

Curriculum vitae

GARY E. WARD

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EDUCATION

1979-1985	Ph.D., Marine Biology Laboratory of Dr. Victor D. Vacquier University of California at San Diego Thesis Title: <i>Dephosphorylation of Sperm Guanylate Cyclase During Sea Urchin Fertilization</i>
1981	Physiology Course Marine Biological Laboratory (Woods Hole, MA)
1975-1979	B.Sc. (Honors), Biophysics University of New Brunswick, Fredericton Honors Thesis Title: <i>Interferometric Fluctuation Spectroscopy: A New Approach to Macromolecular Weight Determinations.</i>

ACADEMIC APPOINTMENTS

2007- present	Professor
2002-2007	Associate Professor
1996-2002	Assistant Professor
	Department of Microbiology and Molecular Genetics University of Vermont
1989-1996	Senior Staff Fellow
	Laboratory of Parasitic Diseases National Institute of Allergy and Infectious Diseases National Institutes of Health, Bethesda MD
1985-1989	Postdoctoral fellow
	Laboratory of Dr. Marc W. Kirschner Department of Biochemistry and Biophysics University of California at San Francisco Postdoctoral Fellowship Title: <i>Studies on the Mechanism of Action of Maturation-promoting Factor</i>

HONORS

2011-12 University Scholar, University of Vermont

2009-present	Member, Vermont Academy of Science and Engineering
2001-2004	Burroughs Wellcome New Investigator in Molecular Parasitology (University of Vermont)
1985-1988	Jane Coffin Childs Postdoctoral Fellowship (University of California, San Francisco)
1986	Martin D. Kamen Prize for Graduate Research in Biological Chemistry (University of California, San Diego)
1979-1983	Postgraduate Fellowship, Natural Sciences and Engineering Research Council of Canada (University of California, San Diego)
1979	Governor General of Canada Gold Medal (University of New Brunswick)

SERVICE

Dissertation/studies committees (1996-2014)

Alia Merla, Tammy Richman, John Rose, Rebecca Guy, Carolyn Donahue, Michael Wichroski, Kimberly Carey, Stacey Gilk, Dominic Lambert, Jeffry Mital, Melissa Batonick, Karen Cole, Sandhya Khurana, Chunxiao Yu, Jamie Carter, Belinda Thompson, Ben Stark, Aoife Heaslip, Luke Tilley, Qing Tang, Whitney Barkhuff, Jacqueline Leung, Anahi Fernandez Cuppari, Heng Guo, Annette LaBauve, John Midkiff, Kovi Bessoff, Shruthi Krishnamurthy, Jenna Foderaro, Dario Lirussi (MMG)

Irene Rainville, Tim Trott, Danielle Vitiello, Wade Bell, Charles Johnson, Aoife Heaslip, Pam Lescault, Dimitry Krementsov, Brad Heron, Ying Ruan, Brent Osborne, Joe Klaus, Adam Sateriale, Benjamin King, Rajiv Juman, Md Mahmudul Hasan Alvee (Cellular, Molecular, and Biomedical Sciences [CMB] Program)

Tom Sladewski (Molecular Physiology and Biophysics)

Jackie Teriele, Ying Ruan (Pharmacology)

Susan Perkins, Rebecca Eisen, J.J. Herlihy (M.Sc.), Anne Yezerski, Suchismita Chandran (M.Sc.), Shyamal Weeraratne (Biology)

Yan Liang, Giovanna Sassi, Yucan Zhang, Prince Zogli (Plant Biology)

Amy Noe (Notre Dame University)

Alexia Belperron (Dartmouth College)

Ke Hu (University of Pennsylvania)

Undergraduate Honors Thesis committees

Cathryn Koptiuch, Allison Neal, Katherine St. Denis (Biology)

Departmental/Program service

2015-	CMB Program Graduate Recruitment and Admissions Committee
2015	Norman R. Alpert Research Prize selection committee
2001-present	MMG Reappointment, Promotion and Tenure Committee
2012-2013	MMG Departmental Administrator Search Committee

2003-2004	MMG Research Committee
2002-2003	MMG Website Design Committee (chair)
2002-2003	MMG Cellular Microbiology Search Committee (chair)
2000-present	MMG Graduate Policy Committee
2000	MMG Genetics Search Committee
2000	MMG Curriculum Redesign Committee
1998-2003	MMG Annual Retreat Organizing Committee (chair, 1998-2000)
1998-1999	MMG Virology Search Committee
1998	Director , MMG summer undergraduate fellowship program
1997	MMG Cumulative Exam Committees: Cell Biology/Development, Microbiology
1996-2011	MMG Graduate Admissions and Recruitment Committee (co-chair, 2000 - 2011)

