
CURRICULUM VITAE

NAME Zev Bryant	POSITION TITLE Associate Professor of Bioengineering and (by courtesy) of Structural Biology
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EDUCATION & TRAINING:

START MONTH/ YEAR	END MONTH /YEAR	DEGREE (<i>if applicable</i>)	INSTITUTION AND LOCATION	TRAINING MENTOR	SCIENTIFIC DISCIPLINE
10/2004	02/2007	Postdoc	Stanford University School of Medicine, Stanford, CA	James A. Spudich	Biochemistry
01/2004	09/2004	Postdoc	University of California, Berkeley and Lawrence Berkeley National Laboratory, Berkeley, CA	Carlos Bustamante	Physical Biosciences
08/1998	12/2003	Ph.D.	UC Berkeley, Berkeley, CA	Carlos Bustamante	Molecular and Cell Biology
09/1992	06/1998	B.Sc.	University of Washington, Seattle, WA	Hannele Ruohola-Baker	Biochemistry

PROFESSIONAL POSITIONS:

START MONTH/ YEAR	END MONTH /YEAR	POSITION TITLE	DEPARTMENT	INSTITUTION AND LOCATION
04/2015	present	Associate Professor, with tenure	Bioengineering and (by courtesy) Structural Biology	Stanford University, Stanford, CA
05/2016	08/2016	Project Associate Professor (visiting)	Applied Chemistry	University of Tokyo, Tokyo, Japan
03/2007	03/2015	Assistant Professor	Bioengineering and (by courtesy) Structural Biology	Stanford University, Stanford, CA

Significant Professional Activities

Professional Memberships and Service

- 2017-20 Biophysical Society: Council Member (elected to 3-year term)
2015-16 Biophysical Society: Co-organizer of 2016 Thematic Meeting
Engineering Approaches to Biomolecular Motors, Vancouver, Canada
2015 American Society for Cell Biology: Co-chair of Annual Meeting minisymposium umbrella topic
Cytoskeleton, Motility, and Cell Mechanics
2015- National Institutes of Health: Ad hoc reviewer (MSFC, MSFD, special emphasis panels)
2014-15 Biophysical Society: Chair of *Molecular Biophysics* Subgroup, 2015 Subgroup Meeting
2013 American Physical Society: Co-organizer of March Meeting Focus Session *Motor dynamics*
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Selected Awards and Honors

- 2009 Pew Scholars Award
- 2008 NIH Director's New Innovator Award
- 2005 Helen Hay Whitney Foundation Postdoctoral Fellowship
- 2004 Alan Bearden Award for Outstanding Ph.D. Dissertation on a Biophysical Topic, UC Berkeley
- 2004 Harold M. Weintraub Graduate Student Award, Fred Hutchinson Cancer Research Center
- 1999 Howard Hughes Medical Institute Predoctoral Fellowship

Selected Invited Talks at National and International Conferences

- 2017 IUPAB/EBSA Congress, Edinburgh, Scotland
- 2017 Annual Meeting of the Biophysical Society, New Orleans
- 2016 Bio-AFM Workshop, Kanazawa, Japan
- 2016 Foundations of Nanoscience Meeting, Snowbird, UT
- 2015 Annual Meeting of the Biophysical Society, Baltimore
- 2014 Meeting of the Japanese Biophysical Society, Sapporo, Japan
- 2014 GRC on Topoisomerases in Biology and Medicine, Maine
- 2014 GRC on Single Molecule Approaches to Biology, Barga, Italy
- 2014 International Workshop on Micro- and Nanomachines, Hannover, Germany
- 2013 American Physical Society March Meeting, Baltimore
- 2013 Annual Meeting of the Biophysical Society, Philadelphia
- 2012 Multiscale Modeling and Validation in Medicine and Biology, San Francisco
- 2011 Advances in DNA Topoisomerase and Chromosome Dynamics, Taipei, ROC
- 2010 Annual Meeting of the Biophysical Society, San Francisco
- 2010 Workshop on Mathematical and Experimental Approaches to DNA-Protein Interactions, Columbus
- 2009 American Physical Society March Meeting, New Orleans
- 2009 International Conference on Advanced Materials and Devices, Jeju, South Korea
- 2009 International Congress of Nanobiotechnology and Nanomedicine, San Francisco
- 2008 DNA Topoisomerases in Biology and Medicine, Norwich, UK

