Dipankar Dwivedi

Curriculum Vitae

1 Cyclotron Road,85B-102F, MS-74R316C
Lawrence Berkeley National Laboratory
Berkeley, California
+1-510-833-0504
+1-510-486-4005
DDwivedi@lbl.gov

Education

2007–2012 **Ph.D.**, *Texas A&M University*, College Station, Texas.
- ◇ Biological & Agricultural Engineering
- ◇ Dissertation: *Texas Water Resources: Vulnerability from Contaminants*

2003–2005 **M.Tech.**, *Indian Institute of Technology*, Kanpur, India.
- ◇ Environmental Engineering & Management
- ◇ Dissertation: *Particulate Emission Characterization of a Biodiesel vs Diesel-Fuelled Compression Ignition Transport Engine: A Comparative Study*

1999–2003 **B.Tech.**, *Indian School of Mines*, Dhanbad, India.
- ◇ Mining Engineering
- ◇ Dissertation: *A Seismic Characterization of Sedimentary Rocks to Investigate Subsurface Structures in Singhbhum*

Research Experience

Jan. 2015–present Postdoctoral Fellow, *Lawrence Berkeley National Laboratory*, Berkeley, California.
- ◇ **Scientific Focus Area (SFA 2.0)**
  - – Studied and modeled coupled carbon and nitrogen cycling in the hyporheic zone
  - – Developed a simulation framework for investigating hydrology and watershed biogeochemistry
  - – Developed and examined scale aware parametrization for exploring hydrology and watershed biogeochemistry from meanders to watershed scales

Jan. 2015–present Postdoctoral Fellow, *Lawrence Berkeley National Laboratory*, Berkeley, California.
- ◇ **Interoperable Design of Extreme-scale Application Software (IDEAS)**
  - – Modeled hydrological and biogeochemical cycling in the Colorado River System
  - – Developed a framework for benchmarking hydrology and watershed biogeochemistry using different reactive transport simulators

Oct. 2012–Dec. 2014 Postdoctoral Fellow, *Lawrence Berkeley National Laboratory,* Berkeley, California.

◇ **Next-Generation Ecosystem Experiments**

– Studied and modeled soil C dynamics for Arctic Ecosystems
– Investigated soil carbon interactions with minerals, microbial processes, and transport
– Investigated temperature sensitivity of soil organic carbon decomposition

Jan. 2007–Aug. 2012 Graduate Research Assistant, *Texas A&M University,* College Station, Texas.

◇ **Modeling fate and transport of nitrate and *E.coli* in the subsurface**

– Identified biotic and abiotic controls for vulnerability of water resources from contaminants
– Characterized spatial and temporal variability of nitrate in groundwater
– Developed a hybrid stochastic-deterministic modeling framework for nitrate transport in the subsurface

Sept. 2005–Oct. 2005 Environmental Engineer, *Vedanta Resources PLC,* Udaipur, India.

– Conducted "Environmental Impact Assessment" (EIA) in conjunction with external agencies

Research Interests

◇ Biogeochemistry of coupled carbon and nitrogen cycles in soil
◇ Hydrology and biogeochemistry at higher latitudes
◇ Fate and transport of contaminants in the subsurface
◇ Scaling of processes and parameters
◇ Uncertainty quantification
◇ Parameter estimation
◇ Groundwater modeling
◇ Watershed hydrology

Modeling Tools and Skills

Modeling Packages

Subsurface Reactive Transport Models: PFLOTRAN, TOUGHREACT, ATS-AMANZI, HYDRUS, MODFLOW, MT3DMS
Other Distributed Models and Packages: SWAT, BASINS

Other Packages

iTOUGH, Parameter ESTimation (PEST), MATLAB, COMSOL Multi-physics, R, LOADEST, SGeMS, ArcGIS, Surfer, SPSS, LaTeX, Tikz

Programming Languages

C, Python, Visual Basic, Fortran, Shell Programming (BASH), Experience in cluster computing & supercomputing

