

## TIMOTHY O. RANDHIR, PH.D., F. SWCS

*Professor (Full) of Watersheds/Water, Ecohydrology, Complex Systems, Ecol. Econ, Sustainability*

*Department of Environmental Conservation*

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*Faculty Profile: <https://www.umass.edu/environmental-conservation/about/directory/timothy-randhir>*

*Twitter: [@timrandbir](https://twitter.com/timrandbir); [LinkedIn.com/in/timothy-randbir-68901389/](https://www.linkedin.com/in/timothy-randbir-68901389/)*



Web-based Decision Support: [Econwaters.com](http://Econwaters.com)

Sample Talk: <https://www.youtube.com/watch?v=su15PSRTRoc>



[https://www.researchgate.net/profile/Timothy\\_Randhir](https://www.researchgate.net/profile/Timothy_Randhir)



[http://scholar.google.com/citations?user=3\\_JsdOIAAAA&hl=en](http://scholar.google.com/citations?user=3_JsdOIAAAA&hl=en)



<https://umass.academia.edu/TimothyRandhir>



<https://publons.com/researcher/2873454/timothy-o-randhir/>



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<https://www.growkudos.com/profiles/154891>

## EXPERTISE

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Watershed science, water quality, ecohydrology, climatic change, sustainability, ecological economics, systems ecology, mathematical programming, complex systems, Uncertainty, machine learning, simulation and optimization, GIS., spatial analysis, institutional economics, multicriteria decision making, natural resources policy, agricultural economics, land use, international trade and development, energy economics, common-pool resources, mechanism design, and environmental science/policy.

## EDUCATION

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**Ph.D. (1995)** Purdue University, West Lafayette, IN, U.S.A.

Dissertation: "Agriculture and water quality: Modeling N.P.S. pollution under geographic state dynamics and bio-physical simulation" – awarded "Outstanding Ph.D. Dissertation" by the agricultural economics department.

**Keywords:** Watershed systems, natural resources conservation policy, regional planning, water resources protection, spatial dynamic programming, watershed management, ecosystem modeling, Geographic Information Systems (GIS), multi-attribute decision-making, nonpoint source pollution.

**M.S. (1988)** Agricultural Economics, Tamil Nadu Agricultural University, Coimbatore, India.

Thesis: Optimum crop planning under production risk at varying water supply situations – A case of the Maduranthakam tank of Chengalpattu district.

**B.S. (1986)** Faculty of Agricultural Sciences, Annamalai University, India.

## PROFESSIONAL EXPERIENCE

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**Sept 2015 – Current: Full Professor**

**Sept 2007 – Aug 2015: Associate Professor** (Tenured in 2007)

**Sept 1997 – Oct 2007: Assistant Professor**

Dept. of Environmental Conservation, Univ. of Massachusetts, Amherst, MA 01003.

The tenure-track position began in September 2002.

## Faculty Affiliations:

Director, Massachusetts Water Resources Research Center.

Adjunct Professor, UMass Department of Resource Economics.

Faculty Affiliate, Intercampus Graduate School in Marine Sciences and Technology.  
 Faculty Affiliate, CAFÉ - Center for Agriculture, Food and Environment.

**Appointment: *Research, Teaching, and Service***

- Research areas: spatial optimization, natural resource economics, watershed science, hydrology, nonpoint source pollution, biodiversity, urbanization, community science, sustainable development, GIS, multicriteria decision-making, ecological economics, global warming, incentive design, common-pool resources, information technology, and systems modeling.
- Teaching: Watershed Science & Management, Watershed Management (Online), Ecological Economics and Sustainability, Ecosystem Modeling and Simulation, Advanced Watershed Management, Water Resources Management & Policy, Water Resources, Blue Gold, and World Water Wars. Developed and coordinated the Graduate Program in Water, Watersheds, and Wetlands concentration.
- Service: Training and outreach to agencies and communities throughout the Commonwealth of Massachusetts and New England, MA Director of S.N.E. Chapter of SWCS, Editor of two environmental journals, developed participatory planning methods for landscape resources, involvement in national and international professional activities, Provost's Task Force on graduate admissions, UMass Faculty Senate Computer & Electronic Communications Committee, Ombuds Academic Honesty Board and chair of the department computer committee.

**Sept 95 - Aug 97:      **Natural Resource Economist (Post-Doctoral position)****

Dept. of Agricultural Economics, Purdue University.

- Post-doctoral investigator and modeler in a \$2 million USDA-CSREES project (SDSS-Spatial Decision Support System) at Purdue Univ, Texas A&M University, and the University of Illinois.
- The project develops a spatial, participatory, multi-objective, dynamic optimization system to create cost-effective and efficient soil and water conservation decisions.
- Other research conducted: global warming, international agricultural trade, watershed economics and policy, ecosystem-based planning and strategies, conservation issues in developing economies, water quality policies, and management of common property resources.

**Aug 91 - Dec 95      **Graduate Research Assistant****

Dept. of Agricultural Economics, Purdue University.

Completed two research projects (for USGS and USDA) and a Ph.D. thesis.

**Sept 88 - July 91      **Assistant Professor****

Dept of Agricultural Economics, Tamil Nadu Agricultural University.

Teaching (40%), Research (40%), and Extension (20%).

Taught undergraduate courses and completed several projects on water allocation, village economics, cropping systems, and farm management. Principal Investigator of several research projects

**Professional Memberships**

Soil and Water Conservation Society (SWCS)

American Association for the Advancement of Science (AAAS)

International Association for the Study of Common Property Resources (IASC)

American Geophysical Union (AGU)

American Water Resource Association (AWRA)

International Society for Ecological Economics (ISEE)

American Agricultural Economics Association (AAEA)

American Economic Association (A.E.A.)

### International Collaborations

Victoria University, **Australia**; University of Botswana, **Botswana**; University of Sao Paulo, **Brazil**; Federal University of São Carlos, **Brazil**; Federal University of São Carlos, Sorocaba, **Brazil**; University of South China, Hengyang, **China**; East China Normal University, Shanghai, **China**; Yunnan Academy of Economics, Kunming, **China**; Zhejiang Agricultural & Forestry University, China; Nanjing Forestry University, **China**; Suzhou University of Science and Technology, **China**; Nueva Granada Military University, Bogota, **Colombia**; National University of Colombia, Bogota, **Colombia**; Tamil Nadu Agricultural University, Coimbatore, **India**; Tamil Nadu Veterinary and Animal Sciences University, **India**; Bharathiar University, Coimbatore, **India**; Stella Maris College, **India**; National Academy of Agricultural Research Management, Hyderabad, **India**; Indian Council of Agricultural Research, New Delhi, **India**; Islamic Azad University, Maybod, **Iran**; University of Tehran, **Iran**; Shahid Beheshti University, Tehran, **Iran**; Tarbiat Modares University, **Iran**; Islamic Azad University, Maybod, **Iran**; University of Tehran, **Iran**; Narxoz University, **Kazakhstan**; Wildlife Conservation Society, **Myanmar**; University of Bergen, **Norway**; Istanbul University, **Turkey**; Cankiri Karatekin University, Cankiri, **Turkey**; Suleyman Demirel University, Isparta, **Turkey**; Wildlife Conservation Society, Kampala, **Uganda**.

**Fulbright Scholars Trained:** Honduras, El Salvador, Pakistan, Côte d'Ivoire, Colombia, Myanmar, Ecuador, ESwatini, and Indonesia.

### AWARDS AND HONORS:

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#### Awards:

2024 **Fellow** of the Soil and Water Conservation Society (SWCS), a premier international organization for professionals who practice and advance the science and art of natural resource conservation (swcs.org)

2023-25 **STRIPE Fellow** - Strategies and Tactics for Retention through Inclusive Promotion Evaluation - University of Massachusetts

2022-25 **STRIDE Fellow** – Strategies and Tactics for Recruiting to Improve Diversity and Excellence -University of Massachusetts.

2018 **PEP Fellow** - Public Engagement Project - University of Massachusetts.

2017 **Innovate@ Fellow** - University of Massachusetts.

2017-18 **TIDE Fellow** – Teaching for Inclusiveness, Diversity, and Equity- University of Massachusetts.

2017-18 **Kahn Faculty Fellow**, Kahn Institute, Smith College on Destroy then Restore: Transforming our Lands and Waters.

2014 - **Sustainability Curriculum Initiative Fellow**- University of Massachusetts.

2003-04 - **Lilly Teaching Fellow**, University of Massachusetts.

**Chancellor's Award** for Outstanding Community Service (1999), University of Massachusetts.

**1998-99 Service-Learning Fellow** in Teaching, awarded by the Provost's Special Committee.

1997- **Berg Fellow** of the Soil and Water Conservation Society.

Outstanding Ph.D. Thesis Award (1995), Purdue University, Dept. of Ag. Economics.

Nominated for Distinguished Teacher Award (UMass, 2004, 2008, 2011, 2014, 2015, 2016, 2022)

Nominated for Best Reviewer (SWCS, 1997)

Nominated by the Department for Outstanding Ph.D. Thesis (National competition of the American Agricultural Economics Association, 1995).

#### Merit Scholarship:

National Merit Scholar, India (1982).

Merit Scholar, Tamil Nadu Ag. Univ., India (1986).

**Medals:** Pachaiyappa's Gold Medalist, India (1980).

#### Academic Honors:

Outstanding Ph.D. Thesis (1995) and nominated for AAEA Competition (1995).

Honor rank in M.S. Program (1988)

Honor rank in B.S. Program (1986)

Rotary award for the first rank in the Secondary School Leaving Examination (1980).

### Training:

Research Mentor Training

Culturally Aware Mentoring

Computational Hydraulics I.N.C. Course on "Stormwater Modeling with SWMM, PCSWMM, and GIS." Feb 21-23, 2000.

NCAR Fellowship to participate in "An Institute of the Economics of the Climatic Resource" 5-7 June 1995, National Center for Atmospheric Research, Boulder, Colorado.

