

EMILY A. DUSTMAN

SCIENTIST, ARTIST, & EDUCATOR

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Throughout her career, Emily has focused on developing collaborative and strategic approaches to solving problems in science, education, and communication. She has spent a considerable amount of time developing and implementing programs and managing partnerships with corporations, foundations, nonprofits, universities, and government agencies.

Most recently, Emily served as Director of Science Education & Communication on the Strategy Team at the United Soybean Board, where she advanced special projects in research, education, and promotion nationally and internationally. At the United Soybean Board, she informed program research strategy for their investment portfolio, totaling \$150 million in funded projects annually. She proposed and launched innovation challenges and hackathons, first-ever events for the agricultural industry. Emily has also made significant advancements in Diversity, Equity, and Inclusion (DEI), firmly believing that DEI are fundamental principles of a sustainable community and necessary for advancement.

Previously, Emily served as Director of Communications for the College of Arts and Sciences at Southern Illinois University-Edwardsville and professor and STEM educator at Harris Stowe State University, a historically black public university. For the past ten years, she has served as a professor and curriculum developer at various community colleges and universities around the country. Through grants awarded by the National Science Foundation (NSF), she has focused on increasing retention in the areas of science, technology, engineering, and mathematics (STEM). She has also written and published on behalf of topics in agriculture and has transformed numerous research ideas into projects for herself as well as for CEOs, supervisors, and contractors, garnering over \$1,070,000 in funding for 2022. She instructs Sci-Art workshops and teaches regularly at botanical gardens around the country. Her educational background includes a B.S. in ecology, evolution, and environment at Southern Illinois University-Edwardsville, an M.S. in biology from Murray State University, and a post-graduate degree in natural science illustration from Rhode Island School of Design.

Emily has remained an active member of her profession, serving on the review board for the interdisciplinary journal on the interactions between agroecosystems and the environment (*Agriculture, Ecosystems, & Environment*), publishing research in various journals regarding species of conservation concern, launching new national educational and training programs, and garnering connections from around the world to inspire action around topics like climate change through her art + science publication, *E-Squared Magazine*. Outside of her work, she spends much of her free time in the outdoors, where she enjoys hiking, biking, gardening, paddling rivers, and listening to nu jazz.

SUMMARY OF EXPERTISE

Expertise in strategic planning to advance organizational goals in critical priority areas. Advances special projects in education and communication through developing and implementing programs and managing partnerships. Highly skilled at conceptualizing, producing, and disseminating information in creative ways to improve knowledge, understanding, and engagement among key audiences to achieve success and impact change. Capable of managing and motivating teams to achieve desired outcomes. Excellent written communications, interpersonal, and organizational skills. Certified Office 365 Champion and proficient in Adobe Creative Suite, G-Suite, and MS Office, among other platforms.

SUMMARY OF QUALIFICATIONS

- Degrees in ecology, biology, and scientific illustration.
- Numerous years of field research experience pertaining to ecology, biodiversity, and conservation-related issues with publications in multiple peer-reviewed journals.
- Proficient in data-collection, administering surveys, and analyzing metrics to solve complex problems with a solution-based mentality to achieve desired outcomes.
- Advocate for systems thinking to identify barriers and opportunities to leverage intervention strategies that facilitate change.
- Adept at developing and executing strategic plans that are informed by the latest science and pedagogical techniques.
- Ability to work independently as well as work collaboratively on a team to deliver strategic outcomes.
- Self-motivated and creative, successfully implementing multi-disciplinary projects and initiatives.
- Proficient in performing literature reviews, meta-analyses, and grant writing, proposing and successfully acquiring funding for projects for which outcomes are delivered to national and international audiences.
- Strong ability to conceptualize, produce, and disseminate content that improves knowledge, understanding, and engagement on complex issues for critical/influential audiences.
- Wide ranging experience in scientific writing, editing, and publishing content that is publicized internationally and archived at reputable institutions.
- Ability to build trust and establish new partnerships while strengthening existing ones; experience working with a diverse range of professionals and stakeholders from around the world.
- Exceptional interpersonal skills with an ability to direct and manage a team, in an office-setting or out in the field.

