

Stephen Nicholas Floor

floor@berkeley.edu

HHMI Fellow of the
Helen Hay Whitney Foundation

Advisor: Jennifer Doudna

c/o Doudna Lab
731 Stanley Hall, MS # 3220
University of California
Berkeley, CA 94720-3220
(785) 393-1620

EDUCATION

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Ph.D., Biophysics September 2011 Advisor: JD Gross

UNIVERSITY OF KANSAS

B.S., Physics May 2005 GPA 3.78
B.S., Computer Science May 2005

HONORS

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

RESEARCH

Postdoctoral Research

9/11-Present
University of California, Berkeley
Dr. Jennifer Doudna (advisor)

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

Ph. D. Dissertation

8/05-9/11
University of California, San Francisco
Biophysics Graduate Group
Dr. John Gross (advisor)

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

RESEARCH (CONTINUED)

Undergraduate Research

6/04-8/04

University of Michigan, Ann Arbor, MI
Physics Department

Dr. August Evrard (advisor)

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

6/02-6/04

University of Kansas, Lawrence, KS
Physics Department

Dr. Adrian Melott (advisor)

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

Undergraduate Research

2/00-8/01

University of Kansas, Lawrence, KS
Physics Department

Dr. Greg Hackman (advisor)

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

PUBLICATIONS (CLICK FOR GOOGLE SCHOLAR)

14. Shintaro Iwasaki, [Stephen N. Floor](#), and Nicholas T. Ingolia. “Rocaglates convert DEAD-box protein eIF4A into a sequence-selective translational repressor.” *Nature* **534**, 558 (2016) DOI:10.1038/nature17978.
13. S. Oh†, R. Flynn†, [S.N. Floor](#), J. Purzner, L. Martin, B. Do, S. Schubert, D. Vaka, S. Morrissy, Y. Li, M. Kool, V. Hovestadt, D. Jones, P. Northcott, T. Risch, H-J. Warnatz, M-L. Yaspo, C. Adams, R. Leib, M. Breese, M. Marra, D. Malkin, P. Lichter, J. Doudna, S. Pfister, M. Taylor, H. Chang and Y-J. Cho. “Medulloblastoma-associated DDX3 variant selectively alters the translational response to stress.” *Oncotarget* (2016). DOI:10.18632/oncotarget.8612
† Equal contributions
12. [Stephen N. Floor](#)* and Jennifer A. Doudna*. “Tunable protein synthesis by transcript isoforms in human cells.” *eLife* **5**, e10921 (2016). DOI:10.7554/eLife.10921 (bioRxiv preprint DOI:10.1101/035188). * Corresponding author
11. [Stephen N. Floor](#)†, Krister J. Barkovich†, Kendall J. Condon, Kevan M. Shokat and Jennifer A. Doudna. “Analog sensitive chemical inhibition of the DEAD-box protein DDX3.” *Protein Science* **25**, 638 (2015). DOI:10.1002/pro.2857 † Equal contributions
10. [Stephen N. Floor](#), Kendall J. Condon, Deepak Sharma, Eckhard Jankowsky and Jennifer A. Doudna. “Autoinhibitory Interdomain Interactions and Subfamily-Specific Extensions Redefine the Catalytic Core of the Human DEAD-box Protein DDX3.” *J. Biol. Chem.* **291**, 2412 (ePub 2015) (print 2016).

PUBLICATIONS (CONTINUED)

9. Robin A. Aglietti†, Stephen N. Floor†, Chris L. McClendon, Matthew P. Jacobson, and John D. Gross. “Active Site Conformational Dynamics Are Coupled to Catalysis in the mRNA Decapping Enzyme Dcp2.” *Structure* **21**, 1571 (2013). † Equal contributions
8. Stephen N. Floor, Mark S. Borja, and John D. Gross. “Interdomain dynamics and coactivation of the mRNA decapping enzyme Dcp2 are mediated by a gatekeeper tryptophan.” *PNAS*, **109**, 2872 (2012). DOI: 10.1073/pnas.1113620109
7. Stephen N. Floor, B.N. Jones, G.A. Hernandez and J.D. Gross. “A split active site couples cap recognition by Dcp2 to activation.” *Nature Structural and Molecular Biology* **17**, 1096 (2010). DOI: 10.1038/nsmb.1879
6. J.N. Lampe, S.N. Floor, J.D. Gross, C.R. Nishida, Y. Jiang, M.J. Trnka, and P.R. Ortiz de Montellano. “Ligand-Induced Conformational Heterogeneity of Cytochrome P450 CYP119 Identified by 2D NMR Spectroscopy with the Unnatural Amino Acid ¹³C-*p*-Methoxyphenylalanine.” *J. Am. Chem. Soc.* **130**, 16168 (2008). DOI: 10.1021/ja8071463
5. S.B. Neher, N. Bradshaw, S.N. Floor, J.D. Gross, and P. Walter. “SRP RNA controls a conformational switch that regulates the interaction of the signal recognition particle and its receptor.” *Nature Structural and Molecular Biology* **15**, 916 (2008). DOI: 10.1038/nsmb.1467
4. M.V. Deshmukh, B.N. Jones, D. Quang-Dang, J.C. Flinders, S.N. Floor, J. Jemielity, M. Kalek, E. Darzynkiewicz and J.D. Gross. “mRNA Decapping is Promoted by an RNA-Binding Channel in Dcp2.” *Molecular Cell* **29**, 324 (2008). DOI: 10.1016/j.molcel.2007.11.027
3. Stephen N. Floor, Adrian L. Melott, and Patrick M. Motl. “Simulated Versus Observed Cluster Eccentricity Evolution.” *The Astrophysical Journal* **611**, 153 (2004). DOI: 10.1086/422090
2. Stephen N. Floor, Adrian L. Melott, Christopher Miller, and Greg Bryan. “Eccentricity Evolution in Simulated Galaxy Clusters.” *The Astrophysical Journal* **591**, 741 (2003). DOI: 10.1086/375493
1. S.T. Clark, G. Hackman, R.V.F. Janssens, R. M. Clark, P. Fallon, S.N. Floor, G. J. Lane, A. O. Macchiavelli, J. Norris, S. J. Sanders, and C. E. Svensson. “Empirical Investigation of Extreme Single-Particle Behavior of Nuclear Quadrupole Moments in Highly Collective A ~ 150 Superdeformed Bands.” *Physical Review Letters* **87**, 172503 (2001). DOI: 10.1103/PhysRevLett.87.172503

