

RAMESH K. GOEL

Professor

Department of Civil & Environmental Engineering
University of Utah
110 S. Central Campus Drive, 2000MCE
Salt Lake City, UT 84112-0561

PHONE: (801) 581-6110
FAX: (801) 585-5477
E-mail: ram.goel@utah.edu

COLLEGE EDUCATION AND OTHER TRAINING

- January 2014** Visiting Professor (5 months), Nijmegen University, The Netherlands (Dr. Mike Jetten)
- July 2014** Visiting Professor (5 months), EAWAG, Switzerland (Dr. Eberhard Morgenroth).
- 2005** Post Doc, Environmental Engineering
University of Wisconsin, Madison (With Dr. Daniel Noguera)
- 2003** **Ph.D. in Environmental Engineering**
University of South Carolina, Columbia (With Dr. Joe Flora)
- 1996** **Master of Science in Civil Engineering**
Jadavpur University, Kolkatta, India.
- 1994** **Bachelor of Science in Civil Engineering**
Jadavpur University, Kolkatta, India
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CURRENT EMPLOYMENT

2017-present - Professor- Civil & Environmental Engineering, University of Utah, Salt Lake City

SUMMARY OF WORK HISTORY

- a) July 2017- present- Professor and Graduate Director, Civil & Environmental Engineering, U of Utah, Salt Lake
- b) July 2011- present- Associate professor and Graduate Director, Civil & Environmental Engineering, U of Utah, Salt Lake
- c) January 2006- June 2011 -Assistant professor, Civil & Environmental Engineering, U of Utah, Salt Lake
- d) August 03-December 05- Post Doc- Environmental Engineering, UW, Madison (**With Dr. Daniel Noguera**): **Research Topics**: (1) Enhanced biological phosphorus removal in Cannibal™ activated sludge process, (2) Ecology of heterotrophic bacteria that colonize drinking water distribution systems.
- e) January 01- August 03 -Research Assistant-Environmental Engineering- USC, Columbia. (**With Dr. Joseph Flora**) **Research Topic**: Bioelectrolytic techniques for environmental remediation and wastewater treatment.
- f) July 96 – September 99- Engineer- CES (I) Ltd, India
- g) July 94 – July 96- Graduate Research Assistant- Jadavpur University, India, **Research Topic**: Anaerobic treatment of distillery spent wash.
- h) July 90-June 94- Bachelor of Civil Engineering Student-Jadavpur University, Calcutta

HONORS AND AWARDS

- Outstanding Faculty Member- Civil & Environmental Engineering Department, University of Utah- 2016 and 2018
- NSF-CAREER Award (2011-2016)- Bacteriophages in engineered and natural systems.
- Outstanding Mentor- Civil & Environmental Engineering Department, University of Utah- 2014-2015

- Outstanding Researcher award- Civil & Environmental Engineering Department, University of Utah- 2008-2009
- Best Environmental Engineering Education paper award- American Society for Engineering Education conference, Atlanta-2013.
- Indo-US Professorship to India by American Society for Microbiology.
- Best teaching award for tenure track faculty-Civil & Environmental Engineering Department-2007-2008.
- Faculty creative research grant- April 2007
- Best student advisor- Civil & Environmental Engineering Department, University of Utah-2009-2010
- Appreciation Letter from University President's office for K-12 educational outreach.
- Best poster award in WEFTEC 2008 conference in Chicago.
- Outstanding Graduate Student Award for 2002-2003 in the Department of Civil & Environmental Engineering, University of South Carolina.

TRAINING WORKSHOPS CONDUCTED

International Teaching & Workshops

- *"Microbes and Sustainability"*- a short course taught at Madurai Kamraj University, India, December 20-25, 2009. The course was sponsored by *American Society for Microbiology* under its prestigious "Indo-US Professorship to Asia" that was awarded to Dr. Goel.
- NSF sponsored Workshop (PI)- Water sustainability and infectious diseases at Indian Institute of Science, Bangalore, January 4-8, 2010.
- NSF sponsored workshop (Co-PI)- Water Sustainability- at Indian Institute of Technology, Madras, organized in collaboration with Department of Science and Technology, Ministry of India, January 7-11, 2012

Training Workshops Offered

- Innovations in wastewater treatment: October 29, 2015. Water Environment Association of Utah sponsored workshop.
- Great Salt Lake Wetlands- May 11-12th, 2015 University of Utah.
- Nutrient issues in Utah- a training workshop for wastewater practitioners, June, 2007, University of Utah.
- Biological Nitrogen Removal- a training workshop at North Davis Sewer District, June 2009
- Chemical Phosphorus removal- presented at the training workshop conducted by Water Association of Utah, St George, UT, April 2009.
- Nitrogen mass balance and filamentous bulking- a training workshop at North Davis Sewer District- planned for August 2010

TRAINING WORKSHOPS ATTENDED

- ASCE ExCEED Teaching Workshop, 11-17 July 2009, Flagstaff, AZ.
- USEPA's 404 training workshop- May 2012, Denver, EPA.

OTHER POSITIONS HELD

a. Professional Societies

- Member- AEESP

- Member- International Water Association (IWA)
- Member – American Society for Microbiology
- Member-Water Environment Federation
- Associate Member- American Society of Civil Engineers
- Member-American Society for Engineering Education

b. Federal, State and others

- August 2015- December 31, 2018- ‘**Water Research**’ journal.
- August 2013-present- Associate Editor- “**Water Environment Research**” Journal
- Chair: AEESP Lecture Committee
- Secretary & Treasurer-United States of America National Committee of the International Water Association (USANC-IWA)- September-15-till date.
- Chair-WEFTEC Research symposium committee- December 2015-till date-.
- Vice Chair- WEFTEC Research symposium committee- August 2012-December 2014.
- Committee member- AEESP student services committee-2011- till date.
- August 2010-July 2013- Chair-Utah Wastewater certification program

PUBLICATION HISTORY

a. Books/chapter

1. Motlagh, A.M. and Goel, R. (2014). Sustainability of activated sludge processes. Book Chapter in Water Reclamation and Sustainability: 391-414
2. Motlagh, A.M. and Goel, R. (2014). Biological Phosphorus Removal: Reference Module in Earth Systems and Environmental Sciences, from Comprehensive Water Quality and purification, Volume 3, 2014, Pages 150-162
3. Noguera, D. R., Yilmaz, L. S., Goel, R., and Harrington, G. W. (2009) “Identification of heterotrophic bacteria that colonize chloraminated drinking water distribution systems”, *AWWA*,
4. Goel R, Flora J.R.V. and Chen P. (2004) “Flow Equalization and Neutralization”, A book chapter in book Physicochemical Treatment Processes -- Handbook of Environmental Engineering, Vol.5A, edited by Wang L.K., Hung Y- T and Shamas N, Humana press Inc, Totowa, NJ, volume 3: p21-44.

b. Peer reviewed articles in scholarly journals.

1. Safar KM, Mahar RB, Aslam UQ, Shankar BA, **Goel R.** (2018). The feasibility of putrescible components of municipal solid waste for biomethane production at Hyderabad, Pakistan. *Waste Manag Res.* 36(2):169-182.
2. Huma Tariq, Muhammad Raffae, Rasool Bux Mahar, **Ramesh Goel**, Junaid Ahmed Kori. Molecular characterization of bacterial communities in the drinking water distribution system of Hyderabad City revealing microbiologically contaminated water being supplied to the city. *Environmental Monitoring and Assessment.* (Under Review)
3. Junaid Kori, Rasool Bux Mahar, Muhammad Raffae Vistro, Huma Tariq Tariq, MS Ishtiaq Ahmed Khan, **Ramesh Goel.** Metagenomics Analysis of Drinking Water Samples from Treatment Plants of Hyderabad City and MUECHS. *Environmental science and Pollution Research* (submitted).
4. Windy D. Tanner., James A. VanDerslice., Ramesh K. Goel ., Molly K. Leecaster ., Mark A. Fisher., Jeremy Olstadt., Catherine M. Gurley., Anderson G. Morris., Kathryn A. Seely., Leslie Chapman ., Michelle Korando ., Kalifa-Amira Shabazz.^a, Andrea Stadsholt ., Janice VanDeVelde., Ellen Braun-Howland ., Christine Minihane ., Pamela J Higgins ., Michelle Deras., Othman Jaber ., Dee Jette ., Adi V. Gundlapalli . (2019). Multi-state study of

Enterobacteriaceae harboring extended-spectrum beta-lactamase and carbapenemase genes in U.S. drinking water. Accepted in Scientific Report, Nature.