College of Medicine service

2015-	Medical Curriculum Committee
2011-2013	Vermont Immunobiology and Infectious Disease Center, Mucosal Immunologist Faculty Search Committee
2010-2012	Graduate Education Committee
2008-2009	Search Committee, COM Associate Dean for Research
2008-2010	Department of Molecular Physiology and Biophysics, Cell Biologist/Biophysicist Faculty Search Committee
2008-2009	Vermont Immunobiology and Infectious Disease Center, Faculty Search Committee, Chair
2006-2010	Vermont Immunobiology and Infectious Diseases Center Proteomics Core, co-Director (Protein Isolation and Separation)
2006-2007	Vermont Immunobiology and Infectious Disease Center, Faculty Search Committee, co-Chair
2006	Committee on Fitness (ad hoc, 11/06)
2005-2011	Committee on Advancement
2003-2004	Vermont Integrated Curriculum, Cell and Molecular Biology Steering Committee
2001-2003	Vermont Integrated Curriculum, Cell and Molecular Biology Design Committee
1999	Vermont Integrated Curriculum, Leadership Theme Subgroup (4/15/99 6/30/99)
1998-2002	Vermont Integrated Curriculum Assessment Subcommittee

College of Agriculture and Life Sciences service

2014	2015 CALS Alumni Awards Selection Committee
2001-2003	CALS representative, Faculty Senate Nominating Committee
2000-2001	Department of Nutrition and Food Sciences, Biomolecular Nutritionist

Faculty Search Committee

University service

2016	REACH grant reviewer
2015	University Scholar Selection Committee, Basic and Applied Science
2010-present	Scholarly Communication Committee
2004, 2008	McNair Scholar Selection Committee / Interviewer
2000-2010	Institutional Biosafety Committee
2002-2010	Institutional Biosafety Committee, Infectious Agents Subcommittee
1997	Judge, Graduate and Medical Student Research Forum

National/International service

2015	NIH CSR AIDS and Related Research Special Emphasis Review Panel ZRG1 AARR-K(03)
2015-2018	International Scientific Advisory Board, Wellcome Trust Center for Molecular Parasitology (Glasgow)
2013-present	PubMed Commons External Working Group, National Center of Biotechnology Information
2013	NIH CSR AIDS and Related Research Special Emphasis Review Panel ZRG1 AARR-E 02M
2012	NIH CSR Parasites and Insect Vectors Special Emphasis Review Panel ZRG1 IDM-B 02M
2011-present	Public Library of Science, Board of Directors (Chair, 2011-present); Finance Committee (2011-present); Nominations Committee (Chair, 2011-present); Editorial Advisory Committee (2013-present); CEO Search Committee (Chair, 2013)
2010	NIH EuPathDB Bioinformatics Resource Center, Driving Biological Projects (DBP) Review Panel (5/10)
2007-2011	PubMed Central National Advisory Board, National Library of Medicine (Chair, 2009-2011)
2006	NIH Pathogenic Eukaryotes (PTHE) Study Section (6/06)
2006	NIH CSR Special Emphasis Review Panel ZRG1 BCMB-Q (90) (S)
2005-2006	Public Access Working Group, National Library of Medicine
2005	Executive Director Search Committee, American Society for Cell Biology
2002-2008	Treasurer (elected) and member of the Executive Committee, American Society for Cell Biology
2002-2003	Annual Meeting Site Selection Committee, American Society for Cell Biology (2002-2003)
2000	NIH CSR Special Emphasis Review Panel ZRG1 AARR-1
1998-2000	Finance Committee, Federation of American Societies for Experimental Biology

1996-2008 Finance and Audit Committee, American Society for Cell Biology
(Chair, 2002-2008)

UNIVERSITY AFFILIATIONS

Vermont Cancer Center
Cellular, Molecular, and Biomedical Sciences Program
Graduate College
Vermont Immunobiology and Infectious Diseases Center

TEACHING

Honors

- Nominee, Silver Stethoscope Award, VIC Foundations Course (2004, 2007)
 - For the faculty member who had few lecture hours but made a substantial contribution to the Class of 2007/2010 education
- Nominee, Foundations Teaching Award, VIC Foundations Course (2007)
 - Foundations Teacher of the Year
- Nominee, AMSA Golden Apple Award, VIC Foundations Course (2007)
 - For the medical school professor who has had significant impact on the educational value that the medical student receives from his/her coursework

