

BISWANATH DARI

Assistant Professor – Agronomist
Department of Crop and Soil Sciences
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Personal Website: <https://biswanathdari9.wixsite.com/dari>

Research gate: https://www.researchgate.net/profile/Biswanath_Dari

PROFESSIONAL POSITIONS

Assistant Professor, Klamath Basin Research and Extension Center, Oregon State University (Jan 2020 -) (Department of Crop and Soil Science)

Post-doctoral Fellow, Aberdeen Research and Extension center, University of Idaho (August 2017 to Dec 2019)

Post-doctoral Research Associate, Soil and Water Sciences Department and North Florida Research and Education Center, Institute of Food and Agricultural Sciences, University of Florida (September 2015 to August 2017)

Certified Analyst, UF/IFAS Analytical Services Laboratories (Extension Soil Testing Laboratory – *Analytical Research Laboratory*), University of Florida, (August 2011 to November 2015)

Laboratory Manager, Environmental Soil Chemistry Laboratory, Soil and Water Sciences Department, University of Florida (August 2011 to September 2015).

EDUCATION

Doctorate of Philosophy (Ph.D.) August 2015

University of Florida, Gainesville, Florida
Major: Soil and Water Sciences
Graduate Research Assistant and Graduate Teaching Assistant

Master of Science July 2010

Punjab Agricultural University, Punjab, India
Major: Agricultural Meteorology
Minor: Soil Science
Junior Research Fellow of Indian Council of Agricultural Research

RESEARCH

- **Assistant Professor at the Oregon State University**
 1. *Sustainable Agriculture (crop, soil and water management)*
 2. *Agricultural resources management (i.e. fertilizer, nutrient, irrigation water, post-harvest residue etc.)*
 3. *Soil health and nutrient cycling*
 4. *Environmental (e.g. soil and water) protection*
 5. *Teaching and mentoring graduate and undergraduate students*
 6. *Community services for better crop production and general agricultural knowledge*
- **Post-Doctoral Research at the University of Idaho**
 7. *Soil fertility and plant nutrition (fertilizer and nutrient management) in cereal-based cropping system (mainly barley)*
 8. *Irrigation water management (e.g. irrigation timing cutoffs, deficit irrigation) to improve the quantity (~yield) and end-use quality (e.g. protein) in cereal based cropping system (mainly barley)*
 9. *Post-harvest residue management in cereal based cropping system to manage residue decomposition and fertilizer recommendation in Idaho and Pacific Northwest.*
 10. *Evaluation of nutrient (N, P and micronutrient) analysis and their correlation as an integrated approach of soil health in Idaho and the western United States.*

Funding: Idaho Barley Commission, College of Agricultural and Life Sciences (CALs), University of Idaho (Total nearly @\$150,000).

Responsibilities: Project management and organization, designing short- and long-term field experiments on cereal based cropping systems, planning and organizing soil sampling, coordinating the field activities related to crop production, delegating the field day/farmer's day, field workshops with extension personnel, conducting laboratory experiment, expertise in all related laboratory analytical skills and writing manuscripts and helping in projects reports, intensive advising and mentoring graduate students.

- **Post-Doctoral Research at the University of Florida**
 1. *Quantitative approach for recovering legacy phosphorus while minimizing crop nutrient deficiency risk*
 2. *Retention and release of phosphorus in agricultural soils applied with biochar*

Funding: USDA- AFRI Grant @\$485,000

Responsibilities: Project management and organization, designing field experiment on dairy pasture cropping systems, planning and organizing soil sampling from various part of the United States, coordinating the field activities related to crop production, visit and meeting with co PI's and clients, delegating the field day with extension personnel,

conducting laboratory experiment, and expertise in all related laboratory analytical skills, advising and mentoring graduate students.

3. *Biosolids options for phosphorus fertilization and its effect on P retention in pasture soils* (project was supported by FDACS and Florida Cattlemen's Association Grants @\$54,000).

Responsibilities: Oversaw the complete project, complex problem solver, supervised field experiment related to pasture crops, directed field plot experiments, independently regulated entire column experiment and laboratory batch experiments, analyzed all laboratory samples, managed field soil sampling, organized and assimilated data, coordinated workshop and field day.

- **Doctoral Dissertation:**

Dissertation Title: *Predicting soil phosphorus loss and its potential remediation through biochar application*

Funding: USDA-IFAFS FDEP, SFWMD and USDA-Hatch Grants

Responsibilities: Developed a laboratory protocol, performed field sampling, planned laboratory experiment for the study, solved critical analytical and instrumental problem in lab and field, integrated and illustrated results in national conferences, published manuscripts in peer-reviewed journals.

- **Master Thesis:**

Thesis Title: *Performance of direct seeded rice under different microclimate and irrigation regimes in semi-arid condition*

Funding: Student Fellowship; Junior Research Fellowship, ICAR-Indian Government

Responsibilities: Addressed critical answers to field-related research questions, coordinated and supervised field experiment including crop production, management of irrigation, fertilizers and pests, persuaded laboratory experiment, analyzed and interpreted of data.