5. Hanyan, L., Alsanea, A., Barber, M. and Goel, R. (2019). High-throughput DNA sequencing reveals the dominance of pico- and other filamentous cyanobacteria in an urban freshwater Lake; *Science of the Total Environment*; **661: 465-480**
6. Hogsett, M., Li, H. and Goel, R. (2018). The role of internal nutrient cycling in a Freshwater shallow alkaline lake. *Environmental Engineering Science*; DOI: 10.1089/ees.2018.0422
7. Dasgupta, S. Haydee De Clippeleir and Goel, R. (2019). **Short operational differences support granulation in a lab scale reactor in comparison to another conventional activated sludge reactor**. *Bioresource Technology*; 271: 417-426
8. Dasgupta, S., Wu, S. and Goel, R. (2017). Coupling Autotrophic denitrification with partial nitritation-anammox (PNA) for efficient total inorganic nitrogen removal. *Bioresource Technology*; 243: 700-707.
9. Bhattacharjee, A.S., Motlagh, A.M., Gilcrease, E.B., Islam, M.I., Casjens, S. and Goel, R. (2017). Complete genome sequence of lytic bacteriophage RG-2014 that infects the multidrug resistant bacterium *Delftia tsuruhatensis* ARB-1. **Standards in Genomic Sciences**; **12 (82)**: <https://doi.org/10.1186/s40793-017-0290-y>
10. Weidhaas, J.L., A. Panaccione, A. Bhattacharjee, R. Goel, A. Anderson, S. Proudell Acharya, *in press*, Whole community transcriptome of a sequencing batch reactor transforming 2,4-dinitroanisole (DNAN) and 3-nitro-1,2,4-triazol-5-one (NTO), *Biodegradation*, DOI: 10.1007/s10532-017-9814-9
11. Sengupta, S., Eargas, S., Cunnigham, J., Goel, R., Feldman, A. and Chen, Yi-H. (2017). Concept inventory for fundamentals of environmental engineering courses: concept inventory development and testing. *Environmental Engineering Science*; DOI: 10.1089/ees.2016.0595.
12. Lawson, C., Bhattacharjee, A., Wu, S., McMahon, T., Goel, R. and Noguera, D. (2017). Metabolic network analysis reveals microbial community interactions in anammox granules. ***Nature Communications* 8:15416: 1-12**
13. Bhattacharjee, A., Wu, S., Lawson, C., Jetten, M.S., Kapoor, V., Domingo, S., MaMahon, T., Noguera, D. and Goel R. (2017). Whole-Community Metagenomics in Two Different Anammox Configurations: Process Performance and Community Structure. *Environmental Science & Technology*; doi: 10.1021/acs.est.6b05855.
14. Pappu, A.R., Bhattacharjee, A.S., Dasgupta, S. and Goel, R., 2017. Nitrogen Cycle in Engineered and Natural Ecosystems—Past and Current. *Current Pollution Reports*, 3(2), pp.120-140.
15. Huang, P., Mukherji, S.T., Wu, S., Muller, J. and Goel, R. (2016). Fate of 17 β -Estradiol in source separated urine during integrated chemical P recovery and treatment using partial nitritation-anammox process. *Water Research*; 103(15): 500-509
16. Wu, S., Bhattacharjee, A.S., Weissbrodt, D., Morgenroth, E. and Goel, R. (2016). Effect of external perturbations on the microbial ecology and key functional genes in a partial nitritation-Anammox reactor. *Bioresource Technology*: 219: 527-535
17. Motlagh, A., Bhattacharjee, A. Casjens, S., Coutinho, F. Dulith, B.E. and Goel, R. (2017). Metagenomic approach to study phage- host interaction in sediments of hypersaline environment of Great Salt Lake. In print in *Frontiers in Microbiology*.
18. Bhattacharjee, A.S., Motlagh, A.M., Jetten, M.S.M. and Goel, R. (2016). Methane dependent denitrification- from ecosystem to laboratory-scale enrichment for engineering applications. *Water Research*; 99 (244-252).
19. Li, L., Zhou, Y., Zhang, Y., Huang, Y. and Goel, R. (2016). Enhanced electrolytic nitrate reduction with three-dimensional electrolysis reactor packed with activated carbon and foamed copper. In print in *Environmental Engineering Science*.

20. Wu, S., Bhattacharjee, A.S. and Goel, R. (2017). Comparison of performance and microbial communities in single stage suspended and attached growth partial nitrification/anammox reactors under different temperature. *Environmental Engineering Science*; 34(2): 63-72.
21. Tanner, Windy; Atkinson, Robyn; Goel, Ramesh; Toleman, Mark; Benson, Lowell; Porucznik, Christina; VanDerslice, James. (2017). Horizontal transfer of the *bla_{NDM-1}* gene to *Pseudomonas aeruginosa* within a biofilm. *FEMS Microbiology Letters*; 364 (8): 1-4
22. Huang, P and Goel, R. (2015). Response of a sludge minimizing lab scale BNR reactor when the operation is changed to real primary effluent from synthetic wastewater. *Water Research*; 81: 301-310.
23. Motlagh, A. Bhattacharjee, A. and Goel, R. (2015). Bacteriophage therapy for biofilm control with natural and genetically-modified phages. *World Journal of Microbiology and Biotechnology*; 32(4): 67
24. Windy Tanner, Robyn Atkinson, Ramesh Goel, Christina Porucznik, Lowell Benson, and James VanDerslice. (2015). The Effect of Meropenem Concentration on Detection of Low Numbers of Carbapenem-Resistant *Enterobacteriaceae*. In print in *Antimicrobial Agents and Chemotherapy* 60(1): 712-714.
25. Windy D. Tanner, James A. VanDerslice, Devinder Toor, L. Scott Benson, Christina A. Porucznik, Ramesh K. Goel, Robyn M. Atkinson. (2015). Development and field evaluation of a method for detecting carbapenem-resistant bacteria in drinking water. *Systematic and Applied Microbiology*: 38: 351-357.
26. Motlagh, A., Bhattacharjee, A. and Goel, R. (2015) Microbiological Study of Bacteriophages Induction in Presence of Chemical Stress Factors in Enhanced Biological Phosphorus Removal (EBPR). *Water Research*: 81: 1-14.
27. Bhattacharjee, A.S., Choi, J.D., Motlagh, J.D., Mukherji, S.T. and Goel, R. (2015). Bacteriophage therapy for membrane biofouling in membrane bioreactors and antibiotic-resistant bacterial biofilms. *Biotechnology and Bioengineering*; 112(8): 1644-1654.
28. Damasceno de Oliveira L, Motlagh AM, Goel R, de Souza Missagia B, Alves de Abreu Filho B, Lautenschlager SR. (2014) The use of bottle caps as submerged aerated filter media. *Water Science & Technology*. 69(7): 1518-1525
29. Huang, P., Kotay, M. and Goel, R. (2014). Carbon mass balance and microbial ecology in a laboratory scale reactor achieving simultaneous sludge reduction and nutrient removal. *Water Research*. 53; 153-167.
30. Shireen M. Kotay, Bryan L. Mansell, Mitch Hogsett, Huang Pei, and Ramesh Goel. (2013). Anaerobic ammonia oxidation (ANAMMOX) for side-stream treatment of anaerobic digester filtrate process performance and microbiology; *Biotechnology and Bioengineering*: 110(4): 1180-1192.
31. Hogsett, M. and Goel, R. (2013). Dissolved Oxygen Dynamics at the Sediment–Water Column Interface in an Urbanized Stream. *Environmental Engineering Science*; 30(10): 594-605.
32. Choi, J., Kotay, S.M. and Goel, R. (2012). Viruses to the rescue. *Water Environment and Technology*; June: 38-41.
33. Racz, L., Muller, J.G. and Goel R. (2012) Fate of selected estrogens in two laboratory scale sequencing batch reactors fed 3 with different organic carbon sources under varying solids retention times. *Bioresource Technology*. 110: 35-42.
34. Liang, L and Goel R. (2011). Biodegradation of naphthalene and BTEX in batch and membrane bioreactors- *Environmental Engineering Science*. 29(1): 42-51
35. Goel, Ramesh; Kotay, Shireen M.; Butler, Caitlyn S.; Torres, César I.; Mahendra, Shaily., Goel, R., *Molecular Biological Methods in Environmental Engineering*. (2012) *Water Environment Research*; 83(10): 927-955

