

Maryam Nouri-Aiin

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CURRENT APPOINTMENT

Postdoctoral Associate, Agroecology, Landscape, and Env., University of Vermont **Jun 2022 - Present**
Focus Areas: Integrated Pest Management (IPM), genomics and bioinformatics, soil health and microbiome studies, and behavioral and ecological analyses to address challenges in sustainable agriculture and environmental management. Burlington, Vermont

Other Affiliations

Full Team Member, Institute for Agroecology, University of Vermont **Sep 2024 - Present**
Focus Areas: Integrated Pest Management (IPM), and Participatory Action Research. Burlington, Vermont

EDUCATION

Ph.D. in Plant and Soil Science, University of Vermont **Aug 2016-May 2022**
Dissertation: Elements of Biocontrol Strategies for Pheretimid Earthworms Burlington, Vermont

M.S. in Entomology, Tehran Science and Research Branch, Azad University **Feb 2012-Feb 2014**
Thesis: Isolation and characterization of entomopathogenic fungi Tehran, Iran

B.S. in Agricultural Science, Ilam Azad University **Sep 2004-Jul 2008**
Focus Areas: Plant Pests and Diseases Management Ilam, Iran

PROFESSIONAL EXPERIENCE

Collaborator, Institute for Agroecology **May 2022-Aug 2024**
Conducted lab and field experiments, co-supervising Agroecology Extension (AX) Summer Research Fellows Burlington, Vermont

Agricultural Quality Control Supervisor, TAK Inspection Co. **May 2014-Aug 2016**
Supervised inspections and certifications for agricultural products. Tehran, Iran

Microbiology Laboratory Technician, MK Training, Research and Q.C. Lab **Feb 2014 - May 2014**
Conducted microbial safety tests and calibrated equipment for food analysis. Tehran, Iran

Research Assistant, Research Institute for Plant Protection **Feb 2013-May 2014**
Conducted microbial safety tests and calibrated equipment for food analysis. Tehran, Iran

SUCCESSFUL RESEARCH GRANT APPLICATIONS

Nouri-Aiin, M., Izzo, V., Heleba, D., McCay, T., & Görres, J. **Mar 2025-Feb 2028**
Northeast SARE, Research and Education **\$250,375**
Assessing and Mitigating the Impact of Invasive Earthworms on Small Vegetable and Nursery Farms: An Integrated Research and Education Approach

Izzo, V., **Nouri-Aiin, M.**, Freund, M., & Callahan, C. **Mar 2025-Nov 2028**
Northeast SARE, Research for Novel Approaches **\$199,679**
Evaluating new paper-mulch alternatives to plastic mulch on Northeastern vegetable farms

Izzo, V., Lewins, S., Maden, R., Goossen, C., & **Nouri-Aiin, M.** **May 2023-Dec 2026**
Northeast SARE, Research and Education **\$188,658**
Evaluation of delayed potato planting for the management of insect and disease

Izzo, V., Lewins, S., & **Nouri-Aiin, M.** **May 2022-Dec 2025**
Northeast SARE, Research for Novel Approaches **\$199,710**
Development of above- and below-ground control using entomopathogenic fungi and RNAi for root crop pests.

Görres, J. & Nouri-Aiin, M. <i>Raising research fund from private donors</i> <i>Jumping worms ecology and management.</i>	<i>Aug 2021-Present</i> \$400,000
Görres, J. <i>Eppley Foundation for Research</i> <i>Controlling invasive Asiatic earthworms in horticulture.</i> (Role: Key Personnel)	<i>Aug 2018-Aug 2020</i> \$32,000
Görres, J. <i>Vermont Specialty Crop Block Grant</i> <i>Best horticultural practices to prevent pheretimoid dispersion.</i> (Role: Key Personnel)	<i>Aug 2019-Aug 2021</i> \$23,000

PUBLICATIONS

Book Chapters

- Nouri-Aiin, M.**, & Görres, J. H. (2024). Invasive earthworms and ecosystem processes in North America. In *Earthworms and Ecological Processes* (pp. 3–31). Cham: Springer Nature Switzerland.
- Dávalos, A., Görres, J., Herrick, B. M., McCay, T. S., & **Nouri-Aiin, M.** (2024). Management of invasive earthworms in North America. In M. Hung Wong & T. Seastedt (Eds.), *Sustainable Management of Invasive Species*. London: World Scientific. (In press; release date: December 22, 2024).