Research Interests

- Sustainable agricultural production
 - Quantity and quality of field crops (especially cereal-based cropping system), Cover crops, Alternate crops
- Agricultural resource management (~promoting best management practices)
 - Fertilizer management, Irrigation water management, Residue management, Soil fertility and plant nutrition management
- Soil health assessment
 - Soil test and recommendation, Management of legacy nutrients (N, P and C etc.), Risk assessment of nutrients in an agro-ecological set up, Quantitative estimation and biogeochemistry of global nutrient cycles (N, P and C etc.) in agricultural fields, Environmental quality (e.g. soil, water, air protection)
- Promoting alternate agricultural resources (i.e. biochar and biosolids) in the face of climate change with a trade-off between agronomic benefits and environmental protection

Grant Awarded

- Assessing Residue Source and Management Practices for Improving Fertilizer Recommendations in Cereal-based Cropping Systems (2019). Idaho Barley Commission @ 40,000.
- Assessing Residue Source and Management Practices for Improving Fertilizer Recommendations in Cereal-based Cropping Systems (2018). Idaho Barley Commission @ 40,000.
- Improving Nutrient Management for Wheat through Comprehensive Soil and Crop Survey (2018). Idaho Wheat Commission @ 40,000.
- Biosolids options for phosphorus fertilization and its effect on P retention in pasture soils (2016). Florida Department of Agriculture and Consumer Services and Florida Cattlemen Association @40,000.
- Understanding Superphos and Phosphoric acid transport in soils (2015). SUPER PHOS™, Bio Huma Netics, Inc. Arizona, USA @25,000.

HONORS AND AWARDS

- Energypath 2017 Scholarship: Sustainable Energy Fund, an independent non-profit organization in Pennsylvania, USA, 2017.
- Recognition of High Scholarship, Outstanding Achievement or Service by Gamma Sigma Delta, the Honor Society of Agriculture, University of Florida, Gainesville, FL, April, 2015.
- Best Poster Award in the “2014 Graduate Student Poster Competition” by Biochar Community. ASA-CSSA-SSSA International Annual Meeting held in Long Beach, CA, Nov 2-5, 2014 (*monetary award of \$100*).
- Second place in the “2014 Graduate Student Oral Competition” by Pedology Division. ASA-CSSA-SSSA International Annual Meeting held in Long Beach, CA, Nov 2-5, 2015 (*monetary award of \$100*).
- Outstanding Graduate Student Award by “Association of Agricultural Scientists of Indian Origin (AASIO)”. Association with ASA-CSSA-SSSA International Annual Meeting held in Long Beach, CA, Nov 2-5, 2014 (*monetary award of \$200*).
- Recipient of certificate for selection and participation of the “2014 Graduate Student Leadership Conference”. ASA-CSSA-SSSA International Annual Meeting held in Long Beach, CA, Nov 2-5, 2014.
- “Environmental Quality Outstanding Graduate Student Award” under Environmental Quality section in American Society of Agronomy (ASA). ASA-CSSA-SSSA International Annual Meeting, held in Tampa, FL, Nov 3-6, 2013 (*monetary award of \$250*).
- Second place in the “Graduate Student Poster Competition” under the section of “Animal Agriculture and Environmental Community”. ASA-CSSA-SSSA International Annual Meeting, Nov, Tampa, FL, Nov 3-6, 2013 (*monetary award of \$100*).

- First place in the “Graduate Student Soil Poster Contest” in Southern Branch meeting of American Society of Soil Science held in Orlando, FL, Feb, 2013 (*monetary award of \$200*).
- Internship (two days) helping with remote posters. ASA-CSSA-SSSA International Annual Meeting held in Tampa, FL, Nov, 2013 @ *\$100*.
- The Graduate Student Travel Grants, Soil Science Society of America Annual Meeting held in Cincinnati, OH, 2012 @ *\$65*.
- Excellence in Graduate Studies and Best Dissertation Award: University of Florida, Gainesville, FL, 2015-2016.
- The A S Herlong Sr. Fellowship, IFAS/CALS, University of Florida, Gainesville, FL, 2014-15 (*monetary award of \$2,000*).
- Outstanding CALS international student, Univ. of Florida International Center, University of Florida, Gainesville, FL, 2014.
- The William Robertson Fellowship, Soil and Water Science Department, Univ. of Florida, FL, 2014 (*monetary award of \$1,000*).
- Nominated among 14 finalists for Howard Hughes Medical Institute Fellowship (Fall Semester, 2014) at University level, University of Florida, Gainesville, FL.
- The Doris Lowe and Earn and Verna Lowe Scholarship, IFAS/CALS, University of Florida, FL, 2013-2014 (*monetary award of \$1,500*)
- V W Carlisle Fellowship, SWSD, IFAS/CALS, Univ. of Florida, Gainesville, FL, Fall Semester, 2013 (*monetary award of \$1000*)
- Outstanding Achievement Award for maintaining *Grade Point of 4.0* from University of Florida International Centre, Univ. of Florida, Gainesville, FL
 - Academic Year: 2014-2015
 - Academic Year: 2013-2014
 - Academic Year: 2012-2013
 - Academic Year: 2011-2012
- The Graduate School Grinter Fellowship, University of Florida, Gainesville, FL
 - Academic Year: 2013-2014 (*monetary award of \$2,000*)
 - Academic Year: 2012-2013 (*monetary award of \$2,416*)
 - Academic Year: 2011-2012 (*monetary award of \$2,000*)
- The Office of the Vice President for Research travel grant, University of Florida, Gainesville, FL, @ *\$400*
 - Year: 2013 (for attending ASA-CSSA-SSSA Annual Meeting, Tampa, FL)
 - Year: 2014 (to be attended ASA-CSSA-SSSA Annual Meeting, Long Beach, CA).
- Recognition for Leadership and Services provided to the Agricultural and Life Sciences College Council. College of Agricultural and Life Sciences, University of Florida, Gainesville, FL, April, 2015.
- Recognition for Outstanding service, Mayors’ Council, University of Florida, Gainesville, FL, 2015.

