

Curriculum Vitae

NAOMI SUSAN MORRISSETTE

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EDUCATION:

University of Pennsylvania, Philadelphia, PA: Ph.D. (Biology) May 1995.

Thesis advisor: Dr. David Roos, Ph.D.

Thesis Committee: John Murray, Harvey Rubin, Phil Scott, Lewis Tilney, Sally Zigmond.

Marine Biological Laboratory, Woods Hole, MA: Summer 1988.

Physiology: Cell and Molecular Biology Course.

Smith College, Northampton, MA: B.A. (Biochemistry) *cum laude*, May 1987.

RESEARCH EXPERIENCE:

July 2011-present: Associate Professor, Department of Molecular Biology and Biochemistry,
University of California, Irvine, Irvine CA: *Tubulin & microtubules in apicomplexan parasites.*

April 2004-June 2011: Assistant Professor, Department of Molecular Biology and Biochemistry,
University of California, Irvine, Irvine CA: *Tubulin & microtubules in apicomplexan parasites.*

September 1999-January 2004: Senior Fellow, Laboratory of Dr. David Sibley, Department of
Molecular Microbiology, Washington University, St. Louis MO, *Regulation of microtubules
and microtubule associated proteins of Toxoplasma gondii.*

April 1996-August 1999: Senior Fellow, Laboratory of Dr. Alan Aderem, Department of
Immunology, University of Washington, Seattle, WA, *Identification of proteins associated with
macrophage phagocytosis.*

June 1995-March 1996: Post-doctoral Fellow, Laboratory of Dr. Alan Aderem, Rockefeller
University, New York, NY: *Identification of proteins associated with macrophage phagocytosis.*

June 1990-May 1995: Doctoral Research, Laboratory of Dr. David Roos, Department of Biology,
University of Pennsylvania, Philadelphia, PA, *The Toxoplasma gondii apical cytoskeleton.*

June 1989-June 1990: Research Assistant, Beckman Center for the History of Chemistry: *Conducted
interviews for an oral history of the Pew Scholars in the Biomedical Sciences.*

Summer 1987: Research Assistant for Dr. David Bickar, Smith College Chemistry Department:
Isolation of cytochrome oxidase from Crithidia fasciculata.

1983-1986: Research Assistant for Dr. Jeanne Powell, Smith College Biology Department: *Tissue
culture and maintenance of muscular dysgenic mouse colony.*

TEACHING EXPERIENCE:

M143 Human Parasitology, University of California, Irvine, Spring Quarter 2005-present: *Lecture-
style class, 60 students/quarter.*

Bio99 Molecular Biology, University of California, Irvine, Spring Quarter 2011-present: *Lecture-
style class, 250 students/quarter.*

M122 General Microbiology, University of California, Irvine, Fall and Spring Quarters,
2005-2007: *Lecture-style class, 200-350 students/quarter.*

Bio2B The Biology of Harry Potter, University of California, Irvine, Spring Quarters 2008-2010:
Freshman Seminar (15 students) on biology that could explain phenomena in the Harry Potter books.

Bio2B The Politics of Parasites, University of California, Irvine, Spring Quarters 2006-2007:
Freshman Seminar (15 students) on developing drugs to treat neglected diseases.

Teaching Assistant, Biology of Parasitism Course, Marine Biological Laboratory, Woods Hole,
MA: June 8-24, 2000: *Cell biology techniques for studying Toxoplasma.*

Teaching Assistant, Hughes Scholars Program, University of Pennsylvania, Fall 1992:
Science enrichment program for gifted inner-city high school seniors.

Teaching Assistant, University of Pennsylvania Biology Department, Academic years 1987-1989:
Instructor for Introductory Biology Labs and Recitation Leader for Genetics.

Teaching Assistant, Cell and Molecular Biology Lab, Smith College, Spring semester, 1986 &
1987: *Laboratory instruction for second year cell biology course.*

PROFESSIONAL SERVICE:

Annotater, CentrioleDB.org, a database of images and information on microtubule
organizing centers, organized by Mónica Bettencourt-Dias and the Instituto Gulbenkian de
Ciência (IGC), Lisbon, Portugal.

Reviewer, NIAID Special Emphasis Panel (ZRG1 IDM-S(02) Topics in Microbial Pathogens),
June 9, 2009.

Reviewer, NIAID Special Emphasis Panel (RFA-AI-08-005, Development of Novel Interventions
and Tools for the Control of Malaria, Neglected Tropical Diseases and their Vectors),
November 2008.