## LEADERSHIP AND ADMINISTRATION

- 2022- Current – **Director**, Massachusetts Water Resources Research Center, UMass. Leading the center in addressing emerging water issues of the Commonwealth of Massachusetts. Supervise two employees and several student interns, PI of USGS base funds, and two other state-funded projects. Led the review of competitive selection of proposals and annual reporting, and handled \$800K in yearly funds.
- 2015-2022 - Eco **Graduate Program Director**: Revamped the program with student-led community efforts, directed more than 100 graduate students each year, enhanced mentoring, streamlined paperwork, promoted DEIJ efforts, curriculum changes to streamline concentrations, increased diversity by recruiting Spaulding-Smith scholars, and increased international dimension through the recruitment of Fulbright scholars.
- 2019-current: **President** of the Southern New England Chapter of the Soil and Water Conservation Society, with leadership in chairing the Board of Directors, strategic direction for the organization, budgeting, community connection, conference management, and team decisions.
- **Chair** of the Working Group on Innovation in Graduate Education, CNS: Led a GPD team and developed a report for innovating graduate programs.
- **PI** of a DOE project on Solar-wildlife interactions with UMass faculty, solar industry partners, energy nonprofits, and Argonne National Lab in pioneering research in solar energy.
- **PI** of the NSF-GCR (Growing Convergence Research) Project for UMass, coordinating with multiple institutions and international research sites. The project involves leading and mentoring research teams of faculty, students, professionals, farmers, and citizens.
- **PI** of the NSF-IGE (Innovation in Graduate Education) proposal submitted by a team of CNS GPDs in Chemistry, IDGP, Eco, CNS Director of Diversity, OPAS, and CSSR.
- Graduate Concentration **Coordinator** for Water Resources Concentration from 2002 to current: Developed this concentration to high enrollment and recognition in hydrology
- 2015-2017- **Academic Director**- fellowship coordinator of "Professional Fellows Program- Environmental Sustainability" for 90 international professionals from Peru, Mexico, and Uruguay. Collaboration with I.T.D., South Amherst, and sponsored by the U.S. State Department.
- Interim **Director** of the MA Water Resources Research Center – one year
- Served three years as an **Academic Director** of the Professional Fellows Program in Sustainability, sponsored by the US Department of State. Mentored young professionals from Mexico, Uruguay, and Peru who were scientists, faculty, engineers, and sustainability leaders.
- **MA Director** of the Southern New England Chapter of the Soil and Water Conservation Society
- **Member** of the ACE-Joint Task Force on Internationalization (JTFI) of UMass
- **Chair** of the subcommittee in Community Engagement of the University Joint Task Force on Internationalization, UMass.

## RESEARCH

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### Grants:

(\* indicate awards while at UMass- Listed chronologically, the most recent first).

- 2023-2027 **DOE-Deploying Solar with Wildlife and Ecosystem Services Benefits (SolWEB)** “Informing Wildlife Conservation Strategies and Best Practice for Solar Facilities” \$1,391,100 PI: Randhir; CoPIs: Figueroa and King.
- 2023- Current MA WRRRC - **USGS** 104b WRRRA funds (\$145K/Year), **Upper Blackstone** Monitoring (\$110K/Year), and **Acid Rain** Monitoring (\$40K/Year).
- 2022-24 **NSF-GCR (Growing Convergence Research)** "Collaborative Research: Designing a Sustainable Agricultural Production System through Convergence Research Using a Multi-Scale Ecosystems Approach" \$979,720 PI: Randhir; CoPI King.
- 2022-2027 **USDA/NIFA – McIntire-Stennis MAES/CAFE** “Forest Dynamics Under Food-Energy-Water (FEW) Nexus at a Watershed Scale” PI: Randhir
- 2023-2028 **FAPESP-Special Programs -Brazil** “Restoration of native vegetation in the Atlantic Forest through the strategic combination of mandatory measures and voluntary commitments - CCD-EMA” – PI-Paulo Guilherme Molin (Federal University of São Carlos, Brazil), T.O. Randhir – Associate Researcher (international) - \$895,000
- 2022-2027 **FAPESP-GEF-Brazil** –“Decision support for the implementation of payment for ecosystem services projects related to water, carbon, and biodiversity: Paraíba do Sul and Vale do Ribeira” – PI Kaline de Mello (Federal University of São Carlos, Brazil), T.O. Randhir - Associate Researcher (international) - \$190,000
- 2020-22 **MassDEP** "Implementation, Remediation, and Education of Selected Best Management Practices to Minimize the Environmental Impact of Two Equine Operations" \$286,670 PI: Hashemi; CoPI: T.O. Randhir, C. Uricchio.
- 2019-21 **Mass D.C.R.** "Information for Climatic Adaptation and Restoration of Ecosystem Services (I-CARES) for urban and agricultural landscapes of Massachusetts, \$81,900 PI: Randhir
- 2017-2022 **USDA/NIFA – McIntire-Stennis MAES/CAFE** “Spatial and Temporal Management of Forest Cover and Urban Impacts for Water Resources Sustainability” PI: Randhir
- 2017 **UMass Provost Office** Climate Change Resilience, Environmental Justice, and Ecosystem Services (CREE), under Western Mass Sustainable Equity and Engagement Network (SEEN), \$9K. P.I.: Randhir
- 2015-2018 **MassDEP** "Reducing Nonpoint Source Pollution from Two Equine Facilities through Implementation, Remediation, and Education of Selected Best Management Practices" \$253K P.I.: Hashemi, CoPI: S. Herbert, T. Randhir.
- 2013-2015 **USDA-NIFA** "Conference on Climate Uncertainty and Agricultural Water Security" \$202K. P.I.: Rees, CoPI: S. Herbert, C. Nicholson, T. Randhir.
- 2012-2015 **\*Mass D.E.P.** "Minimizing Nonpoint Source Pollution from Two Horse Facilities through BMPs" \$338K, P.I.: Hashemi, CoPI: S. Herbert, T. Randhir
- 2011-2012- **\*Blackstone River Coalition (MA)** "Compilation of nutrient loading and GIS modeling in the Upper Blackstone Watershed" \$10K, RI: Randhir, CoPI: Paula Rees.
- 2009-2014- **\*USDA-Hatch (MAES)**. "Protecting water security in watershed systems: Uncertainty in the decision making" \$10K, P.I.: Randhir
- 2008-2010. **Wildlife Conservation Society.** Graduate student training - Nampindo. \$30K, P.I.: Randhir
- 2007-2010. **\*USDA-SARE.** Assessing Pasture Species, Varieties, and Blends. \$212K. P.I.: Herbert; CoPI: T. Randhir and others.
- 2007-2009. **\*Mass D.A.R. -Ag. Innovation Center.** Integrating Pasture Management on Dairy and Livestock Farms. \$170K. P.I.: Herbert; CoPI: T. Randhir and others.
- 2007-2008. **\*Mass D.O.E.** Economic Evaluation of Switchgrass for Biofuel. \$10K PI: Herbert; Co-PI: R. Prostack, and T. Randhir. (May 2007 to April 2008).
- 2006-2008. **\*USDA-SARE:** "Effective Cover Crop Seeding dates for Nutrient Recovery" \$85,953 PI: Herbert; Co-PI: A.M. Hashemi and T. Randhir (July 2006 to June 2008).
- 2006-2007 **\*Faculty research grant/ Healy endowment grant, UMass,** "Decision Making under Environmental Uncertainty: An Experimental Investigation" (\$15K) P.I.: T. Randhir. Sept 2006 to Aug 2007.

- 2005-2010. **USDA-Hatch (MAES). Multi-state (NE-132):** "Whole Farm Dairy and Beef Systems to Protect Environmental Quality" \$90,000 PI: Randhir; CoPI: Herbert (Sept 2005 to Aug 2010).
- 2004-2005 **\*USDA-Hatch (MAES).** "Environmental and Economic Impacts of Nutrient Management on Dairy Forage Systems" \$16,000. PI: Randhir; CoPI: Herbert (Sept 2004 to Aug 2005).
- 2003-2005. **\*USDA/Forest Service:** "Distance-Education in Forestry" \$98,000, P.I.: Randhir (Aug 2003-June 2005); Co-PIs: McComb and Loomis.
- 2003-2004. **\*USDA/Forest Service.** "Urban Forestry Watershed Modeling" \$5,000, P.I.: Randhir (Aug 2003-June 2004).
- 2002-2007. **\*USDA-Hatch (MAES).** Integrated Watershed Management to Protect Water Quality and Ecological Integrity." \$50,000 PI: Randhir. (Sept 2002 to Aug 2007).
- 2000 - 2001. **\* M.A. Board of Higher Education.** 2000-2001. "Three Communities Connected by a River: Sustainable Communities through State Curriculum Frameworks." \$48,000; P.I.: Randhir, Co-PI: Burbank. (Sept 2000 to Aug 2001).
- 1999-2000. **\*USDA/CSREES.** "Watershed-based Education to Protect Water Resources and Ecosystems" \$80,000. P.I.: Jackson, CoPI: Randhir (Jan 98- Dec 99).
- 1999-2000 **\*Board of Higher Education.** "Three Communities Connected by a River: Sustainable Communities through State Curriculum" (\$25,000) P.I.: Randhir, Co-PI: Burbank; (Sept 1999 to Aug 2000).
- 1998-1999: **\*EOEA/ Commonwealth of Massachusetts.** "Watershed Initiative - UMASS-EOEA Contract" \$387,000. Principal Investigator (PI): T. O. Randhir, Asst. Professor, Dept. of Natural Resources Conservation. Managed a team of more than 15 undergraduates, five graduate research assistants, and one professional staff. Effectively managed the budget of 10 different sub-projects (Jan 98- Dec 99).
- 1998-1999 **\*Board of Higher Education.** "Three Communities Connected by a River and Frameworks: Linking Science and Technology to Schools (\$20,000). P.I.: Randhir, Co-PI: Burbank (Sept 1998 to Aug 1999).
- 1995-1997. **USDA:** "Spatial Decision Support System." \$2 million. Investigators: J.G. Lee, B. Engel, and S. Lovejoy. Participated in writing the proposal as a Ph.D. student and was later appointed investigator and modeler in this multi-institutional and multi-disciplinary project (Jan 1995 to Oct. 1997).

**Minor Grants:** Influence of Risk on Input Use in South India, 1990 (TNAU University Grant); Deforestation and Agricultural Productivity in India, 1991(TNAU University Grant); Contribution of the University to State Development, 1991(TNAU University Grant); Conjunctive use of Irrigation Water for Crop Production in P.A. River Irrigation System, 1990 (Indian Council of Agricultural Research Grant).