- Recognitions from International Honorary for Leaders in University Apartment Community (IHLUAC), University of Florida, Gainesville, FL, 2014.
- The Institute of Food and Agricultural Sciences (IFAS) Travel Grant, 2012 @ \$200.
- ICAR Junior Research Fellowship (JRF), Indian Agricultural Research Institute (IARI), New Delhi, India (2008-2010) selected on all India basis.
- Merit certificate for maintaining overall *GPA of 8.0* throughout the master's program (2008-2010), Department of Agricultural Meteorology, Punjab Agricultural University, Ludhiana, India.
- University Merit Scholarship, Bidhan Chandra Krishi Viswavidyalaya (2004-2008)

PUBLICATIONS

Featured Works

- Research Highlights: Crop and Soils Magazine – WERA-103 (2019). [Soil Phosphorus Testing on Alkaline Calcareous Soils](#). Nutrient Management-CEU, American Society of Agronomy. doi:10.2134/cs2019.52.0510
- [UF/IFAS High Impact Research Publications, 2017](#): One of the short-listed articles

Referred/Adjudicated

- **Dari B**, CW Rogers, A Leytem and KL Schroeder (2019). Evaluation of Soil Test Phosphorus Extractants in Idaho Soils. *Soil Science Society of American Journal*. doi:10.2136/sssaj2018.08.0314
- **Dari B**, CW Rogers, X Liang, G Hu, and R Mikkelsen (2019). Plant, grain and soil responses of irrigated malt barley as affected by cultivar, phosphorus and sulfur application in an alkaline soil. *Journal of Plant Nutrition*. 1-11. doi.org/10.1080/01904167.2019.1589504
- Rogers CW, **B Dari**, G Hu, and R Mikkelsen (2019). Dry matter accumulation and nutrient uptake and partitioning of irrigated feed, food and malt barley. *Journal of Plant Nutrition and Soil Sciences*. 000:1-7. <https://doi.org/10.1002/jpln.201800336>
- Rogers CW, **B Dari**, K.L. Schroeder (2019). Comparison of Soil-Test Extractants for Potassium, Calcium, Magnesium, Sulfur and Micronutrients in Idaho Soils. *Agrosystems, Geosciences & Environment*, 2:190067. doi:10.2134/age2019.08.0067
- Rogers, C.W. S. Pristupa, **B Dari**. Soil Carbonate Analysis using the Solvita Compost Maturity Gel System. *Agricultural & Environmental Letters*. 4:190044. doi:10.2134/ael2019.09.0044
- **Dari B**, VD Nair, AN Sharpley, P Kleinman, D Franklin, and WG Harris (2018). Consistency of the Threshold Phosphorus Saturation Ratio across a Wide Geographic Range of Acid Soils. *Agrosystems, Geosciences & Environment*, 1:180028. doi:10.2134/age2018.08.0028

- Yan Z, S Chen, **B Dari**, and Q Chen (2018). Phosphorus forms and sorption-desorption characteristics affected by manure application in a calcareous soil. *Geoderma*. 322:163-171. doi.org/10.1016/j.geoderma.2018.02.035
- **Dari B**, and D Sihi (2018). A decadal overview of biochar research in agriculture. *Journal of Agricultural Physics*. 18: 14-20. <http://www.agrophysics.in>
- Nair VD, PK Ramachandran Nair, **B Dari**, AM Freitas, N Chatterjee, and FM Pinheiro (2017). Biochar in the agroecosystems-climate-change-sustainability nexus. *Front. Plant. Sci.* 8:2051. doi.org/10.3389/fpls.2017.02051
- **Dari B**, VD Nair, and WG Harris (2017). Approaches for evaluating subsurface phosphorus loss potential from soil profiles. *Agriculture, Ecosystem and Environment*. 245: 92-99. doi.org/10.1016/j.agee.2017.05.006
- Sihi D, **B Dari**, DK Sharma, H Pathak, L Nain, and OP Sharma (2017). Evaluation of soil health in organic vs. conventional farming of basmati rice in North India. *Journal of Plant Nutrition and Soil Science*. 180:389-406. doi.org/10.1002/jpln.201700128
- **Dari B**, VD Nair, WG Harris, PKR Nair, LE Sollenberger, and R Mylavarapu (2016). Relative Influence of soil- vs. biochar properties on soil phosphorus retention. *Geoderma*. 280:82-87. doi.org/10.1016/j.geoderma.2016.06.018
- **Dari B**, D Sihi, SK Bal, and S Kunwar (2016). Performance of direct-seeded rice under various dates of sowing and irrigation regimes in semi-arid region of India. *Paddy and Water Environment*. 15:395-401. <http://link.springer.com/article/10.1007%2Fs10333-016-0557-8>
- **Dari B**, VD Nair, J Colee, WG Harris, and R Mylavarapu (2015). Estimation of isotherm parameters: A simple and cost-effective procedure. *Front. Environ. Sci.* 3:70. (Listed as 2016 University Florida/IFAS High Impact Publication) doi.org/10.3389/fenvs.2015.00070
- Sihi D, DK Sharma, H Pathak, YV Singh, OP Sharma, L Chaudhary, and **B Dari** (2011). Evaluation of yield, quality and pest management strategies in certified organic and conventional system of basmati rice (*Oryza sativa*) cultivation. *Oryza-An International Journal of Rice*, p 24-29. <https://www.researchgate.net/publication/282828217>

Under Review and In-preparation

- Sihi D, **B Dari**, DK Sharma, H Pathak, OP Sharma, and L Nain. Assessment of groundwater quality in Indo-Gangetic Plains of south-eastern Asia under organic vs. inorganic conventional farming. *Water Environment Research (under review)*.
- Loomis G, **B Dari**, CW. Rogers and D Sihi. Evaluation of Residue Management Practices on Barley Residue Decomposition. *PLOS One (under review)*.
- Nair VD, **B Dari**, and PKR Nair. Biochar as soil amendment: Potential role of coconut byproducts. *Journal - Indian Society of Plantation Crops (under review)*.

