Curriculum Vitæ

Steve Pressé
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Positions

April 2026 -present	**Arizona State University** Director – Biodesign Center for Single Molecule Biophysics
May 2021 -present	**Arizona State University** Professor – Dept. of Physics and School of Molecular Sciences [Affiliate member - ASU Global Security Initiative]
Jan. 2017 -Apr. 2021	**Arizona State University** Associate Professor – Dept. of Physics and School of Molecular Sciences [Affiliate member - ASU Global Security Initiative]
Jan. 2013 -Dec. 2016	**Indiana Univ. - Purdue Univ. Indianapolis** Assistant Professor of Biophysics – Dept. of Physics [Adjunct – Cell & Integrative Physio. (IU School Med.) and Chemistry]

Education

2008 -2012	**University of California San Francisco, San Francisco CA** Postdoctoral fellow, Biophysics (K.A. Dill group)
2003 -2008	**Massachusetts Institute of Technology, Cambridge MA** Ph.D., Chemical Physics (R.J. Silbey group); Thesis title: Role of fluctuations and defects in select condensed matter problems
2000 -2003	**McGill University, Montréal QC** B.Sc., Honors Chemistry, minor German Language

Co-founder

2023	**Saguaro Solutions, now Blue Agave**

Leadership Highlights

- **Scientific and Programmatic Leadership:** Principal Investigator across federal agencies (NIH, NSF, ARO), providing training opportunities and tool development in Bayesian inference, biophysical modeling, and computational imaging. Led the development of scalable, physics-informed statistical methods.

- **Institutional and Interdisciplinary Leadership:** Professor in the Department of Physics and School of Molecular Sciences (SMS) at Arizona State University. Associate director of Research Development in SMS. Served and chaired multiple committees across departments and spearheaded initiatives at the College level (*e.g.*, program development merging Data Science with Natural Sciences). Sustained leadership in cross-disciplinary research efforts across departments at ASU, Mayo clinic, and across the globe.
- **Laboratory and Team Leadership:** Founder and director of an interdisciplinary research group mentoring more than 15 postdoctoral fellows and 10 PhD students to date, many of whom have gone on to independent academic and tenure, industry, and national-lab positions. Emphasis on rigorous quantitative training, reproducible computation, and professional development.
- **Entrepreneurial and Translational Leadership:** Co-founder (2023) of *Saguaro Solutions* (now *Blue Agave*), translating academic advances in data modeling and inference into deployable technologies for scientific and biomedical applications.
- **Educational Leadership:** Co-author of the graduate-level textbook *Data Modeling for the Sciences* (Cambridge University Press, 2023), accompanied by open-source computational resources and instructional materials.

Textbook

I. Sgouralis*, **S. Pressé***, "Data Modeling for the Sciences: applications, basics, computations", Cambridge Univ. Press, 2023 (available on Amazon, solution manual available through Cambridge Univ. Press), Google colab available on labpresse.com/textbook/

Publications (* denotes corresponding author, † denotes undergraduate author)

In review or pre-print (bioRxiv/arXiv)

A. Azzam, M. Ahmed, N. Ramesh, S. B. Ozkan, **S. Pressé***, P. Pessoa*, "Forecast distributions, not trajectories: Rethinking time series forecasting benchmarks for stochastic dynamics", NeurIPS/submitted (2026)

C. Lu, S. Tashev, P.Pessoa, R. Kruithoff, D. Shepherd*, **S. Pressé***, "Stochastic colonization and host-to-host transmission shape gut bacterial variability", bioRxiv/submitted (2026)

P. Pessoa, **S. Pressé**, S.B. Ozkan*, "Allostery beyond amplification: Temporal regulation of signaling information", bioRxiv (2026)

S. Huang, A. Saurabh, **S. Pressé***, "Revisiting the scale dependence of the Reynolds number in correlated fluctuating fluids", arXiv (2026)

R. Kruithoff, M.D. Spendlove, S.J. Sheppard, M.C. Schweiger, P. Pessoa, M. Abbasi, **S. Pressé**, B.B. Bartelle, D.P. Shepherd*, "GPU-accelerated, self-optimizing processing for 3D multiplexed iterative RNA-FISH experiments", bioRxiv (2025)

Z.H. Hendrix, L.W.Q. Xu, P. Rez, A. Brandi, **S. Pressé**, M.J. Treacy, R.C. Balling, M. Georgescu*, "Evidence for greenhouse gas forcing from dry-season temperature records from rural locations in Arizona", in review at **Env. Res. Lett.** (2025)

S. Huang, A. Saurabh, **S. Pressé***, "Hydrodynamic trapping of tracer particles induced by spatially correlated noise in thermal equilibrium", arXiv/completed first review round at **Phys. Rev. Lett.** (2025)

M. Fazel, R. Hoseini, M. Mahmoodi, L.W.Q. Xu, A. Saurabh, Z. Kilic, K.L. Scrudders, D. Shepherd, S.T. Low-Nam, F. Huang, **S. Pressé***, "Simultaneous particle tracking, phase retrieval and point spread function reconstruction", bioRxiv/to be submitted (2025)

L.W.Q. Xu, N. Ronceray, M.F. Mitsioni, T. Brossy, D. Štastný, J.C. Spendlove, R. Šachl, M. Hof, A. Radenović, **S. Pressé***, "Particle tracking for quantized intensities accelerated with parallelism", bioRxiv/in review at **Nat. Comm.** (2025)

Z.H. Hendrix†, L.W.Q. Xu, **S. Pressé***, "How easy is it to learn motion models from widefield fluorescence single particle tracks?", arXiv/completed first review round at **Proc. Natl. Acad. Sc.** (2025)

A. Saurabh, G.B.M. Wisna, M. Schweiger, R. Hariadi, **S. Pressé***, "Bayesian nonparametrics for FRET using realistic integrative detectors", bioRxiv/to be submitted (2025)

L.W.Q. Xu, N. Ronceray, M.F. Mitsioni, T. Brossy, A. Radenovic, **S. Pressé*** , "Single-photon single-particle tracking", bioRxiv/to be submitted (2025)

G.B.M. Wisna, A. Saurabh, R. Sasmal, D. Karna, P. Chopade, **S. Pressé**, R. Hariadi*, "DNA origami-based platform for multi-axial single-molecule force spectroscopy reveals hidden dynamics in Holliday junctions", bioRxiv/invited by editors at **Nat. Nano.** (2025)

Published and accepted (in rank)

Ivan Menendez-Montes, ..Pedro [11th author]..., Steve Pressé [28th author] ..., Hesham Sadek "Mitochondria Interact with Nuclear Pores to Regulate Nuclear Energetic Coupling", accepted **Nature** (2026)

M. Fazel, R. Hoseini, A. Saurabh, L.W.Q. Xu, L. Scipioni, G. Tedeschi, E. Gratton, M.A. Digman, **S. Pressé***, "Highly multiplexed spectral FLIM via physics informed data analysis", accepted **Scientific Reports** (2026)

Z.H. Hendrix†, P.T. Brown, T. Flanagan, D.P. Shepherd, A. Saurabh, **S. Pressé**, "A physically motivated and parallelizable alternative to Richardson-Lucy deconvolution across SNR regimes without iteration cutoffs", accepted **Nat. Comm.** (2026)

P. Pessoa, J.A. Martinez, V. Vandenbroucke, F. Delvigne, **S. Pressé***, "Simulation-based inference captures non-Markovian effects as exemplified in protein production kinetics through cell division", **Proc. Natl. Acad. Sc.**, 123, e2517309123 (2026)

Selected as: Showcase Article

T.L.C. Jensen, A.H. Marcus, **S. Pressé**, S. Ray, N.G. Walter*, "Biomolecular dynamics using optical methods: Theory and experiment", **J. Chem. Phys.**, 164, 070401 (2026)