36. Choi, J., Kotay, S.M. and Goel, R. (2011). Bacteriophage-based biocontrol of biological sludge bulking in wastewater *Bioengineering Bugs*; 2(4): 1-4
37. Choi, J., Kotay, S.M. and Goel, R. (2010). Various physico-chemical stress factors cause prophage induction in *Nitrosospira multiformis* 25196-an ammonium oxidizing bacteria. *Water Research*; 44(15): 4550-4558.
38. Racz, L., Datta, T. and Goel, R. (2010). Effect of organic carbon on ammonia oxidizing bacteria in a mixed community. *Bioresource Technology*; 101: 6454-6460.
39. Kotay, S.M., Datta, T., Choi, J. and Goel, R. (2011). Biocontrol of Biomass Bulking Caused by *Haliscomenobacter hydrossis* using a newly isolated lytic bacteriophage. *Water Research*, 45(2):694-704.
40. Liang, L. and Goel, R. (2010). Role of hydroxyl radical during electrolytic degradation of contaminants. *Journal of Hazardous Materials*;181: 521-525
41. Datta, T. and Goel, R. (2010). Evidence and long term feasibility of Enhanced biological phosphorus removal in oxidation ditch type of aerated-anoxic activated sludge systems. *ASCE-Journal of Environmental Engineering*; 136(11): 1237-1247
42. Racz, L. and Goel, R. (2010). Fate and removal of estrogens in municipal wastewater. *Journal of Environmental Monitoring*; (12): 58-70.
43. Racz, L. and Goel R. (2010). Organic Carbon Effect on nitrifying bacteria in a mixed community. In press in *Water Science & Technology*.
44. Datta, T., Racz, L., Kotay, S. M. and Goel, R. (2010). Seasonal Variations of Nitrifying Community in Trickling Filter-Solids Contact (TF/SC) Activated Sludge Systems. *Bioresource Technology*,
45. Gu, A.Z., Sturm, B.M., Nerenberg, R., Park, C. and Goel, R. (2010). Molecular methods in biological systems. *Water Environment Research*:
46. Datta, T., Liu, Y. and Goel, R. (2009). A novel treatment approach to simultaneously achieve nutrient removal and sludge reduction in activated sludge process. *Chemosphere*: 76: 697-705.
47. Liu, Y., Li, L and Goel, R. (2009). Kinetic study of electrolytic ammonia removal using Ti/IrO₂ as anode under different experimental conditions. *Journal of Hazardous Materials*; 167: 959-965.
48. Srinivasan, S., Harrington, G., Xagorarakis, I. and Goel, R. (2008). Factors Affecting Bulk to Total Bacteria Ratio in Drinking Water Distribution Systems. *Water Research*; 42: 3393 – 3404.
49. Goel R. and Noguera. (2006) Evaluation of Sludge Yield and Phosphorus Removal in a Cannibal Solids Reduction Process. *ASCE- Journal of Environmental Engineering*; 132: 1331-1337.
50. Williams J, Goel R, Flora J.R.V and Vidic R. (2005) Investigating the Role of a Growing Adsorbent Bed in a Dead-End PAC/UF Process- *ASCE – Journal of Environmental Engineering*; 131(11): 1583-1588.
51. Goel R and Flora J.R.V. (2004) Stimulating Aerobic activities by passing Electric Current- *ASCE- Journal of Environmental Engineering*; 131(11): 1607 – 1613.
52. Goel R, Flora J.R.V and Ferry J. (2003) Mechanisms of Naphthalene Removal during Electrolytic Aeration of Anoxic Groundwater- *Water Research* ;37(4):891-901.
53. Goel R, Liu L, Flora J.R.V, Meadows M and Walter I (2003) Simulation Studies of Electrolytic Aeration of Anoxic Groundwater in laboratory aquifer reactor and modeling of Process, *Environmental Engineering Science*; 20(6): 677 - 691.
54. Goel R and Flora J.R.V. (2005) Sequential nitrification and denitrification in a divided cell- *Environmental Engineering Science*; 22(4):440-449.
55. Goel, R., Cooper, A.T. and Flora, J.R.V. (2003) Sodium azide interference in chemical and biological testing. *Journal of Environmental Engineering and Science*; 2(5): 407.

c. Peer reviewed articles in scholarly journals (in review).

1. Dasgupta, S. and Goel, R. (2016) Coupling autotrophic denitrification with anammox for efficient N management in wastewater treatment plant. In review in “*Water Research*”.
2. Bhattacharjee, A.S., Wu, S., Lawson, C., Jetten, M., Noguera, D., Kapoor, V., Domingo, S.J., McMahon, K.D. and Goel, R. (2016). Metagenomic analysis of bacterial communities in suspended and attached growth anammox reactors. Under review in *Environmental Science & Technology*.
3. Weissbrodt, D.G., Wells, G.F., Goel, R., Luareni, M., Russo, G., Men, Y., Fischer, S., Minder, A.M., Aluri, S., Szivak, I., Kipf, M., Hahangi, H.R., Johnson, D.R., Christensen, M., Joss, A., Nielsen, J., Burgmann, H. and Morgenroth, E. (2016). A Process Engineering Vista on the Ecogenomics of Aerobic/Anaerobic Ammonium Oxidation. In review in “*Advances in Biotechnology*”.
4. Motlagh, A.M., & Goel, R. (2016) The Diversity of Lytic Phages and Effects of Environmental Stress Factors on Prophage Induction of Lysogenic Phages in Great Salt Lake. Under review in *Environmental Microbiology*.
5. Bhattacharjee, A. S., Motlagh, A. M., Casjens, S. & Goel, R. (2016). Complete genome sequence of lytic bacteriophage specific to a multidrug resistant bacterium *Delftia tsuruhatensis* ARB-1. Under review in Genome.
6. Dasgupta, S., and Goel, R (2016). Process start up, performance and microbial community structure in a lab scale granular activated sludge reactor. Under review in *Water Research*.

d. Peer reviewed articles in scholarly journals (in preparation)

1. Pappu, A.R., Pomeroy, C., Burian, S. and Goel, R. (2016). Fate of nitrogen in and nitrous oxide emissions from urban bioretention facility. Expected submission August 2016.
2. Hogsett, M. and Goel, R. (2016). Nutrient flux and phosphorus speciation in Utah Lake sediments. Expected submission July, 2016.
3. Hogsett M. and Goel, R. (2016). Organic carbon dynamics and budget in Jordan River, Salt Lake City. Expected submission August, 2016.
4. Lawson, C.E., Wu, S., Bhattacharjee, A.S., McMahon, K.D., Goel, R., & Noguera, D.R. Ecogenomics Reveals Distributed Metabolic Networks in an Anammox Bioreactor. Expected submission July 2016.
5. Teeters, S., Motlagh, AM. And Goel, R. (2016) Nutrients in the Great Salt Lake Wetlands: The Importance of Sediment Nutrient Fluxes and Prokaryotes. Expected submission August 2016.
6. Dasgupta, S., and Goel, R. Coupling Autotrophic Denitirification and Anammox for Efficient Removal of Inorganic Nitrogen. Expected submission February 2016.
7. Huang, P. and Goel, R. (2016). Whole community metagenomics for Microbial Communities Analysis of Activated Sludge from Lab-Scale sludge minimizing and Nutrients Removal Reactor. Expected submission August, 2016.

Year 2018

Bhattacharjee, A. and Goel, R. (2018) Effects of temperature gradients on anammox activity – a genome wide approach. WEFTEC, New Orleans, October 3rd- Wednesday- 1:30 PM

H. Li, C. Hansen, N. Von Stackelberg, R. Goel, S. Burian, and M. Barber. (2018). Assessing and Modeling Climate Change Impacts on Cyanobacteria in Utah Lake. WR/NIWR Annual Water Resources Conference, June 26-28, Pittsburgh, PA.

Li, H., Alsanea, A., Goel, R., Barber, M. Harmful Algal Blooms in Utah Lake: A Molecular Insight, Salt Lake Watershed Symposium (2018), Salt Lake City, UT

Hollstein, M., Li, H., Gupta, V., Goel, R. What Happens to Cyanotoxins Once They Are Out? 2018 SLC Watershed Symposium, Nov14-15

Li, Hanyan, Alsanea, A., Goel, R., Barber, M. Cyanobacteria in Utah Lake - Toxin and Non-Toxin Producing: Molecular Level Study. 2018 WEAU meeting, St. George, UT.

Podder, A., Reinhart, D., Goel, R., 2018, "Implementation of Circular Economy in Solid Waste Management", Poster Presentation at Environment & Sustainability Research Symposium in University of Utah, Salt Lake City, Utah (February 2018)

Podder, A., Goel, R., 2018, "Aerobic Granular Sludge Technology in Treatment of Landfill Leachate", Speaker at Water Environment Association of Utah (WEAU) conference in St. George, Utah (April, 2018)

Podder, A., Reinhart, D., Goel, R., 2018, "Where do landfills fit in the changing paradigm of Circular Economy – Resource Recovery & Social Aspects", presented at 6th International Conference on Sustainable Solid Waste Management, Naxos island, Greece (June 2018)

Podder, A., Gupta, V., Goel, R., 2018, "Implementation of Circular Economy in Treatment of Landfill Leachate", presented at 8th International Network of Environmental Forensics (INEF), organized by Royal Society of Chemistry, University of Utah, Salt Lake City, Utah (June 2018)

Dasgupta, S., Podder, A., Goel, R., 2018, "Aerobic Granular Sludge Transformation: Reactor Operation Switched from Synthetic to Real Wastewater", Presenter at ecoSTP 2018, 4th IWA specialized International Conference, Western University, London, Ontario, Canada (June 2018)

Podder, A., Reinhart, D., Goel, R., 2018, "Implementation of Circular Economy in Landfill Leachate Treatment", Poster Presentation at 9th Annual Canadian Waste to Resource Conference, Toronto, Ontario, Canada (October 2018)

Islam, M., Chahal, S., Goel, R. Energy and Resource Positive Wastewater Treatment Plants (WWTPs). WEAU Annual Conference 26th-29th April 2016. St. George, Utah, USA.