- **Dari B**, C Mackowiak, VD Nair, and J Shirley. Efficacy of Biosolids as a fertilizer alternative in reduction of phosphorus loss from agricultural lands. *Soil Science Society of American Journal (in prep.)*.
- **Dari B**, CW. Rogers, KL Schroeder, TL Roberts. Evaluation of Soil Indices for Potentially Mineralizable Nitrogen Across Profile Depths in Northern Idaho. *Soil Science Society of American Journal (in prep.)*.

Extension Publications and Trade Articles/Newsletter (Peer reviewed/Evaluated)

- Rogers, CW, **B Dari**, and O Walsh (2019). Fertility in Southern Idaho Soils for Crop Production: Soil Testing Procedures. University of Idaho Extension, Moscow, ID (*accepted*)
- **Dari B**, CW Rogers, and O Walsh (2019). Understanding factors controlling ammonia volatilization from fertilizer nitrogen applications. University of Idaho Extension, Moscow, ID. Bul. 926.
- Rogers CW, **B Dari**, and O Walsh (2019). Best management practices for minimizing ammonia volatilization from fertilizers nitrogen application in Idaho crops. University of Idaho Extension, Moscow, ID. Bul. 927.
<http://www.extension.uidaho.edu/detail.aspx?IDnum=2233>
- **Dari B**, VD Nair, and WG Harris (2017). Parameters for site-specific soil phosphorus loss modelling from soil test data. UF/IFAS Extension Publication: EDIS; SL442.
<http://edis.ifas.ufl.edu>

Magazines and Popular Articles

- Rogers CW, **B Dari**, A Leytem (2019). [Soil phosphorus testing on alkaline calcareous soils](#). WERA- Article 103. Crop and Soils Magazine. American Society of Agronomy. doi:10.2134/cs2019.52.0510
- Rogers CW, **B Dari**, and G Thurgood (2019). Idaho Grain Magazine. Cereal Residue as part of a cropping system. Winter 2019.
- Rogers CW, **B Dari**, and O Walsh (2017). Idaho Grain Magazine. Fertilizer management for yield and quality in spring barley. Winter 2017.
- Mackowiak C and **B Dari** (2017) Soil phosphorus storage capacity as affected by P fertilizer sources. *Florida Cattlemen Association Article*.

Book Chapters (Invited)

- Sihi, D. and **B Dari**. (2020) Soil biogeochemistry for nutrient cycling. In: The Soils of India, Mishra, B. B. (Eds), World Soils Book Series. Hartemink, A. E. (Series Eds), Springer Nature Switzerland AG, DOI: [10.1007/978-3-030-31082-0](https://doi.org/10.1007/978-3-030-31082-0).
- Souri Z, AA Cardoso, CJ Silva, LM Oliveira, **B Dari**, and D Sihi, and N Karimi (2019). Heavy metals and photosynthesis: Recent Developments. In: [Photosynthesis, Productivity and Environmental Stress](#). Ahmad, P., Ahanger, M. A., Alyemeni, M. N., and Alam, P. (Eds) Wiley (in press). <https://www.waterstones.com/book/photosynthesis-productivity-and-environmental-stress/parvaiz-ahmad/mohammad-abass-ahanger/9781119501770>.
- Nair VD, PK Ramachandran Nair, **B Dari**, AM Freitas, N Chatterjee, and FM Pinheiro (2019). Biochar in the agroecosystems-climate-change-sustainability nexus. In: José M.

Mirás-Avalos and Philippe C. Baveye (eds). Agroecosystems Facing Global Climate Change: The Search for Sustainability (2019). *Front. Plant. Sci. (e-Book)*.

- **Dari B** and D Sihi (2018). Future of rice crop under enriched CO₂ environment. In: S Bal, J Mukherjee, B Chowdhury and A Dhawan (eds.). *Advances in crop Environmental Interaction*. SK Bal et al., (eds.). *Advances in Crop Environment Interaction*. Springer Nature, Singapore. Pp 425-437. https://doi.org/10.1007/978-981-13-1861-0_17
- **Dari B**, and D Sihi. Heavy Metals as Emerging threats in Indian Soils. In: *Soil Management*, Springer (*accepted*).

