ANUSHREE CHATTERJEE

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PROFESSIONAL POSITIONS

2018-present	Associate Editor, Frontiers in Biotechnology and Bioengineering
2013-present	Assistant Professor, Department of Chemical and Biological Engineering, University of Colorado Boulder
2014-2016	Inventor and co-founder, PRAAN Biosciences, Inc.
2011-2012	Postdoctoral Fellow, Theoretical Biology and Biophysics, Center for Nonlinear Studies, Los Alamos National Laboratory (LANL) *Advisor: Alan S. Perelson*

EDUCATION

2011	Doctor of Philosophy, Chemical Engineering, University of Minnesota (UMN). *Advisor(s): Wei-Shou Hu and Yiannis N. Kaznessis*
2006	Master of Technology, Chemical Engineering, Indian Institute of Technology Delhi. *Advisor: Barun K. Guha*
2006	Bachelor of Technology, Chemical Engineering, Indian Institute of Technology Delhi (I.I.T Delhi)

AWARDS AND HONORS

2018	ACS Infectious Diseases Young Investigator Award
2017	Defense Advanced Research Projects Agency (DARPA) Young Faculty Award
2016	Most Highly prolific authors for ACS Infectious Diseases
2015	Finalist, Agilent Early Career Professor Award
2015	William M. Keck Foundation Research Award
2014	New Inventor of the Year, University of Colorado
2014-2016	co-Founder, PRAAN Biosciences
2011-2012	Center for Nonlinear Studies Postdoctoral Fellowship, LANL
2010	Doctoral Dissertation Fellowship, UMN
2006	Usha Kumar Fellowship, UMN
2006	Suman-Upma Gupta Memorial Gold Medal, I.I.T Delhi
2005	Institute Scholarship for Master of Technology, I.I.T Delhi
2004	First prize in technical paper session, *TRYST*, New Delhi
2003	Summer Undergraduate Research Award, I.I.T. Delhi
2001-2005	Institute Merit Scholarship, I.I.T Delhi

SELECTED RESEARCH MEDIA PRESS

BBC News (Link)
Voice of America (Link)

CGTN America (Link)
Science News (Link)
National Science Foundation News Highlight (Link)
Material Research Society (MRS Bulletin Link)
ABC's Denver Channel 7 News (Link)
University of Colorado Health (Link)
News Week Media group (Link)
Popular Mechanics (Link)
Center for Infectious Disease Research and Policy (CIDRAP) (Link)
University of Colorado Boulder press release (Link)
IEEE Spectrum (Link)
Science Daily (Link)
Times of India (Link)

PEER-REVIEWED PUBLICATIONS

([#] *indicates Equal contribution, * indicates corresponding author***)**

1. Peter B. Otoupal, and Anushree Chatterjee* (2018). **CRISPR gene perturbations provide insights for improving bacterial biofuel tolerance.** *(Under revision*).

2. Logan Collins, Peter B. Otoupal, Colleen M. Courtney, and Anushree Chatterjee* (2018). **Design of a denovo aggregating antimicrobial peptide to kill bacteria and a drug delivery system to combat antibiotic resistance.** (*Under review*).

3. Peter B. Otoupal, William T. Cordell, Vismaya Bachu, Madeleine J. Sitton and Anushree Chatterjee* (2018). **CHAOS: Deterring Bacterial Adaptation via Epistatic Gene Expression Perturbations.** *(Under revision*).

4. Thomas R. Aunins, Katherine M. Marsh, Susan L. Uprichard, Alan S. Perelson, and Anushree Chatterjee* (2018). **Intracellular hepatitis C modeling predicts infection dynamics and viral protein mechanism.** *(In revision*).

5. Samuel M. Goodman, Max Levy, Fei-Fei Li, Yuchen Ding, Colleen M. Courtney, Partha P. Chowdhury, Annette Erbse, Anushree Chatterjee, Prashant Nagpal* (2018). **Designing Superoxide-Generating Quantum Dots for Selective Light-Activated Nanotherapy.** *Frontiers in Chemistry* (*In press*).

6. Thomas Aunins, Keesha E. Erickson, Nripesh Prasad, Shawn E. Levy[3], Angela Jones, Shristi Shrestha, Rick Mastracchio, Mike Hopkins, Louis Stodieck, David Klaus, Luis Zea[*], Anushree Chatterjee* (2018). **Spaceflight modifies *Escherichia coli* gene expression in response to antibiotic exposure and reveals role of Oxidative Stress response.** *Frontiers in Microbiology* (*In press*). doi: 10.3389/fmicb.2018.00310.

7. Dodaveri M. Sagar, Lee E. Korshoj, Katrina B. Hanson, Partha P. Choudhary, Peter B. Otoupal, Anushree Chatterjee, and Prashant Nagpal* (2017). **High-Throughput Block Optical DNA Sequence Identification.** *Small* 14 (4), 1703165. DOI: 10.1002/smll.201703165.

8. Lee E. Korshoj, Sepideh Afsari, Anushree Chatterjee, Prashant Nagpal* (2017). **Conformational Smear Characterization and Binning of Single-Molecule Conductance Measurements for Enhanced Molecular Recognition.** *The Journal of American Chemical Society,* 139 (43), pp 15420–15428. **DOI:** 10.1021/jacs.7b08246.

   Press coverage: University of Colorado Press Release (Link), Phys.Org (Link), Health Unlocked (Link), Global News Connect (Link), Buffzone (Link), NewsWise (Link), Health & Medicine News (Link), Science Daily (Link).

9. Sepideh Afsari, Lee E. Korshoj, Gary R. Abel, Sajida A. Khan, Anushree Chatterjee, Prashant Nagpal* (2017). **Quantum Point Contact Single-Nucleotide Conductance for DNA and RNA Sequence Identification.** *ACS Nano* 11 (11), pp 11169–11181. DOI: 10.1021/acsnano.7b05500.

   Press coverage: University of Colorado Press Release (Link), Phys.Org (Link), Health Unlocked (Link), Global News Connect (Link), Buffzone (Link), NewsWise (Link), Health & Medicine News (Link), Science Daily (Link).

10. Keesha E. Erickson, James D. Winkler, Danh T. Nguyen, Ryan T. Gill, and Anushree Chatterjee* (2017). **The Tolerome: A database of transcriptome-level contributions to diverse Escherichia coli resistance and tolerance phenotypes.** *ACS Synthetic Biology* 6 (12), pp 2302–2315. DOI: 10.1021/acssynbio.7b00235.