#### **Publications:**

(†indicates Prof. Randhir's graduate student/adviser; \*indicates visiting scholar at Prof. Randhir's lab; ‡indicates international research collaborator)

**SUMMARY:** *Refereed Journal Articles (135); Books (1); Book Chapters (7); Refereed full papers in proceedings (4); Peer-reviewed selected/conference papers (80); non-refereed conference papers (4); Other publications (11); and several working papers in development or review.*

#### **Books:**

Randhir, T.O. 2006. ***Watershed Management: Issues and Approaches.*** International Water Association (IWA) Publishing, London, UK. (168 Pages) <https://doi.org/10.2166/9781780402338>

#### **Refereed Journal Articles:**

- 135 Bol†, T.T., M.H. Htike, T.K. Fuller, S. Htun, H. Naing, S.H.T. Po, T.O. Randhir. 2025. Multi-species distribution modeling of big cats in the Chindwin River Watershed of Myanmar. ***Journal of Nature Conservation.*** [doi.org/10.1016/j.jnc.2025.127169](https://doi.org/10.1016/j.jnc.2025.127169)

- 134 Adambekova‡, AA., RA. Salimbayeva‡, TO. Randhir, TO. Assessment of environmental risks in the regions of Kazakhstan using a composite index: method and application. *Central Asian Economic Review*. 2025;(4):133-147. <https://doi.org/10.52821/2789-4401-2025-4-133-147>
- 133 Asmarat, B., and T.O. Randhir. 2025. A mixed-methods assessment of the influence of palm plantations on water resources of indigenous communities of Indonesian Papua, *Global Environmental Change Advances*, 5: 1-13. <https://doi.org/10.1016/j.gecadv.2025.100018>
- 132 Camarillo‡, A.Q., P. Schuhmann; T.O. Randhir; J. Orellana. 2025. Coffee farmers' willingness to accept payments for ecosystem services: Evidence from a choice experiment in Honduras, accepted, *Journal of Environmental Management*, 378. <https://doi.org/10.1016/j.jenvman.2025.124787>
- 131 Mirzaie‡, M., S.M.H. Shahdany, M. Yousefi, S. Mozaffari, and T.O. Randhir. 2024. Fuzzy Multi-objective Optimization for Sustainable Agricultural Water Management of Irrigation Networks. *Journal of Environmental Management*. 372:123347. <https://doi.org/10.1016/j.jenvman.2024.123347>
- 130 Adambekova‡, A., N. Adambekov, T.O. Randhir, Z. Adambekova, and M. Yezhebekov. 2024. Micro-crediting and Investment Analysis in the Context of Environmental, Social, and Corporate Governance. *Journal of Risk and Financial Management*. <https://doi.org/10.3390/jrfm17110484>
- 129 Hamada, F.A., S.S. Sabah, E.M.B. Mahdy, H.S. Abd El-Raouf, A.M. El-Taher‡, O.F.A. El-leel, A.T. Alhobaiti, M.A. Ghareeb, R. Randhir, and T.O. Randhir. 2024. Genetic, phytochemical, and morphological identification and genetic diversity of selected Moringa species. *Scientific Reports* 14, 30476 (2024). <https://doi.org/10.1038/s41598-024-79148-x>
- 128 Vinitpornasawat‡, S., M.H. Htike, T.O. Randhir, S. Duangchantrasiri, and T.K. Fuller. 2024. Distribution patterns of tigers and leopards in Thung Yai Naresuan (East) Wildlife Sanctuary, Western Thailand, Accepted in *Ecology and Diversity*. 1(1), 10003. <https://doi.org/10.70322/ecoldivers.2024.10003>
- 127 Bolt, T.T., and T.O. Randhir. 2024. Predicting Land Use Land Cover Change in the Chindwin River Watershed of Myanmar using Multilayer Perceptron-Artificial Neural Networks. *Land*. 13(8), 1160. <https://doi.org/10.3390/land13081160>
- 126 Mohammadi, A., S. Javadi‡, H. Yousefi, H. Pouraram, and T.O. Randhir. 2024. A Framework for Assessing Food Baskets Based on Water and Carbon Footprints, *Water*. 16(9): 1196. <https://doi.org/10.3390/w16091196>
- 125 Asmarat, B., and T.O. Randhir. 2024. Modeling the Impacts of Oil Palm Plantations on Water Quantity and Quality in the Kais River Watershed of Indonesia, *Science of the Total Environment*. 928: 172456. <https://doi.org/10.1016/j.scitotenv.2024.172456>
- 124 Randhir, T.O., K.B. Klostermant. 2024. Modeling landscape influence on stream baseflows for watershed Conservation. *Land*. 13(3): 324; <https://doi.org/10.3390/land13030324>
- 123 Mambat, H.S., and T.O. Randhir, 2023. Exploring temperature and precipitation changes under future climate change scenarios for black and white rhinoceros populations in Southern Africa, *Biodiversity*. <https://doi.org/10.1080/14888386.2023.2291133>
- 122 Quinonez‡, A.L.C., and T.O. Randhir. 2023. A Sustainability Framework based on Threats, Consequences, and Solutions (TCS) for Managing Watershed Commons. *PLoS ONE*. <https://doi.org/10.1371/journal.pone.0295228>
- 121 Randhir, T.O., K. Toffling‡, and C. R. Griffin. 2023. Impacts of climate change and variability on the growth potential of global mangrove distribution. *Sustainable and Resilient Infrastructure*. <https://doi.org/10.1080/23789689.2023.2253412>
- 120 Naing‡, H., T.K. Fuller, P. R. Sievert, T. O. Randhir, S.H.T. Po, S. Htun, and T. Myint. 2023. Dry-season habitat occupancy by ungulate tiger prey in the Hukaung Valley of northern Myanmar. *Tropical Zoology*. 36(1-2): 21-35. <https://doi.org/10.4081/tz.2023.124>
- 119 De Mello‡, K.D., R.H. Taniwaki, D.R. Macedo, C.G. Leal, T.O. Randhir. 2023. Biomonitoring for watershed protection from a multiscale land-use perspective. *Diversity* 15(5): 636. <https://doi.org/10.3390/d15050636>
- 118 Omer, R.B., H.M. Hewait, E. Mady‡, S.K.M. Yousif, E.A. Gashash, R. Randhir, A.E. Ashmawi, A.M. El-Taher‡, N.A. Al-Harbi, T.O. Randhir. 2023. Chemical, Anatomical, and Productivity Responses of Cowpea (*Vigna unguiculata* L.) to Integrated Biofertilizer Applications with PGPR, Cyanobacteria, and Yeast, *Sustainability* 15(9): 7599. <https://doi.org/10.3390/su15097599>

- 117 El-Beltagi, H.S., R.S. Nada, E. Madyt, A.E. Ashmawi, E.A. Gashash, A.A. Elateeq, A.A. Suliman, N.A. Al-Harbi, S. M. Al-Qahtani, M.M. Zarad, T.O. Randhir. 2023. Effect of Organic and Bio-Fertilization on Fruit Yield, Bioactive Constituents, and Estragole Content in Fennel Fruits. *Agronomy*. 13(5):1189-1209. <https://doi.org/10.3390/agronomy13051189>
- 116 Talibt, A., T.O. Randhir. 2023. Long-term effects of Land-use Change on Water Resources in Urbanizing Watersheds. *PLOS Water*. <https://doi.org/10.1371/journal.pwat.0000083>
- 115 Sorkhabi#, O.M., J. Asgari, T.O. Randhir. 2023. Monitoring Groundwater Storage based on Satellite Gravimetry and Deep Learning. *Natural Resources Research*. <https://doi.org/10.1007/s11053-023-10185-5>
- 114 Alnefaie, R.M., S.A. EL-Sayed, A.A. Ramadan, A.I. Elmezien, A.M. El-Taher#, T.O. Randhir, and A. Bondok. 2023. Physiological and Anatomical Responses of Faba Bean Plants Infected with Chocolate Spot Disease to Chemical Inducers. *Life* 13, no. 2 (Jan. 31): 392. <http://dx.doi.org/10.3390/life13020392>.
- 113 Ahmed M. El-Taher#, A.M., H. A. Elzilal, H. S. Abd El-Raouf, E. Madyt, K. S. Alshallash, R. M. Alnefaie, E.M. Mahdy, O.G. Ragab, E.A. Emam, I.A. Alaraidh, T.O. Randhir, M.F.M. Ibrahim. 2023. Characterization of some Cichorium taxa grown under Mediterranean climate using morphological traits and molecular markers, *Plants*. <https://doi.org/10.3390/plants12020388>
- 112 Hatamkhani, A., A. Moridi#, T.O. Randhir, 2023. Sustainable planning of multipurpose hydropower reservoirs with environmental impacts in a simulation-optimization framework. *Hydrology Research*. nh2022084. <https://doi.org/10.2166/nh.2022.084>
- 111 Ahmad\*#, T.M., M.S. Haider, T.O. Randhir, S.R. Ahmad. 2023. Spatial Analysis of Factors Influencing Bacterial Leaf Blight in Rice Production. *Brazilian Journal of Biology*. <https://doi.org/10.1590/1519-6984.264249>
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#### **Refereed, Selected Full Papers resulting from a Conference:**

1. Valente, R.A., F. Soares, M.V. Morales, and T.O. Randhir. 2025. Landscape Dynamics in priority areas for forest conservation under the Atlantic forest. Proceedings of the *XXI Brazilian Symposium on Remote Sensing*
2. ISBN: 978-65-80968-29-9.
3. Banihabib#, M.E., N. Chitsaz, and T.O. Randhir. 2018. VIKAR Decision Model for Ranking Flood Control Strategies. *Scientific Congress of the Turkish National Union of Geodesy and Geophysics (SC-TNUGG)*, 30 May - 2 June 2018 in Izmir, Turkey.
4. Cheng, C., and T.O. Randhir. 2010. A Sustainability Evaluation and Modeling Tool for Landscape Scenario Planning. *Fábos International Conference on Landscape and Greenway Planning*, Budapest, Hungary, July 8-11, 2010.
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#### **Book Chapters:**

1. Vargas-de la Mora†, V. Camacho-Valdéz, T.O. Randhir, M.C. Hernández-Moreno, and M.J. Cach-Pérez. 2021. Agroforestry technologies (TAF) in livestock: a strategy for adaptation to climate change in coastal territories, IN *Agroforestry technologies for adaptation and mitigation to climate change - options and perspectives*, Publisher: University of Colima, Mexico.
2. Randhir, T.O. 2019. Globalization, Local Commons, and the Multiscale Ecosystem Framework (M.E.F.), Invited chapter, Hudson, B., J. Rosenbloom, and D. Cole. *Routledge Handbook of the Study of the Commons*, 1st Edition. Routledge Taylor and Francis Group, Abington, U.K.
3. Randhir, T.O., and A.G. Hawes†. 2010. Ecology and Poverty in Watershed Management. Invited chapter, Declerck, F., J.C. Ingram, and C.R. Del Rio. *Integrating Ecology into Poverty Alleviation and International Development Efforts: A Practical Guide*. Springer Verlag Publication.
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#### *Peer-Reviewed, Selected/ Conference Abstracts:*