Research Skills

- Certified analyst for Total Phosphorus on Autocatalyzer, UF/IFAS Analytical Services Laboratories (Extension Soil Testing Laboratory – Analytical Research Laboratory; NELAP-Certified Laboratory), Univ. of Florida, Gainesville, FL.
- Expertise on laboratory instrumentations: Shimadzu TOC-L analyzer, Auto Analyzer (AA), Infra-red Gas Analyzer (IRGA, LI-COR 8100, & GASMET), UV-VIS Spectrophotometer, Discrete Analyser, Fluorometer, Atomic Absorption Spectrophotometer (AAS), Inductively Coupled Argon Plasma Atomic Spectrophotometer (ICAPAS), Flame Emission Spectrophotometer (FES), Polarography, Distillation apparatus, Potentiometer and Electrical Conductivity Meter.
- Expertise on laboratory instrumentations: Moisture probe/moisture meter, K_{sat} and Hyprop (measuring saturated and/or unsaturated hydraulic conductivity, permanent wilting point and moisture release curve), Conductometer, Single Rain Drop Simulator, Flame Photometer, Neutron Moisture Meter, Pressure Plate Apparatus, Modulus of Rupture, Double Ring Infiltrometer, Parshal Flume, Canopy Analyser, Infrared Thermometer, Net Radiometer, Quantum Sensor, Psychrometer or Psychron, Spectroradiometer, Photosynthetic System Instrument.
- Analytical Techniques: Phosphorus Isotherm parameters, Water Extractable Elements (N, P K etc.), Total Elements (all) in ICP, Organic Carbon, Physico-Chemical Properties of Soils, and Ground Water Quality Parameters.
- Software expertise: Statistical package (SAS, R, and JMP), ArcGIS, MS office suite, Geographical Positioning System (GPS), Visual MINTEQ; A free equilibrium Speciation Model.
- Statistical expertise in linear regression, multiple regression, backward and step-wise regression analyses, multivariate analyses, cluster analyses etc.

TEACHING AND MENTORING EXPERIENCES

Teaching

- Agriculture and Environmental Quality (ALS 3133), Spring 2016 (Co-teaching; Lecture) <https://mediasite.video.ufl.edu/Mediasite/Play/3b62b1b30fc04c7292106d0012c4e0111d>
- Introduction to Soils in the Environment (SOS 3022L), Spring, 2016 (Lead instructor: Laboratory teaching)
- Soil and Water Conservation, SWS 4233 (Lead instructor: Online teaching)

Co-Teaching and Teaching Assistant (Lead discussion in Lecture and Laboratory)

- Environmental Pedology (SWS 4715/5716); Spring, 2013 (In-class and extensive field-based teaching)
- Introduction to Soils in the Environment (SOS 3022L), Fall 2014 (Laboratory teaching)
- Agriculture and Environmental Quality (ALS 3133), Spring 2014 (Lectures)
- Agroforestry (FNR 5335/4854), School of Forest Resources and Conservation, Spring 2014 (Lectures)
- The World of Water (SWS 2007), Fall 2013 (Lectures).
- Introduction to soils in the environment (SWS 3022), Fall 2012 (Lectures)

Invited Speaker and Guest Lecturer

- *Invited speaker* to deliver seminar on “*Predicting Soil Phosphorus Loss and Its Potential Remediation through Biochar Application*”, North Florida Research and Education Center, Florida (August 2015).
- *Guest lecturer* to teach a class on “*Soil: Basic characteristics and classification*” in Agroforestry course (FNR 5335/4854), School of Forest Resources and Conservation, IFAS, University of Florida
 - Spring 2014
 - Spring, 2017
- *Guest lecturer* to teach a class on “*Biochar in Agriculture*” in Agroforestry course (FNR 5335/4854), School of Forest Resources and Conservation, IFAS, University of Florida (Spring 2014).
- *Invited speaker* to deliver seminar on “*Prediction of isotherm parameters for Phosphorus loss model inputs*”, Mississippi State University, Starkville, MS (August 2013).
- Credit seminar on “*Role of Direct Seeded Rice in enhancing water productivity*”. Punjab Agricultural University, Punjab, India (2009).
- Presentation entitled “*Your planet needs you--Unite to combat climate change*” under college level presentation competition, Punjab Agricultural University, Punjab, India (2009).
- Presentation entitled “*Soil matric potential-based irrigation scheduling to rice*” as class seminar, Punjab Agricultural University, Punjab, India (2008).
- Lead discussion on *Phosphorus Quick Test; PQT, a rapid field test for soil P based on the phosphomolybdate blue procedure, Field level demonstration*, Environmental Pedology course (SWS 4715/5716), University of Florida (Spring, 2013).

Mentoring

Agronomy Crop and Soil Science Society of America

2012-present

- Graduate Student Committee Member - American Society of Agronomy
- Graduate Student Competition Judge – American Society of Agronomy, Environmental Quality, Soil and Environmental Quality, Biochar Community

University of Idaho, Aberdeen, ID

2017-present

- Formal mentoring of masters' student Garrett Thurgood (thur3779@vandals.uidaho.edu) on field research design, soil sampling, laboratory techniques, data collection, graduate research proposal writing, conference presentation (ASA meeting, 2018), manuscript preparation for publication in peer-review journals.
- Formal mentoring of masters' student Grant Loomis (gloomis@uidaho.edu) on laboratory incubation experiments design, data collection, sample analyses, soil sampling, thesis writing, conference presentations (ASA meeting, 2018), manuscript preparation for publication in peer-review journals

University of Florida, Gainesville, FL

2011-2016

- Graduate teaching assistant on various courses taught in Soil and Water Sciences Department
- Informal mentoring of Ph.D. student Andressa Freitas (andressamfreitas@ufl.edu), PhD students on laboratory incubations study as well as field agronomic crop production experiment design, soil and plant tissue sampling, laboratory analyses, manuscript writing
- Informal mentoring of undergraduate student Amanda Rodriguez (arodriguez10722@ufl.edu) on laboratory bench experiments design, soil samples analyses in laboratory, lab protocol develop, soil samples collection, soil samples submitting in commercial lab, lab log book maintenance
- Informal mentoring of visiting Ph.D. Scholar Zhengjuan Yan (juanyz3749@163.com) from China on laboratory analyses, data interpretation, manuscript preparation and publications

