NASTARAN TEBYANIAN, PH.D.

Decision Scientist

ORGANIZATION ROLE
Decision Scientist

PROJECT ROLE / FOCUS AREAS
Decision science

Data science

Climate adaptation

Environmental planning

EDUCATION
Ph.D., Architecture, Pennsylvania State University, 2022

MAS, Master of Applied Statistics, Pennsylvania State University, 2019

Summer School on Sustainable Climate Risk Management, Pennsylvania State University, 2016

MSLA, Master of Science in Landscape Architecture, Pennsylvania State University, 2016

MLA, Master of Landscape Architecture, Shahid Beheshti University, 2012

BS, Bachelor of Architectural Engineering, Isfahan University of Art, 2008

Nastaran Tebyanian, decision scientist, has backgrounds in statistics, architecture, and landscape architecture, and has worked on a diverse set of research projects from the regional assessment of cultural and natural resources to developing computer-aided design tools for resilient urban landscape design.

Nastaran received her bachelor's degree in architectural engineering, master's of landscape design, master of science in landscape architecture, master's of applied statistics, and a Ph.D. in Architecture. Bringing together all her interests, Nastaran focuses on decision sciences such as decision making under deep uncertainty, to help decision makers define their problem and work through sometimes competing interest to facilitate decision-making with a particular community or agency. Nastaran focuses most of her work on environmental planning challenges and climate change adaptations tailored to a specific community or region.

In her previous roles she worked as a researcher at the Penn State Initiative for Resilient Communities (PSIRC) and an adjunct researcher at the RAND Frederick S. Pardee Center for Longer Range Global Policy and the Future Human Condition. She was also a part of the cohort of LandscapeU, a National Science Foundation (NSF) research traineeship in regenerative landscape science at Penn State.

PROFESSIONAL EXPERIENCE

2022–Present: Research Scientist, Planning and Policy Team, The Water Institute

2021–2022: Adjunct Researcher / Summer Associate, RAND Corporation

2019–2022: Fellow at LandscapeU, An NSF Research Traineeship in Landscape Science / Researcher, Penn State Initiative for Resilient Communities (PSIRC), Penn State University

2018–2019: Adjunct Faculty of Landscape Systems, Penn State University

2013–2022: Research Associate at Hamer, Hamer Center for Community Design, Penn State University

2012: Lecturer, Architectural design studios, Azad University

2009–2011: Project Landscape Architect – Urban Designer, Semnan Municipality

SELECTED PROJECTS

Louisiana Barrier Island System Management (BISM) Project. *Louisiana Coastal Protection and Restoration Authority (CPRA). (Ongoing).* Decision Scientist. The project focuses on developing a framework for regional sediment management (RSM) in barrier island restoration, including inventorying available data for model development and identifying potential stakeholder concerns.

Lower Mississippi River Management Program. *Louisiana Coastal Protection and Restoration Authority (CPRA). (Ongoing).* Decision Scientist*.* The project focuses on identification of future scenarios of sediment and water management that provides holistic value across coastal protection, navigation, and ecosystem restoration. Also developing a framework for evaluating the costs and benefits of those scenarios.

The Penn State Initiative for Resilient Communities (PSIRC). (*Penn State). (2019–2022).* Researcher and Data Scientist. The program focused on the research on resilience challenges of small, riverine communities vulnerable to flood risk in Pennsylvania.

Appalachian Landscape Conservation Cooperative – Cultural Resource Preservation Priorities at a Landscape Scale. (*National Park Services). (2017– 2019).* Researcher. The project focused on the research within the Appalachian Landscape Conservation Cooperative (AppLCC) to integrate cultural resources in landscape-scale conservation planning and design.

SELECTED PUBLICATIONS

Peer-Reviewed
1. Tebyanian, N., Wu, H., Iulo, L., Keller, K. (2022). Uncertainty considerations in green infrastructure optimization: a review. Journal of Digital Landscape Architecture (JoDLA), 7.
2. Tebyanian, N. (2020). Application of machine learning for urban landscape design: a primer for landscape architects. Journal of Digital Landscape Architecture (JoDLA), 5, 217–226. https://doi.org/10.14627/537690023
3. Flohr, T., Wu, H., & Tebyanian, N. (2020). A web app for urban pollinator site assessment. Landscape Research Record, 9, 177–191. https://thecela.org/wp content/uploads/LRR_v.9_FINAL_2020_Reduced-1.pdf
4. Tebyanian, N. (2016). Reflecting time in computer-aided landscape design and analysis: developing an application for modelling seasonality and resiliency in small scale landscapes. Journal of Digital Landscape Architecture (JoDLA), 1, 214–221. https://doi.org/10.14627/537612025
5. Iulo, L., Arora, A., Fowler, L., Goldberg, L., Casey Helgeson, Keller, K., Nicholas, R., Sharma, S., Tebyanian, N., Tuana, N., & Mahkameh, Z. (2020). Establishing priorities for Pennsylvania community flood resilience [White Paper].
6. Tebyanian, N., & Iulo, L. (2019, September). Food-energy-water nexus and green infrastructure: a theoretical connection. International Conference on Sustainable Development. ICSD 2019, Columbia University, New York, USA. https://ic-sd. org/wp-content/uploads/2019/11/nastaran_tebyanian.pdf

SELECTED CONFERENCE PROCEEDINGS AND PRESENTATIONS

1. Tebyanian, N. & Iulo, L. & Wu, H. (2021, June 10). Green infrastructure placement under deep uncertainty. Computational Urban Planning and Urban Management Conference (CUPUM 2021), Helsinki (Virtual).
2. Tebyanian, N. & Iulo, L. & Wu, H. (2021, March 19). Application of many objective robust decision making (MORDM) for green infrastructure planning. Council of Educators in Landscape Architecture Conference (CELA 2021), Virtual