Postdoctoral fellows supervised:

Jeralyn Haraldsen (2004-2008)
Fabiola Parussini (2006-2011)
Pramod Rompikuntal (2013-present)

Graduate students supervised:

Carolyn Donahue (Ph.D student, 1996-2002) –postdoctoral fellowship at University of California, San Francisco; currently Staff Scientist at Illumina, San Diego CA
Michael Wichroski (Ph.D student, 1997-2003) – postdoctoral fellowship at University of Massachusetts Medical School, Worcester; currently Research Scientist II at Bristol-Myers Squibb, Wallingford CT
Kimberly Carey (Ph.D student, 1998-2004) –postdoctoral fellow at Yale University; a currently Research Scientist II at the Broad Institute, Boston MA
Stacey Gilk (Ph.D student, 1998-2004) – postdoctoral fellowship at University of North Carolina; postdoctoral fellowship at Rocky Mountain Laboratories, NIH; currently Assistant Professor in the Department of Microbiology and Immunology, Indiana University School of Medicine, Indianapolis IN
Jeffrey Mital (PhD student, 2001-2006) –postdoctoral fellowship at Rocky Mountain Laboratories, NIH; currently an Assistant Professor of Biomedical Sciences at Quinnipiac University, Hamden CT

Jayanthi Garudathri (MS student 2004-2007) – currently Research Scientist II, University of Washington, Seattle WA

Aoife Heaslip (PhD student, 2003-2008) – postdoctoral fellowship at Indiana University, Bloomington IN; currently Assistant Professor in the Department of Molecular Physiology and Biophysics, University of Vermont

Whittney Barkhuff (MD/PhD student, 2005-2008) – currently a Physician in the Division of Neonatology, Department of Pediatrics, University of New Mexico, Albuquerque NM

Qing Tang (PhD student, 2006-2013) – currently a postdoctoral fellow in the Department of Molecular Physiology and Biophysics, University of Vermont

Anahi Odell (PhD student, 2008-2013) – currently on maternity leave

Jacqueline Leung (PhD student, 2008-2013) – currently a postdoctoral fellow in the Department of Biology, Indiana University, Bloomington IN

Luke Tilley (PhD student, 2007-2013) – postdoctoral fellowship in the Whitehead Institute, Massachusetts Institute of Technology, Boston MA; currently Infectious Disease Scientist, Sarepta Therapeutics, Boston MA

Shruthi Krishnamurthy (PhD student, 2010-2015) – currently a postdoctoral fellow in the Dept. of Pathology, Microbiology and Immunology, University of California, Davis CA

Jenna Foderaro (PhD student, 2011-present)

Undergraduate students supervised:

Cathryn Koptiuch (Honors thesis; 2008-2009)

Phoebe Cole (2009-2010)

Audrey Woods (2011)

Mac Stannard (2015-present)

Nora Cleary (2016-present)

Courses taught (medical):

Cell and Molecular Biology Course, Vermont Integrated Medical Curriculum (Fall 2003, 2004, 2006-2015). **Steering Committee Member (2003)**. Foundations level survey course for medical students on the fundamentals of cell and molecular biology. 110 students. 9-12 hours lecture (out of 70 total); co-led one group discussion (out of 2 total); co-developed and staffed 3 on-line learning modules (out of 6 modules total). Introduced the use of “Clickers” to increase active learning.

Courses taught (graduate):

CLBI 301, “Cell Biology” (Fall 2003, 2005-2015). Graduate level cell biology survey course. 12-25 students. 4 hours lecture out of 33 total.

MMG 296E, “Grant Writing” (Spring 2012). **Co-developed and co-directed** this graduate level course in grant-writing for MMG students. 6 students. Participated in all sessions (12.5 hr total), and in grading of final proposals.

MMG 310, “Biological Noise” (Fall 2011). **Course director**. Graduate level seminar course on the role of stochasticity and noise in biological systems; strong

emphasis on developing students' presentation skills. 2 post-docs and 5 students, from MMG, CMB. 17.5 hours class time out of 17.5 total.

MMG 310, "Cellular and Molecular Mechanisms of Human Disease" (Fall 1998).

Course director. Graduate level seminar course on the cellular and molecular mechanisms of human disease; strong emphasis on developing students' presentation skills. 10 students, from MMG and CMB. 15 hours class time out of 15 total.

MMG 310, "Post-Genomic Biology" (Fall 2006). **Course director.** Graduate level seminar course on post-genomic experimental biology; strong emphasis on developing students' presentation skills. 9 students, from MMG, CMB and Biology. 15 hours class time out of 15 total.

