

Ajit P. Joglekar

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EDUCATION

University of Michigan, Ann Arbor

Ph.D. Biomedical Engineering

May 2004

Thesis: "A study of directional instability during mitotic chromosome movement"

Advisor: Prof. Alan Hunt, Co-advisor: Prof. Edgar Meyhöfer

Pune University, Pune, India

B.E. Mechanical Engineering

May 1999

Final year project: "Fabrication of small capacity wind-turbine blades"

RESEARCH EXPERIENCE

University of North Carolina, Chapel Hill

Post-doctoral research associate

July 2004-Present

"*In vivo* protein architecture of a kinetochore-microtubule attachment"

University of Michigan, Ann Arbor

Doctoral student

1999 - 2004

"A study of the directional instability during mitotic chromosome movement"

TEACHING EXPERIENCE

University of Michigan, Ann Arbor

Teaching assistant, Quantitative Physiology

Fall 2001

HONOURS

- Research Excellence Award from the Office of Post-doctoral Affairs, UNC 2008
- Career Award at the Scientific Interface - Burroughs-Wellcome Fund 2007-2011
- Summer Research fellowship - Jawaharlal Nehru Institute for Advanced Scientific Research, Bangalore, India 1998

PUBLICATIONS

- 1) Johnson, K., **Joglekar A. P.**, Fukagawa, T., Salmon E. D. (manuscript under preparation) "Protein composition of the kinetochore in DT40 chicken cells determined by live-cell fluorescence microscopy"
- 2) **Joglekar A. P.**, Bloom K., Salmon E. D. "Mechanisms of force generation with end-on kinetochore-microtubule attachments" review submitted to *Curr Op Cell Biol*.
- 3) **Joglekar A. P.** and Bloom K. "Resolving kinetochore architecture with quantitative biology" review submitted to *Curr Biol*.
- 4) **Joglekar A. P.** and DeLuca J. G. "Chromosome Segregation: Ndc80 Can Carry the Load" *Curr Biol*. 19(10):R404-7.
- 5) **Joglekar A. P.**, Bloom K., Salmon E. D. (2009) "In vivo protein architecture of the eukaryotic kinetochore with nanometer accuracy" *Curr Biol*. 19(8):694-99.
- 6) Wan X., O'Quinn R.P., Pierce H. L., **Joglekar A. P.**, DeLuca J. G., Desai A., Yen T. J., Salmon E. D. "Protein architecture of the core microtubule attachment site in human kinetochores measured by KSHREC" *Cell* 137(4):672-84.
- 7) Ribeiro S., Gatlin J. C., Dong Y., **Joglekar A. P.**, Cameron L., Hudson D. F., McEwen B. F., Salmon E. D., Earnshaw W. C., Vagnarelli P. (2009) "Condensin regulates the stiffness of vertebrate centromeres" *Mol Biol Cell* 20(9):2371-80.
- 8) Gardner M. K., Bouck D. C., Paliulis L. V., Meehl J. B., O'Toole E. T., Haase J., Soubry A., **Joglekar A. P.**, Winey M., Salmon E. D., Bloom K., and Odde D. J. (2008) "Kinesin-5 motors mediate chromosome congression by promoting disassembly of longer microtubules" *Cell* 135(5): 894-906.