Mahar, R., Islam, M., Motlagh, A., Bhattacharjee, A., Goel, R. Evaluation of Various Disinfection Processes for Isolated Multidrug Resistant Bacteria In Wastewater Treatment Plant. 252nd ACS National Meeting, August 21-25, 2016, Philadelphia, Pennsylvania, USA.

Islam, M., Goel, R. Application of Bacteriophages Diversity in Engineered and Natural Ecosystem. Asia Pacific Conference on Sustainable Energy & Environmental Technologies (APCSEET), March 6-10, 2017 conference, Bihar, India.

Dasgupta, S., Islam, M., Goel, R. Application of Metagenomics for Microbial Characterization in Different Environments. Association of Environmental Engineering and Science Professors (AEESP), June 20-22, 2017, University of Michigan, USA.

Mackey, B., Heck, P., Goel, R. "Enhanced Biological Phosphorus Removal (EBPR) Study for Central Valley Water Reclamation Facility" presented at WEAU Mid Year conference 13th November 2018. Salt Lake City, Utah, USA

Mackey, B., Heck, P., Goel, R. "Enhanced Biological Phosphorus Removal (EBPR) Study for Central Valley Water Reclamation Facility" Presented at Salt Lake County Annual Watershed Conference 14th November 2018. Salt Lake City, Utah, USA

Hollstein, M., Li, H., Gupta, V., Goel, R. "What Happens to Cyanotoxins Once They are Released?" presented at Salt Lake County Annual Watershed Conference 14th November 2018. Salt Lake City, Utah, USA

Jennifer Weidhaas, Saraswati Poudel Acharya, Dana Tran, Vedansh Gupta, Ramesh Goel. (2018). Ion exchange and biological treatment of NTO wastewater. Presented at Joint Army-Navy-Nasa-Air Force (JANNAF) Interagency Committee conference in Vancouver, WA: December 10-13, 2018

Year 2017

Podder. A., Goel. R., Anaerobic process for mainstream carbon and nitrogen removal for energy efficient wastewater treatment. WEAU Annual Conference. April 19th – April 20th 2017. St George, Utah.

Podder. A., Martheswaran. T, Goel. R., Simultaneous Recovery of Nutrients and Treatment of Landfill Leachate using Innovative Technologies. EREF Summit at WasteExpo. May 8 2017. New Orleans, Louisiana.

Karimi, A., Goel, R. Microbial Source Tracking; A Unique Approach to microbial pollution in water bodies. 2017 WEAU Annual Conference.

Dasgupta S., Goel R. and Heck P (2017). Studying Nutrient Management using a Pilot Scale A2O process at Central Valley Water Reclamation Facility. WEAU Mid-Year, USA, November 2017.

Dasgupta S. and Goel R. (2017). Fundamentals of Nutrient Removal in Wastewater Treatment. WEAU, USA, April 2017.

Dasgupta S. and Goel R. (2017). Innovation in Wastewater Treatment with Reduced Footprint. 11th Asia Pacific Conference, Bihar, India March 2017.

Dasgupta S., Bhattacharjee A.S. and Goel R. (2017) Evaluation of Process Kinetics and Toxicity on Granular Activated Sludge. Nutrient Symposium, USA, June 2017.

Dasgupta S., Bhattacharjee A.S. and Goel R. (2017). A Comparative Study on Kinetics, Process Performance and Microbial Ecology for Aerobic Granular and Conventional Activated Sludge reactors. WEFTEC, September 2017.

Hanyan Li and Ramesh Goel (2017, February). Cyanobacteria and cyanotoxins in Utah Lake (poster). Urban Riparian Symposium, Houston, TX.

Hanyan Li and Ramesh Goel (2017, April). Cyanobacteria and cyanotoxins in Utah Lake. WEAU Annual Conference. St. George, UT.

Ramesh Goel, **Hanyan Li**, Anwar Alsanea, Michael Barber (2017, November). Identifying harmful algal blooms at Utah Lake via advanced molecular tools. Salt Lake Watershed Symposium, Salt Lake City, UT.

Gupta, V., Dasgupta, S., Goel, R. (2017). Managing Dissolved Methane Gas in Anaerobic Effluents. WEFTEC, October 2017, Chicago.

Anwar Alsanea, Hanyan Li, and Ramesh Goel. (February, 2017). Utah Lake Eutrophication: Algae blooms and the role of Sediment-Water Column Interactions. Urban Riparian Symposium. Houston, TX

Anwar Alsanea and Ramesh Goel. (April, 2017). Can algae growth be a feasible option to reduce excess nutrients in wastewater effluents? Water Environment Association of Utah annual conference. St. George, UT

Hanyan Li, **Anwar Alsanea**, and Ramesh Goel. (November, 2017). Deciphering Cyano-blooms Using Molecular Approaches in Utah Lake. Salt Lake Watershed Symposium. Salt Lake City, UT

Year 2016

1. Bhattacharjee A.S., Wu S., Dulith B.E., Goel R. Temperature effects on distributed metabolisms of partial nitrification/anammox (PN/A) reactor. ASM 116th General Meeting. 16th – 20th June 2016. Boston, Massachusetts.
2. Bhattacharjee A. S., Wu S, Dulith B. E, Goel R. Developing robust parameters through nitrogenomics approach for partial nitrification/anammox system under low temperature. Water Microbiology Conference. 18th – 22nd May 2016. Chapel Hill, North Carolina.
3. Wu S., Bhattacharjee A.S., Dulith B.E., Goel R. Developing robust parameters through nitrogenomics approach for partial nitrification/anammox system under low temperature. WEFTEC 2016. 24th – 29th September – 1st October. New Orleans, Louisiana.
4. Wu S., Islam M.I., Bhattacharjee A.S., Goel R. Effect of temperature variations and sulfide toxicity on the bacterial activity and key functional genes in a partial nitrification-anammox reactor. IWA Nutrient removal and recovery. 10th – 13th July 2016. Denver, Colorado.
5. Motlagh, A.M., Bhattacharjee, A.S., Goel, R. Delineating the ecology of phage-prokaryotes in hypersaline environment through "omics" approach. Water Microbiology Conference. May 2016. Chapel Hill, NC.
6. Motlagh, A.M., Bhattacharjee, A.S., Goel, R. Bacteriophage dynamics and their role in bacterial communities in hypersaline environment of Great Salt Lake. American Society for Microbiology (ASM). June 2016. Boston, Massachusetts.
7. M. Barber, M. Hasan, J. Petrie, & R. Goel, “Impacts of woody biomass biofuel production on sustainable river basin management.” 2016 UCOWR/NIWR Annual Conference, Oral Presentation, Pensacola Beach, FL, June 2016.
8. Mahar, R.B., Motlagh, A.M., Bhattacharjee, A.S., Goel, R. Evaluation of various disinfection processes for isolated multidrug resistant bacteria in wastewater treatment plant. American Chemical Society (ACS). August 2016. Philadelphia, Pennsylvania.
9. Dasgupta S. and Goel R. A comparative study of toxicity assessment of erythromycin and lead on aerobic granules and conventional activated sludge process. The 13th IWA Leading Edge Conference on Water and Wastewater Technologies. 13th – 16th June 2016. Jerez de la Frontera, Spain.
10. Dasgupta S., Bhattacharjee A.S. and Goel R. Metagenomics approach for comparative study of microbial community structure in granular and conventional activated sludge. UNC Water Microbiology Conference 2016. 17th – 19th May 2016. University of North Carolina at Chapel Hill, North Carolina.
11. Dasgupta S. and Goel R. Aerobic granules and activated sludge biomass exposed to lead and erythromycin: a comparative study of toxicity assessment and removal efficiency. WEFTEC 2016. 24th – 29th September 2016. New Orleans, Louisiana.
12. Pappu A.R. and Goel R. Innovative engineering techniques to manage nutrients in storm-water using urban green infrastructure. 22nd National Nonpoint Source (NPS) Monitoring Workshop. 23rd – 25th August 2016. Salt Lake City, Utah.
13. Karimi, A., Goel R. Microbial source tracking: a practical approach to nonpoint microbial pollution in water bodies. 22nd National Nonpoint Source (NPS) Monitoring Workshop. 23rd – 25th July 2016. Salt Lake City, Utah.
14. Christensen, H., Huang, P., Mukherji, S.T., Goel R. Feasibility studies on lab-scale ammonia oxidizing archaea/anammox system for nitrogen removal. WEFTEC 2016. 24th – 29th September – 1st October 2016. New Orleans, Louisiana.
15. Goel, R., Huang, P., Islam, M.I. Fate of estrogens in source separated urine during integrated chemical P recovery and treatment using partial nitrification-anammox process. IWA Nutrient removal and recovery. 10th – 13th July 2016. Denver, Colorado.