EDUCATION

Postgraduate Certificate / Natural Science Illustration

Rhode Island School of Design, 2013 – 2015

Master of Science Degree / Biology

Murray State University, 2007 – 2010

Bachelor of Science Degree / Ecology, Evolution, Environment

Southern Illinois University-Edwardsville, 2003 – 2007

WORK HISTORY

United Soybean Board (USB) / *Director of Science Education & Communication, Strategy Team, Nov. 2020 – June 2022*

In 1991, Congress authorized the soybean research and promotion (R&P) program which operates as the United Soybean Board. The program's goal is to maintain and expand domestic and foreign markets and uses for soybeans and soybean products. As stipulated in the federal Soybean Promotion, Research and Consumer Information Act, the USDA Agricultural Marketing Service has oversight responsibilities for the USB and the soy checkoff. Through the checkoff, the **USB funds ~100-\$150 million in scientific research annually.**

- Developed and managed all scientific-related content/strategy for the United Soybean Board, working closely with staff and contractors to share the USB's vision and mission.
- Conceptualized, produced, and disseminated informative and creative content to improve knowledge, understanding, and engagement on complex issues among key audiences (e.g., the nation, farmers, etc.).
- Analyzed available evidence and distilled complex concepts into clear, concise, and compelling education and communication materials for various audiences.
- Established new partnerships while strengthening existing relationships. Delivered science education and communication direction to contractors and partners.

United Soybean Board (USB) / *Director of Science Communication, April 2020 – June 2022*

- Lead a multidisciplinary team on creative insight, technical expertise, and strategic communications resulting in evidence-based marketing and communication approaches for broad audiences, including direct development and oversight of high quality written and visual content for a range of marketing and communication purposes.
- Developed and executed creative communication collateral in collaboration with multidisciplinary project teams.
- Disseminated scientific information in such a way that improves knowledge and understanding of complex information, increasing overall public appreciation and engagement.
- Conceptualized science communication efforts, developing evidence-based communications to share relevant information, circumvent problematic cognitive heuristics, and establish new relationships while enhancing those that are current.
- Worked in conjunction with the Director of PR and Issues Management, the Director of Investor and Industry Communications, and the Senior Director of Content Management and Brand Stewardship on special projects.
- Established new partnerships while strengthening existing relationships.

Southern Illinois University Edwardsville / *Director of Communications, 2018-2019*
Communications for the College of Arts & Sciences (CAS)

Lead Writer & Publisher for This Month in CAS / www.thismonthincas.com

- Developed and managed all communications for the College working closely with the Dean, the College leadership team, and faculty and staff to create and share the College's desired image and vision.
- Provided strategic leadership for all college communications efforts and ensured creative and consistent communication throughout the College. Management & direction of all social media accounts.

Various Colleges & Community Colleges | *Course Coordinator, Curriculum Developer, & Lecturer, 8/2010 – 2019.*

- [Various Courses] Responsible for development, innovation, and operation of courses (STEAM-oriented). Developed & scheduled consultations with instructors about curriculum & implementation.
- **Instructed various courses: Introductory Biology; Biology with Emphasis on Anatomy; Environmental Science; Organismal Biology; Biology in the Modern World; Cellular Biology; Advanced Cellular Biology; Seminar in STEM; Biology**

Survey; Human Disease, Immunology.

E-Squared Magazine / *Founder & Director*, 2016 – present

International Art + Science print-magazine presenting innovation projects from around the world / www.esquaredmagazine.com

- 6+ years of experience in publishing, marketing, and communicating content to an international audience.
- Managed multiple projects and a team of writers.
- Generated guidelines and maintained a schedule to meet deadlines.
- Developed and managed website / online presence.
- Maintained brand image across all platforms.
- **Archived at Stanford University & University of Pittsburgh**; sold at Brown University bookstore, Bluestockings Bookstore NY, among others.