Journal Articles

- Izzo, V., Lewins, S., & **Nouri-Aiin, M.** (2024). *On-farm evaluation of swede midge susceptibility among four popular kale varieties.* Journal of Economic Entomology, p.toae304. 10.1093/jee/toae304.
- Schall, J. J., **Nouri-Aiin, M.**, & Görres, J. (2023). *Apolocystis bosanqueti n. sp. (Apicomplexa: Eugregarinorida) from the invasive earthworm Amynthes agrestis (Annelida: Megascolecidae), with significance for the monophyly of the family Monocystidae.* The Journal of Parasitology, 109(2), 56–64. DOI: 10.1645/22-66.
- Nouri-Aiin, M.**, Connolly, S., Keough, C., Smigelsky, A. J., Wen, Y., Howland, J., Schall, J. J., & Görres, J. H. (2022). *Genetic population structure and reproductive system of two invasive Asian earthworms, Amynthes tokioensis and Amynthes agrestis.* PeerJ, 10, e13622. DOI: 10.7717/peerj.13622.
- Nouri-Aiin, M.** (2022). *Elements of Biocontrol Strategies for Pheretimoid Earthworms (Doctoral dissertation).* The University of Vermont and State Agricultural College. ProQuest Dissertations & Theses, 29259212.
- Chang, C. H., Bartz, M. L., Brown, G., Callaham, M. A., Cameron, E. K., Dávalos, A., Dobson, A., Görres, J. H., Herrick, B. M., Ikeda, H., James, S. W., Johnston, M. R., McCay, T. S., McHugh, D., Minamiya, Y., **Nouri-Aiin, M.**, Novo, M., Ortiz-Pachar, J., Pinder, R. A., Ransom, T., Richardson, J. B., Snyder, B. A., & Szlavecz, K. (2021). *The second wave of earthworm invasions in North America: Biology, environmental impacts, management and control of invasive jumping worms.* Biological Invasions, 23, 3291–3322. DOI: 10.1007/s10530-021-02598-1.
- Nouri-Aiin, M.**, Schall, J. J., Keough, C. A., Wen, Y., & Görres, J. H. (2021). *Identifying the unidentifiable: A PCR multiplex protocol for the diagnosis of invasive pheretimoid earthworm species, verified by morphological and barcode identification.* Applied Soil Ecology, 161, 103822. DOI: 10.1016/j.apsoil.2020.103822.
- Nouri-Aiin, M.**, & Görres, J. H. (2021). *Biocontrol of invasive pheretimoid earthworms using Beauveria bassiana.* PeerJ, 9, e11101. DOI: 10.7717/peerj.11101.
- McCay, T. S., Brown, G., Callaham, M. A., Jr., Chang, C. H., Dávalos, A., Dobson, A., Görres, J. H., Herrick, B. M., James, S. W., Johnston, M. R., McHugh, D., Minter, T., Moore, J. D., **Nouri-Aiin, M.**, Novo, M., Ortiz-Pachar, J., Pinder, R. A., Richardson, J. B., Snyder, B. A., & Szlavecz, K. (2020). *Tools for monitoring and study of peregrine pheretimoid earthworms (Megascolecidae).* Pedobiologia, 83, 150669. DOI: 10.1016/j.pedobi.2020.150669.
- Nouri-Aiin, M.**, & Görres, J. H. (2019). *Earthworm cocoons: The cryptic side of invasive earthworm populations.* Applied Soil Ecology, 141, 54–60. DOI: 10.1016/j.apsoil.2019.05.004.
- Görres, J. H., Martin, C., **Nouri-Aiin, M.**, & Bellitürk, K. (2019). *Physical properties of soils altered by invasive pheretimoid earthworms: Does their casting layer create thermal refuges?* Soil Systems, 3(3), 52. DOI: 10.3390/soilsystems3030052.

