Dr. Csengele Barta

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EDUCATION

Certification in Geographical Information Systems (GIS), Northwest Missouri State University, 2024 (in progress, expected Spring 2025)

Ph.D., Plant Biology, Plant Molecular Eco-Physiology , Biochemistry and Cell Biology (*Summa Cum Laude*), 2004
University of Szeged, Hungary

International Training Course (ITC), Plant Physiology, 2001
Biological Research Center of the Hungarian Academy of Sciences, Szeged, Hungary

BSc degrees in (a) Biology; (b) Chemistry and (c) Science (Biology and Chemistry) Education, (*Summa Cum Laude*) 2000, Babes-Bolyai University, Cluj Napoca, Romania

POSITIONS

Professor, Department of Biology, Missouri Western State University, Saint Joseph, MO, 2023 - present

Associate Professor, Department of Biology, Missouri Western State University, Saint Joseph, MO, 2018 – 2023

Invited (Remote) Lecturer, Department of Biology and Ecology, Babes-Bolyai University, Cluj-Napoca, Romania, 2021 - present (topics in: plant physiology, plant eco-physiology, plant morphology, plant stress physiology and plant biotechnology)

Assistant Professor, Department of Biology, Missouri Western State University, Saint Joseph, MO, 2012- 2018

Visiting Scholar, Department of Atmospheric Sciences, Texas A&M University, College Station, TX, June 20th – July 14th, 2013

Research Associate, Department of Atmospheric Sciences, Texas A&M University, College Station, TX, 2010- 2012

Research Plant Physiologist, USDA, Agricultural Research Service, Maricopa, AZ, 2007-2010

Post-Doctoral Research Fellow (EU), Institute of Agro-Environment and Forest Biology (Terrestrial Ecosystems Research Centre), Italian National Research Council, Rome, Italy, 2004-2007

Graduate Research Associate, Center of Excellence of the European Union, Biological Research Center of the Hungarian Academy of Sciences, Szeged, Hungary, 2001-2004

International Research Fellow (UNESCO), Biological Research Center of the Hungarian Academy of Sciences, Szeged, Hungary, 2000-2001

Undergraduate Research Fellow, Biology and Geology Department, Babes-Bolyai University, Cluj- Napoca, Romania, 1996-2000

AREAS of EXPERTISE

- ***Plant Science***: Plant Molecular Ecophysiology & Cell Biology; Plant Physiology; Plant Stress Physiology; Comparative Plant Morphology, Anatomy and Development; Floristics & Ethnobotany; Forest Biology/Silviculture; Horticulture; Lichenology applications in Environmental Pollution Management;
- ***Ecology***: Chemical Ecology & Integrated Pest Management; Climate Change Ecology; Invasive Species Ecology; Arid Land Ecosystem Biology;
- ***Agriculture:*** Crop Science; Crop Physiology; Phenotyping; Modelling; Crop Stress Physiology;
- ***Conservation Biology***: Plant Conservation; Invasive Plant Species Management; Environmental Restauration using Plants;
- ***Chemistry***: Plant Biochemistry & Analytical Chemistry; Protein Biochemistry; Metabolomics; Phytochemistry;
- ***Molecular Biology***; Plant Biotechnology; Bioinformatics; Systems Biology;
- ***Environmental Science***: Environmental Process Modeling and Computation; Atmospheric Sciences;
- ***(Photo)Biophysics***
- ***Health Science:*** Plant-Derived Medicine; Drug Design; Inhibitors and Toxins; Chemotherapeutic Agents; Aromatic Volatiles;
- ***Science Education***; Public Adult and Youth Education and Outreach; Online Course Delivery and Platforms; Innovative Teaching Techniques; Scholarship of Education;
- Professional ***Grant Writing***;
- ***Technical***: Greenhouse Applications; Global Positioning Systems Mapping (GPS), Chemical Quality Control, Geographical Information Systems (GIS)

AWARDS and HONORS

1) American Society of Plant Biologists (ASPB) Primarily Undergraduate Institutions Award, 2023
2) Shout Out Advisor Award Nomination, MWSU, 2023
3) American Society of Plant Biologists (ASPB) Primarily Undergraduate Institutions Award, 2022
4) Best Poster Award, to presenting mentee, Colleen Menne, Conference on Applied Learning in Higher Education, CALHE, 2022, St. Joseph, MO.
5) American Society of Plant Biologists (ASPB) Primarily Undergraduate Institutions Award, 2021
6) Ecological Society of America, Researchers at Undergraduate Institutions (ESA-RUI) Opportunity Award, 2021
7) LAS Faculty Development Award, MWSU, 2021
8) Outstanding Reviewer Award for 2019, Plants (awarded in 2020)
9) American Society of Plant Biologists (ASPB) Primarily Undergraduate Institutions Conference Award, 2020
10) Most Influential Professor Award, two awards, MWSU 2019 and 2020
11) Reviewer Board Member Award, Molecular Diversity Preservation International Publishers of the Multidisciplinary Digital Publishing Institute (MDPI), 2019
12) PUBLONS Peer Reviewer Award, Publons, 2019
13) LAS Faculty Development Award, MWSU, 2019
14) PUBLONS Peer Reviewer Award, Publons, 2018
15) LAS Faculty Development Award, MWSU, 2018
16) American Society of Plant Biologists – Primarily Undergraduate Institutions (ASPB-PUI), Plant Biology Travel Award, 2017
17) LAS Faculty Development Award, MWSU, 2017
18) LAS Faculty Development Award, MWSU, 2016
19) Tools in Plant Biology (ASPB and The Plant Cell) Award, 2015
20) American Society of Plant Biologists (ASPB), Plant Biology Travel Award, 2015
21) LAS Faculty Development Award, MWSU, 2015
22) American Society of Plant Biologists (ASPB), Plant Biology Travel Award, 2014

23) LAS Faculty Development Award, MWSU, 2014
24) American Society of Plant Biologists (ASPB), Women's Young Investigator Award, 2013
25) LAS Faculty Development Award, MWSU, 2013
26) American Society of Plant Biologists (ASPB), Plant Biology Travel Award, 2012
27) Graduate Teaching Academy Senior Award, Texas A&M University, 2012
28) Graduate Teaching Academy Award, Texas A&M University, 2011
29) ARS-USDA Award for Superior Performance, 2008
30) Marie-Curie (EC) Post-Doctoral Research Fellowship, 2004-2007
31) COST- Plant Proteomics in Europe Award, 2007
32) Gordon Research Conference, Ventura, CA, USA, Chair's Fund Award, 2006
33) BRC-HAS Ph.D. Fellowship, 2001-2004
34) International Advanced Antioxidant Biochemistry Course award, Wageningen, Netherland, 2002
35) Bioinformatics Course Award, Polish Academy of Sciences, Warsaw, Poland, 2002
36) International (ITC) Research Fellowship (UNESCO&EC), 2000-2001

FUNDING

1) **Unlocking nature's bounty: exploring the potential of velvet bean (Mucuna pruriens) seed metabolome in enhancing crop resistance to salinity stress to support the future and new tools of an environment-smart, sustainable agriculture**. Faculty Summer Research Grant, MWSU Foundation, 2024, ($7500).
2) **The secret language of plants: unveiling the intricate mechanisms of chemical communication between species,** American Society of Plant Biologists (ASPB), 2023 (~$ 8,000) – *principal investigator/mentor* – **Summer Undergraduate Research funding (SURF)** to student Sonja Weber, MWSU
3) **Is the capacity to emit isoprene a valuable tool in plants' arsenal for fending aggressive allelopathic invaders during chemical warfare for resources and survival?** American Society of Plant Biologists (ASPB), 2023 (~$ 8,000) – *principal investigator/mentor* – **Summer Undergraduate Research funding (SURF)** to student Rene Frye, MWSU
4) **Program of Research, Teaching and Applied Learning (PORTAL) Research Award, MWSU**, 2023 ($ 2,500) – *principal investigator*
5) **Program of Research, Teaching and Applied Learning (PORTAL) Research Award, MWSU**, 2022 ($ 2,500) – *principal investigator*
6) **Offense and defense strategies in plants' chemical warfare for resources and survival: Can native "heroes" rescue other native plant species, sensitive to allelopathic inhibition, triggered by highly competitive invasive species?,** American Society of Plant Biologists (ASPB), 2021 (~$ 6,000) – *principal investigator/mentor* – **Summer Undergraduate Research funding (SURF)** to student Alyka Zahnd, MWSU
7) **Program of Research, Teaching and Applied Learning (PORTAL) Research Award, MWSU**, 2021 ($ 3,500) – *principal investigator*
8) **Discover Science, Summer Day Camp, 2019-2020,** Western Foundation ($ 5,742) - *principal investigator*
9) **Program of Research, Teaching and Applied Learning (PORTAL) Research Award, MWSU**, 2020 ($ 2,800) – *principal investigator*
10) **Program of Research, Teaching and Applied Learning (PORTAL) Research Award, MWSU**, 2019 ($ 3,500) – *principal investigator*
11) **The role of isoprene in plant development,** American Society of Plant Biologists (ASPB), 2018 (~$ 6,000) – *principal investigator/mentor* – **Summer Undergraduate Research funding (SURF)** to student Rachael Prawitz, MWSU
12) **Small Instrumentation Grant, funded by the Western Foundation**, 2018 ($ 4,000) – *principal investigator*
13) **Program of Research, Teaching and Applied Learning (PORTAL) Research Award, MWSU**, 2018 ($ 3,500) – *principal investigator*
14) **Small Instrumentation Grant, funded by the Western Foundation**, 2017 ($ 2,000) – *principal investigator*

15) **Program of Research, Teaching and Applied Learning (PORTAL) Research Award, MWSU**, 2017 ($ 3,500) – *principal investigator*
16) **Program of Research, Teaching and Applied Learning (PORTAL) Research Award, MWSU**, 2016 ($ 3,500) – *principal investigator*
17) **Small Instrumentation Grant, funded by the Western Foundation**, 2015 ($ 2,500) – *principal investigator*
18) **Expansion of the Leo Galloway Herbarium, funded by the Western Foundation**, 2015 ($ 2,500) – *co-principal investigator*
19) **Program of Research, Teaching and Applied Learning (PORTAL) Research Award, MWSU**, 2015 ($ 3,500) – *principal investigator*
20) **Discover Science – Summer Day Camp, funded by Boehringer Ingelheim Vetmedica Inc.,** 2015 ($ 6,820) - *principal investigator*
21) **Discover Science – Summer Day Camp, funded by Boehringer Ingelheim Vetmedica Inc.,** 2014 ($ 12,250) - *principal investigator*
22) **Program of Research, Teaching and Applied Learning (PORTAL) Research Award, MWSU**, 2014 ($ 3,500) – *principal investigator*
23) **Program of Research, Teaching and Applied Learning (PORTAL) Research Award, MWSU**, 2013 ($3,500) - *principal investigator*
24) **Bilateral Cooperation Grant, CNR-MTA**, Italian and Hungarian Ministry of Sciences and Education, 2007-2009 (€ 15,000) - *principal investigator at CNR*
25) **Bilateral Cooperation Grant CNR-BAS**, Italian and Bulgarian Ministry of Sciences and Education, 2007-2009 (€ 12,000) - *principal investigator at CNR*
26) **ACCENT–BIAFLUX Exchange of Staff Grant**, collaborator: Popov Institute of Plant Physiology of the Bulgarian Academy of Sciences, 2006 (€ 5,000) - *principal investigator*
27) **European Science Foundation (ESF), VOCBAS Exchange Grant**, collaborators: Research Center Karlsruhe, IMK-IFU, Garmisch Partenkirchen, Germany; EUS&BIOP Institutes of the GSF National Research Center for Environment and Health (Helmholtz Association), Munich, Germany, 2006 (€ 6,000) - *principal investigator*
28) **European Science Foundation (ESF), VOCBAS Short Visit Grant**, collaborator: Research Center Karlsruhe, IMK-IFU, Garmisch Partenkirche n, Germany, 2005 (€ 3,000) - *principal investigator*

Other, non-funded, but positively rated proposals:

i) **The Missouri Western State University (MWSU) Climate Pollution Reduction Project: a distinguishing model of climate-friendly land use and greenhouse gas mitigation leadership in the State of Missouri public education.**, Missouri Department of Natural Resources (MDNR): Climate Pollution Reduction Grants (CPRG) Program ($162,000), (2023) – *co-principal investigator*. This proposal was offered partial funding of $140,000 but had to withdraw due to the lack of matching funds support for the full amount.

ii) **Endemism and biotic interactions in the Interior Highlands, a region of exceptional biogeography**, National Science Foundation (NSF), ($ 3,700,000) –*principal investigator for MWSU – multi-state collaborative project*

iii) **RUI: Evaluating Short Exposures to Course-Based Undergraduate Research Experiences Across a Curriculum,** National Science Foundation (NSF) ($600,000) – *co-principal investigator*

iv) **Griffon Pathway to STEM (GPS): Enhancing Mentoring and Engagement to Excel in STEM -** National Science Foundation (NSF), DUE 1742068, 2017 ($999,938) – *co-principal investigator*

v) **Collaborative Research: Digitization TCN, National Science Foundation (NSF) –** proposal 1413839, 2014 ($ 76,000) – *principal investigator at MWSU*

TEACHING and MENTORING

Courses – delivered in both in-class and online formats

Department of Biology, Missouri Western State University (2012-present):

- **Plant Morphology, BIO 407 and 307** (307, starting the Fall 2019) – lecture and laboratory (upper level, majors' course – re-developed; offered every Fall)
- **Plant Physiology, BIO 340 and 440** (440, starting the Spring of 2020)– lecture and laboratory (upper level, majors' course – re-developed; offered every Spring, lecture and one laboratory section/offering)
- **Honors Colloquium, HON 395** – special topics seminar course (upper level, honors students – developed; offered in the Fall of 2014; the Spring of 2018 and Spring 2022) – topics included "plant volatile and chemical communication"; "plant secondary metabolites and drug design"; "life at the extremes".
- **Principles of Cell Biology, BIO 106** – lecture and laboratory (introductory, majors – offered Spring and Fall semesters each year, with lecture and two to four laboratory sections, pending enrollment/offering)
- **Principles of Biology, BIO 101**– lecture and laboratory (introductory, non-majors, offered a total of 4 lectures and ten laboratory sections since 2012 in various semesters)
- **University 101** – lecture/seminar (introductory, majors, offered every Fall)
- **Independent Research, BIO 450** – research practicum (majors, research; offered every Spring, Fall, and Summer)
- **Biology Teaching Practicum, BIO 420** – teaching practicum (majors, teaching; offered various Spring or Fall semesters)
- **Field Natural History, BIO 220** – field course (Co-Taught in Spring 2020 the offering led by Dr. Karen Koy ("Natural History of the Desert Southwest")). **Planned as lead faculty for the 2026 offering "Natural History of Hawaii'."**

Department of Biology and Geology, Babes-Bolyai University, Cluj-Napoca, Romania (2021-present):

- **Biotechnology** *(upper division)*
- **Plant Morphology and Anatomy** *(introductory)*
- **Plant Physiology** *(upper division)*
- **Plant Stress Physiology** *(upper division)*
- **Plant Ecophysiology** *(upper division)*

Other Institutions (2000-2012):

Department of Atmospheric Sciences Texas A&M University, 2011 (guest lectures, ATMO 202) – majors, developed

University of Tuscia, Viterbo, Italy, 2007, "Plant emitted volatiles," (full course in English and Italian) – upper-level majors and graduates, developed

Institute of Agro-Environment and Forest Biology, Italy, lectures in Chemical Ecology, Plant Biology and Biochemistry, 2004-2007 – graduate lectures, developed

RESEARCH TEAM(s) and PROJECTS

Department of Biology, Missouri Western State University (2012-present):

2024

Angel Justus – upcoming, summer 2024
Hanna Moore – upcoming summer 2024
Aaron King – upcoming summer 2024
Renee Frye - Project: Identifying velvet bean seed chemicals and root exudates with potential inhibitory effects.