Publications

Refereed Publications

1. **Dwivedi, D.**, B. Arora, C.I. Steefel, R. Versteeg, B. Dafflon (2017), Hot Spots and Hot Moments of Nitrogen in a Riparian Corridor: A Reactive Transport Analysis (in review, *Biogeochemistry*).
2. **Dwivedi, D.**, W.J. Riley, M.S. Torn, N. Spycher, and J.Y. Tang (2017), Mineralogy, microbes, transport, and plant-input profiles control vertical distribution and age of soil carbon stocks, *Soil Biology and Biochemistry*, 10.1016/j.soilbio.2016.12.019.
3. **Dwivedi, D.**, C.I. Steefel, B. Arora, G. Bisht (2017), Impact of intra-meander hyporheic flow on nitrogen cycling, *Procedia Earth and Planetary Science*, 17, 404-407, doi: 10.1016/j.proeps.2016.12.102.
4. Arora, B., **D. Dwivedi**, N. F. Spycher, and C. I. Steefel (2017), On modeling CO_2 dynamics in a floodplain aquifer, *Procedia Earth and Planetary Science*, 17, 408-411 doi: 10.1016/j.proeps.2016.12.103.
5. **Dwivedi, D.**, B.P. Mohanty, and B.J. Lesikar (2016), Impact of the Linked Surface Water-Soil Water-Ground Water System on Transport of *E. coli* in the Subsurface, *Water, Air, and Soil Pollution*, 227(9), 351, doi:10.1007/s11270-016-3053-2.
6. Arora, B., **D. Dwivedi**, S.S. Hubbard, and C.I. Steefel, and K. H. Williams (2016), Identifying geochemical hot moments and their controls on a contaminated river floodplain system using wavelet and entropy approaches, *Environmental Modelling & Software*, DOI: 10.1016/j.envsoft.2016.08.005.
7. **Dwivedi, D.** and B.P. Mohanty (2016), Hot Spots and Persistence of Nitrate in Aquifers across Scales, *Entropy,18(1)*, 25, doi:10.3390/e18010025.
8. **Dwivedi, D.**, B. Dafflon, B. Arora, H.M. Wainwright, and S. Finsterle (2016), Chapter 21: Spatial Analysis and Geostatistical Techniques, in *Handbook of Applied Hydrology*, V. P. Singh (ed.), McGraw-Hill, SBN-13: 978-0071835091.
9. **Dwivedi, D.**, B. Arora, S. Molins, and C. I. Steefel (2016), Chapter 19 (Section IV): Benchmarking Reactive Transport Codes for Subsurface Environmental Problems, in *Groundwater Assessment, Modeling, and Management*, D. Thangarajan and V. P. Singh (eds.), CRC Taylor and Francis Group, ISBN10 0071835091.
10. Tinnacher, R., **D. Dwivedi**, W. Stringfellow, M. Reagan, C. Varadharajan, J. Birkholzer (2016), Chapter 7 (Section II): Hydraulic fracturing from the groundwater perspective, in Groundwater Research on Exploration, in *Groundwater Assessment, Modeling, and Management*, D. Thangarajan and V. P. Singh (eds.), CRC Taylor and Francis Group, ISBN10 0071835091.
11. Riley, W.J., F.M. Maggi, M. Kleber, M.S. Torn, J.Y. Tang, **D. Dwivedi**, and N. Guerry

(2014), Long residence times of rapidly decomposable soil organic matter: application of a multi-phase, multi-component, and vertically resolved model (BAMS1) to soil carbon dynamics, *Geoscientific Model Development*, vol. 7, 1335-2014, doi:10.5194/gmd-7-1335-2014.