1. Arias, R.N. and T.O. Randhir. Perception, value, and governance of ecosystem services in Ecuador. 77<sup>th</sup> **SWCS Annual Conference**, Denver, CO, July 31 to August 3, 2022.
2. Mady, E. and T.O. Randhir. Climate-smart practices for increasing resilience of rural and urban landuses at a watershed scale. 77<sup>th</sup> **SWCS Annual Conference**, Denver, CO, July 31 to August 3, 2022.
3. Paulding, C. and Randhir, T.O. 2021. An Ecohydrological Assessment of Potential Impacts of Climate Change on Herpetofaunal Habitat in the Connecticut River Watershed. 76<sup>th</sup> **SWCS Annual Conference**, Virtual Conference, 26-28 July 2021.
4. Randhir, T.O. 2020. Conservation policy across multiple scales during uncertain times. Keynote presented at the **2020 Global Symposium on Commons Without Borders**. October 5, 2020.
5. Randhir, T.O. 2019 Ecohydrologic modeling in GIS of water resources and land use to predict future impacts on water quality, Brazilian Symposium on Remote Sensing, Santos, Brazil, April 14-17.
6. Zarama-Alvarado, S., and T.O. Randhir. 2019. Water Conflicts: Challenges of Transition to Environmental Peace in Colombia, XVII Biennial IASC Conference "In Defense of the Commons: Challenges, Innovation, and Action," July 1-5, Lima, Peru.
7. Liu\*, Y., and T.O. Randhir. 2019. Relationship between Urbanization, Grain Production and the Environment in the Main Grain Producing Region of China, 2019 *American Association of Geographers* Annual Meeting, April 3-7, Washington, DC.
8. Norvanchig†, J., and T.O. Randhir. 2018. Modeling sustainability of water resources in Tuul River watershed in Mongolia, The 2018 *International SWAT Conference*, January 8-12, Chennai, India.
9. Mello, K.\*, T. O. Randhir, R. de Oliveira Avena Valenta, and C. A. Vettorazzi, 2015 Impacts of Forest Cover on Water Quality in Agricultural Watersheds of São Paulo, Brazil, 2015 *AWRA Annual Water Resources Conference*. Nov 16-19, Denver, CO.
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12. Caiping\*, Z. T.O. Randhir. 2015. Carbon Performance Evaluation Method from Resource Value Flow Analysis Perspective, 2015 **International Conference on Energy and Environment Engineering** (E.I.), 2015,4.
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14. Roy, A.H., S. F. Jane, J.T. Finn, P. D. Hazelton, T. O. Randhir, and T. A. Richards. 2015. Linkages between streamflow, habitat, and biotic assemblages in an urbanized large river, Annual Meeting of the **Society for Freshwater Science**, 17-21 May 2015, Milwaukee, WI.
15. Jane, S.F., J.T. Finn, T.O. Randhir, A.H. Roy, 2015. Linkages between flow, habitat, and biotic integrity: a case study of the urbanized Sudbury River, The 39th Annual Meeting of the **New England Association of Environmental Biologists**, March 18 - 20, 2015, Bartlett, NH.
16. Randhir, T.O. 2014. Integrated ecohydrologic research for watershed resilience to land use and climate change. Keynote address at **Watershed Management conference** held at Cankiri Karatekin University, Turkey. September 10 to 12.
17. Zhang\*, L., and T.O. Randhir. 2014. **UCOWR-NIWR-CUAHSI Conference**, Water Systems, Science, and Society Under Global Change, Medford, Massachusetts, 18th-20th June 2014
18. Zhang\*, L., and T.O. Randhir. 2014. Urban Green Rainwater Infrastructure in Growing Metropolitan Region of China, **Conference on Green Infrastructure and Water Management** in Growing Metropolitan Areas, Tampa, Florida, 14 – 16 January 2014.
19. Talibt, A and Randhir. 2014. Land Use Land Cover Impacts on Water Quantity and Quality in Watershed Systems, **SWCS Annual Conference**, Lombard, Illinois, 27-30 July 2014.
20. Tsvetkovat, O., and T.O. Randhir. 2014. Modeling climatic and hydrologic Uncertainty, 2014 **Northeastern Natural History Conference**, Springfield, Massachusetts, 7 - 9 April 2014.
21. Sabogalt, J. and T.O. Randhir. 2014. Hydroelectric Facilities Environmental Cost and Benefits on Water Cycle, Social Systems and Ecosystems, **UCOWR-NIWR-CUAHSI Conference**, Water Systems, Science, and Society Under Global Change, Medford, Massachusetts, 18th-20th June 2014
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24. Eknesst, P., and T.O. Randhir. 2014. Continental-Scale Impacts of Climate on runoff. The **Northeast Natural History Conference**, Springfield Massachusetts, MA, 7-9April, 2014.
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26. Zhang\*, L., and T.O. Randhir. 2014. Integrated Watershed Management to Sustain Urbanizing Panlong River Basin, **Summer Specialty Conference Integrated Water Resources Management**, Reno, NV, June30-July2, 2014.
27. Talibt, A and Randhir. 2014. Climate Change Impacts on Water Resources, **Northeast Natural History Conference (NENHC)**, Springfield, Massachusetts, 7-9 April 2014.
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29. Erol\*, A and T.O. Randhir. 2012. Effects of Land Use on Nutrient Loading in Lake Egirdir Watershed. IUFRO WG 7.01.08 Conference: Forest-Water Interactions with respect to Air Pollution and Climate Change, Kahramanmaras-Turkey 2012.
30. Randhir, T.O., and P. Coffin. 2012. Blackstone River Watershed: water quality. South New England **Soil and Water Conservation Society** Summer conference, Grafton, MA. August 9, 2013.
31. Randhir, T.O. 2012, Climatic Change and Socioeconomic systems – **Symposium** presentation. Aug 8, 2012. Tamil Nadu Agricultural University, Coimbatore, India.
32. Randhir, T.O. 2012. Climatic Change impacts on Socioeconomic systems – Keynote address, **National Symposium** presentation. Aug 16, 2012. Bharathiar University, Coimbatore, India.

33. Randhir, T.O. 2012. Climatic Change and S.E.S. systems – Symposium presentation. Aug 16, 2012. **Madras Institute of Development Studies**, Chennai, India.
34. Randhir, T.O. 2012. Adaptation to Climatic Change: Systems, Resilience, and Decision Making, Keynote Address to Conference on "Toward a new climate agreement 2012-2020 or Death of Kyoto protocol" May 23, 2012, at the **National University of Colombia**, Bogota, Colombia.
35. Nampindo†, S., and Randhir, O.T., 2012. Landscape modeling of land use, land cover, and climate change effects on the Congo watershed ecosystems: developing a decision support system for P.E.S. initiatives. **NASA/JPL/Kent Institute of Space Science Summer Program**, Pasadena, California, August 6-10, 2012.
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38. Galindo†, L., and T.O. Randhir. 2012. Adaptive management of ecosystem services in Orinoco Watershed: A regional Assessment, Paper presented at 2012 **Soil and Water Conservation Society** Annual Meeting, Fort Worth, TX, July 22-25.
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40. Nampindo†, S., and Randhir O.T. 2011. Land use and climate change effects on watershed commons in the Albertine Rift Valley of Africa. The 66th International Annual Conference titled "Conservation Science and Policy: Global Perspectives and Applications" Washington DC. July 17-20, 2011.
41. Randhir, T.O. and A. Erol\*. 2011. Conservation strategies to reduce nutrient loading in Lake Eğirdir Watershed of Turkey, Paper presented at 2011 **Soil and Water Conservation Society** Annual Meeting, Washington, DC., July 18-19.
42. Randhir, T.O. and O. Tsvetkovat. 2011. Soil and water conservation under climatic stress in selected watersheds in Russia, Paper presented at 2011 **Soil and Water Conservation Society** Annual Meeting, Washington, DC., July 18-19.
43. Randhir, T.O. and S. Nampindo†. 2011. Land use and climate change effects on watershed commons in the Albertine Rift Valley of Africa, Paper presented at 2011 **Soil and Water Conservation Society** Annual Meeting, Washington, DC., July 18-19.
44. Randhir, T.O., S. J. Herbert, and A. Farsad. 2011. Online Crop Decision Support for Nitrogen Recovery through Cover Crops, 2011 **Land and Sea Grant National Water Conference**, January 30-31, Washington, DC.
45. Farsad A., S. J. Herbert, T.O. Randhir, M. Hashemi. 2010. Optimum Planting Date for Rye Cover Crop: A Spatial Analysis. **SWCS** Annual Conference, St. Louis, MO, July 18-21, 2010.
46. Farsad A., T.O. Randhir, S. Herbert, M. Hashemi. 2010. Using a spatial model for estimating the critical planting date for rye cover crop in Massachusetts. **NEBCSA** Conference, Cornell University, NY, June 27-29, 2010
47. Herbert, S., S. Weis, T.O. Randhir, S. Bosworth, R. Gilker, M. Sanderson, K. Kaija, R. Brzozowski, and C. Majewski. 2009. Assessing Pasture Grasses, Legumes, and Pasture Blends for Varying Soil Conditions in New England and Pennsylvania: A NE SARE Project. Poster 4th **National Conference on Grazing Lands**, Nevada.
48. Eknes†, P., and T.O. Randhir. 2008. Effect of Spatial Configuration of Watershed Land Use on Hydrology. **American Water Resources Association** Proceedings. 2008 at New Orleans, LA.
49. Mazzarino†, M., and T.O. Randhir. 2008. Hydrologic Effects of Climate Change in a Tropical, Glaciated Watershed in Peru. **American Water Resources Association** Proceeding. 2008 at New Orleans, LA.
50. Sekar†, I., and T.O. Randhir. 2008. Efficiency of Small-Scale Storage Networks in India, **American Water Resources Association Proceedings**. 2008 at New Orleans, LA.
51. Randhir, T.O. 2008. "Effect of Climate Change in New England" in session "Adapting to Climate Change," **Southern New England American Planning Association** Conference, September 5, Providence, RI.
52. Randhir, T.O. 2008. "Effect of climate change in Connecticut River Watershed." Workshop on "Climate Change in the Northeast: Preparing for the Future Workshop," **U.S. Fish and Wildlife Service, National Park Service, U.S. Geological Survey, Minerals Management Service, U.S. Department of Agriculture's Forest Service, Department of Commerce's National Oceanic and Atmospheric Administration, Six New England states and New York, Workshop** – Regional Workshop CD proceedings. June 3 to 5, at Amherst, MA.