2023

Angel Justus - Project: Plant succession survey on the John Rushin Teaching and Research Prairie. (*Gold Friday Research*).
Sonja Weber - Project: The impact of velvet bean seeds on red russian kale growth and development (*Gold Friday Research*).
Nora Burroughs - Project: The impact of velvet bean seed chemicals on red russian kale physiology (*Gold Friday Research*).
Renee Frye - Project: The identification of velvet bean seed chemicals and root exudates with potential inhibitory effects (*Gold Friday Research*).
Amadeu Pavini - Project: The impact of velvet bean seeds on red russian kale growth and development (*Gold Friday Research*).
Chenoah Reeder – Project: The impact of velvet bean seeds on red russian kale growth and development (*Gold Friday Research).*
Jeremy Schneider - Project: The impact of soil microbiome on allelopathic interactions between competing plant species? (*Gold Friday Research*).
Jeremy Schneider - Project: Plant succession survey on the John Rushin Teaching and Research Prairie. (*Gold Friday Research*).
Teri Larison – Project: The impact of differential prairie management practices on planted native species emergence and invasive infestation (*Summer PORTAL and Gold Friday Research*).
Teri Larison – Project: Soil enrichment with degrading velvet bean (*Mucuna pruriens*) seeds enhances plant growth, development and delays senescence: could velvet bean chemicals become key for future agricultural practices? (*Summer PORTAL and Gold Friday Research*).
Katy Stafford – Project: Plant succession survey on the John Rushin Teaching and Research Prairie. (*Gold Friday Research*).

2022

Jeremy Schneider - Project: The impact of soil microbiome on allelopathic interactions between competing plant species? (*Gold Friday Research*).
Jeremy Schneider - Project: Plant succession survey on the John Rushin Teaching and Research Prairie. (*Gold Friday Research).*
Jacob Kuy – Project: Plant succession survey on the John Rushin Teaching and Research Prairie. (*Gold Friday Research*).
Jacob Kuy – Project: Do velvet bean allelopathic agents affect radish growth and development? (*Gold Friday Research*).
Teri Larison – Project: The impact of differential prairie management practices on planted native species emergence and invasive infestation (*Summer PORTAL and Gold Friday Research*).
Teri Larison – Project: Soil enrichment with degrading velvet bean (*Mucuna pruriens*) seeds enhances plant growth, development and delays senescence: could velvet bean chemicals become key for future agricultural practices?

(*Summer PORTAL and Gold Friday Research*).
Katy Stafford – Project: Plant succession survey on the John Rushin Teaching and Research Prairie. (*Gold Friday Research*).
Kate Kyser – Project: Offense and defense strategies in plants' chemical warfare for resources and survival: chemical competition for resources between native tallgrass prairie species and invasive species (*Gold Friday Research*).
Kate Kyser – Project: Does the capacity to emit isoprene provide a competitive advantage to plants subject to allelopathic inhibitors? (*Gold Friday PORTAL*).
Colleen Menne – Project: Plant success survey on the John Rushin Teaching and Research Prairie (*Gold Friday PORTAL*)
Marissa Garza – Project: Molecular and functional differences between the genes controlling the emission of isoprene in Missouri oaks. A comparative study. (*Gold Friday and Summer PORTAL*)
Aubree Haddock – Project: Molecular and functional differences between the genes controlling the emission of isoprene in Missouri oaks. A comparative study. (*Gold Friday PORTAL*)
Alyka Zahnd – Project: Offense and defense strategies in plants' chemical warfare for resources and survival: Can native "heroes" rescue other native plant species, sensitive to allelopathic inhibition, triggered by highly competitive invasive species? (*Gold Friday and Summer PORTAL*)
Alyka Zahnd – Project: The impact of topology and resource availability on native prairie species distribution on the John Rushin Teaching and Research Prairie at Missouri Western State University. (*Gold Friday PORTAL*)
Jessica Poush – Project: The impact of topology and resource availability on native prairie species distribution on the John Rushin Teaching and Research Prairie at Missouri Western State University. (*Gold Friday PORTAL*)
2021

Kate Kyser - Project: Does the capacity to emit isoprene provide a competitive advantage to plants subject to allelopathic inhibitors? (*Gold Friday PORTAL*).
Colleen Menne – Project: The impact of topology and resource availability on native prairie species distribution on the John Rushin Teaching and Research Prairie at Missouri Western State University. (*Gold Friday PORTAL*)
Marissa Garza – Project: Molecular and functional differences between the genes controlling the emission of isoprene in Missouri oaks. A comparative study. (*Gold Friday PORTAL*)
Aubree Haddock – Project: Molecular and functional differences between the genes controlling the emission of isoprene in Missouri oaks. A comparative study. (*Gold Friday PORTAL*)
Alyka Zahnd – Project: The impact of topology and resource availability on native prairie species distribution on the John Rushin Teaching and Research Prairie at Missouri Western State University. (*Gold Friday PORTAL*)
Alyka Zahnd – Project: Offense and defense strategies in plants' chemical warfare for resources and survival: Can native "heroes" rescue other native plant species, sensitive to allelopathic inhibition, triggered by highly competitive invasive species? (*ASPB SURF Project, Summer*)
Jessica Poush – Project: The impact of topology and resource availability on native prairie species distribution on the John Rushin Teaching and Research Prairie at Missouri Western State University. (*Summer PORTAL*)
Amie Haddock – Project: The molecular diversity of isoprene synthase genes and enzymes. (*Gold Friday PORTAL*)
Shannon Buehre – Project: The molecular diversity of isoprene synthase genes and enzymes. (*Gold Friday PORTAL*)
Mehreen Tai – Project: The molecular diversity of isoprene synthase genes and enzymes. (*Gold Friday PORTAL*)
Lauren Tinoco – Project: Planted tree survival and factors influencing survival rates on the John Rushin Teaching and Research Prairie at Missouri Western State University (*Gold Friday PORTAL*).

2020

Devon Lindstrom Project: The molecular mechanism at the basis of allelopathic inhibition of seed germination by honeysuckle (*Lonicera maackii*) leaf extract in *Brassica rapa*. (*Gold Friday and Summer PORTAL*)
Devon Lindstrom Project: The evolution of isoprene emission in plants. (*Gold Friday and Summer PORTAL*)
Aubree Haddock Project: Molecular and functional differences between the genes controlling the emission of isoprene in Missouri oaks. A comparative study. (*Gold Friday PORTAL*)

Amie Haddock – Project: The molecular diversity of isoprene synthase genes and enzymes. (*Gold Friday PORTAL*)
Alyka Zhand – Project: Biological weed control: taking advantage of plant secondary chemistry in plant conservation. (*Gold Friday PORTAL*)
Tai Mehreen – Project: Seasonal expression of the isoprene synthase gene in post oaks (*Gold Friday PORTAL*)
Tai Mehreen – Project: Isoprene synthase structural modelling. (*Gold Friday PORTAL*)
Caroline Langley – Project: Seasonal expression of the isoprene synthase gene in pin oaks (*Gold Friday PORTAL*)
Kait Atkins - Project: The impact of honeysuckle allelochemicals on the soil microbiome. (*Gold Friday PORTAL*)
Sarah Powell – Project: The evolutionary benefits of isoprene production in oaks. (*Gold Friday PORTAL*)
Harrison Meers – Project: Exploring the biotechnological potential of using isoprene synthase to produce biofuels. (*Summer PORTAL*)
Colleen Menne – Project: Biological pest control: screening of volatiles emitted by native Missouri species. (*Gold Friday PORTAL*)
Rose Privett – Project: Isoprene emission in kudzu: invasive benefit or evolutionary relic? (*Gold Friday PORTAL*)
Nicholas Stratton – Project: Biological control of invasive species in plant conservation. (*Gold Friday PORTAL*)
Alexis Hersh – Project: Chemical warfare in the plant world: the characterization of honeysuckle (*Lonicera maackii*) leaf allelochemicals. (*Gold Friday PORTAL*)
Cody Kirschner - Project: Isoprene synthase structural modeling. (*Gold Friday PORTAL*)
Jessica Poush – Project: Biological pest control: screening of volatiles emitted by native Missouri species. (*Gold Friday PORTAL*)
Jessica Phelan – Project: Oak isoprene synthase protein models. (*Gold Friday PORTAL*)
Caylee VanGeison – Project: Screening Missouri invasive species for the production of allelopathic metabolites. (*Gold Friday PORTAL*)

2019

Megan Morris - Project: Oak isoprene synthase protein models.
Zachary Schank – Project: The isolation and characterization of isoprene synthase genes from Missouri oaks.
Cameron Hall - Project: Variations in the gene encoding for isoprene synthase in Missouri oaks (*Quercus* spp.).
Brian Jenkins - Project: Elevated endo- and exogenous phytohormone levels alleviate the negative allelopathic effects of honeysuckle leaf extracts.
Nick Straton - Project: The isolation and characterization of isoprene synthase genes from Missouri oaks.
Cody Kirschner - Project: Isoprene synthase structural modelling.
Chayata Faye Thammarat - Project: The mechanism of active root avoidance responses in response to allelopathic inhibitors in *Brassica rapa* seedlings.
Rachael Prawitz - Project: Characterization of the seasonal pin oak (*Quercus palustris*) isoprene synthase (*Isps*) expression AND Project: The role of isoprene in plant development.
Brendan Ryan - Project: The impact of honeysuckle (*Lonicera maackii*) leaf allelochemicals on native Missouri species.
Devon Lindstrom - Project: The molecular mechanism at the basis of allelopathic inhibition of seed germination by honeysuckle (*Lonicera maackii*) leaf extract in *Brassica rapa*.
Makenzie Helsel- Project: Plants for the future: taking advantage of plant volatiles in biological pest control.

2018

Jeremy Reynolds – Project: Juglone and honeysuckle leaf extracts downregulate gibberellic acid production in *Brassica rapa* seeds, inhibiting seed germination.
Brian Jenkins - Project: Elevated endo- and exogenous phytohormone levels alleviate the negative allelopathic effects of honeysuckle leaf extracts.
Devon Lindstrom - Project: Identification of secondary metabolites involved in the allelopathic action of the invasive honeysuckle (*Lonicera maackii*).
Chayata Faye Thammarat - Project: The mechanism of active root avoidance responses in response to allelopathic

inhibitors in *Brassica rapa* seedlings.
Rachael Prawitz - Project: Characterization of the seasonal pin oak (*Quercus palustris*) isoprene synthase (*Isps*) expression.
Rachael Prawitz – Project: The role of isoprene in plant development. (*ASPB-SURF Project, Summer*)
Makenzie Helsel - Project: Isoprene synthases in oaks.
William Kyle Constable - Project: The evolution of oak isoprene synthases.
Neiley Karns - Project: The isolation and characterization of the isoprene synthase protein from pin oak.
Jesica Phelan - Project: The impact of the 2018 severe drought on the oxidant-antioxidant balance, photosynthesis, and isoprene emission of pin oaks in NW Missouri.
Kody Piper - Project: Does the capacity to emit isoprene provide competitive advantage to invasive species?
Mary Moore - Project: Characterization of the post oak (*Quercus stellata*) isoprene synthase (*Isps*) gene.
Kerry Moore - Project: The allelopathic effects of honeysuckle (*Lonicera maackii*) leaf extracts.

2017

Alyssa Jones - Project: Characterization of the pin oak (*Quercus palustris*) isoprene synthase (*Isps*) gene.
Reid Brown - Project: DNA isolation from pin oak buds.
Danielle Edeman - Project: Isolating DNA from mature leaves of species with high secondary metabolite contents.
Rachael Prawitz - Project: Housekeeping genes for quantitative PCR in pin oak (*Quercus palustris*) – identifying partial sequences of the 18 S rRNA, ndhF, and ATPβ encoding genes.
Mackenzie Helsel - Project: Total RNA isolation from pin oak (*Quercus palustris*).
Christina Gray - Project: Isoprene synthase (*Isps*) evolution in angiosperms.
Audrey Keim - Project: Isoprene synthase gene expression in pin oak (*Quercus palustris*).
Amie Haddock – Project: The impact of in-situ dark adaptation on the efficiency of DNA extraction from mature pin oak (*Quercus palustris*) leaves.

