Sonya M. Hanson, Ph.D.

email	hansons@mskcc.org	**address**	Memorial Sloan Kettering Cancer Center
twitter	@sonyahans		1275 York Ave, Box 357
github	sonyahanson		New York, NY 10065
website	sonyahanson.com	**tel**	646.888.3594

EDUCATION

PH.D. Biochemistry, University of Oxford 2009–14
Supervisors: Kenton J. Swartz (NIH), Simon Newstead (Oxford), Mark. S.P. Sansom (Oxford)

B.S. Biophysics, Minor: Screenwriting, University of Southern California, *cum laude* 2005–09

RESEARCH EXPERIENCE

Postdoctoral Fellow, Computational Biology Program, Memorial Sloan Kettering Cancer Center 2014–present
PI: John D. Chodera.
Developing a combined pipeline of automated wetlab experiment and molecular simulation to dissect the contribution of conformational reorganization energies to kinase inhibitor binding.

PH.D. Biochemistry, University of Oxford 2009–14
Dissertation: *Structural, biochemical and computational studies of TRP channel transmembrane domain modularity.*
Funded via the NIH-Oxford-Cambridge scholars program, specifically the National Institute of Neurological Disorders and Stroke (NINDS) of the National Institutes of Health.

University of Southern California 2007–09
Undergraduate research with Lin Chen (*computational modeling and docking of antibody-ion channel interaction*).

Indiana University 2005–07
Undergraduate research with Santiago Schnell (*mathematical models of enzyme kinetics*).

ACADEMIC LEADERSHIP EXPERIENCE

Course Instructor 'Quantitative and computational biology' at Gerstner Sloan Kettering Graduate School	2016
Ad hoc reviewer, *JoVE*	2016
MSKCC Postdoctoral Association Board Member	2015-16
Gordon Research Seminar 'Computer Aided Drug Design' - Discussion Leader	2015
Ad hoc reviewer, *Biochemistry*	2015
Biophysical Society 59th Annual Meeting Platform Co-Chair: 'Protein-Small Molecule Interactions'	2015

AWARDS AND HONORS

Biophysical Society Committee for Professional Opportunities for Women (CPOW) Travel Award	2016
Materials Computation Center (MCC) Travel Award to attend "Molecular and chemical kinetics" workshop	2015
OXION: Ion Channels and Disease Initiative Day Poster Award	2013
Bursary Award to Attend 2013 4th RSC/SCI symposium on Ion Channels as Therapeutic Targets	2013
NIH-Oxford-Cambridge Biomedical Research Scholar	2009–14
B.S. awarded *cum laude* and with 'Discovery honors' for original research from USC	2009
Barry M. Goldwater Scholarship	2008
Interdisciplinary Award at the USC Undergraduate Research Symposium	2008
National Merit Finalist Presidential Scholarship from the University of Southern California	2005–09

SCIENCE COMMUNICATION ACTIVITIES

Volunteer at Rockefeller University's 'Science Saturday' - *Protein biochemistry super station*	2016
General Audience Lecture at Genspace NYC - *How computer programs can help us design better cancer drugs*	2016
Biophysical Society Annual Meeting Guest Blogger	2015-16
Alan Alda Science Communication Boot Camp	2015
Founding Editor of the Oxbridge Biotech Roundtable Review: Editor in Chief 2011-12, Oxford Editor 2011-13	2011–13

PROFESSIONAL MEMBERSHIP

New York Academy of Sciences 2014-present
Biophysical Society 2009-present
Member of the organizing committee for Undergraduate Women in Physics Conf. at USC 2008

TALKS

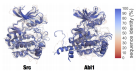
Developing high-throughput fluorescence-based assays for measuring kinase inhibitor free energies of binding 2015
Biophysical Society 59th Annual Meeting - Baltimore, MD
Hanson SM, Prinz JH, Behr JB, Grinaway PB, Rustenburg AS, Beauchamp KA, Parton DL, Chodera JD

Tackling complex problems in small molecule recognition using computation and automated biophysical experiment 2014
Telluride TSRC 'Molecular Recognition' Workshop - Telluride, CO
Hanson SM, Prinz JH, Grinaway PB, Rustenburg AS, Beauchamp KA, Behr JB, Parton DL, Chodera JD

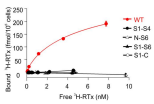
PUBLICATIONS

* asterisks denote that marked authors contributed equally

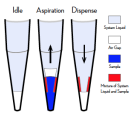
Parton DL, Grinaway PB, **Hanson SM**, Beauchamp KA, and Chodera JD. Ensembler: Enabling high-throughput molecular simulations at the superfamily scale. *PLoS Computational Biology* 12(6):e1004728, 2016 · DOI



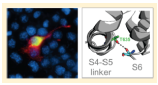
Zhang F*, **Hanson SM***, Jara-Oseguera A, Krepkiy D, Bae C, Pearce LV, Blumberg PM, Newstead S, and Swartz KJ. Engineering vanilloid-sensitivity into the rat TRPV2 channel. *eLife* 2016;10.7554/eLife.16409, 2016 · DOI



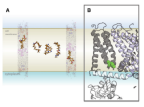
Hanson SM, Ekins S, and Chodera JD. Modeling error in experimental assays using the bootstrap principle: Understanding discrepancies between assays using different dispensing technologies. *Journal of Computer-Aided Molecular Design* 29(12):1073-86, 2015 · DOI



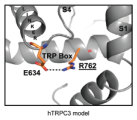
Hanson SM, Sansom MSP, and Becker EB. Modeling suggests TRPC3 hydrogen bonding and not phosphorylation contributes to the ataxia phenotype of the Moonwalker mouse. *Biochemistry* 54(26):4033-41, 2015 · DOI



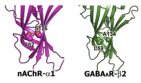
Hanson SM, Newstead S, Swartz KJ, and Sansom MSP. Capsaicin interaction with TRPV1 channels in a lipid bilayer: Molecular dynamics simulation. *Biophysical Journal*, 108(6):1425-34, 2015 · DOI
Selected for 'Best of 2015' reprint collection as one of 12 most-accessed articles in the Biophysical Journal in 2015.



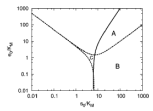
Fogel BF, **Hanson SM**, and Becker EB. Do mutations in the murine ataxia gene TRPC3 cause cerebellar ataxia in humans? *Movement Disorders*, 30(2):284–6, 2014 · DOI



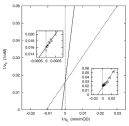
Dellisanti CM, **Hanson SM**, Chen L, and Czajkowski C. Packing of the extracellular domain hydrophobic core has evolved to facilitate pentameric ligand-gated ion channel function. *The Journal of Biological Chemistry*, 286(5):3658–70, 2011 · DOI



Hanson SM and Schnell S.The reactant stationary approximation in enzyme kinetics. *The Journal of Physical Chemistry A*, 112:8654–58, 2008 · DOI



Schnell S and **Hanson SM**. A test for measuring the effects of enzyme inactivation. *Biophysical Chemistry*, 125:269–74, 2007 · DOI



Google Scholar statistics: https://goo.gl/aU1s2e