12. Brender, J.D., P.J. Weyer, P.A. Romitti, B.P. Mohanty, M.U. Shinde, A.M. Vuong, J.R. Sharkey, **D. Dwivedi**, S.A. Horel, J. Kantamneni, J.C. Huber Jr., Q. Zheng, M.M. Werler, K.E. Kelley, J.S. Griesenbeck, F.B. Zhan, P.H. Langlois, L. Suarez, and M.A. Canfield (2013), Prenatal nitrate intake from drinking water and selected birth defects in offspring of participants in the national birth defects prevention study, *Environmental Health Perspectives*, vol. 121:1083-1089, doi:10.1289/ehp.1206249.
13. **Dwivedi, D.**, B.P. Mohanty, and B.J. Lesikar (2013), Estimating *Escherichia coli* loads in streams based on various physical, chemical, and biological factors, *Water Resources Research*, vol. 49, 2896-2906, doi:10.1002/wrcr.20265.
14. **Dwivedi, D.**, A.K. Agarwal, and M. Sharma (2006), Particulate emission characterization of a biodiesel vs. diesel-fuelled compression ignition transport engine: A comparative study, *Atmospheric Environment*, vol. 40, 5586-5595, doi: 10.1016/j.atmosenv.2006.05.005.
15. Bharathi, K.V.L., **D. Dwivedi**, M. Sharma, and A.K. Agarwal (2005), Diesel exhaust particulate characterization for poly aromatic hydrocarbons and benzene soluble fraction, *SAE Technical Paper*, 2005-26-348, doi: 10.4271/2005-26-348.

Other Publications

16. **Dwivedi, D.**, W.J. Riley, and J.Y. Tang (2015), Carbon saturation affects soil C dynamics?, Proceedings of the TOUGH Symposium 2015, Lawrence Berkeley National Laboratory, Berkeley, California, 476-482.
17. Arora, B., **D. Dwivedi**, N.F. Spycher, and C.I. Steefel (2015), Modeling carbon fluxes from a biogeochemical hotspot in a floodplain aquifer, Proceedings of the TOUGH Symposium 2015, Lawrence Berkeley National Laboratory, Berkeley, California, 456-463.

Reports and White-Papers

1. V. Bailey, P. J. Hanson, J. Jastrow, M. S. Torn, and D. Stover (2014), Data-Model Needs for Belowground Ecology, A Summary Report from the TES Mini-Workshop held May 8, 2014. (helped in writing and making conceptual framework)
2. **Dwivedi, D.**, B.P. Mohanty, and B.J. Lesikar (2009), Develop an understanding and systematically investigate the transport and fate of *E. coli* in Lake Granbury, Texas Water Resources Institute (TWRI).

Selected Conference proceedings

1. **Dwivedi, D.**, C.I. Steefel, B. Arora, M.E. Newcomer, G. Hammond, J.D. Moulton, A. Bhattacharyya, P. Fox, X. Yuan, P.S. Nico, K.H. Williams (2016), Outsized impacts of hyporheic exchange on coupled carbon and nitrogen cycling in river systems, presented at 2016 Fall Meeting, AGU, San Francisco, CA, 12-16 Dec. (*oral presentation*)
2. B. Arora, **D. Dwivedi**, C.I. Steefel, N.F. Spycher, P. Fox, and P. S. Nico (2016),

Mineralogical controls on carbon cycling in a contaminated floodplain environment, presented at 2016 Fall Meeting, AGU, San Francisco, CA, 12-16 Dec. (*oral presentation*)