E.M. López-Alfonzo, A. Saurabh, S. Zarafshan, **S. Pressé**, A. Martin*, "Substrate-interacting pore loops

of two ATPase subunits determine the degradation efficiency of the 26S proteasome", **Nat. Comm.**, 17, 4473 (2026)

M. Schweiger, A. Saurabh, , **S. Pressé***, "A cautious user's guide in applying HMMs to physical systems", **J. Chem. Phys.**, 163, 210901 (2025)

Selected as: Featured Article

P. Pessoa, M. Schweiger, L.W.Q. Xu, T. Manha, A. Saurabh, J.A. Camarena, **S. Pressé***, "Avoiding subtraction and division of stochastic signals using normalizing flows: NFdeconvolve", **iScience**, 28, 113823 (2025)

L.W.Q. Xu, **S. Pressé***, "Perspective: An outlook on fluorescence tracking", **J. Chem. Phys.**, 163, 160901 (2025)

Selected as: Featured Article, also selected for "Scilight"

P. Pessoa, P. Campitelli, D.P. Shepherd, S.B. Ozkan, **S. Pressé*** , "Mamba time series forecasting with uncertainty propagation", **Mach. Learn.: Sci. Technol.**, 6, 035012 (2025)

J.S. Bryan IV, S.A. Tashev, M. Fazel, M. Scheckenbach, P. Tinnefeld, D.P. Herten*, **S. Pressé*** , "Bayesian inference of binding kinetics from fluorescence time series", **J. Phys. Chem. B**, 129, 4670 (2025)

P. Pessoa, C. Lu†, S.A. Tashev, R. Kruithoff, D.P. Shepherd, **S. Pressé*** , "REPOP: bacterial population quantification from plate counts", **eLife**, https://doi.org/10.7554/eLife.107122.1 (2025)

R. Sexton, M. Fazel, M. Schweiger, **S. Pressé**, O. Beckstein* , "Bayesian nonparametric analysis of residence times for protein-lipid interactions in molecular dynamics simulations", **JCTC**, 21, 4203 (2025)

J.S. Bryan IV, P. Pessoa, M. Tavakoli, **S. Pressé***, "Perspectives: Comparison of deep learning segmentation models on biophysical and biomedical data", **Biophys. J.**, 124, 1327 (2025)

L.W.Q. Xu, S. Jazani, Z. Kilic, **S. Pressé***, "Single-molecule reaction-diffusion", **Biophys. J.**, 124, 1643 (2025)

V. Kumar†, J.S. Bryan IV, A. Rojewski, C. Manzo, **S. Pressé***, "DiffMAP-GP: Continuous 2D diffusion maps from particle trajectories without data binning using Gaussian processes", **Biophys. Rep.**, 5, 100194 (2025)

A. Saurabh, P.T. Brown, J.S. Bryan IV, Z.R. Fox, R. Kruithoff, C. Thompson, C. Kural, D.P. Shepherd*, **S. Pressé***, "Approaching maximum resolution in structured illumination microscopy via accurate noise modeling", **npj imaging**, 3,5 (2025)

A. Saurabh, W.Q. Xu, **S. Pressé***, "On the statistical foundation of a recent single molecule FRET benchmark", **Nat. Comm.**, 15, 3627 (2024)

I. Sgouralis, W.Q. Xu, A.P. Jalihal, Z. Kilic, Nils G. Walter, **S. Pressé***, "BNP-Track: A framework for superresolved tracking", **Nat. Meth.**, 21, 1716 (2024)

P. Pessoa, M. Schweiger, **S. Pressé***, "Avoiding matrix exponentials for large transition rate matrices", **J.**

Chem. Phys., 160, 094109 (2024)

M. Fazel, K.S. Grussmayer, B. Ferdman, A. Radenović, Y. Shechtman, J. Enderlein, **S. Pressé***, "Fluorescence Microscopy: a statistics-optics perspective", **Rev. Mod. Phys.**, 96, 025003 (2024)

Selected as: Cover

A. Rojewski, M. Schweiger, I. Sgouralis, M. Comstock, **S. Pressé***, "An accurate probabilistic step finder for time-series analysis, Biophys. J., 123, 2749 (2023)

W.Q. Xu, **S. Pressé***, "Towards building comprehensive particle tracking tools with u-track 3D", **Cell Rep. Meth.**, 3, 100651 (2023)

M. Fazel, S. Jazani, L. Scipioni, A. Vallmitjana, S. Zhu, E. Gratton, M.A. Digman, **S. Pressé***, "Building fluorescence lifetime maps photon-by-photon by leveraging spatial correlations", **ACS Photonics**, 10, 3558 (2023)

Z. Kilic, M. Schweiger, C. Moyer, **S. Pressé***, "Monte Carlo samplers for efficient network inference", **PLoS Comput. Biol.**, 19, e1011256 (2023)

W.Q. Xu, J. Shepard Bryan IV, Z. Kilic, **S. Pressé***, "Two state swimming: strategy and survival of a model bacterial predator in response to environmental cues", **Biophys. J.**, 122, 1 (2023)

J. Lee, K. Cotter†, I. Elsadek†, M. Comstock*, **S. Pressé***, "Few-body hydrodynamic interactions probed by optical trap pulling experiments", **J. Chem. Phys.**, 159, 024201 (2023)

Y. Luo, J. Chang, D. Yang, J. Shepard Bryan IV, M. MacIsaac, **S. Pressé**, W. Wong*, "Resolving molecular heterogeneity with single-molecule centrifugation", **JACS**, 145, 3276 (2023)

P. Pessoa, **S. Pressé***, "How many submissions does it take to discover friendly suggested reviewers?", **PLoS ONE**, 18, e0284212(2023)

M. Fazel, A. Vallmitjana, L. Scipioni, E. Gratton, M.A. Digman, **S. Pressé***, "Fluorescence Lifetime: Beating the IRF and interpulse window", **Biophys. J.**, 122, 672 (2023)

Z. Kilic, M. Schweiger, C. Moyer, D.P. Shepherd*, **S. Pressé***, "Gene expression model inference from snapshot RNA data using Bayesian non-parametrics", **Nat. Comp. Sc.**, 3, 174 (2023)

Featured in: Nature Computational Science News and Views

A. Saurabh, M. Safar†, I. Sgouralis, M. Fazel, **S. Pressé***, "Single Photon smFRET. I. theory and conceptual basis", **Biophys. Rep.**, 3, 100089 (2023)

Selected as: Biophysical Report Highlights, **Featured in:** Biophysics.org Blog, Cell Press Highlights

A. Saurabh, M. Safar†, M. Fazel, I. Sgouralis, **S. Pressé***, "Single photon smFRET. II. application to continuous illumination", **Biophys. Rep.**, 3, 100087 (2023)

M. Safar†, A. Saurabh, B. Sarkar, M. Fazel, K. Ishii, I. Sgouralis, T. Tahara, **S. Pressé***, "Single photon smFRET. III. application to pulsed illumination", **Biophys. Rep.**, 2, 100088 (2023)

J. Shepard Bryan IV, **S. Pressé***, "Learning Continuous Potentials from smFRET", **Biophys. J.**, in

press (2022)

S. Shiekh, A. Jack, A. Saurabh, G. Mustafa, S. Kodikara, P. Gyawali, M.E. Hoque, **S. Pressé**, A. Yildiz*, H. Balci*, "Shelterin Reduces the Accessibility of Telomeric Overhangs", **Nucl. Acid Res.**, 50, 12885 (2022)

P. Pessoa, B. Arderucio Costa, **S. Pressé***, "Revisiting Claims in 'Black Hole Entropy: A Closer Look' ", **arXiv**, arXiv:2210.00324 (2022)

A. Saurabh, S. Niekamp, I. Sgouralis, **S. Pressé***, "Modeling non-additive effects in neighboring chemically identical fluorophores", **J. Phys. Chem. B**, 126, 4216 (2022)

S. Jazani, W.Q. Xu, I. Sgouralis, D.P. Shepherd, **S. Pressé***, "A computational proposal for tracking multiple molecules in a multi-focus confocal", **ACS Photonics**, 9, 2489 (2022)