16. Motlagh, A.M., Bhattacharjee, A.S., Goel, R. Metagenomic analysis to understand the interaction network of bacteriophages and their bacterial hosts in hypersaline environment of Great Salt Lake. ISME 16. 21st – 26th August 2016. Montreal, Canada.
17. Motlagh, A.M., Goel, R. The role of lytic phage and prophage induction in bacterial population, diversity, and nutrient cycling in hypersaline ecosystem. ISME 16. 21st – 26th August 2016. Montreal, Canada.
18. Motlagh, A.M., Bhattacharjee, A.S., Goel, R. Metagenomic approach to understand the role of bacteriophages in bacterial population, diversity, and their nutrient cycling. MEWE and Biofilms IWA specialist conference. 4th-7th September 2016. Copenhagen, Denmark.
19. Lawson, C. E., Hamilton, J. J., Wu, S., Bhattacharjee, A.S., McMahon, K. D., Goel, R., Noguera, D. R. Distributed metabolic networks define microbial community assembly in anammox bioreactors. ISME 16. 21st – 26th August 2016. Montreal, Canada.
20. Bhattacharjee, A.S., Wu S., Dulith, B. E., Goel, R. Effects of temperature on metabolic networks of partial nitrification/anammox (PN/A) reactor. ISME 16. 21st – 26th August 2016. Montreal, Canada.
21. Dasgupta, S., Bhattacharjee, A. S. and Goel, R. Comparative analysis of micro-ecosystem in a biofilm based aerobic granules and conventional flocs. MEWE and Biofilms IWA specialist conference. 4th -7th September 2016. Copenhagen, Denmark.

Year 2015

1. Bhattacharjee, A. S., & Goel, R. Gaseous electron donors for denitrification- the potential of novel anoxic methane oxidizers. IWA Nutrient removal and recovery 2015. 17th – 21st May 2015. Gdansk, Poland.
2. Bhattacharjee A. S., Mukherji, S. T., & Goel, R. (2015). “Ecological Perspective on New Connectivity between Nitrogen and Carbon Cycle”. Urban Riparian Symposium 11th- 13th February 2015. Austin, Texas.
3. Weissbrodt DG, Wells GF, Goel RK, Lauren M, Bürgmann H, Johnson DR, Men Y, Fischer S, Minder A, Aluri S, Harhangi HR, Kipf M, Joss A, Christensson M, Nielsen JL, Morgenroth E (2015). A process engineering vista in the ecogenomics of aerobic-anaerobic ammonium oxidation in: Oleszkiewicz *et al.* (eds.), IWA Nutrient Removal and Recovery Conference 2015: Moving innovation into practice, Gdansk, Poland.
4. Bhattacharjee, A. S., Wu, S., & Goel, R. Metagenomics reveals different microbial community structures in suspended and attached growth anammox reactors. WEFTEC 2015. 26th – 30th September 2015. Chicago, Illinois.
5. Pei Huang, Sachiyo Mukherji, Ramesh Goel. (2014) “Fate of estrogens and illicit drugs during urine separation and treatment”. IWA Sustainable Wastewater treatment and Resource Recovery conference, Oct 2014, Kathmandu, Nepal.
6. Lawson, C. E., Wu, S., Bhattacharjee, A. S., McMahon, K. D., Goel R., & Noguera, D. R. Ecogenomics reveals distributed metabolic networks in suspended and attached growth anammox bioreactors. WEFTEC 2015. 26th – 30th September 2015. Chicago, Illinois.
7. Bhattacharjee A. S., Mukherji, S. T., & Goel, R. Ecological perspective on new connectivity between nitrogen and carbon cycle. Urban Riparian Symposium. 11th – 13th February 2015. Austin, Texas.
8. Bhattacharjee, A. S., & Goel, R. (2015). “Methane as electron donor for denitrification for energy saving and smaller carbon footprint”. AEESP 2015. 13th-16th June 2015. Yale University. New heaven. Connecticut.
9. Bhattacharjee, A. S., Motlagh, A. M., & Goel, R. Metagenomics to Unlock the Innovative Nitrogen Transformation in Aquatic Ecosystem: Denitrification coupled with methane oxidation. Water Microbiology Conference. 18th – 22nd May 2015. Chapel Hill, North Carolina.
10. Motlagh, A. M., Bhattacharjee, A. S., & Goel, R. Identification of host-phage interaction network in Great Salt Lake reveals the role of bacteriophages in bacterial diversity and population. Water Microbiology Conference. 18th – 22nd May 2015. Chapel Hill, North Carolina.

11. Lawson, C., Wu, S., Bhattacharjee, A. S., McMohan K. D. Goel, R., & Noguera D. R. Distributed metabolism in suspended and attached growth anammox bioreactors revealed through metagenomic sequencing. Water Microbiology Conference. 18th – 22nd May 2015. Chapel Hill, North Carolina.
12. Motlagh, A. M., Bhattacharjee, A. S., & Goel, R. Metagenomic analysis of ssDNA and dsDNA bacteriophage diversity and their role in functional gene transfer in Great Salt Lake. ASM 115th General Meeting. 30th May – 2nd June 2015. New Orleans, Louisiana.
13. Bhattacharjee, A. S., & Goel, R. Methane as electron donor for denitrification for energy saving and smaller carbon footprint. AEESP 2015. 13th – 16th June 2015. Yale University. New Haven, Connecticut.
14. Bhattacharjee, A. S., & Goel, R. The use of dissolved methane gas for denitrification - process kinetics and microbiology. ACS General Meeting 2015. 16th – 20th August 2015. Boston, Massachusetts.
15. Huang, P., Mukherji, S., Goel, R. Coupling chemical and biological processes for nutrient recovery and removal for better source separated urine management. Oral presentation at the ACS National Meeting and Exposition. August 2015. Boston, Massachusetts.
16. Pei Huang, Sachiyo Mukherji, Ramesh Goel. (2015). “Can we minimize biosolids production in activated sludge systems by process manipulations – process sustainability and nutrients removal?” WEF Residuals and Biosolids Conference, June 2015, Washington DC, U.S.
17. Bhattacharjee, A. S., Huang, P., Goel, R. Use of dissolved methane gas for denitrification-process kinetics and microbiology. Oral presentation at the ACS National Meeting and Exposition. August 2015. Boston, Massachusetts.
18. Wu, S., Weissbrodt, D. G., Morgenroth, E., & Goel, R. Resiliency of anammox against external stress factors - effect of temperature and wastewater constituents. WEFTEC 2015. September 26th – 30th 2015. Chicago, Illinois.
19. Motlagh, A.M., Bhattacharjee, A.S., Goel, R. Host-phage interaction network in Great Salt Lake and the role of bacteriophages in bacterial diversity and population. AEESP 2015. 13th-16th June 2015. Yale University. New Haven, Connecticut.
20. Dasgupta S., Wu S., Goel R. Coupling Autotrophic Denitrification and ANAMMOX for Efficient Removal of Inorganic Nitrogen (2015). WEFTEC 2015. September 26th – 30th 2015. Chicago, Illinois.
21. Goel. R., Abedin. S., Barber. M., Understanding Nitrogen Dynamics and Organic matter sources in the Jordan River, Society of Environmental Toxicology and Chemistry North America 36th Annual Meeting. November 1-5th 2015. Salt Lake City, Utah.
22. Abedin. S., Goel. R., Barber. M., Understanding Nitrogen Dynamics in the Jordan River and Wetlands associated with Great Salt Lake. WEAU Annual Conference. April 29th – May 1st 2015. St George, Utah.
23. Abedin. S., Goel. R., Barber. M., Understanding nitrogen dynamics and organic matter sources in the Jordan River. Urban Riparian Symposium-Restoration, Collaboration, Innovation. February 11th – 13th, 2015. Austin, Texas.
24. Abedin. S., Goel. R., Barber. M., Understanding nutrient dynamics in the Jordan River. Salt Lake Symposium. November 18th – 19th, 2015. Salt Lake City, Utah.