2016

Alyssa Jones - Project: Characterization of the pin oak (*Quercus palustris*) isoprene synthase (*Isps*) gene.
Kalif Leslie - Project: Pin oak (*Quercus palustris*) isoprene synthase properties.
Christina Gray - Project: The relationship between isoprene emission and senescence in pin oaks (*Quercus palustris*).
Edward Miles - Project: The molecular eco-physiology of oak marcescence. Oak isoprene synthases.
Amie Haddock - Project: Do light intensity change induced alterations in leaf isoprene emission affect the timing of senescence in velvet bean (*Mucuna pruriens*)?
Jeremy Brown - Project: Do temperature variation induced alterations in leaf isoprene emission affect the timing of senescence in velvet bean (*Mucuna pruriens*)? Isoprene synthase characterization.
Steven Bilby - Project: Challenges and solutions to quality genomic DNA isolation from mature and senescing pin oak (*Quercus palustris*) leaves.
Marissa Klingseis - Project: Do drought stress-induced alterations in leaf isoprene emission affect the timing of senescence in velvet bean (*Mucuna pruriens*)?
Chandler Gossett - Project: The impact of light quality on velvet bean (*Mucuna pruriens*) isoprene emission. *Mucuna sp.* isoprene synthase.
Alexander Duryee - Project: Taking advantage of plant metabolism in isolating high quality genomic DNA from mature pin oak (*Quercus palustris*) leaves.
Matthew Steinlage - Project: The metabolic triggers of leaf marcescence in oaks.
Erin Scott - Project: Oxidant-antioxidant balance in senescing oak leaves.
Mary-Kate Wiley - Project: Variations in the extent of lipid peroxidation during senescence in pin oak (*Quercus palustris*) leaves.
Tyler Hughes - Project: The impact of light quality on isoprene emission oak species.
Hailey Drew Mantlo - Project: Morphological differences between velvet bean plants grown under light and

temperature gradient conditions.

2015

Sandra Pitcher - Project: GIS: a biological tool in the investigation of ecological consequences and the physiological mechanism at the basis of marcescence.
Edward Miles - Project: The molecular eco-physiology of oak marcescence.
Christina Gray - Project: The relationship between isoprene emission and senescence in pin oaks (*Quercus palustris*).
Bethany Bolander - Project: Seasonal variations in leaf pigment composition in pin oaks (*Quercus palustris*) in Missouri.
Lauren Alkier - Project: Designing a flow-through chamber system for plant gas exchange and volatile collection.
Jenice Bartlett - Project: Differences in the timing of the development of the abscission layer in marcescent and non-marcescent pin oak (*Quercus palustris*) leaves.
Erin Scott - Project: Oxidant-antioxidant balance in senescing oak leaves.
Heather Seever - Project: Pigment degradation dynamics in senescing pin oak leaves (*Quercus palustris).*
Carly Compton - Project: Does increasing the blue spectral component of incident irradiation alter isoprene emission rates in velvet bean (*Mucuna pruriens*)?
Nicholas Williams - Project: Detecting light-stress induced reactive oxygen species production *in vivo* in velvet bean (*Mucuna pruriens*) leaves using a novel fluorescent sensor.

2014

Sandra Pitcher - Project: The molecular eco-physiology of oak marcescence.
Derek Hullett - Project: Designing a low-cost dynamic leaf volatile collection chamber.
Jasmine Stalker - Project: Does the capacity to emit isoprene provide a competitive advantage to kudzu (*Pueraria lobata*) in Missouri?
Jessie Green - Project: The timing of senescence in marcescent and non-marcescent oak trees.
Charmaine Marie Banez - Project: Do enhanced isoprene emission rates prevent reactive oxygen formation in marcescent trees?
Jessica Foster - Project: Does modulating isoprene emission in velvet bean (*Mucuna pruriens*) affect the timing of leaf senesce?
Heather Seever - Project: The relationship between isoprene flux and abscisic acid synthesis in velvet bean (*Mucuna pruriens*) and kudzu (*Pueraria lobata*).

2013

Derek Payne - Project: Identification of marcescent tree species in NW Missouri during the winter of 2012-2013. A Global Positioning mapping study.
Tyler O. Hughes - Project: Climate change feedback on plant isoprene emissions.
Jesse Campbell - Project: Does isoprene play a role in delaying senescence in oaks under high temperature conditions?
Jake Graham - Project: Oak species in the United States: a comparative biogeography study.
Phillip Mueller - Project: Stress resistance mechanisms in marcescent tree species.
Sandra Pitcher - Project: The molecular eco-physiology of oak marcescence.

Other institutions – co-advised research (2004 - 2012):

Jonathan Gramann (Ph.D.), Texas A&M University, 2010 - 2012
Stephanie L. White (undergraduate, sophomore), Texas A&M University, 2010
Alice Garani (undergraduate, junior), University of Bologna, 2009

Alberto Canarini (undergraduate, junior), University of Bologna, 2009
Gwen G. Coyle (research assistant), ARS-USDA, 2007-2010
Roberta Fodale (MSc), University of Palermo, Italy, 2006-2007
Clelia Oliva (MSc), Montpellier, France, 2006-2007
Alessio Fortunati (Ph.D.), University of Tuscia, Viterbo, Italy, 2004-2007
Federico Brilli (Ph.D.), University of Tuscia, Viterbo, Italy, 2004-2007
Silvano Fares (Ph.D.), University of Tuscia, Viterbo, Italy, 2004-2007
Domenico Serafini (PhD), University of Tuscia, Viterbo, Italy, 2004-2007

TEACHING ASSISTANT ADVISING

Department of Biology, Missouri Western State University (2012-present):

2022 - **Colleen Menne** (senior, in BIO 106 and BIO 440, Spring and Fall); **Alyka Zahnd** (senior, BIO 307)
2021 – **Josiah Boothe** (senior, in BIO 106); **Guethre Ziebarth** (senior, in BIO 106); **Lauren Tinoco** (junior, in BIO 440);
2020 – **Alexis Hersh** (senior, in BIO 440);
2019 – **Jackie Herron** (senior, in BIO 307);
2018 – **Morgan Wells** (junior, in BIO 106); **Tatum Thomason** (junior, in BIO 106);
2017 – **Hailey Babcock** (junior, in BIO 106);
2016 - **Joe Glise** (junior, in BIO 106); **Tess Campbell** (senior, in BIO 106)
2015 - **Allison Reed** (senior, in BIO 106); **Jami Kellam** (senior, in BIO 106); **Jasmine Colon** (senior, in BIO 106)
2014 - **Tiffany Zaroor** (senior, in BIO 106); **Dillon Howe** (senior, in BIO 101); **Jessica Foster** (junior, in BIO 106); **Bridgette French - Harbison** (junior, in BIO 101)
2013 - **Matalie Ann Lynch (Place)** (senior, in BIO 106)**; Diana Ackermann** (senior, in BIO 106)**; Dillon Howe** (junior, in BIO 101)**; Crystal Daggett** (junior, in BIO 101)

High school teaching:

Apaczai Csere Janos Lyceum, Cluj Napoca, Romania, (junior and senior) Biology, 2000
Brassai Samuel Lyceum, Cluj Napoca, Romania, 12th-grade (senior) Biology, 1999
Bathory Istvan Lyceum, Cluj Napoca, Romania, 9th-grade (freshman) Chemistry, 1999

PEER-REVIEWED PUBLICATIONS

Published & Submitted Journal Articles (peer-reviewed) (* denotes student co-author)

(1) Szekely, G., and Barta, C. (2024) Taking advantage of plant allelochemistry to combat salt stress: implications for agricultural land use., Annals of Botany, (Impact Factor 4.9, Q1 in Plant Science) *written in 2023, in progress, under co-author review, submission on* 04/15/2024.
(2) Szekely, G., and Barta, C. (2024) Exploring the remediation potential of osmoprotectants against heavy metal stress in halophytes. Botany Letters (Impact Factor 1.7, Q2 in Plant Science), *submitted, under review.*
(3) Barta, C., *Jenkins, B.C., *Lindstrom, D.S., *Zahnd, A.K., Szekely, G. **The first evidence of gibberellic acid's ability to modulate target species sensitivity to honeysuckle (*Lonicera maackii*) allelochemicals**, Plants (Impact Factor 4.8, Q1 in Plant Science), 12, 1014, 2023, https://doi.org/10.3390/plants12051014
(4) Barta, C., *Jenkins, B.C., *Lindstrom, D.S., *Zahnd, A.K., Szekely, G. **The first evidence of gibberellic acid's ability to modulate target species sensitivity to honeysuckle (*Lonicera maackii*) allelochemicals,** Peeref Poster Publication, April, 2023, https://doi.org/10.54985/peeref.2304p6126090
(5) Szekely, G., *Szigyarto, NZ, *Toth, A and Barta, C., The rhizosphere of *Petrosimonia triandra* may posess salinity tolerance inducing potential, Hungarian Journal of Industry and Chemistry/Biotechnology, 50 (2): 11-15 2022, https://doi.org/10.33927/hjic-2022-12

(6) Szekely, G. and Barta, C. **Plant growth promoting Rhizobacteria: biotechnological tools to improve cereal yields**, Hungarian Journal of Industry and Chemistry/Biotechnology, 50 (1): 11-14, 2022, https://doi.org/10.33927/hjic-2022-03

(7) Barta, C., **Abiotic Stress Responses in Plants (Editorial)**, Horticulturae (MDPI), 19/1, 2019

(8) Barta, C., *Bolander, B., *Bilby, S., *Brown, J., *Brown, R., *Duryee, A.M., *Edelman, D., *Gray, C., *Gossett, C., *Haddock, A., *Helsel, M., *Jones, A., *Klingseis, M., *Leslie, K., *Miles, E., *Prawitz, R., ***In situ* dark adaptation enhances the efficiency of DNA extraction from mature pin oak (*Quercus palustris*) leaves, facilitating the identification of partial sequences of the 18S rRNA and isoprene synthase (*IspS*) genes.** –Plants, 6(4), 52, 2017, https://doi.org/10.3390/plants6040052

(9) *Jones, A., *Brown, R., *Prawitz, R. and Barta, C., ***Quercus palustris* 18S ribosomal RNA gene, partial sequence (MF360746.1)**, Gen Bank, published gene sequence, NCBI, National Center for Biotechnology Information, 2017

(10) Kaling M., Kanawati B., *Ghirardo A., Albert A., Winkler J.B., Heller, W., Barta, C., Loreto, F., Schmitt-Kopplin P., Schnitzler J.P., **UV-SI: UV-B mediated metabolic rearrangements in poplar revealed by non-targeted metabolomics**., Plant Cell and Environment, 38(5):892-904, 2015, https://doi.org/10.1111/pce.12348

(11) Wachter R.M., Salvucci M.E., Carmo-Silva A.E., Barta C., Genkov T., Spreitzer R.J., **Activation of interspecies-hybrid Rubisco enzymes to assess different models for the Rubisco-Rubisco activase interaction,** Photosynthesis Research 117(1-3): 557-566, 2013, https://doi.org/10.1007/s11120-013-9827-0

(12) Barta, C., Wachter, R.M., Dunkle, A.M., Salvucci, M.E., **Structural changes associated with the acute thermal instability of Rubisco activase,** Archives of Biochemistry and Biophysics 499 (1-2):17-25, 2010, https://doi.org/10.1016/j.abb.2010.04.022

(13) Salvucci, M.E., Barta, C., Byers, J.A., *Canarini, A., **Photosynthesis, and the partitioning of carbon between carbohydrates and isoprenoid pathway products in vegetatively active and dormant guayule: physiological and environmental constraints on rubber accumulation in a semi-arid shrub**, Physiologia Plantarum, 140(4):368-379, 2010, https://doi.org/10.1111/j.1399-3054.2010.01409.x

(14) Behnke, K., Kaiser, A., Zimmer, I., Brüggemann, N., Janz, D., Polle, A., Hampp, R., Hänsch, R., Popko, J., Schmitt-Kopplin, P., Ehlting, B., Rennenberg, H., Barta, C., Loreto, F., Schnitzler, J.P., **RNAi-mediated suppression of isoprene emission in poplar transiently impacts phenolic metabolism under high temperature and high light intensities: a transcriptomic and metabolomic analysis**, Plant Molecular Biology, 74(1-2):61-75, 2010, https://doi.org/10.1007/s11103-010-9654-z

(15) Velikova, V., Tsonev, T., Barta, C., Centritto, M., Koleva, D., Stefanova, M., Busheva, M., Loreto, F., **BVOC emissions, photosynthetic characteristics and changes in chloroplast ultrastructure of *Platanus orientalis* L. exposed to elevated CO_2 and high temperature**, Environmental Pollution, 157(10): 2629-2637, 2009, https://doi.org/10.1016/j.envpol.2009.05.007

(16) *Fortunati, A., Barta, C., *Brilli, F., Centritto, M., Zimmer, I., Schnitzler, J.P., Loreto, F., **Isoprene emission is not temperature-dependent during and after severe drought-stress: a physiological and biochemical analysis**, The Plant Journal 55(4):687-697, 2008, https://doi.org/10.1111/j.1365-313X.2008.03538.x

(17) Timperio, A.M., D'Amici, G.M., Barta, C., Loreto, F., Zolla, L., **Proteomic, pigment composition and organization of thylakoid membranes in iron-deficient spinach leaves**, Journal of Experimental Botany, 58(13):3695-3710, 2007, https://doi.org/10.1093/jxb/erm219

(18) *Brilli, F., Barta, C., *Fortunati, A., Lerdau, M., Loreto, F., Centritto, M., **Response of isoprene emission and carbon metabolism to drought in white poplar (*Populus alba*) saplings**, New Phytologist, 175(2):244-254, 2007, https://doi.org/10.1111/j.1469-8137.2007.02094.x

(19) Loreto, F., Centritto, M., Barta, C., Calfapietra, C., *Fares, S., Monson, R.K., **The relationship between isoprene emission rate and dark respiration rate in white poplar (*Populus alba* L) leaves**, Plant Cell and Environment, 30(5):662-669, 2007, https://doi.org/10.1111/j.1365-3040.2007.01648.x

