

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

- 2018 NIH Director's New Innovator Award
- 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 Lennox, Ashley L. et al. (2018). “Pathogenic DDX3X mutations impair RNA metabolism and neurogenesis during fetal cortical development.” In: *bioRxiv*, p. 317974.

JOURNAL ARTICLES

- 1 Richardson, Chris D., Katelynn R. Kazane, Sharon J. Feng, Elena Zelin, Nicholas L. Bray, Axel J. Schäfer, **Stephen N Floor**, and Jacob E. Corn (2018). “CRISPR–Cas9 genome editing in human cells occurs via the Fanconi anemia pathway.” In: *Nature Genetics* 50.8, pp. 1132–1139. ISSN: 1546-1718. DOI: 10.1038/s41588-018-0174-0.
- 2 Blair, John D, Dirk Hockemeyer, Jennifer A Doudna, Helen S Bateup, and **Stephen N Floor** (2017). “Widespread translational remodeling during human neuronal differentiation.” In: *Cell Reports* 21.7, pp. 2005–2016.
✉ Bateup & Floor: co-corresponding authors
- 3 Staahl, Brett T, Madhurima Benekareddy, Claire Coulon-Bainier, Ashwin A Banfal, **Stephen N Floor**, Jennifer K Sabo, Cole Urnes, Gabriela Acevedo Munares, Anirvan Ghosh, and Jennifer A Doudna (2017). “Efficient genome editing in the mouse brain by local delivery of engineered Cas9 ribonucleoprotein complexes.” In: *Nature Biotechnology* 35.5, pp. 431–434.
- 4 **Floor, Stephen N**, Krister J Barkovich, Kendall J Condon, Kevan M Shokat, and Jennifer A Doudna (2016). “Analog sensitive chemical inhibition of the DEAD-box protein DDX3.” In: *Protein Science* 25.3, pp. 638–649.
👤+ Floor & Barkovich: co-first authors

- 5 **Floor, Stephen N**, Kendall J Condon, Deepak Sharma, Eckhard Jankowsky, and Jennifer A Doudna (2016). “Autoinhibitory interdomain interactions and subfamily-specific extensions redefine the catalytic core of the human DEAD-box protein DDX3.” In: *Journal of Biological Chemistry* 291.5, pp. 2412–2421.
» Selected as a “Highlight of 2016” by the JBC editors
- 6 **Floor, Stephen N** and Jennifer A Doudna (2016). “Tunable protein synthesis by transcript isoforms in human cells.” In: *Elife* 5, e10921.
☑ Floor & Doudna: co-corresponding authors
- 7 Iwasaki, Shintaro, **Stephen N Floor**, and Nicholas T Ingolia (2016). “Rocaglates convert DEAD-box protein eIF4A into a sequence-selective translational repressor.” In: *Nature* 534.7608, pp. 558–561.
- 8 Oh, Sekyung, Ryan A Flynn, **Stephen N Floor**, James Purzner, Lance Martin, Brian T Do, Simone Schubert, Dedeepya Vaka, Sorana Morrissy, Yisu Li, et al. (2016). “Medulloblastoma-associated DDX3 variant selectively alters the translational response to stress.” In: *Oncotarget* 7.19, p. 28169.
👥+ Oh & Flynn: co-first authors
- 9 Aglietti, Robin A, **Stephen N Floor**, Chris L McClendon, Matthew P Jacobson, and John D Gross (2013). “Active site conformational dynamics are coupled to catalysis in the mRNA decapping enzyme Dcp2.” In: *Structure* 21.9, pp. 1571–1580.
👥+ Aglietti & Floor: co-first authors
- 10 **Floor, Stephen N**, Mark S Borja, and John D Gross (2012). “Interdomain dynamics and coactivation of the mRNA decapping enzyme Dcp2 are mediated by a gatekeeper tryptophan.” In: *Proceedings of the National Academy of Sciences* 109.8, pp. 2872–2877.
- 11 **Floor, Stephen N**, Brittnee N Jones, Gail A Hernandez, and John D Gross (2010). “A split active site couples cap recognition by Dcp2 to activation.” In: *Nature structural & molecular biology* 17.99, pp. 1096–1101.
- 12 Deshmukh, Mandar V, Brittnee N Jones, Duc-Uy Quang-Dang, Jeremy Flinders, **Stephen N Floor**, Candice Kim, Jacek Jemielity, Marcin Kalek, Edward Darzynkiewicz, and John D Gross (2008). “mRNA decapping is promoted by an RNA-binding channel in Dcp2.” In: *Molecular cell* 29.3, pp. 324–336.
- 13 Lampe, Jed N, **Stephen N Floor**, John D Gross, Clinton R Nishida, Yongying Jiang, Michael J Trnka, and Paul R Ortiz de Montellano (2008). “Ligand-induced conformational heterogeneity of cytochrome P450 CYP119 identified by 2D NMR spectroscopy with the unnatural amino acid 13C-p-methoxyphenylalanine.” In: *Journal of the American Chemical Society* 130.48, pp. 16168–16169.
- 14 Neher, Saskia B, Niels Bradshaw, **Stephen N Floor**, John D Gross, and Peter Walter (2008). “SRP RNA controls a conformational switch regulating the SRP–SRP receptor interaction.” In: *Nature structural & molecular biology* 15.9, pp. 916–923.
- 15 **Floor, Stephen N**, Adrian L Melott, and Patrick M Motl (2004). “Simulated versus observed cluster eccentricity evolution.” In: *The Astrophysical Journal* 611.1, p. 153.
- 16 **Floor, Stephen N**, Adrian L Melott, Christopher J Miller, and Greg L Bryan (2003). “Eccentricity evolution in simulated galaxy clusters.” In: *The Astrophysical Journal* 591.2, p. 741.
- 17 Clark, ST, Gene Hackman, RVF Janssens, RM Clark, P Fallon, **Stephen N Floor**, GJ Lane, AO Macchiavelli, J Norris, SJ Sanders, et al. (2001). “Empirical Investigation of Extreme Single-Particle Behavior of Nuclear Quadrupole Moments in Highly Collective A 150 Superdeformed Bands.” In: *Physical review letters* 87.17, p. 172503.