11. Colleen M. Courtney, Samuel Goodman, Toni Nagy, Max Levy, Pallavi Bhusal, Nancy E. Madinger, Corrella Detweiler, Prashant Nagpal*, and Anushree Chatterjee* (2017). **Potentiating clinical drug resistant bacteria via stimuli-activated superoxide generation.** *Science Advances* 3 (10), 2375-2548. DOI: 10.1126/sciadv.1701776.

    See press coverage: BBC News, Newsweek, Science News, Center for Infectious Disease Research and Policy (CIDRAP), University of Colorado Boulder press release, ResearchGate News, IEEE Spectrum, NanotechWeb, EurekAlert!, Nanowerk,Phys.org, Science Daily, Futurism, Drug Discovery and Development, Courthousenews, Lavanguardia, El Pais, Azo Nano, teckcrispy, El observer, Ultimahora, Gears of Biz, Laboratory talk, ChemEurope, Bionity,Science Alert,CEmag, Newswise, News Medical Lifesciences, Technology.org., International Business Times, msn, Zap, Science Springs, Optics and Photonics, Science Trends, True viral News, Science Springs, The Surg, UC Health.

12. Steele Reynolds, Colleen M. Courtney, Keesha E. Erickson, Lisa Wolfe, Anushree Chatterjee, Prashant Nagpal, Ryan T. Gill* (2017). **ROS Mediated Selection for Increased NADPH Availability in Escherichia coli.** *Biotechnology and Bioengineering* 114(11) pp 2685–2689. DOI: 10.1002/bit.26385.

13. Lee E. Korshoj, Sepideh Afsari, Sajida Khan, Anushree Chatterjee*, Prashant Nagpal* (2017). **Single nucleotide DNA sequence identification using biophysical signatures from nanoelectronic quantum tunneling**. *Small* 13 (11):1603033. DOI: 10.1002/smll.201603033.

14. Keesha E. Erickson, Peter B. Otoupal, and Anushree Chatterjee* (2017). **Transcriptome level signatures in gene expression and gene expression variability during bacterial adaptive evolution**. *mSphere* 2:e00009-17. DOI: 10.1128/mSphere.00009-17.

15. Peter B. Otoupal, Keesha E. Erickson, Antoni E. Bordoy, and Anushree Chatterjee* (2017). **CRISPR modulation of gene expression perturbs bacterial adaptive pathways and reveals intrinsic epistatic constraints.** *ACS Synthetic Biology* 6 (1), 94-107.

16. Keesha E. Erickson, Nancy E. Madinger, and Anushree Chatterjee* (2017). **Draft Genome Sequence of two Clinical Isolates Acinetobacter baumanii**. *Genome Announcements* 5:e01547. DOI: 10.1128/genomeA.01547-16.

17. Keesha E. Erickson, Nancy E. Madinger, and Anushree Chatterjee* (2016). **Draft Genome Sequence of a Clinical Isolate of Vancomycin Resistant *Enterococcus faecalis*.** *Genome Announcements* 4(3): e00584-16. DOI: 10.1128/genomeA.00584-16.

18. Antoni E. Bordoy, Usha S.Varanasi, Colleen M. Courtney and Anushree Chatterjee* (2016). **Transcriptional Interference in convergent promoters as a means for Tunable Gene Expression.** *ACS Synthetic Biology* 5 (12), 1331-1341.

19. Colleen M Courtney[#], Samuel Goodman[#], Jessica McDaniel, Nancy E. Madinger, Anushree Chatterjee*, and Prashant Nagpal* (2016). **Photo Excited Quantum Dots for Killing Multi-Drug Resistant Bacteria.** *Nature Materials* 15, 529-534.

    Media/news highlights on this article:
    ABC's Denver Channel 7 News (Link), National Science Foundation News Highlight (Link), University of Colorado press release (Link), Material Research Society (Link), Infectious Disease New (Link), Boston Global Media (Link), Huffington Post (Link), ChBE Highlight (Link), TImes of India (Link), Zee News (Link), Yahoo News (Link), Popular Mechanics (Link), Big News Network (Link), Sciencedaily (Link), Phy.Org (Link), Eurekalert (Link), Tech News Now (Link), Jersey Tribune (Link), Bioportfolio (Link), Wn.com (Link), Science Alert (Link), Science Newsline, News Wise (Link), News Headline Spot (Link), Science News (Link), Quantum Times (Link), Bristish Society of Nanomedicine (Link), Nanowerk (Link), Innivation Toronto (Link), ZME Science (Link), Inverse (Link), ScienMag (Link), News Medical (Link), Tech Times (Link), Business Standard (Link), IndiaNewEngland (Link), GizMag(Link), BGR (Link), RT (Link), Medical Daily (Link)
    International News Coverage: Indian Media (Times of India (Link), Frontier Mail (Link)), British Media (Daily Mail (Link)), Spanish Media (Lainformacion (Link), elEconomista.es (Link), Quo.es (Link)) , Russian Media (ACLP.ru (Link))), Australian Media (Big News Network(Link)) Armenian Media (NEWS.am (Link)), German Media (Trendsderzukunft (Link))

20. Keesha E. Erickson, Peter B. Otoupal, and Anushree Chatterjee* (2015). **Gene expression variability underlies adaptive resistance in phenotypically heterogeneous bacterial populations**. *ACS Infectious Diseases* 1 (11), 555-567.
    Selected for Gram Negative Issue
    Featured in Gram Negative Issue 2015

21. Antoni E. Bordoy, and Anushree Chatterjee* (2015). **cis-Antisense Transcription Gives Rise to Tunable Genetic Switch Behavior: A Mathematical Modeling Approach.** *PLoS ONE* 10 (7): e0133873. DOI: 10.1371/journal.pone.0133873.

22. Colleen M. Courtney and Anushree Chatterjee* (2015). **Sequence-specific peptide nucleic acids based antisense inhibitors of TEM-1-β-lactamase and mechanism of adaptive resistance.** *ACS Infectious Diseases* 1 (6), 253-263.

23. Josep C. Ribot, Anushree Chatterjee*, Prashant Nagpal* (2015). **Measurements of single nucleotide electronic states as Nanoelectronic fingerprints for identification of DNA nucleobases, their protonated and Unprotonated states, Isomers and Tautomers.** *Journal of Physical Chemistry B* 119 (15), 4968–4974.

24. Keesha E. Erickson, Ryan T Gill, and Anushree Chatterjee* (2014). **Constraint Modification provides insight for design of Biochemical networks**. *PLoS ONE* 9(11):e113820**.** doi:10.1371/journal.pone.0113820**.**

25. Samuel Goodman, Vivek Singh, Josep Casamada Ribot, Anushree Chatterjee, Prashant Nagpal* (2014). **Multiple energy exciton shelves in Quantum dot-DNA nano-bioelectronics.** *Journal of Physical Chemistry Letters* (5) 5, 3909-3913.