RESEARCH & PROJECTS

Bayer, University of Georgia, MOST Policy Initiative, & United Soybean Board

Research on Topics in DEI, 2021-2022

- I assembled a multi-sectoral, interdisciplinary team to perform Phase 1 research to: identify, understand, and bring together underrepresented scientists and leaders within the farming community to build a network that has the strength to promote diverse voices in the climate change conversation that results in outcomes that can eventually inform DEI-appropriate education and policy.
 - ***Part 1: Empowering Women in Climate Change Conversations: Exploring Female Scientists' Voices***
 - ***Part 2: Engaging Minority Voices in Climate Change Conversations***

United Soybean Board (USB)

Launch Initiative: Make the Most of Meal, 2022

- \$1 million dollar initiative proposed to target and discover future market opportunities. Presented and approved by our board of directors (73 members in total).
- Funding provided to the Yield Lab and the Pelling Lab. This launch initiative will improve mature uses of soybean meal and find new and expanded uses for to create durable, longer-term demand through increasing soybean meal inclusion rates, expanding use into new markets, and through discovering and applying new uses for soy.

Submission Guidelines & Online Portal, 2021

- Developed a brand-new framework for the USB's annual request for concepts (RFCs), a global research call for proposals amounting to >500 projects submitted and ~\$100-150 million dollars funded annually. Created clear and concise submission guidelines for researchers/entities and performed website development for a new, online portal for submissions.

Intern Program with Washington University, 2021

- Proposed and developed a *first ever* internship program for the United Soybean Board. Responsible for interviewing applicants, hiring, onboarding, and overseeing the student, working one on one with them for the duration of the program.

Addressing the Gap from Want to Change, 2021-2022

- Proposed and initiated the research project to determine the enablers and barriers to adoption of sustainable best management practices in order to better address future, complex issues on farm. Phase 1: The Delphi Survey, *complete*; Phase 2: Focus Groups, *complete*; Phase 3: Quantitative Survey & Analysis.

Made to Stick: Bridging the Communication Chasm, 2021-2022

- Proposed and launched a science communication training program for USB and its contractors to maximize the value of the interchange between facilitators and producers (2021-present).

Soy Innovation Challenge. 2020.

- Reviewed and judged over review of over 89 worldwide applicants in partnership with the Yield Lab Institute, Syngenta, and Amazon Web Services.
- Finalists were selected on their ability to develop solutions, from land stewardship and greenhouse gas monitoring to blockchain and traceability advancements, as well as detailed nutritional information, to ultimately accelerate sustainability enhancements and maximize profit opportunities through technology that's seamless for soybean farmers to use. Winners represented a diverse and compelling array of trailblazing innovations and technologies that have remarkable potential to capture value for farmers and disrupt the soy value chain.

Research & Education. 2020-2022.

- Reviewed pre-proposals each year for efficacy from the USB's request for concepts, a global research call for proposals amounting to >500 projects submitted each year.
- Worked firsthand with the USB's research portfolio to translate past and currently funded research for U.S. Soybean farmers (~550,000) and the nation.
- Distilled information for U.S. Soybean farmers to help inform their funding decisions throughout all concept stages (pre-proposal → full-proposal → funded project; i.e., understanding of projects/outcomes is crucial to current and future funding decisions)
- Conceptualized, produced, and disseminated scientific research in creative ways to educate and the nation on scientific topics related to soybean research.

United Soybean Board (USB), United States Soybean Export Council (USSEC), & Systems Dynamics Society (SDS) in Denmark | Hack to the Future: A Soy Market Challenge. 2020.

