ANUSHREE CHATTERJEE

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PROFESSIONAL EXPERIENCE

2013- **Assistant Professor,** Department of Chemical and Biological Engineering, University of Colorado at Boulder

2013- **Affiliate, Renewable and Sustainable Energy Institute (RASEI),** University of Colorado at Boulder

2011-2012 **Postdoctoral Fellow**, Theoretical Biology and Biophysics, Center for Nonlinear Studies, Los Alamos National Laboratory

EDUCATION

2011-2012 **Postdoctoral Fellow**, Theoretical Biology and Biophysics, Los Alamos National Laboratory (LANL)
Title: "***Modelling hepatitis C virus RNA replication: from RNA regulation to virion production***"
Mentor: Alan S. Perelson

2006-2011 **Doctor of Philosophy**, Chemical Engineering, University of Minnesota (UMN)
Thesis title: "***A Bistable switch controls antibiotic resistance transfer in Enterococcus faecalis***"
Advisor(s): Wei-Shou Hu and Yiannis N. Kaznessis

2001-2006 **Master of Technology**, Chemical Engineering, Indian Institute of Technology Delhi
Thesis title: "***Acid gas removal from flue gas mixture using Membrane contactors***"
Advisor: Barun K. Guha
Bachelor of Technology, Chemical Engineering, Indian Institute of Technology Delhi (I.I.T Delhi)

SELECTED AWARDS AND HONORS

2011 **Center for Nonlinear Studies Postdoctoral Fellow**, LANL
2010 **Doctoral Dissertation Fellowship**, UMN
2009 **Microbial and Plant Genomics Institute Grant award**, 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

PEER-REVIEWED PUBLICATIONS

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

- Anushree Chatterjee, Patrick F. Smith and Alan S. Perelson[*] (2012), ***"Hepatitis C viral kinetics: the past, present and future."*** **Clinics in Liver Disease, doi:10.1016/j.cld.2012.09.003 (in press).**

- 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 (in press).**

- Anushree Chatterjee[#], Laura C. Cook[#], Che-Chi Shu, Doraiswami Ramkrishna, Gary M. Dunny and Wei-Shou Hu[*], ***"Antagonistic self-sensing and mate-sensing signaling controls antibiotic-resistance transfer."*** **Proceedings of National Academy of Sciences (Under review).**

- 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.

    - *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?*

- 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.**

- 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.**

- 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.**

- 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.**

- Che-Chi Shu, Anushree Chatterjee, Wei-Shou Hu and Doraiswami Ramkrishna* (2011), "***Modeling of Gene regulatory processes by Population mediated Signaling. New applications of Population balances."*** **Chemical Engineering Science.** doi:10.1016/j.ces.2011.07.062.

- 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

MANUSCRIPTS IN PREPARATION

- Che-Chi Shu, Anushree Chatterjee, Wei-Shou Hu, and Doraiswami Ramkrishna, ***"On modeling biofilm, intracellular stochastic fluctuations matter."*** **PLoS Computational Biology (to be submitted).**

- Anushree Chatterjee, Laetitia Canini, Jeremie Guedj, Patrick F. Smith and Alan S. Perelson (2012),***" A pharmacokinetic/viral kinetic model to evaluate treatment of chronic hepatitis C virus with danoprevir."*** **Hepatology (to be submitted).**

BOOK CHAPTERS

- Anushree Chatterjee*, ***"The antibiotic resistance game: genetic switches controlling antibiotic resistance transfer,"*** in ***"Detection and Characterization of Antibiotic resistance"***, Edited by and Dr. Jian Song and Dr. Murray Wolinsky (Springer-Verlag, New York, 2012).

PATENTS

- **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***".

INVITED AND CONTRIBUTED PRESENTATIONS *(presenting/first author only)*

- Chatterjee A., ***"Discovering novel drug targets to prevent antibiotic resistance transfer in bacteria using systems biology approaches,"*** 2012, Department of Chemical and Biological Engineering, University of Colorado, Boulder, CO. ***(Invited talk)***

- Chatterjee A., ***"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. ***(Invited talk)***

- Chatterjee A., ***"Discovering novel drug targets to prevent antibiotic resistance transfer in bacteria using systems biology approaches,"*** 2012, Department of Chemical and Biomolecular Engineering, Tufts University, Boston, MA. ***(Invited talk)***

- 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.