3. Newcomer, M.E., S.S. Hubbard, J.H. Fleckenstein, U. Maier, C. Schmidt, G. Laube, N. Chen, C. Ulrich, **D. Dwivedi**, C.I. Steefel, Y. Rubin (2016), Hydrological Controls on Hyporheic Contributions to River Net Ecosystem Productivity, presented at 2016 Fall Meeting, AGU, San Francisco, CA, 12-16 Dec.
4. **Dwivedi, D.**, C.I. Steefel, B. Arora, G. Bisht (2016), Impact of intra-meander hyporheic flow on nitrogen cycling, presented at 2016 Water Rock Interaction - 15 International Symposium, Évora, Portugal, 16 - 21 Oct. (*oral presentation*).
5. Arora, B., **D. Dwivedi**, N. F. Spycher, and C.I. Steefel (2016), On modeling CO_2 dynamics in a floodplain aquifer, presented at 2016 Water Rock Interaction - 15 International Symposium, Évora, Portugal, 16 - 21 Oct. (*oral presentation*, delivered by B. Arora).
6. **Dwivedi, D.**, B. Arora, M. Newcomer, E. Woodburn, C.I. Steefel, and J.D. Moulton, (2016), Modeling Integrated Surface Subsurface Water Flow and Biogeochemical Cycling in the Hyporheic Zone, SeS Bench V, A Coruña, Spain, Oct. 13-15, 2016. (*oral presentation*).
7. **Dwivedi, D.**, C.I. Steefel, B. Arora, G. Bisht (2016), How Important is the Hyporheic Zone for Biogeochemical Cycling? (2016), presented at 2016 Goldschmidt, Yokohama, Japan, 26 June-1 Jul. (*oral presentation*)
8. **Dwivedi D.**, C.I. Steefel, E. Woodburn, B. Kallemov, D. Moulton, E. Kikinzon, E. Coon, G. Hammond, L. Foster, R. Maxwell, Testing Code Interoperability and Productivity on Modeling Integrated Surface Subsurface Water Flow and Biogeochemical Cycling in the Hyporheic Zone – IDEAS Use Case 1 (2016), presented at Potomac, Maryland, Conference: Annual joint investigators meeting of the Department of Energy's Office of Biological and Environmental Research (BER), DOI: 10.13140/RG.2.1.2515.5441. (poster)
9. **Dwivedi, D.**, W.J. Riley, C.I. Steefel, M.S. Torn, N. Spycher (2016), Mechanistic Representation of Soil C Dynamics, presented at IIT Kanpur, Kanpur, 12 Jan. 2016 (*Invited talk*)
10. **Dwivedi, D.**, C.I. Steefel, B. Arora, G. Bisht, K.H. Williams (2015), The Role of Hyporheic Zones in Cycling of Carbon and Nitrogen, presented at 2015 Fall Meeting, AGU, San Francisco, CA, 14-18 Dec. (*oral presentation*)
11. Riley, W.J., **D. Dwivedi**, B. Ghimire, F. M. Hoffman, G.S.H. Pau, J.T. Randerson, C. Shen, J.Y. Tang, Q. Zhu (2015), Improving predictions of large scale soil carbon dynamics: Integration of fine-scale hydrological and biogeochemical processes, scaling, and benchmarking, presented at 2015 Fall Meeting, AGU, San Francisco, CA, 14-18 Dec. (*Invited talk*, delivered by W.J. Riley)
12. Versteeg, R., R. Soltanian, D. Johnson, **D. Dwivedi**, A. Tran (2015), A Cloud Based Framework For Monitoring And Predicting Subsurface System Behaviour, presented at 2015 Fall Meeting, AGU, San Francisco, CA, 14-18 Dec.
13. **Dwivedi, D.**, W.J. Riley, and J.Y. Tang (2015), Carbon saturation affects soil C dynamics? presented at TOUGH Symposium 2015, Lawrence Berkeley National Laboratory,

Berkeley, California, 28-30 Sep. (*oral presentation*)