Punjab Agricultural University, Punjab, India

2008-2010

- Undergraduate teaching assistant, Soil Science, Agricultural Meteorology

Invited Seminar/Presentation

- **Dari B**, CW Rogers, and X Liang. 2019. Plant, Grain, and Soil Response of Irrigated Malt Barley as Affected by Cultivar, Phosphorus, and Sulfur Applications on an Alkaline Soil. Plant Sciences Seminar Series. Department of Plant Sciences, University of Idaho.
- **B Dari**, CW Rogers, and Garrett Thurgood (2019). Post-harvest Residue Management in Idaho Cereal Crops. Caribou County Grain Seminar. Grace, Idaho, USA (Conference Proceeding publications).
- Nair VD, **B Dari**, and PKR Nair (2016). Biochar as a soil amendment: Potential role of coconut byproducts. pp 46-47. Book of Abstract. 3rd International Symposium on Coconut Research and Development. ICAR – Central Plantation Crops Research Institute Kasaragod, Kerala, India, Dec 10-12, 2016.
- **Dari B**, VD Nair, R Mylavarapu and WG Harris (2014). Can biochar amendments reduce soil phosphorus loss risk? SERA 17 Annual Meeting, Des Moines, IA, July 22-25, 2014.
- **Dari B**, VD Nair, and R Mylavarapu. Biochar application effects on soil phosphorus sorption and release. 15th Annual Forum, University of Florida, Gainesville, FL, Sept 18, 2014 (*oral presentation*).

- **Dari B**, and SK Bal (2010). Performance of direct seeded rice as influenced by different irrigation regimes in semi-arid condition. National Symposium on Sustainable rice production system under changed climate held in Central Rice Research Institute (CRRI), Cuttack, Orissa, India, Nov 27-29, 2010.

Professional Meeting Papers and Proceedings

- Thurgood G, CW Rogres, **B Dari**, J Marshall, O Walsh, KL Shroder (2019). Survey of C:N Ratios of Barley and Wheat Cultivars in Idaho. ASA-CSSA-SSSA Annual Meeting, San Antonio, TX, Nov 10-13 (*poster presentation*).
- Rogers CW, **B Dari**, K.L. Schroeder (2019). Comparison of Soil-Test Extractants for Potassium, Secondary, and Micronutrients in Idaho Soils. ASA-CSSA-SSSA Annual Meeting, San Antonio, TX, Nov 10-13 (*poster presentation*).
- Ray A, **B Dari**, D Sihi, S Tandon, A Dubey (2019). Bio-Adsorption of Cobalt and Lead Ions from Aqueous Solution Using Bamboo Biochar. ASA-CSSA-SSSA Annual Meeting, San Antonio, TX, Nov 10-13 (*poster presentation*).
- **Dari B**, CW Rogers and AB Leytem (2019). Evaluation of soil phosphorus tests in calcareous soils of western united states. SSSA International Soils Meeting, San Diego, CA, Jan 6-9 (*poster presentation*).
- Rogers CW and **Dari B** (2019). Comparison soil-tests extractants for secondary nutrients and micronutrients analysis in calcareous soils of western united states. SSSA International Soils Meeting, San Diego, CA, Jan 6-9 (*poster presentation*).
- **Dari B**, CW Rogers, X Liang, G Hu, and R Mikkelsen (2018). Plant, grain and soil responses of irrigated malt barley as affected by cultivar, phosphorus and sulfur application in an alkaline. ASA and CSSA Annual Meeting, Baltimore, MD, Nov 4-7 (*poster presentation*).
- **Dari B**, CW Rogers, X Liang, G Hu, and R Mikkelsen (2018). Plant, grain and soil responses of irrigated malt barley as affected by cultivar, phosphorus and sulfur application in an alkaline. ASA and CSSA Annual Meeting, Baltimore, MD, Nov 4-7 (*poster presentation*).
- **Dari B**, VD Nair, A Sharpley, D Franklin, P Kleinman, WG Harris (2017). An Environmental Phosphorus Monitoring Tool for Soils of the Eastern and Midwestern USA. ASA, CSSA and SSSA Annual Meeting, Tampa, FL, Oct 22-25 (*poster presentation*).
- Nair VD, LE Sollenberger, **B Dari**, A Freitas, WG Harris and J Dubeux (2017). An Environmental Phosphorus Monitoring Tool for Soils of the Eastern and Midwestern USA. ASA, CSSA and SSSA Annual Meeting, Tampa, FL, Oct 22-25 (*oral presentation*).
- Mackowiak, C, **B Dari**, and VD Nair (2017). Plant influence soil phosphorus storage capacity in soils receiving alternative fertilizers. ASA, CSSA and SSSA Annual Meeting, Tampa, FL, Oct 22-25 (*poster presentation*).
- **Dari B**, CL Mackowiak, VD Nair, and JP Shirley (2016). Soil phosphorus storage capacity in Florida soils receiving fertilizer alternatives. ASA, CSSA and SSSA Annual Meeting, Phoenix, AZ, Nov 6-9 (*oral presentation*).

