

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
Tetrad 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 Jiang, Xuan, Amit Prabhakar, Stephanie M. Van der Voorn, Prajakta Ghatpande, Barbara Celona, Srivats Venkataramanan, Lorenzo Calviello, Chuwen Lin, Wanpeng Wang, Brian L. Black, **Stephen N Floor**, Giorgio Lagna, and Akiko Hata (2020). "Control of ribosomal protein synthesis by Microprocessor complex." In: *bioRxiv*. DOI: 10.1101/2020.04.24.060236.
- 2 Venkataramanan, Srivats, Lorenzo Calviello, Kevin Wilkins, and **Stephen N Floor** (2020). "DDX3X and DDX3Y are redundant in protein synthesis." In: *bioRxiv*. DOI: 10.1101/2020.09.30.319376.
- 3 Calviello, Lorenzo, Srivats Venkataramanan, Karol J. Rogowski, Emanuel Wyler, Malvika Tejura, Bao Thai, Jacek Krol, Witold Filipowicz, Markus Landthaler, and **Stephen N Floor** (2019). "DDX3 depletion selectively represses translation of structured mRNAs." In: *bioRxiv*. DOI: 10.1101/589218.
 Calviello & Venkataramanan: co-first authors
 Landthaler & Floor: co-corresponding authors
- 4 Asundi, Aarati, Srivats Venkataramanan, Gina Caldas Cuellar, Atsushi Suzuki, **Stephen N Floor**, Andrei Goga, and Noelle L'Etoile (2018). "The nuclear RNAi factor, NRDE2, prevents the accumulation of DNA damage during mitosis in stressful growth conditions." In: *bioRxiv*. DOI: 10.1101/428250.

JOURNAL ARTICLES

- 1 Chen, Mingming, Miwako Asanuma, Mari Takahashi, Yuichi Shichino, Mari Mito, Koichi Fujiwara, Hironori Saito, **Stephen N Floor**, Nicholas T. Ingolia, Mikiko Sodeoka, Kosuke Dodo, Takuhiro Ito, and Shintaro Iwasaki (2020). "Dual targeting of DDX3 and eIF4A by the translation inhibitor rocaglamide A." In: *Cell Chemical Biology*. ISSN: 2451-9448. DOI: 10.1016/j.chembiol.2020.11.008.

- 2 Gordon, David E. et al. (2020). “A SARS-CoV-2 protein interaction map reveals targets for drug repurposing.” In: *Nature* 583.7816, pp. 459–468. DOI: 10.1038/s41586-020-2286-9.
- 3 Lennox, Ashley L. et al. (2020). “Pathogenic DDX3X Mutations Impair RNA Metabolism and Neurogenesis during Fetal Cortical Development.” In: *Neuron* 106.3, 404–420.e8. DOI: <https://doi.org/10.1016/j.neuron.2020.01.042>.
- 4 Arake de Tacca, Luisa M., Mia C. Pulos-Holmes, **Stephen N Floor**, and Jamie H. D. Cate (2019). “PTBP1 mRNA isoforms and regulation of their translation.” *eng.* In: *RNA* 25, pp. 1324–1336. DOI: 10.1261/rna.070193.118.
- 5 Iwasaki, Shintaro, Wakana Iwasaki, Mari Takahashi, Ayako Sakamoto, Chiduru Watanabe, Yuichi Shichino, **Stephen N Floor**, Koichi Fujiwara, Mari Mito, Kosuke Dodo, Mikiko Sodeoka, Hiroaki Imataka, Teruki Honma, Kaori Fukuzawa, Takuhiro Ito, and Nicholas Ingolia (2018). “The Translation Inhibitor Rocaglamide Targets a Bimolecular Cavity between eIF4A and Polypurine RNA.” In: *Molecular Cell* 73.4, pp. 738–748. DOI: 10.1016/j.molcel.2018.11.026.
- 6 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. DOI: 10.1038/s41588-018-0174-0.
- 7 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
- 8 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.
- 9 **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
- 10 **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
- 11 **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
- 12 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.
- 13 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
- 14 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

