

NEEDHI BHALLA

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EDUCATION

2000-2002 Harvard University, Cambridge, MA
Visiting Fellow
1995-2002 University of California, San Francisco, CA
Ph.D., 2002
1991-1995 Columbia College, New York, NY
B.A. with Honors, magna cum laude, 1995

RESEARCH TRAINING

2002-2008 **Post-doctoral Fellow**
Dr. Abby F. Dernburg
E.O. Lawrence Berkeley National Lab
University of California, Berkeley
1995-2002 **Doctoral Dissertation**
Dr. Andrew W. Murray
University of California, San Francisco
1994-1995 **Independent Undergraduate Research**
Dr. Teri Melese
Columbia University
1993 **Summer Intern**
Dr. John Kornblum
New York City Public Health Laboratories

PROFESSIONAL EXPERIENCE

2015-present **Associate Professor**
Department of Molecular, Cell and Developmental Biology
University of California, Santa Cruz
2008-2015 **Assistant Professor**
Department of Molecular, Cell and Developmental Biology
University of California, Santa Cruz

HONORS, FELLOWSHIPS AND AWARDS

2009-2013 Ellison Medical Foundation New Scholar in Aging Award
2006-2012 National Institutes of Health Pathway to Independence Award
2004-2006 Ruth L. Kirschstein National Research Service Award, Post-doctoral Fellowship
1997-2000 National Science Foundation Pre-doctoral Fellowship
1995 Phi Beta Kappa
1991-1995 Astor Presidential Scholarship, Columbia College
1991-1995 Dean's List, Columbia College
1994 Summer Undergraduate Research Fellowship, Columbia College

GRANTS

- 2011 - 2021 National Institutes of Health R01 Research Grant, R01GM097144: "Regulating and monitoring meiotic synapsis in *C. elegans*"
- 2010 - 2011 University of California Cancer Research Coordinating Committee, SC-11-06: "Regulation of Meiotic Chromosome Dynamics by ZHP-3 in *C. elegans*"
- 2009 - 2014 Ellison Medical Foundation New Scholar in Aging Award, AG-NS-0584-09: "Nuclear Organization and Regulation of Meiotic Recombination"
- 2006 - 2012 National Institutes of Health Pathway to Independence Award, K99RR024110/4R00RR024110: "Characterization of the Synapsis Checkpoint in *C. elegans* Meiosis"

PROFESSIONAL SOCIETIES

Member, American Society of Cell Biology, 2005-present

Member, Genetics Society of America, 2011-present

PUBLICATIONS (PEER-REVIEWED)

Bohr, T., G. Ashley, E. Eggleston, K. Firestone and **N. Bhalla**. 2016. Synaptonemal complex components are required for meiotic checkpoint function in *Caenorhabditis elegans*. *Genetics*. 204(3):987-997.

Nelson, C.R., T. Hwang, P.H. Chen and **N. Bhalla**. 2015. TRIP13^{PCH-2} promotes Mad2 localization to unattached kinetochores in the spindle checkpoint response. *J Cell Biol*. 211(3):503-516.

Bohr, T., C.R. Nelson and **N. Bhalla**. 2015. Spindle assembly checkpoint proteins regulate and monitor meiotic synapsis in *C. elegans*. *J Cell Biol*. 211(2):233-242.

Ye, A.L., J.M. Ragle, B. Conradt and **N. Bhalla**. 2014. Differential regulation of germline apoptosis in response to meiotic checkpoint activation. *Genetics*. 198(3):995-1000.

Deshong, A., A.L. Ye, P. Lamelza, and **N. Bhalla**. 2014. A quality control mechanism coordinates events during meiotic prophase in *C. elegans*. *PLoS Genet*. 10(4): e1004291.

Lamelza, P. and **N. Bhalla**. 2012. Histone methyltransferases MES-4 and MET-1 promote meiotic checkpoint activation in *Caenorhabditis elegans*. *PLoS Genet*. 8(11): e1003089.

Harper, N.C., R. Rillo, S. Jover-Gil, Z.J. Assaf, **N. Bhalla**, A.F. Dernburg. 2011. Pairing Centers recruit a Polo-like kinase to orchestrate meiotic chromosome dynamics in *C. elegans*. *Dev Cell*. 21(5): 934-47.

Bhalla, N., D.J. Wynne, V. Jantsch and A.F. Dernburg. 2008. ZHP-3 acts at crossovers to couple meiotic recombination with synaptonemal complex disassembly and bivalent formation in *C. elegans*. *PLoS Genet*. 4(10): e1000235.

Phillips, C.M., C. Wong, **N. Bhalla**, P.M. Carlton, P. Weiser, P.M. Meneely and A.F. Dernburg. 2005. HIM-8 binds to the X chromosome Pairing Center and mediates chromosome-specific meiotic synapsis. *Cell*. 123(6): 1051-1063.

MacQueen, A.J., C.M. Phillips, **N. Bhalla**, P. Weiser, A.M. Villeneuve and A.F. Dernburg. 2005. Chromosome sites play dual roles to establish homologous synapsis during meiosis in *C. elegans*. *Cell*. 123(6): 1037-1050.

Bhalla, N. and A.F. Dernburg. 2005. A conserved checkpoint monitors meiotic chromosome synapsis in *Caenorabditis elegans*. *Science*. 310(5754): 1683-1686.

Bhalla, N., S. Biggins, and A.W. Murray. 2002. Mutation of *YCS4*, a budding yeast condensin subunit, affects mitotic and non-mitotic chromosome behavior. *MBC*. 13(2): 632-645.