PREVIEWS AND COMMENTARIES

2. Stephen N. Floor and Jennifer A. Doudna. "Get in LINE: competition for newly minted retrotransposon proteins at the ribosome." *Mol. Cell* **60**, 5 (2015).
1. Stephen N. Floor, Brittnee N. Jones, and John D. Gross. "Control of mRNA Decapping by Dcp2: an open and shut case?" *RNA Biology* **5**, 189 (2008). PMID: 18971632

SELECT ORAL PRESENTATIONS

ASCB Post-Transcriptional Gene Regulation Session	Dec. 2016
ASCB ASAPbio (Subgroup K)	Dec. 2016
Illumina Sequencing Seminar (Invited)	June 2016
ENCODE Users Meeting	June 2016
The Helen Hay Whitney Fellows Meeting	Nov. 2015
Eukaryotic mRNA Processing (Cold Spring Harbor)	August 2015
NIGMS National Centers for Systems Biology Meeting	July 2015
UCSF BBC Joint Retreat (Selected Student for Biophysics Program)	Nov. 2010
RNA 2010: 15 th Annual RNA Society Meeting	June 2010
UCSF Biophysics and Bioinformatics Annual Retreat	Sept. 2009
The Mid-America Regional Astrophysics Conference #35	April 2004
Multiwavelength Cosmology, Mykonos, Greece	June 2003
Tartu Observatory, Tartu, Estonia	June 2003
Theoretical Astrophysics Center, Copenhagen, Denmark	June 2003
The Mid-America Regional Astrophysics Conference #34	April 2003

SELECT POSTER PRESENTATIONS

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

MENTORING

Master's Student Advisor (Hubrecht Institute)	Sep. 2016-present
Master's Student Advisor (LMU Munich student)	Dec. 2015-Dec. 2016
Undergraduate Mentor (UCB Biochemistry student) - currently an MIT graduate student	Jan. 2012-May 2015
Undergraduate Mentor (UCB Biochemistry student) - currently a WUSTL medical student	Feb. 2013-Aug. 2013
Rotation Advisor (UCB MCB graduate student)	Feb. 2012-May 2012

MENTORING (CONTINUED)

UCSF Summer Research Training Program Student Mentor	Jan.-April 2011
Rotation Advisor (UCSF Biophysics graduate student)	June-Aug. 2008
Rotation Advisor (UCSF Chemical Biology graduate student)	April-June 2008
Rotation Advisor (UCSF Tetrad graduate student)	Jan.-April 2008
UCSF Summer Research Training Program Student Mentor	June-Aug. 2007

TEACHING EXPERIENCE

Teaching Assistant, Chem241: Statistical Mechanics	Sept.-Nov. 2010
UCSF iPQB Bootcamp Lecturer	September 2010
UCSF iPQB Bootcamp Organizer and Lecturer	August 2009
At UCSF we gave a preparatory “bootcamp” to incoming biophysics, bioinformatics, and chemical biology students to acquaint them with relevant mathematics, physics, computer programming, and biology. I designed the curriculum for the 2007-2009 sessions.	
UCSF iPQB Bootcamp Organizer and Lecturer	August 2008
UCSF Biophysics Bootcamp Mathematics Organizer and Lecturer	August 2007
Teaching Assistant, PC231: Principles of NMR Spectroscopy	Mar.-June 2007
Teaching Assistant, BMI206: Principles, Theory & Computation	Jan.-Mar. 2007
UCSF Biophysics Bootcamp Mathematics Organizer and Lecturer	August 2006

SERVICE TO PROFESSIONAL PUBLICATIONS

Reviewer, <i>Scientific Reports</i>	2016-present
Reviewer, <i>F1000Research</i>	2015-present

UNIVERSITY SERVICE

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

PUBLIC SERVICE

Advisor, High School Senior Biotechnology Projects, Los Altos High School (Two students)	2015-2016
Contributing Editor, <i>Science in the Classroom</i> (http://scienceintheclassroom.org/)	2014
Docent, California Academy of Sciences	Oct. 2010-Feb. 2013
UCSF Science and Health Education Partnership (Gateway High School)	Jan.-May 2010
UCSF Science and Health Education Partnership (Academy of Art & Science High School.)	Jan.-May 2008
UCSF Science and Health Education Partnership (Galileo High School)	Jan.-May 2007
UCSF Science and Health Education Partnership (Edison Charter Elementary)	Jan.-May 2006