Görres, J. H., Connolly, S. T., Chang, C. H., Carpenter, N. R., Keller, E. L., **Nouri-Aiin, M.**, & Schall, J. J. (2018). *Winter hatching in New England populations of invasive pheretimoid earthworms *Amyntas agrestis* and *Amyntas tokioensis*: A limit on population growth, or aid in peripheral expansion?* *Biological Invasions*, 20, 1651–1655. DOI: 10.1007/s10530-018-1663-x.

Nouri-Aiin, M., Askary, H., Imani, S., & Zare, R. (2014). *Isolation and characterization of entomopathogenic fungi from hibernating sites of Sunn Pest (*Eurygaster integriceps*) on Ilam Mountains, Iran.* *International Journal of Current Microbiology and Applied Sciences*, 3(12), 314–325.

Under Review

Nouri-Aiin, M., Schall, J., Leibovich, O., Hoover, E., Eller, K., & Görres, J. (2024). Annual endogenous cycle and thermal drivers of cocoon hatching in *Amyntas tokioensis*. *Soil Biology and Biochemistry*.

TEACHING AND MENTORSHIP

Teaching, University of Vermont

ALE 5990: Biologically Based IPM

May 2025–Aug 2025

Teaching Assistant, University of Vermont

BCOR11: Exploring Biology

Aug 2021–Dec 2021

PSS021A: Introduction to Agroecology

Jan 2021–May 2021

PBIO177A: Biology of Fungi

Aug 2020–Dec 2020

PSS127A: Greenhouse Operations and Management

Jan 2020–May 2020

PSS195OL1: Introduction to Hemp Production

Aug 2019–Dec 2019

TALKS AND PRESENTATIONS

Guest Lecturer

PSS128 Intro to Fundamental of Soil Science (Instructor: Andrew Gerliz), October 29, 2023. *Invasive Earthworms: Their Impact On Soil Dynamics*, University of Vermont, Burlington, VT.

PSS311 Intro to Agroecology (Instructor: Vic Izzo), November 12, 2022. *Harnessing Entomopathogenic Fungi for Biological Control of Insect Pests*, University of Vermont, Burlington, VT.

BIOL101 Invasive Species (Instructor: Damhnait McHugh), September 22, 2020. *Fieldwork and Frontlines: Navigating Invasive Species Research During Uncertain Times*, Colgate University, Hamilton, NY.

Invited Talks

Nouri-Aiin, M. (2024, December 17). *On-farm innovations for Colorado potato beetle management beyond Entrust*. New England Vegetable & Fruit Conference, Biannual Meeting 2024, Manchester, NH, USA.

Nouri-Aiin, M. (2024, December 4). *Digging Deeper: Managing Invasive Worms and Root Crop Pests Through Ecology and Natural Solutions*. Science Colloquium Speaker Series, Vermont State University–Johnson, Johnson, VT, USA.

National and International Meetings

Nouri-Aiin, M., Lewins, S., & Izzo, V. (2024, November 13). *Eco-friendly pest management strategies for late-season root crops: Integrating entomopathogenic fungi and RNA interference in Northeastern diversified farms*. Entomological Society of America Annual Meeting, Phoenix, AZ, USA.

Izzo, V., Lewins, S., & **Nouri-Aiin, M.** (2024, November 13). *Exploring non-chemical management options for *Allium* pest insects*. Entomological Society of America Annual Meeting, Phoenix, AZ, USA.