J. Shepard Bryan IV, O. Basak, **J. Bechhoefer***, **S. Pressé***, "Inferring potential landscapes from noisy trajectories of particles within an optical feedback trap", **iScience**, 25, 104731 (2022)

M. Fazel, S. Jazani, L. Scipioni, A. Vallmitjana, E. Gratton, M.A. Digman, **S. Pressé***, "High resolution fluorescence lifetime maps from minimal photon counts", **ACS Photonics**, 9, 1015 (2022)

J. Shepard Bryan IV, I. Sgouralis, **S. Pressé***, "Diffraction-limited molecular cluster quantification with Bayesian nonparametrics", **Nat. Comp. Sc.**, 2, 102 (2022)

Featured in: Nature Computational Science News and Views

Z. Kilic, I. Sgouralis, **S. Pressé***, "Residence time analysis of RNA polymerase transcription dynamics: a Bayesian sticky HMM approach", **Biophys. J.**, 120, 1665 (2021)

Z. Kilic, I. Sgouralis, W. Heo, K. Ishii, T. Tahara, **S. Pressé***, "Extraction of rapid kinetics from smFRET measurements using integrative detectors", **Cell Reports: Physical Science**, 2, 100409 (2021)

Z. Kilic, I. Sgouralis, **S. Pressé***, "Generalizing HMMs to continuous time for fast kinetics: Hidden Markov Jump Processes", **Biophys. J.**, 120, 409 (2021)

S. Pressé*, "A thermodynamic perspective on enhanced enzyme diffusion", Commentary, **Proc. Natl. Acad. Sc.**, 2022207117 (2020)

M. Tavakoli, S. Jazani, I. Sgouralis, H. Wooseok, K. Ishii, T. Tahara, **S. Pressé***, "Direct photon-by-photon analysis of time-resolved pulsed excitation data using Bayesian nonparametrics", **Cell Reports: Physical Science**, 1, 100234 (2020)

S. L. Seyler, **S. Pressé***, "Surmounting potential barriers: Hydrodynamic memory hedges against fluctuating sources of energy", **J. Chem. Phys.**, 153, 041102 (2020)

Selected as: Rapid Communications

T. Modi, S.B. Ozkan, **S. Pressé***, "Information propagation in time through allosteric signaling" **Phys. Rev. Res.**, 2, 023367 (2020)

J. Shepard Bryan IV, I. Sgouralis, **S. Pressé***, "Inferring effective forces for Langevin dynamics using Gaussian processes" **J. Chem. Phys.**, 152, 124106 (2020)

M.Tavakoli, I. Sgouralis, O.M. Shafraz, S. Sivasankar, B. Donaphon, M. Levitus, **S. Pressé***, "Pitching single focus confocal data analysis one photon at a time with Bayesian nonparametrics" **Phys. Rev. X**, 10, 011021 (2020)

S. L. Seyler, **S. Pressé***, "Long-time Persistence of Hydrodynamic Memory Boosts Microparticle Transport" **Phys. Rev. Research**, 1, 032003(R) (2019)

Selected as: Rapid Communications

S. Jazani, I. Sgouralis, O.M. Shafraz, M. Levitus, S. Sivasankar, **S. Pressé***, "An Alternative Framework for Fluorescence Correlation Spectroscopy" **Nat. Comm.**, 10, 3662 (2019)

Featured in: Phys.org, Science Daily, Nanowerk, Photonics.com, EurekaAlert!

J. Lee*, S. Seyler, **S. Pressé**, "Hydrodynamic interaction facilitates the unsteady transport of two neighboring vesicles" **J. Chem. Phys.**, 156, 094108 (2019)

M. Tavakoli, K. Tsekouras, R. Day, K.W. Dunn, **S. Pressé***, "Quantitative Kinetic Models from Intravital Microcopy: A Case Study Using Hepatic Transport" **J. Phys. Chem. B**, 123, 7302 (2019)

S. Jazani, I. Sgouralis, **S. Pressé***, "A method for single molecule tracking using a conventional single-focus confocal setup" **J. Chem. Phys.**, 150, 114108 (2019)

Selected as: J. Chem. Phys. Editor Highlight

V. Prakash, K. Tsekouras, M. Venkatachalapathy, L. Heineke, **S. Pressé**, N.G. Walter*, Y. Krishnan* , "Quantitative maps of endosomal DNA processing by single molecule counting" **Angewandte Chemie**, 58, 3073 (2019)

I. Sgouralis, S. Madaan, F. Djutanta, R. Kha†, R. Hariadi, **S. Pressé***, "A Bayesian Nonparametric Approach to Single Molecule Förster Resonance Energy Transfer" **J. Phys. Chem. B**, 123, 675 (2019)

G. Javens†, H. Jashnsaz, **S. Pressé***, "From the volcano effect to banding: a minimal model for bacterial behavioral transitions near chemoattractant sources" **Phys. Bio.**, 15, 046002 (2018)

I. Sgouralis, M. Whitmore, L. Lapidus, M. Comstock, **S. Pressé***, "Single Molecule Force Spectroscopy at High Data Acquisition: A Bayesian Nonparametric Analysis" **J. Chem. Phys.**, 148, 123320 (2018)

P. Dixit, J. Wagoner, C. Weistuch, **S. Pressé**, K. Ghosh, and K. Dill*, "Perspective: Maximum Caliber is a general variational principle for dynamical systems" **J. Chem. Phys.**, 148, 010901 (2018)

C. Weistuch†, **S. Pressé***, "Spatiotemporal organization of catalysts driven by enhanced diffusion" **J. Phys. Chem. B**, 122, 5286 (2018)

H. Jashnsaz, G. Anderson, **S. Pressé***, "Statistical signatures of a targeted search by bacteria" **Phys. Bio.**, 14, 065002 (2017)

I. Sgouralis, **S. Pressé***, "ICON: an adaptation of infinite HMMs for time traces with drift", **Biophys. J.**, 112, 2117 (2017)

I. Sgouralis, **S. Pressé***, "An introduction to infinite HMMs for single molecule data analysis", **Biophys. J.**, 112, 2021 (2017)

M. Tavakoli, J.N. Taylor, C.-B. Li, T. Komatsuzaki, **S. Pressé***, "Single molecule data analysis: An introduction", **Adv. Chem. Phys.**, 162, 205 (2017)

H. Jashnsaz, M. Al Jaboori†, C. Weistuch†, N. Miller†, T. Nguyen†, V. Meyerhoff†, B. McCoy†, S. Perkins†, R. Wallgren†, B. Ray, K. Tsekouras, G. Anderson*, **S. Pressé***, "Hydrodynamic Hunters", **Biophys. J.**, 112, 1282 (2017)

Selected as: Biophys. J. Research Highlight; **Selected as:** EurekaAlert!, Bild.de, Sueddeutsche.de,
Sciencedirect.com, Welt.de, Zeit.de, Spiegel.de, SciShow (260k+ views) and 37+ additional sites.