- Spearheaded and judged a first-ever international hackathon event bringing diverse backgrounds together to solve or "hack" for increasing U.S. soy market share in the European Union.

St. Louis Science Center (MO) | Exhibitor, 8/11/2018

- Designed and presented an exhibit informing all age groups about bacteria in, on, and around the body. In this all-day exhibit, participants learned about helpful & harmful bacteria, identified them according to morphology type, and made bacteria art to take home.

Women in STEM Fields | STEM Representative, various years & locations

- Informed high school students about STEM fields and prospective career paths. Provided tangible examples of what they could be doing through various laboratory exercises.

Ohio State University (on Poplar Island) (MD) | Field Research Manager, 5/2010 – 11/2010

- Trained and managed a team of research technicians and interns; conducted surveys on diamondback terrapin nests, hatchlings, and adults; measured and pit tagged hatchlings/adults; operated an Infrared Gas Analyzer (IRGA). Data collection & statistical analysis. Liaison between numerous organizations.

Murray State University (KY) | Field Researcher | 6/2007 – 5/2010

- Conducted research evaluating previous sexing techniques as well as developing a new sexing technique for the common snapping turtle (*Chelydra serpentina*); studied the effects of roads on sex ratio and body size among freshwater turtle populations; collected, identified, measured, and marked various aquatic species for the purpose of evaluating the effects of herbicidal spray on populations (pre and post spray).

Center for Reservoir & Watershed Studies Institute (KY) | Research Assistant, 2007 – 2010.

- Monitored water quality at the Clear Creek Watershed Management Area (WMA). Performed soil and vegetation surveys; collected, identified, measured, marked various salamander species, mussels, fish, tree frogs, and macro-invertebrate species.

National Great Rivers & Research Education Center (NGRREC) (IL) | Intern, 2007

- Conducted research regarding sex ratios of common snapping turtles (*Chelydra serpentina*) in the Lower Illinois River. Supervisor: Research Scientist, John K. Tucker

Illinois Natural History Survey (IL) | Field Assistant, 6/2003-3/2007

- Assisted in extensive field and laboratory research on a variety of herpetofauna, primary focus concerning population demography, dynamics, effects of climate change, natural selection on life history traits, and morphometrics of turtles.

PROGRAMS & WORKSHOPS

E-Squared Magazine | Internship Program, 2022 – 2023

- Proposed and developed an internship program for my international art + science magazine, E-Squared. Responsible for interviewing applicants, hiring, onboarding, and overseeing the student, working one on one with them for the duration of the program.

National Science Foundation / Harris Stowe State University | Educator for the Fruit Fly Genetics Summer Camp, 7/2018

- Educated high school, first year-college, and bridge students about fruit fly genetics.

Honors Program Advisor | Program Advisor, 2016 – 2017

- Provided an academically challenging and enriching, interdisciplinary learning experience above and beyond the standard curriculum to highly motivated and intellectually talented students. Created educational artwork pertaining to eukaryotic & prokaryotic cells.

The Wheeler School – Aerie Program | Middle School Instructor, 2016

- Developed curriculum and instructed unique electives fusing art + science to middle school students.

National Science Foundation / EPSCoR | In-reach Workshop Instructor, 2015 – 2016.

- Instructed a college-level workshop on plant science & botanical illustration: *Art Forms in Nature*.

ART EXHIBITIONS

2023. Group Exhibition. *Would You Love Me as Your Pet?* Souldard Art Gallery, St. Louis, MO.

ART & DESIGN

Missouri Botanical Garden | Botanical Illustration Instructor, 5/18/2019 – present

- Instruct courses for the Education Program on plant science & botanical illustration.

Georgia Botanical Garden & University of Georgia | Botanical Illustration Instructor, September 2022.

- Instructed a natural science illustration workshop on the *Intersection of Art and Science Associated with Climate Change & Plant Adaptation*

United Soybean Board (USB)

- Farmers & the Food Supply Chain
- Bioactive peptides for use in international research presentations (glycinin)
- Various figures for world renowned researchers, presentations at international conferences, and in publications like *Feedstuffs*.

