



# Sonia Naderi

PhD Candidate  
 University of Maine  
 Research Interests: Wireless sensor networks, forest ecosystem monitoring



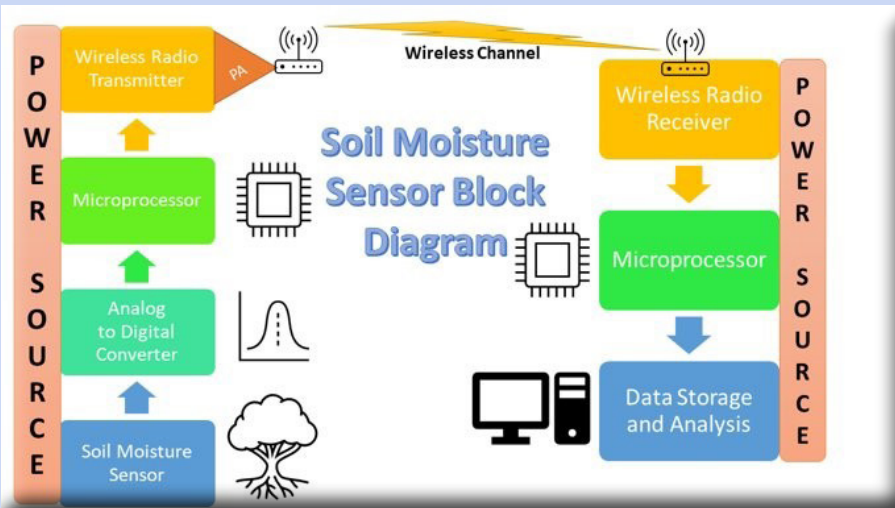
## Student Profiles

**SONIA NADERI** is a third-year Ph.D. candidate in Electrical and Computer Engineering (ECE) at the University of Maine, using her knowledge and research within multiple fields of study (e.g., forestry). As a graduate research assistant, advised by Ali Abedi, she works in WiSe-NET Lab, building wireless sensors for forest ecosystem monitoring as part of the NSF-funded INSPIRES project.

Naderi is also chair of IEEE Women in Engineering (WIE) Maine Section and President of the Iranian Graduate Student Association as well as ECE Senator of the Graduate Student Government, where she represents fellow ECE graduate students' interests and concerns.

With a bachelor's and master's degree in electrical engineering from her home country of Iran, she began studying the research papers of Abedi, whose work inspired her—along with her interest in sensors and wireless communications as well as a strong background in mathematics—to join the University of Maine's electrical engineering program and WiSe-NET Lab.

While she is very interested in reading and writing papers, the lab gives her the opportunity to work



with cutting-edge sensors and collect data. Since 2018, Naderi has worked on several projects with Abedi at WiSe-NET Lab, including the wireless energy transfer project as well as different projects involving sensors. Through Abedi, Naderi was introduced to INSPIRES.

“Since it’s an interdisciplinary project,” states Naderi. “I had this opportunity to work with the University of Maine, University of New Hampshire, and University of Vermont with students and faculties from different majors.”

To build a low-cost and low-power sensor suite for INSPIRES, Naderi leads a team of two undergraduate students in the ECE department, Victoria Nicholas and Thayer Whitney. “These low-cost sensors enable large scale deployment, providing much needed data points in places that no data has been collected in the past,” explains Abedi.

Naderi is currently working on soil moisture sensors for forest ecosystem monitoring as well as wireless sensing of forest ecosystem using artificial intelligence and machine learning developed by researcher Kenneth Bundy.

Although COVID has presented challenges, Naderi and project team members are working from home with their equipment, periodically meeting via Zoom. Recently, Naderi and team members have deployed a couple of soil moisture sensors and data acquisition system at the Old Town, ME site.

Teamwork is an important aspect of Naderi's work:



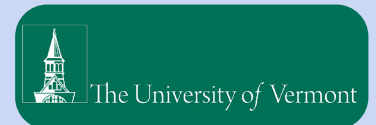
Soil moisture sensor for data acquisition

*“What I’m most excited about is this is the first time that I’m working with a large group of students and faculty from different majors, from different schools,” said Naderi. “And also we meet every month and I learn a lot about their work, especially forestry.”*



INSPIRES interviews and profiles by Stefania Irene Marthakis,  
University of Maine Center for Research on Sustainable Forests

[crsf.umaine.edu/inspires](http://crsf.umaine.edu/inspires)



## *Smart Data for Resilient Forests*

**INSPIRES: Leveraging Intelligent Informatics and Smart Data for Improved Understanding of Northern Forest Ecosystem Resilience** is an NSF-supported project that leverages unique expertise from the University of Maine, University of New Hampshire, and University of Vermont to construct a digital framework to better assess, understand, and forecast this complex forest at a resolution relevant to scientists, land managers, and policymakers.

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