Year 2014

1. Pei Huang, Sachiyo Mukherji, Ramesh Goel. (2014) “Phosphorus recovery followed by deammonification of urine for nutrient management”. WEFTEC Sept 2014, New Orleans, LA, U.S.
2. Bhattacharjee, A. S., Wu, S., & Goel R. (2014). “An insight into the complex microbial communities of Attached Growth and Suspended Growth Anammox Reactors for real centrate treatment process”. ASM 114th General Meeting –17th -20th May 2014. Boston, Massachusetts.

3. Weissbrodt DG, Wells GF, Laurenzi, M., Goel R., Burgmann, H., Johnson, DR., Nielsen, JL and Morgenroth E. (2014). Systems biology of side stream and main stream aerobic-anaerobic ammonia oxidation processes in: Kim et al. (eds). 15th International Symposium on Microbial Ecology-ISME15, Seoul, Korea.
4. Bhattacharjee, A., Wu, S., Goel, R. An insight into the complex microbial communities of Attached Growth and Suspended Growth Anammox Reactors for real centrate treatment process, American Society for Microbiology, May 2014.
5. Motlagh, A., Bhattacharjee, A., Goel, R. Potential of bacteriophages in defining the diversification of microbial communities in natural ecosystems: Wetlands, American Society for Microbiology, May 2014.
6. Bhattacharjee A. S., Huang, P., Mukherji, S. T., & Goel R. (2014). "New connectivity between carbon and nitrogen cycles- nitrite/nitrate coupled methane oxidation". WEFTEC 2014. 27th September 1st October. New Orleans, Louisiana.
7. Motlagh, A., Goel, R. (2014). Statistical and comparative analysis of biological phosphorus removal process configurations and technologies in wastewater treatment plants across the US, EWRI, June 2014.
8. Wu, S., Bhattacharjee, A., Goel, R. Evaluation of hybrid deammonification reactor for filtrate treatment in lab-scale: Start-up and performance, WEFTEC, September 2014.
9. Bhattacharjee, A., Huang, P., Mukherjee, S., Goel, R. New connectivity between carbon and nitrogen cycles- nitrite/nitrate coupled methane oxidation, WEFTEC New Orleans, September 2014.
10. Tanner, W., VanDerslice, J., Toor, D., Benson, S., Porucznik, C., Goel, R., Atkinson, R. Carbapenem-resistant bacteria in drinking water: Method Development and Field Testing in New Delhi, India, AWWA, International Symposium on Waterborne Pathogens, April 2014.
11. Huang P. and Goel, R. (2014). The fate of illicit drugs and estrogens during urine treatment and resource recovery. IWA speciality international conference on nutrient recovery in Nepal. October 26-30, 2014.
12. Motlagh, A.M. and Goel, R. (2014) "Statistical and comparative analysis of biological phosphorus removal process configurations and technologies in wastewater treatment plants". Environmental & Water Resource Institute (EWRI), June 2014, Portland, OR.
13. Huang, P and Goel, R. (2014). Phosphorus Recovery Followed by Deammonification of Urine for Nutrient Management. WEFTEC in New Orleans.
14. Wu, S, Bhattacharjee, A and Goel, R. (2014) Evaluation of single stage hybrid deammonification reactor for filtrate treatment: start-up and performance. WEFTEC in New Orleans.

Year 2013

1. Motlagh, A.M., Kotay, S.M., Goel, R. (2013) "Bacteriophage-induction due to stresses can cause EBPR-upsets: an engineering and microbial-ecology perspective" 5th International Microbial Ecology and Water Engineering (MEWE) , July 2013, Ann Arbor, MI.
2. Pei Huang, Shireen Kotay, Ramesh Goel. (2013). "Evidence of Novel PAOs participating in EBPR in Sludge-Minimizing Bioreactors". IWA's Microbial Ecology and Water Engineering Conference, July 2013. Ann Arbor, Michigan, U.S.
3. Bhattacharjee, A. S, Goel R. (2013) "Bacteriophages in Engineered Bioreactor and Natural System: Phage-Bacteria Interactions". XXIII Biennial conference on Phage/Virus Assembly. 8-13 September. Lake Arrowhead, California.
4. Bhattacharjee A. S., Kotay S. M., & Goel R. (2013). "Complete-Genome-Sequencing of Multidrug-Resistant-Bacteria reveals insights into emergence of resistance genes".

- Microbial Ecology and Water Engineering 5th International Conference –7th -10th July, Ann Arbor, Michigan.
5. Mitch Hogsett, Pei Huang, Ramesh Goel. (2013) “Water Sustainability through Surface Water Quality Sediment-Water interactions in an urbanized stream”. AEEESP Colorado School of Mines, July 2013, Golden, Colorado, U.S.
 6. Pei Huang, Shireen Kotay, Ramesh Goel. (2013) “Sustainability in solids reduction and nutrients removal within activated sludge operation”. AEEESP Colorado School of Mines, July 2013., Golden, Colorado, U.S.
 7. Wu, S. and Goel, R. (2013) Comparison of attached growth and suspended growth anammox reactors for real filtrate/centrate treatment- process start-up and performance. WEFTEC. September 26th-30th 2013. Chicago, Illinois.

Year 2012 and prior

1. Bhattacharya, A.S. Kotay, S.M. and Goel, R. (2012). Interactions of bacteriophages with biofilms: Phage-host dynamics in mixed community biofilms, presented at 244th ACS National Meeting held in Philadelphia, Pennsylvania, August 19-23, 2012.
2. Bhattacharya, A.S. Kotay, S.M. and Goel, R. (2012). Potential of biofilm disintegration by phage infection lysate: EPS Depolymerase. Presented at ASM conference in San Francisco.
3. Hogsett, M. and Goel, R. (2012). Sediment-Water Column Dissolved Oxygen Interactions in an Urbanized Stream, WEFTEC, 2012 in New Orleans.
4. Goel, R. Huang, P and Kotay, S.M. (2012). Sludge Minimization Coupled with Biological Nitrogen and Phosphorus Removal - A Step towards Sustainable AS Process Operation. WEFTEC, 2012 in New Orleans.
5. Bhattacharjee, A. S., Kotay, S. M., & Goel, R. “Potential of Biofilm Disintegration by Phage Infection Lysate: EPS Depolymerase”. ASM 112th General Meeting - June 16 - 19, 2012, San Francisco, California.
6. Kotay SM, Bhattacharjee, A. S., Goel R. “Interaction of Bacteriophages with Biofilms: Phage-host Dynamics In Mixed Community Biofilms”. 244th American Chemical Society. General Meet, 2012, Philadelphia, Pennsylvania.
7. Goel, R. (2012). Nutrient Removal- an overview on current practices with a detailed insight on EBPR and anaerobic ammonia oxidation, presented at Water Environment Association of Utah annual conference in St. George, April, 2012.
8. Mitch Hogsett, Brian Mansell, Ramesh Goel. (2011). The Robustness of ANAMMOX Communities Treating Full-Scale Sidestream Municipal Anaerobic Digester Filtrate. WEFTEC, 2011 in Los Angeles.
9. Jeongdong Choi, Shireen Meher Kotay, Ramesh Goel. (2011). Feasibility study on Biocontrol of Membrane Biofouling using Lytic Bacteriophages, WEFTEC, 2011 in Los Angeles.
10. Goel, R. (2011). Nutrient Recovery from belt press black liquid- step forward towards efficient management of nutrients, presented at WEAU mid-year conference.
11. Hogsett, M. and Goel, R. (2011). Is organic matter present in sediments a big player
a. for TMDL decision making. Presented at WEAU mid-year conference.
12. Kotay, S.M., Choi, J. and Goel, R. (2010). Phage Biocontrol to Mitigate Filamentous Bulking- Application of Novel Bacteriophages Infecting Filamentous Bacteria *S. natans* and *H. hydroxsis*. *American Society of Microbiology*; 110th General Meeting; May 2010 in San Diego, CA
13. Kotay, S.M., Choi, J. and Goel, R. (2010). Phage therapy for sludge bulking using a novel bacteriophage infecting filamentous bacterium, *Sphaerotilus natans*. 83rd Annual Conference of the Water Environment Federation, New Orleans, October, 2010.

