. Faris*⁺, *H.-H. Wang, and M.J. Brewer*². 2022. *Landscape complexity has mixed effects on an invasive aphid and its natural enemies in sorghum agroecosystems.* *Environ. Entomol.* 51:660-669. doi: 10.1093/ee/nvac036

Brewer, M.J.¹, N.C. Elliott, E.L. Esquivel⁺, et al. 2022. Natural enemies, mediated by landscape and weather conditions, shape response of the sorghum agroecosystem of North America to the invasive aphid *Melanaphis sorghi*. *Front. Insect Sci.* 2, 830997. doi: 10.3389/finsc.2022.830997

*Koralewski, T.E. Wang, H.-H., Grant, W.E., Brewer, M.J.*⁵, and *Elliott, N.C.* 2022. *Evaluation of areawide forecasts of wind-borne crop pests: sugarcane aphid (Hemiptera: Aphididae) infestations of sorghum in the Great Plains of North America.* *J. Econ. Entomol* 115: 863-868. doi:10.1093/jee/toac035

Faris, A.M. ⁺, N.C. Elliott, and **M.J. Brewer** ⁶. 2022. *Suppression of the sugarcane aphid, Melanaphis sacchari (Hemiptera: Aphididae), by resident natural enemies on susceptible and resistant sorghum hybrids*, Environ. Entomol. 51:332-339. doi: 10.1093/ee/nvab147

Pekar, J. ⁺, S. Murray, T. Isakeit, L. Pruter⁺, N. Wahl, and **M. Brewer** ³. 2022. Control of aflatoxin using atoxigenic strains and irrigation management is complicated by maize hybrid diversity. Crop Sci. 62: 867-879. doi: 10.1002/csc2.20710

Medrano, E.G., J.P. Glover⁺, A.A. Bell, and **M.J. Brewer** ³. 2021. *Serratia marcesens* strains involved in cotton (*Gossypium hirsutum*) boll infection by a prokaryote. Agric. Sci. 12: 1565-1578.

Esquivel, I.L. ⁺, M.J. Starek, S. Popescu, **M.J. Brewer** ², and R.N. Coulson. 2021. Preliminary approach in detecting cotton fleahopper induced damage via unmanned aerial systems and normalized difference vegetation indices. J. Cotton Sci., 25: 79-90. doi: 10.56454/UKZO6465

Wang, H.-H., W.E. Grant, T.E. Koralewski, **M.J. Brewer** ⁵, and N.C. Elliott 2021. Simulating migration of wind-borne pests: “Deconstructing” representation of the emigration process. Ecol. Modelling, 406, 109742. doi: 10.1016/j.ecolmodel.2021.109742

Elliott, N., K. Giles, **M. Brewer** ⁴, A. Szczepanec, A. Knutson, et al. 2021. Recruitment of natural enemies of the invasive sugarcane aphid vary spatially and temporally in sorghum fields in the southern Great Plains of the USA. Southwest. Entomol. 46: 357-372. doi: 10.3958/059.046.0207

Gordy, J.W. ⁺, N.J. Seiter, D.L. Kerns, F.P.F. Reay-Jones, R.D. Bowling, M.O. Way, and **M.J. Brewer** ². 2021. *Field assessment of aphid doubling time and yield of sorghum susceptible and partially resistant to sugarcane aphid (Hemiptera: Aphididae)*, J. Econ. Entomol. 114: 2076-2087. doi: 10.1093/jee/toab135

Gordy, J.W. ⁺, M.O. Way, R.D. Bowling, and **M.J. Brewer** ². 2021. Tally-based thresholds as an alternative to density-based thresholds for sugarcane aphid, *Melanaphis sacchari*, (Hemiptera: Aphididae) in grain sorghum. Crop Protect. doi: 10.1016/j.cropro.2021.105749

Moses-Gonzales, N., and **M.J. Brewer** ⁸. 2021. *A special collection: drones to improve insect pest management*. J. Econ. Entomol. 114. doi: 10.1093/jee/toab081

Esquivel, I.L. ⁺, K.A. Wright, M.D. Eubanks, J.D. Oswald, R.N. Coulson, **M.J. Brewer** ². 2021. Crop and semi-natural habitat configuration affects diversity and abundance of native bees (Hymenoptera: Anthophila) in a large-field cotton agroecosystem. Insects. 12, 601. doi: 10.3390/insects12070601

Esquivel, I.L. ⁺, A.F. Faris ⁺, and **M.J. Brewer** ⁴. 2021. Sugarcane aphid, *Melanaphis sacchari* (Hemiptera: Aphididae), abundance on sorghum and johnsongrass in a laboratory and field setting. Crop Protect. 148, 105715. doi 10.1016/j.cropro.2021.105715

