

CURRICULUM VITA

TILOTTAMA ROY, PHD

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PROFESSIONAL EXPERIENCE

- **Missouri Western State University, St. Joseph, MO**
Assistant Professor, Department of Biology (August 2017-present)
- **Seattle University, Seattle, WA**
Lecturer, Department of Biology (January 2017-June 2017)
- **The State University of New York at Buffalo, Buffalo, NY**
Graduate Teaching Assistant (2009-2010; 2012- 2015)
- **The University of South Dakota, Vermillion, SD**
Graduate Teaching Assistant (2006-2008)

EDUCATION, TRAINING, AND RESEARCH EXPERIENCE

- **The University of Michigan at Ann Arbor, Ann Arbor, MI**
Postdoctoral Research Fellow, Department of Ecology and Evolutionary Biology (2015-2016)
Project title: “Genetic basis of leaf shape variation in *Ipomoea batatas*” – Postdoctoral research project
Project PI: Dr. Gina Baucom
- **The State University of New York at Buffalo, Buffalo, NY**
Doctor of Philosophy in Biological Sciences - Plant Evolutionary Biology focus (2009-2015)
Graduate Research Assistant (2010-2012)
Dissertation title: “Phylogeny and biogeography of a large mint subfamily, Lamiaceae (Lamiaceae), with emphasis on North American and Hawaiian diversifications”
Dissertation Advisor: Dr. Charlotte Lindqvist
- **University of South Dakota, Vermillion, SD**
MS in Biology - Plant Evolutionary Biology focus (2006-2008)

Thesis title: “Genetic structure of a *Schiedea* (Caryophyllaceae) hybrid zone in Hawaii”
Thesis advisor: Dr. Molly Nepokroeff

- **University of Calcutta, Kolkata, India**
MS in Agriculture with specialization in Genetics and Plant Breeding, (2001-2003)
Thesis title: “Application of various technologies for the maintenance of CMS lines in Rice (*Oryza sativa*, Poaceae)”
Thesis advisor: Dr. P.K. Dey
- **Presidency College (University of Calcutta), Kolkata, India**
BS in Botany (with Honors) (1998 – 2001), Minor in Chemistry and Zoology
- **Summer Research:** The State University of New York at Buffalo (2009)
“Ecological dynamics of pesticide toxicity on the aquatic microcrustaceans *Daphnia* and *Scapholeberis*”
Project advisor: Dr. Derek Taylor

PUBLICATIONS:

Wok done exclusively at Missouri Western State University

(*undergraduate research student)

1. **A closer look at the migration and diversification of the False Foxgloves (Genus: *Agalinis*; Family: Orobanchaceae) in temperate North America - Tilottama Roy, Tien-Hao Chang**, Shawn Boss*, Benjamin Bashaw*, and Lyndsay Lamey*; **Manuscript submitted to “BIOS” – current status –required reviews completed**

US collaborator
2. **Radioprotective Natural Products: A Probable Alternative to Orthodox Cancer Radiotherapy in India.** Subhajit Dutta**, Raju R Wadekar**, Tilottama Roy, Subhash C Mandal**; **Manuscript submitted to “The Journal of Herbs, Spices, and Medicinal Plants”** **International collaborators
3. **A closer look at plant migration and diversification: How does abiotic stress affect historical biogeography in plants.** Tilottama Roy, Shawn Boss*, and Esther Par*. Manuscript in prep.
4. **Character individuation: How good are Bayesian methods at resolving phylogenetic relationships between closely related species.** Tilottama Roy and Lane DesAutels**.

Manuscript in prep. ** Collaborator from the Department of Philosophy and Religion, MWSU

5. **Paying “the right price” for stress protection in a “volatile” future: the potential costs and benefits of emitting isoprene in a warming climate**, Barta , C**., Svojanovsky, S.R., Roy, T., Bashaw , B.J*, Bilby, S.R., Constable, W.K., Edlin, M.L., Helsel, M.M., Jenkins, B.C., Karns, N.C, Lamey, L.M*, Lindstrom, D.S., Moore, K.D., Moore, M.M., Phelan, J.M., Piper, K.S., Prawitz, R.A., Thammarat, C.F., Manuscript ready for submission.

