

Stephen Nicholas Floor

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AFFILIATIONS

Pediatric Malignancies Program, Helen Diller Family Comprehensive Cancer Center
Biophysics Graduate Program (part of iPQB)
Biomedical Sciences Graduate Program

EDUCATION AND TRAINING

- 2011 – 2017 **Postdoctoral Fellow, University of California, Berkeley**
Advisor: Jennifer Doudna
- 2005 – 2011 **PhD, University of California, San Francisco** in Biophysics.
Thesis title: *Conformational Control of Eukaryotic mRNA Decapping by Dcp2*.
Advisor: John D. Gross
- 1999 – 2005 **BS Computer Science, BS Physics, University of Kansas**

FELLOWSHIPS, HONORS, AND AWARDS

- 2013 – 2016 Helen Hay Whitney Foundation HHMI Fellow
2011 Frank M. Goyan Award for Outstanding UCSF Physical Chemistry Thesis
- 2010 – 2011 Achievement Rewards for College Scientists Scholar
2009 Mel Jones Award for Scientific Achievement in UCSF Biophysics
- 2007 – 2008 Genentech-Sandler Graduate Research Opportunity Fellow
Achievement Rewards for College Scientists Scholar
2007 Honorable Mention, NSF Graduate Fellowship
2006 Honorable Mention, NSF Graduate Fellowship
- 2004 – 2005 Barry M. Goldwater Scholar
- 2000 – 2005 Awarded 5 annual School of Engineering scholarships
- 2000 – 2004 Awarded 4 annual Department of Computer Science scholarships

RESEARCH EXPERIENCE

Postdoctoral Research

2011 – 2017
University of California, Berkeley
Advisor: Dr. Jennifer Doudna

Revealed widespread regulation of human translation by transcript isoforms and studied the role of DEAD-box “RNA helicases” in translation and RNA biology.

RESEARCH EXPERIENCE (CONTINUED)

Ph. D. Dissertation

September 2005 - September 2011
University of California, San Francisco
Biophysics Graduate Group
Advisor: Dr. John Gross

Determined the regulatory mechanism of the eukaryotic mRNA decapping enzyme using NMR, SAXS, kinetics, and X-ray crystallography.

Undergraduate Research

June 2004 - August 2004
University of Michigan, Ann Arbor, MI
Physics Department
Advisor: Dr. August Evrard

Developed a simulation of gravitational lensing by galaxy clusters to estimate errors in lensing mass estimates due to the matter density of the universe.

Undergraduate Research

June 2002 - June 2004
University of Kansas, Lawrence, KS
Physics Department
Advisor: Dr. Adrian Melott

Extended and applied a simulation of galaxy cluster evolution to place bounds on cosmological constants by fitting the observed matter density of the universe.

Undergraduate Research

February 2000 - August 2001
University of Kansas, Lawrence, KS
Physics Department
Advisor: Dr. Greg Hackman

Wrote algorithms to extract data from cyclotron experiments on atomic nuclei using gamma ray coincidence at multiple detectors as a gate.

RESEARCH PUBLICATIONS (CLICK FOR GOOGLE SCHOLAR)

PREPRINTS

- 1 Blair, J. D., Hockemeyer, D., Doudna, J. A., Bateup, H. S., & Floor, S. N. (2017). Widespread translational remodeling during human neuronal differentiation. *bioRxiv*, 156190.
✉ Bateup & Floor: co-corresponding authors
- 2 Richardson, C. D., Kazane, K. R., Feng, S. J., Bray, N. L., Schaefer, A. J., Floor, S. N., & Corn, J. (2017). Crispr-cas9 genome editing in human cells works via the fanconi anemia pathway. *bioRxiv*, 136028.

JOURNAL ARTICLES

- 1 Staahl, B. T., Benekareddy, M., Coulon-Bainier, C., Banfal, A. A., Floor, S. N., Sabo, J. K., ... Doudna, J. A. (2017). Efficient genome editing in the mouse brain by local delivery of engineered cas9 ribonucleoprotein complexes. *Nature Biotechnology*, 35(5), 431-434.
- 2 Floor, S. N., Barkovich, K. J., Condon, K. J., Shokat, K. M., & Doudna, J. A. (2016). Analog sensitive chemical inhibition of the dead-box protein ddx3. *Protein Science*, 25(3), 638-649.
👤+ Floor & Barkovich: co-first authors
- 3 Floor, S. N., Condon, K. J., Sharma, D., Jankowsky, E., & Doudna, J. A. (2016). Autoinhibitory interdomain interactions and subfamily-specific extensions redefine the catalytic core of the human dead-box protein ddx3. *Journal of Biological Chemistry*, 291(5), 2412-2421.
» Selected as a "Highlight of 2016" by the JBC editors
- 4 Floor, S. N. & Doudna, J. A. (2016). Tunable protein synthesis by transcript isoforms in human cells. *Elife*, 5, e10921.