53. Herbert, S., M. Hashemi, S. Weis, and T.O. Randhir. 2007. Managing Cover Crops for Maximum Nitrogen Recovery Following Corn. 2007 *Annual Meeting of American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America*, Nov 4-8, New Orleans, LA.
54. Hawes†, A., and T.O. Randhir. 2007. Effects of Watershed Land Use on Aquatic Ecosystems. *Soil and Water Conservation Society*. Annual Conference, July 21 to 25, Tampa, FL.
55. Eknes†, P., and T.O. Randhir. 2007. Economic value of riparian ecosystem attributes in an urban setting, Soil and Water Conservation Society, Annual Conference, July 21 to 25, Tampa, FL.
56. Tsvetkova†, O., and T.O. Randhir. 2007. Predicting 2007. Land Use Change and Water Quality Impacts. *Soil and Water Conservation Society*. Annual Conference, July 21 to 25 at Tampa, FL.
57. Eknes†, P., and T.O. Randhir. 2005. Understanding Watersheds: Using water movement on campus to investigate our natural surroundings. *National Science Teachers Association* – 2005 Annual Meeting Proceedings. Hartford, CT.
58. Marshall†, E., and T.O. Randhir. 2004. Mitigation of Climate Change Impacts on Water Balance at Varying Scales. *American Water Resources Association Proceedings*. 2004.
59. Eknes†, P., and T.O. Randhir. 2004. Interaction between Riparian Systems and Stream Water Quality. *American Water Resources Association Proceedings*. 2004.
60. Brouillette-Jacobson†, D., and T.O. Randhir. 2004. Sustainable Use of Water Supplies in Cape Code: Modeling and Policy Implications. *American Water Resources Association Proceedings*. 2004.
61. Eknes†, P., and T.O. Randhir. 2003. Landuse Effects and Habitat Functions of Riparian Ecosystems. *American Water Resources Association Proceedings*. 2003.
62. Marshall†, E. and T.O. Randhir. 2003. Impact of Global Warming on Water Quality in the Connecticut River Watershed. *American Water Resources Association Proceedings*. 2003.
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65. Randhir, T.O., C. Genge., and S. Buckley. 2002. "Watershed Approach to Clean Water in Developing Countries: An Application in Honduras." *American Water Resources Association Proceedings*.
66. Randhir, T.O. 2002. "Integrated Watershed Modeling for Sustainability Planning." *American Water Resources Association Proceedings*.
67. Randhir, T.O. 2001. "Coastal Watershed Conservation to Protect Narragansett Bay." *Journal of Soil and Water Conservation*.
68. Randhir, T.O. 2001. Watershed Approach to Mitigate the Effects of Hurricanes: A Case Study of Hurricane Mitch in Honduras." *Journal of Soil and Water Conservation*.
69. Randhir, T.O. 2001. "Protecting Potential Water Supplies in Coastal Watersheds: The Case of Taunton Watershed." *Journal of Soil and Water Conservation*.
70. Randhir, T.O. S. Lowe†, and K. Norwood†. 2000. "Combining Species and Landscape Assessment to Evaluate Watershed Ecosystems" *Journal of Soil and Water Conservation*.
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72. Randhir, T.O., E. Keeler†, and K. Norwood†. 2000. Watershed Imperviousness as an Indicator of Water Quality." *Journal of Soil and Water Conservation*.
73. Randhir, T. O., and D. Goodwin. 1998. "Assessing Land Use Changes at a Watershed Level Using GIS." *Journal of Soil and Water Conservation*, 52(2): 169.
74. Randhir, T. O., and J. G. Lee. 1998. "Effect of Water Quality Standards on Agriculture." *Journal of Soil and Water Conservation*, 52(2): 157.
75. Randhir, T. O., S. Lovejoy, and J. G. Lee. 1998. "Multiobjective Decision-making in Watershed and Landscape Management." *Journal of Soil and Water Conservation*, 52(2): 172.
76. Randhir, T. O., and T. Hertel. 1997. "Trade Liberalization as a vehicle for Adapting to Global Warming." International Agricultural Trade Research Consortium Annual Meeting, Dec 14-16.

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79. Randhir, T. O., and J. G. Lee. 1996. "Economic and Environmental Implications of Policies to Reduce Agricultural Nonpoint Source Pollution." Abstract. *American Journal of Agricultural Economics*. 77(5), January: 1388.
80. Randhir, T. O., B. Engel, and J. G. Lee. "A Distributed Parameter/GIS Approach to Agricultural Pollution." Abstract. *American Journal of Agricultural Economics*. 77(5), January 1996: 1358.
81. Randhir, T. O., and J. G. Lee. 1996. "Trading Cropping Rights in Erodible Lands under Conservation Reserve Program." Abstract. *American Journal of Agricultural Economics*. 77(5), January: 1371.
82. Randhir, T. O., and J. G. Lee. 1995. "Multiple Criterion Dynamic Optimization of Agricultural watersheds with nonpoint source pollution." Selected paper presented at *Southern Agricultural Economists Association Annual Meeting*, New Orleans, U.S.A., 1995.
83. Randhir, T. O., and J. G. Lee. 1994. "Institutional Solutions to Resource Degradation in Developing Countries." Abstract. *American Journal of Agricultural Economics*, 76(5) December: 1262-1263.
84. Loehman, E. T., and T. O. Randhir. 1992. "Resource Degradation and Income Inequality: Effects of Externalities in a Dynamic Setting." Selected paper at the International Association for the Study of *Common Property Resources Meetings*. Sept. Washington. DC., 1992.
85. Randhir, T. O., and M. Ravichandran†. 1991. "Economic Analysis of Watershed Management in Anakkatti Region of Coimbatore District through National Perspective." *Indian Journal of Agricultural Economics*, 46 (3) (Aug.-Oct.): 301.

#### ***Non-refereed Conference Papers:***

1. Randhir, T.O., J. G. Lee, B. A. Engel, H. Manguerra, J. Frankenberger, and A. Spacie. 1997. "Ecosystem-based Least-Cost Planning in watersheds: A Spatial Optimization Approach." Paper presented at the SWCS conference on "Investigating Ecosystem Dynamics at a Watershed Level" at Athens, Georgia, April 13-16.
2. Randhir, T.O., J. G. Lee, B. Engel, and S. Lovejoy. 1997. "Improving Water Quality through Watershed Planning: A Spatial Optimization Model." Paper presented at the ESEI Environmental Symposium, Purdue University, West Lafayette, IN 47907.
3. Randhir, T. O., and J. G. Lee. 1994. "Combining Economic and Biophysical Models in Farming Systems Research." Paper presented at Workshop on "Applied Research and Education in Sustainable Agriculture: What Have We Learned?" April 11-12, Indianapolis, Indiana, U.S.A.
4. Lee, J. G., T. O. Randhir, and S. B. Lovejoy. 1993. "Nitrate and Pesticide Levels in Indiana Rural Domestic Wells." Paper presented at First Purdue University Environmental workshop, Aug. 20, Purdue Univ., West Lafayette, IN, U.S.A.

#### ***Other Technical Publications:***

1. Randhir, T.O. 2017. Climate Change Resilience, Environmental Justice, and Ecosystem Services (CREE), Report submitted as part of the Center for Racial Justice and Urban Affairs (CRJUA) Project, University of Massachusetts, Amherst.
2. Jane, S. F., A. H. Roy, P. D. Hazelton, T. A. Richards, J. T. Finn, and T. O. Randhir. 2016. Establishing links between streamflow and ecological integrity in the Sudbury River. U.S. Department of the Interior, Fish and Wildlife Service, Cooperator Science Series FWS/CSS-122-2016, Washington, D.C.
3. Randhir, T.O. 2004. (Ed.) Watershed Conservation 2004 Proceedings, Sept. 17<sup>th</sup>, University of Massachusetts, Amherst. 2004.
4. Randhir, T.O. 2002. (Ed.) Watershed Conservation 2002 Proceedings, Sept. 20<sup>th</sup>, University of Massachusetts, Amherst. 2002.

5. Randhir, T.O. 2000. (Ed.) Watershed Conservation 2000 Proceedings. June 2. The University of Massachusetts. 2000.
6. Randhir, T.O., 2000. Sustainable Watershed Planning in Blackstone River Watershed. Technical Report to EOEA-Watershed Initiative. 2000.
7. Randhir, T.O. 1999. Ware River Watershed Land Acquisition Model. Technical Report to MDC. 1999.
8. Randhir, T. O., and J. G. Lee. 1993. "Hybrid Criterion Optimization under Dynamic Simulation of Non-point Source Pollution." Technical Report, Fiscal Year 1992-1993. Indiana Water Resources Research Center. Purdue University. West Lafayette, IN, U.S.A. (1993): 1-16.
9. Randhir, T. O., J. G. Lee, and Ronald Lacewell. 1994. "Effect of Agricultural Practices on Surface Water Quality." Technical Report of Research Project funded by the United States Geological Survey.
10. Randhir, T. O., 1991. "Influence of Risk on Farm Decisions concerning Input Use in Tankfed Zone of Chengaianna District, South India." Staff Report. No. R1. Agecon.364. Department of Ag. Econ., Tamil Nadu Ag. Univ., Coimbatore, India.
11. Ramasamy, C., and T. O. Randhir. 1991. "Agricultural Growth in Tamil Nadu- Contribution by Tamil Nadu Ag. Univ.," Staff Report, Tamil Nadu Ag. Univ., Coimbatore. India.
12. Randhir, T. O., R. Venkataraman, and N. Ajjan. 1989. Farm Management: Practical Manual (Undergraduate Teaching Manual of AGE 402).