E-Squared Magazine | Founder & Director, 2016 – present

- Strong understanding of typography, photography, artwork selection, pre-press, proofing marks, and print production.
- Ability to design and implement branding and identity graphic standards

Turtles of Rhode Island Series | *Illustrator & Designer*, 2016 – 2017

- Designed postcards & stickers for educational & conservation purposes; marketed and sold to local stores like Audubon Society RI, Rhody Craft, Craftland, et cetera.

Rhode Island School of Design, Harvard University, & Roger Williams

Park Zoo | *Illustrator & Designer*, 2015 – 2016

- Illustrated the native turtles of Rhode Island from Harvard University's taxidermy specimens. Final renderings were composed into a Species of Rhode Island poster for the zoo for educational and conservation purposes.

National Science Foundation / EPSCoR | *In-reach Workshop Instructor*, 2015 – 2016.

- Instructed a college-level workshop on plant science & botanical illustration: *Art Forms in Nature*.

PUBLICATIONS & PEER REVIEWING

Peer Reviewer for (various papers)

Agriculture, Ecosystems and Environment, a leading interdisciplinary forum that publishes research investigating all aspects of agroecological science. 2020 – present.

Feedstuffs.

New Measurement Tools for Trypsin Inhibitors. Author. Published September 10, 2021.

US Soy.

Chemical Composition, Protein Quality & Nutritive Value of Commercial Soybean Meals Produced From Beans From Different Countries: A Meta-Analytical Study. Author. Published July 2020.

E-Squared Magazine.

Issue #1. *The Animal & Human Condition*. **2016.**

Issue #2. *The Environment & Human Impact*. **2017.**

Issue #3: *Man, Machine, & Power*. **2018.**

Issue #4: *Earth, Connectivity, & Restoration*. **2019.**

Issue #5: *The Water Cycle*. **2020.**

Issue #6: *Technosociety*. **2023.**

Issue #7: Digital Futures. ***In press.***

Dustman, Emily A. Protobiont Press. Journal, magazine. Periodical. 2016-present.
ISSN 2474-3984.

***Restoration Ecology* 22(6): 815-823.**

Roosenburg, W.E., Spontak, D.M., Sullivan, S.P., Matthews, E.L., Heckman, M.L., Trimbath, R.J., Dunn, R.P., Dustman, E.A., Smith, L., and Graham, L.. Sullivan, S.P., and Eva L. Matthews (2014). Nesting Habitat Creation for Maintaining Turtle Populations: *Malaclemys* Nesting at the Paul S. Sarbanes Ecosystem Restoration Project.

***Herpetological Review* 44(2): 235-238.**

Dustman, E.A. (2013). Sex Identification in the Common Snapping Turtle (*Chelydra serpentina*): A New Technique and Evaluation of Previous Methods.

***Chelonian Conservation and Biology* 7(1): 60-69.**

Tucker, J.K., Dolan, C.R., Lamer, J.T., and Dustman, E.A. (2008). Climatic warming, red-eared sliders (*Trachemys scripta elegans*), and sex ratio.

***Herpetological Review* 37(4):453-455.**

Tucker, John K., Lamer, J.T., Dolan, C.R., and Dustman E.A. (2006). Chelonian Species. Record Carapace Lengths for Illinois.

***Herpetological Review* 37(1): 97.**

Lamer, James T., John K. Tucker, and Emily Dustman. (2006). Distributional Note: *Siren intermedia*.

***Herpetological Review* 36(2): 198.**

Dustman, Emily A. (2005). Distributional Note: *Siren intermedia*.

Submitted to *Journal of Herpetology*.

Tucker, John K., Chad R. Dolan, James T. Lamer, and Emily A. Dustman. Carapace Morphology and Red-Eared Sliders (*Trachemys scripta elegans*).