- 9) **Joglekar A. P.**, Bouck D., Finley K., Liu X., Wan Y., Berman J., He X., Salmon E.D., Bloom K. (2008) "Molecular architecture of kinetochore-microtubule attachment sites is conserved in point and regional centromeres" *J Cell Biol.* 181(4): 587-94.
- 10) Bouck D., **Joglekar A. P.**, Bloom K. (2008) "Design Features of a Mitotic Spindle: Balancing tension and compression at a single microtubule kinetochore interface in budding yeast" *Ann. Rev. Genet.* 42:335-59.
- 11) **Joglekar A. P.**, Salmon E. D., Bloom K. (2008) "Counting kinetochore proteins in budding yeast using genetically encoded fluorescent proteins" *Methods Cell Biol.* 85:127-51.
- 12) Yeh E., Haase J., Paliulis L. V., **Joglekar A. P.**, Bond L., Bouck D., Salmon E. D., Bloom K. S. (2008) "Pericentric chromatin is organized into an intramolecular loop in mitosis." *Curr. Biol.* 18(2):81-90.
- 13) Gardner M. K., Haase J., Myhre K., Molk J. N., Anderson M., **Joglekar A. P.**, O'Toole E. T., Winey M., Salmon E. D., Odde D. J., Bloom K. (2008) "The microtubule-based motor Kar3 and plus end-binding protein Bim1 provide structural support for the anaphase spindle." *J. Cell Biol.* 180(1):91-100.
- 14) Kudryashov S. I., **Joglekar A. P.**, Mourou G., Herbstman J. F., Hunt A. J. (2007) "Nanochannels fabricated by high-intensity femtosecond laser pulses on dielectric surfaces" *Appl. Phys. Lett.* 91:141111.
- 15) **Joglekar A. P.**, Bouck D., Molk J., Bloom K., Salmon E. D. (2006) "Molecular architecture of a kinetochore-microtubule attachment site" *Nature Cell Biol.* 8:581-85.
- 16) **Joglekar A. P.**, Liu, H. H., Meyhofer E., Mourou G., Hunt, A. J. (2004) Optics at Critical Intensity: Applications to Nanomorphing. *PNAS USA* 101(16): 5856-61.
- 17) **Joglekar A. P.**, Liu H. H., Meyhofer E., Mourou G., Hunt, A. J. (2003) A Study of the Deterministic Character of Optical Damage by Femtosecond Laser Pulses and Applications to Nanomachining. *Appl. Phys. B - Lasers* 77 (1): 25-30.
- 18) **Joglekar A. P.**, Hunt, A. J. (2002). A Simple, Mechanistic Model for Directional Instability during Mitotic Chromosome Movement. *Biophys. J.* 83(1): 42-58.
- 19) Kunte, K., **Joglekar, A.P.**, Ghate, U., Pramod, P. (1999) Patterns of Butterfly, Bird and Tree Diversity in the Western Ghats. *Current Science* 77 (4): 577-86.

CONFERENCE POSTER PRESENTATIONS

- 1) Motile and Contractile systems, Gordon Research Conference, 2009
- 2) Annual Meeting of the American Society for Cell Biology, 2008
- 3) Annual Meeting of the Biophysical Society, 2007
- 4) Annual Meeting of the American Society for Cell Biology, 2007
- 5) Annual Meeting of the American Society for Cell Biology, 2006
- 6) Annual Meeting of the Biophysical Society, 2006
- 7) Annual Meeting of the American Society for Cell Biology, 2005
- 8) Annual Meeting of the American Society for Cell Biology, 2004
- 9) Annual Meeting of the Biophysical Society, 2003
- 10) Annual Meeting of the Biophysical Society, 2002
- 11) Annual Meeting of the Biophysical Society, 2001

INVITED SEMINARS

- 1) “Some assembly required: Protein architecture of the eukaryotic kinetochore” – Yeast Cell Biology meeting at Cold Spring Harbor Laboratories (August 2009)
- 2) “Some assembly required: Protein architecture of the eukaryotic kinetochore” – invited seminar in the Department of Biological Sciences at Virginia Tech (2009).
- 3) Biomedical Engineering at Vanderbilt
- 4) Institute of Cell and Molecular Biology at the University of Utah, Salt Lake City
- 5) Biochemistry Department at Dartmouth
- 6) Institute of Cell and Molecular Biology/Biomedical Engineering at Cornell
- 7) Institute of Cell and Molecular Biology at the University of Texas, Austin
- 8) Department of Cell Biology at Yale
- 9) Institute of Cell and Molecular Biology at the University of Colorado, Boulder
- 10) Department of Molecular Physiology and Biophysics at the University of Vermont
- 11) National Heart, Lung, and Blood Institute (NHLBI)
- 12) Annual Meeting of the Biophysical Society (2004)

PATENTS

- 1) US Patent # 6,995,336 ‘Method for forming nanoscale features’ Hunt, Alan J.; Mourou, Gerard; **Joglekar, Ajit P.**; Meyhofer, Edgar; Nees, John A.; Spooner, Greg.