(20) *Fares, S., Barta, C., *Brilli, F., Centritto, M., Ederli, L., Ferranti, F., Pasqualini, S., Reale, L., Tricoli, D., Loreto, F., **Impact of high ozone on isoprene emission and some anatomical and physiological parameters of developing *Populus alba* leaves directly or indirectly exposed to the pollutant**, Physiologia Plantarum, 128:456-465, 2006, https://doi.org/10.1111/j.1399-3054.2006.00750.x

(21) Loreto, F., Barta, C., * Brilli, F., Nogues, I., **On the induction of volatile organic compound emissions by plants as consequence of wounding or fluctuations of light and temperature**, Plant Cell and Environment, 29: 1820-1828, 2006, https://doi.org/10.1111/j.1365-3040.2006.01561.x

(22) Barta, C., Loreto, F., **The relationship between the methyl-erythritol phosphate (MEP) pathway leading to emission of volatile isoprenoids and abscisic acid content in leaves**, Plant Physiology, 141: 1676-1683, 2006, https://doi.org/10.1104/pp.106.083063

(23) Erdei, N., Barta, C., Hideg, E., Boddi, B., **Light-induced wilting and its molecular mechanism in epicotyls of dark-germinated pea (*Pisum sativum* L.) seedlings**, Plant Cell and Physiology, 46(1): 185-191, 2005, https://doi.org/10.1093/pcp/pci012

(24) Barta, C., Kálai, T., Hideg, K., Vass, I., Hideg, É., **Differences in the ROS generating efficacy of various ultraviolet wavelengths in detached spinach leaves**, Functional Plant Biology, 31: 23-28, 2004, https://doi.org/10.1071/FP03170

(25) Barta, C., Kálai, T., Vass, I., Hideg, É., **Dansyl- and rhodamine-based fluorescent sensors for detecting singlet oxygen and superoxide production in plants *in vivo***, Acta Biologica Szegediensis, 46, 149-150, 2002

(26) Hideg, É., Barta, C., Kálai, T., Vass, I., Hideg, K., Asada, K., **Detection of singlet oxygen and superoxide with fluorescent sensors in leaves under stress by photoinhibition or UV-radiation**, Plant Cell and Physiology, 43: 1154-1164, 2002 (top 3 of online accesses for Plant Cell Physiology in 2002), https://doi.org/10.1093/pcp/pcf145

Book chapters (peer reviewed)

(27) Barta C., Carmo-Silva, A.E,, Salvucci M.E., **Purification of Rubisco Activase from Leaves or after Expression in *Escherichia coli***, Photosynthesis Research Protocols, Methods in Molecular Biology, Springer, Humana Press, Ed. Carpentier, R., 684:363-374, 2011, https://doi.org/10.1007/978-1-60761-925-3_28

(28) Barta C., Carmo-Silva, A.E., Salvucci M.E., **Rubisco Activase Activity Assays**, Photosynthesis Research Protocols, Methods in Molecular Biology, Springer, Humana Press, Ed. Carpentier, R., 684:375-382, 2011, https://doi.org/10.1007/978-1-60761-925-3_29

(29) Carmo-Silva, A.E., Barta C., Salvucci M.E., **Isolation of Ribulose-1,5 Bisphosphate Carboxylase/Oxygenase from Leaves**, Photosynthesis Research Protocols, Methods in Molecular Biology, Springer, Humana Press, Ed. Carpentier, R., 684:339-347, 2011, https://doi.org/10.1007/978-1-60761-925-3_26

Editorials and Edited Special Issues

Horticulture (MDPI), Guest Editor Note, Special Issue "Abiotic Stress Responses of Plants", 2018-2019 (*published*)

Selected conferences/Seminar proceedings (* denotes student author)

Invited Speaker/Conference Talk

(1) Barta, C., *Jenkins, B.C., *Lindstrom, D.S., *Zahnd, A.K., Szekely, G. **The first evidence of gibberellic acid's ability to modulate target species sensitivity to honeysuckle (*Lonicera maackii*) allelochemicals,** 2024 Missouri Academy of Science (MAS), Apr. 13, 2024, St. Joseph, MO (State).

(2) *Frye, R. and Barta, C., **Enhancing crop defense strategies and productivity through the utilization of biogenic plant volatile organic compounds (VOCs) in agriculture.**, 2024 Missouri Academy of Science (MAS), Apr. 13, 2024, St. Joseph, MO (State)

(3) *Frye, R. and Barta, C., **Enhancing crop defense strategies and productivity through the utilization of biogenic plant volatile organic compounds (VOCs) in agriculture: a case study.**, 2023 Plant Biology Meeting, Aug. 5-9, CORTEVA Showcase, 2023 Savannah, GA (International)

(4) Newton, A., Barta, C., and Chevalier C., **The Missouri Western State University's John Rushin Teaching and Research Prairie: aspects of multidisciplinary biology research in an outdoors applied learning laboratory.,** 83rd Midwest Fish and Wildlife Conference, Overland Park, Kansas, Feb.12-14, 2023

(1) Barta C., **The chemistry of Fall,** Master Naturalists Organization, St. Joseph, MO., *November 2022.*
(2) Barta C., **Isoprene: a volatile with multifaced roles in plant-environment interactions**, virtual, Babes-Bolyai University of Cluj-Napoca, Institute of Biology and Ecology, *26th July 2022*
(3) Barta, C., Newton, A., and Chevalier C., **The Missouri Western State University's John Rushin Teaching and Research Prairie: the first year of multidisciplinary biology research in an outdoors applied learning laboratory.,** Conference on Applied Learning in Higher Education (CALHE), St. Joseph, MO, April 21-23, 2022
(4) Barta C., **The impact of a warming climate on volatile mediated plant-environment communications**, public virtual seminar, hosted by the Ecumenical Eco-Justice (EEJ) Organization, St. Joseph, MO, Nov. 18, 2021
(5) Barta C., **Plant volatiles – applications in modern agriculture.**, International Conference on Engineering, Science and Technology (IConEST), virtual, 2021
(6) Barta, C., **Will the capacity to emit isoprene contribute to delaying plant senescence (aging) in a "volatile" future?** Public Seminar, Virtual Scholarship Summit, Center for Teaching and Learning, MWSU, 2021
(7) Barta, C., **Plants' Arsenal for Waging Chemical Warfare on Their Unsuspecting Neighbors: Does the Synthesis and Release of Secondary Negative Allelopathic Metabolites into the Environment Provide a Competitive Advantage to Invasive Plant Species in Missouri Habitats?**, Public Seminar, Virtual Scholarship Summit, Center for Teaching and Learning, MWSU, 2020
(8) Barta, C., **The Science Behind Climate Change**, Public Seminar sponsored by the Kiwani's Club, St. Joseph, MO, 2020
(9) Barta, C., **For the love of Trees: Trees and Us**, Public Seminar, Tree Expo at the Center for Justice, Outreach and Yoga, Saint Joseph, MO, 2019
(10) Barta, C. **Plants, and their Pollinators**, *Public Seminar, Grand River Prairie Days,* Dunn Ranch, Hatfield, MO, 2019
(11) Barta, C., **Applied Learning in Plant Biology at MWSU: Challenges and Successes**, Conference on Applied Learning in Higher Education (CALHE), St. Joseph, MO, 2016
(12) Barta, C., **Science, and Society: The Science and Politics of Climate Change**. – public seminar, St. Joseph, MO, 2015
(13) Barta C., **Plants, meet your pollinators!** – Grand River Prairie Days, Missouri Department of Conservation, Dunn Ranch, MO, 2015
(14) Barta, C., **Teaching students about research**. Conference on Applied Learning in Higher Education (CALHE), St. Joseph, MO, 2015
(15) Barta, C., **Plant-pollinator interactions**. Mini-course, 2x3 hours sessions, Master Naturalists and the Master Gardeners of the University of Missouri Extension Meeting, St. Joseph, MO, 2015
(16) Barta, C., *Gramman, J., *White, S.L., Schade, G.W., **Drought impact on photosynthesis and isoprene emission capacities of oak species in urban and rural areas of Texas.**, Plant Biology – American Society of Plant Biologists Meeting, Austin, TX, 2012
(17) Barta, C., *Gramman, J., *White, S.L., Schade, G.W., **Biogenic volatiles and the atmosphere: does climate change affect local and global emissions?**, Department of Atmospheric Sciences, Texas A&M University, College Station, 22 Nov 2011
(18) Barta, C., *Gramman, J., *White, S.L., Schade, G.W., **The effect of drought stress on carbon assimilation and isoprene emission capacities of oak species in urban and rural areas of Texas**, AGU Fall Meeting, San Francisco, 5-9th Dec 2011
(19) Barta, C., Loreto, F., **Isoprene in the plant-environment interactions**, Texas A&M University, Department of Plant, Soil and Crop Sciences, 2011
(20) Barta, C., Wachter, R.M., Dunkle, A.M., Salvucci, M.E., **The role of Mg^{2+} and adenine nucleotides in regulating Rubisco activase stability at high temperatures**, invited mini-symposium on Enzyme Regulation, Plant Biology 2010, Montreal, Canada, 2010
(21) Barta, C., **The role of Mg^{2+} in determining Rubisco activase heat tolerance *in vitro*,** ARS USDA and the Arizona State University Department of Biochemistry joint seminar, 2009
(15) Barta, C., **Plant volatiles: secondary metabolites with multiple roles in the plant- environment interactions**, ARS-USDA seminar, 2008

(16) Barta, C., *Fortunati, A., *Brilli, F., Loreto, F., **Arabidopsis transformed to emit isoprene are more resistant to high light and high temperatures and show a different intracellular redox balance than non-emitting wild types**, 8th TERPNET Meeting, Strasbourg, France, 2007

(17) Barta, C., Loreto, F., Zolla, L., Timperio, A.M., *D'Amici, G.M., **Proteomic, pigment composition and organization of thylakoid membranes in iron-deficient spinach leaves**, Plant Proteomics in Europe Workshop, Munich, Germany, 2007

(18) Barta, C., *Fortunati, A., *Brilli, F., Loreto, F., **Does isoprene protect cellular membranes from oxidative damages?** 37th Membrane Transport Congress, Sumeg, Hungary, 2007

(19) Barta, C., *Brilli, F., *Fortunati, A., Monson, RK., Loreto, F., **Isoprene: a metabolite with multiple roles in the plant-environment interaction**, ISONET -VOCBAS Short Course, Kuopio, Finland, 2006

(20) Barta, C., Nogues Gonzalez, I., *Brilli, F., Velikova, V., Loreto, F., **Does isoprene protect leaves against photoinhibition?**, II nd ISONET Meeting, Benediktbeueren, Germany, 2005

(21) Barta, C., Kálai, T., Vass, I., Hideg, K., Hideg É., **Differences in the in vivo ROS generating efficacy of different UV-A and UV-B wavelengths in leaves**, VOCBAS Summer School, Pieve Tesino, Italy, 2004

(22) Barta, C., Kálai, T., Vass, I., Hideg, K., Hideg É., **Study of the UV- radiation generated ROS production in tobacco leaves**, IIIrd Hungarian Plant Physiology Conference, Szeged, 2002

(23) Barta, C., Kálai, T., Vass, I., Hideg, K., Hideg É., **Action spectrum of ROS production under different wavelength UV stress**, Bioinformatics Training Course, Warsaw, Poland, 2002

(24) Barta, C., Kálai, T., Vass, I., Hideg, K., Hideg É, **Action spectrum of ROS production under UV stress**, IInd Chemistry and Biochemistry of Antioxidants Course, Wageningen, The Netherlands, 2002

Selected poster presentations/Proceedings (international, national, and state) (* denotes student author)

(1) *Justus, A., *Burroughs, N., *Frye, R., *Kuy, J., *Menne, C., *Schneider, J., *Tinoco, L., *Weber, S. and Barta, C., **A three-year survey of the relationship between native and invasive plant species' success on the John Rushin Teaching and Research Prairie at Missouri Western State University.** 2024 Missouri Academy of Science (MAS), Apr. 13, 2024, St. Joseph, MO (State).

(2) *Larison, T., *Burroughs, N., *Frye, R., *Justus, A., *Weber, S., and C. Barta, **Prairie species' vulnerability to biological invasions.** 2024 Missouri Academy of Science (MAS), Apr. 13, 2024, St. Joseph, MO (State).

(3) *Weber, S., *Burroughs, N., *Frye, R., *Justus, A., *Menne, C., *Schneider, J., and Barta, C. **Velvet bean soil inclusions enhance the growth, biomass, and photosynthetic assimilation efficiency in tomato**. 2024 Missouri Academy of Science (MAS), Apr. 13, 2024, St. Joseph, MO (State).