Esquivel, I.L. ⁺, K.A. Parys, and **M.J. Brewer** ⁵. 2021. *Pollination by non-Apis bees and potential benefits in self-pollinating crops*. Annals Entomol. Soc. Amer. 114: 257-266. doi: 10.1093/aesa/saaa059

Koralewski, T.E., H.-H. Wang, W.E. Grant, **M.J. Brewer** ⁵, et al. 2021. Modeling the dispersal of wind-borne pests: sensitivity of infestation forecasts to uncertainty in parameterization of long-distance airborne dispersal. Agricul. Forest Meteorol. 301–302. doi: 10.1016/j.agrformet.2021.108357

Koralewski, T. E., H.-H. Wang, et al. including **M. Brewer** ⁵. 2020. Toward near-real-time forecasts of airborne crop pests: Aphid invasions of cereal grains in North America. Comp. Electron. Agric. 179, 105861, doi: 10.1016/j.compag.2020.105861

Medrano, E., T. Smith, J. Glover⁺, A. Bell, and **M. Brewer** ⁵. 2020. Complete genome sequence of *Serratia* sp. Strain CC119 associated with inner cotton boll rot via insect vector transmission. Microbiol. Resource Announce.: 9 (50) e01077-20; doi: 10.1128/MRA.01077-20

Wang, H.-H., W.E. Grant, et al. including **M.J. Brewer** ⁵. 2020. Where do all the aphids go? A series of thought experiments within the context of area-wide pest management. Agric. Systems. 185. doi: 10.1016/j.agsy.2020.102957

Pruter, L.S. ⁺, **M.J. Brewer** ², S.C. Murray, et al. 2020. *Yield, insect derived ear injury, and aflatoxin among developmental and commercial maize hybrids adapted to the North American subtropics*. J. Econ. Entomol. 113: 2950-2958. doi: 10.1093/jee/toaa207

- Esquivel, I.L.⁺, **M.J. Brewer**², and R.N. Coulson. 2020. A native bee, *Melissodes tepaneca* (Hymenoptera: Apidae), benefits cotton production. *Insects*. 11, 487. doi:10.3390/insects1108048
- Esquivel, I.L.⁺, **M.J. Brewer**², and R.N. Coulson. 2020. Field edge and field-to-field ecotone-type influences on two cotton herbivores: cotton fleahopper, *Pseudatomoscelis seriatus* (Hemiptera: Miridae), and verde plant bug, *Creontiades signatus* (Hemiptera: Miridae). *J. Econ. Entomol.* 113: 2213-2222.
- Park, J.⁺, J.A. Thomasson, Z. Gorman, **M.J. Brewer**², et al. 2020. Multivariate analysis of sorghum volatiles for the fast screening of sugarcane aphid infestation. *J. Asia-Pacific Entomol.* 23: 901-908.
- Deng, X., J.A. Thomasson, N.A. Pugh⁺, et al. including **M.J. Brewer**⁴. 2020. Estimating the severity of sugarcane aphid infestation on sorghum with machine vision. *Inter. J. Precis. Agric. Aviat.* 3: 89-96.
- Glover, J.P.⁺, and **M.J. Brewer**². 2020. Comparisons of cotton boll injury caused by four species of boll-feeding Insects (Hemiptera: Pentatomidae and Miridae). *J. Cotton Sci.* 24: 27-33.
- Pruter, L.S.⁺, M. Weaver, and **M.J. Brewer**⁸. 2020. Overview of risk factors and strategies for management of insect-derived ear injury and aflatoxin accumulation for maize grown in subtropical areas of North America. *J. Integ. Pest Manage.* 11:8. doi: 10.1093/jipm/pmaa005
- Parys, K.A., I. Esquivel⁺, K.W. Wright, T. Griswold, and **M.J. Brewer**⁵. 2020. Native pollinators (Hymenoptera: Apoidea) in cotton grown in the Gulf South, United States. *Agronomy* 10:69.
- Esquivel, J. F., J. P. Glover⁺, **M. J. Brewer**⁴, et al. 2020. Expansion of geographical range and plant associations of *Leptoglossus clypealis*: a potential invasive pest of sorghum along the Texas Gulf Coast. *Southwest. Entomol.* 45: 1-15. doi: 10.3958/059.045.0101
- Lindenmayer, J.C.⁺, K.L. Giles, N.C. Elliott, et al. including **M.J. Brewer**⁴. 2020. Development of binomial sequential sampling plans for sugarcane aphid *Melanaphis sacchari* Zehntner (Hemiptera: Aphididae) in commercial grain sorghum. *J. Econ. Entomol.* 113: 1990-1998. doi: 10.1093/jeet/toaa064
- Glover, J.P.⁺, E.G. Medrano, T. Isakeit, and **M.J. Brewer**². 2020. Transmission of cotton seed and boll rotting bacteria by the verde plant bug (Hemiptera: Miridae). *J. Econ. Entomol.* 113: 793-799.
- Koralewski, T. E., H.-H. Wang, et al. including **M. J. Brewer**⁵. 2020. Integrating models of atmospheric dispersion and crop-pest dynamics: linking detection of local aphid infestations to forecasts of region-wide invasion of cereal crops. *Ann. Entomol. Soc. Amer.* 113: 79-87. doi:10.1093/aesa/saz047
- Brewer, M. J.**¹, L. Deleon⁺, and I. L. Esquivel⁺. 2020. Geographic information system (GIS)-based mapping and spatial analyses applied to risk assessment and resource allocation for boll weevil (Coleoptera: Curculionidae) detection. *Ann. Entomol. Soc. Amer.* 113: 71-78. doi: 10.1093/aesa/saz048