#### **Current/ Recent Research Projects:**

- Climate change and ecosystem services (Orinoco watershed, Colombia)
- Mobile Crop Decision Support Systems (M.A., NE regional, and National)
- Water-Energy optimization over space and time (Colombia, regional, and global)
- Climate change and Mediterranean watersheds (Turkey)
- Sustainability under climate and land-use change (Narragansett Bay Watersheds)
- Climate change, land use, and ecosystem services (Albertine Rift, Africa)
- Adaptation to climatic change (Key West, Florida, U.S.A.)
- Water resources, sustainability, and climate change (Continental U.S.)
- Glacial processes and watershed impacts (Ganges, India)
- Water conservation and policy in M.A. communities (Massachusetts, U.S.A.)
- Wetland ecology (Amherst, U.S.A.)
- Tiger poaching behavior (India)
- Invasive species modeling (Northeast U.S.A.)
- Modeling contaminant flows under climate change (SuAsCo Watershed, U.S.A.)
- Coliform contamination and chlorine by-products (Uganda)
- Impact of climatic change uncertainty on watershed systems (Connecticut Watershed, U.S.A.)
- Climatic effects on stormwater (Charles River watershed, U.S.A.)
- Institutional solutions to water resources (Honduras)
- Urbanization in Watersheds (Blackstone Watershed)
- Urban Modeling of Pervious Cover (Mill River Watershed, Springfield)
- Watershed impacts of animal feed operations (Middle Connecticut Watershed)
- Internet-based, a watershed information site for Watershed Communities (a Comprehensive site for watershed information)
- Watershed education (website with resources for teaching)

#### **Working papers:**

#### **Submitted:**

1. **Randhir, T.O.** (Submitted) Modeling multi-attribute impacts on watershed sediment export: A global assessment for conservation policy, *Earth Surface Processes, and Landforms.*
2. Pamukcu\*†, P., N. Erdem; Y. Serengil, **T.O. Randhir.** (Submitted) Assessment of hydrologic risk and land suitability in the Riva Creek watershed of Turkey. *Landscape Research*

Working papers:

- Randhir, T.O., and D. Shriver. "Nutrient dynamics related to Manure application in large watershed systems: Spatial and temporal transfers" targeted to *Water Resources Research*.
- Randhir, T.O. Global sediment discharge in watersheds – anthropogenic and climatic impacts, Targeted to *Nature*.
- Randhir T.O., and O. Tsvetkova. Modeling spatial and Temporal dynamics in watershed systems. Targeted to *Water Resources Research*.
- Randhir, T.O. "Sustainable Development in Watershed Ecosystems." Targeted to *Journal of Environmental Economics and Management*. (First Draft)
- Randhir, T.O. "Managing Global Commons: Strategies for Mitigating Externalities" Targeted to *Science*.
- Randhir, T.O., and J. Lee. "Incentive Design to Protect Water Quality." Targeted to *American Journal of Agricultural Economics* (Second Draft Stage)
- Randhir, T.O. "Group decision theory in watershed planning." Targeted to *Water Resources Research*.
- Randhir, T.O. "Mitigating Hurricane Damage through Watershed Conservation." Targeted to *Environmental and Development Economics*.
- Ekness, and Randhir, Sustaining ecohydrologic processes at a continental scale using multiscale assessments, Targeted to *Water Resources Research*.
- Ekness and Randhir, Watershed vulnerability to climatic change: a national assessment of hydrologic impacts. Targeted to *Climate Change*.
- Randhir and Ekness, National Water Sustainable Policy to protect ecosystem services under climatic stress. Targeted to *Journal of the American Water Resources Association*
- Ekness and Randhir, Influence of landscape pattern on watershed ecohydrology. Targeted to *Ecohydrology*.
- Randhir and Ekness, Effect of landuse change on stream ecohydrology. Targeted to the *Journal of Hydrology*.
- Ekness and Randhir, Coastal watershed response to climate and land-use change. Targeted to *Water Resources Research*.
- Randhir and Ekness, Quantification of the watershed-coastal ocean linkages for conservation targeted to *Ecological Applications*
- Tsvetkova and Randhir, Climatic and hydrologic Uncertainty in watershed systems, Targeted to *Water Resources*.
- Randhir and Tsvetkova, Adaptation to climatic Uncertainty, Targeted to *Climatic Change*.
- Tsvetkova and Randhir, Hydrology and climatic impacts in the Volga watershed, *Journal of Hydrology*
- Tsvetkova and Randhir, Spatial and temporal Uncertainty in climatic predictions, Targeted to *Ecological Modeling*.
- Randhir and Tsvetkova, "Spatio-temporal dynamics in hydrologic responses to climatic stress in watersheds," Targeted to *Water Research*.
- Nampindo and Randhir, Modeling ecosystem services in the Congo Basin, Targeted to *Ecological Applications*.
- Randhir and Nampindo, Common-pool resource use and management in sub-Saharan ecosystems, Targeted to *Ecological Economics*.
- Randhir and Nampindo, Biodiversity, and climatic adaptation in Albertine Rift; Targeted to *Climatic Change*.

**Books**

\*Randhir, T.O. (In Preparation). ***Watershed Science and Management***. (In the contract). Springer-Verlag.

**TEACHING EXPERIENCE**

G – Graduate; U.G. – Undergraduate (\* courses taught at UMass)

(URL: <http://www.ecowaters.com/wscourse/>)

1. \*(G/UG) NRC 577 Ecosystem Modeling and Simulation (Fall session of Odd years). Approximately 25 students per semester.

2. \*(G/UG) NRC 596 Water Resources Management and Policy (Fall session even years) -approximately 15 students per semester.
3. \*(G) NRC 578 Watershed Science and Management (Spring session - all years). Approximately 20 students per semester.  
Recipient of the Service Learning fellowship (1998), awarded by the Provost's special committee  
This graduate-level course is interdisciplinary and combines the theory and practice of watershed science. The main focus is to develop skills in using scientific techniques, computers, field methods, and the Internet to solve environmental problems.
4. \*(G) ECO678 Advanced Watershed Science (Spring of Even years) – interdisciplinary, topical course – 10 students.
5. \*(G) ECO675 Ecological Economics and Sustainability (Spring of Odd years) – 10 students.
6. \*(U.G.) FFYS 191 Sustainability of Water Resources (Fall years) – 19 students/ year.
7. \*(U.G.) HONORS 391D Blue Gold and World Water Wars (Spring and Fall) – 28 students/year.
8. (U.G.) BIO 117 Research Methods in Biology (Summer 2) offered at Springfield Technical Community College, MA – 21 students/year.
10. \*(G/UG) W&FCON 597S Coastal Watersheds: Issues and Problem Solving (Spring 2001). One-time offering with more than 25 Students.  
Focused on combining science and technology into watershed education offered as an off-campus, field-based course.
6. \*(G/UG) W&FCON, FOREST 597O Watershed Science and Management Online. (Spring). Enrolment 20 Students per semester.  
Unique offering as a distance education through multimedia, distributed projects, and threaded discussions.
7. (U.G.) Economics of Farm Management (AGEC 401), TNAU, 1988-91.

**Others:** Invited lectures in Environment and Society (NRC 100), New Student Orientation lectures (2011); Sustainability R.A.P. (2010,2011); Mass Envirothon (2011); Resource Policy (AGEC 616), 1996; Concentration coordinator for professional master's program in watershed management (Also designed the program), Invited lectures in Ecosystem Management at UMASS; Linear Programming (AGEC 601 lab), 1991.

### **Graduate Advisory Committee:**

#### Current (Major Advisor) -8:

1. Nargis Mirzaei (2027) Ph.D. Uncertainty in watershed systems
2. Shivan Kamugisha (2027) Ph.D. Ecosystem Services and Population Dynamics of African Lions
3. Donald Fonseca (2027 Ph.D.) Coastal Ecosystem Resilience
4. Moussa Siri. (2026 Ph.D.) Volta River Watershed – ecohydrology and socio-economic analysis
5. Rosanna Salazaar (2028 Ph.D.) Traditional Ecological Knowledge systems and Indigenous commons in Peru
6. Anastasia Ivanova (2026 Ph.D.) Ecosystem services and public health
7. Julio Canas Reyes (MS 2025) Watershed modeling in Ecuador - Fulbright Scholar
8. Matthew Schlaikjer (MS 2026) Spatial Analysis of Wildlife

#### Graduates (Major Advisor)- 47:

1. Ana Quinonez (2024 Ph.D.) Watershed ecology and hydrologic modeling
2. Emad Mady (2023 Ph.D.) Biodiversity and Metabolic Alterations of Vegetable and Medicinal Plants
3. J. Aguilar (2020 Ph.D.) Emerging Energy Issues in Colombia
4. L. Galindo (2018 Ph.D.) Landscape and watershed ecosystem services.
5. S. Nampindo (2014 Ph.D.) Climate change impacts water resources, biodiversity, and ecosystem services; - WCS Beinecke Scholar from Uganda.
6. P. Ekness (2013 Ph.D.) Watershed ecosystem dynamics.
7. O. Tsvetskova (2013 Ph.D.) Uncertainty in climate change impacts on watershed systems.
8. I. Sekar (2007 Ph.D.) Agriculture and water quality – economics and policy.
9. Theint Thandar Bol (2024 MS) Climate Change Impacts on Big Cats, Myanmar - Fulbright Scholar

