
BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
Grant J. Jensen	HHMI Investigator Associate Professor of Biology California Institute of Technology

EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Brigham Young University, Provo, UT	B.S.	1994	Physics
Stanford University, Palo Alto, CA	Ph.D.	1999	Biophysics
Lawrence Berkeley National Laboratory, Berkeley, CA	Postdoc	1999-2002	Biophysics

Research and Professional experience

8/08-present *Investigator*, Howard Hughes Medical Institute
7/08-present *Associate Professor of Biology*, California Institute of Technology
7/02-7/08 *Assistant Professor of Biology*, California Institute of Technology
12/99-6/02 *Post-doctoral fellow*, Lawrence Berkeley National Lab; Dr. Kenneth H. Downing, advisor
1/95-12/99 *Graduate student*, Stanford University; Dr. Roger D. Kornberg, advisor
5/93-8/94 *Summer research assistant*, Los Alamos National Lab; Dr. Mark Bitenski, advisor
5/92-8/92 *Research assistant*, Brigham Young Univ. Physics Dept.; Dr. William Strong, advisor

Honors and Awards

Chair elect, American Society of Microbiology, Division of Cell and Structural Biology, 2007
Member, Faculty of 1000, Structural Biology, Macromolecular Machines Section, 2008 - present
Searle Scholar, 2004
Damon Runyon-Walter Winchell post-doctoral fellow, 1999-2002
Microscopy Society of America Presidential Scholar Award, 1998
Valedictorian, College of Physical and Mathematical Sciences, Brigham Young University, 1994

Publications

2008

1. Gan, L., Chen, S. and Jensen, G.J. (2008). Molecular organization of Gram-negative peptidoglycan. *PNAS* 105(48):18953-18957.
 2. Lee, E., Fahimian, B.P., Iancu, C.V., Suloway, C., Murphy, G.E., Wright, E.R., Castano-Diez, D., **Jensen, G.J.**, and Miao, J. (2008). Radiation dose reduction and image enhancement in biological imaging through equally sloped tomography. *J. Struct. Biol.* 164:221-227.
 3. He, W., Jensen, G.J., McIntosh, J.R., Bjorkman, P.J. (2008). Three-dimensional itinerary of FcRn-mediated antibody transport across epithelial cells revealed by electron tomography. *Nature* 455(7212):542-546.
 4. Ebersbach, G., Briegel, A., Jensen, G.J., and Jacobs-Wagner, C. (2008). A multipurpose polar bridging factor critical for bacterial chromosome anchoring, cell division and polar morphogenesis. *Cell* 134(6):956-968.
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5. Tivol, W.F., Briegel, A., and Jensen, G.J. (2008). An improved cryogen for plunge freezing. *Microscopy and Microanalysis* 14(05):375-379.
6. Morris, D.M. and Jensen, G.J. (2008). Towards a biomechanical understanding of whole bacterial cells (invited review). *Annu. Rev. Biochem.* 77:24.1-31.
7. Briegel, A.B., Ding, H.J., Li, Z., Gitai, Z., Dias, P.D., and Jensen, G.J. (2008). Location and architecture of the *Caulobacter crescentus* chemoreceptor array by electron cryotomography. *Mol. Microbiol.* 69(1):30-41.
8. Murphy, G.E., Matson, E.G., Leadbetter, J.R., Berg, H.C., and Jensen, G.J. (2008). Novel ultrastructures of *Treponema primitia* and their implications for motility. *Mol. Microbiol.* 67(6):1184-1195.
***highlighted by an invited "Microcommentary" in the same journal by Nyles Charon**
9. Yu, Z., Gonciarz, M.D., Sundquist, W.I., Hill, C.P., and Jensen, G.J. (2008). Cryo-EM structure of dodecameric Vps4 and its 2:1 complex with Vta1. *J. Mol. Biol.* 377:364-377.