14. **Dwivedi, D.**, C. I. Steefel, B. Arora, G. Bisht (2015), Impact of Hyporheic Zone on Biogeochemical Cycling of Carbon, presented at 2015 Goldschmidt, Prague, Czech Republic, 16-21 Aug. (*oral presentation*, delivered by C.I. Steefel)
15. **Dwivedi, D.**, W.J. Riley, M.S. Torn, N. Spycher, F. Maggi, and J. Tang (2015), Mechanistic Representation of Soil C Dynamics for Grassland Ecosystems, presented at Modeling Forum, Earth Sciences Division, LBL, Feb. 11, 2015. (*oral presentation*)
16. **Dwivedi, D.**, W.J. Riley, M.S. Torn, J. Six (2015), Relative importance of sorption versus aggregation over soil carbon stocks, presented at 2015 SIAM, Stanford University, CA, 29 Jun - 2 Jul.
17. Arora, B., **D. Dwivedi**, S.S. Hubbard, C.I. Steefel, and K.H. Williams (2015), Towards improved characterization of geochemical hot moments: A combined wavelet-entropy approach, presented at 2015 SIAM, Stanford University, CA, 29 Jun - 2 Jul. (*oral presentation*, delivered by B. Arora)
18. Riley, W.J., **D. Dwivedi**, K. Georgiou, J. Tang, and M.S. Torn (2015), Explicitly representing microbes, mineral interactions, and tracer transport to predict depth-resolved SOM dynamics: A component of the LBNL TES SFA, presented at 2015 Environmental System Science (PI) Meeting, Potomac, 28-29, Apr.
19. Riley, W. J., N. J. Bouskill, B. Ghimire, C. D. Koven, J. Tang, and **D. Dwivedi** (2015), Mechanistic treatment of plant N use, root-microbe competition, and microbial processes improves high latitude and global ecosystem carbon budget predictions, presented at 2015 Environmental System Science (PI) Meeting, Potomac, April 28-29, 2015.
20. Versteeg, R., B. Dafflon, **D. Dwivedi**, D. Johnson, A. Rodzianko, and R. Soltanian (2015), Cloud based predictive assimilation framework for subsurface site management, presented at 2015 Environmental System Science (PI) Meeting, Potomac, 28-29, Apr.
21. **Dwivedi, D.**, W.J. Riley, M.S. Torn, and N. Spycher (2014), Mineralogical controls over carbon storage and residence times in grassland soils, presented at 2014 Fall Meeting, AGU, San Francisco, CA, 15-19 Dec.(*oral presentation*)
22. **Dwivedi, D.**, W.J. Riley, M.S. Torn, N. Spycher, and F. Maggi (2014), Mineralogical controls over soil carbon stocks and dynamics, presented at 2014 NGEE All-Hands Meeting, San Francisco, CA, 13-14 Dec.
23. Riley, W.J., J. Tang., **Dwivedi, D.**, M.S. Torn, F.M. Maggi, and M. Kleber (2014), Emergent SOM dynamics considering interactions between microbial physiology, microbial competition, mineral interactions, vertical transport, and temperature, presented at 2014 Fall Meeting, AGU, San Francisco, CA, 15-19 Dec. (*Invited talk*, delivered by W.J. Riley)
24. Arora, B., H.M. Wainwright, **D. Dwivedi**, C.I. Steefel, E. Brodie, A. Navarre-Sitchler, R. Prugue, A. Kenwell, K.H. Williams, and S.S. Hubbard (2014), Characterizing biogeochemical hot spots and hot moments in a floodplain system, presented at 2014 TES SBR PI Meeting, Potomac, 6-7 May.
25. **Dwivedi, D.** and B.P. Mohanty (2014), Entropy-based analysis for spatio-temporal variability of nitrate in Texas aquifers across multiple scales, presented at 2014 ASA-

CSSA-SSSA International Annual Meeting, Long Beach, CA, 2-5 Nov. (*oral presentation*)