- Eller, K., Izzo, V., & **Nouri-Aiin, M.** (2024, November 11). *Wireworm populations in Vermont*. Entomological Society of America Annual Meeting, Phoenix, AZ, USA.
- Nouri-Aiin, M.** (2024, May 21). *Influence of temperature on hatching timings of earthworm cocoons in controlled environments*. Soil Ecology Society Meeting, Grand Rapids, MI, USA.
- Nouri-Aiin, M.**, Eller, K., Hoover, E., Lewins, S., & Izzo, V. (2023, November 8). *Wireworm species of Vermont: Identification and report*. Entomological Society of America Annual Meeting, National Harbor, MD, USA.
- Nouri-Aiin, M.**, Schall, J. J., & Görres, J. H. (2023, August 7). *High genetic diversity in the parthenogenetic megascolecid invasive earthworms*. Ecological Society of America (ESA) Annual Meeting, Portland, OR, USA.
- Nouri-Aiin, M.**, Schall, J. J., Keough, C. A., Wen, Y., & Görres, J. H. (2020, August 4). *A rapid multiplex-PCR method for ecological studies of invasive pheretimoid earthworms*. Ecological Society of America (ESA) Annual Meeting, Salt Lake City, UT, USA.
- Nouri-Aiin, M.**, Görres, J. H., Keough, C., & Schall, J. J. (2019, November 13). *Cost-effective molecular method to identify pheretimoid cocoons, juveniles, and adults and investigate their population phenology*. ASA-CSSA-SSSA International Annual Meeting, San Antonio, TX, USA.
- Nouri-Aiin, M.**, & Görres, J. H. (2019, January 7). *Phenology of pheretimoid earthworm cocoons*. ASA-CSSA-SSSA International Annual Meeting, San Diego, CA, USA.
- Görres, J. H., & **Nouri-Aiin, M.** (2019, January 7). *Genetic diversity of populations of the invasive, parthenogenetic earthworm *Amyntas agrestis* using microsatellites*. ASA-CSSA-SSSA International Annual Meeting, San Diego, CA, USA.

Regional Meetings and Workshops

- Görres, J., & **Nouri-Aiin, M.** (2024, May 14). *Research update on the jumping worm distribution and control*. Extension Professional Improvement Conference, Stowe, VT, USA.
- Izzo, V., Lewins, S., & **Nouri-Aiin, M.** (2024, May 14). *Vermont Entomology PAR team (VEPART)*. Extension Professional Improvement Conference, Stowe, VT, USA.
- Nouri-Aiin, M.**, & Miller, P. (2024, April 29). *Navigating the jumping worm invasion with poise*. 18th Annual Vermont Organics Recycling Summit, Waterbury, VT, USA.
- Nouri-Aiin, M.**, & Görres, J. (2024, February 18). *Understanding and managing jumping worms: Recent research findings and treatment approaches*. Northeast Organic Farming Association of Vermont, Burlington, VT, USA.
- Nouri-Aiin, M.**, Izzo, V., Görres, J., & Lewins, S. (2023, February 18). *Fungal insecticide application*. Northeast Organic Farming Association of Vermont, Burlington, VT, USA.
- Nouri-Aiin, M.**, & Görres, J. (2019, July 14). *Pheretimoids ecology and identification characters*. Community Meeting, Jaquith Public Library, Marshfield, VT, USA.
- Nouri-Aiin, M.** (2018, November 4). *Embryo development stages in pheretimoid cocoons*. Megascolecidae Symposium and Workshop, Colgate University, Hamilton, NY, USA.
- Görres, J., & **Nouri-Aiin, M.** (2018, July 26). *Snake worms in horticulture*. UNH Invasive Earthworm Education Program, University of New Hampshire Extension Seminar, Urban Forestry Center, Portsmouth, NH, USA.
- Nouri-Aiin, M.**, Görres, J., & Schall, J. J. (2018, March 16). *Exploring the reproductive system of pheretimoid earthworms with microsatellites*. Maine Invasive Species Network, Maple Hill Inn and Conference Center, Hallowell, ME, USA.
- Nouri-Aiin, M.**, & Görres, J. (2018, March 16). *Phenology of pheretimoid earthworm cocoons*. Maine Invasive Species Network, Hallowell, ME, USA.
- Görres, J., & **Nouri-Aiin, M.** (2018, March 16). *Snake worms: Invasive pests in horticultural and forestry*. Maine Invasive Species Network, Maple Hill Inn and Conference Center, Hallowell, ME, USA.
- Nouri-Aiin, M.**, Görres, J., & Schall, J. J. (2018, April 19). *Exploring genetic diversity of the invasive earthworm *Amyntas agrestis* using microsatellites*. Student Research Conference, University of Vermont, Burlington, VT, USA.
- Nouri-Aiin, M.** (2017, December 15). *Earthworm cocoons: The cryptic side of invasive earthworm populations*. Forest Ecosystem Monitoring Cooperative (FEMC), University of Vermont, Burlington, VT, USA.