2007

10. Li, Z., Trimble, M.J., Brun, Y.V., and Jensen, G.J. (2007). The structure of FtsZ filaments in-vivo suggests a force-generating role in cell division. *EMBO J.* 26:4694-4708. ***received "Must Read" interest factor in Faculty of 1000 reviews**
 11. Murphy, G.E. and Jensen, G.J. (2007). Electron cryotomography (invited essay). *Biotechniques* 43(4):413-420.
 12. Iancu, C.V., Ding, H.J., Morris, D.M., Martino, A., and Jensen, G.J. (2007). The structure of isolated *Synechococcus* strain WH8102 carboxysomes as revealed by electron cryotomography. *J. Mol. Biol.* 372:764-773. ***received "Recommended" interest factor in Faculty of 1000 reviews**
 13. Henderson, G.P., Gan, L., and Jensen, G.J. (2007). 3-D Ultrastructure of *Ostreococcus tauri*: Electron cryotomography of an entire eukaryotic cell. *PLoS One* 2(8):e749. doi:10.1371/journal.pone.0000749 ***received "Recommended" interest factor in Faculty of 1000 reviews**
 14. Jensen, G.J. and Briegel, A. (2007). How electron cryotomography is opening a new window into prokaryotic ultrastructure. *Curr. Opin. Struct. Biol.*, 17:260-267.
 15. Wright, E.R., Schooler, J.B., Ding, H.J., Kieffer, C., Fillmore, C., Sundquist, W.I., and Jensen, G.J. (2007). Electron cryotomography of immature HIV-1 virions reveals the structure of the CA and SP1 Gag shells. *EMBO J.* 26:2218-2226. ***received "Must read" interest factor in Faculty of 1000 reviews**
 16. Jensen, G.J. (2007). A nanoengine for gliding motility (invited Microcommentary). *Mol. Microbiol.* 63:4-6.
 17. Burns, D.G., Janssen, P.H., Itoh, T., Kamekura, M., Li, Z., Jensen, G.J., Rodriguez-Valera, F., Bolhuis, H., and Dyal-Smith, M.L. (2007). *Haloquadratum walsbyi* gen. nov., sp. nov., the square haloarchaeon of Walsby, isolated from saltern crystallizers in Australia and Spain. *Int. J. Syst. Evol. Microbiol.* 57:387-392.
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2006

18. Iancu, C.V., Tivol, W.F., Schooler, J.B., Henderson, G.P., Dias, D.P., Murphy, G.E., Wright, E.R., Li, Z., Briegel, A., Yu, Z., Gan, L., He, Yongning and Jensen, G.J. (2006). Electron cryotomography sample preparation. *Nature Protocols*, DOI 10.1038/nprot.2006.432.
19. Murphy, G.E., Leadbetter, J.R., and Jensen, G.J. (2006). *In-situ* structure of the complete *Treponema primitia* flagellar motor. *Nature* 442:1062-4. ***highlighted by a review in Current Biology by David DeRosier.**
20. Briegel, A., Dias, D.P., Li, Z., Jensen, R.B., Frangakis, A.S., and Jensen, G.J. (2006). Multiple large filament bundles observed in *Caulobacter crescentus* by electron cryotomography. *Mol. Microbiol.* 62(1):5-14.
21. Henderson, G.P. and Jensen, G.J. (2006). Three-dimensional structure of *Mycoplasma pneumoniae*'s attachment organelle and a model for its role in gliding motility. *Mol. Microbiol.* 60(2):376-385.
22. Wright, E.R., Iancu, C.V., Tivol, W.F. and Jensen, G.J. (2006). Observations on the behavior of vitreous ice at ~82 and ~12 K. *J. of Struct. Biol.* 153:241-252.
23. Iancu, C.V., Wright, E.R., Heymann, J.B., and Jensen, G.J. (2006). A comparison of liquid nitrogen and liquid helium as potential cryogens for electron cryotomography. *J. of Struct. Biol.* 153:231-240.
24. Komeili, A., Li, Z., Newman, D.K., and Jensen, G.J. (2006). Magnetosomes are cell membrane invaginations organized by the actin-like protein MamK. *Science*, 311:242-245.