(4) *Weber, S., *Larison, T., *Justus, A., * Burroughs, N., *Frye, R., *Schneider, J., *Kuy, J., *Menne, C., *Pavini, A., and Barta, C., **Plant competitive success on a conservation prairie**, 2024 Missouri Natural Resources Conference, *Feb. 5-9, 2024* Osage Beach, MO - state

(5) *Weber, S., *Larison, T., *Justus, A., * Burroughs, N., *Frye, R., *Schneider, J., *Kuy, J., *Menne, C., , *Pavini, A., Svojanovsky, S. and Barta, C., **Prairie species' vulnerability to biological invasions: velvet bean (*Mucuna pruriens*) suppresses big bluestem (*Andropogon gerardii*) growth and development**, 2023 Plant Biology Meeting, *Aug. 5-9, 2023* Savannah, GA - international

(6) Barta, C., *Jenkins, B., *Lindstrom, D., *Zahnd, A., Szekely, G. **The first evidence of gibberellic acid's ability to modulate target species' sensitivity to honeysuckle (*Lonicera maackii*) allelochemicals**, 2023 Plant Biology Meeting, *Aug. 5-9, 2023* Savannah, GA – international

(7) *Frye, R. and Barta, C., **Enhancing crop defense strategies and productivity through the utilization of biogenic plant volatile organic compounds (VOCs) in agriculture: a case study.**, 2023 Plant Biology Meeting, Aug. 5-9, 2023 Savannah, GA - international

(8) * Burroughs, N., *Larison, T., *Justus, A., *Weber, S., *Frye, R., *Schneider, J., *Kuy, J., *Zahnd, A., * Poush, J., *Tinoco, L., *Menne, C., *Pavini, A., *Prawitz, R., Mills, M. and Barta, C., **The Missouri Western State University's John Rushin Teaching and Research Prairie: a three-year survey of native vs. invasive plant**

species' success after seeding and first controlled burn management., 2023 Plant Biology Meeting, Aug. 5-9, *2023* Savannah, GA - international

(9) Barta, C., *Menne, C., *Larison, T., **Prairie grasses and biological invasions: velvet bean (*Mucuna pruriens*) suppresses big bluestem (*Andropogon gerardii*) growth and development**., 83rd Midwest Fish and Wildlife Conference, Overland Park, Kansas, Feb.12-14, 2023 - international

(10) Barta, C., *Zahnd, A, *Poush, J., *Larison, T., *Schneider, J., *Kuy, J., *Stafford, K. **The Missouri Western State University's John Rushin Teaching and Research Prairie: a two-year survey of native vs. invasive plant species' success after seeding.**, 83rd Midwest Fish and Wildlife Conference, Overland Park, Kansas, Feb.12-14, 2023 - international

(11) Barta, C., *Menne, C., *Larison, T., **The impact of the semi-invasive velvet bean (*Mucuna pruriens*) on big bluestem (*Andropogon gerardii*) growth and development**., 2023 Missouri Natural Resources Conference, Lake of the Ozarks, MO - state

(12) Barta, C. **Learning plant development through a Course-Based Undergraduate Research Experience (CURE) in upper division Plant Morphology (BIO307): the first CURE module implemented in plant sciences at MWSU.**, Conference on Applied Learning in Higher Education (CALHE), Saint Jospeh, MO, March 9, 2023 - national

(13) *Menne C., *Larison, T., and Barta C., **Prairie species' vulnerability to biological invasions: velvet bean (*Mucuna pruriens*) suppresses big bluestem (*Andropogon gerardii*) growth and development.,** Joint Meeting of the Ecological Society of America and the Canadian Society for Ecology and Evolution, 2022, Montreal, Canada - international

(14) Barta, C., *Zahnd, A., *Poush, J., *Tinoco, L., *Menne, C., and *Larison, T, **The John Rushin Teaching and Research Prairie at Missouri Western State University, as a model ecosystem for plant eco-physiology and conservation research: the first year vegetation and native-invasive competition survey.,** Plant Biology 2022, Portland, OR – international

(15) *Zahnd, A. and Barta, C., Bioactive **Amur honeysuckle (*Lonicera maackii*) metabolites responsible for allelopathic inhibition of native species' seed germination and growth in Missouri.,** Plant Biology 2022, Portland, OR - international, SURF

(16) *Menne, C., *Zahnd, A., *Poush, J., *Garza, M., *Kyser, K., *Buehre, S., *Haddock, A., *Tinoco, L., and *Barta, C., **First year vegetation survey of the Missouri Western State University John Rushin Teaching and Research Prairie.**, Missouri Academy of Science Meeting, Central Methodist University, Fayette, MO, April 23rd, 2022 – state

(17) *Menne, C., *Zahnd, A., *Poush, J., *Garza, M., *Kyser, K., *Buehre, S., *Haddock, A., *Tinoco, L., and *Barta, C., **First year vegetation survey of the Missouri Western State University John Rushin Teaching and Research Prairie.**, Conference on Applied Learning in Higher Education (CALHE), St. Joseph, MO, April 21-23, 2022 - national

(18) *Zahnd, A. and Barta, C., **Does the synthesis and release of secondary negative allelopathic metabolites into the soil provide a competitive advantage to Amur honeysuckle (*Lonicera maackii*) in Missouri?**, Missouri Natural Resources Conference, Feb. 2022 - national

(19) *Zahnd, A., *Poush, J. and Barta, C., **The John Rushin Teaching and Research Prairie at Missouri Western State University: First-Year Vegetation Success Survey of a Conservation Prairie**., Missouri Natural Resources Conference, Feb. 2022 - national

(20) Chevalier, C., *Reynolds, J., *Bremer, R., *Zahnd, A., *Poush, J., and Barta, C. **Missouri Western State University prairie savanna restoration tree survival: the first growing season**., Fish and Wildlife Conference, 2022 – international

(21) *Zahnd, A. and Barta, C., **Apigenin and luteolin, isolated from decomposing leaves of Amur honeysuckle affect differentially plant growth and development in a concentration dependent manner.** Plant Biology, virtual, 2021 - international

(22) Barta, C., *Buehre, S., *Haddock, A., *Jenkins, B., *Lindstrom, D., *Meers, H., *Prawitz, R., *Tai, M., *Tinoco L., *Zahnd., A., **Chemical warfare in the plant world: does the synthesis and release of secondary negative**

allelopathic metabolites into the soil provide a competitive advantage to Amur honeysuckle (*Lonicera maackii*)?, Ecological Society of America Meeting, virtual, 2021 –international

(23) Barta, C., and Prawitz, R., **The role of isoprene in regulating senescence and leaf abscission in velvet bean (*Mucuna pruriens*).**, Ecological Society of America Meeting, virtual, 2021 –international

(24) Barta, C. and *Zahnd, A., **Phytohormone additives prevent the allelopathic inhibition of Brassica seedling growth by apigenin, a phenolic metabolite released by the invasive Amur honeysuckle (*Lonicera maackii*) into the soil.**, Missouri Natural Resources Conference, virtual, 2021 – state.

(25) Barta, C., *Buehre, S., *Haddock, A., *Jenkins, B., *Lindstrom, D., *Meers, H., *Prawitz, R., *Tai, M., *Tinoco L., *Zahnd., A., **Gibberellic acid supplementation decreases the negative allelopathic effects of Amur honeysuckle leaf extracts on mustard seed germination and growth.**, Missouri Natural Resources Conference, virtual, 2021 - state

(26) *Haddock, A., *Buehre, S., *Poush, J., *Tai, M., *Tinoco, L., *Zahnd, A., Barta, C., **Could the capacity to emit isoprene affect plant senescence in a warming climate?** Missouri Academy of Science Convention, 2021 virtual - state

(27) Barta, C., *Hersh, A., and *Kirschner, C., **Mechanisms at the basis of root growth deficiencies in Brassica plants treated with negative allelopathic inhibitors extracted from decomposing leaves of the invasive Amur honeysuckle.**, Plant Biology 2020, virtual - international

(28) Barta, C., Svojanovsky, S., Hiley, S., *Morris, M., *Tinoco, L, *Thammarat, C.F., **Chemical profiling of negative allelopathic inhibitors extracted from decomposing Amur honeysuckle leaves.**, Plant Biology 2020, virtual - international

(29) *Prawitz, R., and Barta, C.E., **Do variations in temperature and light conditions affect the relationship between isoprene emission and senescence in velvet bean (*Mucuna pruriens*)?** Plant Biology, San Jose, CA, 2019 - international

(30) Barta, C, *Brown, R., *Constable, W.K., *Hall, C.C., *Helsel, M.M., *Jenkins, B.C., *Jones, A., *Karns, N., *Kirchner, C., *Lindstrom, D., *Moore, K.D., *Moore, M.L., *Miles, E., *Morris, M., *Phelan, J., *Prawitz, R., *Schank, Z., *Straton, N., *Thammarat, C.F. 2019, **The identification of the gene encoding for isoprene synthase (*IspS*) in dominant Missouri oaks,** Plant Biology, San Jose, CA, 2019 - international

(31) Barta, C., *Jenkins, B.C., *Lindstrom, D.S., *Reynolds, J., *Karns, N., *Constable, W.K., *Phelan, J., *Helsel, M.M., *Prawitz, R., *Brown, J., *Moore, M.L., *Moore, K.D., *Thammarat, C.F., **Phytohormone treatment alleviates the negative allelopathic effects of Amur honeysuckle (*Lonicera maackii*) leaf extracts on seed germination and growth,** Missouri Academy of Sciences (MAS), Maryville, MO, 2019 - state

(32) *Lindstrom, D.S., *Jenkins, B.C., *Prawitz, R., *Helsel, M.M., *Constable, W.K., *Karns, N., *Phelan, J., *Jones, A., *Moore, M.L., *Moore, K.D., *Bolander, B., *Bilby, S., *Brown, J., *Duryee, A., *Edelman, D., *Gray, C., *Gossett, C., *Haddock, A., *Klingseis, M., *Leslie, K., *Miles, E., and Barta, C., **The identification of partial pin oak (*Quercus palustris*) and post oak (*Q. stellata*) isoprene synthase (IsPS) gene sequences,** Missouri Academy of Sciences (MAS), Maryville, MO, 2019 - state

(33) *Prawitz, R., *Helsel, M.M., *Lindstrom, D.S., *Jenkins, B.C., *Constable, W.K., *Karns, N., *Phelan, J., *Jones, A., *Bolander, B., *Bilby, S., *Brown, J., *Duryee, A., *Edelman, D., *Gray, C., *Gossett, C., *Haddock, A., *Klingseis, M., *Leslie, K., *Miles, E., *Moore, M.L., *Moore, K.D., and Barta, C., **In situ dark adaptation increases the efficiency of DNA extraction from mature pin oak (*Quercus palustris*) leaves, facilitating gene identification studies,** Missouri Academy of Sciences (MAS), Maryville, MO, 2019 - state

(34) Barta, C., *Jenkins, B.C., *Moore, M.L., *Moore, K.D., *Lindstrom, D.S., *Thammarat, C.F., *Reynolds, J., Svojanovsky, S.R., **Phytohormone treatment with gibberellic acid alleviates the negative allelopathic effects of Amur honeysuckle (*Lonicera maackii*) leaf extracts and juglone on seed germination and growth,** Missouri Natural Resources Conference (MNRC), Osage Beach, MO, 2019 - state

(35) Barta, C., *Jenkins, C.B., *Moore, M. L., *Moore, K.D., *Lindstrom, D.S., *Thammarat, C.F., Svojanovsky, S., **Phytohormone treatment with gibberellic acid alleviates the negative allelopathic effects of Amur honeysuckle (*Lonicera maackii*) leaf extracts on seed germination and growth,** Plant Biology, Montreal, Canada, 2018 – international

(36) *Brown, R.N., *Jones, A.D., *Prawitz, R.A., *Helsel, M.M., *Moore, M.L., *Moore, K.D., *Constable, W.K.,

*Phelan, J., *Holland, E., *Bolander, B., *Bilby, S.R., *Brown, J.H., *Duryee, A.M., *Edelman, D.R., *Gray, C.E., *Gossett, C., *Haddock, A.G., *Klingseis, M.E., *Leslie, K., *Miles, E.W., Barta, C., Svojanovsky, S.R., **The identification of partial sequences of pin oak (Quercus palustris) and post oak (Q. stellata) isoprene synthase (IspS) genes, ,** Plant Biology, Montreal, Canada, 2018 – international

(37) Barta, C., Bolander, B., Bilby, S., Brown, J., Brown , R., Duryee, A.M., Edelman, D., Gray, C., Gossett, C., Haddock , A., Helsel, M., Jones, A., Klingseis, M., Leslie, K., Miles, E., Prawitz , R., ***In situ* dark adaptation enhances the efficiency of DNA extraction from mature pin oak (*Quercus palustris*) leaves, facilitating the identification of partial sequences of the 18S rRNA and isoprene synthase (*IspS*) genes.,** Plant Biology, Montreal, Canada, 2018 – international

(38) *Brown, R., *Jones, A., *Duryee, A., *Gray, C., *Edelman, D., *Klingseis, M., *Gossett, C., *Haddock, A., *Brown, J., *Bilby, S., *Miles, E., Barta, C. **DNA isolation and amplification from mature and senescing pin oak (*Quercus palustris*) leaves: challenges and solutions**, Plant Biology, Honolulu, HI, 2017 – international

(39) Barta, C., *Miles, E., *Bolander, B., *Gray, C., *Jones, A., *Brown, R., *Edelman, D., *Campbell, J., **The impact of growth season length and sustained high temperatures on isoprene emission, oxidant-antioxidantnt balance and senescence in velvet bean (*Mucuna pruriens*)**, Plant Biology, Honolulu, HI, 2017 – international

(40) *Gray, C., *Edelman, D., *Jones, A., *Brown, R., *Miles, E., *Bolander, B., *Pitcher, S., Barta, C. **Does isoprene influence the onset of senescence in oaks?**, Plant Biology, Honolulu, HI, 2017 – international

(41) Barta, C., *Gray, C., *Edelman, D., *Jones, A., *Brown, R., *Miles, E., *Bolander, B., *Pitcher, S., **Isoprene indirectly impacts leaf shedding in Missouri oaks**, Missouri Natural Resources Conference (MNRC), 2017 – state

(42) *Bolander, B., Barta, C., *Pitcher, S., , *Miles, E., *Bartlett, J., *Scott, E., *Drake, **The role of plant volatiles in leaf senescence**, Plant Biology, Austin, TX, 2016 - international

(43) Barta, C., **Plant physiological ecology research in a classroom setting: applied learning in undergraduate education.,** Ecological Society of America Meeting, Fort Lauderdale, FL, 2016- international

(44) *Miles, E., *Gray, C., Barta, C., **Changes in isoprene synthase (*Isps*) gene expression in senescing pin oaks in Missouri,** Ecological Society of America Meeting, Fort Lauderdale, FL, 2016 -international

(45) *Gray, C., *Miles, E., *Bolander, B., *Scott, E., *Wiley, M.K., *Steinlage, M., *Barta, C., **Prolonged high temperature-triggered metabolic changes delay senescence in the isoprene emitter velvet bean (*Mucuna pruriens)***, Ecological Society of America Meeting, Fort Lauderdale, FL, 2016 - international

(46) Barta, C., *Pitcher, S., *Bolander, B., *Miles, E., *Bartlett, J., *Scott, E., *Drake, D., **The relationship between isoprene emission, senescence and abscission in pin oaks (*Quercus palustris*).,** Plant Biology - American Society of Plant Biologists, Minneapolis, MN, 2015 – international