Selected articles prior to 2020 with focus on pest suppression in large-scale agroecosystems:

- Maxson, E.L.⁺, **M.J. Brewer**², W.L. Rooney, and J.B. Woolley. Species composition and abundance of the natural enemies of sugarcane aphid, *Melanaphis sacchari* (Zehntner) (Hemiptera: Aphididae), on sorghum in Texas. *Proc. Wash. Entomol. Soc.* 121:657-680. doi: 10.4289/0013-8797.121.4.657
- Elliott, N.C., K.L. Giles, **M.J. Brewer**⁵, and C.N. Jessie. 2018. Early season parasitism of cereal aphids in wheat fields and field borders. *Southwest. Entomol.* 44: 11-19. doi: 10.3958/059.044.0102
- Wang, H.-H., W.E. Grant, et al. including **M.J. Brewer**⁵. 2019. Integrated modelling of the life cycle and aeroecology of wind-borne pests in temporally-variable spatially-heterogeneous environment. *Ecol. Modelling* 399: 23-38. doi: 10.1016/j.ecolmodel.2019.02.014
- Glover, J.P.⁺, **M.J. Brewer**², M.N. Parajulee, et al. 2019. Plant response and economic injury levels for a boll-feeding sucking bug complex on cotton. *J. Econ. Entomol.* 112:1227-1236. doi:10.1093/jeet/toz018
- Brewer, M.J.**⁸, F.B. Peairs, and N.C. Elliott. 2019. Invasive cereal aphids of North America: Ecology and pest management. *Ann. Rev. Entomol.* 64: 73-93. doi: 10.1146/annurev-ento-011118-111838
- Backoulou, G.F., N.C. Elliott, L.L. Giles, **M.J. Brewer**⁴, et al. 2018. Detecting change in a sorghum field infested by sugarcane aphid. *Southwest. Entomol.* 43: 823-832. doi: 10.3958/059.043.0401
- Pugh, N.A.⁺ et al. including **M.J. Brewer**³. 2018. Temporal estimates of crop growth in sorghum and maize breeding enabled by unmanned aerial systems. *Plant Phenome J.* 1:170006.

Elliott, N.C., **M.J. Brewer**⁵, and K.L. Giles. 2018. Landscape context affects aphid parasitism by *Lysiphlebus testaceipes* in wheat fields. *Environ. Entomol.* 47: 803-811. doi: 10.1093/ee/nvy035

Backoulou, G.F., N.C. Elliott, L.L. Giles, T.M. Alves⁺, **M.J. Brewer**⁴, et al. 2018. Using multispectral imagery to map spatially variable sugarcane aphid infestations in sorghum. *Southwest. Entomol.* 43: 37-44. doi: 10.3958/059.043.0122

Chu, T., M. J. Starek, **M. J. Brewer**³, S.C. Murray, and L. S. Pruter⁺. 2018. Characterizing canopy height with UAS structure-from-motion photogrammetry—results analysis over multiple factors in a maize field trial. *Remote Sensing Letters* 9: 753-762. doi: 10.1080/2150704X.2018.1475771

Karp, D.S., et al. including **M. Brewer**⁴. 2018. Crop pests and predators exhibit inconsistent responses to surrounding landscape composition. *Proc. Nat. Acad. Sci.* 115 (33) E7863-E7870.

Harris-Shultz, K.R., **M.J. Brewer**⁴, P.A. Wadl, X. Ni, and H. Wang. 2018. A sugarcane aphid ‘super-clone’ predominates on sorghum and johnsongrass for four US States. *Crop Sci.* 58 : 2533-2541.

Elliott, N., **M. Brewer**³, N. Seiter, et al. 2017. Sugarcane aphid spatial distribution in grain sorghum fields. *Southwest. Entomol.* 42: 27-35. doi: 10.3958/059.042.0103

Stanton, C.⁺, M. J. Starek, N. Elliott, **M. Brewer**², et al. 2017. Unmanned aircraft system-derived crop height and normalized difference vegetation index metrics for sorghum yield and aphid stress assessment. *J. Applied Remote Sensing* 11: 026035. doi: 10.1117/1.JRS.11.026035

Weaver, M.A., H.K. Abbas, **M.J. Brewer**³, L.S. Pruter⁺, et al. 2017. Integration of biological control and transgenic insect protection for mitigation of aflatoxin in corn. *Crop Protect.* 98:108-115.