Ad Hoc Reviewer, Natural Sciences and Engineering Research Council of Canada, January 2009.

Ad Hoc Grant Reviewer, International Science and Technology Center, Moscow - Program of
Lawrence Livermore National Laboratory and the US Department of State.

Ad Hoc Grant Reviewer, Wellcome Trust (UK).

Guest Editor, special issue of the International Journal for Parasitology (Centennial of the
Discovery of *Toxoplasma gondii*).

External Member, Faculty Search Committee, Microbiology and Molecular Genetics, School of
Medicine, UCI, January-May 2008.

Coordinator, Biology of Infectious Diseases Track, MBGB graduate program, UCI, 2005-present.

Admissions Committee, MBGB Graduate program, 2005-2008.

Coordinator, MB&B Departmental Seminar Series, 2005-2006.

American Society of Cell Biology (ASCB) finance committee, 2005-2007.

Reviewer: Cell Motility and the Cytoskeleton, Cellular Microbiology, Eukaryotic Cell, FEBS
Letters, Genetics, Heredity, International Journal for Parasitology, Journal of Parasitology,
Journal of Proteome Research, Molecular and Biochemical Parasitology, Molecular Biology
of the Cell, Molecular Microbiology, PLoS Genetics, PLoS ONE, PLoS Pathogens,
Proceedings of the National Academy of Sciences, Yeast.

GRANTS AND AWARDS:

NIH RO1 1R01AI067981 “Mechanisms of Dinitroaniline Action, Selectivity and Resistance”
January 1, 2006-December 30, 2010 (currently as a no cost extension).

K22 AI055790 NIH Career Development Award, “Dissection of Dinitroaniline Specificity for
Tubulin” Transition award for the first two years as an assistant professor.

F32 GM20484 NIH National Research Service Award “*Toxoplasma* and *Plasmodium* Resistance to
Dinitroanilines” May 2001-November 2002.

Post-doctoral Fellow, NIH Infectious Disease Training Grant, Washington University School
of Medicine, 1999 -2000.

Heiser Program for Research in Leprosy and Tuberculosis Fellowship, June 1996-1998.

Winston Post-doctoral Fellowship, Rockefeller University, July 1995-March 1996.

Pre-doctoral Fellow, NIH Immunology Training Grant, University of Pennsylvania 1990-93.

MacFarland Prize for Women's Studies, Smith College, 1986.

INVITED PRESENTATIONS:

- ♦ Tenth International Congress on Toxoplasmosis, Kerkrade, The Netherlands, June 2009.
- ♦ Plant and Fungal Cytoskeleton Gordon Research Conference, Barga, Italy, August 2008.
- ♦ Immunology and Microbiology Department, University of Oklahoma Health Sciences Center, March 3, 2008.
- ♦ Ninth International Congress on Toxoplasmosis, Chico Springs Montana, July 2007.
- ♦ Cytoskeleton Seminar Series, UCLA, April 4, 2007.
- ♦ Department of Molecular Biology and Biochemistry, Simon Frasier University, British Columbia, Canada, March 9, 2007.
- ♦ George Connell Seminar Series, Biochemistry Department, University of Toronto, Ontario, Canada January 17, 2007.
- ♦ Pathology Department, University of California, Irvine, January 6, 2006.
- ♦ Plant and Fungal Cytoskeleton Gordon Research Conference, Andover NH, August 2006.
- ♦ UCSF/Stanford University Bay Area Parasitology Seminar series, December 2004.
- ♦ Microbiology and Molecular Genetics Seminar Series, University of California, Irvine College of Medicine, October 2004.
- ♦ Department of Molecular Biology and Biochemistry, University of California at Irvine, Irvine CA, December 2003.
- ♦ Molecular Genetics Department, Ohio State University, Columbus OH, September 2003.
- ♦ Seventh International *Toxoplasma* Meeting, Tarrytown, NY May 2003.
- ♦ Center for Microbial Interface Biology, Ohio State University, Columbus OH, May 2003.
- ♦ Tufts University School of Veterinary Medicine, North Grafton MA, April 2003.
- ♦ Department of Microbiology and Immunology, Dartmouth Medical School, Hanover NH, February 2003.
- ♦ Department of Microbiology and Molecular Genetics, University of Texas Health Science Center, Houston TX, January 2003.
- ♦ Co-organizer, ASCB Meeting Special Interest Subgroup: “Building the Cell II: Building Complex Structures in Simple Cells,” ASCB Meeting, San Francisco CA, December 2002.
- ♦ ASCB Meeting Special Interest Subgroup: “Building the Cell,” ASCB Meeting, Washington DC, December 2001.