14. Racz L. and Goel R. (2010). Fate of selected estrogens in two laboratory scale sequencing batch reactors fed with different organic carbon sources. *83rd Annual Conference of the Water Environment Federation, New Orleans, October, 2010.*
15. Tahir, S., Haries, J. and **Goel, R.** (2009). Setting up TMDL for Jordan River-Role of Sediment Oxygen Demand and Nutrient Flux. WEF TMDT Conference, Minnesota September, 2009.
16. Kotay, S.M., Datta, T and **Goel, R.** (2009) Microbial Ecology of Viruses in an EBPR Activated Sludge Process Performing Phosphorus Release under Aerated-Anaerobic Condition. *American Society of Microbiology*; 109th General Meeting; May 17-21 in Philadelphia, PA.
17. Choi, J., Kotay, S. M., Datta, T. and **Goel, R.** (2009). Dynamics of viruses infecting bacterial population doing biological nutrient removal in activated sludge processes. *82nd Annual Conference of the Water Environment Federation, Orlando, FL, October, 2009.*
18. Racz, L. and Goel, R. (2009). A systematic approach to evaluate the biodegradation kinetics of estrogens by nitrifying activated sludge. *82nd Annual Conference of the Water Environment Federation, Orlando, FL, October, 2009.* .
19. Racz, L. and Goel, R. (2009). Effect of Carbon Source on Ammonia Oxidizing Bacteria Community. International conference on Nitrification in Louisville Kentucky, July 2009.
20. Yilmaz, L. S., **Goel, R.**, Harrington, G. W., and Noguera, D. R. (2008) "Identification of Heterotrophic Bacteria that Colonize Pilot- and Full-Scale Chloraminated Distribution Systems", *WQTC 2008*, Cincinnati, OH
21. Datta T. and **Goel R. (2007)** Evidence of Non - *Cand. A. phosphatis* population participating in Enhanced Biological Phosphorus Removal in Carrousel Activated Sludge Process. Submitted to WEFTEC 2007 at San Diego, CA.
22. Srinivasan, S., Harrington, G., Xagorarakis, I. and **Goel, R.** (2007) Factors Affecting Biofilm Density in Drinking Water Distribution Systems. In *Water Quality & Technology Conference*, Charlotte, NC.
23. **Goel R.**, Sanhueza, P. and Noguera D (2005). Evidence of Dechloromonas sp. Participating in Enhanced Biological Phosphorus Removal under Aerated-anoxic conditions. *78th Annual Conference of the Water Environment Federation, Washington, D.C.*
24. **Goel R.** and Noguera D. (2005) Enhanced Biological Phosphorus removal in Cannibal^(TM) activated sludge processes. *78th Annual Conference of the Water Environment Federation, Washington, D.C.*

Other Local Conference Papers

1. Dasgupta S. and Goel R. Innovation in conventional wastewater treatment process with reduced footprint. Water Environment Association of Utah (WEAU) 2016. 26th – 29th April 2016. St. George, Utah
2. Islam, M.I., Wu, S., Goel, R. Energy and resource positive wastewater treatment plants (WWTPs). WEAU Annual Conference & Exposition. 26th – 28th April 2016. Dixie Center, St. George, Utah.
3. Bhattacharjee A.S., Goel, R. Anoxic methane oxidation coupled to denitrification (n-DAMO): a sustainable approach to wastewater treatment. WEAU Annual Conference. 26th – 29th April 2016. St. George, Utah.
4. Bhattacharjee, A. S., Mukherji, S. T., Goel, R. Alternative pathways of denitrification: to achieve better total nitrogen removal. WEAU Annual Conference. 30th April 2015. St. George, Utah.
5. Wu, S., Goel, R. Challenges in applying deammonification reactor in wastewater treatment plant. WEAU Annual Conference. April 30th – May 2nd 2015. St. George, Utah.
6. Goel, R., Chahal, S. Wastewater is No more wastewater. 2015 WEAU Mid-Year Conference. November 12th 2015. Salt Lake City, Utah.

7. Wu, S., Hogsett, M., Heck, P., Goel, R. Developing operation strategies for pilot scale one-stage deammonification reactors in Utah North Davis Sewer District (NDS), Water Environments Association of Utah-St George, May 2014.
8. Huang, P., Mukherjee, S., Goel, R. The fate of estrogens and illicit drug during the urine treatment and management, Water Environments Association of Utah-St George, May 2014.
9. Bhattacharjee, A., Mukherjee, S., Goel, R. Site specific total ammonia-nitrogen criteria proposed by US-EPA: New development and implications, Water Environments Association of Utah, November 2014.
10. Mukherjee, S., Goel, R. What are our options to manage nutrients in existing WWTPs? WEAU, November 2014.
11. Teeters, D., Goel, R. Nutrients in Great Salt Lake Wetlands: Fluxes and the Role of Microbes, Salt Lake County Watershed Symposium, November 2014.
12. Li, L. and Goel, R. (2009). Chemical and biological treatment of produced water for sustainable operation of oil shales and similar operations. Water.Energy Sustainability symposium at GWPC annual conference. Salt Lake City, September, 2009.
13. Guo, Y. and Goel R. (2009). Quantification of Cyanotoxin and Identification of Cyanobacteria in Farmington Bay of Great Salt Lake. Water Environment Association of Utah Annual Conference in St George, March 2009.
14. Kotay, S.M., Datta, T., Choi, J. and Goel, R. (2009). Viruses in activated sludge processes: their role and influence on microbial community and process performance. AEESP conference at the University of Iowa, July 2009.
15. Goel R. and Datta T. (2007) Why are we scared of phosphorus removal-examples of three full scale plants in Utah- presented at Water Environment Association of Utah conference in Salt Lake City in November.
16. R. Goel, S. Burian, A. Hong, B. Murphy, G. Nash, W. Han, B. McPherson. (2007). New approaches to treat produced water and perform water availability impact assessment for oil shale development. Presented at AIChE annual meeting in Salt Lake City in November.
17. Goel, R. (2007). Water Quality Issues in Utah-an overview. Presented at Water Environment Association of Utah (WEAU) conference in Salt Lake City in November.
18. Goel, R. (2007). Water quality issues in Utah-Where do I fit. Invited talk at Utah Water Quality Board- June 4, 2007.
19. Liu, Y., Datta, T and Goel, R. (2007). Sludge minimization coupled with biological nitrogen and phosphorus removal- a step towards sustainable wastewater treatment. Presented at AEESP conference at Virginia Tech in July.
20. Datta, T. and Goel, R. (2007). PAOs other than *Candidatus Accumulibacter Phosphatis* participating in Enhanced Biological Phosphorus Removal. Poster Presentation at AEESP conference at Virginia Tech in July.
21. Goel, R. (2006). Cannibal activated sludge process- can we remove nutrients and personal care products. Presented at Water Environment Association of Utah (WEAU) conference in Salt Lake City in November.
22. Goel, R. (2006) Application of molecular tools in environmental engineering. Presented at Water Environment Association of Utah (WEAU) conference in St. George in March.

Other Presentations

- Goel, R. (2006). “Application of Molecular tools in environmental engineering” Invited Presentation at CH2M Hill.
- Goel, R. (2006) Title “Is it environmental engineering or electrical engineering?” Presentation at Graduate Seminar Series- Civil & Environmental Engineering, University of Utah.

- Goel, R. (2006). Introduction to Environmental Engineering- CVEEN 1000 Seminar- October 31, 2006, 2007, 2008, 2009, 2010, 2011 & 2012.
- Goel, R. (2006). Introduction to Environmental Engineering- CVEEN 4910- September 2006.
- Goel, R. (2007). Environmental Engineering at a Glance; In LEAP Class- March 15, 2007
- Goel, R. and Datta, T. (2008). Microbial Source Tracking and other water quality issues in Utah- Salt Lake City Watershed Symposium, October 28, 2008.
- Goel, R. (2008). Environmental Engineering at a Glance. Invited presentation at Salt Lake Community College. November 2008.
- Goel, R. Several presentations made in elementary, middle and high schools.

Invited Talks

- All about cyanobacteria and cyanotoxins- why and where they flourish- WEAU Workshop- February 6th, 2018
- Harmful algal blooms in Utah lake- deciphering dynamics using DNA technology- UVU Seminar Series- April 10th, 2018
- Goel, R. (2016). Intriguing world of phages in engineered and natural ecosystems, September 30th, 2016, **Rice University**.
- Goel, R. (2016). Nitrogen cycle in natural and engineered ecosystems, April 8th, 2016, **University of Minnesota**, Twin Cities
- Goel, R. (2016). Effect of temperature effects on anammox revealed by metagenomics, June 27, 2016. CSIR, Bhubenswar, India
- Goel, R. (2016). Environmental Engineering at a glance- past, present and future, July 13th, 2016, National Institute of Technology, Patna, India
- Goel, R. (2015). Nitrogen transformations in engineered bioreactors. August, 2015, IIT, Madras.
- Goel, R. (2013). Bacteriophages in engineered systems. September, 2013. Biodesign Institute. **Arizona State University**.
- Goel, R. (2013). Bacteriophages in engineered and natural systems. November, 2013. **University of Pittsburg**.
- Goel, R. (2011). Role of molecular tools in environmental engineering. Invited Talk- IIT Gandhi Nagar- May 25, 2011
- Goel, R. (2011). Nutrient removal from wastewater. Invited Talk- University of Delhi- May 17th, 2011
- Goel, R. (2009). Chemical precipitation of phosphorus. Invited talk at the Water Environment Association of Utah Annual Conference in St George, March 2009.
- Goel, R. (2008). Water Quality issues in Utah-an overview- Invited talk, Center of Environmental Biotechnology, University of Tennessee, Knoxville. May 23rd, 2008.
- Goel, R. (2008). Research at the interface of environmental engineering and environmental microbiology. Invited talk at Madurai Kamraj University, India. December, 15th, 2008.
- Goel, R. (2007). Water quality issues in Utah- presentation made at Utah Water Quality Board in June 2007.
- Goel, R. (2007). Environmental Engineering at a glance- Presentation made to LLEAP student at the University of Utah- March 2007.
- Goel, R. (2006). *Dechloromonas* related organisms participating in EBPR under aerated-anoxic conditions- At Utah State University in February 2006
- Goel, R. (2006). Role of molecular tools in environmental engineering. At CH2M Hill Environmental Consultants in March 2006.

