SABRINA LEIGH SPENCER

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Education:

Stanford University: Postdoctoral Fellow, Department of Chemical and Systems Biology, March 2010-present.
Massachusetts Institute of Technology: PhD in Computational and Systems Biology, June 2009.
University of Michigan: MS in Human Genetics, April 2003.
The George Washington University: BS in Biology with Honors, BA in French Language & Literature, May 2001.

Research Experience:

3/2010-present	**Damon Runyon Foundation Postdoctoral Fellow, Stanford University,** Palo Alto, CA. The G1/S transition and cell cycle commitment. Advisor: Dr. Tobias Meyer.
6/2009-2/2010	**Postdoctoral Scientist, Harvard Medical School,** Boston MA. Continuation of dissertation research with Dr. Peter K. Sorger.
9/2004-6/2009	**Doctoral Degree - Massachusetts Institute of Technology (MIT),** Cambridge, MA
6/2005-5/2009	Thesis topic: Origins of cell-to-cell variability in apoptosis. Advisor: Dr. Peter K. Sorger. (The Sorger lab moved to Harvard Medical School (HMS) in January 2007).
9/2004-5/2005	Four, two-month research rotations with Drs. D. Lauffenburger, M. Kellis, D. Endy, and T. Jacks.
Summers 2004, 2003	**The Santa Fe Institute (SFI),** Santa Fe, NM
7/2004-8/2004	Steinmetz Fellow: Modeling the somatic evolution of cancer. Advisor: Dr. Stephanie Forrest.
7/2004	Student at the Mathematical and Computer Models in Medicine workshop.
6/2003-7/2003	Student at the Complex Systems Summer School.
1/2004-3/2004	**University of Adelaide**, Adelaide, Australia Visiting scholar: Modeling the multistep transformation to cancer. Advisor: Dr. Derek Abbott.
9/2001-8/2003	**Master's degree - University of Michigan (UM)**, Ann Arbor, MI.
4/2002-8/2003	Role of ß- and γ-catenin in colorectal cancer. Advisor: Dr. Eric R. Fearon.
9/2001-4/2002	Two, three-month research rotations with Drs. J. Dixon and D. Burke.
9/1996-5/2001	**Bachelor's degrees - The George Washington University (GWU)**, Washington DC.
1/2000-5/2001	Undergraduate genetics research for Honors in Biology: Search for adenosine deaminase gene in *Drosophila melanogaster*. Advisor: Dr. Diana Johnson
9/1999-12/1999	**National Institutes of Health (NIH)**, National Human Genome Research Institute, Bethesda, MD. Undergraduate molecular biology research on hematopoiesis. Advisor: Dr. David Bodine.
9/1998-5/1999	**Université Paris XI Orsay**, Orsay, France. Undergraduate chemistry research on battery cathode materials. Advisor: Dr. C. Masquelier.
Summers 1999, 1998	**Rowan University**, Glassboro, NJ. Undergraduate chemistry research on perovskites; Advisor: Dr. K.V. Ramanujachary.

Honors and Awards:

Damon Runyon Cancer Research Foundation Postdoctoral Fellowship, 3/2010-2/2013.
Steinmetz Fellowship, SFI, 7/2004-8/2004.
The Queen Elizabeth Hospital Research Foundation Scholarship, Adelaide, Australia, 1/2004-3/2004.
Awarded NIH Genetics Training Grant, UM, 7/2003.
Honorable Mention, National Science Foundation Graduate Research Fellowship, 3/2002.
Graduated Summa Cum Laude, GWU, 5/2001. Undergraduate GPA of 3.9/4.0.
Phi Beta Kappa, 5/2000.
Presidential Recognition Award, GWU, 2000-2001.
Presidential Academic Scholarship, GWU, 1996-2001.
Dean's List: Columbian School of Arts and Sciences, GWU, 1996-2001.