In preparation for *Journal of Herpetology*.

Tucker, John K., Emily A. Dustman, and James T. Lamer. Run away, run away: post-emergence activity of hatchling red-eared sliders (*Trachemys scripta elegans*) and climatic change.

PRESENTATIONS

University of Georgia, Guest Lecturer. *The Congruence of Art + Science as it Applies to Hedonics*. September 2022.

GroundBreakers. The Yield Lab Institute & Openly Disruptive. *The Soybean Car: Driving & Uniting Industry & Agriculture*. 2022.

Society for Risk Analysis. *Facilitating Innovation & Climate Action: Could Gender be a factor in change?* Presented at the Society of Risk Analysis (SRA) with three other women in agriculture - Cami Ryan, PhD from Bayer, Eleni Bickell, PhD from MOST Policy Initiative, and Alexa Lamm from The University of Georgia. Our first multi-sectoral and interdisciplinary symposium was about empowering women's voices in climate change. Our session covered topics like agriculture and gender equity, neuroscience and behavior, narratives and communication science, and economics of gender and climate change. I presented in my role at USB, relating climate action back to U.S. soy/soybean farmers and how advancing gender equality can deliver innovation, action, and change across various sectors, including agriculture.

Agriculture & Applied Economics. *It Takes a Warrior to Ride this Abstract to the End*. 2021.

American Society for Biochemistry & Molecular Biology. *Isoflavones: Multifunctional Phytochemicals*. 2020.

Soy Summit. *If the Research Doesn't Reach Us, How Can It Teach Us?* 2020.

On various published topics at:

Joint Meeting of Ichthyologists & Herpetologists

U.S. Army Corp of Engineers

National Great Rivers Research & Education Center

Illinois Academy of Sciences

ADVISORY COUNCILS

Center for Food Integrity's Coalition for Responsible Gene Editing. Staff

Representative. Contributing to the mission to earn trust in gene editing to help provide consumers with safe, nutritious, and affordable food produced in sustainable systems.

Nourish the Future. A national education initiative developed by science teachers for science teachers. 2021-present.

Take Action. Farmer-focused educational platform designed to help farmers implement best stewardship practices. 2020-present.

HONORS & AWARDS

Nominated by Millipore Sigma as a scientist achieving the *#NextGreatImpossible*
LEAP Award (Learning Environment Awards Program)
Teacher of the Year Award
Teaching Assistant of the Year Award
First Place in Photography, The Wildlife Society
National Dean's List

MEMBERSHIPS

Guild of Natural Science Illustrators (GNSI)
American Association for the Advancement of Science (AAAS)
Society for Risk Analysis (SRA)
American Society for Biochemistry & Molecular Biology (ASBMB)
American Society of Agronomy (ASA)
Crop Science Society of America (CSSA)
Soil Science Society of America (SSSA)
Herpetological Society
Rhode Island School of Design Museum

VOLUNTEER EXPERIENCE & COMMUNITY SERVICE

Iowa State University Extension & Outreach Judge (IA)

- Annually serve as a judge for the Youth Crop Scouting Competition at the Soybean Staging & Morphology station.

Gallery Night: Experienced Gallery Night Guide

- Serve as an experienced gallery night guide, touring and educating individuals about area galleries and artwork.

National Audubon Society

- Survey and collect data on different bird species for Annual Bird Counts, ongoing.

International Coastal Clean-up, Assateague (MD)

- Trash clean-up along the coast at Assateague Island National Seashore.

CAM / Contemporary Art Museum, St. Louis (MO)

- Performed a variety of tasks during exhibitions & fundraising.

Service Learning Project, Reusable Bags: A Practical Alternative

- Educated about the use of plastic bags. Collected statistics pre- and post-survey.

Regional Science Fair Judge

- Served as a science fair judge at the Louisville Regional Science Fair.