Extension and Public Talks

- * **Nouri-Aiin, M.** (2024, July 31). *Jumping worms biology and best management practices*. Native Gardens of Blue Hill, Blue Hill, ME, USA.
- * **Nouri-Aiin, M.** (2024, June 18). *Jumping worms: Best management practices webinar*. Extension Master Gardener Program, Online.

PEER REVIEW AND EDITORIAL CONTRIBUTIONS

Grant Peer Reviewer

Sustainable Agriculture Research and Education (SARE)

Oct 2024–Dec 2026

Journal Peer Reviewer

PeerJ

May 2020, Apr 2021

NeoBiota

Jan 2024

Soil Biology and Biochemistry

Aug 2024

Journal of Economic Entomology

Jul 2024

Guest Editor

Northeastern Naturalist

Jun 2024

COMMITTEE AND SOCIETY ENGAGEMENT

Committee Memberships

Evaluation Chair & Moderator, *New England Vegetable and Fruit Steering Committee*

Feb 2025–Present

Moderator & Member at Large, *New England Vegetable and Fruit Steering Committee*

Jan 2024–Feb 2025

Website Committee Member, *Soil Ecology Society*

Jul 2024–Present

Member, *S1070: The Working Group on Improving Microbial Control of Arthropod Pests*

Nov 2024–Present

Student Competition Judge, *Entomological Society of America, Annual Meeting, Phoenix, AZ*

Nov 2024

Professional Society Memberships

Soil Science Society of America

Nov 2019–Present

Ecological Society of America

May 2019–Present

Entomological Society of America

Jun 2023–Present

Soil Ecology Society

Feb 2024–Present

Student Leadership Roles

Treasurer, *Iranian Student Association, University of Vermont*

Dec 2016–May 2019

Treasurer, *Indian Student Association, University of Vermont*

Dec 2016–May 2019

SHORT PROFESSIONAL DEVELOPMENT TRAININGS

Strategies and Techniques for Analyzing Microbial Population Structures (STAMPS)

Jul 2024

University of Chicago, Marine Biological Laboratory

Woods Hole, Massachusetts

Pesticide Applicator License: Agricultural Plant, and Demonstration and Research Pest Control *May 2024*

Vermont Agency of Agriculture, Food and Markets

Burlington, Vermont

Developing Entomopathogenic Fungi for Biological Control

Oct 2016

University of Vermont

Burlington, Vermont

ISO/IEC 17020 Principles and Documentation

Jun 2015

Marjaan Khatam Training, Research and Q.C. Lab

Tehran, Iran

Greenhouse Sampling Techniques and Organic Production Certification <i>Marjaan Khatam Training, Research and Q.C. Lab</i>	May 2015 <i>Tehran, Iran</i>
Microbial Food Safety Testing and Laboratory Equipment Calibration <i>Marjaan Khatam Training, Research and Q.C. Lab</i>	Apr 2015 <i>Tehran, Iran</i>
Public-Private Engagement in Research and Development <i>Marjaan Khatam Training, Research and Q.C. Lab</i>	Apr 2015 <i>Tehran, Iran</i>
Trade, Food Culture, Ethics, and Community Health <i>Marjaan Khatam Training, Research and Q.C. Lab</i>	Feb 2015 <i>Tehran, Iran</i>

RESEARCH MEDIA COVERAGE

WCAX TV: <i>UVM researchers dig into harms of invasive jumping worms.</i> Link	Oct 2024
Growing Greener Podcast: <i>Meeting the Threat of Asian Jumping Worms.</i> Link	Oct 2021
Outdoor Radio: <i>On The Hunt For Invasive Worms.</i> NPR. Link	Oct 2020
New York Times Article: <i>As Summer Takes Hold, So Do the Jumping Worms.</i> Link	Jul 2020
Boston Globe: <i>Crazy snake worms are not on the plane.</i> Link	Apr 2018