Harris-Shultz, K., X. Ni, et al. including **M.J. Brewer**³. 2017. Microsatellite markers reveal; a predominant sugarcane aphid (Homoptera: Aphididae) clone is found on sorghum in seven states and one territory of the USA. *Crop Sci.* 57:2064-2072. doi: 10.2135/cropsci2016.12.1010

Deleon, L.⁺, **M. J. Brewer**⁷, I. L. Esquivel⁺, and J. Halcomb. 2017. Use of a geographic information system to produce pest monitoring maps for south Texas cotton and sorghum land managers. *Crop Protect.* 101: 50-57. doi: 10.1016/j.cropro.2017.07.016

Brewer, M.J.¹, J.W. Gordy⁺, D.L. Kerns et al. 2017. Sugarcane aphid population growth, plant injury, and natural enemies on selected grain sorghum hybrids in Texas and Louisiana. *J. Econ. Entomol.* 110: 2109-2118. doi: 10.1093/jee/tox204

Chu, T., M. J. Starek, et al. including **M. J. Brewer**³. 2017. Assessing crop lodging over an experimental maize (*Zea mays* L.) field using UAS images. *Remote Sensing* 9: 923. doi: 10.3390/rs9090923

Bowling, R., **M.J. Brewer**⁵, D.L. Kerns, et al. 2016. Sugarcane aphid (Homoptera: Aphididae): a new pest on sorghum in North America. *J. Integr. Pest Manage.* 7: 12. doi.org/10.1093/jipm/pmw011

Brewer, M.J.¹, and P.B. Goodell. 2012. Approaches and incentives to implement integrated pest management that address regional and environmental issues. *Ann. Rev. Entomol.* 57: 41-59.

Brewer, M.J.¹, and T. Noma⁺. 2010. Habitat affinity of resident natural enemies of the invasive *Aphis glycines* on soybean, with comments on biological control. *J. Econ. Entomol.* 103: 583-596.

Brewer, M.J.¹, T. Noma⁺, N.C. Elliott, et al. 2008. A landscape view of cereal aphid parasitoid dynamics reveals sensitivity to farm- and region-scale vegetation. *Eur. J. Entomol.* 105: 503-511.

Brewer, M.J.¹ and N.C. Elliott. 2004. Biological control of cereal aphids in North America and mediating effects of host plant and habitat manipulations. *Ann. Rev. Entomol.* 49: 219-242.

Complementary Outreach/Extension publications

International: Educational materials in Spanish, Sugarcane Aphid on Sorghum. Print (3), video (2).

Faris, A.M.⁺, and **M. J. Brewer**⁶. 2019. Natural enemies of the sugarcane aphid on sorghum in south Texas, 6 pp. ENTO-091. Texas A&M AgriLife Ext., College Station.

Vyavhare, S.S., D. Kerns, C. Allen, R. Bowling, **M. Brewer**⁸, and M. Parajulee. 2018. Managing cotton insects in Texas, 38 pp. ENTO-075 Texas A&M AgriLife Ext., College Station.

Bowling, R., J. Thomas, and **M. Brewer**. 2017. Common aphid identification in Texas grains, 2 pp.

- ENTO-070. Texas A&M AgriLife Extension, College Station.
- Bowling, R, **M. Brewer**, A. Knutson, S. Biles, M. Way, and D. Sekula-Ortiz. 2016. Scouting sugarcane aphids in south, central, and west Texas, 2 pp. ENTO-043/ENTO-043S (Spanish), Texas A&M.
- Knutson, A., R. Bowling, **M. Brewer**, E. Bynum, and P. Porter, 2016. The sugarcane aphid: management guidelines for grain and forage sorghum in Texas, 6 pp. ENTO-035. Texas A&M.
- Brewer, M.J.**, R. Bowling, J.P. Michaud, and A.L. Jacobson. 2016. Sugarcane aphid: A new sorghum pest in North America, 2 pp. ENTO-056. Texas A&M AgriLife Extension, College.
- Bowling, R, **M. Brewer**³, A. Knutson, M. Way, P. Porter, et al. 2015. Scouting sugarcane aphids. ENTO-043, Texas A&M AgriLife Extension Service, College Station, TX.