2005

25. Murphy, G.E. and Jensen, G.J. (2005). Electron cryotomography of the E. coli pyruvate and 2-oxoglutarate dehydrogenase complexes. *Structure*, 13(12):1765-1773. ***received "Exceptional" interest factor in Faculty of 1000 reviews**
26. Iancu, C.V., Wright, E.R., Benjamin, J., Tivol, W.F., Dias, D.P., Murphy, G.E., Heymann, J.B., and Jensen, G.J. (2005). A "flip-flop" rotation stage for routine dual-axis electron cryotomography. *J. of Struct. Biol.* 151:288-297.
27. Leong, P.A., Heymann, J.B., and Jensen, G.J. (2005). Peach: A simple Perl-based system for distributed computation and its application to cryoEM data processing. *Structure*, 13:1-7.
28. Benjamin, J., Ganser-Pornillos, B.K., Tivol, W.F., Sundquist, W.I., and Jensen, G.J. (2005). Three-dimensional structure of HIV-1 virus-like particles by electron cryotomography. *J. Mol. Biol.* 346(2):577-588. ***one of top ten downloaded JMB papers in 2005**
29. Ackerson, C.J., Jadzinsky, P.D., Jensen, G.J., and Kornberg, R.D. (2005). Rigid, specific, and discrete gold nanoparticle/antibody conjugates. *J. Am. Chem. Soc.* 128:2635-2640.

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30. Jensen, G.J. (2001). Alignment error envelopes for single particle analysis. *J. of Struct. Biol.* 133:143-155.
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31. Jensen, G.J. and Kornberg, R.D. (2000). Defocus-gradient corrected back-projection. *Ultramicroscopy* 84:57-64.
32. Poglitsch, C.L., Meredith, G., Gnatt, A., Jensen, G.J., Chang, W., Fu, J., and Kornberg, R.D. (1999). Electron crystal structure of an RNA polymerase II transcription elongation complex. *Cell* 98:791-798.
33. Fu, J., Gnatt, A., Bushnell, D.A., David, P., Jensen, G.J., and Kornberg, R.D. (1999). Yeast RNA polymerase II at 5Å resolution. *Cell* 98:799-810.
34. Jensen, G.J. and Kornberg, R.D. (1998). Single-particle selection and alignment with heavy atom cluster-antibody conjugates. *Proc. Natl. Acad. Sci. USA* 95:9262-9267.
35. Jensen, G.J., Meredith, G., Bushnell, D.A. and Kornberg, R.D. (1998). Structure of wild-type yeast RNA polymerase II and location of subunits Rpb4 and Rpb7. *EMBO* 17:2353-2358.
36. Yoshida, T., Willardson, B.M., Wilkins, J.F., Jensen, G.J., Thornton, B.D. and Bitenski, M.W. (1994). The phosphorylation state of phosducin determines its ability to block transducin subunit interactions and inhibits transducin binding to activated rhodopsin. *J. Biol. Chem.* 269:24050-24057.

Patent

Jensen, G.J. and Kornberg, R.D. (1999) "Methods and compositions for use in three-dimensional structural determination." U.S. patent number 6,604,052, Aug. 5, 2003.

Textbook contributions:

Figure in Three-dimensional electron microscopy by Joachim Frank, second edition, taken from paper "Alignment error envelopes for single particle analysis" JSB 133:143.

Image of *Mycoplasma pneumoniae* cell requested (7/5/06) for Genes IX, by Benjamin Lewin.

Images of *Mycoplasma genitalium* provided for article in Discover Magazine, 6/2007.

Reconstruction and model of *E. coli* pyruvate dehydrogenase requested 6/2007 for textbook Microbiology: An Evolving Science by Joan Slonczewski.

Fig. 6A of Briegel et al. 2006 Mol. Micro requested for text "Cell Structure, Organization, Bacteria and Archaea," to be published by Elsevier