(47) Barta, C., *Hughes, T., *Compton, C., *Williams, N., **Alterations in the spectral composition of the incident irradiation modulates isoprene emission and the environmental stress response of velvet bean (*Mucuna pruriens*).** Ecological Society of America (ESA) Centennial Meeting, Baltimore, MD, 2015 - international

(48) Barta, C. **Applied Learning in undergraduate ecology and eco-physiology education**. Ecological Society of America (ESA) Centennial Meeting, Baltimore, MD, 2015 - international

(49) Barta, C., *Pitcher, S., *Bartlett, J., *Scott, E., *Seever, H., **Do alterations in leaf isoprene emission affect the timing of senescence in velvet bean (*Mucuna pruriens*)?**. Ecological Society of America (ESA) Centennial Meeting, Baltimore, MD, 2015 - international

(50) Barta, C., Hatch, S., Svojanovsky, S., Rhoad, J., Ducey, M., Eckdahl, T., **Do multidisciplinary science camps enhance high school student learning and interest in pursuing a career in life-sciences?** Association of College and University Biology Educators (ACUBE) 59th Annual Meeting, St Joseph, MO, 2015 - national

(51) *Pitcher, S., Barta, C., Drake, D., **GIS: a tool in plant eco-physiological studies**. Missouri Academy of Science, St. Joseph, MO, 2015 - state

(52) Barta, C., *Pitcher, S., Drake, D., *Bartlett, J., *Scott, E., **Oak marcescence in Missouri: an eco-physiology study.** Missouri Academy of Science, St. Joseph, MO, 2015 - state

(53) *Hughes, T., *Pitcher, S., *Mueller, P., *Campbell, J., Barta, C., **Models, and observations: predicting future isoprene emission loads into the atmosphere.** Missouri Academy of Science, St. Joseph, MO, 2015 - state

(54) Barta, C., **Teaching students about research.** Conference on Applied Learning in Higher Education (CALHE), St. Joseph, MO, 2015 - national

(55) *Pitcher, S., Barta, C., Drake, D., **GIS: a biological tool in the investigation of ecological consequences and the physiological mechanism at the basis of marcescence.,** 46th South Dakota State University Geography Convention, 2015 - state

(56) Barta, C., *Payne, D., *Green, J., *Hullett, D., *Stalker, J., *Banez, C. M., *Pitcher, S., Drake, D. **Does isoprene play a role in the marcescence of oaks in Missouri?** Missouri Natural Resources (MNRC), Lake of the Ozarks, 2015 - state

(57) Barta, C., *Pitcher, S., *Mueller, P., *Campbell, J., **Does accounting for adaptation to local climate reduce the gap between models and observations in predicting future isoprene emission loads into the atmosphere?**, 99th Ecological Society of America (ESA) Meeting, Sacramento, CA, 2014 - international

(58) *Pitcher, S., *Payne, D., Drake, *D., Barta, C., **The eco-physiology of marcescence in dominant oak species in Missouri.**, 99th Ecological Society of America (ESA) Meeting, Sacramento, CA, 2014 - international

(59) *Campbell, J., *Mueller, P., *Pitcher, S., Barta, C., **Narrowing the gap between models and observations in predicting future isoprene loads into the atmosphere: a modelling study.**, 9th Conference on Applied Learning in Higher Education (CALHE), Saint Joseph, MO, 2014 - national

(60) *Campbell, J., *Mueller, P., *Pitcher, S., Barta, C., **Narrowing the gap between models and observations in predicting future isoprene loads into the atmosphere: a modelling study.**, NC-2 BBB District Conference, Papillion, NE, 2014 – regional/district

(61) *Thornton, B. and Barta, C., **Applied learning through case-studies in plant physiology: The ecological, economic and cultural necessity of Mangrove ecosystems.**, 9th Conference on Applied Learning in Higher Education (CALHE), Saint Joseph, MO, 2014 - national

(62) *Walker, W., *Howe, D., Barta, C., **The effects of abscisic acid (ABA) and gibberellic acid (GA3) on plant development.**, 9th Conference on Applied Learning in Higher Education (CALHE), Saint Joseph, MO, 2014 - national

(63) *Olsen, B., *Herrod, C., *Reece, R., Barta, C., **The impact of soil acidification on plant nutrition.** 9th Conference on Applied Learning in Higher Education (CALHE), Saint Joseph, MO, 2014 - national

(64) Barta, C., *Pitcher, S., *Mueller, P., *Hughes, T.O., *Campbell, J., **Isoprene emission from the vegetation: why don't emission models always get it right?**, Plant Biology Meeting, Portland, OR, 2014 - international

(65) Barta, C., *Campbell, J., *Hughes, T. **Climate change feedback on plant isoprene emissions.**, Missouri Natural Resources Conference, Osage Beach, MO, 2014. – state

(66) Barta, C., Gramman, J., White, S.L., Schade, G.W., **Do extreme drought conditions alter the relationship between photosynthesis and isoprene emission in oak species? An interannual study along an urban to rural environmental gradient.** Plant Biology – American Society of Plant Biologists Meeting, Providence, RI, 2013 - international

(67) Gramman, J., Schade, G.W., Bryan, A., Barta, C., **Urban-to-Rural Environmental Gradients in the Houston Metropolitan Area**, AGU Fall Meeting, San Francisco, 2012

(68) Barta, C., Gramman, J., White, S.L., Schade, G.W., **Drought impact on photosynthesis and isoprene emission capacities of oak species in urban and rural areas of Texas.**, Plant Biology – American Society of Plant Biologists Meeting, Austin, TX, 2012 – international

(41) Barta, C., *Gramman, J., *White, S.L., Schade, G.W., **Drought impact on photosynthesis and isoprene emission capacities of oak species in urban and rural areas of Texas.**, Plant Biology – American Society of Plant Biologists Meeting, Austin, TX, 2012

(42) Barta, C., Wachter, R.M., Dunkle, A.M., Salvucci, M.E., **Structural changes associated with the thermal instability of Rubisco activase**, Plant Biology, Montreal, Canada, 2010

(43) Barta, C., *Gramman, J., *White, S.L., Schade, G.W., **Variations in the photosynthetic carbon assimilation and isoprene emission capacities of Texas oak species during the exceptional spring 2011 drought**, 96th ESA Meeting, Austin, TX, 2011

(44) Barta, C., Wachter, R.M., Dunkle, A.M., Salvucci, M.E., **Structural changes associated with the thermal instability of Rubisco activase**, Plant Biology, Montreal, Canada, 2010

(45) Salvucci, M.E., Barta, C., Byers, J.A., *Canarini, A., **Effect of temperature and CO_2 enrichment on photosynthesis and the levels of carbohydrates and isoprenoid pathway products in guayule, a latex-**

producing shrub, Plant Biology, Montreal, Canada, 2010

(46) Wachter, R.M., Barta, C., Chausse, A., Salvucci, M.E., **Biophysical studies of higher plant Rubisco activase**, 19th Western Photosynthesis Conference, Pacific Grove, CA, USA, 2010

(47) Salvucci, M.E., Barta, C., Carmo-Silva E.A., Chausse, A., Wachter, R.M., **Prospects for improving photosynthetic performance at higher temperatures by re-engineering Rubisco activase**, 19th Western Photosynthesis Conference, Pacific Grove, CA, USA, 2010

(48) Barta C., *Brilli, F., *Fortunati, A., Loreto, F., **Does the emission of oxygenated plant volatiles reflect stress-induced membrane damages?** 3rd Congress on Proton Transfer Mass Spectrometry (PTR-MS Congress), Obergurgl, Austria, 2007

(49) Barta C., *Brilli, F., *Fortunati, A., Loreto, F., **Does isoprene synthesis in transformed Arabidopsis thaliana plants induce oxidative stress resistance by regulating intracellular redox balance***?** Gordon Research Conference on Biogenic Hydrocarbons and the Atmosphere, Ventura, California, USA, 2007

(50) Barta C., *Brilli, F., *Fortunati, A., Behnke, K., Schnitzler, J.P., Loreto F., **Does isoprene play a role in the adaptation of leaves to elevated ultraviolet irradiation by modulating the intra- foliar generation of reactive oxygen species (ROS)?** Botany and Plant Biology Joint Congress, Chicago, USA, 2007

(51) *Brilli, F., Barta, C., *Fortunati, A., Centritto, M., Loreto, F., **The contribution of different carbon sources to isoprene biosynthesis during and after drought in Populus leaves**, ESF- VOCBAS Workshop, Wageningen, Netherland, oral presentation by Brilli, F., 2006

(52) *Brilli, F., Barta, C., *Fortunati, A., Centritto, M., Loreto, F., **The contribution of different carbon sources to isoprene biosynthesis during and after drought stress in *Populus alba* leaves**, IIIrd European Geosciences Union (EGU) Congress, Wien, Austria, 2006

(53) Barta, C., Velikova, V., Loreto, F., **The relationship between volatile isoprenoids and abscisic acid (ABA) biosynthetic pathway(s) in leaves**, IIIrd European Geosciences Union (EGU) Congress, Wien, Austria, solicited poster presentation, 2006

(54) *Fortunati, A., *Brilli, F., Barta, C., Loreto, F., **Isoprene emission changes biological defence against environmental stresses in Arabidopsis plants**, XVth FESPB Congress, Lyon, France, 2006

(55) Barta, C., Velikova, V., Loreto, F., **Isoprene proxies a pool of leaf abscisic acid (ABA) which regulates stomatal opening under both physiological and abiotic stress conditions**, XVth FESPB Congress, Lyon, France, 2006

(56) *Brilli, F., Barta, C., *Fortunati, A., Centritto, M., Loreto, F., **Isoprene emission occurs independently of photosynthesis in drought stressed leaves**, IGAC Congress, Cape Town, South-Africa, 2006

(57) *Brilli, F., Barta, C., *Fortunati, A., Centritto, M., Loreto, F., **Online analysis of the $^{13}CO_2$ labeling reveals the chloroplastic and extrachloroplastic carbon contribution to isoprene synthesis during drought stress in *Populus nigra* leaves**, ISONET -VOCBAS Course, Kuopio, Finland, 2006

(58) *Fortunati, A., *Brilli, F., Barta, C., Loreto, F., ***Isps* over-expression in *Arabidopsis thaliana* triggers changes in the emission pattern of other volatile organic compounds (VOCs)**, ISONET -VOCBAS Course, Kuopio, Finland, 2006

(59) Barta, C., Nogues, I., Velikova, V., *Brilli, F., Loreto, F., **Exogenous isoprene alleviates photodamage in xanthophyll-cycle deficient *npq1* Arabidopsis mutants**, TERPNET Congress, Wageningen, Holland, 2005

(60) Barta, C., Nogues Gonzalez, I., Velikova, V., *Brilli, F., Loreto, F., **The role of exogenous isoprene in protecting Arabidopsis mutants deficient in the xanthophyll-cycle (*npq1*) from high light**, XVIIth International Botanical Congress, Vienna, Austria, 2005

(61) Barta, C., Nogues Gonzalez, I., *Brilli, F., Velikova, V., Loreto, F., **Biogenic volatile organic compound (BVOC) emissions from leaves induced by oxidative stresses**, ACCENT Symposium on Biogenic Organic Volatiles, Urbino, Italy, 2005

(62) Velikova, V., Barta, C., Nogues Gonzalez, I., *Brilli, F., Fares, S., Loreto, F., **Isoprene in a changing environment – effect of high temperature on ozone and isoprene em***ission*, ACCENT Symposium on Biogenic Organic Volatiles, Urbino, Italy, 2005

(63) Barta, C., Ogawa, K., Asada, K., Hideg, É., **The role of superoxide-dismutase in detoxifying reactive oxygen species in tobacco leaves exposed to UV-radiation**, 10th Congress of the European Society for Photobiology, Vienna, Austria, 2003

(64) Barta, C., Vass, I., Hideg, É, **The role of superoxide-dismutase in detoxifying reactive oxygen species in tobacco leaves exposed to 290 or 360 nm UV**, Vth Hungarian Photosynthesis Conference and Advanced Photosynthesis School, Noszvaj, Hungary, 2003

(65) Barta, C., Kálai, T., Sár, C., Hideg, K., Vass, I., Hideg, É., **Detection of ROS in plants: novel techniques**, IVth Hungarian Photosynthesis Meeting, Szeged, HAS-BRC, 2001

(66) Hideg, É., Kálai, T., Barta, C., Ogawa, K., Vass, I., Hideg, K., Asada, K., **Detecting stress-induced reactive oxygen production in plants**, 9th Congress of the European Society for Photobiology, Lillehammer, Norway, 2001

(67) Hideg, É., Asada, K., Barta, C., Bornman, J., F., Dudits, D., Hideg, K., Horváth, G. V., Kálai, T., Oberschall, A., Ogawa, K., Sár, C., Szilágyi, A., Vass, I., **Detecting ROS in plants under UV-B stress**, Plant and Ultraviolet-B Radiation Congress, Japan, oral presentation by Hideg E., 2000

Poster presentations – local (since 2012): coordinated **over 650 students presenting their in-class applied learning projects at the MWSU Multidisciplinary Research Days** in St. Joseph, MO, and **research presentations of the Barta Team Isoprenado at PORTAL Showcases, representing our research with 6-9 posters each year**.