Previous work

- Roy T., Catlin N.S., Garner D.M.G., Cantino P.D., Scheen A., Lindqvist C. **2016**. Evolutionary relationships within the lamioid tribe Synandreae (Lamiaceae) based on multiple low-copy nuclear loci. **PeerJ 4:e2220**
- Roy T. and Lindqvist C. **2015**. New insights into evolutionary relationships within the subfamily Lamiioideae (Lamiaceae) based on pentatricopeptide repeat (*PPR*) nuclear DNA sequences. **American Journal of Botany 102 (10): 1-15**
- Roy T., Cole L., Chang T., Lindqvist C. **2015**. Untangling reticulate evolutionary relationships among New World and Hawaiian mints (Stachydeae, Lamiaceae). **Molecular Phylogenetics and Evolution 89: 46-62**
- Roy T., Chang T., Lan T., Lindqvist C. **2013**. Phylogeny and Biogeography of New World Stachydeae with emphasis on the origin and diversification of Hawaiian and South American taxa. **Molecular Phylogenetics and Evolution 69: 218-238**
- Charlotte Lindqvist, Tilottama Roy, Christian Lydersen, Kit M. Kovacs, Jon Aars, Øystein Wiig, Lutz Bachmann. **2016**. Genetic diversity of historical North Atlantic walruses (*Odobenus rosmarus rosmarus*) from Bjørnøya and Håøya (Tusenøyanen), Svalbard, Norway. **BMC Research Notes 9(1):112**
- Wallace L.E., Culley T.M., Weller S.G., Sakai A.K., Kuenzi A., Roy T., Wagner W.L., Nepokroeff M. **2011**. Asymmetrical gene flow in a hybrid zone of Hawaiian *Schiedea* (Caryophyllaceae) species with contrasting mating systems. **PloS One 6(9): e24845**

TEACHING EXPERIENCE:

Missouri Western State University, Department of Biology

- BIO105: Principles of Organismal Biology –Lecture and lab (Fall 2017, 2018, 2019; Spring 2018, 2019)
- BIO351: Local Flora – Lecture and lab (Fall 2017; Spring 2019)
- BIO 350: Plant Systematics – Lecture and lab (Fall 2018)

- BIO 101: Principles of Biology- Lab (Fall 2019)
- UNV 101: The University Experience (Fall 2019)

Seattle University, Department of Biology

- BIOL1620/1621: Biology II: Evolution and Ecology- Lecture and lab (Winter quarter, 2017)
- BIOL2520-01: Flowering Plant Taxonomy- Lecture and lab (Spring quarter, 2017)

The State University of New York at Buffalo, Department of Biological Sciences

- Bioinformatics and Genome Analysis (BIO400/500)- Spring (2015, 2014, 2013, 2010)
- Evolutionary Biology (BIO200)- Fall (2014, 2013, 2012, 2009); Summer (2015, 2013, 2010)
- Cell Biology (BIO201) –Summer (2014)

University of South Dakota, Department of Biology

- General Biology (BIOL153L) -Fall (2006); Spring (2007, 2008);
- Principles of Ecology (BIOL311L/511L) –Fall (2007)

STUDENT RESEARCH MENTORING:

Missouri Western State University

- Shawn Boss, Biology Major and Honors student (January 2019-present): Evolution and diversification of *Agalinis* (False Foxgloves; Orobanchaceae)
- Esther Par, Biology Major (May 2019-present): Phylogeny and biogeography of two important lamioid mint groups Pogostemoneae and Gomphostemmatae (Lamiaceae); Index Herbariorum Project
- Megan Ray, Biology Major and Honors student (Fall 2019-present) – Index Herbariorum project
- Benjamin Bashaw, Biology Major and Honors student (January 2018-December 2018): Phylogeny and biogeography of Lamioid mint groups; Phylogenetics of *Agalinis* (False Foxgloves; Orobanchaceae)
- Lyndsay Lamey (May 2018-May 2019)- Phylogenetics of *Agalinis* (False Foxgloves; Orobanchaceae)

Previous

- Tyler Marrs, Ecology and Evolutionary Biology (2015-2016); The University of Michigan;
- Nathan Catlin, Biology major and honors student (2012-2014); The State University of New York at Buffalo
- Drake Garner, Biology major (2012-2014); The State University of New York at Buffalo;
- Alexandria Walters, Bioinformatics major (2011-2012)
- Nicholle Anderson, Biology major (2012); The State University of New York at Buffalo

❖ Graduate student rotation research mentor:

- Michael Brannick (Fall 2012), Department of Biological Sciences; The State

University of New York at Buffalo

o Ridhima Vij (Spring, 2011), Department of Biological Sciences; The State University of New York at Buffalo

o Mackenzie Hopkins (Spring, 2010), Department of Biological Sciences; The State University of New York at Buffalo

LEADERSHIP AND OUTREACH:

- Interdisciplinary Science and Engineering partnership (ISEP) with the University at Buffalo, Buffalo, NY (2011)

A. Professional:

1. Member of the editorial board of the journal 'Harvest Journal'-www.harvestjournal.net (2018-present)
2. Reviewer for the following scientific journals: PeerJ, Nordic Journal of Botany, Molecular Phylogenetics and Evolution, Plant Systematics and Evolution, Folia-Geobotanica
3. Reviewer of conference papers for the 3rd International Conference in Biotechnology & Biological sciences, BIOSPECTRUM, Kolkata, India, 2019
4. Mentor for the PLANTS grant program for undergraduate researchers at the Botany Conference, 2018, Rochester, MN
5. Session chair for a session at the Botany Conference, July 2018, Rochester, MN

B. Community:

1. Judge for posters and talks for local high school students at MARSEF and MJAS science fairs at Missouri Western State University (March, 2018)
2. Judge for posters for the West Platte High School Science Fair, MO (January- 2018, 2019)
3. Super Science Saturday at Missouri Western State University (set up, display and demonstrate a variety of biological specimens to interested audiences of diverse ages)- (January- 2018, 2019)
4. Planned and displayed a variety of scientific experiments for the girl scout at Missouri Western State University (June, 2018)
5. Volunteer at the Saint Joseph Airshow (planned, developed and demonstrated scientific experiments and biological specimens) – (August 2018)
6. Planned, developed and demonstrated scientific experiments and biological specimens for selected group of 5th graders from local schools at Missouri Western State University, (December, 2018)
7. Tiny Tots Town, Saint Joseph, MO (set up, display and demonstrate a variety of simple science activities to little kids)- (Fall 2017, 2019)

C. Institutional/Departmental:

1. Biology department recruitment coordinator (January 2018-current)- I plan, coordinate and participate at Missouri Western State University showcase (Griffon showcase), as well as other recruitment events for the biology department – A series of events every year that helps to highlight our biology department to potential undergraduate students interested in pursuing their degrees at Missouri Western.
2. Host for the Biology Honors convocation, Biology Department at MWSU, April 2018

3. Attended Griffon coffee chats with interested students and their parents at Missouri Western (summer 2018, 2019)
4. Part of the SOCI mentoring committee at Missouri Western (Mentor for students of color)- 2018-2019
5. Presenter for UNV 101 talks for fall 2017, 2018 at Missouri Western, representing Biology department along with other faculty
6. PORTAL showcase, fall 2018, 2019- My undergraduate research students presented posters on their research
7. Multidisciplinary Research Day at Missouri Western State University – Spring 2018, 2019; fall 2018, 2019 - My undergraduate research students and BIO 105 students presented posters on their research
8. Griffon Edge Panel Discussion at Missouri Western State University– August 2018, 2019 – I was a part of a panel of faculty that talked to incoming students about their first-year experience.
9. Participated in Tri-Beta movie nights and discussions, Biology department at Missouri Western, fall 2018

D. Administration

1. Chair of the professional leave committee (faculty senate committee at Missouri Western State University), AY-2018-2019 and 2019-2020
2. Member of the Strategic Plan Steering committee at Missouri Western State University- Spring 2018– We were in charge of working towards reorganizing and redefining some of the missions and visions of Missouri Western. I was a part of the “People” group – our objective was to formulate and plan strategies at Missouri Western that will create a culture that demonstrates our values and affirms the role of every employee as an educator.
3. Member of the General Studies Assessment Academy at Missouri Western- Fall 2018 – I was involved in strategizing measures to refine our institutional learning goals into measurable student learning outcomes.
4. Member of the General Studies scoring committee at Missouri Western, Summer 2019 – I participated in scoring more than 200 artifacts from General Studies courses from various departments at MWSU
5. Member of the tree planning and advisory committee on campus at MWSU– 2018-2019

CONFERENCE/SYMPOSIA PRESENTATIONS:

*Undergraduate student researcher

- **Evolution Conference (Evolution meetings), June 2019, Providence, RI**
 - a. Poster- *S. Boss, Tien-Hao Chang, *Benjamin Benjamin Bashaw, *Lyndsay Lamey and Tilottama Roy: Investigating phylogenetic relationships within the North American False Foxgloves (*Agalinis Sp.*; Family: Orobanchaceae) - Shawn presented this poster and was highly praised by faculty and students from all over the world
- **Botany Conference (Botany meetings), July, 2018, Rochester, MN**
 - a. Oral presentation – Tilottama Roy: Investigating evolutionary relationships within Pogostemoneae and Gomphostemmatae (Subfamily: Lamiioideae; Family: Lamiaceae)

- b. Poster- Benjamin Bashaw* and Tilottama Roy: Investigating evolutionary relationships within Pogostemoneae and Gomphostemmatae (Subfamily: Lamioideae; Family: Lamiaceae)
- **Missouri Academy of Science Annual Conference, Maryville, MO, April, 2019**
 - a. Oral presentation - Tilottama Roy: Revisiting the North American *Agalinis* (Family: Orobanchaceae)
 - b. Poster - S. Boss*, L. Lamey*, B. Bashaw* and T. Roy. Department of Biology, Missouri Western State University: Investigating phylogenetic relationships within the North American False Foxgloves (*Agalinis Sp.*; Family: Orobanchaceae)
- **Multidisciplinary Research Day** – Spring 2018 (Poster by Benjamin Bashaw* on the evolutionary relationships among the Lamioid mints); Fall 2018 (Posters by Benjamin Bashaw and Lyndsay Lamey* on the phylogenetics and historical biogeography of the North American *Agalinis*); Spring 2019 ((Poster by Shawn Boss* on the phylogenetics and historical biogeography of the North American *Agalinis*)
- **PORTAL Showcase:**
 - a. Fall 2018- (Posters by undergraduate research students Benjamin Bashaw* and Lyndsay Lamey* on the evolution and diversification of the North American *Agalinis*);
 - b. Fall 2019- (Posters by undergraduate research students Esther Par* on the phylogenetics and biogeography of Lamioid mints; Shawn Boss* on the phylogenetics and biogeography of the North American *Agalinis*)
- Roy T. and Lindqvist, C. 2014. Phylogeny and biogeography of two North American lamioid mint lineages (Lamiaceae). Evolution Conference, Raleigh, North Carolina (Oral Presentation)
- Roy, T. 2014. Reconstructing complex evolutionary relationships of New World mints through a multi-locus phylogenetic approach. The 9th Annual Biological Sciences Research Symposium. The State University of New York at Buffalo, Buffalo, NY (Oral Presentation)
- Roy, T. 2012. Origin and diversification of the Hawaiian mints. Botany Meetings, Columbus, Ohio (Oral Presentation)
- Roy, T. 2012. Origin and diversification of the Hawaiian mints. The 7th Annual Biological Sciences Research Symposium. The State University of New York at Buffalo, Buffalo, NY (Oral Presentation)
- Roy, T. 2007. Genetic structure of a *Schiedea* hybrid zone in Hawaii. Annual Graduate Research Forum, 2007. University of South Dakota, Vermillion, SD (Oral Presentation)

INVITED SPEAKER PRESENTATIONS:

- Invited guest speaker at the Career Day, at the State University of New York at Buffalo, New York (March, 2019)
- Invited guest speaker at the biology seminar series at Seattle University (May, 2018)
- Invited guest speaker at the biology seminar series at Western Washington University (May,

2018)

HONORS AND AWARDS:

- Program of Research Teaching and Learning (PORTAL) grant award, Missouri Western State University; summer 2018; summer 2019
- LAS Faculty Development Award, Missouri Western State University – AY 2018-2019; AY 2019-2020
- Professional Members Travel award from the Botanical Society of America, 2018
- Mark Diamond Research Fund (MDRF) grant award, The State University of New York at Buffalo, 2014
- Travel award for attending the Phylogenomics Symposium and Software School at Evolution 2014, in Raleigh, North Carolina, 2014
- Travel grant, The State University of New York at Buffalo Graduate student association, 2014
- Graduate Student Research Grant award, University of South Dakota, 2006

- **NSF Proposal:**

A closer look at the migration and diversification of the False Foxgloves (Genus: *Agalinis*; Family: Orobanchaceae) in temperate North America
National Science Foundation (NSF)- Co-principal investigator with Dr. C. Barta (Biology) (In Prep.)

AFFILIATIONS:

- Botanical Society of America (2010- present)
- Society for the Study of Evolution (2010-present)
- American Society of Plant Taxonomists (2006-2010)