10. Melissa Langley (MS 2023) Coastal Wetlands
11. Abigale Foster (2024 M.S.) Climate change and wildlife
12. Justin Maynard (2023 MS) Stream Restoration
13. Hazel Ortiz (2023 M.S.) Climate change and invasive species.
14. Brianthama Asmara (MS 2023) Indigenous communities and watershed resources in Papua - Fulbright Scholar
15. Alexandra Fink (MS 2023) Ocean Acidification impacts on coastal ecosystems
16. Hilal Arslan (2022 M.S.) Forest management in arid watersheds – Turkey Ministry of Education Scholar
17. Roberto Navarrete (2022 M.S.) Ecological Economics of Mining in Ecuador - Fulbright Scholar
18. Heather Parry (2022 M.S.) Watershed management for water quality
19. S. Traore (2022 M.S.) Integrated Watershed Management in the Ivory Coast – Fulbright Scholar
20. A. Ivanova (2020 M.S.) Vegetative cover in climate resilience
21. C. Paulding (2019 M.S.) Species Modeling under Climate Influence
22. C. Lynch (2020 M.S.) Stream crossing and people's perceptions
23. M. Roberts (MS 2018) Institutions and water commons
24. I. Cherkas (MS 2018) Resilience in coastal watersheds
25. J. Norvanchig (MS 2018) Integrated water resource modeling in Mongolia- Fulbright Scholar from Mongolia
26. H. Mamba (MS 2018) Rhinoceros conservation- Fulbright Scholar from Swaziland
27. S. Chauhan (MS 2018) Machine learning for watershed hydrologic time series
28. J. Pellegrino (MS 2018) Urban watershed environmental services and justice
29. A. Quinonez (MS 2017) Neotropical otter habitat -Fulbright Scholar from Honduras
30. J. Baker (MS 2017) Climate change influence on nutrients
31. A. Talib (MS 2015) Watershed modeling and climate change – Fulbright Scholar from Pakistan
32. N. Bush (MS 2015) Modeling invasive species.
33. R. Stripal (MS 2014). Tiger conservation and poaching.
34. J. Dudula (MS 2014) Climate change and stormwater.
35. E. Ross (MS 2014): Sustaining Narragansett Bay Watershed System.
36. K. Collins (MS 2013) Instream habitat and landscape changes;
37. J. Hart (MS 2013) Water use policy.
38. K. Toffling (MS 2012) Climatic change impacts on Mangroves.
39. O. Tsvetskova (MS 2007) Spatio-temporal Modeling.
40. Hawes (Smith) (MS 2007) Sediment and Aquatic Impacts.
41. E. Marshall (MS 2005) – Global Warming and Watershed Modeling.
42. P. Ekness (MS 2005) – Riparian systems.
43. Debbie Shriver (MS 2004) – Watershed Classification.
44. K. Davis (Schoenberg) (MS 2002) – Neotropical bird habitat.
45. M. Matteo (MS 2002) – urban watersheds.
46. S. Lowe (MS 2001) - Biodiversity in watershed planning.
47. E. Keeler (MS 2000) – Urbanization and water quality.

#### **Member of Advisory Committee - 43:**

1. Chavon Rogers (2027), PhD. Economics - Climate Change and Small Island Developing Economies
2. Dorna Saadat (2025), PhD, Stockbridge School of Agriculture – Soil health and cover crops
3. Xiupei Zhou (2025) PhD. Stockbridge School of Agriculture – Nanoplastics in water
4. Aoze Li (2027) PhD. Stockbridge School of Agriculture – Microplastic Sorption of Pesticides
5. Tien Thi Nguyen (2025) MS Environmental Conservation – Community-based conservation
6. Paul O'Connor (2026) Ph.D. Stockbridge School of Agriculture – Precision agriculture
7. Timothy Nsubuga (2026) Ph.D. - Civil and Environmental Engineering – Nutrient modeling
8. Kwan-Hyuck Kim (2026) Ph.D. Civil and Environmental Engineering)- Urban flood risk
9. Anahita Khosravi (2023) Ph.D. Stockbridge School of Agriculture – Hydrochars and microplastics
10. Andrew Delsanto (2023) Ph.D. Civil and Environmental Engineering)- Low flow prediction modeling
11. Chinedum Eluwa (2023 Ph.D. Civil and Environmental Engineering) – Uncertainty modeling
12. Onupurba Das (2024 Ph.D. – Resource Economics)- Environmental Economics in India

13. Omid Zanvikili (2021 Ph.D. – Environmental Conservation)- Soil Amendments and Nutrients
14. Nelson Da Luz (2021 Ph.D. – Civil and Environmental Engineering) -Water and Sanitation Systems
15. Marielos Arlen Marin (2020 Ph.D. – Landscape Architecture & Regional Planning) Climate Migration
16. Jayesh Paudel (2019 Ph.D. – Resource Economics), Climate change and Ag. water quality
17. Mikaela A. Laverty, (2015 PhD Civil and Env. Eng.) Lake Modeling.
18. Brian Yellen (2015 Ph.D. Geosciences) – Sediment transport
19. Cortni Borgerson (2015 Ph.D. Anthropology) Primate ecology.
20. Malik Marjan (2014 Ph.D. ECo). Wildlife migrations.
21. Dan Clark (2013 Ph.D. Eco) Seagull management for Water Quality
22. Sadeghpour (2014 Ph.D. Plant Sciences) Cover crop systems.
23. Supagit Vinitpornswan (2012 Ph.D. ECo) Tiger Ecology.
24. Ali Farzad (2010 Ph.D. Plant Sciences) Cover cropping.
25. Dave Timmins (2010 Ph.D., Res. Econ) Bioenergy economics.
26. Alex Manda (2009 PhD. Geosciences) – Hydrostructural domains.
27. Wulan Pusparini (2014 MS ECO): Sumatran Rhino Conservation
28. Hla Naing (2014 MS ECO): Indonesian tiger conservation
29. Maureen Pollock (2012 MS LARP): Climate Adaptation
30. Colleen Samson (2011 M.S.), Surface and groundwater monitoring.
31. Emily Wright (2011 MS LARP) Phosphorus loading in Landscape planning.
32. Kimberley Klosterman (MS 2011 LARP) Baseflows and impervious cover.
33. Sarah Raposa (2011 M LARPS) Sustainable city planning.
34. Dennis Luken (2009 M.S. ECo) – Stream crossing.
35. Jenny Allen (2006 M.S.) – Coastal Coliform Contamination,
36. Jim Dedes (2005 Ph.D. UMass-Boston) – Watershed metrics.
37. Joseph Ogrodowczyk (2004 Ph.D.) – Nonmarket valuation.
38. Mike Lewis (2003 M.S.) – Stream Daylighting.
39. Bruce Bayne (2002 M.S.)- Wetlands.
40. Matt Donzella (2002 M.S.) – Forest Watersheds.
41. JeanMarie Skalka (2001 MS)- Wetlands.
42. Mike Stoltzfuz (2001 M.S.) – Wetlands.
43. D. Corlett (2001 MS) – Riparian Modeling.
44. Kristy Norwood (1999 M.S.) – GIS.

#### **Student Services:**

Undergraduate Research Experience (research experience for eight students a year)

Advising faculty for several undergraduate and graduate students (approximately 30 students per year in Environmental Science and NRC majors).

Faculty advisor to the UMass Chapter of Soil and Water Conservation

Staff mentor for first-generation and low-income students under the HORIZONS Student Support Program of Purdue University (1996).

#### **Postdoctoral Scholars -1**

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Ana Quinonez

#### **Visiting Scholars -20**

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1. Mr. Edimilson Rodrigues, 2025 – Visiting Scholar from the University of São Paulo, Brazil.
2. Dr. Roberta Valente, 2024 - Visiting Scholar from the Federal University of São Carlos, Sorocaba Campus, Brazil.
3. Dr. Rassima Salimbaeva, 2022, 2024 – Visiting Professor from the Norxoz University, Almaty, Kazakhstan
4. Dr. Semih Edis, 2020 – Post-doctoral Scholar from Cankiri University, Turkey.
5. Dr. Ibrahim Yurtseven, 2019 – Assistant Professor of Forest Engineering, Istanbul University, Turkey.

6. Dr. Yumei Liu, 2018 – Vice-Chair and Lecturer, Suzhou University of Science and Technology, China.
7. Dr. Christine Lucas, 2018 – Ecologist and Adjunct Professor, University of Uruguay.
8. Dr. Xiaoping Sun – 2017 –Ph.D. Research, Nanjing Forest University, Nanjing, China. Sponsored by the China Scholarship Council
9. Dr. Meijuan Liu – 2017 – Professor (Full), Zhejiang A&F University, Zhejiang, China. Research scholarship by the China Scholarship Council
10. Mr. Basit Ali 2017 – Scholar, PMAS-Arid Agriculture University, Rawalpindi, Pakistan – sponsored by Higher Education Commission, Pakistan (H.E.C.)
11. Ms. Lale Caliskan 2016 – Ph.D. Scholar, Ankara University, Ankara, Turkey; sponsored by TUBITAK Scholarship
12. Ms. Li Han 2016 – Ph.D. Scholar, East China Normal University, Shanghai, China. Sponsored by the China Scholarship Council
13. Dr. Kaline de Mello, 2015 – Ph.D. Scholar, University of São Paulo, Brazil.
14. Dr. Roberta Oliveira Aversa Valante, 2015, Faculty, Federal University of São Carlos, Sorocaba Campus, Brazil.
15. Dr. Le Zhang, 2014, Faculty, Yunnan Academy of Economics, China.
16. Dr. Pinar Pamukcu, 2014– Scholar, University of Istanbul, Turkey. Sponsored by TUBITAK Scholarship
17. Dr. Caiping Zhang, 2014 – Faculty, University of South China, China. – Sponsored by the China Scholarship Council
18. Ms. Eshika Manchanda, 2014, Scholar, Amity University, India.
19. Ms. Richa Sharma, 2014, Scholar, Amity University, India.
20. Dr. Ayten Erol 2013– Faculty, Suleyman Demirel University, Turkey – sponsored by TUBITAK Scholarship
21. Dr. Kalybek Abdykadyrov, 2012 –Kyrgyz State Technical University, Bishkek, The Kyrgyz Republic. -Fullbright Faculty Scholar

## SERVICE

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### Academic Service:

- 2022 to Current: Director, Massachusetts Water Resources Research Center, UMass.
- 2024-2025: Senator, Faculty Senate, UMass.
- 2022-2023: Chair, Eco Department Personnel Committee, UMass.
- 2015-2022 Graduate Program Director, Department of Env. Conservation, UMass.
- 2019 - Chair of the Working Group on Innovation in Graduate Education, CNS, UMass.
- 2013-2014 ACE-Joint Task Force on Internationalization (JTFI) of UMass
- 2013-2014 Chair of the subcommittee in Community Engagement of JTFI, UMass
- 2009-current: Undergraduate Concentration Coordinator (NRC- Water Resources)
- 2009-current: Graduate Concentration Coordinator (Eco-Water, wetlands, and watersheds)
- 2003-2020: Faculty Senate Computer & Electronic Communications Committee
- 2002 – 2003: Interim Scientific Director, Water Resources Research Center, UMass
- 2002 - Provost's Task Force on Graduate Admissions to Achieve Diversity, UMass
- 2000 – Current: Academic Honesty Board, Ombuds Office, UMass
- 2000 – 2008: Chair, Computer Committee, Dept. of Natural Resources Conservation.
- 1999 - Chair, Ad-hoc outreach-planning committee, Dept. of Natural Resources. Conservation.
- 2002 – 2006: Member - Minority recruitment committee, Website committee.