Oral Presentations and Posters

Symposium presentations at ESA since 2020, + indicates student or post-doc:

- Brewer, M.J.** 2025. Coastal wetlands are indicators of infestation of one mirid bug but not another in cotton: Value and limitations of pest risk mapping. ESA Southwestern Branch Annual Meeting (oral).
- Giles, K., N. Vasquez, N. Elliott, and **M. Brewer**. 2025. Barriers to deploying natural enemy thresholds in sorghum. ESA Southwestern Branch Annual Meeting (oral).
- Hudson, M., and **M.J. Brewer**. 2024. Good reviews and how reviewing helps you. ESA Southwestern Branch Annual Meeting (oral).
- Brewer, M.J.**, A.M. Faris, N.C. Elliott, and K.L. Giles. 2023. Estimating innate aphid suppression using monitoring data coupled with experimental data in the sorghum agroecosystem: supporting regionally-tuned sustainable aphid management. ESA Southwestern Branch Annual Meeting (oral).
- Elliott, N.C., et al. including **Brewer, M.J.** 2023. Toward ecologically based aphid areawide pest management in Southern Plains field crops. ESA Southwestern Branch Annual Meeting (oral).
- Bradicich, P.A. +, **M.J. Brewer**, A.M. Faris, and N.C. Elliott. 2023. Innate sugarcane aphid (*M. sorghi*) suppression by its natural enemies on sorghum: Why sorghum risk is lower than expected in south Texas. ESA Southwestern Branch Annual Meeting (oral).
- Giles, K., **M. Brewer**, N. Elliott, H. Butler, and N. Rudin. 2022. Latitudes and lethal temperatures in the southern plains: effects on cereal aphid biological control. ESA Southeastern Branch (oral).
- Brewer, M.**, N. Elliott. I.L. Esquivel +, A. Jacobson, A. Szczepaniec, et al, 2021. Natural enemy response to the invasive sugarcane aphid across the sorghum agroecosystem of North America: a four-region comparison. ESA Annual Meeting (oral).
- Keena, M.A., **M. Brewer**, T. Poland, F. Zalom, and N-Y Su. 2020-21 virtual, 2022-25. Environmental Entomology and Journal of Economic Entomology awards and overview. ESA Annual Meeting (oral).
- Brewer, M.**, N. Elliott, I. Esquivel +, A. Jacobson, A. Szczepaniec, et al. 2021. Distribution, abundance, and diversity of natural enemies of sugarcane aphid following its invasion onto sorghum, with notes on agro-landscape and weather correlates. ESA Southeastern Branch Annual Meeting (virtual).
- Giles, K., N. Elliott, **M. Brewer** et al. 2021. Plant resistance and biological control: Disruption of annual range expansion to reduce likelihood of sugarcane aphid outbreaks in US sorghum. ESA Southeastern Branch Annual Meeting (virtual).
- Brewer, M.J.**, L. Pruter +, M. Weaver, and J. Gander. 2020. Connecting aflatoxin risk to *Helicoverpa zea* control on Vip/Cry-Bt corn and other Bt and non-Bt corn hybrids. ESA Annual Meeting. (virtual).

Selected other oral/poster ESA presentations since 2020, + indicates student:

- Lam, I. +, P.A. Bradicich+, and **M.J. Brewer**. 2025. Cotton ecotone edge effects on arthropod biodiversity with relevance to cotton pest management. ESA Southwestern Branch Meeting (poster).
- Bradicich, P.A. +, I. Lam. +, and **M.J. Brewer**. 2025. Adjacent habitat type affects abundances of natural enemies of the sorghum aphid (*Melanaphis sorghi*) in grain sorghum. ESA Southwestern Branch Annual Meeting (poster).

Vasquez, N., K. Giles, N. Elliott, **M. Brewer**, and C. Goad. 2024. Future development of sampling protocols for sorghum aphid (*Melanaphis sorghi*) and natural enemies. ESA Annual Meeting (poster).

Brewer, M.J. 2024. Are salt and fresh waterbodies indicators of early season risk to cotton? A tale of two mirid pests. ESA Annual Meeting (poster).

Lam, I. ⁺, P.A. Bradicich⁺, and **M.J. Brewer**. 2024. Ecotone edge effects on arthropod biodiversity and aphid management in Texas sorghum. ESA Annual Meeting (2nd place oral student competition).

Bradicich, P.A. ⁺, and **M.J. Brewer**. 2024. Effect of timing of natural enemy arrival on suppression of the sorghum aphid, *Melanaphis sorghi*. ESA Annual Meeting (oral).

Brewer, M.J., P.A. Bradicich, and M.A. Weaver. 2024. Aflatoxin risk to corn in south Texas conditioned by transgenic insect protection. ESA Southwestern Branch Annual Meeting (poster).

Lam, I. ⁺, P.A. Bradicich⁺, and **M.J. Brewer**. 2024. Arthropod biodiversity across Texas sorghum field ecotones. ESA Southwestern Branch Annual Meeting (oral).

Brewer, M.J., N. Elliott, P. Bradicich⁺, and A. Faris. 2023. Shifts in natural enemy abundance and diversity indicate increased suppression of the sorghum aphid. ESA Annual Meeting (poster).