STUDENT MENTORING:

Graduate - Ph.D. Students

Christopher Ma (Ph.D. June 2009)

- ♦ Honors & Awards: UCI Travel award, International congress on toxoplasmosis.
- ♦ Current position: post-doctoral fellow, Washington University, St. Louis MO.

Sally Lyons-Abbott (Ph.D. June 2010)

- ♦ Honors & Awards: UCI Travel award, International congress on toxoplasmosis; Edward A. Steinhaus Teaching Award, 2010.
- ♦ Current position: post-doctoral fellow, University of Georgia, Athens GA.

Jessica de Leon (Ph.D. June 2011)

- ♦ Honors & Awards: UCI Travel award, International congress on toxoplasmosis; Howard Hughes Teaching Fellowship; UCI Travel Award, First EMBO Conference on Centrosomes and Spindle Pole Bodies; Edward A. Steinhaus Teaching Award, 2011.
- ♦ Current position: intern microbiologist, public health laboratory

Johnson Tran (Ph.D. June 2011)

Roxanna Ochoa (June 2010-present)

- ♦ Honors & Awards: NSF GK12 Fellowship 2011-2012.

Graduate - Biotechnology Master's Degree Students

- ♦ Susan Tsai (2004-2005)
- ♦ Janice Smith (2010-2011)

Undergraduate Students

Michael Li, BS 2006 (2004-2006)

- ♦ Honors & Awards: Campus-wide honors program.
- ♦ Current position: California State Health Department, MPH program at CSULB.

Lakshmi Ganesan, BS 2007 (2004-2007)

- ♦ Honors & Awards: Campus-wide honors program; Summer Undergraduate Research Program (2006); Aldrich Scholarship (2006); Jayne Unzelman Scholarship (2007).
- ♦ Current position: Medical student, UC San Diego School of Medicine.

Roxanna Ochoa, BS 2009 (2006-2009)

- ♦ Honors & Awards: Excellence in research; Robert Ernst Prize in the Biological Sciences; MARC Scholar; CAMP Scholar.
- ♦ Current position: Graduate student, University of California, Irvine.

David Wood, BS 2009 (2007-2009)

- ♦ Honors & Awards: Campus-wide honors program; Excellence in research
- ♦ Current position: Medical student, University of Southern California.

Lawton Chung, BS 2010 (2008-2010)

- ♦ Honors & Awards: SURP (2008)
- ♦ Current position: Graduate student, SUNY Stonybrook.

Tara Reed, BS 2010 (2006-2010)

- ♦ Honors & Awards: SURP (2009)
- ♦ Current position: Applying to medical school.

Ni Yao, class of 2010 (2008-present)

- ♦ Honors & Awards: Excellence in Research.
- ♦ Current position: Applying to medical school.

Darany Tan, class of 2012 (2009- present)

- ♦ Honors & Awards: Campus-wide honors program.

Candace Yau, class of 2012 (2009- present)

- ♦ Honors & Awards: Campus-wide honors program; Excellence in Research; Dean's Award for Excellence in Research; William F. Holcomb Scholarship.

Alice Chyan, class of 2012 (2009- present)

- ♦ Honors & Awards: Campus-wide honors program, Excellence in Research.

George Vela, class of 2012 (2010- present)

- ♦ Honors & Awards: CAMP Scholar.

Francis Dang, class of 2014 (2010-present)

MANUSCRIPTS AND PUBLICATIONS:

MANUSCRIPTS IN PREPARATION OR SUBMITTED:

Sally B. Lyons-Abbott and Naomi S. Morrisette, “Binding of Dinitroaniline Derivatives to Protozoan Tubulin,” (MS in preparation).

Sally B. Lyons-Abbott, Jacek Gaertig and Naomi Morrisette, “Expression of functional *Toxoplasma gondii* tubulin dimers in *Tetrahymena*,” (MS in preparation).

Johnson Q. Tran, Catherine Li, Alice Chyan, Lawton Chung and Naomi S. Morrisette, “SPM1 and SPM2 Co-localize with the Subpellicular Microtubules in *Toxoplasma gondii*”(submitted).

Jessica Cruz de Leon, Bill Wickstead, Nicole Scheumann, Josh Beck, Johnson Q. Tran, Candace Chau, Wandy Beatty, Peter Bradley, Keith Gull and Naomi S. Morrisette, “A SAS-6 Like Protein Suggests that the *Toxoplasma* Conoid Evolved from a Flagellar Axoneme” (submitted).