26. Colleen M. Courtney, and Anushree Chatterjee* (2014). **cis-antisense RNA and transcriptional interference: coupled layers of regulation.** *Journal of Gene Therapy* 2 (1):9. **(invited review article).** doi: 10.13188/2381-3326.1000004.

27. Laetitia Canini#, Anushree Chatterjee#, Jeremie Guedj, Annabelle Lemenuel-Diot, Patrick F. Smith and Alan S. Perelson* (2014). **A pharmacokinetic/viral kinetic model to evaluate treatment of chronic hepatitis C virus with danoprevir.** *Antiviral Therapy* 20 (5), 469-477**.**

28. Laetitia Canini, Jeremie Guedj, Anushree Chatterjee, Annabelle Lemenuel-Diot, Patrick F. Smith, and Alan S. Perelson* (2015). **Modeling the interaction between Danoprevir and Mericitabine in the treatment of chronic HCV infection**. *Antiviral Therapy* 21 (4), 297-306.

29. Anushree Chatterjee#, Jeremie Guedj# and Alan S. Perelson* (2012). **Mathematical modeling of HCV infection: what can it teach us in the Direct Antiviral Agents era?** *Antiviral Therapy***,** 17 (6 Pt B): 1171-1182.

30. Anushree Chatterjee, Patrick F. Smith and Alan S. Perelson* (2013). **Hepatitis C viral kinetics: the past, present and future.** *Clinics in Liver Disease***,** 17 (1), 13-26.

31. Che-Chi Shu, Anushree Chatterjee, Wei-Shou Hu, and Doraiswami Ramkrishna* (2013), **Role of intracellular stochasticity in biofilm growth. Insights from population balance modeling.** *PLoS ONE* 8(11): e79196. DOI:10.1371/journal.pone.0079196.

32. Anushree Chatterjee#, Laura C. Cook#, Che-Chi Shu, Yuching Chen, Dawn Manias, Doraiswami Ramkrishna, Gary M. Dunny and Wei-Shou Hu* (2013). **Antagonistic self-**

sensing and mate-sensing signaling controls antibiotic-resistance transfer. *Proceedings of the National Academy of Sciences*, 110 (17), 7086-7090.

33. Anushree Chatterjee, Christopher M. Johnson, Che-Chi Shu, Yiannis N. Kaznessis, Doraiswami Ramkrishna, Gary M. Dunny and Wei-Shou Hu* (2011). **Convergent transcription confers a bistable switch in Enterococcus faecalis conjugation.** *Proceedings of the National Academy of Sciences***,** 108: 9721-9726.

    Media/news highlights on article:
    Selected and evaluated the Faculty of 1000 (F1000) as top 2% of published articles in biology and medicine (http://f1000.com/11331957
    Featured in "University of Minnesota News."
    http://www1.umn.edu/news/features/2011/UR_CONTENT_343890.html
    Featured in Hutchinson Leader, Minnesota
    (http://www.hutchinsonleader.com/view/full_story/14491407/article-U-of-M-researchers-to-pathogenic-bacteria--Resistance-is-futile?).

34. Anushree Chatterjee, Laurie Drews, Sarika Mehra, Eriko Takano, Yiannis N. Kaznessis and Wei-Shou Hu* (2011), **Convergent transcription in the butyrolactone regulon in Streptomyces coelicolor confers a bistable genetic switch for antibiotic biosynthesis.** *PLoS ONE***,** 6:e21974. DOI: 10.1371/journal.pone.0021974.

35. Christopher M Johnson, Heather Haeming, Anushree Chatterjee, Wei-Shou Hu, Keith E. Weaver, and Gary M. Dunny* (2011). **RNA-mediated reciprocal regulation between two bacterial operons is RNAse III dependent.** *mBio***,** 2(5): e00189-11. DOI: 10.1128/mBio.00189-11.

36. Che-Chi Shu, Anushree Chatterjee, Gary M. Dunny, Wei-Shou Hu and Doraiswami Ramkrishna* (2011). **Bistability versus Bimodal Distributions in Gene Regulatory Processes from Population Balance Model.** *PLoS Computational Biology***,** 7(8):e1002140. DOI: 10.1371/journal.pcbi.1002140.

37. Laura CC Cook, Anushree Chatterjee, Aaron Barnes, Jeremy Yarwood, Wei-Shou Hu and Gary M. Dunny* (2011)**. Biofilm growth alters regulation of conjugation by a bacterial pheromone.** *Molecular Microbiology***,** 81(6), 1499-1510.

38. Che-Chi Shu, Anushree Chatterjee, Wei-Shou Hu and Doraiswami Ramkrishna* (2012). **Modeling of Gene regulatory processes by Population mediated Signaling. New applications of Population balances.** *Chemical Engineering Science***,** 70, 188-199.

39. Anushree Chatterjee, Yiannis N. Kaznessis and Wei-Shou Hu* (2008). **Tweaking biological switches through a better understanding of bistability behavior.** *Current Opinion in Biotechnology, Tissue, cell and pathway engineering*, 19: 475-481.

PATENTS/PATENT APPLICATIONS

1. Nagpal, P., Chatterjee A., Courtney C.M., Goodman, S. New U.S. Patent Application No. 15/559,577, "*Novel Light-Activated Compositions and Methods of Using the Same.*" Filing date: 09/19/2017.

2. Chatterjee A., Otoupal P.B. International Patent Application No. PCT/US2017/032298. "*Compositions and Methods for Altering Bacterial Fitness.*" Filing date: 05/11/2017.

3. Chatterjee A., Otoupal P.B. U.S. Provisional Patent Application No. 62/334,967. "*Compositions and Methods for Altering Bacterial Fitness.*" Filing date: 05/11/2016.

4. Nagpal, P., Chatterjee A., Courtney C.M., Goodman, S. International Patent Application No. PCT/US2016/023191 "*Novel Light-Activated Compositions and Methods of Using the Same."* Filing date: 03/18/2016.

5. Chatterjee A., Courtney C.M., U.S. PCT CU3751B-PPA1. *"Sequence specific and organism specific antimicrobials and related materials and methods*." Filing date: 07/27/2017.

6. Nagpal, P., Chatterjee A., Courtney C.M., Goodman, S. U.S. Provisional Patent Application No. 62/136,128. "*Novel Light-Activated Compositions and Methods of Using the Same*." Filing date: 3/20/2015.

7. Nagpal P., Chatterjee, A., Gold, L.. U.S. Provisional Patent Application No. 62/135,059. **"***Quantum Molecular Sequencing (QM-Seq): Identification of unique nanoelectronic tunneling spectroscopy fingerprints for DNA, RNA, and single nucleotide modifications."* Filing date: 03/18/2015.