A. Lee, K. Tsekouras, C. Calderon, C. Bustamante, **S. Pressé***, "Unraveling the thousand word picture: An Introduction to super-resolution data analysis", **Chem. Rev.**, 117, 7276 (2017)

K. Tsekouras, T.C. Custer, N.G. Walter, **S. Pressé***, "A novel method to accurately locate and count large numbers of steps by photobleaching", **MBoC**, 2, 3601 (2016)

K. Tsekouras, C. Riedel, R. Gabizon, S. Marqusee, **S. Pressé*, C. Bustamante**, "Comment on "Enhanced diffusion of enzymes that catalyze exothermic reactions" by R. Golestanian", **arXiv preprint arXiv:1608.05433**, Unpublished (2016)

G. Rollins, J.Y. Shin, C. Bustamante, **S. Pressé***, "Stochastic approach to the molecular counting problem in super-resolution microscopy", **Proc. Natl. Acad. Sc.** (Direct Submission), 112, E110 (2015)

Featured in: EurekaAlert!, PNAS Research Highlight, IUPUI SoS Website

C. Riedel, R. Gabizon, C.A.M. Wilson, K. Hamadani, K. Tsekouras, S. Marqusee, **S. Pressé***, C. Bustamante*, "The heat released during catalytic turnover enhances the diffusion of an enzyme", **Nature**, 517, 227 (2015)

Selected as: Nature News and Views, C&EN Highlights; **Featured in:** Phys.org, IUPUI SoS Website

H. Jashnsaz, T. Nguyen†, H. Petrache, **S. Pressé***, "Inferring models of bacterial dynamics toward point sources", **PLoS ONE**, 10, e0140428 (2015)

S. Pressé*, "A data-driven alternative to the fractional Fokker-Planck equation", **J. Stat. Mech.: Th. and Expmt.**, P07009 (2015)

K. Tsekouras, A. Siegel, R. Day, **S. Pressé***, "Inferring diffusion dynamics from FCS in heterogeneous nuclear environments", **Biophys. J.**, 109, 7 (2015)

S. Pressé*, K. Ghosh, J. Lee, K. Dill, "Reply to C. Tsallis' 'Conceptual inadequacy of the Shore and Johnson axioms for wide classes of complex systems' ", **entropy**, 17, 5043 (2015)

S. Pressé*, "Nonadditive entropy maximization is incompatible with Bayesian updating", **Phys. Rev. E.**, 90, 052149 (2014)

S. Pressé*, J. Peterson, J. Lee, P. Elms, J.L. MacCallum, S. Marqusee, C. Bustamante, K. Dill, "Single molecule conformational memory extraction: P5ab RNA hairpin", **J. Phys. Chem. B**, 118, 6597 (2014)

S. Pressé*, K. Ghosh, J. Lee, K. Dill, "Nonadditive entropies yield probability distributions with biases not warranted by the data", **Phys. Rev. Lett.**, 111, 180604 (2013)

Featured in: Science Daily, IUPUI SoS Website

S. Pressé*, K. Ghosh, J. Lee, K. Dill, "Principles of maximum entropy and maximum caliber in statistical physics", **Rev. Mod. Phys.**, 85, 1115 (2013)

M. Sen, R.A. Maillard, K. Nyquist, P. Rodriguez-Aliaga, **S. Pressé**, A. Martin*, C. Bustamante*, "The ClpXP protease functions as a motor with constant 'rpm' but different 'gears' ", **Cell**, 115, 636 (2013)

Featured in: IUPUI SoS Website

S. Pressé*, J. Lee, K. Dill, "Extracting conformational memory from single-molecule kinetic data", **J. Phys. Chem. B**, 117, 495 (2013)

Prior publications

J. Lee*, **S. Pressé***, "Microcanonical origin of the maximum entropy principle for open systems", **Phys. Rev. E**, 86, 041126 (2012)

J. Lee*, **S. Pressé***, "A derivation of the master equation from path entropy maximization", **J. Chem. Phys.**, 137, 074103 (2012)

G.J. Peterson*, **S. Pressé**, K. Peterson, K.A. Dill, "Simulated evolution of protein-protein interaction networks with realistic topology", **PLoS ONE**, 7, e39052 (2012)

H. Ge*, **S. Pressé**, K. Ghosh, K.A. Dill, "Markov processes follow from the principle of maximum caliber", **J. Chem. Phys.**, 136, 064108 (2012)

Selected as: J. Chem. Phys. Research Highlight.

S. Pressé*, K. Ghosh, K.A. Dill, "Modeling stochastic dynamics in biochemical systems with feedback using maximum caliber", **J. Phys. Chem. B**, 115, 6202 (2011)

S. Pressé, K. Ghosh, R. Phillips*, K.A. Dill*, "Dynamical fluctuations in biochemical reactions and cycles", **Phys. Rev. E**, 82, 031905 (2010)

G. J. Peterson, **S. Pressé**, K.A. Dill*, "Nonuniversal power law scaling in the probability distribution of scientific citations", **Proc. Natl. Acad. Sc.**, 107, 16023 (2010)

S. Pressé, R.J. Silbey*, "Radiating dipoles near curved interfaces", **Phys. Rev. A**, 77, 043402 (2008)

S. Pressé, R.J. Silbey*, "Memory effects on the convergence properties of the Jarzynski equality", **Phys. Rev. E**, 74, 061105 (2006)

J.M. Hodgkiss, N.H. Damrauer, **S. Pressé**, J. Rosenthal, D.G. Nocera*, "Electron transfer driven by proton fluctuations in a hydrogen-bonded donor-acceptor assembly", **J. Phys. Chem. B**, 110, 18853 (2006)

S. Pressé, R.J. Silbey*, "Anomalous temperature-isotope dependence in proton-coupled electron transfer", **J. Chem. Phys.**,124, 164504 (2006)

S. Pressé, R.J. Silbey*, "Ordering of limits in the Jarzynski equality", **J. Chem. Phys.**, 124, 054117 (2006)

Patents

6x2023

Scholarships, Fellowships, Grants and Awards

2025 – **Army Research Office, Computational Mathematics Division – Single PI grant**
''Learning statistical models of gene networks: a Bayesian nonparametric approach
($ 360,000 including indirect)

– **APS Fellow** for "For pioneering contributions to Bayesian method development in biological Physics; in particular, seminal work in computational statistical approaches to imaging and spectroscopy of single molecule experiments. "

2023 – **Army Research Office, Computational Mathematics Division – Single PI grant**
'Mechanisms of non-equilibrium transport processes at intermediate scales'
($ 360,000 including indirect)

– **NSF, PHY– MPI grant (Pressé 85% effort)**
'Tuning and assessing bacterial
predation efficiency in complex environments'
($ 760,000 including indirect)

– **NIH, NIGMS R35 – Single PI grant**
'Toward high spatiotemporal resolution models of
single molecules for in vivo applications'
($ 2,300,000 including indirect)

2021 – **NIH BRAIN Initiative Cell Census Network R01 – MPI grant (Pressé 30% effort)**
Pressé one of 3 core PIs
'Scalable 3D molecular imaging and data analysis for cell census generation'
($ 2,230,000 including indirect)

2019 – **NIH, NIGMS R01– Single PI grant**
'Theoretical models of single molecule dynamics from minimal photon numbers'
($ 1,200,000 including indirect)

2019 – **NIH, NIGMS R01– Single PI grant**
'A Bayesian nonparametric approach to superresolved tracking of multiple molecules'
($ 1,500,000 including indirect)

2017 – **Moore Foundation/Research Corporation – 3 Co-PI grant**
'Follow the Leader: Forecasting collective cancer dynamics'
($ 168,750 including 12.5% indirect, split equally among 3 Co-PI's)

2016 – **NSF CAREER – Single PI grant**
'NSF CAREER: Data-Driven Models for Biological Dynamics'
($ 1,000,000 including indirect)

– **Army Research Office, Mechanical Sciences Division – Single PI grant**
'Multi-Dimensional and Dissipative Dynamical Systems: Maximum Entropy as a Principle for Modeling Dynamics and Emergent Phenomena in Complex Systems'
($ 360,000 including indirect)

2015 – **Research Corporation Scialog Fellow for "Molecules Come to Life"**

– **GSIRF Grant 'Advancing photobleaching as a versatile single molecule counting tool'**
($ 56,000 direct), PI: Steve Pressé, Co-PI: Ken Dunn

– **IUCRG Grant 'Using quantitative in vivo microscopy to build predictive models of drug-induced liver injury'**
($ 50,000 direct), Co-PI: Steve Pressé, Richard Day, Ken Dunn

– **Purdue Research Foundation Summer Grant** ($ 9,000 + fringe)

2014 – **NSF, MCB/PHY – Single PI grant**
'Determining in vivo protein complex stoichiometry from superresolution microscopy'
($ 470,350 including indirect)