Language Skills: English, Italian, Romanian and Hungarian (*fluent*); French, Spanish, German (*basic*)

SERVICE

A) Institutional Service and Leadership

1. **MWSU Faculty Senate Executive Board and FS Secretary**, 2023-present
2. **University Assessment Committee, MWSU,** 2023-present
3. **MWSU Faculty Senator and Liaiason to the Grievance Committee,** 2023
4. **MWSU Faculty Senate Vice-President (and Executive Board Member)**, 2021-2022
5. **MWSU Financial Advisory Council, Member**, 2022
6. **Provost Search Committee, Member, MWSU**, 2021-2022
7. **MWSU – Family Day – Biology Exhibitor**, September 2022
8. **MWSU Strategic Plan Progress Review Focus Group,** participant, August 24th, 2022
9. **World Wildlife Day Promotional Video, Editor/Producer/PR, Recruiting,** March 30th, 2022
10. **MWSU Instagram Takeover, Recruiting and Visibility Enhancement, for World Wildlife Day,** March 30th, 2022
11. **MWSU Faculty Senate Executive Board and FS Secretary**, 2020-2021
12. **Organizer, Conference on Applied Learning (CALHE)**, 2021-2022
13. **Program Committee Chair of the Conference on Applied Learning (CALHE)**, 2021-2022
14. **Institutional Applied Learning Steering Committee, Member,** 2021 – present
15. **Social Media and Public Relations Director, Department of Biology,** 2021 – present
16. **Chair, Departmental Tenure and Promotion Committee,** for Dr. Aracely Newton, 2021-present
17. **MO-Rise, Career Networking Event Contributor,** 2019-present
18. **MWSU Faculty Senator (elected), Liaison for the Grievance Committee**, 2019 – 2021
19. **GO-Zoom Recruitment Showcase Host and Panelist,** 2020-present
20. **Presidential Speakers Team, Member**, 2019 – present
21. **Steering Committee and Secretary, Center for Teaching and Learning (CTL), MWSU,** 2019 – 2022
22. **Committee Member, the John Rushing Teaching and Research Prairie, MWSU,** 2018-present
23. **Chair, Center for Teaching and Learning (CTL), MWSU – Fall Programming Committee**, 2018- 2019
24. **Recruitment Committee Member, Department of Biology, MWSU**, 2019 - present
25. **Member, General Studies Assessment Scoring Committee,** 2019 - present
26. **Partnership for Undergraduate Lifesciences Education (PULSE, NSF) Workshop**, MWSU Biology representative, DuBois, NE, July 17, 2019
27. **Panelist, Griffon Edge – freshman orientation, MWSU**, 2019 - present
28. **Chair, Subcommittee**, Undergraduate Curriculum Committee, 2018

29. **Committee Member, Strategic Planning - Programs – MWSU**, 2018
30. **Academic Advisor to the Molecular Biology and Biochemistry Program,** 2018 - present
31. **MWSU Departmental Showcase Presenter**, 2018 - present
32. **Panelist, Griffon Edge – freshman orientation, MWSU**, 2018
33. **Chair, Open House Showcase**, Department of Biology, 2018
34. **Secretary**, Undergraduate Curriculum Committee, Subcommittee C, 2017
35. **Faculty Advisor** to the Alpha Delta Gamma (ADG) Sorority, 2016 - 2020
36. **Chair, Women in Science Coordinator,** Women's History Month at MWSU – 2016 – 2020
37. **Committee Member & Liaison**, Women in Science and Mathematics institutional committee – 2016 - present
38. **Organizer & Presenter, College for Kids, Science and Science Careers** (MWSU – LAS) – Humboldt Elementary, October 28, 2016.
39. **Contributor**, MWSU Foundation Appreciation Gala, 2015 - present
40. **Committee Member,** Department of Biology Natural History Collection – since 2015
41. **Committee Member,** Women's History Month at MWSU – 2015 - present
42. **Guest Speaker,** Women's History Month at MWSU – 2015
43. **Academic Co-Advisor to the Wildlife Conservation and Management Program**, 2015 – present
44. **Committee Member,** Biology Activity Organizing Faculty Team - CALHE 2015
45. **Chair**, Academic Standards and Regulations Committee, MWSU, 2014 – 2016
46. **Member**, Undergraduate Curriculum Committee, Subcommittee C, 2014 – 2019
47. **Honors Program Contributor**, HON 395 Honors Colloquium Development, 2014 - present
48. **Member**, Academic Standards and Regulations Committee, MWSU, 2013 - 2014
49. **Member**, Search Committee, Plant Systematics position, MWSU, 2014 and 2016
50. **Faculty reviewer, Science,** of the Missouri General Education Assessment (MoGEA) test, 2014
51. **Invited speaker**, MWSU Student Chapter of the Wildlife Society, Awards Banquet, 2014
52. **Leo Galloway Herbarium Coordinator & Co-Curator**, Great Plains Herbarium Network, 2013 – present
53. **Faculty Mentor,** Annual Reiss Biological Station Field Trip for Biology Department Students - 2013 - present
54. **Co-advisor**, Tri-Beta Biological Honors Society, 2012 – 2020
55. **Member**, Principles of Biology – Biology for non-majors departmental committee, 2012 – 2017
56. **Greenhouse Manager** - Biology Department, 2012 – present
57. **Faculty advisor**, to 40 biology majors/semester – since 2012

B) Professional Service and Leadership

Professional Affiliations

American Society of Plant Biologists (ASPB)
Ecological Society of America (ESA)
Federation of the European Society of Plant Biologists (FESPB)
Missouri Academy of Science (MAS)

Director/ Chair/ Committee Member/Panelist

1) **Invited Career Mentor**, American Society of Plant Biologists, Plant Biology Meeting, 2023
2) **How to Build a Successful Research Program at a Primarily Undergraduate Institution - Workgroup**, American Society of Plant Biologists (ASPB-PUI), Plant Biology Meeting, 2022
3) **Invited Career Panelist**, American Society of Plant Biologists (ASPB-PUI), Plant Biology Meeting, 2021
4) **Session Chair for the Plants and Climate Change (Sessions I and II)** at the Ecological Society of America Meeting, 2021
5) **Public Relations (PR), PUI section,** American Society of Plant Biologists (ASPB-PUI) – 2017-2021
6) **Volunteer**, Career advisor, Plant Biology Meeting, 2017 - present

7) **Session Chair**, Ecological Society of America (ESA) Meeting – Chaired the "Aquatic Ecology" half-day session, Fort Lauderdale, FL, August 2016
8) **Career Chats**, Careers at PUI institutions, invited workshop panelist, Plant Biology Meeting, 2015
9) **Session Chair,** Conference on Applied Learning in Higher Education, 2015
10) **Secretary**, Ecological Society of America (ESA) – Primarily Undergraduate Institutions (PUI) section, 2015 – present
11) **Webmaster**, Ecological Society of America (ESA) – Primarily Undergraduate Institutions (PUI) section, 2014 – present
12) **Career Advisor,** American Society of Plant Biologists (ASPB) - 2015
13) **Session Chair**, Ecological Society of America (ESA) Meeting – Chaired the "Plants and Climate Change I" half-day session, Sacramento, CA, August 2014
14) **Session Chair**, 9th Applied Learning in Higher Education Conference (CALHE) – Chaired a "Student Session," March, 2014
15) **Buell Braun Award Judge**, Ecological Society of America (ESA) Meeting, Sacramento, CA, August 2014
16) **Volunteer,** Plant Biology Meeting, Portland, OR, July 2014

Editor/Guest Editor

- **Forests (MDPI)**, Special Issue "Mechanisms of Acclimation and Adaptation of Tree Photosynthesis," 2023/2024
- **Plants (MDPI)**, Special Issue "Plant Responses to Pollution," 2023/2024 – in preparation
- **Journal of Visualized Experiments (JOVE)**, Special issue on Photosynthesis and Secondary Metabolite Assay Techniques, 2022 – in preparation
- **Horticulture (MDPI)**, Special Issue, "Abiotic Stress Responses of Plants" 2018-2019
- **Forests (MDPI)**, 2018-present

Editorial Board

- **Frontiers in Plant Science**, 2023 – present
- **Biology (MDPI), 2023** - present

Reviewer Board

Sustainability (MDPI), 2019 - present

Reviewer

Regular: Functional Plant Biology (over 20 papers), Atmospheric Environment (over 10 papers), Plant Cell and Environment (over 10 papers); Plant Biology (over 5 papers), Conservation Physiology (over 5 papers), Plant Physiology (over 5 papers), International Journal of Molecular Sciences (MDPI) (over 35 papers), Plants (over 10 papers), Sustainability (MDPI), Agriculture (MDPI) (over 5 papers); Molecules (MDPI) (over 5 papers), Horticulturae (MDPI) (over 5 papers), Agronomy (MDPI) (over 5 papers), Antioxidants (MDPI) (over 5 papers), Biology (over 5 papers) (Regular MDPI journals reviewer since 2015)

Ad hoc (less than four papers): Transactions of the Missouri Academy of Sciences, Plant Biosystems, Planta, Annales Botanici Fennici, Atmosphere (MDPI), Environments (MDPI) Genetics (MDPI), Education (MDPI), International Journal of Environmental Research and Public Health, Planta (ASPB).

Online Resource Reviews: reviewed the Revel Platform (Pearson Education) for General Biology (2016)

Textbook Reviews: reviewed four chapters of the "Biology for the informed citizen" textbook, authored by Donna Bozzone and Douglas Green, published by the Oxford University Press (2014)

Panel member/Ad hoc reviewer: NSF, 2011-present; USDA – AFRI, from 2022 – present

C) Community Service and Leadership

1) **Super Science Saturday – Biology Activity Coordinator**, February 10th, 2024
2) **Tiny Tots Town – Biology Coordinator**, St. Joseph, MO, October 10th , 2023
3) **MORise Science and Industry Networking Event, Biology Representative**, March 14th, 2023
4) **Griffon Recruitment Showcase,** March 9th, 2023
5) **Super Science Saturday – Biology Director**, St. Joseph, MO, January 28th, 2023
6) **Western Foundation Donor's Gala, Exhibitor and Mentor**, April 25th, 2022
7) **Science Program Director/Organizer,** Super Science Saturday, 2022.
8) **Missouri Western State University Open House, Demonstrator,** April 22nd, 2022
9) **Science Program Director,** "Northland Career Center Visit Activities", St. Joseph, MO, December, 2021
10) **Biology Exhibit Director,** Planet Party, Community Event, St Joseph, MO, September, 2021
11) **Science Program Director,** "Sound of Speed Airshow", St. Joseph, MO, May 1&2, 2021
12) **Science Program Exhibitor,** Mid-Buchanan HS Outreach program, St. Joseph, MO, June, 2021
13) **Dunn Ranch Prairie Days, Plant Biology Activity Director**, Dunn Ranch, MO, June, 2021
14) **Biology Director, Virtual Super Science Saturday**, January, 2021
15) **Director**, Discover Science! Summer Day Camp – Advanced, Inquiry-Based Molecular Biology, and Biochemistry Program, 2020
16) **Tree Expo –** Plant Biology Exhibit, Saint Joseph, MO, 2019
17) **Plant Biology Exhibit**, Local and Regional STEM Highschool day, 2019
18) **Plant Science Specialist Consultant, Sustainable Environment Advisory Committee for the City of St Joseph, MO –** 2018 - present
19) **Biology Program Organizer,** "Sound of Speed Airshow" Exhibit, St. Joseph, MO, August 25 & 26, 2018
20) **Biology Program Organizer**, Girl Scout Camp Day – MWSU, 2018
21) **Program Coordinator,** Super Science Saturday - 2017- present
22) **Director,** Biology Department, Discover Science! Summer Day Camp, 2014 – present
23) **Guest Speaker,** Grand River Prairie Days, Missouri Department of Conservation and the Nature Conservancy Organization – 2015 – present, yearly event
24) **Committee Member,** Missouri Academy of Science, Junior High School Division, 2013 - present
25) **Science Judge,** MARSEF, 2013 – 2020
26) **District Director**, Missouri Junior Academy of Science, MJAS, 2012- present
27) **Program Coordinator**, Tiny Tots Town (with the City of Saint Joseph, MO), 2012- present
28) **Guest Speaker,** Science, and Society: The Science and Politics of Climate Change, public seminar, St. Joseph, MO - 16 November 2015
29) **Workshop Organizer & Guest Speaker, Plants and pollinators,** Master Gardeners of the University of Missouri Extension and the Master Naturalists Organization**,** March 25, 2015 - April 1, 2015
30) **Director**, Mid-America Regional Science and Engineering Fair (MARSEF), 2015, 2015-present: **science judge/panelist**
31) **Committee Member, Stewartsville Science Fair** - March 17, 2015
32) **Award Committee Member**, for Junior High School Division of MJAS, 2012 - present
33) **Biology Demonstration Coordinator**, Briarcliff Elementary School Visit, 2014
34) **Science Fair Judge**, GEMS, Savannah, MO, 2013
35) **Science Judge**, West Platte Science Fair, 2012 - present
36) **Department Coordinator,** Super Science Saturday – Biology Department, Missouri Western State University and the Saint Joseph Museum, 2012- present
37) **Department Representative & Biology Program Coordinator**, Parents as Teachers, Tiny Tots Town – Biology Department, Missouri Western State University, 2012- present
38) **Plant Biology Activity coordinator,** Kids as Scientists, 2012
39) **Volunteer,** Graduate Teaching Academy, Texas A&M University, 2011- 2012
40) **In-field science judge,** 14th Student Research Week, Texas A&M University, 2011

41) **School Science Fair Judge**, 2000- present
42) **Workshop coordinator** of Texas A&M University science projects, workshops, field and laboratory demonstrations for teachers and students of the Jefferson Davies High School and McCullough Junior High, and employees of the Sam Houston National Forest Ranger Station, TX, 2010-2013
43) **Coordinator**, USDA laboratory demonstrations and guided visits of groups of visiting students and lecturers from the Arizona State University and University of Arizona, 2007-2010
44) **Coordinator**, Biology Journal Club and seminar coordination, 2000-2007