26. Riley, W. J., M.S. Torn, J. Tang, **D. Dwivedi**, F. Maggi, and M. Kleber (2014), Mineral interactions, microbial processes, and transport explain long residence times of rapidly decomposable deep soil organic matter, presented at 2014 Complex Soil Systems Conference, Berkeley, CA, 3-5 Sept. (*Invited talk*, delivered by W.J. Riley)
27. Riley, W.J., M.S. Torn, J. Tang, **D. Dwivedi**, F. Maggi, and M. Kleber (2014), Long residence times of rapidly decomposable soil organic matter: a mechanistic modeling study, presented at 2014 Goldschmidt, Sacramento, CA, 8-13 Jun. (*Invited talk*, delivered by W.J. Riley)
28. **Dwivedi, D**., W.J. Riley, B. Ghimire, G. Bisht, J. Tang, and M.S. Torn (2014), Modeling controls on the decomposition of Soil Organic Matter, presented at 2014 TES SBR PI Meeting, Potomac, 6-7 May.
29. **Dwivedi, D.**, W.J. Riley, and G. Bisht (2013), Mechanistic representation of soil C dynamics for Arctic Ecosystems, presented at 2013 Fall Meeting, AGU, San Francisco, CA, 9-13 Dec.
30. **Dwivedi, D.**, W.J. Riley, G. Bisht, and G. Hammond (2013), Mechanistic representation of soil C dynamics for Arctic Ecosystems, NGEE Arctic Planning Meeting, San Francisco, CA, 7-8 Dec.
31. Riley, W. J., F.M. Maggi, M. Kleber, M.S. Torn, J.Y. Tang, **D. Dwivedi**, and N. Guerry, N. (2013), Long residence times of rapidly decomposable soil organic matter: application of a new multi-phase, multi-component, and vertically-resolved model for soil carbon dynamics, NGEE Arctic Planning Meeting, San Francisco, CA, 7-8 Dec.
32. Bisht, G., W.J. Riley, **D. Dwivedi**, and G. Hammond (2013), Modeling soil organic matter dynamics for NGEE-Arctic at different spatial scales, presented at 2013 18^{th} Annual CESM Workshop, Breckenridge, CO, 17-20 June.
33. **Dwivedi, D.** and B.P. Mohanty (2012), On developing a conceptual modeling framework for nitrate transport in the subsurface, presented at 2012 Fall Meeting, AGU, San Francisco, CA, 3-7 Dec.
34. Riley, W.J., F.M. Maggi, **D. Dwivedi**, N. Guerry, M.S. Torn, and M. Kleber (2012), Modeling fine-scale soil organic matter dynamics for NGEE-Arctic, presented at 2012 Next-Generation Ecosystem Experiments (NGEE Arctic) Planning Meeting, Berkeley, CA, 1 Dec.
35. Mohanty, B.P., **Dwivedi, D.**, I. Mendoza-Sanchez, and J. D. Brender (2012), A Physically based modeling of nitrate levels in ground water (local scale), presented at RCN Human Health Conference Outline Impacts of Excess Nitrogen in the Environment on Human Health, Bethesda, MD, 14-15 Nov.
36. **Dwivedi, D.** and B.P. Mohanty (2011), Addressing uncertainty in contaminant transport in groundwater using the ensemble Kalman filter, presented at 2011 Fall Meeting, AGU, San Francisco, CA, 5-9 Dec.
37. **Dwivedi, D.** and B.P. Mohanty (2011), Spatio-Temporal variability of nitrate in Texas Aquifers across different scales, presented at 2011 ASA-CSSA-SSSA International Annual

Meeting, San Antonio, TX, 16-19 Oct. (*oral presentation*)

38. **Dwivedi, D.** and B.P. Mohanty (2010), Spatio-Temporal variability of nitrate across scales in Texas Aquifers, presented at 2010 Fall Meeting, AGU, San Francisco, CA, 13-17 Dec.
39. **Dwivedi, D.** and B.P. Mohanty (2009), Modeling nitrate in Texas groundwater at regional & aquifer scales, presented at 2009 Fall Meeting, AGU, San Francisco, CA, 14-18 Dec.
40. **Dwivedi, D.** and B.P. Mohanty (2008), Using ANN to predict *E. coli* accumulation in coves based on interaction amongst various physical, chemical and biological factors, presented at 2008 Fall Meeting, AGU, San Francisco, CA, 15-19 Dec.
41. **Dwivedi, D.**, B.P. Mohanty, and B.J. Lesikar (2008), *E. coli* fate and transport below subsurface septic tanks in Lake Granbury area, presented at 2008 ASA-CSSA-SSSA International Annual Meeting, Houston, TX, 5-9 Oct.
42. Bharathi, K.V.L., **D. Dwivedi**, A.K. Agarwal, and M. Sharma (2004), Diesel exhaust particulates characterization for heavy metals, presented at IASTA Meeting and International Conference on Aerosols, Clouds and Indian Monsoon, IIT Kanpur, 15-17 Nov. (*oral presentation*, delivered by A.K. Agarwal)

Teaching Interests

- Surface and subsurface hydrology
- Hydrogeology
- Watershed hydrology
- Water resources engineering
- Application of **G**eographic **I**nformation **S**ystem (GIS)
- Biogeochemical cycles
- Fate and transport of contaminants in the environment
- Stochastic hydrology
- Environmental microbiology
- Mathematical modeling of physicochemical processes

Teaching Experience

Spring 2012 **ENGR 112 "Foundations of Engineering"**, *Texas A&M University*, College Station, Texas.
- Assisted in this freshman-level course for developing an autonomous well capping robot and programming with LabVIEW and SolidWorks

Spring 2010 **GTA Certification**, *Texas A&M University*, College Station, Texas.
- Certification, Graduate Teaching Assistant Fellows Program by Graduate Teaching Academy