– **Purdue Research Foundation Research Grant** ($ 18,000 + fringe)

2013 – **Burroughs-Wellcome Travel Grant** ($ 12,000 total)

– **Purdue Research Foundation Summer Grant** ($ 8,000 + fringe)

2008-2010 – **FQRNT**[1] **Postdoctoral Scholarship** (Approx. $ 59,000 total)

2007-2008 – **FQRNT Doctoral Scholarship** (Approx. $ 27,500 total)

2005-2007 – **NSERC**[2] **Doctoral Scholarship** (Approx. $ 42,000 total)

2003-2005 – **NSERC Master's Scholarship** (Approx. $ 38,500 total)

2004 – **Outstanding Teaching Award, MIT Chemistry Dept.**

2003 – **John Williamson Frederick Peacock Memorial Scholarship Award** (Approx. $ 5,000)
– **Society of Chemical Industry Merit Award**
– **Anachemia Prize in Chemistry**
– **Lucien Piché Award** (Approx. $ 1,500)
– **R.F. Robertson Award in Physical Chemistry**

2002 – **Herbert J. Brennen Scholarship** (Approx. $ 2,000)
– **Canadian Society for Chemistry, Silver Medal**
– **Frederic J. LeMaistre Award** (Approx. $ 1,000)
– **Undergraduate research NSERC scholarship** (Approx. $ 4,500)

Teaching and Mentoring (in rank):

Research Mentoring:

Postdoctoral fellows: Konstantinos Tsekouras (Jul. 2013-Jun. 2017), Ioannis Sgouralis (Jul. 2016-Jul. 2020), Mateusz Chwastyk (Feb. 2017-Dec. 2017), David Rowland (Jan. 2017-May 2018),

[1]Le Fonds québécois de la recherche sur la nature et les technologies

[2]Natural Sciences and Engineering Research Council of Canada

Sean Seyler (Jan. 2018-Dec. 2020), Zeliha Kilic (Jul. 2018-Sep. 2021), Lei Zhou (Jun. 2020-Jun. 2021), Mohamadreza Fazel (Jun. 2020-Jan. 2024), Ayush Saurabh (Jul. 2020-), Jessica Vlcek (Aug. 2021-Dec. 2022), Pedro Pessoa (Jun. 2022-), Julian Camarena (Jan. 2024-Oct. 2024), Sijie Huang (Mar. 2024-), Stanimir Tashev (Jun. 2024-), Bonfilio Naiggolan (Sep. 2025-)
PhD students: Hossein Jashnsaz (Jan. 2013-Jun. 2017), Meysam Tavakoli (Jun. 2015-Jun. 2020), Sina Jazani (Jun. 2015 - Jun. 2020), Shepard Bryan (Jan. 2019-May 2023), Weiqing Xu (Sep. 2020-Sep. 2025), Maxwell Schweiger (Aug. 2021-), Jay Spendlove (Sep. 2024-), Zachary Hendrix (Jan. 2025-), Carol Lu (Sep. 2025-), James Lim (Jan. 2026-)
Master's students: Ross Wallgren (Aug. 2017-May 2019), Shreya Ray (Dec. 2018-May 2019), Mikayla Carlson (Aug. 2018-May 2020), Camille Moyer (Jan. 2020-Dec. 2021), Matthew Safar (Aug. 2021-May 2022), Tristan Manha (Sep. 2023-Dec. 2025)
1 Master's intern: Robert Zigon (Jun. 2013-Sep. 2013)
50+ Undergraduate students: Mahmoud Ahmed (2024-), Tim Flanagan (2023), Zachary Hendrix (2023-2024), Xuan He (2023-), Carol Lu (2023-2025), Nicole Perry (2022-2023), Ramia Mekhla (2021-2022), Alex Rojewski (2021-2022), Sarah Perleberg (2021-2022), Vishesh Kumar (2021-2024), Eric Bryan (2020-2022), Milena Stambolic (2021-2023), Alec Sanchez (2017-2019), Shreya Madaan (2017-2019), Matthew Safar (2019-2021), Claire Cirelli (2020), Austin Gallimore (2019-2021), Crystal Kubby (2017-2018), Diana Okeyo (2018), Nicolle Villoria (2017), Sean Sipes (2017), Clayton Hui (2017), Melody Yeh (2017), Mikayla Carlson (2017-2018), Aiden Check (2017), Ayan Rafique (2017), Freddy Melara (2017), Indrajit Badvaram (2017), Stephanie Perkins (2015-2016), Nick Miller (2015-2016), Ross Wallgren (2015-2016), Christopher O'Connor (2015-2016), Margaret Ann Christy (2016, REU, Purdue), Gregory Jevens (2016, REU, CUNY), Viktoria Meyerhoff (2015-2016), Lindsay Hale (2015, UROP), Corey Weistuch (2015-2016, REU, SUNY Stony Brook), Stjepan Kraljic (2014), Lana Serikof (2014), Michaella Conteh (2014), Justin Sciscoe (2014), Harshel Naik (2014-2015), Camilo Gomez (2014-2015), Jaime Velazquez (2014), Jacques Roettcher (2014), Nicholas Proctor (2014-2016), Bryan McCoy (2014-2016), Kylee Johnson (2014-2015), Ian Daly (2014-2015), Morgan Cook (2014), Mohammed Al-Juboori (2014-2016), Peter Anderson (2013-2014), Fawaz Butt (2013), Tyler Nguyen (2013-2014), Bhavesh Ghandi (2013), Jason Walsman (2013)
7 high-school students: Lucas Burke (2013), Ephraim Retta (2013), Roger Biak (2014), Matt Muhoberac (2015), Emily Perez (2016), Vivian Nguyen (2018), Supriya Weiss (2018)

Teaching:

Graduate Statistical Physics (IUPUI, PHYS 617; ASU, PHYS 541), Undergraduate Electricity and Magnetism (IUPUI, PHYS 251), Graduate Biophysics (IUPUI, PHYS 585), Undergraduate Statistical Physics (ASU, PHYS 441), Graduate Data Analysis (ASU, PHYS /CHEM 598; PHYS /CHEM 547).

Conferences, Seminars, Workshops

Invited Talk - Colloquium, Center for Computational Mathematics, Flatiron Institute, New York NY, Mar. 2026

O'Keeffe Lectureship - School of Molecular Sciences, ASU, Tempe AZ, Feb. 2026

Platform Talk - Invited talk for "Nanoscale Approaches to Biology" subgroup–Biophysical Society (BPS), San Francisco CA, Feb. 2026

Invited Talk - CBP & GCSC Joint Workshop– Pacifichem 2025, Honolulu HI, Dec. 2025

Invited Talk - Seminar, Department of Physics, Simon Fraser, Vancouver BC, Oct. 2025

Invited Talk - Seminar, Institute of Applied Mathematics, Univ. British Columbia, Vancouver BC, Oct. 2025

Invited Talk - Seminar, Oden Institute, UT Austin, Austin TX, Sep. 2025

Invited Talk - Colloquium, Department of Chemistry, UT Austin, Austin TX, Sep. 2025

Invited Talk - Seminar, Center for Theoretical Biological Physics, Rice, Houston TX, Sep. 2025

Invited Participant - NCEMS NSF Summit 2025, State College PA, Aug. 2025

Invited Talk - Symposium, "Emerging Advances in Light Microscopy of Fixed and Live Samples Below the Diffraction Limit", Microscopy and Microanalysis (M and M), Salt Lake UT, Aug. 2025

Invited Talk - Symposium "Current Topics in Life Sciences", Max Planck Institute for Multidisciplinary Sciences, Goettingen, Germany, July 2025

Invited Talk - EPFL "Brownian Motion Workshop", Lausanne, Switzerland, Jun. 2025

Co-Organizer - Workshop on "The Complexity of Dynamics and Kinetics from Single Molecules to Cells" –Telluride Science Research Center, Telluride CO, Jun. 2025
Co-organizers: Douglas P. Shepherd, Tamiki Komatsuzaki