PREVIEWS AND COMMENTARIES

- 1 Thai, Bao and **Stephen N Floor** (2018). “Move Over, Genomes: Here Comes Transcriptome Engineering.” In: *The CRISPR Journal* 1.2, pp. 126–127.

- 2 Venkataramanan, Srivats and **Stephen N Floor** (2018). “The Traffic Jam: Polyamine Prevalence Pauses Protein Production.” In: *Molecular Cell* 70.2, pp. 191–192. ISSN: 1097-2765.
- 3 **Floor, Stephen N** and Jennifer A Doudna (2015). “Get in LINE: Competition for newly minted retrotransposon proteins at the ribosome.” In: *Molecular cell* 60.5, pp. 712–714.
- 4 **Floor, Stephen N**, Brittnee N Jones, and John D Gross (2008). “Control of mRNA decapping by Dcp2: An open and shut case?” In: *RNA biology* 5.4, pp. 189–192.

ORAL PRESENTATIONS

- 2018 Gordon Research Conference on Post-Transcriptional Gene Regulation
 RNA 2018: 23rd Annual RNA Society Meeting
 Stanford University Frontiers in Biology Seminar
 Molecular Medicine Tri-Conference
 Featured Young Investigator: UC Irvine RNA Symposium
 Innovative Genomics Institute, UC Berkeley
- 2017 Eukaryotic mRNA Processing (Cold Spring Harbor)
 Keystone Protein–RNA Interactions
- 2016 ASCB Post-Transcriptional Gene Regulation Session
 ASCB ASAPbio (Preprint Info Session; Subgroup K)
 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
- 2003 Multiwavelength Cosmology, Mykonos, Greece
 Tartu Observatory, Tartu, Estonia
 Theoretical Astrophysics Center, Copenhagen, Denmark

UNIVERSITY SERVICE

- 2018 – UCSF School of Dentistry Technology Governance Committee
- 2018 Faculty Presenter, UCSF Summer Research Training Program
- 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

SERVICE TO PROFESSIONAL PUBLICATIONS

Editorial Board Member, The CRISPR Journal
 Affiliate, bioRxiv

SERVICE TO PROFESSIONAL PUBLICATIONS (CONTINUED)

Reviewer for: Cell, eLife, RNA, Nucleic Acids Research, Cell Reports, Molecular and Cellular Biology, F1000Research, Scientific Reports, others

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)

TEACHING EXPERIENCE

- 2017 Journal Club Advisor, BMS 260
- 2010 Teaching Assistant, Chem241: Statistical Mechanics
UCSF iPQB Bootcamp Lecturer
- 2009 UCSF iPQB Bootcamp Organizer and Lecturer
- 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

MENTORING

<u>Who</u>	<u>When</u>	<u>Position</u>	<u>Next position</u>
Luisa Arake de Tacca	2018 –	Joint Grad Student with Jamie Cate	still in lab
Yewande Alabi	2018 –	BMS Rotation Student	rotations
Lorenzo Calviello	2018 –	Postdoc	still in lab
Katie Blackwell	2018	UCSF SRTP Student	back to college
Srivats Venkataramanan	2018 –	Postdoc	still in lab
Kevin Wilkins	2018	BMS Graduate Student	still in lab
Irene Chen	2017	BMS Rotation Student	rotating
Bao Thai	2017 –	Technician	still in lab
Malvika Tejura	2017 –	UC Berkeley Undergrad	still in lab
Eelco Meerdink	2016 – 2017	Masters Student (Utrecht University)	applying to PhD programs
Axel Schäfer	2015 – 2016	Masters Student (LMU Munich)	PhD student, Uni Mainz
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