- Chatterjee A., ***"The antibiotic resistance game in Enterococcus faecalis: A bistable genetic switch controls antibiotic resistance transfer",*** 2012, Bio-Sciences Division, Los Alamos National Laboratory, Los Alamos, NM. ***(Invited talk)***

- Chatterjee A., ***"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. ***(Invited talk)***

- 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. ***(Invited talk)***

- 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.

- 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.

- Chatterjee A., Hu W-S, "***Modeling Regulatory Role of Transcriptional Interference in Conjugational Transfer of Drug Resistance in Enterococcus faecalis***", Life Science Alley, 2009, Minneapolis, MN.

- Chatterjee A., Hu W-S, "***Antisense RNA, Transcriptional Inference and Genetic Switch: Train wreck or noise filter?***", AIChE General Meeting 2009, Nashville, TN. ***(Invited Talk)***

- Chatterjee A.., "***Modeling Regulatory Role of Transcriptional Interference in Conjugational Transfer of Drug Resistance in Enterococcus faecalis***", Cellular Bioprocess Tech. short course, 2009, Minneapolis, MN.

- 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, 2009, Montreal, Canada. ***(Invited Talk)***

- 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, 2009, Philadelphia.

- 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, 2009, Minneapolis, MN.

- Chatterjee A., Castro M., "***Modeling of ScbA/ScbR system in Streptomyces coelicolor***", Cellular Bioprocess Technology short course, 2007, Minneapolis, MN.

- Chatterjee A., Guha, B.K., "***Membrane Contactors for gas-liquid contacting***", 58th Annual IIChE meet, IIT Delhi, 2005.

- Chatterjee A., Bhaskarwar A.N., "***Development of a Novel Temperature Sensitive Ink***", Industrial Research and Development Conference, IIT Delhi, 2004.

- Chatterjee A., Bhaskarwar A.N., "***Pollution preventing Temperature Sensitive Lithographic Ink***", TRYST 2004, IIT Delhi.

TEACHING EXPERIENCE

- **Teaching Assistant, University of Minnesota:** 2008-2010
  - *Systems Analysis of Biological Processes*, Spring 2010 *(lectures, course material preparation and grading)-GRADUATE*
  - *Classical Thermodynamics*, Spring 2009 *(grading)-GRADUATE*
  - *Biochemical Engineering Fundamentals*, National Taiwan University, Spring 2009 (*project instructor)-UNDERGRADUATE*
  - *Introduction to Biomolecular Engineering*, Fall 2008 *(lectures, recitation instructor and grading) -UNDERGRADUATE*

- **Teaching Instructor for short course/workshop:** 2007-2011
  - *Cellular Bioprocess Technology short course***,** *Summers 2007-2010*

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

- **Teaching Assistant, I.I.T. Delhi:** 2005-2006
  - *Chemical Engineering Process Principles* (Undergraduate level course), Spring 2006 *(recitation instructor and grading)*

MENTOR EXPERIENCE

- **Research Mentor at University of Minnesota:** 2006-2011
  - *Undergraduate students: Laurie Drews, Hyacinth Cui, Michael Srienc*
  - *Graduate student: Tyler P Price*

REVIEWER IN JOURNALS

- Proceedings of National Academy of Sciences
- Chemical Engineering Science
- PLoS ONE
- PLoS Computational Biology
- Current Opinion in Chemical Engineering
- Antiviral therapy

PROFESSIONAL ASSOCIATIONS

- Member, American Institute of Chemical Engineers, 2010-2012.
- Member, Canadian Chemical Engineering, 2009-2010.
- Member, American Society of Microbiology, 2008-2011.
- Member, Society of Women Engineers, 2008-2009.
- Member, Indian Institute of Chemical Engineers (IIChE), 2005.
- Member, Chemical Engineering Society, I.I.T Delhi, 2001-2006.

REFERENCES: *Available on Request*