- **Dari B**, CL Mackowiak, VD Nair and JP Shirley (2016). Use of biosolids in reducing phosphorus loss from Florida agricultural soils. 17th Annual Forum, University of Florida, Gainesville, FL, Sept 15 (*poster presentation*).
- **Dari B**, VD Nair, WG Harris, R Mylavarapu (2015). Estimation of isotherm parameters: A simple and cost-effective procedure. ASA, CSSA and SSSA Annual Meeting, Minneapolis, MN, Nov 15-18 (*poster presentation*).
- Schmidt CA, **B Dari**, N Chatterjee, DS Howlett, and VD Nair. Nutrient and Water Retention Dynamics of Biochar Produced from Pinyon- Juniper Forest Thinning in Nevada. ASA, CSSA and SSSA Annual Meeting, Minneapolis, MN, Nov 15-18 (*Third place in student poster presentation*).
- Chatterjee N, **B Dari**, VD Nair, PKR Nair (2015). Phosphorus sorption behavior in biochar-amended soils. ASA, CSSA and SSSA ASA, CSSA and SSSA Annual Meeting, Minneapolis, MN, Nov 15-18 (*poster presentation*).
- **Dari B**, VD Nair, WG Harris and R Mylavarapu (2014). Input parameters in phosphorus loss predictive models as applied to Spodosol and Ultisol horizons. ASA, CSSA and SSSA Annual Meeting, Long Beach, CA, Nov 2-5 (*Second place in graduate student oral presentation competition*).
- **Dari B**, VD Nair, R Mylavarapu and WG Harris (2014). Hardwood and poultry litter biochar effects on phosphorus sorption of soil. ASA, CSSA and SSSA Annual Meeting, Long Beach, CA, Nov2-5 (*Best graduate student award for poster presentation*).
- **Dari B**, VD Nair, R Mylavarapu and WG Harris (2014). Phosphorus sorption behaviour in manure-impacted soil amended with biochar. World Congress of Soil Science, Jeju, Korea, June 8-13 (*poster presentation*).
- **Dari B**, VD Nair, WG Harris and R Mylavarapu (2013). Tools for predicting phosphorus release from soils of animal and agricultural production system. ASA, CSSA and SSSA Annual Meeting, Tampa, FL, Nov 3-6 (*Second place in graduate student poster presentation competition*).
- **Dari B**, VD Nair and R Mylavarapu R. Obtaining model input parameters for predicting phosphorus leaching using PLEASE model. 14th Annual Forum, University of Florida, Gainesville, FL, Sept 6 (*poster presentation*).
- **Dari B**, VD Nair, R Mylavarapu and WG Harris (2012). Relating “Freundlich K_F ” parameters to the soil phosphorus saturation ratio. ASA Southern Branch Meeting, Orlando, FL, Feb 3-5 (*First place in graduate student soil poster presentation contest*).
- **Dari B**, VD Nair, RD Rhue and R Mylavarapu (2012). Relation of Langmuir parameters to the soil phosphorus saturation ratio. ASA, CSSA and SSSA Annual Meeting held in Cincinnati, OH, Oct 21-24 (*poster presentation*).
- **Dari B**, VD Nair, RD Rhue and R Mylavarapu (2012). Obtaining Langmuir parameters from a soil test solution. 13th Annual Forum, University of Florida, Gainesville, FL, Sept 7 (*poster presentation*).

- **Dari B**, VD Nair, DA Graetz, and R Mylavarapu (2012). Soil phosphorus dynamics in a dairy farm during a seven-year period. 3rd Water Institute Symposium, University of Florida, Gainesville, FL, Feb 15-16 (*poster presentation*)
- ***Dari B**, SK Bal, SK Jalota, and J Mukherjee (2011). Growth, development and yield of direct seeded rice as influenced by irrigation regimes and microclimate variation. International Conference on Preparing Agriculture for Climate Change (ICPACC), Punjab Agricultural University (PAU), Ludhiana, Punjab, India, Feb, 2011 (*poster presentation*).

Extension Seminar, Presentation and Conference Proceeding

- CW Rogers, **B Dari**, and H Neibling (2019). Irrigated Cereal Response to Nitrogen Applications to Improve Efficiencies for Yield and Protein. Western Nutrient Management Conference. Reno, USA (Conference Proceeding publications). **INVITED**
- **B Dari**, CW Rogers, A Leytem and K Schroder (2018). Comparison of Soil Phosphorus Tests in Alkaline Calcareous Soils of Idaho. Idaho Nutrient Management Conference. Twin Falls, Idaho, USA (Conference Proceeding publications). **INVITED**
- University of Idaho Cereal Field Day (Idaho Falls, ID). Presented two seminars on (i) Understanding Factors Controlling Ammonia Volatilization from Fertilizer Nitrogen Applications, and (ii) Best Management Practices for Minimizing Ammonia Volatilization from Fertilizer Nitrogen Applications in Idaho Crops (2019).
- University of Idaho Cereal Field Day (Burly, ID). Presented two seminars on (i) Understanding Factors Controlling Ammonia Volatilization from Fertilizer Nitrogen Applications, and (ii) Best Management Practices for Minimizing Ammonia Volatilization from Fertilizer Nitrogen Applications in Idaho Crops (2019).
- University of Idaho Cereal Field Day (Pocatello, ID). Presented two seminars on (i) Understanding Factors Controlling Ammonia Volatilization from Fertilizer Nitrogen Applications, and (ii) Best Management Practices for Minimizing Ammonia Volatilization from Fertilizer Nitrogen Applications in Idaho Crops (2019).
- University of Idaho Cereal Field Day (Ashton, ID). Presented two seminars on (i) Understanding Factors Controlling Ammonia Volatilization from Fertilizer Nitrogen Applications, and (ii) Best Management Practices for Minimizing Ammonia Volatilization from Fertilizer Nitrogen Applications in Idaho Crops (2019).
- University of Idaho Cereal Field Day (Preston, ID). Presented two seminars on (i) Understanding Factors Controlling Ammonia Volatilization from Fertilizer Nitrogen Applications, and (ii) Best Management Practices for Minimizing Ammonia Volatilization from Fertilizer Nitrogen Applications in Idaho Crops (2019).