✉ Floor & Doudna: co-corresponding authors

- 5 Iwasaki, S., **Floor, S. N.**, & Ingolia, N. T. (2016). Rocaglates convert dead-box protein eif4a into a sequence-selective translational repressor. *Nature*, 534(7608), 558–561.
- 6 Oh, S., Flynn, R. A., **Floor, S. N.**, Purzner, J., Martin, L., Do, B. T., ... Li, Y. et al. (2016). Medulloblastoma-associated ddx3 variant selectively alters the translational response to stress. *Oncotarget*, 7(19), 28169.
👥 Oh & Flynn: co-first authors
- 7 Aglietti, R. A., **Floor, S. N.**, McClendon, C. L., Jacobson, M. P., & Gross, J. D. (2013). Active site conformational dynamics are coupled to catalysis in the mrna decapping enzyme dcp2. *Structure*, 21(9), 1571–1580.
👥 Aglietti & Floor: co-first authors
- 8 **Floor, S. N.**, Borja, M. S., & Gross, J. D. (2012). Interdomain dynamics and coactivation of the mrna decapping enzyme dcp2 are mediated by a gatekeeper tryptophan. *Proceedings of the National Academy of Sciences*, 109(8), 2872–2877.
- 9 **Floor, S. N.**, Jones, B. N., Hernandez, G. A., & Gross, J. D. (2010). A split active site couples cap recognition by dcp2 to activation. *Nature structural & molecular biology*, 17(9), 1096–1101.
- 10 Deshmukh, M. V., Jones, B. N., Quang-Dang, D.-U., Flinders, J., **Floor, S. N.**, Kim, C., ... Gross, J. D. (2008). Mrna decapping is promoted by an rna-binding channel in dcp2. *Molecular cell*, 29(3), 324–336.
- 11 Lampe, J. N., **Floor, S. N.**, Gross, J. D., Nishida, C. R., Jiang, Y., Trnka, M. J., & Ortiz de Montellano, P. R. (2008). Ligand-induced conformational heterogeneity of cytochrome p450 cyp119 identified by 2d nmr spectroscopy with the unnatural amino acid 13c-p-methoxyphenylalanine. *Journal of the American Chemical Society*, 130(48), 16168–16169.
- 12 Neher, S. B., Bradshaw, N., **Floor, S. N.**, Gross, J. D., & Walter, P. (2008). Srp rna controls a conformational switch regulating the srp-srp receptor interaction. *Nature structural & molecular biology*, 15(9), 916–923.
- 13 **Floor, S. N.**, Melott, A. L., & Motl, P. M. (2004). Simulated versus observed cluster eccentricity evolution. *The Astrophysical Journal*, 611(1), 153.
- 14 **Floor, S. N.**, Melott, A. L., Miller, C. J., & Bryan, G. L. (2003). Eccentricity evolution in simulated galaxy clusters. *The Astrophysical Journal*, 591(2), 741.
- 15 Clark, S., Hackman, G., Janssens, R., Clark, R., Fallon, P., **Floor, S. N.**, ... Sanders, S. et al. (2001). Empirical investigation of extreme single-particle behavior of nuclear quadrupole moments in highly collective a 150 superdeformed bands. *Physical review letters*, 87(17), 172503.

PREVIEWS AND COMMENTARIES

- 1 **Floor, S. N.** & Doudna, J. A. (2015). Get in line: competition for newly minted retrotransposon proteins at the ribosome. *Molecular cell*, 60(5), 712–714.
- 2 **Floor, S. N.**, Jones, B. N., & Gross, J. D. (2008). Control of mrna decapping by dcp2: an open and shut case? *RNA biology*, 5(4), 189–192.