Invited Talk - GCSC Symposium "Chemical Dynamics in Materials and Living Systems", Seoul, Korea, May. 2025

Contributed Talk - Focus on Microscopy (FoM), Taipei, Taiwan, Mar. 2025

Invited Talk - OWLS-17 Optics within Life Sciences, IIT Bombay, India, Nov. 2024

Invited Talk - Colloquium, Department of Physics, University of Alberta, Edmonton AB, Nov. 2024

Contributed Talk - Single Molecule Localization Microscopy Conference, Lisbon, Portugal, Aug. 2024

Invited Talk - Symposium, "ACS single Molecule Symposium", American Chemical Society (ACS), Denver CO, Aug. 2024

Contributed Talk - Gordon Research Conference on Single Molecule in Biology, Newry ME, Jul. 2024

Co-Organizer - Workshop on "Deciphering Complex Energy Landscape and Kinetic Network from Single Molecules to Cells", Dijon, France, Jun. 2024

Invited Talk - Invited tutorial and contributed talk, Focus on Microscopy (FoM), Genoa, Italy, Mar. 2024

Invited Talk - Invited tutorial at session "Superresolution Imaging", American Physical Society (APS), Minneapolis MN, Mar. 2024

Invited Talk - XXIIIrd Annual Linz Winter Workshop on single molecules, Linz, Austria, Feb. 2024

Invited Talk - Seminar, Department of Physiology and Cell Biology, Ohio State University, Columbus OH, Jan. 2024

Invited Talk - Colloquium, Department of Physics, Ohio State University, Columbus OH, Jan. 2024

Invited Talk - Laboratory of Fluorescence Dynamics Workshop, Department of Biomedical Engineering, UC Irvine, Irvine CA, Oct. 2023

Invited Talk - Biophysics seminar, Department of Biomedical Engineering, Ohio State University, Columbus OH, Oct. 2023

Invited Talk - Computational Biology seminar, Biophysics Department, UT Southwestern Medical, Dallas TX, Sep. 2023

Invited Talk - Data-oriented Mathematical & Statistical Sciences (DoMSS) Seminar, School of Mathematical and Statistical Sciences, ASU, Phoenix AZ, Sep. 2023

Invited Talk - q-bio 2023, Shenzhen, China, Jul. 2023

Invited Talk - Workshop entitled"Conference: Sensory Prediction, Engineered and Evolved", Santa Fe,

NM, Jul. 2023

Invited Zoom Talk - Invited talk, Light Microscopy Interest Group (LMIG) Seminar, NIH, Online only, May 2023

Contributed Talk - Focus on microscopy (FOM), Porto, Portugal, Apr. 2023

Invited Talk - Tutorial at session "Machine Learning and Model Inference for Biological Physicists", American Physical Society (APS), Las Vegas NV, Mar. 2023

Poster - Biophysical Society (BPS), San Diego CA, Feb. 2023

Invited Zoom Talk - FCS@50, Kerala India, Jan. 2023

Co-Organizer - CECAM Workshop on "Data Modeling and Computation: Capturing Biomolecular Processes" –CECAM, Lausanne, Switzerland, Nov. 2022

Invited Talk - 20th KIAS Conference on Protein Structure and Function, Seoul, South Korea, Sep. 2022

Invited Talk - Symposium, American Chemical Society (ACS), Chicago IL, Aug. 2022

Co-Organizer - Workshop on "The Complexity of Dynamics and Kinetics from Single Molecules to Cells" –Telluride Science Research Center, Telluride CO, Jun. 2022
Co-organizers: Douglas P. Shepherd, Tamiki Komatsuzaki

Invited Talk - Invited talk, Les Houches Conference "Protein Dynamics", Aussois, France, May 2022

Invited Zoom Talk - Invited talk, CRC 1456 "Mathematics of Experiment: The challenge of indirect measurements in the natural science", Goettingen, Germany, Mar. 2022

Organizer - and Session Chair "Data Science for Biophysics" –American Physical Society (APS), Chicago IL, Mar. 2022

Invited Zoom Talk - Invited talk, Biological Physics/Physical Biology (BPPB) Seminar, Online only, Feb. 2022

Platform Talk - Selected platform talk at workshop "Computational Methods and Bioinformatics II" –Biophysical Society (BPS), San Francisco CA, Feb. 2022

Invited Zoom Talk - Colloquium, Physics Dept., Univ. British Columbia, Vancouver BC, Jan. 2022

Invited Zoom Talk - Workshop on "Trans-scale Biochemical Analysis of Rare Events in Living Systems: Singularity Biology" – Pacifichem 2021, Honolulu HI, Dec. 2021

Invited Zoom Talk - Invited talk, FCS2021 Conference, Kerala, India, Nov. 2021

Invited Zoom Talk - Colloquium, Physics Dept., Simon Fraser Univ., Vancouver BC, Sep. 2021

Invited Talk - Colloquium, Physics Dept., Univ. of Arizona, Tucson AZ, Sep. 2021

Invited Zoom Talk - Seminar, q-bio Summer School, Fort Collins, CO, Jul. 2021

Invited Zoom Lecturer - Workshop – q-bio Summer School, Fort Collins, CO, Jul. 2021

Invited Zoom Talk - Seminar, Systems and Computational Biology Dept., Einstein College of Medicine, Bronx, NY, May 2021

Invited Zoom Talk - Colloquium, School of Molecular Sciences, Arizona State Univ., Tempe, AZ, Dec. 2020

Invited Zoom Talk - Seminar, Dept. Physics and Astronomy, Purdue, West Lafayette, IN, Nov. 2020

CANCELLED (COVID) **Invited Talk** - Invited talk, Biophysical Dynamics Workshop, Santa Fe NM, Jul. 2020

CANCELLED (COVID) **Invited Talk** - Workshop on "Single Molecule Dynamics" –Telluride Science Research Center, Telluride CO, Jun. 2020

CANCELLED (COVID) **Invited Talk** - Workshop on "Quinary Interactions: Structure, Dynamics, Function" –Telluride Science Research Center, Telluride CO, Jun. 2020

CANCELLED (COVID) **Invited Talk** - Invited talk, ETH, Zuerich, Switzerland, Jun. 2020

CANCELLED (COVID) **Invited Talk** - Invited talk, TSRC Protein Dynamics Workshop, Les Houches, France, Jun. 2020

Invited Zoom Talk - Colloquium, Physics Dept., Ariz. State Univ., Tempe, AZ, Apr. 2020

Invited Talk - Invited talk at workshop "Fluorescence Correlation Spectroscopy" –Biophysical Society (BPS), San Diego CA, Feb. 2020

Invited Talk - Invited talk, XXIInd Annual Linz Winter Workshop on single molecules, Linz, Austria, Feb. 2020

Invited Talk - Invited talk, QBI 2020, London, United Kingdom, Jan. 2020

Invited Talk - Invited talk, Nature Conference "Functional dynamics - visualizing molecules in action", Ariz. State Univ., Tempe, AZ, Nov. 2019

Invited Talk - Seminar, Dept. of Mathematics and Actuarial Sciences, American University of Cairo, Cairo, Egypt, Oct. 2019

Invited Talk - Seminar, Physics Dept., American University of Cairo, Cairo, Egypt, Oct. 2019

Co-Organizer - Workshop on "The Complexity of Dynamics and Kinetics from Single Molecules to Cells" –Telluride Science Research Center, Telluride CO, Jun. 2019
Co-organizers: Stephen R. Berry, Tamiki Komatsuzaki

Invited Talk - Session on "Statistical Analysis in Biophysics and Climate" –SIAM Dynamical Systems Conference, Snowbird UT, May. 2019

Invited Talk - Colloquium, Dept. Chem., UT Austin, Austin, TX, Apr. 2019

Invited Talk - Invited talk, QBI 2019, Rennes, France, Jan. 2019

Invited Talk - Invited talk, College of Chemistry, Weizmann Institute, Israel, Jan. 2019