Naomi S. Morrisette and Susan K. Dutcher. “Genetic Dissection of Tubulin Function”, International Review of Cell and Molecular Biology, (Invited review, MS in preparation).

Catherine Li, Lawton Chung, Johnson Q. Tran, Jessica C. de Leon, Peter J. Bradley and Naomi S. Morrisette, “Novel Nuclear-Encoded Mitochondrial Proteins in *Toxoplasma gondii* Have Apicomplexan and Dinoflagellate Homologs,” (submitted).

PUBLISHED PAPERS:

1. Naomi S. Morrisette, Vahe Bedian, Paul Webster and David S. Roos, (1994) “Characterization of Extreme Apical Antigens from *Toxoplasma gondii*,” Experimental Parasitology 79:445-59.

2. David S. Roos, Robert G. K. Donald, Naomi S. Morrissette and A. Lindsay C. Moulton, (1994) "Molecular Tools for Genetic Dissection of the Protozoan Parasite *Toxoplasma gondii*," *Methods in Cell Biology* 45:27-63.
3. Thomas J. W. Stokkermans, Joseph D. Schwartzman, Karen Keenan, Naomi S. Morrissette, Lewis G. Tilney and David S. Roos (1996) "Inhibition of *Toxoplasma gondii* Replication by Dinitroaniline Herbicides." *Experimental Parasitology* 84:355-370.
4. Naomi S. Morrissette, John M. Murray and David S. Roos (1997) "Subpellicular Microtubules Associate with an Intramembranous Particle Lattice in the Protozoan Parasite *Toxoplasma gondii*," *Journal of Cell Science* 110:35-42.
5. Naomi S. Morrissette and David S. Roos, (1998) "*Toxoplasma gondii*: A Family of Apical Antigens Associated with the Cytoskeleton," *Experimental Parasitology*, 89 296-303.
6. Naomi Morrissette, Elizabeth Gold and Alan Aderem, (1999) "The Macrophage - A Cell for All Seasons," *Trends in Cell Biology* 9: 199-201.
7. Naomi S. Morrissette, Elizabeth S. Gold, Jian Guo, Jessica A. Hamerman, Adrian Ozinsky, Vahe Bedian and Alan Aderem (1999) "Isolation and Characterization of Monoclonal Antibodies Directed Against Novel Components of Macrophage Phagosomes," *Journal of Cell Science* 112:4705-4713.
8. Elizabeth S. Gold, David Underhill, Naomi S. Morrissette, Jian Guo and Alan Aderem (1999) "Dynamin 2 Is Critical For Macrophage Phagocytosis," *Journal of Experimental Medicine* 190:1849-56.
9. Elizaeth S. Gold, Naomi S. Morrissette, David M. Underhill, Jian Guo, Michael Bassetti and Alan Aderem, (2000) "Amphiphysin II-M, a Novel Amphiphysin Isoform, is Required for Macrophage Phagocytosis," *Immunity* 12:285-92.
10. Naomi S. Morrissette and L. David Sibley, (2002) "Cytoskeleton of Apicomplexan Parasites," *Microbiology and Molecular Biology Reviews*, 66:21-38.
11. Naomi S. Morrissette and L. David Sibley, (2002) "Disruption of Microtubules Uncouples Budding and Nuclear Division in *Toxoplasma gondii*," *Journal of Cell Science*, 115:1017-25.
12. Susan K. Dutcher, Naomi S. Morrissette, Andrea M. Preeble, Craig Rackley and John Stanga, (2002) "Epsilon-tubulin is an Essential Component of the Centriole," *Molecular Biology of the Cell* 13:3859-69.
13. Naomi S. Morrissette, Arpita Mitra, David Sept and L. David Sibley. (2004) "Dinitroanilines Bind Alpha-tubulin and Disrupt Microtubules," *Molecular Biology of the Cell* 15:1960-68.