MMG 320, "Cellular Microbiology" (formerly *MMG 296 - Microbial Pathogenesis*; Spring, 1999, 2002, 2004, 2006, 2008, 2010, 2013, 2015). **Course director.** 4-credit graduate level course on the pathogenic mechanisms of viruses, bacteria and parasitic protozoa. 6-12 students, from MMG, CMB, and Biology. 22.5 hours lecture, 8 hours debate/journal club out of 55 hours total (55%). Introduced student Wikipedia projects to promote collaborative and active learning.

MMG 332, "Critical Reading" (Fall 1996, 1999-2001, 2003, 2005, 2006, 2008-10). Graduate level class aimed at developing students' critical reading skills. 7-10 students, from MMG and CMB. 1.5 hours class time out of 21 total.

ANNB 327 "Being a Scientist: Responsible Conduct in Research" (Spring 2006-2015). A discussion course for graduate students, post-doctoral fellows and new faculty, exploring issues relating to the responsible conduct of research. Approx. 20 students (registered and audits); 1.5 hr lecture out of 21 total.

MPBP 310 "Molecular Basis of Biological Motility" (Spring 2008, 2009). Graduate level, literature-based course examining the molecular basis of cellular motility. 8 students, from MMG, CMB and MPBP; 1.5 hr lecture out of 24 total

Courses taught (undergraduate):

MMG 101, "Biology of Microorganisms" (Fall 1999-2003). Undergraduate introductory microbiology course. 65-70 students, primarily from MMG, Animal Sciences, and Biological Sciences. 3 hours lecture out of 38 total.

MMG 102, "Molecular Genetics" (Spring 2001-2004). Undergraduate eukaryotic genetics/cell biology course. 15-25 students, primarily from MMG. 9 hours lecture out of 39 total.

MMG 001, "First Year Colloquium" (Fall 2005, 2007, 2010, 2015). Introduction to research topics within MMG, for MMG majors. 6-10 students, 1 hr lecture or lab demonstration out of 10 total.

Courses taught (other):

Biology of Parasitism (Woods Hole MA; 2007, 2009, 2010). Graduate level lecture and lab course on the molecular and cellular biology of parasitism. 16 students.

Lecturer (1997, 2001, 2003-2006). 2.5 hr guest lecture. **Laboratory module director** (2007, 2009, 2010). Two-week intensive laboratory module.

Approximately 140 hr contact time in the laboratory. **Course co-director (2014-2017).**

New Developments in Western Blotting: Quantitation, Dual Detection and More (2013). **Co-director**. Theoretical and hands-on workshop for graduate students. 8 students, 3 hr contact time.

UVM Dana Library Workshop Series: From Funding to Publishing (2010). Career development course for graduate students and postdocs on scientific databases, presentation and publication. 25 students. 2 hr contact time out of 12 total.

BI 330 (Middlebury College; 1998) “*Mechanisms of Microbial Pathogenesis*”. Upper level undergraduate course on the mechanisms of microbial pathogenesis, directed by Dr. Grace Spatafora. 12 students. 1.5 hour guest lecture.

BPH 212 (Harvard School of Public Health, 2002) “*Molecular and Cellular Parasitology*”. Graduate level course on molecular/cellular parasitology directed by Barbara Burleigh. 10 students. 2 hour guest lecture.

M/I 148 (Dartmouth Medical School, 2001, 2003) “*Molecular Pathogenesis*”. Graduate level course on the mechanisms of microbial pathogenesis, directed by David Bzik and Ambrose Cheung. 8 students. 3 hour guest lecture/discussion session.

PROFESSIONAL SOCIETIES

American Society for Cell Biology (1980-present)

American Society for Tropical Medicine and Hygiene (1989-2002)

American Society for Microbiology (2003-present)

EDITORIAL BOARDS

PLoS Biology (2003-present)

Eukaryotic Cell (2007-2012)

GRANT SUPPORT - Active

NIH, P20 RR021905-04 (co-P.I.)

07/01/06 – 06/30/11, \$1,491,873 direct costs annual

Vermont Immunobiology / Infectious Diseases Center

NIH, R01 AI105191/1-5 (P.I.)

09/01/2013-08/31/2018, \$225,000 direct costs annual

Functional Analysis of the T. gondii AMA1 Cytosolic Tail

GRANT SUPPORT - Prior

NIH, R01 AI054961/7-11 (P.I.)