SELECT ORAL PRESENTATIONS

- 2017 Keystone Protein–RNA Interactions
2016 ASCB Post-Transcriptional Gene Regulation Session
ASCB ASAPbio (Preprint Info Session; Subgroup K)

SELECT ORAL PRESENTATIONS (CONTINUED)

- Illumina Sequencing Seminar (Invited)
ENCODE Users Meeting
- 2015 The Helen Hay Whitney Fellows Meeting
Eukaryotic mRNA Processing (Cold Spring Harbor)
NIGMS National Centers for Systems Biology Meeting
- 2010 UCSF BBC Joint Retreat (Selected Student for Biophysics Program)
RNA 2010: 15th Annual RNA Society Meeting
- 2009 UCSF Biophysics and Bioinformatics Annual Retreat
- 2004 The Mid-America Regional Astrophysics Conference #35
- 2003 Multiwavelength Cosmology, Mykonos, Greece
Tartu Observatory, Tartu, Estonia
Theoretical Astrophysics Center, Copenhagen, Denmark

SELECT POSTER PRESENTATIONS

- 2016 Gordon Conference: Post-Transcriptional Gene Regulation
- 2015 FASEB Helicases and Nucleic-Acid Based Machines
- 2014 Cell Symposia: Regulatory RNAs
Gordon Conference: Post-Transcriptional Gene Regulation
- 2013 Howard Hughes Medical Institute Science Meeting
- 2012 Cold Spring Harbor Lab Meeting on Translational Control
Experimental Biology (ASBMB) 2012
- 2009 RNA 2009: 14th Annual RNA Society Meeting
Experimental Nuclear Magnetic Resonance Conference #50
- 2008 Experimental Nuclear Magnetic Resonance Conference #49
- 2003 The American Astronomical Society Meeting #201

MENTORING

<u>Who</u>	<u>When</u>	<u>Position</u>	<u>Next position</u>
Malvika Tejura	2017 –	UC Berkeley Undergrad	current
Eelco Meerdink	2016 – 2017	Masters Student (Utrecht University)	applying to PhD programs
Axel Schäfer	2015 – 2016	Masters Student (LMU Munich)	applying to PhD programs
Hera Maryam	2013	UC Berkeley Undergrad	Med. Student, Wash. U., St. Louis
Kendall Condon	2012 – 2015	UC Berkeley Undergrad	PhD student, MIT
Gail Hernandez	2011	UCSF SRTP Student	PhD student, Univ. of Chicago
Anna Hurtle	2007	UCSF SRTP Student	PhD student, UW, Madison

TEACHING EXPERIENCE

- 2010 Teaching Assistant, Chem241: Statistical Mechanics
UCSF iPQB Bootcamp Lecturer
- 2009 UCSF iPQB Bootcamp Organizer and Lecturer

TEACHING EXPERIENCE (CONTINUED)

- 2008 UCSF iPQB Bootcamp Organizer and Lecturer
- 2007 UCSF Biophysics Bootcamp Mathematics Organizer and Lecturer
Teaching Assistant, PC231: Principles of NMR Spectroscopy
Teaching Assistant, BMI206: Principles, Theory & Computation
- 2006 UCSF Biophysics Bootcamp Mathematics Organizer and Lecturer

SERVICE TO PROFESSIONAL PUBLICATIONS

Affiliate, bioRxiv

Reviewer for: Nucleic Acids Research, F1000Research, Scientific Reports

UNIVERSITY SERVICE

- 2008 – 2009 Student Representative, UCSF iPQB Admissions Committee
- 2007 – 2009 Organizer, UCSF Biophysics Bootcamp
- 2007 – 2010 Member, QB3 Student Seminar Series Organizing Committee
- 2007 Member, UCSF Biophysics Curriculum Committee

PUBLIC SERVICE

- 2017 – Ambassador, ASAPbio Preprint Initiative
- 2015 – 2016 Remote Advisor, Science Fair Projects, Beaumont Middle School, Lexington, KY (Three students)
Advisor, High School Senior Biotechnology Projects, Los Altos High School (Two students)
- 2014 Contributing Editor, Science in the Classroom (<http://scienceintheclassroom.org/>)
- 2010 – 2013 Docent, California Academy of Sciences
- 2010 UCSF Science and Health Education Partnership (Gateway High School)
- 2008 UCSF Science and Health Education Partnership (Academy of Art & Science High School.)
- 2007 UCSF Science and Health Education Partnership (Galileo High School)
- 2006 UCSF Science and Health Education Partnership (Edison Charter Elementary)