### Scholarly Review/Professional Activity:

#### Editor:

- 2022-current – Associate Editor – Frontiers in Water – Water and Critical Zone
- 2022-current – Associate Editor – Frontiers in Water – Water Resources Management
- 2022-current – Associate Editor – Frontiers in Water – Modeling and Optimization for Decision Support
- 2022: Guest Editor – Frontiers in Water - The UN International Day of Forests 2022: Forests and Water
- 2022: Guest Editor – Diversity – Biomonitoring of Freshwater Systems

2022-current – Section Board and Editorial Board - Diversity – Biomonitoring of Freshwater Systems  
 2022-current – Academic Editor and Editorial Board -PeerJ Life and Environment  
 2020- current – International Editorial Board – Journal of Nature and Spatial Sciences  
 2009-2022: Executive Editor – Journal of Earth Science and Climate Change  
 2004- Current: Honor Editor-in-Chief, International Journal of Ecological Economics and Statistics  
 2016- Editorial Board – JI. of Env. Research and Technology – Environmental Sciences and Engineering  
 2013-2015 Editor – Journal of Computational Environmental Sciences  
 2010 – Guest Editor – Northeast Naturalist

### Expert Reviews:

2018 – National Accreditation Council of Colombia, Accreditation Panel for the National University of Colombia, review of the Doctoral Program in Economic Sciences  
 2017 – National Academy of Science, Engineering, and Medicine – GULF projects  
 2016–2018 AAAS (American Association for the Advancement of Science) Expert Panel for the EPscor NSF project.  
 2016 - USEPA - Climate Change Effects on Water Quality  
 2016 – USEPA – ICLUS model review  
 2013: National Science Foundation (NSF) Coastal SEES – Proposal review  
 2013 – USDOJ expert review on an environmental ruling in Texas  
 2015- Current – Advisory Board, Anatolian Journal of Forest Research  
 2013: USEPA expert review on the national "Watershed modeling Report."  
 2013: AAAS- American Assoc. of Advancement of Science Expert Panel for EPscor N.S.F.  
 2012- Current: Expert advisor to several research projects on water and climate in Turkey funded by TUBITAK (N.S.F. counterpart in the country).  
 2009-current – Bharathiar University (India) external examiner for Ph.D. (one review per year)  
 2008, 2009, 2010 – Tahoe Science Consortium- Peer Review  
 2010 – National Science Foundation (NSF) and Regional Climate Prediction using Earth System Models (EaSM) – Proposal review  
 2010 – International Foundation for Science (I.F.S.) Peer review.  
 2002-2003 UMASS Water Resources Research Center – Chair of Review Panel  
 2003 USEPA-STAR – Review Panel member  
 2000, 2002, 2004, USDA-National Research Initiative - Review Panel Member  
 2002 The Netherlands Foundation for Advancement of Tropical Research (WOTRO)–Scholarly Review Panel  
 2000- Current: American Water Resources Association Tech. Committees: Hydrology & Watershed Management Committee, International Committee, and the Policy Committee.  
 2003- Current reviewer of Water Resources Research  
 2000 – Current: Reviewer of the Journal of Hydrology  
 1999 – Current: reviewer for the Transactions of the American Society of Agricultural Engineers  
 1998- 2005: M.A. State Technical Advisory Committee of NRCS-USDA.  
 1997 – Current: reviewer for Agricultural and Resource Economics Review (2 per year)  
 1995- Current: Reviewer of the Journal of Soil and Water Conservation. (2 manuscripts/year)  
 1996- Current: reviewer for The Journal of the American Water Resources Association, formerly Water Resources Bulletin. (5 to 6 manuscripts every year)  
 1999- Current: Reviewer for the American Journal of Agricultural Economics.  
 1997- Current: Member of the Professional Activity Committee of American Ag. Econ. Assoc.  
 1998- Current: Member of the International Committee of the American Ag. Econ. Assoc.  
 1996: American Water Resources Association - Professional Technical Committees:  
 (i) Water Policy, (ii) Geographic Information Systems, and (iii) International Issues.  
 1989: Three-member Expert Panel appointed by Vice-Chancellor, T.N.A. Univ., to study the "Contribution of the University to State Development."  
 1997: Panelist in Berg Colloquium on "The Role of Groups and Organizations in the Policy Making Process" at SWCS 97 Meeting, Toronto.

Invited panelist for the Berg Forum on "National Natural Resource Conservation Issues" (Jan-Feb, 1998) held at Washington, DC.

### Community Service:

2018 -Current – Sustainathon – Annual outreach event held at STCC, organized by STCC and UMass on sustainability. Approximately 500 attendees from high schools, community colleges, and universities, professionals, scientists, and citizens.

2025 – Hosted two professional fellows in the “Professional Fellows Program- Economic Empowerment,” Collaboration with I.T.D., South Amherst, and sponsored by the U.S. State Department.

2022 – Hosted one professional Fellow in the “Professional Fellows Program- Economic Empowerment,” Collaboration with I.T.D., South Amherst, and sponsored by the U.S. State Department.

2015-2017- Academic Director/ fellowship coordinator of "Professional Fellows Program- Environmental Sustainability" for 90 international professionals from Peru, Mexico, and Uruguay. Collaboration with I.T.D., South Amherst, and sponsored by the U.S. State Department.

2019- Current - President of the Southern New England Chapter of the Soil and Water Conservation Society.

2018-2019- President-Elect of the Southern New England Chapter of the Soil & Water Conservation Society.

2015-2018 – Vice President and Board Member of the Southern New England Chapter of the Soil and Water Conservation Society.

2011-2015, Massachusetts Director and Board member of the Southern New England Chapter of the Soil and Water Conservation Society.

2010 (Sept-Oct): Director of "The Institute of Energy and Environment" to 21 international student leaders from 6 countries. Collaborated with I.T.D., South Amherst, and sponsored by the U.S. State Department.

2005 – current- UMass delegate to the Universities Council of Water Resources (UCOWR)

2004-2007: Board member, Massachusetts Watershed Coalition, Leominster, MA.

### Extension and Outreach Experience:

(\* indicates outreach while at UMass).

- \* Web decision support – <https://ecowaters.com/>
- \*Collaboration in long-term water monitoring research in Turkey (Istanbul University)
- \*Research Collaboration with two major universities in Turkey (Istanbul University and Suleyman Demirel University)
- \*Collaborating with scientists at two major universities in Colombia (the National University of Colombia and the Military University of Colombia).
- \*Collaborating with scientists at two major universities in India (Tamil Nadu Agricultural University and Bharathiar University).
- \* Provided intense training in Energy and Environmental issues (Sept-Oct 2010) to 21 international students from France, Brazil, Indonesia, Russia, Germany, and India in collaboration with I.T.D., Amherst, and sponsored by the U.S. State Department.
- \* Provided short training in 2008 on water resources management to International policymakers from Eurasia as a part of the U.S. Department of Commerce's Special American Business Internship Training (SABIT) program - Water Resources Management for Central Asia, Western Eurasia, and the Caucasus. Participants were from Armenia, Georgia, Tajikistan, Turkmenistan, Kazakhstan, Kyrgyzstan, Moldova, Ukraine, and Uzbekistan.
- \*Provide watershed information through the web: <https://ecowaters.com/>
- \*Served in a faculty role in the Natural Resources and Environmental Conservation (NREC) Program of the UMass Extension and worked with extension personnel in various outreach activities.
- \*Organizer of Watershed Conservation Annual Conference attracts agencies, universities, and citizens from the New England States. Four conferences were conducted (480 attendees from the New England region).
- \*Conducted several workshops on water quality and watersheds for farmers, K-12 teachers, community leaders, watershed team leaders, and high school students.

- \*Directed the Water Resources Research Center, The Environmental Institute, during 2002.
- \*Developed outreach targeting urbanizing areas through modeling and sustainable planning.
- \*Conducted watershed-based environmental extension and outreach in several watersheds throughout Massachusetts.
- \*Conducted training in watershed management for mayors and professionals from Honduras (areas affected by Hurricane Mitch) in collaboration with ITD and Amherst.
- \*Conducted training in watershed management for mayors and environmental scientists from Columbia in partnership with ITD, Amherst.
- \*Developed programs to connect student learning through community service (service learning and watershed internships) to watersheds in the New England region.
- Developed web-based applications to assist farmers, regional planners, and local and federal decision-makers in managing least-cost water quality and pollution.
- Participated (presented in two sessions) in a Midwest Extension Workshop in Indianapolis, IN (1995).
- Conducted farmer adoption campaign programs in developing countries.
- Conducted farm-level surveys to identify and collect data on local problems in resource use.

#### **Invited Talks (2012 – sample):**

- 2012, Of Water, Wars, and Climate (Fall Orientation lecture), UMass Amherst
- 2012, Stormwater (talk for Envirothon participants), UMass Amherst
- 2012, Phosphorus Modeling in Blackstone River Watershed – November 16, Blackstone Summit, Uxbridge, MA.
- 2012, Adaptation to Climatic Change: Systems, Resilience, and Decision Making, Keynote Address to Conference on "Toward a new climate agreement 2012-2020 or Death of Kyoto Protocol" May 23, 2012, at the National University of Colombia, Bogota, Colombia.
- 2012, Covercrop decision support systems- Center for Ag – Board of Overseers, University of Massachusetts, Amherst, MA.
- 2012, Climatic Change and Socioeconomic Systems – Symposium presentation. Aug 8, 2012. Tamil Nadu Agricultural University, Coimbatore, India.
- 2012, Climatic Change Impacts on Socioeconomic Systems – Keynote address at National Symposium presentation. Aug 16, 2012. Bharathiar University, Coimbatore, India.
- 2012, Climatic Change and S.E.S. systems – Symposium presentation. Aug 16, 2012. Madras Institute of Development Studies, Chennai, India.

#### **COMPUTING EXPERTISE**

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**Web Applications:** <https://www.ecowaters.com/>.

**Operating Systems:** Windows, UNIX, Solaris

**Optimization:** GAMS

**General Equilibrium Modeling:** GEMPACK/GTAP, MPS-GE

**Econometrics/ statistics:** S-PLUS, SYSTAT, S.A.S., LIMDEP, STATA, SHAZAM, R, Python

**GIS:** GRASS, ArcGIS, QGIS

**Simulation:** STELLA, Anylogic, SIMILE, EPIC, GWLF, AGNPS, SWMM, SWAT, BASINS.

**Mathematical:** Mathematica, Matlab, Mathcad

**Internet:** Java, ASP, JSP, Web server administration, FrontPage

**Programming:** Java, C++, Python, R

**Mobile programming:** Android SDK, iOS XCode.