Alwedyan, M. ⁺, and **M. J. Brewer**. 2023. Does feeding by cotton fleahopper, *Pseudatomoscelis seriatus*, delay cotton maturity? ESA Southwestern Branch Annual Meeting (oral).

Rudin, N., K.L. Giles, J.C. Lindenmayer, N.C. Elliott, and **M.J. Brewer**. 2023. Sampling for aphid natural enemies in grain sorghum. ESA Southwestern Branch Meeting (oral).

Bradicich, P.A. ⁺, **M.J. Brewer**. 2023. Sorghum aphid (*Melanaphis sorghi*) densities decrease exponentially from field edge to interior. ESA Southwestern Branch Annual Meeting (oral).

Giles, K.L., N.C. Elliott, **M.J. Brewer**, H.E. Butler and N. Rudin. 2022. Co-occurrence of sugarcane aphid parasitoid competitors in time and space: summary of multi-year regional populations dynamics data. Southwestern Branch ESA Annual Meeting (poster).

Elkins, B. ⁺, M.D. Eubanks, and **M. Brewer**. 2021. Trophic Interactions of *Melanaphis sorghi*, an invasive aphid on cultivated sorghum, with co-occurring aphid, predator, and parasitoid. ESA Annual Meeting (2nd place oral student competition).

Esquivel, I.L. ⁺, A. Faris ⁺, and **M. Brewer**. 2021. Sugarcane aphid (*Melanaphis sacchari* (Hemiptera: Aphididae)) abundance on sorghum and Johnsongrass. ESA Annual Meeting (oral).

Esquivel, I.L. ⁺, K. Parys, K. Wright, **M.J. Brewer**, and R.N. Coulson. 2020. Reciprocal benefits to cotton and bee pollinators in the cotton agroecosystem. ESA NCB/SWB Joint Meeting (3rd place poster).

Seminars since 2017, ⁺ indicates student or post-doc:

Brewer, M., and A. Faris⁺. 2021. Natural enemy response to a pest invasion at a continent-scale agroecosystem: the case of sugarcane aphid on sorghum. Dept. Entomology seminar, Texas A&M.

Brewer, M.J. 2019. Response to an invasive aphid pest of sorghum at a near continent scale. Federal Institute Golano, Campus Rio Verde, Brazil.

Brewer, M.J. 2018. Toward contemporary sugarcane aphid management, based on integrated tactics. Department of Entomology, Texas A&M.

Brewer, M.J. 2018. Insect injury, yield, and aflatoxin taken from corn of diverse genetic backgrounds. Texas A&M R&E Center, Dallas.

Esquivel, I. ⁺, and **M. Brewer**. 2017. Spatial ecology of cotton pests: relevance of edge, ecotone, biodiversity, and deliverables for managers. USDA ARS, Stoneville, MS.

Brewer, M. 2017. Toward contemporary sugarcane aphid management, based on integrated tactics and monitoring. Department Entomology and Plant Pathology, Oklahoma State.

Graduate Students and Postdoctoral Associates Trained

Graduate Students: 13 M.S. chair, 2 M.S. as co-chair, 12 Ph.D. chair, Current 2 Ph.D. and 1 M.S.

Graduate Student Committees as member: 27.

Undergraduate Student Interns and Scholars: 24. Accomplishments include 5 journal articles.

Post-doctoral training: 4 post-doctoral research associates; 3 visiting scholars (Sabbatical guest).

Employment of students and post-doctoral research associates (since 2020)

Assistant Instructional Professor, Texas A&M; Assistant Professor (Extension), U. Idaho.

Assistant Professor, Federal Institute Golano, Campus Rio Verde, Brazil.

Research and technical development. Bayer CropScience, Syngenta Crop Protection.

Texas Dep. Agriculture, Regulatory Branch; USDA ARS Research Entomologist.

Assistant Professor, Entomology, U. Florida; Assistant Professor, Entomology, Oklahoma State

Research Support

Dr. Brewer has secured funding from over 200 awards. Dr. Brewer's program has internal support from initiatives and student assistance (~20 %), and from external grants and contracts (~80 %).

Overview, Competitive funding: Career total: 117 funded, 63 as PI and 54 as co-I.

Career cumulative, \$ 3,885,455 directed to program, as part of awards totaling \$ 10,874,623.

Overview of non-competitive funding: Career total: 91 agreements, 80 as PI and 11 as co-I.

Career cumulative, \$ 1,722,201 directed to program, as part of awards totaling \$1,843,365.

Selective Listing of Grants with focus on pest suppression in large-scale agroecosystems: ¹ led investigation, primary role in writing, experiments, ² supporting student, ³ secondary role in writing, primary role in conducted an experiment, ⁴ secondary role in writing/experiments or outreach, ⁵ secondary role in writing, experiments.