Invited Talk - Workshop "Simons Workshop on Nonequilibrium Physics in Biology", Stony Brook Univ., Stony Brook NY, Dec. 2018

Invited Talk - Colloquium, Dept. of Bioengineering, CU Fort Collins, Fort Collins CO, Nov. 2018

Co-Organizer - Workshop "Statistical Physics in Biology: A workshop in the honor of Ken Dill", Ariz. State Univ., Tempe, AZ, Oct. 2018

Invited Talk - Invited talk, Molecular Spectroscopy Laboratory, RIKEN, Saitama, Japan, Oct. 2018

Invited Talk - Invited talk, Laboratory of Molecular and Life Nonlinear Sciences, Hokkaido, Japan, Oct. 2018

Invited Talk - 6th International Symposium on "Ambitious Leader's Program for Fostering Future Leaders to Open New Frontiers in Materials Science", Hokkaido, Japan, Oct. 2018

Invited Talk - Workshop on "Mathematical methods for reconstructing molecular dynamics in single cells", Pisa, Italy, Oct. 2018

Invited Talk - Workshop on "Biophysical Dynamics" –Telluride Science Research Center, Telluride CO, Jul. 2018

Invited Talk - Workshop on "Single Molecule Workshop: Theory Meets Experiment" –Telluride Science Research Center, Telluride CO, Jun. 2018

Invited Talk - Workshop – 12th Annual q-bio Summer School, Rice University, Houston TX, Jun. 2018

Invited Talk - Invited talk, Biophysical Society of Canada, Vancouver BC, May 2018

Invited Talk - Lecture, Laufer Center for Physical and Quantitative Biology, Stony Brook University, Stony Brook NY, Mar. 2018

Invited Participant - "Working Group: Extending the reach of info-metrics to dynamic and non-hierarchical complex systems", Santa Fe Institute, Santa Fe NM, Mar. 2018

Organizer - and Session Chair "Inference and Stochastic Processes in Biophysics" –American Physical Society (APS), Los Angeles CA, Mar. 2018

Invited Participant - ALT2018 Workshop, Johns Hopkins, Baltimore MD, Mar. 2018

Invited Talk and Tutorial - Invited Lecture and Tutorial on Data Analysis, QB3, UC Berkeley, Berkeley CA, Feb. 2018

Invited Talk - Colloquium, Dept. Physics and Astronomy, Rutgers, Piscataway NJ, Feb. 2018

Invited Talk - Colloquium, Dept. Biophysics and Biophysical Chem., Johns Hopkins School of Medicine, Baltimore MD, Nov. 2017

Invited Talk - Bioinformatics Seminar, Soongsil University, Seoul, South Korea, Sep. 2017

Invited Talk - 17th KIAS Conference on Protein Structure and Function, Seoul, South Korea, Sep. 2017

Invited Talk - Workshop on "Deciphering Complex Energy Landscape and Kinetic Network from Single Molecules to Cells", Dijon, France, Sep. 2017

Invited Talk - Colloquium, Dept. Physics, Arizona State U., Tempe AZ, August 2017

Invited Lecturer - Workshop – 11th Annual q-bio Summer School, Fort Collins CO, Jun. 2017

Co-Organizer - Workshop on "The Complexity of Dynamics and Kinetics from Single Molecules to Cells" –Telluride Science Research Center, Telluride CO, Jun. 2017
Co-organizers: Stephen R. Berry, Tamiki Komatsuzaki

Organizer - and Session Chair "Tracking, Localization and Inference in Live Cells: Methods and Applications " –American Physical Society (APS), New Orleans LA, Mar. 2017

Invited Talk - Symposium, American Physical Society (APS), New Orleans LA, Mar. 2017

Invited Talk - Gordon Research Conference on Stochastic Physics in Biology, Ventura CA, Jan. 2017

Invited Talk - Seminar, Chemistry Dept., Rice, Houston TX, Nov. 2016

Invited Talk - Seminar, MidQBio Conference, Purdue, West Lafayette IN, Oct. 2016

Invited Talk - Seminar, Center for Molecular Simulation, Univ. Calgary, Calgary AB, Oct. 2016

Invited Lecturer - Workshop – 10th Annual q-bio Summer School, Fort Collins CO, Jul. 2016

Invited Talk - Workshop on "Single Molecule Workshop: Theory Meets Experiment" –Telluride Science Research Center, Telluride CO, Jul. 2016

Invited Talk - EMBO Conference: The biochemistry and chemistry of biocatalysis, Oulu, Finland, Jun. 2016

Invited Talk - Conference on "Mathematical and Computational Medicine", Ohio State U., Columbus OH, May 2016

Invited Talk - Seminar, Dept. Molecular Science, Arizona State U., Tempe AZ, May 2016

Invited Talk - Statistical Physics Seminar, Dept. of Chemistry, UC Berkeley, Berkeley CA, Apr. 2016

Invited Talk - Biophysics Seminar, Dept. of Chemistry, U. Chicago, Chicago IL, Apr. 2016

Invited Talk - Physics Frontier Seminar, UIUC, Urbana-Champaign IL, Apr. 2016

Co-Organizer - and Session Chair "Inference in Biophysics" –American Physical Society (APS), Baltimore MD, Mar. 2016
Co-organizer: David Schwab

Invited Talk - Seminar, Dept. of Physics, Iowa State U., Ames IA, Mar. 2016

Primary Co-Organizer - MBI workshop on "Modeling and Inference from Single Molecule to Cells" – Ohio State MBI Workshop, Columbus OH, Feb. 2016
Co-organizers: Ashok Prasad, John Fricks, Jayajit Das

Invited Talk - MBI workshop on "Modeling and Inference from Single Molecule to Cells" – Ohio State MBI Workshop, Columbus OH, Feb. 2016

Invited Talk - Seminar, Dept. of Physics, McGill U., Montréal QC, Feb. 2016

Invited Talk - Seminar, Dept. of Chemistry, McGill U., Montréal QC, Feb. 2016

Invited Talk - Seminar, Biodesign and Dept. of Physics, Arizona State U., Tempe AZ, Jan. 2016

Invited Talk - Workshop on "Deciphering molecular complexity from protein functions to cellular network" – Pacifichem 2015, Honolulu HI, Dec. 2015

Invited Talk - Seminar, Dept. of Physics, Arizona State U., Tempe AZ, Oct. 2015

Invited Talk - Seminar, Biophysics Seminar, Ohio State U., Columbus OH, Sep. 2015

Invited Talk - Seminar, Nationwide Children's Hospital, Ohio State U., Columbus OH, Sep. 2015

Invited Talk - Seminar, Battelle Center, Ohio State U., Columbus OH, Sep. 2015

Invited Lecturer - Workshop – 9th Annual q-bio Summer School, Fort Collins CO, Jul. 2015

Invited Talk - Workshop on "Biophysical Dynamics" –Telluride Science Research Center, Telluride CO, Jul. 2015

Co-Organizer - Workshop on "The Complexity of Dynamics and Kinetics from Single Molecules to Cells" –Telluride Science Research Center, Telluride CO, Jun. 2015
Co-organizers: Stephen R. Berry, Tamiki Komatsuzaki

Invited Talk - Seminar, Dept. of Physics and Astronomy, University of Missouri, Columbia MO, Apr. 2015

Invited Talk - Seminar, Dept. of Physics and Astronomy, Purdue, West Lafayette IN, Mar. 2015

Invited Participant - Scialog "Molecules come to life" hosted by the Research Corporation, Tucson AZ, Mar. 2015

Organizer - and Session Chair "Stochastic Model Inference from Biophysical Data" –American Physical Society (APS), San Antonio TX, Mar. 2015

Invited Talk - Seminar, 2nd Zing Conference on Mathematical Medicine, Cancun, Mexico, Dec. 2014

Invited Talk - Seminar, Physics Dept., Michigan State University, Lansing MI, Nov. 2014