Selected Publications

1. Ivanov, I.E., Lebel, P., Oberstrass, F.C., Starr, C.H., Parente, A.C., Ierokomos, A., and **Bryant, Z.** (2018). Multimodal Measurements of Single-Molecule Dynamics Using FluorRBT. *Biophys J* **114**, 278-82.
 2. Omabegho, T., Gurel, P.S., Cheng, C.Y., Kim, L.Y., Ruijgrok, P.V., Das, R., Alushin, G.M., and **Bryant, Z.** (2018). Controllable molecular motors engineered from myosin and RNA. *Nat Nanotechnol* **13**, 34-40.
 3. Gurel, P.S., Kim, L.Y., Ruijgrok, P.V., Omabegho, T., **Bryant, Z.**, and Alushin, G.M. (2017). Cryo-EM structures reveal specialization at the myosin VI-actin interface and a mechanism of force sensitivity. *eLife* **6**, e31125.
 4. Basu, A., Parente, A.C., and **Bryant, Z.** (2016) Structural dynamics and mechanochemical coupling in DNA gyrase. *J Mol Biol* **428**, 1833-45. Review.
 5. Nakamura, M., Chen, L., Howes, S., Schindler, T.D., Nogales, E., and **Bryant, Z.** (2014) Remote control of myosin and kinesin motors using light-activated gearshifting. *Nature Nanotechnology* **9**, 693-7.
(**News and Views:** *Nat Nanotechnol* **9**, 661-2.)
 6. Lebel, P., Basu, A., Oberstrass, F.C., Tretter, E., and **Bryant, Z.** (2014) Gold rotor bead tracking for high-speed measurements of DNA twist, torque and extension. *Nature Methods* **11**, 456-62.
 7. Schindler, T.D., Chen, L., Lebel, P., Nakamura, M., and **Bryant, Z.** (2014) Engineering myosins for long-range transport on actin filaments. *Nature Nanotechnology* **9**, 33-8.
(**News and Views:** *Nat Nanotechnol* **9**, 9-10; **Editorial:** *Nat Nanotechnol* **9**, 1)
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8. Oberstrass, F., Fernandes, L., Lebel, P., and **Bryant, Z.** (2013) Torque spectroscopy of DNA: basepair stability, boundary effects, backbending, and breathing dynamics. *Physical Review Letters* **110**, 178103.
(**Highlight:** *Physics*, “Wind-up DNA”)
9. Cipriano, D., Jung, J., Vivona, S., Fenn, T.D., Brunger, A.T., and **Bryant, Z.** (2013) Processive ATP-driven substrate disassembly by the NSF machine. *Journal of Biological Chemistry* **288**, 23436-45.
(Selected by JBC as “Paper of the week” and among the **Best of JBC 2013**)
10. **Bryant, Z.**, Oberstrass, F.C., and Basu, A. (2012) Recent developments in single-molecule DNA mechanics. *Curr Opin Struct Biol* **22**, 304-12. Review.
11. Basu, A., Schoeffler, A.J., Berger, J.M., and **Bryant, Z.** (2012) ATP controls distinct structural transitions of *E. coli* DNA gyrase in complex with DNA. *Nature Structural and Molecular Biology* **19**, 538-46.
(**Cover Article.**)
12. Oberstrass, F.C., Fernandes, L.E., and **Bryant, Z.** (2012) Torque measurements reveal sequence-specific cooperative transitions in supercoiled DNA. *Proc Natl Acad Sci U S A* **109**, 6106-11.
13. Chen, L., Nakamura, M., Schindler, T.D., Parker, D., and **Bryant, Z.** (2012) Engineering controllable bidirectional molecular motors based on myosin. *Nature Nanotechnology* **7**, 252-6.
(**News and Views:** Walter, W.J. and Diez, S. *Nat Nanotechnol* **7**, 213-4.)
14. Elting, M.W., **Bryant, Z.**, Liao, J.C., and Spudich, J.A. (2011) Detailed tuning of structure and intramolecular communication are dispensable for processive motion of myosin VI. *Biophys J* **100**, 430-9.
15. Liao, J.C., Elting, M.W., Delp, S., Spudich, J.A., and **Bryant, Z.** (2009) Engineered myosin VI motors reveal minimal structural determinants of directionality and processivity. *J Mol Biol* **392**, 862-867.
16. Parker, D., **Bryant, Z.**, and Delp, S. (2009) Coarse-grained structural modeling of molecular motors using multibody dynamics. *Cellular and Molecular Bioengineering* **3**, 366-374.
17. **Bryant, Z.**, Altman, D., and Spudich, J.A. (2007) The power stroke of myosin VI and the basis of reverse directionality. *Proc Natl Acad Sci U S A* **104**, 772-777.
18. Nöllmann, M.* , Stone, M.D.* , **Bryant, Z.***, Gore, J.* , Crisona, N., Hong, S.-C., Mittelheiser, S., Maxwell, A., Bustamante, C., and Cozzarelli, N.R. (2007) Multiple modes of *Escherichia coli* DNA gyrase activity revealed by force and torque. *Nat Struct Mol Biol* **14**, 264-71. *equal cont.
(**News and Views:** Higgins, N.P. *Nat Struct Mol Biol* **14**, 256-8.)
19. Gore, J., **Bryant, Z.**, Nöllman, M., Le, M., Cozzarelli, N.R., and Bustamante, C. (2006) DNA overwinds when stretched. *Nature* **442**, 836-839
20. Gore, J.* , **Bryant, Z.***, Stone, M. D.* , Nöllman, M., Cozzarelli, N. R. and Bustamante, C. (2006) Mechanochemical analysis of DNA gyrase using rotor bead tracking. *Nature* **439**, 100-104. *equal cont..
21. Stone, M. D., **Bryant, Z.**, Crisona, N. J., Smith, S. B., Cozzarelli, N. R. and Bustamante, C. (2003) Chirality sensing by *Escherichia coli* topoisomerase IV and the mechanism of type II topoisomerases. *Proc Natl Acad Sci U S A* **100**, 8654-9.
22. **Bryant, Z.**, Stone, M. D., Gore, J., Smith, S. B., Cozzarelli, N. R. and Bustamante, C. (2003) Structural transitions and elasticity from torque measurements on DNA. *Nature* **424**, 338-341.
23. Bustamante, C., **Bryant, Z.** and Smith, S.B. (2003) Ten years of tension: single-molecule DNA mechanics. *Nature* **421**, 423-427. Review.
24. **Bryant, Z.**, Pande, V. S. and Rokhsar, D. S. (2000) Mechanical unfolding of a beta-hairpin using molecular dynamics. *Biophys J* **78**, 584-9.
25. **Bryant, Z.**, Subrahmanyam, L., Tworoger, M., LaTray, L., Liu, C. R., Li, M. J., van den Engh, G. and Ruohola-Baker, H. (1999) Characterization of differentially expressed genes in purified *Drosophila* follicle cells: toward a general strategy for cell type-specific developmental analysis. *Proc Natl Acad Sci U S A* **96**, 5559-64.

Complete list of published work:

<http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/46855040/?sort=date&direction=descending>