Brewer, M. ¹, Ludwick, D., and D. Sekula. 2022- 2025. Management of sucking bugs on cotton. Cotton Inc. (multiple awards, \$78,782, Brewer \$44,302).

Brewer, M. ¹, and B. Elkins 2022-2023. Integration of natural enemies into sugarcane aphid IPM in sorghum using spatial modeling to forecast risk and guide use of IPM tools. USDA NIFA Southern Integrated Pest Management Center (\$30,000).

Giles, K., **M. Brewer** ³, and N. Elliott. 2021-2023. Validation and delivery of sugarcane aphid + natural enemy threshold sampling plans in grain sorghum. USDA NIFA Crop protection and pest management CGP, Applied Research and Development (\$323,170, Brewer \$83,743).

Brewer, M. ¹, M. Parajulee, S. Biles, R. Bowling, et al. (as lead and co-I). 2013-2022. Integrated pest management of cotton insects and vectors of cotton boll rot. Cotton Inc. (\$589,190, Brewer \$164,956).

Esquivel, I. ⁺, and **M. Brewer** ². 2019-2020. Reciprocal benefits to cotton yield and bee pollinators in a cotton/sorghum agroecosystem. USDA Southern IPM Center (\$30,000).

Brewer, M. ² 2016-2022. Areawide pest management of the invasive sugarcane aphid in grain sorghum, Texas, areawide pest management. USDA ARS Areawide IPM (\$710,000).

Brewer, M. ¹, R. Bowling, et al. 2014-2021. Sugarcane aphid: control, decision-making, evaluation, outreach education. United Sorghum/Texas Grain Sorghum Board (\$169,247, Brewer \$142,430).

Brewer, M. ¹, D. Kerns, G. Peterson, et al. 2014-2017. An IPM response to the invasive sugarcane aphid on sorghum: developing and integrating thresholds, plant resistance, and biocontrol tactics. USDA NIFA Crop protection and pest management, Applied Research and Dev. (\$250,000, Brewer \$58,591).

Murray, S., W. Xu, **M. Brewer** ³, T. Isakeit, P. Williams, and M. Warburton. 2014-2018. Reducing pre-harvest losses from aflatoxin in maize production through integrated breeding and pest management strategies. USDA NIFA, AFRI Food Security Program (\$1,425,536, Brewer \$312,000).

Brewer, M., (A. Helms added in 2022) 2014-2022. Partnership in education: addressing the need for cotton entomologists. Core Program, Cotton Inc. (\$151,000, Brewer \$145,000).

Brewer, M. ¹, M. Way, et al. 2014. Initiation of an integrated regional response to an invasive aphid pest of sorghum. Southern Region IPM Enhancement Grant (with outreach) (\$30,000, Brewer \$8,190).

Brewer, M. ¹, and M. Way. 2013-2014. Occurrence, distribution, damage potential, and management of the sugarcane aphid. Texas Grain Sorghum Producers (\$14,000, Brewer \$ 7,000).

Brewer, M. 2012-2018. Internship support, TAMU Kingsville (in-kind support of \$69,000).

Teaching Courses

Directed studies courses (since 2013): 2.

Writing a scientific review. Taught for four graduate students (2 credits, 2016).

Ecology and Management of Sugarcane aphid on sorghum. Taught for five graduate students who are using sugarcane aphid in their research (2 credits, 2017-2019), offered for formal credit or as part of research hours at two Universities.

Other Teaching Activities

Guest classroom lectures: 26 related to IPM given at TAMU College Station and TAMU Kingsville.

Undergraduate Experiential Learning: 21 Internship projects at TAMU, 17 since 2013 from 4 Colleges.

Other short courses developed prior to 2013:

Current topics in entomology: advanced agricultural entomology (ENTO 5689, 2 credits graduate, 2000-2002, taught twice), University of Wyoming, approximate 6 students per term.

Insect-plant interactions (ENTO 4685/5685, 2 credits upper division/graduate level, offered biennially, 1996-2000, taught three times), University of Wyoming. Approximately 10 students per term.

Professional Improvement Grants: International travel award to improve student experiential learning, visit to agricultural university in Brazil to explore undergraduate and graduate student exchanges. Neuhaus-Shepardson Faculty Development Award for Teaching Improvement. 2018-2019 (\$2,000).

Seed grant (sabbatical support) for visitations to University of Wageningen, the Netherlands, and USDA ARS Stillwater, OK to conduct research and establish collaborations on insect-plant-natural enemy interaction and areawide pest management of invasive species.