Major Media Exposure

1. Sustainable development- published in Digested News issued by Water Environment Association of Utah- June 2006
2. I Is lake algae killing birds- published in Daily Utah Chronicle- September 7, 2007
3. Utah researchers look up ways to clean up oil spill- KSL television news- May 3rd, 2010.
4. Kagan water- FOX13 News, November 2009.
5. Water quality and phosphorus- a research article published in the U of U College of Engineering's "Research Report"- 2009.
6. Utah's Water Quality- article published in the U of U College of Engineering News Page- June 2008

SYNERGISTIC ACTIVITIES AND SERVICES

1. RPT Chair- Civil & Environmental Engineering, University of Utah, January 2018- till date.
2. Graduate Director- Civil & Environmental Engineering, University of Utah, January 2011- till date.
3. Chair- Academic Misconduct Committee-College of Engineering, University of Utah- July 2018-till date.
4. Member- Academic Misconduct Committee-College of Engineering, University of Utah- July 2015-2018.
5. Member- University of Utah Scholarship committee- August 2018- current
6. Secretary: United States of America National Committee of the International Water Association (USANC)- August 2015- till date
7. Chair- AEESP Distinguished Lecture committee- July 2017-2018
8. Vice Chair- AEESP Distinguished Lecture committee- July 2014-2017
9. Member- AEESP Distinguished Lecture committee- July 2011-2014
10. Member- AEESP Student Services Committee- July 2011-till date
11. Vice Chair- AEESP Distinguished Lecture committee- July 2014-2017
12. Chair: WEAU Preconference workshop.
13. Member: U of U College of Engineering Curriculum Development Committee- May 2015- till date
14. Member: U of U College of Engineering Excellence in Teaching Committee- May 2011- 2017
15. NSF panels: 2017 (5 panels), 2018 (7 panels),
16. Associate Editor-Water Research (August 2015- till date)
17. Associate editor- WEF's Water Environment Research Journal- August 2011-September 2018.
18. Environment Research and Education Foundation- Panel Reviewer- 2017 (3 proposals), 2018 (2 proposals).
19. USDA; 2016 (One water panel), 2017 (one nano panel).
20. Reviewer for International Science Panels: France, Jordan, Georgia, Mexico, Chile
21. Comisión Nacional de Investigación Científica y Tecnológica-Chile- Panel- 2018
22. Shota Rustaveli National Science Foundation of Georgia's Review Panel (2015, 2016, 2017 and 2018).
23. Board Advisor- WEF's Water Environment Research Journal- October 2018-till date.
24. Chair-WEFTEC Research Symposium- August 2015- September 2018.
25. Member-WEFTEC Research Symposium- September 2018- till date
26. Member: Association for Environmental Engineers and Professional's Lectures Committee- August 2011-till date.
27. Serving as Liaison Officer Between WEF and AEESP- August 2011-2015

28. Reviewer for Water Research, J. of Applied Microbiology, Microbial Ecology, ASCE-J. of Environmental Engineering, Chemosphere, Bioresource Technology, Journal of Hazardous Waste Management, International Journal of Hydrogen Energy, Environmental Engineering Science, Water Environment Research, Water Science & Technology, Biochemical Engineering, Environmental Microbiology, Science of the total Environment, Water Research, Environmental Science & Technology, Chemosphere, Desalination, Applied Microbiology, Ecological Engineering, Chemical Engineering Journal, Biodegradation, Applied Biochemistry and Biotechnology, Journal of General Virology, Microbial Ecology and Journal of Applied Electrochemistry. Total number of papers reviewed in 2017 (>25) and 2018 (>30).
29. Committee **Chair** for Water Environmental Association of Utah's Technical Committee Council.
30. Serving on Student services committee supported by Association of Environmental Engineers, Scientists and Professionals (**AEESP**).
31. **Co-Chair (2008) and Chair (2009)** - Poster Session at **WEFTEC**.
32. Director- Intermountain Junior Science and Humanities Symposium for K12 Research- 2009-till date.
33. Participating in **MESA and HI-GEAR** outreach programs for minority students in the college of engineering, University of Utah.
34. Participating in undergraduate research program (UROP) at the University of Utah.
35. Judge for Water Environment Federation Sponsored U.S. Stockholm Junior Water Prize at the University of Utah for five mountain States.
36. Search Committee Chair- Environmental Faculty Search in Civil & Environmental Engineering Department at the University of Utah (2007-2008).
37. Chaired technical session at WEAU conference in St George, Utah- March 2007
38. Serving on the University of **Utah Biosafety Committee**.

Reviewer

Panels: NSF (more than 45 panels), Netherlands Science Foundation, Georgia Science Foundation, Minnesota State Funding, North Carolina State Funding, French Science Foundation. **Peer reviewed journals of international repute:** Environmental Science & Technology, Chemosphere, Water Research, Microbiology, Biotechnology & Bioengineering, Chemosphere, Biochemical Engineering Journal, Chemical Engineering Journal, Bioresource Technology, Frontiers in Microbiology, Microbial Ecology, Ecological Engineering, Science of the Total Environment, FEMS Microbiology Reviews, Environmental Microbiology, Applied Microbiology Reviews, Frontiers in Microbiology, Water Science,

Current Graduate Students (PhD=5, Masters=1, paid Undergraduate researchers=1)

Hanyan Li (PhD), Aditi Podder (PhD), Imdad Hasan (Ph.D), Bishav Bhattarai (Ph.D) and Sierra Quinn (PhD), Brenden Mackey (MS), Ahmed Karimi (MS), Marielle Holstien (Undergraduate researcher).

Funded Post Doctoral Research Fellows

- Dr. Sachiyo Tanaka (PhD: University of Iowa) (January 2014-2016)- Currently Assistant Professor at the University of Texas.
- Dr. Shireen Meher Kotay. (PhD: Indian Institute of Kharagpur) (August 2009-August 2013)- Currently Research Scientist at the University of Virginia.

Past Graduate Students

Doctoral Students (Total 10)

Name

Dr. Tania Datta (2010)
Dr. Liang Li (2012)
Dr. LeeAnn Racz (2010)
Dr. J. Choi (2013)
Dr. Mitch Hogsett (2014)
Dr. Sha Wu (2016)
Dr. Pei Huang (2016)
Dr. Amir Motlagh (2016)
Dr. Ananda Bhattacharjee (2016)
Sunayna Dasgupta (2018)

Current status

Assistant professor, Tennessee Tech University
Associate Professor, Shanghai Sci & Technology
Assistant Professor, Air Force Institute of Technology
Assistant Professor, Korean Transportation University
Engineer, Forsgren Associates Inc. Salt Lake City
Employed in China
Employed in Salt Lake City
Assistant Professor, California State University
Research Scientist- Bieglo Lab, Maine
Research Scientist-University of Minnesota, Twin Cities

Funded Master's Students (Total 15)**Name**

Shaikha Abedin (2016)
Liu Yanjie (2008)
Yidan Guo (2009)
Udarka Karra (2011)
Brian Mansell (2013)
Nikki Comber (2013)
Ran Jing (2014)
Ksheeraja Yahalla (2014)
Scott Teeter (2016)
Vedansh Gupta (2018)
Anwar Alsanea (2018)
Ryan Williams (2017)
Ahmed Karimi (2018)
Simmi Chahal (2017)
Aiswarya Rani

Current status

Florida Water Quality
Engineer, Micron, Boise
Employed in California
Finished PhD at UConn.
Engineer, Brown & Caldwell
URS Corporation
Doctoral Student, U of Maryland, College park
Employed in Chicago
Water Works, SLC
MicroVi, CA
AECOM, Salt Lake City
Weber Water Basin, Utah
Baker International, Salt Lake City
WestTech, Salt Lake City.
Stantech, CA

**Signature**