Peer-reviewed Publications: (* indicates authors contributed equally)

- **Spencer S.L.**, Sorger P.K. (2011) Measuring and modeling apoptosis in single cells. *Cell* 144(6): 926-939.
- Kim, K.A., **Spencer S.L.**, Albeck J.G., Burke J.M., Sorger P.K., Gaudet S., Kim do H. (2010) Systematic calibration of a cell signaling network model. *BMC Bioinformatics* 11:202.
- Niepel M.*, **Spencer S.L.***, Sorger P.K. (2009) Non-genetic cell-to-cell variability and the consequences for pharmacology. *Current Opinion in Chemical Biology* 13(5-6): 556-61.
- **Spencer S.L.***, Gaudet S.*, Albeck J.G., Burke J.M., Sorger P.K. (2009) Non-genetic origins of cell-to-cell variability in TRAIL-induced apoptosis. *Nature* 459(7245):428-32.
    - News and Views by P. Bastiaens. (2009) *Nature* 459(7245): 334-5.
    - Preview by P. Loriaux & A. Hoffmann. (2009) *Molecular Cell*, 34(3): 257-8.
    - Editor's Choice by L. B. Ray. (2009) *Science. Signaling*, 2(72): ec178.
    - Recommended as "Exceptional" (score of 15) in Faculty of 1000.
- Pepper, J.W., Findlay, C.S., Kassen, R., **Spencer, S.L.**, Maley, C.C. (2009) Cancer research meets evolutionary biology. *Evolutionary Applications* 2, 62-70.
- Albeck J.G.*, Burke J.M.*, **Spencer S.L.**, Lauffenburger D.A., Sorger P.K. (2008) Modeling a snap-action, variable-delay switch controlling extrinsic cell death. *PLoS Biology* 6(12): e299.
- **Spencer S.L.***, Gerety R.A.*, Pienta K.J., Forrest S. (2006) Modeling somatic evolution in tumorigenesis. *PLoS Computational Biology* 2(8): e108.
- **Spencer, S.L.**, Berryman, M.J., García, J.A., Abbott, D. (2004) An Ordinary Differential Equation Model for the Multistep Progression to Cancer. *Journal of Theoretical Biology* 231, 515-524.
- Gaudet S.*, **Spencer S.L.***, Chen W., Sorger P.K. Computational analysis of cell-to-cell variability in apoptosis (*in preparation*).
- Flusberg D., **Spencer S.L.**, Sorger P.K. Determinants of cellular sensitivity to TRAIL-mediated apoptosis in single cells (*in preparation*).

Conference Talks and Presentations:

- Invited speaker, Boston Area Systems and Synthetic Biology Meeting, MA (12/2009)
- Selected talk, Meeting on Cell Death, Cold Spring Harbor Laboratory, NY (10/2009)
- Selected talk, Apoptosis and Cancer Conference: The Bcl-2 Family of Proteins, Hanover, NH (6/2009)
- Selected talk, Small Talks program, MIT (11/2008).
- Invited speaker, Merrimack Pharmaceuticals, Cambridge, MA (9/2008).
- Selected talk, International Conference on Systems Biology, Göteborg, Sweden (8/2008).
- Invited speaker, Systems Biology of Human Disease Conference, Boston, MA (6/2008).
- Invited participant, Integrating Evolutionary Theory into Cancer Biology meeting, SFI, (5/2008).

Teaching and Advising Experience:

Summers 2008, 2009	Supervised two PhD rotation students. (Sorger lab, HMS)
2/2007	Guest lecturer: Experimental Molecular Biology (7.16). Course director: Dr. C. Burge (MIT)
2/2006-5/2006	TA for Programming for Biological Engineers (20.180). Course director: Dr. D. Endy (MIT)
6/2004-7/2004	Adjunct professor for Genetics (Biology 335): lecture and laboratory course covering Mendelian genetics, molecular genetics, and population genetics (Rowan University)
1/2003-4/2003	TA for AIDS and Other Health Crises (Biology 118). Course director: Dr. R. Bender (UM)

Relevant Coursework and Skills:

Differential Equations, Nonlinear Dynamics, Linear Algebra, Statistics, Probability, Programming in C++, Discrete Stochastic Processes, Evolutionary Dynamics, Bioinformatics, Cancer Biology, Human Genetics, Cell Biology, Biochemistry; Knowledge of Python, C++, MATLAB, Maple, Mathematica, LaTeX.

Languages/International: Fluent in French, working knowledge of Spanish.

Extracurricular activities at MIT:

Member of the Ballroom Dance Team, 9/2007-1/2009; Orientation Co-chair, Graduate Student Council, 2007-2008; Campus Movie Fest short film festival (finalist), 3/2007; Member of Dean's Selection Panel to review Graduate Student Life Grant submissions, 2006-2007; Organizer of a weekly Systems Biology journal club, 2005-2007; VP of Residential Life, Sidney-Pacific graduate community, 2005-2006.

Interests: Ballet, Ballroom, Travel, Languages, Literature, Photography, Film, Skiing, Pottery, Sailing, Swimming.