8. Chatterjee A., Courtney C.M., U.S. Provisional Patent Application No. 62/109,799. *"Sequence specific and organism specific antimicrobials and related materials and methods*." Filing date: 01/30/2015.

9. Nagpal P., Chatterjee A.**,** Ribot J.C., U.S. Provisional Patent Application No. 62/089,063. "*Quantum Molecular Sequencing (QM-Seq): Identification of unique nanoelectronic tunneling spectroscopy fingerprints for DNA, RNA, and single nucleotide modifications*." Filing date: 12/08/2014.

10. Nagpal P., Chatterjee A.**,** Ribot J.C. PCT/US2014/055512 "*Quantum Molecular Sequencing (QM-Seq): Identification of unique nanoelectronic tunneling spectroscopy fingerprints for DNA, RNA, and single nucleotide modifications*." Filing date: 09/13/2014.

11. Nagpal P., Chatterjee A.**,** Ribot J.C., Provisional Patent Application Number: 61/877,634, "*Third generation sequencing using STM-STS for fast detection of single DNA molecules and single nucleotide modifications.***"** Filing date: 09/13/2013.

12. Chatterjee A. and Bhaskarwar, A.N., Patent no. 2427/DEL/2007, "*A process of preparation of pollution preventing temperature sensitive lithographic ink composition and product thereof."* Filing date: 11/20/2017.

INVITED PRESENTATIONS

1. *"TBD."* Department of Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC. August 27th, 2018.
2. *"TBD."* Department of Chemical Engineering, Indian Institute of Technology Delhi, New Delhi. March 12th, 2018.

3. *"TBD."* Fields Institute Workshop on "*The Role of Mathematics in Combatting Antibiotic Resistance and Developing Novel Antibacterials,"* Fields Institute for Research in Mathematical Sciences, Toronto, Ontario, May 14th, 2018.
4. *"From Synthetic Biology to Nano biotechnology: Rational Antimicrobial Engineering Approaches towards Combating Drug-Resistant Pathogens." Plenary speaker* at the "*Futures of Health*" symposium at Institute for Systems Biology (ISB), Washington, March 26-27, 2018.
5. *"CRISPR Hindrance of Adaptation in Organisms (CHAOS) Based Therapeutics*." International Conference on CRISPR Technologies, Society of Biological Engineering, Raleigh, NC, December, 4th, 2017.
6. "*From Synthetic Biology to Nano Biotechnology: Rational Antimicrobial Engineering Approaches Towards Combating Drug-Resistant Pathogens."* AIChE Annual Meeting, Minneapolis, Minnesota, October, 31st, 2017.
7. *"Developing Sequence blocking adaptable therapeutic strategy for Pathogen targeting."* DARPA YFA Kickoff conference, Arlington, VA, August, 30th, 2017.
8. "*Developing Sequence blocking adaptable therapeutic strategy for Pathogen targeting."* DARPA Safe Genes Kickoff conference, San Diego, CA, May, 3rd, 2017.
9. "*The Antibiotic Resistance Game*", Q-Bio Summer School, Fort Collins, CO, July, 22nd, 2015, CO.
10. "*The Antibiotic Resistance Game*", University of Colorado Denver, Department of Integrative Biology, Denver, CO, September, 18th, 2015,
11. "*The Antibiotic Resistance Game*", University of Colorado Boulder, Bioinformatics Super Group, Boulder, CO, November, 10th, 2014.
12. "*Using synthetic and systems biology approaches for bioenergy applications*", 2013, Colorado Center for bio refining and biofuels, University of Colorado, Boulder, CO, October, 10th, 2013.
13. "*Quantum Molecular Sequencing (QM-Seq)*", Simons Foundation, Boulder, CO, January, 21st, 2015.
14. "*Quantum Molecular Sequencing (QM-Seq)*", Bill and Melinda Gates Foundation, New York City, NY, February, 24th, 2015.
15. "*Quantum Molecular Sequencing (QM-Seq)*", Google Inc, Boulder, CO, , Month, Date, Year.
16. "*Quantum Molecular Sequencing (QM-Seq)*", Agilent Technologies, San Francisco, CA, January 14th, 2015.
17. "*Quantum Molecular Sequencing (QM-Seq)*", 2015, Calico, San Jose, CA, January 13th, 2015.
18. "*Quantum Molecular Sequencing (QM-Seq)*", 2014, Roche, Boulder, CO, December, 5th, 2014.
19. "*Quantum Molecular Sequencing (QM-Seq)*", 2014, Bill & Melinda Gates Foundation, Boulder, CO, August, 7th, 2014.
20. "*Quantum Sequencing: Using nanoscale physics for biochemical assay of single molecules*", Agilent Technologies, Boulder, CO, August, 29th, 2014.
21. "*Quantum Sequencing: Using nanoscale physics for biochemical assay of single molecules*", Agilent Technologies, Boulder, CO, August, 27th, 2014.
22. "*Quantum Sequencing: Using nanoscale physics for biochemical assay of single molecules*", W.M. Keck Foundation, Boulder, CO, September, 11th, 2014.
23. "*Quantum Sequencing: Biochemical assay beyond cheaper sequencing*", SomaLogic Inc., Boulder, CO, August, 21st, 2014.
24. "*Discovering novel drug targets to prevent antibiotic resistance transfer in bacteria using systems biology approaches*," Department of Chemical and Biological Engineering, University of Colorado, Boulder, CO, March, 2012.

25. "*Discovering novel drug targets to prevent antibiotic resistance transfer in bacteria using systems biology approaches*," 2012, Department of Chemical and Biomolecular Engineering, University of Illinois, Urban-Champaign, IL, March, 2012.
26. "*Discovering novel drug targets to prevent antibiotic resistance transfer in bacteria using systems biology approaches*," Department of Chemical and Biomolecular Engineering, Tufts University, Boston, MA, March, 2012.
27. "*Discovering novel drug targets to prevent antibiotic resistance transfer in bacteria using systems biology approaches*," 2012, Department of Chemical and Biomolecular Engineering, University of Tennessee, Knoxvillee, TN, March, 2012.
28. "*Discovering novel drug targets to prevent antibiotic resistance transfer in bacteria using systems biology approaches*," 2012, Department of Chemical and Biological Engineering, University of Buffalo, Buffalo, NY, March, 2012.
29. "*The antibiotic resistance game in Enterococcus faecalis: A bistable genetic switch controls antibiotic resistance transfer*", 2012, Center for Non-linear Studies, Los Alamos National Laboratory, Los Alamos, NM, August, 3rd, 2012.
30. "*The antibiotic resistance game in Enterococcus faecalis: A bistable genetic switch controls antibiotic resistance transfer*", Bio-Sciences Division, Los Alamos National Laboratory, Los Alamos, NM, July, 2012.
31. "*The antibiotic resistance game in Enterococcus faecalis: A bistable genetic switch controls antibiotic resistance transfer*", 2011, Center for Non-linear Studies, Los Alamos National Laboratory, Los Alamos, NM, September 8th, 2011.
32. "*Antisense RNA, Transcriptional Inference and Genetic Switch: Train wreck or noise filter?"* AIChE General Meeting Nashville, TN, November 8th-12th, 2009.
33. "*Engineering Gene Regulation by Tweaking Transcriptional Interference*", 8th World Congress for Chemical Engineering, Montreal, Canada, August 23rd-27th, 2009.