PROFESSIONAL DEVELOPMENT and CERTIFICATIONS

1) **Enhancing Teaching Skills for Plant Scientists**, Webinar, Plantae, Sept. 19, 2023
2) **Successful grantmanship at PUIs**, Plant Biology 2023, Aug. 5-9, Savannah, GA
3) **LICOR Environmental Webinar**, New Direct and Economical Evapotranspiration Measurements, July 19, 2023
4) **National Science Foundation (NSF) Virtual Grants Conference,** June 5-8, 2023
5) **Setting SMART Goals**, Webinar, Plantae, April 21, 2023
6) **Education Summit**, Course Hero, July 2022
7) **Higher Education: Business and Leadership**, by Fierce Education, June 30th, 2022
8) **Transformative Learning for the Future**, Ruthledge Taylor & Francis Education Webinar series, June 21st, 2022
9) **Spring 2022 National Science Foundation (NSF) Grants Conference**, June 6-10, 2022
10) **REMOTE – The Connected Faculty Summit: Maximizing Success for Learners**, earned professional development Badge, Arizona State University, 2022
11) **Missouri Hunter Education Certification, Missouri Department of Conservation,** St. Joseph, MO, April 15th, 2022
12) **REMOTE – The Connected Faculty Summit**, earned professional development Badge, Arizona State University, 2021
13) **Higher Education: The Connected Campus,** Fierce Education, August, 2021
14) **Global Positioning Systems**, II & III Missouri Western State University and the Western Institute, Certified User, Saint Joseph, MO, 2020
15) **Agilent – "Eliminate the Fear Factor" – GC and LC chromatography workshop**, June 18-19, Olathe, KS
16) **Partnership for Undergraduate Lifesciences Education (PULSE, NSF) Workshop**, MWSU representative, DuBois, NE, July 17, 2019
17) **Primarily Undergraduate Institutions Workshop**, American Society of Plant Biologists (ASPB), Honolulu, HI – June 24, 2017, and American Society of Plant Biologists (ASPB), Montreal, Canada, 2018
18) **Six-Sigma White Belt Certificate (IASSC)** – certificate in quality control, 2016
19) **Tutorial,** "**Panopto,**" MWSU - August 25, 2015
20) **Workshop,** "**Federal Funding,**" Ecological Society of America (ESA), Baltimore, MD - August 13, 2015
21) **Workshop,** "**Kill the PowerPoint: Exploring Teaching Moments Via Impromptu Chalk Talks**" Ecological Society of America (ESA), Baltimore, MD - August 13, 2015
22) **Workshop,** "**Build Your Career with the Plant Physiology and Plant Cell,**" American Society of Plant Biologists (ASPB), Minneapolis, MN - July 27, 2015
23) **Workshop,** "**Education Workshop: Lessons on How to Study – Evidence from Cognitive Psychology**" American Society of Plant Biologists (ASPB), Minneapolis, MN - July 28, 2015
24) **Workshop,** "**Plant Biology Research at Primarily Undergraduate Institutions**" American Society of Plant Biologists (ASPB), Minneapolis, MN - July 25, 2015
25) **Great Plains Herbarium Network web interface training workshop**, Botanical Symposium, Saint Louis, MO, 2013
26) "**Writing and Designing NSF Proposals" Certificate,** NSF Grant Training Center, Kansas City, MO, 2013
27) **Global Positioning Systems**, Missouri Western State University and the Western Institute Certified User, Saint Joseph, MO, 2013

28) **Graduate Teaching Academy Certificate**, Texas A&M University, College Station, TX, 2011
29) **Radiation Safety Course** – Radiation Physics and Engineering, Certification, Phoenix, AZ, 2008
30) **"Techniques in plant membrane proteomics" Training School**, COST- EC program, Munich, Germany, 2007
31) **"Gas exchange technology,"** Eco-Search and LI-COR Biosciences, Certification, Citta di Castello, Italy, 2007
32) **"Stable Isotopes, Plant VOCs and Secondary Organic Aerosols in Biosphere-Atmosphere Carbon Exchange"** ISONET -VOCBAS Short Course, Certification, Kuopio, Finland, 2006
33) **Proton Transfer Reaction-MS Training Courses** (II&III), Certification, Obergurgl, Austria, 2005 and 2006
34) **ISONET Summer-School** (II), Benediktbeueren, Germany, 2005
35) **"Biogenic Volatile Organic Compounds in the Plant-Environment Interactions"** (I) VOCBAS Summer School, Chemical Ecology Certification, Pieve Tesino, Italy, 2004
36) **"Solid-Phase Micro-Extraction"** Sigma-Aldrich and Supelco, Certification, Rome, Italy, 2004
37) **International Advanced Course - Chemistry and Biochemistry of Antioxidants**, Wageningen, Netherland, 2002
38) **Bioinformatics Course**, Polish Academy of Sciences, Certification, Warsaw, Poland, 2002

SELECTED MEDIA PRESENCE

- **KQ2-News Interview,** "Climate trends causing allergy season to become earlier, longer, and worse" , March 29, 2023; https://www.kq2.com/news/climate-trends-causing-allergy-season-to-become-earlier-longer-and-worse/article_73ff39a2-ce4d-11ed-8ff3-6f05028ae818.html
- **Griffon Weekly,** "Dr. Csengele Barta publishes two papers", November 2022: https://www.missouriwestern.edu/points-of-pride/2022/12/05/dr-csengele-barta-publishes-two-papers/
- **Griffon Weekly,** "Dr. Csengele Barta forges international collaboration" December 08, 2021**:** https://intranet.missouriwestern.edu/griffonweekly/2021/12/08/dr-csengele-barta-forges-international-collaboration-with-plant-scientists/
- **Griffon Weekly**, "Dr. Csengele Barta and MWSU undergraduate research student, Alyka Zahnd recognized in the American Society of Plant Biologists's International Newsletter" December 08, 2021**:** https://intranet.missouriwestern.edu/griffonweekly/2021/12/08/biology-student-and-research-mentor-are-recognized-in-newsletter/
- **Griffon Weekly,** May 05, 2021**:** https://intranet.missouriwestern.edu/griffonweekly/2021/05/19/prairie-pollinator-attracting-boxes/
- **Savannah Reporter**, June 21, 2021, Plant Wars (https://www.savrep.com/articles/plant-wars/)
- **Saint Joseph News-Press**, May 14, 2021, Biology Student earns research fellowship (https://www.newspressnow.com/life/community/biology-student-earns-research-fellowship/article_f1e2017e-b351-11eb-a793-cf710fc2411b.html)
- **NorthwestMOInfo**: https://www.northwestmoinfo.com/local-news/mo-west-student-earns-summer-fellowship/
- **Griffon News:** https://www.griffonnews.com/home-news/dr-barta-receives-primarily-undergraduate-award/article_cef430ea-f7a1-11ea-8c89-f76795b01aa0.html
- **Griffon Weekly**: https://intranet.missouriwestern.edu/griffonweekly/2021/06/02/student-earns-prestigious-biology-fellowship/
- **Griffon Yearbook, 2020,** "Sowing the Seeds of Success: Dr. Csengele Barta" by Christian Sarna.
- **Saint Joseph News-Press**, November 10, 2019, Expo Educates on the Importance of Trees.
- **MWSU Magazine**, Winter 2019, pages 8-9, September 15, 2019, Biology student selected as research fellow - interview featuring my research with MWSU undergraduate researcher Rachael Prawitz.
- **Medium.com**: "Believing in every opportunity" by Samuel Pickman, October 16, 2019, https://medium.com/@spickman1/believing-in-every-opportunity-99c01ab3abd8
- **Griffon Yearbook Vol 93, September 15, 2019,** More to a pin oak than meets the microscope - research feature of my research laboratory and my undergraduate research team
- **July/August 2018 Newsletter of the American Society of Plant Biologists:** https://aspb.org/newsletter/archive/2018/JulyAug18.pdf

- **American Society of Plant Biologists Education and Outreach Section blog (2018)** portal: https://blog.aspb.org/announcing-the-2018-summer-undergraduate-research-fellows-surf/
- **Missouri Western Magazine (2018):** https://www.missouriwestern.edu/magazine/2019/01/08/biology-student-selected-as-a-research-fellow/
- **Medium.com:** "What's growing in the Agenstein Greenhouse?" March 28, 2018 by Chase Merwin: https://medium.com/griffon-media/an-insight-into-the-agenstein-greenhouse-not-finalized-df7c575f65f
- **KQ2 TV**, March 12, 2016, Missouri Junior Academy of Science Feature, Interview with Csengele Barta
- **FOX 26 KNPN**, Oct.9, 2016Fall Brings Nature's Best Colors – interviewed by Molly Bernard
- **St. Joseph News-Press**, Oct. 10, 2016, Fall Brings Nature's Best Colors – Interview
- **KQ2TV – News at 6** – Interview with Csengele Barta, the Biology Department Coordinator of the Discover Science! Summer Day Camp., June 16, 2014
- **Saint Joseph NewsPress and FOX 26 KNPN: Local News** – Discover Science! Summer Day Camp offered by Missouri Western State University., June 3, 2014
- **Missouri Western Magazine, Fall 2014** – Discover Science! Summer Day Camp feature
- **Saint Joseph NewsPress** – Super Science Saturday feature of offered Plant Biology activity, 2014
- **Saint Joseph NewsPress** – Super Science Saturday feature of offered Plant Biology activity, March 10, 2013
- **Points of Pride**, Missouri Western State University, Saint Joseph, MO – multiple features (May 2014, April 2014, September 2013, May 2013, March 2013)
- **American Society of Plant Biologists, ASPB Newsletter** – May/June 2013, Volume 40, Number 3 – ASPB's 2013 Women's Young Investigator Award Winners Announced

SELECTED SPECIFIC SCIENCE RESEARCH and EDUCATION TECHNIQUES/COMPETENCIES/SKILLS

Professional experience with the following specialized techniques in **Plant Biochemistry and Molecular Biology, General and Plant Cell Biology, Plant Physiology, Medicinal Plant Biology, Chemical Ecology and General Plant Sciences**:

- Photosynthesis investigations: gas exchange measurements (photosynthesis, using LICOR or equivalent tools, infrared gas spectroscopy, oxygen polarography), plant pigment quantification/detection/spectroscopy *in vivo* and *in vitro* using biochemical assays, imaging using imaging equipment (as imaging PAM), chlorophyll fluorescence induction and detection using mini-PAM, handheld devices; glucose, sucrose, starch metabolite assays;
- plant tissue and soil nutrient assessment assays (spectrophotometric, conductance, electrochemistry, atomic absorption, etc. methods);
- metabolite analytical techniques: spectrophoto- and fluorimetry; gas-, high-performance liquid-, thin layer-, atom-absorption, and paper chromatography and mass spectrometry; proton transfer mass spectrometry, volatile headspace analyses;
- metabolite bioassays *in vitro* and *in vivo* on whole plants and cells, plant plate assays to establish irregularities in growth/development/reproduction/phenotype;
- Rubisco, Rubisco activase isolation and purification from plants, *Escherichia coli*, and *Chlamydomonas* spp.;
- Rubisco activase and Rubisco activity measurements (radioactive assays using 14C radioisotopes (for example to measure Rubisco activation));
- metabolite quantification assays (for phytohormones, antioxidants, reactive oxygen and nitrogen species produced upon oxidative stress responses; antioxidant enzyme assays);
- plant histochemical staining, fluorescence detection (e.g., fluorescent detection of reactive oxygen species, protein or other metabolite detection); programmed cell death;
- microscopy: bright field, fluorescence, laser scanning;
- metabolite structural modeling and analyses, NMR spectroscopy;
- protein biochemistry and proteomics (proteins: SDS and Native Page, Western Blotting, sugar gradient ultra-centrifugal separation, fractionation, purification from bacteria or plants, separation using differential precipitation, ion-exchange chromatography, fractionation, enzyme assays and assay development, ELISA,

structural predictions and modeling; protein-protein interactions; protein affinity tagging; protein denaturation studies, circular dichroism, aggregation studies, gel filtration chromatography)
- molecular biology and transcriptomics (PCR, primer design, quantitative PCR and *in vitro* transcription, DNA degradation and Comet assays, electrophoresis techniques, genomic and fragment DNA purification, RNA extraction from plants, site-directed mutagenesis, molecular cloning, construct and vector design, protoplast and plant transformation, DNA and protein purification from *E. coli*, protein assays for activity or structure studies);
- capillary Sanger sequencing and sequence data analysis;
- membrane denaturation detection (lipoxygenase activity measurements, membrane lipid peroxidation, membrane heat stability, thermo-luminescence measurements, membrane conductance measurements, electrography);
- metabolite toxicity bioassays (for example, for allelopathic compounds or soil nutrients in excess);
- cellular toxicity assays for medicinal plant compounds;
- phenotypic profiling;
- soil property analysis;
- field plot research techniques, and large-scale screening;
- general agronomic and horticultural approaches in plant growth and cultivation under controlled conditions (greenhouse, growth chamber) or the field;
- canopy CO2 and volatile flux measurements;
- agricultural and horticultural methods in plant cultivation in soil or aquaponics;
- transgenic plant handling and screening;
- insect choice bioassays;
- bioinformatics tools for data mining and analysis;
- online database use;
- online database construction;
- specialized data handling/analyzing/advanced statistics software proficiency (Sigma Plot, Sigma Stat, and SPSS, Origin, Microsoft Excel, Snap Gene, etc.);
- sterile cell culture techniques (using *Chlamydomonas sp.*, or *E. coli*); cell handling and decontamination, autoclaving;
- automated sampling robots;
- eco-physiology methods (volatile flux analysis and modeling);
- global positioning (GPS – certified user);
- meteorology techniques: installation and operation of in-field and localized weather stations, and analysis of weather data, processing large amounts of data;
- science and recruitment video productions;
- scientific writing, publishing;
- grant writing to attract funding.

Professional competencies in **Education Technology and the Scholarship of Education**:

- Innovative classroom and online delivery of small and large enrollment courses for majors and non-majors;
- Applied Learning in higher education in course settings, including laboratory- and field courses;
- Education Research – scholarship of education;
- Educational grant writing;
- Manuscript writing and publishing in journals or open source platforms;
- Web design for educational materials and science;
- Photography, photo-editing;
- Workshop and small conference logistics;
- Science and recruitment video productions;
- Clicker fast response systems (Turning Technologies);

- Online class delivery tools as, but not limited to Canvas, Moodle, Banner, Panopto, Turnitin, Zoom, Meetings by Google, Microsoft tools, including Office, Power Point, Excel, Microsoft Teams, Adobe Suite including Adobe Premier Pro, scientific data management and statistical software (as Sigma Plot and Sigma Stat, SPSS, Origin, etc.), Photoshop, the use of publisher-provided and operated online platforms as Mastering or Revel by Pearson, Connect by McGraw and Hill, etc.