Mentoring Evaluation. My mentoring is oriented toward undergraduate and graduate student experiential learning, consistent with my appointment expectation of 15% contribution to teaching inclusive of graduate and post-doc training. Therefore, evaluation primarily takes the form of student accomplishments. Graduate and undergraduate students I have mentored have gained recognition in the form of awards (8 meeting presentation awards, 3 professional awards including ESA's Larry Lawson Graduate Student Award in Applied Entomology and 2 students receiving the annual Ph.D. award given by the Texas Plant Protection Assn), scholarships (8 scholarships including two 3-yr TAMU Foundation. one AgriLife Research-sponsored research assistantship, and one AgriLife Research Ph.D. tuition/fees program for employees), and employment in industry, a state regulatory agency, and academics.

Minicourses for outreach audience prior to 2013:

Insects on the farm and ranch (ENTO 2001), 1 credit undergraduate, team-taught, University of Wyoming Extended Studies program, 1993-1998), ca. 10 students per term.

Insects in the urban environment (ENTO 2000, 1 credit undergraduate, team-taught, University of Wyoming Extended Studies program, 1993-1998), ca. 12 students per term.

Scholarships, Fellowships, and Awards to Mentored Students and Post-docs

I have been most pleased with academic and research accomplishments of graduate students in my program. They have received awards (8 scholarships including two 3-yr TAMU/AgriLife Research-sponsored research assistantships, one AgriLife Research Employee Professional Development Award, one AgriLife Research Strategic Initiative Award, 11 meeting presentation awards, 2 professional awards including ESA's Larry Lawson Graduate Student Award in Applied Entomology and 2 students receiving the annual Ph.D. award given by the Texas Plant Protection Assn). They have been well published (see p. 12) and many have participated in program outreach and formal Extension activities. They continue on to employment in industry (research/development), a state regulatory agency, and academics (two assistant professorships).

M.S. student. Graduate Research Assistant award, Texas A&M AgriLife Research Capacity Fund (2024-2025), mentor M. Brewer.

Ph.D. student/employee. Doctoral Education Assistance Program, Texas A&M AgriLife Research (2023-current), mentor M. Brewer.

Ph.D. student. Everett Slayer Cotton Fellowship (2014-2017), mentors M. Brewer and R. Coulson.

M.S. student. Excellence Fellowship, College of Agriculture and Life Sciences (2015-2016), mentors J. Woolley and M. Brewer

M.S. student. Excellence Fellowship, College of Agriculture and Life Sciences (2015-2016), mentors R. Bowling and M. Brewer

Ph.D. student. Texas Plant Protection Conference, Bryan, TX. 1st place award in poster competition. 2015.

Undergraduate student. Del Mar Community College Board of Trustees Recognition. 2016.

Ph.D. student, Beltwide Cotton Conf., New Orleans. 1st place Ph.D. oral competition. 2016.

Ph.D. student. Entomological Society of America, Southwest Branch Meeting. Feb 24, Tyler, TX 2nd place Ph.D. poster competition, 2016

M.S. student, Entomological Society of America, Southwest Branch Meeting. Feb 24, Tyler, TX 2nd place M.S. poster competition, 2016

Ph.D. student. Texas Plant Protection Conference, Bryan, TX. 1st place award in poster competition. 2016.

Post-doc. SPIE—Autonomous Air and Ground Sensing Systems, Agriculture Section, Best paper award, 2017 (lead mentor is M. Starek, I am co-author).

Ph.D. student. Southwest Branch Ento. Soc. Amer. annual meeting, Austin, TX. 1st place award in poster competition. 2017.

Ph.D. student. Larry Lawson Graduate Student Award for Leadership in Applied Entomology. Entomological Society of America. 2017.

Ph.D. student. Ph.D Annual Graduate Student Award. Texas Plant Protection Assoc. 2017.

Ph.D. student, Beltwide Cotton Conf., New Orleans. 1st place Ph.D. oral competition. 2018.

Ph.D. student. Texas A&M AgriLife Research Strategic Initiative Assistantship (2018-2021), mentors M. Brewer and M. Eubanks

Ph.D. student. J.H. Benedict Memorial Graduate Student Scholarship (2018-2019), mentors M. Brewer and R. Coulson.

Ph.D. student. Ph.D, Annual Graduate Student Award. Texas Plant Protection Assoc. 2018.

Ph.D. student. Entomological Society of America Annual Meeting Student Oral Presentation (2nd place biocontrol, PIE student competition), mentors M. Brewer and M. Eubanks.

Michael Brewer, Curriculum Vita

Ph.D. student Texas A&M AgriLife Research Strategic Initiative Assistantship (2018-2021), mentors M. Brewer and M. Eubanks.

Ph.D. student. 2020. Ecological Integration Symposium (Texas A&M) Student Poster Presentation (1st place), mentors M. Brewer and M. Eubanks.

Ph.D. student. 2020. Entomol. Soc. Amer. NCB/SWB Joint Meeting. Student Poster Presentation (3rd place), mentors M. Brewer and R. Coulson.

I acknowledge that this CV is the most current and is correct as of August, 2025.

A handwritten signature in cursive script that reads "Michael Brewer".

Michael Brewer