Spring 2010 **BAEN 689 "Hydrology Across Scales"**, *Texas A&M University*, College Station, Texas.
- Taught stochastic processes and spectral analysis using Fourier and Wavelet Transform, including conducting laboratory exercises

Fall 2009 **FRSC 653 "Programming with Arc objects and Visual Basic application"**, *Texas A&M University*, College Station, Texas.
- Taught programming using Arc objects in Visual Basic framework and graded assignments

Fall 2004 **TA 101 "Engineering Graphics"**, *IIT Kanpur*, Kanpur, India.
- Graded assignments and helped students with tutorials

Professional Development Workshops and Trainings

Oct. 1 – Oct. 3, 2015 Participant, **iTOUGH2 Short Course**, Lawrence Berkeley National Laboratory, Berkeley, CA.

May 8, 2014 Participant, **Mini-workshop on data-model needs for below-ground ecology**, *TES SBR PI Meeting*, Washington, DC.

Mar. 6-7, 2013 Participant, **Carbon Capture Simulation Initiative (CCSI) workshop for reduced order models (ROMs),** *Lawrence Berkeley National Laboratory*, Berkeley, California.

Feb. 20-22, 2013 Participant, **CESM Land Model and Biogeochemistry Working Group Meetings**, *National Center for Atmospheric Research, Mesa Lab*, Boulder, CO.

Dec. 7, 2011 Participant, **NASA Heliophysics Proposal Writing Workshop, NASA Headquarters Staff**, *AGU Fall Meeting*, San Francisco, California.

Jul. 7, 2011 Participant, **COMSOL Multi-physics workshop, COMSOL Inc.**, *Texas A&M University*, College Station, Texas.

Jun. 6, 2011 Certified, **IRB Reference Resource Refresher Course (Ref # 5392709)**, *CITI Collaborative Institutional Training Initiative Human Research*, College Station, Texas.

May 25, 2011 Certified, **Mentoring undergraduates in research**, *Office of Honors and Undergraduate Research, Texas A&M University*, College Station, Texas.

2010 Developer, **MATLAB toolbox to calculate Shannon Entropy, Mutual Information, and Conditional Entropy**, *Texas A&M University*, College Station, Texas.

Jan. 20, 2010 Participant, **WebEx Training on Groundwater Modeling using Visual MODFLOW: The Waterloo Training Course Series**, *Schlumberger Water Services.*

Jun. 1–Jun. 30, 2007 Participant, **SGP Cloud & Land Surface Interaction Campaign (CLASIC)**, *U.S. Department of Energy's Atmospheric Research Measurement Program,* Chickasha, Oklahoma.

Nov. 29–Dec. 2, 2004 Participant, **BENMAP (The Environmental Benefits Mapping and Analysis Program)**, *Environmental Protection Agency (USEPA) and Central Pollution Control Board (CPCB) India,* New Delhi, India.

Honors and Awards

Spring 2012 Received **WAAIME Scholarship**, *American Institute of Mining, Metallurgical, & Petroleum Engineers (AIME).*

- ◇ Scholarship given to students with outstanding credentials pursuing degrees in Earth Sciences

Spring 2012 Received **Biological & Agricultural Engineering Graduate Scholarship**, *Texas A&M University,* College Station, Texas.

- ◇ Scholarship given by the department to few selected students with outstanding credentials

2010 Received **Robert E. Stewart Graduate Excellence Award**, *Biological & Agricultural Engineering Department, Texas A&M University,* College Station, Texas.

- ◇ Award given annually by the department to the best student for excellence in research

2010 Received **Graduate Student Research & Presentation Grant**, *Office of Graduate Studies, Texas A&M University,* College Station, Texas.

- ◇ Travel grant given by the Office of Graduate Studies to few selected students with highest academic standing

2009–2010 Received **TWRI Mills Scholarship**, *Texas Water Resources Institute,* College Station, Texas.