14. Naomi S. Morrissette. (2007) "Tubulin, Microtubules and Microtubule-Associated Structures in *Toxoplasma gondii*," in *Toxoplasma Molecular and Cellular Biology*, James Ajioka and Dominique Soldati, editors, Horizon Press, pp 507-522.
15. Christopher Ma, Catherine Li, Lakshmi Ganesan, Jean Oak, Susan Tsai and Naomi S. Morrissette. (2007) "Mutations in Alpha-tubulin Confer Dinitroaniline Resistance at a Cost to Microtubule Function," *Molecular Biology of the Cell* 12: 4711-20.
16. Naomi S. Morrissette and David Sept. (2008) "Dinitroaniline Interactions with Tubulin: Genetic and Computational Approaches to Define the Mechanisms of Action and Resistance," in "The Plant Cytoskeleton" Yaroslav Blume, Diego Breviario, Vance Baird, (eds), Springer Publishing, pp. 351-372.
17. Christopher Ma, Johnson Tran, Lakshmi Ganesan, David Wood, Catherine Li and Naomi S. Morrissette. (2008) "Secondary Mutations Correct Fitness Defects in *Toxoplasma gondii* with Alpha-tubulin Mutations," *Genetics* 180: 845-56.
18. Bryan D. Bell, Sabrina Leverrier, Brian M. Weist, Ryan H. Newton, Adrian F. Arechiga, Keith A. Luhrs, Naomi S. Morrissette and Craig M. Walsh. (2008) "FADD and caspase-8 control the outcome of autophagic signaling in proliferating T cells." *PNAS* 105:16677-82.
19. Narae Park, Kinrin Yamanaka, Dat Tran, Pete Chandrangu, Johnny Akers, Jessica de Leon, Naomi S. Morrissette, Michael Selsted and Ming Tan. (2009) "The cell-penetrating peptide, Pep-1, has activity against intracellular chlamydial growth but not extracellular forms of *Chlamydia trachomatis*" *Journal of Antimicrobial Chemotherapy* 63:115-123.
20. Naomi S. Morrissette and James W. Ajioka. (2009) "The Early Years of *Toxoplasma* Research: What's Past Is Prologue," *International Journal for Parasitology* 39:865-869.
21. James W. Ajioka and Naomi S. Morrissette. (2009) "One-hundred Years of *Toxoplasma* Research," *International Journal for Parasitology* 39:859-860.
22. Dan Sackett, Karl Werbovetz and Naomi Morrissette. (2010) "Isolating tubulin from nonneural sources," Invited chapter, *Microtubules, In Vitro: A Volume of Methods in Cell Biology*, John J. Correia and Les Wilson, editors, volume 95, pp. 17-32.
23. Christopher Ma, Johnson Tran, Frank Gu, David Sept, Roxanna Ochoa, Catherine Li, Karl Werbovetz and Naomi S. Morrissette. (2010) "Dinitroaniline Activity in Wild-type and Mutant Tubulins of *Toxoplasma gondii*," *Antimicrobial Agents and Chemotherapy* 54(4): 1453-1460.

24. Kristen R. Sweeney, Naomi S. Morrissette, Stephanie Lachapelle, Ira J. Blader. (2010) Host Cell Invasion by *Toxoplasma gondii* is Temporally Regulated by the Host Microtubule Cytoskeleton, *Eukaryotic Cell* 9:1680-9.
25. Johnson Q. Tran, Jessica de Leon, My-Hang Huynh, Wandy Beatty and Naomi S. Morrissette. (2010) "RNG1 is a Novel Marker of the Apical Polar Ring in *Toxoplasma gondii*", *Cytoskeleton* 67:586-98.
26. Jyothi S. Akella, Dorota Wloga, Jihyun Kim, Natalia Starostina, Sally Lyons-Abbott, Naomi S. Morrissette, Scott T. Dougan, Edward T. Kipreos and Jacek Gaertig. (2010) "MEC-17 is an α -tubulin acetyltransferase," *Nature* 467:218-222.
27. Molla M. Endeshaw, Catherine Li, Jessica de Leon, Ni Yao, Kirk Latibeaudiere, Kokku Premalatha, Naomi Morrissette and Karl A. Werbovetz. (2010) "Synthesis and Evaluation of Oryzalin Analogs against *Toxoplasma gondii*," *Bioorganic and Medicinal Chemistry Letters* 20:5179-83.
28. Josh R. Beck, Imilce A. Rodriguez-Fernandez, Jessica C. de Leon, My-Hang Huynh, Vern B. Carruthers, Naomi S. Morrissette and Peter J. Bradley. (2010) "A Novel Family of *Toxoplasma* IMC Proteins Displays a Hierarchical Organization and Functions in Coordinating Parasite Division," *PLoS Pathogens* 6:1-21.
29. Sally B. Lyons-Abbott, Dan L. Sackett, Dorota Wloga, Jacek Gaertig, Rachel E. Morgan, Karl A. Werbovetz and Naomi S. Morrissette. (2010) "Alpha-tubulin Mutations Alter Oryzalin Affinity and Microtubule Assembly Properties to Confer Dinitroaniline Resistance," *Eukaryotic Cell* 9: 1825-34.