Biggins, S., **N. Bhalla**, A. Chang, D.L. Smith, and A.W. Murray. 2001. Genes involved in sister chromatid separation and segregation in budding yeast. *Genetics*. 159(2):453-470.

Biggins, S., F. F. Severin, **N. Bhalla**, I. Sassoon, A. A. Hyman and A. W. Murray. 1999. The conserved protein kinase Ipl1 regulates microtubule binding to kinetochores in budding yeast. *Genes Dev*. 13(5):532-544.

PUBLICATIONS (INVITED COMMENTARIES AND REVIEWS)

Berg JM, **Bhalla N**, Bourne PE, Chalfie M, Drubin DG, Fraser JS, Greider CW, Hendricks M, Jones C, Kiley R, King S, Kirschner MW, Krumholz HM, Lehmann R, Leptin M, Pulverer B, Rosenzweig B, Spiro JE, Stebbins M, Strasser C, Swaminathan S, Turner P, Vale RD, VijayRaghavan K, Wolberger C. 2016. Preprints for the life sciences. *Science*. 352(6288):899-901.

Bhalla, N. 2016. Has the time come for preprints in biology? *MBC*. 27(8):1185-7.

Ye, A.L. and **N. Bhalla**. 2011. Reproductive Aging: Insights from Model Systems (Review). *Biochem Soc Trans*. 39(6): 1770-1774.

Paschal, C.R. and **N. Bhalla**. 2011. The cohesin complex: a platform for DNA damage checkpoint activation and repair? (Commentary) *Curr Biol*. 21(17): R649-50.

Bhalla, N. 2010. Meiosis: Repair or removal? (Commentary) *Curr Biol*. 20(23): R1014-6.

Bhalla, N. and A.F. Dernburg. 2008. Prelude to a Division (Review). *Annu Rev Cell Dev Biol*. 24: 397-424.

Bhalla, N. 2002. Cell Cycle Regulation (Meeting Review). *Genome Biol*. 3:reports4009.1-4.

PREPRINTS

Bohr, T., C.R. Nelson, S. Giacomazzi, P. Lamelza and **N. Bhalla**. Shugoshin is essential for meiotic prophase checkpoints in *C. elegans*. bioRxiv

PUBLICATIONS (IN PREPARATION)

Defachelles, L, A.E. Russo, C.R. Nelson and **N. Bhalla**. PCH-2 is an essential regulator of spindle checkpoint strength.

Vong, D., S. Giacomazzi, A. Devigne, L. Defachelles, and **N. Bhalla**. PCH-2 collaborates with CMT-1 to proofread meiotic interhomolog interactions.

RESEARCH PRESENTATIONS AND SESSIONS CHAIRSHIPS

2017 EMBO Meiosis Meeting, Co-Chair, Pairing and Synaptonemal Complex Session

2017 Gordon Research Conference, Chromosome Dynamics, Lucca Italy

2014 Gordon Research Conference, Meiosis, New London, NH

Discussion Leader, Regulation of Recombination Session

- 2012 Gordon Research Conference, Meiosis, New London, NH
- 2011 18th International *C. elegans* Meeting, Los Angeles, CA
Co-Chair, Cell Biology: Cell Division and Chromosome Dynamics, Polarity
Parallel Session
- 2009 Gordon Research Conference, Chromosome Dynamics, Lucca Italy
- 2007 8th European Meiosis Meeting, Kanagawa, Japan
- 2007 Gordon Research Conference, Chromosome Dynamics, Biddeford, ME
- 2005 45th Annual Meeting of the American Society for Cell Biology, Mitosis & Meiosis
Minisymposium, San Francisco, CA
- 2005 15th Biennial International *C. elegans* Conference, Cell Cycle and Mitosis Parallel
Session, Los Angeles, CA
- 2004 Chromosome Segregation and Aneuploidy: Sixth International Workshop, Cortona, Italy
- 2004 British Society of Cell Biology: Cell Cycle Regulation of Meiosis, Newcastle Upon Tyne,
England

DIVERSITY OUTREACH

- 2017 Seminar and discussion with Crossroads Committee at Stowers Institute for Medical
Research on diversity and inclusivity in academic science
- 2017 Co-led Power Hour at Chromosome Dynamics Gordon Research Conference, Lucca
Italy

OUTREACH

Participated in webinar on Early Career Funding Crisis for eLife
Participated in Online Grad Training for iBio: Course 2: Experimental Design
Twitter account: @NeedhiBhalla, currently have 2667 followers

INVITED SEMINARS

- 2017 University of Utah School of Medicine, Department of Genetics, Salt Lake City, UT
- 2017 Stowers Institute for Medical Research, Kansas City, MO
- 2017 Kansas University, Department of Molecular Biosciences, Lawrence, KS
- 2017 McGill University, Molecular Seminar Series, Montreal, Quebec, Canada
- 2016 University of Iowa, Department of Biology, Iowa City, IA
- 2016 Fred Hutchinson Cancer Research Center, Basic Sciences Division, Seattle, WA
- 2015 University of Chicago, Department of Molecular Genetics and Cell Biology, Chicago, IL
- 2013 California State University, Monterey Bay, Biology Seminar Series, Seaside, CA
- 2011 San Francisco State University, Department of Biology, San Francisco, CA
- 2010 University of California, Davis, Seminar in Molecular Genetics, Davis, CA
- 2007 San Francisco State University, Department of Biology, San Francisco, CA

TEACHING

BIOL105: Molecular Genetics (undergraduate class)
BIOL200C: Graduate Cell Biology
BIOL290: Career Planning for Graduate Students