CONTRIBUTED PRESENTATIONS:

1. **Lee Korshoj**, Sepideh Afsari, Gary Abel Jr, Sajida Khan, Anushree Chatterjee, Prashant Nagpal. Quantum Point Contact Single-Nucleotide Conductance with Conformational Smear Characterization for DNA and RNA Sequence Identification. American Physical Society, 2018.
2. **Lee Korshoj**, DM Sagar, Katrina Hanson, Partha Chowdhury, Peter Otoupal, Anushree Chatterjee, Prashant Nagpal. High-Throughput Block Optical DNA Sequence Identification. American Physical Society, 2018.
3. **Gary Abel Jr**, Lee Korshoj, Peter Otoupal, Anushree Chatterjee, Prashant Nagpal. Sequence Identification and Structural Mapping of Single DNA and RNA Molecules via Quantum Tunneling Spectroscopy. American Physical Society, 2018.
4. **Peter B. Otoupal**, and Anushree Chatterjee. *Employing CRISPR to Identify and Engineer Synergistic Interactions between Antibiotics and Sequence-Specific Treatments.* International Conference on CRISPR Technologies, Society of Biological Engineering, Raleigh, NC, December, 4-6th, 2017.
5. **Peter B. Otoupal**, and Anushree Chatterjee. *Disrupting Bacterial Adaptive Resistance Using dCas9 and dCas9-ω Gene Perturbations: Emerging CRISPR Applications in Synthetic Biology.* International Conference on CRISPR Technologies, Society of Biological Engineering, Raleigh, NC, December, 4-6th, 2017.

6. **Antoni E. Bordoy**, and Anushree Chatterjee. *Construction of Genetic Devices By Engineering Transcriptional Interference.* American Institute of Chemical Engineers Annual Meeting 2017, Minneapolis, MN, October, 30th, 2017.
7. **Peter B. Otoupal**, and Anushree Chatterjee. *Using Synthetic Biology to Engineer Epistasis to Deter Bacterial Adaptation.* American Institute of Chemical Engineers. Annual Meeting 2017, Minneapolis, MN, October, 30th, 2017.
8. **Prashant Nagpal,** Colleen Courtney, Samuel Goodman and Anushree Chatterjee. *Developing Precision Medicine Using Quantum Biology: Combining Quantum States, Surface Chemistry, and Microbiology.* American Institute of Chemical Engineers. Annual Meeting 2017, Minneapolis, MN, October, 30th, 2017.
9. Colleen Courtney, and **Anushree Chatterjee**. *Synthetic RNA-Inhibitor Antibiotics in Non-Traditional Antibiotic Pathways to Treat Multi-Drug Resistant Bacteria.* American Institute of Chemical Engineers Annual Meeting, Minneapolis, MN, October, 31st, 2017.
10. Antoni E. Bordoy and **Anushree Chatterjee** *Engineering Transcriptional Interference for Designing Synthetic Gene Circuits.* American Institute of Chemical Engineers Annual Meeting, San Francisco, CA, November, 16th, 2016.
11. **Keesha Erickson**, Peter Otoupal and Anushree Chatterjee. *Characterizing Complex Gene-Drug Interactions: Gene Perturbation and Antibiotic Treatment As Combination Therapy.* American Institute of Chemical Engineers Annual Meeting 2016, San Francisco, CA, November, 14th, 2016.
12. **Keesha Erickson**, Peter Otoupal and Anushree Chatterjee. *Transcriptome-Level Signatures in Gene Expression and Gene Expression Variability during Bacterial Adaptive Evolution.* American Institute of Chemical Engineers Annual Meeting 2016, San Francisco, CA, November, 14th, 2016.
13. **Colleen Courtney**, Samuel Goodman, Anushree Chatterjee and Prashant Nagpal. *Photoexcited Quantum Dots for Killing Multidrug-Resistant Bacteria.* American Institute of Chemical Engineers Annual Meeting 2016, San Francisco, CA, November, 14th, 2016.
14. **Colleen M. Courtney**, and Anushree Chatterjee. *Sequence Specific Antisense Inhibitors of Non-Traditional Antibiotic Pathways for Eliminating Multidrug-Resistant Bacteria.* American Institute of Chemical Engineers Annual Meeting 2016, San Francisco, CA, November, 14th, 2016.
15. **Colleen Courtney**, Samuel Goodman, Feifei Li, Nancy Madinger, Prashant Nagpal and Anushree Chatterjee. *Photoexcited Quantum Dots for Killing Multidrug-Resistant Bacteria.* American Institute of Chemical Engineers Annual Meeting 2016, San Francisco, CA, November, 15th, 2016.
16. **Colleen Courtney**, Samuel Goodman, Anushree Chatterjee and Prashant Nagpal. *Photoexcited Quantum Dots for Killing Multidrug-Resistant Bacteria.* American Institute of Chemical Engineers Annual Meeting 2016, San Francisco, CA, November, 14th, 2016.
17. Erickson K.E., Otoupal P., and **Chatterjee A.**, "*Phenotypic and Gene expression variability underlies adaptive resistance in heterogeneous bacterial populations*," American Institute of Chemical Engineers. Annual Meeting 2015, Salt Lake City, UT, November, 9th, 2015.
18. Courtney C.M., and **Chatterjee A**., "*Sequence-specific antisense inhibitors of antibiotic resistance and mechanism of adaptive resistance*," American Institute of Chemical Engineers, Salt Lake City, UT, November, 11th, 2015.
19. Courtney C.M., and **Chatterjee A**., "*Specifically tuned light activated nano-therapuetics for selective killing of multi drug resistant bacterial strains*," American Institute of Chemical Engineers, Salt Lake City, UT, November, 10th, 2015.
20. Otoupal P., Erickson K.E.., and **Chatterjee A**., "*Perturbing bacterial adaptive resistance using CRISPR-Cas9 mediated gene targeting: emerging applications in synthetic biology*," American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November, 12th, 2015.

