

GURPAL S. TOOR

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EDUCATION AND TRAINING

Punjab Agricultural University, India	Agriculture & Chemistry	BS (Hons.), 1993
Punjab Agricultural University, India	Soil Chemistry	MS, 1996
Lincoln University, New Zealand	Environmental Soil Chemistry	PhD, 2002
University of Delaware, USA	Soil & Water Quality	Post-doctoral: 2002–2005

RESEARCH AND PROFESSIONAL EXPERIENCE

2017–present	Associate Professor and Extension Specialist of <i>Nutrient Management and Water Quality</i> , University of Maryland	
2017	Professor of <i>Soil & Water Quality</i>	Soil and Water Sciences Department, University of Florida
2012–2017	Associate Professor of <i>Soil & Water Quality</i>	
2007–2012	Assistant Professor of <i>Soil & Water Quality</i>	
2005–2007	Research Scientist, Department of Agricultural and Biological Engineering, University of Arkansas, Fayetteville, AR	

SYNERGISTIC ACTIVITIES: My research and extension appointments focus on the management of nutrients in the environment to minimize their impact on surface water and groundwater. I have published 88 referred articles (76 journal articles, 11 invited review journal articles, and 2 book chapters), 32 extension publications, and 2 featured magazine articles. My students and I have given 24 invited talks, 55 volunteered talks, 58 posters, and 121 abstracts at national and international conferences. I have chaired 6 PhD and 13 MS students' committees and have been a member of other 11 graduate students (4 PhD, 11 MS) committees. I currently serve as Section Editor of *Current Pollution Reports* journal and have previously completed two terms (2008–2014) as Associate Editor of the *Journal of Environmental Quality*. I have served as a member of the tri-societies of agronomy, crop science, and soil science (ASA-CSSA-SSSA) *Book and Multi-Media Publishing Committee* since 2014. I have served as the Chair of the *Urban & Anthropogenic Soils Division* of the Soil Science Society of America in 2014, a member of the Soil Science Society of America *S594 Urban Soils Committee* (2012–2013), and a member of the American Society of Agronomy *K-12 Committee* (2010–2012). Since 2011, I have served as a member of several scientific committees and as a co-chair of six national and international conferences. I have organized 22 symposia that included topical sessions at various national and international conferences. I have served a grant evaluator on various national (USDA, NSF, EPA), state (Sea Grant Program), and local grant programs as a panel member and ad-hoc reviewer. I review ~10 manuscripts and book proposals each year for various journals and publishers. I have been elected as the Incoming Chair of SERA-17 and the Mid-Atlantic Crop Management School.

RESEARCH AND EXTENSION FOCUS: The over-arching goal of research conducted by the group is to develop solutions to manage nutrients in plant root-zone and protect water quality. The *specific objectives* of my research program are to (1) Develop, evaluate, and refine innovative tools using nutrient management principles to reduce nitrogen and phosphorus pollution of water bodies while using waste materials (manures, biosolids) and commercial fertilizers and (2) Investigate mechanisms and processes controlling release and transport of nitrogen and phosphorus from agricultural landscape to drainage ditches, streams, and rivers in the Chesapeake Bay watershed. Our current research efforts are focused on gaining better understanding of processes, mechanisms, and pathways of nitrogen and phosphorus flows in soil-plant-water systems to reduce nutrient transport and protect water quality in sensitive water bodies such as Chesapeake Bay.

SELECTED REFERRED PUBLICATIONS (16 out of 89 peer-reviewed publications as of March 2018).

[* graduate student; ** postdoctoral scholar]. *Google Scholar Weblink:*

https://scholar.google.com/citations?hl=en&user=epE1W0EAAAAJ&view_op=list_works&sortby=pubdate

1. *Jani, J., **G.S. Toor**. 2018. Composition, sources, and bioavailability of nitrogen in a longitudinal gradient from freshwater to estuarine waters. *Water Research*. **137**: 344–354.
2. **Yang, Y. & **G.S. Toor**. 2018. Stormwater runoff driven phosphorus transport in an urban residential catchment: Implications for protecting water quality in urban watersheds. *Scientific Reports*. DOI: 10.1038/s41598-018-29857-x
3. *Lusk, M.G., **G.S. Toor**, & P.W. Inglett. 2018. Characterization of dissolved organic nitrogen in leachate from a newly established and fertilized turfgrass. *Water Research*. **131**: 52-61.
4. *Darre, N.C., **G.S. Toor**. 2018. Desalination of water: a review. *Current Pollution Reports*. **4**: 104–111.
5. **Toor, G.S.**, M.L. Occhipinti, Y. Yang, T. Majcherek, D. Haver, & L. Oki. 2017. Managing urban runoff in residential neighborhoods: nitrogen and phosphorus in lawn irrigation driven runoff. *PLoS ONE*. DOI: 10.1371/journal.pone.0179151
6. **Yang, Y. & **G.S. Toor**. 2017. Sources and mechanisms of nitrate and orthophosphate transport in urban stormwater from residential catchments. *Water Research*. **112**:176–184.
7. *Lusk, M.G., **G.S. Toor**, Y. Yang, S. Mechtensimer, M. De, & T. Obreza. 2017. A review of fate and transport of nitrogen, phosphorus, pathogens, and trace organic chemicals in septic systems. *Critical Reviews in Environmental Science & Technology*. **47**: 455–541.
8. *De, M. & **G.S. Toor**. 2017. Nitrogen transformations in the mounded drainfields of drip dispersal and gravel trench septic systems. *Ecological Engineering*. **102**: 352–360.
9. *Mechtensimer, S. & **G.S. Toor**. 2017. Septic systems contribution to phosphorus in shallow groundwater: Field-scale studies using conventional drainfield designs. *PLoS ONE*, 12 (1): e0170304. DOI: 10.1371/journal.pone.0170304
10. *Lusk, M.G. & **G.S. Toor**. 2016. Biodegradability and molecular composition of dissolved organic nitrogen in urban stormwater runoff and outflow water from a stormwater retention pond. *Environmental Science & Technology*. **50**:3391–3398.
11. *Lusk, M.G. & **G.S. Toor**. 2016. Dissolved organic nitrogen in urban streams: biodegradability and molecular composition studies. *Water Research*. **96**:225–235.
12. **Yang, Y. & **G.S. Toor**. 2016. $\delta^{15}\text{N}$ and $\delta^{18}\text{O}$ reveal the sources of nitrate-nitrogen in urban residential stormwater runoff. *Environmental Science & Technology*. **50**: 2881–2889.
13. *De, M. & **G.S. Toor**. 2016. High removal of effluent-borne nitrogen with multiple external electron donors in the engineered drainfield of an advanced septic system. *Journal of Environmental Quality*. **45**:1874–1882.
14. *Mechtensimer, S. & **G.S. Toor**. 2016. Fate, mass balance, and transport of phosphorus in the septic system drainfields. *Chemosphere*. **159**:153–158.
15. *De, M. & **G.S. Toor**. 2016. Mass balance of water and nitrogen in the mounded drainfield of a drip-dispersal septic system. *Journal of Environmental Quality*. **45**:1392–1399.
16. **Toor, G.S.** & J.T. Sims. 2016. Phosphorus leaching in soils amended with animal manures generated with modified diets. *Journal of Environmental Quality*. **45**:1–7.