

Dan Siegal-Gaskins

- CONTACT INFORMATION** Mathematical Biosciences Institute *Voice:* 614.688.3198
1735 Neil Ave *E-mail:* dsg@mbi.osu.edu
Jennings Hall 374 *Web:* <http://dantimatter.com/>
Columbus, OH 43210
- RESEARCH INTERESTS** Systems and Synthetic Biology, with a focus on using experimental and computational tools to understand regulatory network function.
- EDUCATION** Ph.D. (Physics), University of Chicago, August 2008
Thesis title: Populations to single cells: insights from microfluidic growth experiments
Thesis advisor: Dr. Sean Crosson, Department of Biochemistry and Molecular Biology
- B.A.Sc. (Engineering Science - Physics option), University of Toronto, May 2002
Thesis title: Development of a cryogenic Faraday rotator for CMB polarimetry
Thesis advisors: Dr. C. Barth Netterfield, Department of Physics (Toronto)
Dr. Andrew Lange, Department of Physics (Caltech)
- POSITIONS HELD** **Postdoctoral Fellow**
Mathematical Biosciences Institute, Ohio State University, 2008 - present
- Graduate Research Assistant**
Department of Physics, University of Chicago, 2002 - 2008
- Undergraduate Research Assistant**
Department of Physics, University of Toronto, 1999 - 2002
- PUBLICATIONS** **Siegal-Gaskins D**, Mejia-Guerra MK, Smith GD, and Grotewold E. 2010. “*Emergence of switch-like behavior in a large family of simple biochemical networks*”. In preparation.
- Fiebig A, Castro Rojas CM, **Siegal-Gaskins D**, and Crosson S. 2010. “*Interaction specificity and toxicity in a paralogous set of ParE/RelE-family toxin-antitoxin systems*”. Mol Microbiol 77: 236-251.
- Siegal-Gaskins D**, Grotewold E, and Smith GD. 2009. “*The capacity for multistability in small gene regulatory networks*”. BMC Syst Biol 3:96.
- Siegal-Gaskins D**, Ash JN, and Crosson S. 2009. “*Model-based Deconvolution of Cell Cycle Time-series Data Reveals Gene Expression Details at High Resolution*”. PLoS Comput Biol 5(8): e1000460.
- Guet GC, Bruneaux L, Min TL, **Siegal-Gaskins D**, Figueroa I, Emonet T, and Cluzel P. 2008. “*Simultaneous Determination of mRNA and Protein Concentrations in Single Living Bacteria*”. Nucleic Acids Res 36(12):e73.
- Siegal-Gaskins D** and Crosson S. 2008. “*Tightly-Regulated and Heritable Division Control in Single Bacterial Cells*”. Biophys J 95(4):2063-72.
- Purcell EB, **Siegal-Gaskins D**, Rawling DC, Fiebig A, and Crosson S. 2007. “*A LOV-Family Photosensory Two-Component System Regulates Bacterial Cell Attachment*”. Proc Natl Acad Sci USA 104(46):18241-18246.

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HONORS AND AWARDS	<p>NIH T32 Postdoctoral Fellowship in Cancer Genetics Division of Human Cancer Genetics, Ohio State University, beginning Aug 2010</p> <p>Doolittle-Harrison Fellowship University of Chicago, 2007</p> <p>Burroughs Wellcome Fund Interfaces in Science Fellowship Cross-Disciplinary Program in Biophysical Dynamics and Biocomplexity, 2005 - 2006</p> <p>L. E. (Ted) Jones Award of Distinction University of Toronto Engineering Alumni Association, 2002</p> <p>Spirit of EngSci Award Division of Engineering Science, University of Toronto, 2001</p> <p>Mr. Blue and Gold University of Toronto Engineering Society, 2000</p> <p>Undergraduate Summer Research Award Natural Sciences and Engineering Research Council of Canada, 1999</p>
TEACHING EXPERIENCE	<p>Teaching Assistant Computational Cell Biology, Cold Spring Harbor Laboratory, 2010 Computational Biology Workshop, University of Chicago, 2007 - 2008 Foundations of Modern Physics II, University of Chicago, 2007 Foundations of Modern Physics, University of Chicago, 2004 The Evolution of the Universe, University of Chicago, 2003</p> <p>Other Integrated Molecular and Cellular Biology for Non-Biologists, Ohio State University, 2009 (<i>guest lecturer</i>) Calculus and Analytic Geometry II (Life Sciences), Ohio State University, 2009 (<i>mentor</i>) Calculus and Analytic Geometry I (Life Sciences), Ohio State University, 2008 (<i>mentor</i>)</p>
INVITED SEMINARS	<p>Research for Undergraduates: Adventures in Mathematical Biology and its Applications (RUMBA) program, Ohio State University, January 21, 2010</p> <p>Department of Bioinformatics/Biosystems Engineering, TFH Wildau, November 20, 2009</p> <p>Computational Science training for Undergraduates in the Mathematical Sciences (CSUMS) program, College of William and Mary, June 9, 2009</p>
CONFERENCE TALKS	<p>“Identification of novel genetic switch topologies in a large class of biochemical networks”, Ohio Collaborative Conference on Bioinformatics, Ohio State University, 2010 (<i>contributed</i>)</p> <p>“The capacity for multistability in small networks”, Network Biology: Understanding metabolic and protein interactions, Mathematical Biosciences Institute, 2009 (<i>contributed</i>)</p>

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- CONFERENCE POSTERS
- “The capacity for multistability in small gene regulatory networks”, 10th International Conference on Systems Biology, Stanford University, 2009
 - “Model-based Deconvolution of Cell Cycle Time-series Data Reveals Gene Expression”, 10th International Conference on Systems Biology, Stanford University, 2009
 - “Generalized Deconvolution of Population-level Gene Expression Data Reveals Details with High Temporal Resolution”, Systems Biology: Networks, Cold Spring Harbor Laboratory, 2009
 - “Control and Inheritance of Division Time in *Caulobacter crescentus*”, 8th International Conference on Systems Biology, Long Beach, CA, 2007
 - “A Real-time Study of Genetic Networks Using a Non-coding RNA Reporter System”, International Workshop on Systems Biology, Maynooth, Ireland, 2006
- PROFESSIONAL ACTIVITIES AND OUTREACH
- Session Chair, “Mechanics in Cell Biology”, American Physical Society March Meeting, 2010
 - Participant, Cold Spring Harbor Laboratory course on Computational Cell Biology, 2009
 - Instructor, Science and Technology Outreach and Mentoring Program, University of Chicago, 2006 - 2008
 - Participant, Museum Presentation in Science Program, University of Chicago, 2004 - 2005
 - Reviewer for Biophysical Journal and Journal of Nanobiotechnology
 - Member of the American Physical Society, Biophysical Society, and International Society for Computational Biology
- REFERENCES
- Available upon request.