- 15 **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.
- 16 **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.
- 17 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.
- 18 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.
- 19 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.
- 20 **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.
- 21 **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.
- 22 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.
- 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

2019 Columbia University
 Carnegie Institute
 Moderna
 University of Wisconsin, Madison
 Engineering Biology for Medicine (Duke University/Nature Biomedical Engineering)
 Synthego Genome Engineering Summit
 UC Berkeley Haas Business School Executive Education Program

ORAL PRESENTATIONS (CONTINUED)

- 2018 BC2 Seminar Series, Biozentrum (Basel, Switzerland)
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

- 2019 – Member, UCSF DP5 Internal Selection Committee
Co-chair, UCSF Biomedical Sciences Retreat
- 2018 – UCSF School of Dentistry Technology Governance Committee
Member, Biomedical Sciences Admissions 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

Reviewer for: Cell, eLife, RNA, Nucleic Acids Research, Cell Reports, Cell Chemical Biology, Nature Methods, Genome Research, Developmental Cell, Molecular and Cellular Biology, F1000Research, Scientific Reports, many 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)

DIVERSITY, EQUITY, AND INCLUSION SERVICE

- 2020 – BMS Graduate Program Diversity Lead
UCSF IMSD Program Faculty Mentor
- 2020 UCSF Graduate Division Faculty-Dean's Office DEI Task Force
UCSF School of Dentistry DEI Communication Task Force
- 2019 QBC Retreat Diversity Session Organizer
BMS Retreat Diversity Session Organizer
- 2018 – UCSF Scientists4Diversity Faculty Advisor
- 2018 QBC Retreat Diversity Session Organizer

TEACHING EXPERIENCE

- 2020 Tetrad Biological Regulatory Mechanisms (Biochemistry 201A)
iPQB Macromolecular Interactions (Biophysics 204B)
- 2019 Tetrad Macromolecules Discussion Leader
Tetrad Biological Regulatory Mechanisms (Biochemistry 201A)
iPQB Macromolecular Interactions (Biophysics 204B)
- 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>
Ziad Jowhar	2020 –	MSTP Graduate Student	still in lab
Albert Xu	2020 –	MSTP Graduate Student	still in lab
Lesly Montaña Zolano	2020	Biotech Partners Intern	returned to high school
Nathan Cho	2020	BMS Rotation Student	joined Yadong Huang's lab
Oscar Yip	2020	Tetrad Rotation Student	joined Sophie Dumont's lab
Peter Bowman-Davis	2019 –	Justin-Siena High School	returned to high school
Jocelyne Fadiga	2019	Tetrad Rotation Student	joined Daniele Canzio's lab
Laurel Estes	2019	Bioinformatics Rotation Student	joined Goodarzi and Ramani labs
José Liboy Lugo	2019 –	Tetrad Graduate Student	still in lab
Ann Deng	2019 –	Technician	still in lab
Emily Ehsan	2019	Summer Undergrad (Cornell)	back to college
Yizhu Lin	2018 –	Postdoc	still in lab
Jesslyn Park	2018	Tetrad Rotation Student	joined Hana El Samad's lab
Niko Eng	2018	BMS Rotation Student	joined Hani Goodarzi's lab
Luisa Arake de Tacca	2018 – 2019	Joint Grad Student with Jamie Cate	RA, Acrogen Biosciences
Yewande Alabi	2018	BMS Rotation Student	joined Abby Buchwalter's lab
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	joined Melanie Ott's lab
Bao Thai	2017 – 2019	Technician	MD/PhD program, U of Arizona
Malvika Tejura	2017 – 2019	Technician	RA, Ultima Genomics
Eelco Meerdink	2016 – 2017	Masters Student (Utrecht University)	PhD student, BIMS Berlin
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