- ◇ A competitive research grant given by the Texas Water Resources Institute for carrying out research in water-related studies

2006–2007 Received **WMI Scholarship for Savannah River Site (SRS)**, *Department of Energy (DOE).*

- ◇ A competitive research grant given by the Waste Management Institute for carrying out research in contamination in the subsurface

2003 Secured **All India Rank 4 in**, *Graduate Aptitude Test in Engineering (GATE),* India.

- ◇ Secured All India Rank 4 for seeking admission in post graduate studies

Professional Services

Reviewed manuscripts for the following journals

- Water Resources Research
- Journal of Geophysical Research
- Biogeosciences
- Vadose Zone Journal
- Journal of Hydrology
- Journal of Contaminant Hydrology
- Stochastic Environmental Research and Risk Assessment
- Journal of Earth System Science
- Entropy (MDPI)
- Water (MDPI)
- American Society of Agricultural and Biological Engineers

Panel Review

- Served in a Panel Review for proposals called by the Office of Biological & Environmental Research (BER) within the Department of Energy Office of Science

Convened/Proposed Session(s)

26 Jun-01 Jul., 2016 — **Convener**, *Session titled "Linked Landscapes: Biogeochemical Connections Among Headwater Streams, Rivers, Estuaries and Coastal Ecosystems"*, 2016 Goldschmidt, Yokohama, Japan.
(Co-conveners: Nobuhito Ohte, David Widory, Scott Wankel, Taylor Maavara, Philippe Van Cappellen, Pierre Regnier, Ronny Lauerwald, **Dipankar Dwivedi**, Carl Steefel)

14-18 Dec., 2015 — **Convener**, *Session titled "Benchmarking Next-Generation Reactive Transport Models for Predicting Watershed Biogeochemical Cycling"*, 2015 Fall Meeting, San Francisco, California.
(Co-conveners: **Dipankar Dwivedi** (LBNL), Sergi Molins (LBNL), Carl I. Steefel, (LBNL), and John D. Moulton (LANL))

15-19 Dec., 2014 — **Convener**, *Session titled "Soil Organic Matter Dynamics: Novel Techniques, Big Data, and Functional Models"*, 2014 Fall Meeting, San Francisco, California.
(Co-conveners: **Dipankar Dwivedi** (LBNL), Lifen Jiang (University of Oklahoma), and Margaret S. Torn (LBNL))

9-13 Dec., 2013 — **Convener**, *Session titled "Soil Organic Matter Dynamics in the Anthropocene"*, 2013 Fall Meeting, San Francisco, California.
(Co-conveners: Kate Lajtha (Oregon State University), **Dipankar Dwivedi** (LBNL), Bhavna Arora (LBNL), and William J. Riley (LBNL))

Professional & Honorary Societies Affiliations

2008–present American Geophysical Union *(AGU)*.

2008–present Soil Science Society of America *(SSSA)*.

2011–present Alpha Epsilon, National Honor Fraternity *for Biological and Agricultural Engineering Department*.

2011–2012 Phi Kappa Phi ($\Phi K \Phi$), National Honor Society *for all academic disciplines*.

Service Activities

2015, Sept. Community Outreach Volunteer, **41th Annual Solano Avenue Stroll**, Lawrence Berkeley National Laboratory.

2014, Sept. Mentor to 12 junior class members from Albany High School, **ESD Reaching Out to High School Students**, Lawrence Berkeley National Laboratory.

2014, Sept. Community Outreach Volunteer, **40th Annual Solano Avenue Stroll**, Lawrence Berkeley National Laboratory.

2014–2015 Organizing Member, **Climate Sciences Brownbag Seminar Series**, Lawrence Berkeley National Laboratory.

2013–2014 Committee Member, **ESD postdocs survey development**, Lawrence Berkeley National Laboratory.

2010-2011 Committee Member, **Graduate Student Council Awards**, Texas A&M University.

2010-2011 Department Representative, **Graduate Student Council**, Texas A&M University.

2009 Subject Judge, **Soil hydrology/environment session**, *Student Research Week*, Texas A&M University.

2008–present Volunteer, **Marrow Donor Program** .

2008 Judge, **Ecological Integration Student Symposium**, Texas A&M University.

2007 Organization Volunteer, **5K race to raise awareness on a bacterial disease (necrotizing fasciitis)**, Texas A&M University.

2001–2002 Joint Secretary, **ISM Student Society**, ISM Dhanbad.