

CURRICULUM VITAE

Ke Hu, Ph.D

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EDUCATION:

1997 B.S. in Biology, Tsinghua University, P.R. China
2002 Ph.D. in Biology, thesis advisor Dr. David Roos, University of Pennsylvania

TRAINING:

Postdoctoral Fellow with Dr. John Murray in Department of Cell and Developmental Biology, University of Pennsylvania (2002 - 2003)

CURRENT POSITION:

Postdoctoral Fellow with Dr. Waterman-Storer in Department of Cell Biology, Scripps Research Institute (2003 Aug- now)

FELLOWSHIPS AWARDED:

2005-2008 Leukemia and Lymphoma Society, Special Fellow Award
2005 *The Susan G. Komen Breast Cancer Foundation, Postdoctoral Fellowship Research Award (declined)*
2005 *American Heart Association, Postdoctoral Fellowship Research Award (declined)*

HONORS:

Nachmias/Thimann Research Prize for *Outstanding Research in Cell and Developmental Biology by Graduate students and Postdoctoral Fellows* (University of Pennsylvania, 2002)

TEACHING EXPERIENCE:

Teaching Assistant

(Department of Biology, University of Pennsylvania, 1997-2000)

Biology 101: Introduction to Biology

Biology 121: Introduction to Biology I - The Molecular Biology of Life

Biology 122: Introduction to Biology II - The Form and Function of Living Systems

Biology 175: Principles of Microbiology

Biology 475: Molecular Biology and Genetics Lab

Assistant Instructor

(Cold Spring Harbor Laboratory, 2001-2005)

Immunocytochemistry, In Situ Hybridization, Live cell imaging

PEER-REVIEWED PUBLICATIONS(2002-2004):

Hu, K., T. Mann, B. Striepen, C.J. M. Beckers, D. S. Roos and J. M. Murray. 2002a. "Daughter cell assembly in the protozoan parasite *Toxoplasma gondii*" *Molec. Biol. Cell* 13: 593-606.

Hu, K., D. S. Roos and J. M. Murray. 2002b. "A novel polymer of tubulin forms the conoid in *Toxoplasma gondii*"(cover) *J. Cell Biol.* 156:1039-1050.

Swedlow, J.R., K. Hu, P.D. Andrews, D. S. Roos and J. M. Murray. 2002. "Measurement of tubulin content in

the conoid and spindle pole of the parasite *Toxoplasma gondii*: A comparison of laser scanning confocal and wide field fluorescence microscopy for quantitative analysis in living cells” *Proc. Nat’l Acad. Sci. USA* 99:2014-2019.

- Pelletier, L., Stern, A., Pypaert, M., Sheff, D., Ngo, H., Roper, N., He, C., **Hu, K.**, Toomre, D., Coppens, I., Roos, D., Joiner, K and Warren, G 2002. "Golgi Biogenesis in *Toxoplasma gondii*." *Nature* 418, 548-552.
- D. M. Wetzel, S. Hakansson, **K. Hu**, D. Roos, and L. D. Sibley 2003. “Actin Filament Polymerization Propels Gliding Motility by Apicomplexan Parasites” *Molec. Biol. Cell* 14: 396-406
- K. Hu**, D. S. Roos, S. O. Angel and J. M. Murray 2004. “Variability and heritability of cell division pathways in *T. gondii*” *Journal of Cell Science* 2004 117: 5697-5705

MANUSCRIPTS SUBMITTED:

- K. Hu**, J. Johnson, L. Florens, M. Fraunholz, S. Suravajjala, C. DiLullo, J. Yates, D. S. Roos and J. M. Murray 2005.”Cytoskeletal components of an invasion machine – the apical complex of *Toxoplasma gondii*” Submitted to *Plos Pathogen* (under review)

MANUSCRIPTS IN PREPARATION:

- K. Hu**, S. Suravajjala, C. DiLullo, D. S. Roos and J. M. Murray 2005. “Identification of new tubulin isoforms in *Toxoplasma gondii*”
- K. Hu**, L. Ji, G. Danuser, and C. Waterman-Storer 2005. “Visualizing the clutch: correlating the dynamics of actin and focal adhesion proteins during cell migration”
- L. Ji, **K. Hu**, C. Waterman-Storer and G. Danuser 2005 “Analyze the coupling between two random vector fields: separate intrinsic variation from extrinsic noise”

SELECTED CONFERENCE PRESENTATIONS:

Year 2000:

- K. Hu**, T. Mann, J. M. Murray, B. Striepen, C. Beckers and D. S. Roos. “How to Build a Parasite: the Cytoskeletal Dynamics During Replication of Living *Toxoplasma gondii* Tachyzoite” (**Talk**, abstract # 92) 2000 Molecular Parasitology Meeting