SERVICES

Peer-review/Editorial Services

- Chair (2020): Biochar Community, American Society of Agronomy.
- Vice-chair (2019): Biochar Community, American Society of Agronomy.

- Associate Editor, Agronomy Journal, American Society of Agronomy, Soil Science Society of America, Crop Science Society of America (2018 to present) (<https://dl.sciencesocieties.org/files/publications/aj-masthead-for-web-6-mar-2018.pdf>)
- Editor, Open Agriculture Journal (2017 to present)
- American Society of Agronomy: Graduate Student Committee Member (2014 to 2015)
- Editor: Soil Methods On-line: ACS320. Methods of Soil Analysis, ASA, CSSA, SSSA Books, March 2017 - December 2020.
- PeerJ Ambassador
- Gamma Sigma Delta, 2015-2016.
- Ad hoc Journal Review: Agronomy Journal, Soil Science Society of America Journal, PLOS One, Chemosphere, Geoderma, Agriculture Ecosystem and Environment, Plant and Soil, MDPI (Soils, Forestry, Diversity), Environmental Monitoring and Assessment, Science of the Total Environment, Canadian Center of Science and Education journals such as Sustainable Agricultural Research, Journal of Sustainable Development, Environment and Pollution, Environment and Natural Resources Research, and Open Agriculture

Professional Memberships

- Soil Science Society of America: Member (2011 to present)
- American Society of America: Member (2011 to present)
- Crop Science Society of America: Member (2011 to present)
- SERA-17; An organization for innovative solutions to minimize phosphorus losses from agriculture (2011 to 2015)

Leadership Positions

- Graduate Student Competition Judge – ASA Environmental Quality, Soil and Environmental Quality, Biochar Community etc. (2016 to 2019)
- Co-ordinated *Open Houses*, Analytical research laboratories, Univ. of Florida.
- Vice President of Agricultural and Life Sciences College Council (2014-2015)
- **Moderator:**
 - Session(s): “*Soil Chemistry Oral I and II (includes student competition) (#126 and 127)*”; SSSA Division, ASA-CSSA-SSSA annual meeting, San Antonio, TX, Nov 10-13, 2019.
 - Symposium: “*Correctly Calculating Nitrogen Rates for Sustainable Crop Production and Environmental Protection: Advances Towards Understanding Natural Processes Governing Nitrogen Availability (#249)*”; SSSA Division: Nutrient Management and Soil and Plant Analysis, ASA-CSSA-SSSA annual meeting, San Antonio, TX, Nov 10-13, 2019.
- **Poster Judging:**
 - Soil and Environmental Quality section, ASA-CSSA-SSSA Meeting, Phoenix, AZ, 2016
 - Animal Agriculture and Soils, ASA-CSSA-SSSA Meeting, Tampa, FL, 2017
 - Global Agronomy, ASA and CSSA Meeting, Baltimore, MD, 2018
 - Soil Fertility and Plant Nutrition, SSSA Meeting, San Diego, CA, 2019
 - Soil Chemistry, ASA-CSSA-SSSA Meeting, San Antonio, TX, 2019.

Leadership Activities

- Internship (assisted members of the media at Newsroom) at the 2014 Annual SSSA, ASA and CSSA Meetings, held in Long Beach, November 2-5, 2014
- Internship (assisted members of the media at Newsroom) at the 2013 Annual SSSA, ASA and CSSA Meetings, held in Tampa, Florida, USA, November 3-6, 2013
- Volunteered at “Water Choices V” program- A Day long think tank on Water held at Straughn IFAS Extension Professional Development Center on September, 2012
- Volunteered at *14th Annual Soil and Water Science Research Forum*, University of Florida, September, Sept 6, 2013
- Volunteered at *13th Annual Soil and Water Science Research Forum*, University of Florida, September, Sept 7, 2012
- Volunteered at the 4th UF Water Institute Symposium, University of Florida, Feb 11-12, 2014
- Volunteered at the 3rd UF Water Institute Symposium, University of Florida, Feb 15-16, 2012

Student Organizations and Student Club

- Mayor of Diamond Village, Graduate and Family Housing under Mayor Council (MC) at University of Florida (December 2012 to August 2015)
- Grant reviewer and member of Graduate Student Council (GSC), University of Florida, Florida, USA (2013-1015)
- Fund Raiser and Active member, UF Wetlands Club (2014-2015)
- Lead the New Graduate Orientation by GSC: Planning committee member, Tour guide instructor and coordinator, University of Florida, 2013

Other Service Activities

- Science Fair Judge at the Regional Science Fair Program at Santa Fe College, Gainesville on February 6, 2014
- Science Fair Judge at the Alachua County School Volunteer Program at Ft. Clarke Middle School, Gainesville on Dec 10, 2013
- Science Fair Judge at the Professional Academies Magnet (PAM) at Loften High School, Gainesville on May 30, 2013
- Science Fair Judge at the Alachua County School Volunteer Program at Bishop Middle School, Gainesville on Nov 15, 2012
- Presented India at the College of Education’s International Day Celebration at the University of Florida, Fall 2013