21. Escalas-Bordoy A.., Varanasi U., and **Chatterjee A.,** "*Design principles of robust genetic switch using antisense transcription*," American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November, 12th, 2015.
22. Goodman S., Courtney C.M., **Chatterjee A**., Nagpal P., "*Novel light-activated therapy for multi-drug resistant pathogens*", American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November, 9th, 2015.
23. Ribot J.C., Chatterjee A., **Nagpal P**., "*Quantum Molecular-Sequencing (QM-Seq): Single Molecule DNA and RNA Sequencing*", American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November, 10th, 2015.
24. Goodman S., Chatterjee A., **Nagpal P**., "*Multiple Energy "Exciton-Shelves" in Quantum-Dot-DNA Nanobioelectronic Materials*", American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November, 9th, 2015.
25. Goodman S., Courtney C.M., Chatterjee A., **Nagpal P**., "*Novel Light-Activated Nano-Therapeutics for Selective Cell Phenotypes*", American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November, 9th, 2015.
26. Ribot J.C., Chatterjee A., **Nagpal P.**, "*Quantum Molecular-Sequencing (QM-Seq): Nanoelectronic Single Molecule DNA/RNA Sequencing and Epigenetics*", American Institute of Chemical Engineers Annual Meeting, Salt Lake City, UT, November, 10th, 2015.
27. **Bordoy, A.E**., Varanasi U.V., and Chatterjee A., **"***Antisense Transcription as a Novel Tool for Synthetic Biology,"* Butcher Symposium, Westminster, CO, November, 11th, 2015.
28. **Courtney C.**, Goodman S., Nagpal P., Chatterjee A., "*Specifically Tuned Light Activated Nano-therapeutics for Selective Cell Phenotypes,*" Butcher Symposium, Westminster, CO, November, 11th, 2015.
29. **Erickson K.E.**, Otoupal P.; Chatterjee A., "*Gene expression signatures underlying adaptive resistance in bacterial population*," Butcher Symposium, Westminster, CO, November, 11th, 2015.
30. **Peter Otoupal**, Erickson K.E.; Courtney C.M.; Madinger, N.E; Chatterjee A., "*Disrupting Bacterial Adaptive Pathways Using CRISPR-dCas9 Gene Targeting*," Butcher Symposium, Westminster, CO, November, 11th, 2015.
31. **Courtney C**., Goodman S., Chatterjee A., and Nagpal P. "*Specifically tuned light activated nano-therapeutics for selective cell phenotypes***,**" American Chemical Society National Meeting, Denver, CO, March, 24th, 2015.
32. **Erickson K.E.,** and Chatterjee A., "*Differential gene expression variability underlies adaptive resistance in heterogeneous populations***,**" American Chemical Society National Meeting, Denver, CO, March, 24th, 2015.
33. **Erickson K.E.,** and Chatterjee A., "*Constrictor: Flux Balance Analysis Constraint Modification Provides Insight for Design of Biochemical Networks*," American Chemical Society National Meeting, Denver, CO, March, 24th, 2015.
34. **Goodman S**., Siu A., Singh V., Ribot J., Chatterjee A., Nagpal P., "*Multiple energy "exciton-shelves" in quantum-dot-DNA nanobioelectronic materials*," American Chemical Society National Meeting, Denver, CO, March, 25th, 2015.
35. **Courtney C**., and Chatterjee A., "*Sequence-specific synthetic RNA silencing overcomes antibiotic resistance,*" American Chemical Society National Meeting, Denver, CO, March, 22nd, 2015.
36. **Otoupal P.B**., Erickson K.E., and Chatterjee A., "*Sequence-specific and organism-specific antimicrobials using phage-delivered CRISP-Cas9 targeting*," American Chemical Society National Meeting, Denver, CO, March, 23rd, 2015.
37. **Goodman S**., Courtney C., Chatterjee A., and Nagpal P., "*Novel light-triggered therapeutics for selective cell phenotypes*," American Chemical Society National Meeting, Denver, CO, March, 22nd, 2015.

38. **Bordoy, A.E.,** Varanasi U.V., and Chatterjee A., "*Design principles of a robust genetic switch using antisense transcription in naturally occurring systems,*" American Chemical Society National Meeting, Denver, CO, March, 22nd, 2015.
39. **Otoupal P.,** Erickson K.E., and Chatterjee A., "*Perturbing bacterial adaptive resistance using CRISPR-Cas9 mediated gene targeting: Emerging applications in Synthetic Biology*," American Chemical Society National Meeting, Denver, CO, March, 24th, 2015.
40. **Casamada-Ribot J.,** Chatterjee A., and Nagpal P., "*Quantum molecular sequencing (QM-Seq): Single molecule DNA and RNA sequencing*," American Chemical Society National Meeting, Denver, CO, March, 25th, 2015.
41. **Erickson K.E.,** and Chatterjee A., "*Constrictor: Flux Balance Analysis Constraint Modification Provides Insight for Design of Biochemical Networks*," American Physics Society National meeting, Denver, CO, March, 5th, 2014.
42. **Erickson K.E.**, and Chatterjee A., "*Towards a tolerance toolkit: Gene expression signatures enabling the emergence of resistant bacterial strains*," American Physics Society National meeting, 2014, Denver, CO, March, 5th, 2014.
43. **Courtney C.M.**, and Chatterjee A., "*Re-sensitizing drug-resistant bacteria to antibiotics Antisense therapeutics*," American Physics Society National meeting, Denver, CO, March, 5th, 2014.
44. **Courtney C.M.**, and Chatterjee A., "*An in vivo and in silico approach to study cis-antisense: a short cut to higher order response*," American Physics Society National meeting, Denver, CO, March, 5th, 2014.
45. **Casamada Ribot**, J, Chatterjee A., and Nagpal P., "*Quantum-Sequencing: Biophysics of quantum tunneling through nucleic acids*," American Physics Society National meeting, Denver, CO, March, 5th, 2014.
46. **Casamada Ribot**, J, Chatterjee A., and Nagpal P., "*Quantum-Sequencing: Fast electronic single DNA molecule sequencing*," American Physics Society National meeting, 2014, Denver, CO, March, 6th, 2014.
47. Erickson K.E., and **Chatterjee A.,** "*Constrictor: Flux Balance Analysis Constraint Modification Provides Insight for Design of Biochemical Networks*," American Institute of Chemical Engineers ting, San Francisco, CA, November, 6th, 2013.
48. Casamada Ribot, J., Nagpal, P., and **Chatterjee A**., "*Nano-Biosensors for Fast, High-Throughput Detection of Antimicrobial Resistance*," American Institute of Chemical Engineers 2013, San Francisco, CA, November, 3rd, 2013.
49. **Chatterjee A.,** Cook L.C., Shu C-C, Johnson C.M., Kaznessis Y.N., Ramkrishna D., Dunny G.M. and Hu W-S, "*The Antibiotic Resistance game: The Genetic Regulation of antibiotic resistance transfer in Enterococcus faecalis*," AIChE 2011, Minneapolis, MN, October 16th-21st, 2011.
50. **Chatterjee A.,** "*Convergent transcription confers a bistable switch during conjugative transfer of drug resistance in Enterococcus faecalis*", 2011, Theoretical Biology and Biophysics division, Los Alamos National Laboratory, Los Alamos, NM, September, 10th, 2011.
51. Chatterjee A., Johnson C.M., Shu C-C, Ramkrishna D., Hu W-S and Dunny G.M., "*Turning off the bistable switch controlling Enterococcus faecalis conjugation*", Phage Meeting 2011, Madison, WI, August 2nd-7th, 2011.
52. **Chatterjee A**., Johnson C.M., Shu C-C, Kaznessis Y.N., Doraiswami R., Dunny G.M., Hu W-S, "*A Bistable Switch Controls Drug Resistance Transfer in Enterococcus Faecalis Via Antisense RNA, Transcriptional Interference: An in Silico and In Vivo Approach*", AIChE 2010, Salt Lake City, UT, November 7th-12th, 2010.
53. **Chatterjee A.,** Hu W-S, "*Modeling Regulatory Role of Transcriptional Interference in Conjugational Transfer of Drug Resistance in Enterococcus faecalis*", Life Science Alley, Minneapolis, MN, February, 2009.