Invited Talk - Seminar, Faculty Homecoming, IUPUI, Indianapolis IN, Oct. 2014

Invited Talk - Seminar, Center for *In Silico Protein Science*, KIAS, Seoul, South Korea, Sep. 2014

Invited Talk - Seminar, Chemistry Dept., Seoul National University, Seoul, South Korea, Sep. 2014

Invited Talk - 14th KIAS Conference on Protein Structure and Function, Seoul South Korea, Sep. 2014

Invited Talk - Seminar, Chemistry and Chemical Bio. Dept., IUPUI, Indianapolis IN, Sep. 2014

Invited Talk - Seminar, Biology Dept., IUPUI, Indianapolis IN, Sep. 2014

Organizer - and Session Chair "Probability Inverse Problems in Biophysics" –SIAM Life Sciences, Charlotte NC, Aug. 2014

Invited Talk - Symposium, SIAM Life Sciences, Charlotte NC, Aug. 2014

Attendee - New Faculty Workshop, AAPT, College Park MD, Jun. 2014

Invited Talk - Symposium, American Physical Society (APS), Denver CO, Mar. 2014

Organizer - and Session Chair "Inferring Physical Models from Noisy Biological Data" –American Physical Society (APS), Denver CO, Mar. 2014

Poster - Biophysical Society (BPS), San Francisco CA, Feb. 2014

Invited Talk - Seminar, Integrative Physiology Dept., IU School Medicine, Indianapolis IN, Jan. 2014

Invited Talk - Seminar, Computer Science Dept., IUPUI, Indianapolis IN, Jan. 2014

Invited Talk - Seminar, Physics Dept., Ball State University, Muncie IN, Oct. 2013

Invited Talk - Workshop on "Single Molecule Dynamics" –Telluride Science Research Center,Telluride CO, Jul. 2013

Invited Talk - Workshop on "Complexity of Dynamics and Kinetics in Many Dimensions" –Telluride Science Research Center,Telluride CO, Jul. 2013

Invited Talk - Seminar, iM2CS Group – Math Dept., IUPUI, Indianapolis IN, Apr. 2013

Invited Talk - Seminar, Indiana Academy of Sciences, Indianapolis IN, Mar. 2013

Invited Talk - Seminar, Statistics Dept., Pennsylvania State University, College Park PA, Mar. 2013

Contributed Talk - American Physical Society (APS), Baltimore MD, Mar. 2013

Invited Talk - Seminar, Physics Dept., IUPUI, Indianapolis IN, Feb. 2013

Poster - Gordon Research Conference on Stochastic Physics in Biology, Ventura CA, Jan. 2013

Contributed Talk - Biophysics Seminar, Physics Dept., UC Berkeley, Berkeley CA, Apr. 2012

Invited Talk - Seminar, Chemical Physics Lab., NIH-NIDDK, Bethesda MD, Apr. 2012

Invited Talk - Seminar, Chemistry Dept., Wichita State University, Wichita KS, Apr. 2012

Invited Talk - Seminar, Physics Dept., IUPUI, Indianapolis IN, Apr. 2012

Contributed Talk - American Chemical Society (ACS), San Diego CA, Mar. 2012

Contributed Talk - American Physical Society (APS), Boston MA, Feb. 2012

Contributed Talk – (talk on behalf of Julian Lee)– Biophysical Society (BPS), San Diego CA, Feb. 2012

Invited Talk - Seminar -Physics Dept., Concordia University, Montréal, Jan. 2012

Invited Talk - Seminar -Single molecule group, UC Berkeley, Berkeley CA, Jul. 2011

Contributed Talk - Biophysical Society (BPS), Baltimore MD, March 2011

Poster - Gordon Research Conference on Stochastic Physics in Biology, Ventura CA, Jan. 2011

Poster - Biophysical Society (BPS), San Francisco CA, Feb. 2010

Invited Talk - Seminar -Single molecule group, UC Berkeley, Berkeley CA, Jan. 2010

Poster - American Chemical Society (ACS), San Francisco CA, Mar. 2010

Invited Talk - Seminar, Dept. of Physics and Astronomy, U. of Denver, Denver CO, Jan. 2009

Poster - XXIII IUPAP International Conference on Statistical Physics, Genoa, Italy, Jul. 2007

Contributed Talk - American Chemical Society (ACS), Atlanta GA, Mar. 2006

Poster - American Conference of Theoretical Chemistry (ACTC), Los Angeles CA, Jul. 2005

Attendee - Workshop in Computational Biophysics offered by K. Schulten group, Boston MA, Dec. 2004

Consulting

Roswell Biotechnologies, GLG Consulting, Eli Lilly, Exodigm Biosciences, Quantum Si

Activities and Initiatives

– Organized conferences and symposia listed in "Conferences" section above

2025-	–Associate Director for Research Development (SMS)
2025	–NIH ad hoc panel reviewer
	–Evaluator of NSF GRFP
	–Co-organized a summer school at ASU on stochastic processes for undergraduate students
2024-	–Associate Director for Research Development (SMS)
2024	–Special Issue in JCP on single molecule fluorescence
	–Evaluator of NSF GRFP
	–Created minor in Data Science for Chemistry at ASU
	–Co-organized a summer school at ASU on molecular dyn. for freshmen and comm. college students
2023	–Created the first course in Data Science within
	–Evaluator of NSF GRFP
	Chemistry and Physics departments at ASU (CHM/PHY 547)
2022	–Editorial Board–Biophysics and Physicobiology (BPPB)
2020	–Co-Organizing Committee, q-Bio 2020
2019	–Co-Organized special edition in J. Physical Chemistry B entitled "Deciphering Molecular Complexity in Dynamics and Kinetics–From the Single Molecule to the Single Cell Level"
2017 -2020	–Presenter of an interactive program ("Bacterial Serengeti") at the South Mountain Education Center (Phoenix Zoo affiliated)
2015 -2016	–Member of the Journal *entropy*'s editorial board
	–Co-Organizer of IUPUI's iM2CS Seminar
	–Member IUPUI Imaging Research Initiative (IRI) Council
	–Presenter of an interactive program entitled "Bacterial Serengeti" at the Indianapolis Zoo (K-12)

2014 -2015	–Indiana Academy of Sciences – Chair Elect (Physics Section)
2013	–Indiana Academy of Sciences – Vice-Chair Elect (Physics Section)
2013 -present	Hosted high school students through the D.J. Angus-Scientech foundation and ACS project SEED
2005 -2008	MIT organizer of the Greater Boston Theoretical Chemistry Lecture Series

Member: Sigma Xi, Golden Key, American Physical Society (APS), American Chemical Society (ACS), Biophysical Society (BPS).

Ad hoc reviewer (journals): Nat. Comm., Nat. Meth., Nat. Protocols, Biophys. J., Trends in Biotech., Phys. Rev. E, Phys. Rev. A, Phys. Rev. X, Phys. Rev. Lett., Proc. Natl. Acad. Sc., J. Stat. Phys., Phys. Bio., Phys. Lett. A, entropy, RSC's Chemical Science, PLoS Comp. Bio., Pramana Physics, Frontiers Microbiology, The Biophysicist, J. Phys. Chem. B, J. Chem. Phys, Mol. Biol. and Evol., ...

Ad hoc editor (journals): PNAS, entropy, J. Phys. Chem. B, J. Chem. Phys., ...

Ad hoc reviewer (funding programs/agencies): European Research Council, Fondecyt (Chilean National Science and Technology Commission), ACS Petroleum Research Fund, Kavli Microbiome Ideas Challenge, Netherlands Organization for Funding Research, Army Research Office (U.S.), National Science Foundation (U.S.), Research Corp (U.S.), ...

Languages and other interests

Native fluency in **French**, **English**, and **Italian**; working knowledge of **German** and **Spanish**. Amateur interests: music (Bach, Shostakovich), piano and harpsichord, Lieder singing (Schumann, Schubert), history (Canada, France, Italy).