Year 2001:

- J.R. Swedlow, **K. Hu**, P.D. Andrews, D. S. Roos and J. M. Murray “Measurement of Tubulin Content in the Conoid and Spindle Pole of the Parasite *Toxoplasma gondii*: A Comparison of Laser Scanning Confocal and Wide Field Fluorescence Microscopy for Quantitative Analysis in Living Cells” (Poster, abstract # 2381) 2001 ASCB Meeting
- K. Hu**, D. S. Roos and J. M. Murray. “A Novel Polymer of Tubulin Forms the Conoid in *Toxoplasma gondii*” (Poster, abstract # 2382) 2001 ASCB Meeting

Year 2002:

- K. Hu**, J. M. Murray and D. S. Roos “Daughter Cell Assembly in the Apicomplexan Parasite *Toxoplasma gondii*” (**Talk**, abstract # 8H) 2002 Molecular Parasitology Meeting

Year 2003:

- K. Hu**, D. S. Roos, S. O. Angel, and J. M. Murray “Variability and Heritability of Cell Division Pathways in *T. gondii*” (Poster, abstract # 411) 2003 ASCB Meeting
- K. Hu**, L. Florens, J. Johnson, M. Fraunholz, C. DiLullo, J. Yates, D. S. Roos and J. M. Murray “Identification of New Conoid Components of *Toxoplasma gondii*” (Poster, abstract #422) 2003 ASCB Meeting
- K. Hu**, S. Suravajjala, C. DiLullo, D. S. Roos and J. M. Murray “Identification of New Tubulin Isoforms in *Toxoplasma gondii*” (Poster, abstract #L460) 2003 ASCB Meeting
- S. D. Gilk, Y. Raviv, **K. Hu**, J. M. Murray G. E. Ward “Identification of PhIL1, a Novel Membrane- and] Cytoskeleton-Associated Protein of the *Toxoplasma gondii* pellicle, by Photosensitized Labeling with ¹²⁵I-INA” (Poster, abstract #223) 2003 ASCB Meeting

Year 2004:

- K. Hu**, L. Ji, M. Ginsberg, G. Danuser, and C. Waterman-Storer “Visualizing the clutch: correlating the dynamics of actin and focal adhesion proteins during cell migration” (**Talk**, *Molecular microscopy in living cells* minisymposium) 2004 ASCB Meeting
- K. Hu**, J. Johnson, J. Yates, and C. Waterman-Storer “Proteomic analysis of components of the focal adhesion/actin cytoskeleton interface” (Poster, abstract #B270) 2004 ASCB Meeting
- K. Hu**, L. Florens, J. Johnson, M. Fraunholz, C. DiLullo, J. Yates, D. S. Roos and J. M. Murray “Proteomic analysis of conoid and cytoskeleton of *Toxoplasma gondii*” (Poster, abstract #B280) 2004 ASCB Meeting
- K. Hu**, S. Suravajjala, C. DiLullo, D. S. Roos and J. M. Murray “Functional specialization of tubulin isoforms in *Toxoplasma gondii*” (Poster, abstract #B289) 2004 ASCB Meeting

Year 2005:

- K. Hu**, L. Ji, G. Danuser, and C. Waterman-Storer “Correlational Total Internal Reflection Fluorescent Speckle Microscopy (TIR-FSM) Reveals Coupling of Focal Adhesion Molecules with the Actin Cytoskeleton in Cell Migration” (**Talk**, *At the Limits: Optical Methods for Single Molecules, Cells, Whole Genomes, & Live Animals* ASCB Subgroup Session)
- K. Hu**, S. Suravajjala, D. S. Roos and J. M. Murray “New Cytoskeletal Structures Used to Build a Parasite” (Poster, abstract# B237) 2005 ASCB Meeting
- K. Hu**, L. Ji, G. Danuser, and C. Waterman-Storer “Correlated Molecular Motions of Actin Cytoskeleton and Focal Adhesion Molecules within Adhesion Complexes” (Poster, abstract# B197) 2005 ASCB Meeting
- M. Machacek, **K. Hu**, C. Waterman-Storer, G. Danuser “Spatio-temporal Coordination between Protrusion, Actin Network Assembly, Network Flow and Adhesion in Migrating Epithelial Cells” (Talk, *Cytoskeletal Dynamics in Living Cells* minisymposium)
- L. Ji, J. Lim, **K. Hu**, C. Waterman-Storer, G. Danuser “Probing the Molecular Mechanism in Cell Migration by Cytoskeleton Continuum Mechanics” (Poster, abstract# B321)