54. **Chatterjee A.,** "*Modeling Regulatory Role of Transcriptional Interference in Conjugational Transfer of Drug Resistance in Enterococcus faecalis*", Cellular Bioprocess Tech. short course, Minneapolis, MN, June, 3rd, 2009.
55. **Chatterjee A**., Kaznessis Y.N., Dunny G.M. and Hu W-S, "*Engineering Gene Regulation by Tweaking Transcriptional Interference*", 8th World Congress for Chemical Engineering, Montreal, QC, Canada, August 23rd-27th , 2009.
56. Chatterjee A., **Johnson C.**, Kaznessis Y.N., Dunny G.M. and Hu W-S, "*Modeling Regulatory Role of Transcriptional Interference in Conjugational Transfer of Drug Resistance in Enterococcus faecalis*", American Society of Microbiology, General Meeting , Philadelphia, PA, May, 9th, 2009.
57. **Chatterjee A.,** Dunny G.M., Hu W-S "*Transcriptional interference and Antisense regulation controlling conjugation switch in Enterococcus faecalis*", Microbial and Genomics Institute Annual Retreat, Minneapolis, MN, March, 2009.
58. **Chatterjee A.,** Castro M., "*Modeling of ScbA/ScbR system in Streptomyces coelicolor*", Cellular Bioprocess Technology short course, 2007, Minneapolis, MN, June, 6th, 2007.
59. Chatterjee A., Guha, B.K., "*Membrane Contactors for gas-liquid contacting*", 58th Annual IIChE meet, IIT Delhi, 2005, December, 6th, 2005.
60. Chatterjee A., Bhaskarwar A.N., "*Development of a Novel Temperature Sensitive Ink*", Industrial Research and Development Conference, IIT Delhi, January, 15th, 2005.
61. Chatterjee A., Bhaskarwar A.N., "*Pollution preventing Temperature Sensitive Lithographic Ink*", TRYST 2004, IIT Delhi, March, 3rd, 2004.

TEACHING/INSTRUCTOR EXPERIENCE

- **Teaching Instructor (University of Colorado, Boulder)**

Term	Year	Title	Level	Number of students enrolled	Instructor evaluation
Spring	2013	CHEN 5210: Transport Phenomena	Graduate	20	3.8/6.0
Spring	2014	CHEN 5210: Transport Phenomena	Graduate	24	4.2/6.0
Fall	2014	CHEN 2120: Materials and Energy Balances	Undergraduate	93	4.5/6.0
Spring	2015	CHEN 5210: Transport Phenomena	Graduate	32	4.4/6.0
Fall	2015	CHEN 2120: Materials and Energy Balances	Undergraduate	94	4.8/6.0
Fall	2016	CHEN 4803: Metabolic Engineering and Synthetic Biology	Undergraduate	50	5.5/6.0
Spring	2017	CHEN 5210: Transport Phenomena	Graduate	25	5.0/6.0
Fall	2017	CHEN 4130: Senior Chemical Engineering Laboratory	Undergraduate	20	6.0/6.0
Spring	2018	CHEN 2120: Materials and Energy Balances	Undergraduate	35	In progress

  - University of Colorado Boulder iGEM Team Advisor 2014-2015

- **Teaching Instructor (University of Minnesota)**
  - CHEN 8754, Systems Biology (graduate), Spring 2008
  - Cellular Bioprocess Technology short course**,** Summers 2007-2010

- National Institute of Health Trainees workshop, Spring 2010, Summer 2011

CURRENT AND PAST STUDENTS AND POSTDOCTORAL RESEARCH ASSOCIATES SUPPORTED (University of Colorado Boulder)

Graduated students/postdocs/visiting students highlighted in red with current affiliation

- **Research associate/post-doctoral fellows supervised:**
  - Usha S Varanasi, 2013-2015, Current: BASF, Michigan
  - Sajida Arif Khan (co-advised with Dr. Prashant Nagpal), 2015-present
  - Sepideh Afsari (co-advised with Dr. Prashant Nagpal), 2016-present

- **Ph.D. students supervised:**
  - Dr. Colleen M Courtney (Ph.D. in Chemical Engineering), Jan 2013-July 2017, Current: Postdoctoral fellow at Sandia National Laboratory, Livermore, CA
  - Dr. Keesha E Erickson (co-advised with Dr. Ryan Gill) (Ph.D. in Chemical Engineering), Jan 2013-May 2017, Current: Postdoctoral fellow at Los Alamos National Laboratory, Los Alamos, NM
  - Josep Casamada Ribot (co-advised with Dr. Prashant Nagpal) (Masters in Chemical Engineering), Jan 2013-Sep. 2015, Current: Ioniqa Technologies, Spain
  - Peter B. Otoupal, Sep. 2013-present
  - Antoni Escalas Bordoy, Oct. 2013-present
  - Andrew Boston (co-advised with Dr. Prashant Nagpal), Nov. 2014-Sep. 2015
  - Lee Korshoj (co-advised with Dr. Prashant Nagpal), Dec. 2015-present
  - Partha Pratim Choudhary (co-advised with Dr. Prashant Nagpal), Dec. 2015-present
  - Thomas Aunins, Oct. 2016-present
  - Kristen Eller (co-advised with Dr. Stephanie Bryant), Dec. 2016-present
  - Jocelyn Campos, Aug. 2017-present
  - Nolan O' Connor, Dec 2017- present

- **Visiting graduate students supervised:**
  - Marina Nieto-Caballero, Aug. 2015-Dec. 2015, Current: Department of Environmental Biology, University of Colorado Boulder

- **Undergraduate students supervised**
  - Kyle Williams, 2013-2015
  - Shakira Ramesh Govind, 2013-2015
  - Austin Charles Pothoff, 2013-2015
  - Christina Danielle Nuss-Brill, 2013-2016
  - Kyle Anderson, 2013
  - Peyton Elizabeth Domeier, 2013
  - Emma Langdon, 2014-2015
  - Derek Freund, 2014-2016
  - Alec Motezi, 2014-2015
  - Joshua R Volin, 2014-2015
  - Madeleine Sitton, 2014-present

- Nicholas Cianco, 2015-2016
- Vismaya Bacchu, 2015-present
- Pallavi Bhushal, 2016-present
- Taylor Mackenzie Kontour, 2016
- William Cordell, 2016-present

- **High school students supervised:**
  - Logan Collins, Fairview High School, Boulder CO, 2013-2015, Current: Dartmouth College

- **Independent study students supervised:**
  - Benjamin Richardson, 2015
  - Lee Korshoj, 2015
  - Antoni Escalas Bordoy, 2015
  - Andrew Boston, 2015
  - Peter B. Otoupal, 2014
  - Colleen M Courtney, 2014
  - Keesha E Erickson, 2014
  - Kyle Williams, 2013
  - Austin Charles Pothoff, 2013
  - William Cordell, 2016, 2018
  - Pallavi Bhusal, 2016
  - Vismaya Bachu, 2016
  - Madelaine Sitton, 2016
  - Thomas Aunins, 2016

- **Rotation students:**
  - Jacqueline Wentz, November 2015-February 2016
  - Jocelyn Campos, June 2017-August 2017
  - Lynn Sanford, Jan 2014-Apr 2014

PROFESSIONAL ASSOCIATIONS/SERVICE

DEPARTMENTAL

- Member of ChBE Undergraduate committee (2013-present)
- Reviewer (Undergraduate awards, UC Boulder ChBE 2014-present)
- ChBE Transfer courses review (2016-present)
- Awards ceremony (ChBE) (2015-present)
- ChBE Dept. Graduation Ceremony committee (2017-present)
- REU Planning committee (2017-present)
- Biological Engineering Ph.D. program planning committee (2017-present)
- Other common departmental services including serving on preliminary exam and thesis committees

COLLEGE

- Task force member, BioFrontiers Institute, University of Colorado at Boulder 2014-present
- Member, Biophysics Supergroup, University of Colorado Boulder 2014-present

UNIVERSITY

- Reviewer for Biofrontiers Institute Chemical Biology Faculty Search 2015-2016

EXTERNAL

- **Meetings:**

  Session Chair, *Am. Inst. Chem. Eng. Annual Meeting 2018, Gene Regulation*

  Session Chair, *Synthetic Biology: Engineering, Evolution & Design (SEED) Conference 2018*

  Session Chair, *Am. Inst. Chem. Eng. Annual Meeting 2017, Nanomaterials for Biological Applications I*

  Session Chair, *Am. Inst. Chem. Eng. Annual Meeting 2017, Nanomaterials for Biological Applications II*

  Session Chair, *Am. Inst. Chem. Eng. Annual Meeting 2017, Emerging tools and enabling technologies in synthetic biology*

  Session Chair, *Am. Inst. Chem. Eng. Annual Meeting 2016, Nanomaterials for Biological Applications I*

  Session Chair, *Am. Inst. Chem. Eng. Annual Meeting 2016, Nanomaterials for Biological Applications II*

  Session co-Chair, *Am. Inst. Chem. Eng. Annual Meeting 2016, Advances in Metabolic Engineering*

  Session Chair, *Am. Chem. Soc. National Meeting 2016, Emerging Technologies for Cellular and Molecular Engineering*

  Session Chair, *Am/ Chem. Soc. National Meeting 2015, Emerging Technologies for Cellular and Molecular Engineering*

  Session Chair, *Am. Inst. Chem. Eng. Annual Meeting* 2015, *Cell Culture III: Metabolic Flux Analysis and Modeling*

  Session Chair 2015, *Am. Inst. Chem. Eng. Annual Meeting* 2015, *Nanomaterials for Biological Applications*

  Session co-Chair 2015, *Am. Inst. Chem. Eng. Annual Meeting* 2015, *Cell Culture II: Host Cell Engineering, Screening, and Scale-Down Models*

  Session Chair, *Am. Inst. Chem. Eng. Annual Meeting* 2014, *Systems and Synthetic Biology of Interacting Microorganisms*

- **Editorial Board Member:**

  Journal of Gene therapy

  Associate Editor, Frontiers in Biotechnology and Bioengineering

- **Journal manuscript reviewer for:**

  Science
  Proceedings of the National Academy of Sciences
  Nature Communications
  Nucleic Acid Research
  ACS Nano
  ACS Chemical Biology
  ACS Infectious Disease
  ACS Applied Materials and Interfaces
  Biotechnology and Bioengineering
  PLoS ONE
  PLoS Computational Biology
  Antiviral therapy

Chemical Engineering Science
Current Opinion in Chemical Engineering
Antimicrobial Agents and Chemotherapy
AIChE Journal
Environmental Science and Technology
Nucleic Acid Therapeutics
Engineering Life Sciences
WIREs RNA

Funding agency proposal reviewer for:

National Science Foundation, Sustainability panel on Biomass & Biofuels review panel (2014)

National Institutes of Health, NIAID study section, Partnerships for the Development of Host- Targeted Therapeutics to Limit Antibacterial Resistance panel (R01) (2016)

National Science Foundation Graduate Research Fellowship Program (GRFP) review panel (2016)

University of Nebraska Research Initiative review panel (2016)

Natural Sciences and Engineering Research Council of Canada review panel (2016)

Wellcome Trust DBT India Alliance Fellowship review committee (2016)

American Academy of Arts and Sciences, Scientific review panel for Research Opportunity Initiative **(**2017**)**

National Science Foundation, Biochemical Engineering and related topics review panel (2017)

National Institutes of Health, NIAID study section, K applications (2018)

Wellcome Trust Foundation (2018)

- **Membership:**

American Institute of Chemical Engineers
American Chemical Society
American Society of Microbiology
Society of Women Engineers