06/08/10 – 05/31/15, \$355,912 direct costs annual

Small Molecule Approaches to Studying T. gondii Invasion

NIH, R01 AI063276-05 (P.I.)

07/01/05 – 03/31/12, \$1,212,500 direct costs

Functional Studies of Toxoplasma gondii AMA1 and AMA2

UVM College of Medicine Internal Grant Program (P.I.)

03/10/10 – 03/09/11, \$50,000 direct costs

The regulation of Toxoplasma gondii Motility by Myosin A Phosphorylation

NIH, R56 AI054961-6 (P.I.)

06/01/08 – 05/31/10, \$262,191 direct costs

Small Molecule Approaches to Studying T. gondii Invasion

NIH, R01 AI054961/1-5 (P.I.)

03/01/03 – 05/31/08, \$1,914,014 direct costs

Small Molecule Approaches to Studying T. gondii Invasion

Burroughs Wellcome Fund, New Investigator in Molecular Parasitology Award

07/01/01-6/30/06, \$210,000 direct costs

Surface Proteins of Toxoplasma gondii

NIH K02 (Independent Scientist Award) AI01719-01 (P.I.)

04/00-03/06, \$250,000 direct costs

Characterization of Novel Toxoplasma Surface Proteins

NIH R29 (First Award) AI42355-01 (P.I.)

02/01/98-01/31/03, \$350,000 direct costs

Surface Proteins of Toxoplasma gondii

University of Vermont COM New Research Initiatives Award (co-PI with Douglas Johnson)

01/07/03, \$14,940.65

A Novel, Chemical Genetics Approach to Studying Virulence Mechanisms in Candida albicans and Toxoplasma gondii

University of Vermont Research Advisory Council Equipment Award (P.I.)

02/12/99, \$12,200

Cooled CCD Camera for High Resolution Digital Image Capture

Vermont EPSCoR Research Equipment Fund (co-PI with Mary Tierney)

09/01, \$5169.00

Request for a Multiuser Olympus DP11 Digital Camera System

Vermont EPSCoR Graduate Research Fellowships to graduate students:

Michael Wichroski (09/01/00-08/31/01): \$21,630

Kimberly Carey (06/01/01-12/31/01): \$9902

Stacey Gilk (06/01/01-12/31/01): \$9902

PUBLICATIONS - REFEREED JOURNALS (*Indicates co-corresponding authors)

- Foe, I.T., Child, M.A, Majmudar, J.D., Krishnamurthy, S. van der Linden, W.A, **Ward, G.E.**, Martin, B. R and Bogyo, M. (2015) Global Analysis of Palmitoylated Proteins in *Toxoplasma gondii*. Cell Host & Microbe 18, 501–511. PMID: 26468752
- Odell, A.V., Tran, F., Poupart, S., Pathak, R. Westwood, N.J.* and **Ward, G.E.*** (2015) Yeast three-hybrid screen identifies TgBRADIN as a novel negative regulator of *Toxoplasma gondii* bradyzoite differentiation. PLOS ONE 10: e0120331. PMCID: PMC4366382
- Bookwalter, C.S., Kelsen, A., Leung, J.M., **Ward, G.E.*** and Trybus, K.M.* (2014) A *Toxoplasma gondii* class XIV myosin, expressed in Sf9 cells with a parasite co-chaperone, requires two light chains for fast motility. J Biol Chem 289: 30832-30841. PMCID: PMC4215259
- Tang, Q., Andenmatten, N., Hortua Triana, M.A., Deng, B., Meissner, M., Moreno, S.N.J, Ballif, B.A., **Ward, G.E.** (2014) Calcium-dependent phosphorylation alters Class XIVa myosin function in the protozoan parasite *Toxoplasma gondii*. Mol Biol Cell 25: 2579-91. PMCID: PMC4148248
- Leung, J.M., Tran, F, Pathak, R.B., Poupart, S., Heaslip, A.T., Ballif, B.A., Westwood, N.J.* and **Ward, G.E.*** (2014) Identification of *T. gondii* Myosin Light Chain-1 as a Direct Target of Tachyplegins A-2, a Small-Molecule Inhibitor of Parasite Motility and Invasion. PLOS ONE 9: e98056. PMCID: PMC4043638
- Tilley, L.D., Krishnamurthy, S, Westwood, N.J. and **Ward, G.E.** (2014) Identification of TgCBAP, a novel cytoskeletal protein that localizes to three distinct subcompartments of the *Toxoplasma gondii* pellicle. PLOS ONE 9: e98492. PMCID: PMC4041824
- Bessoif K., Spangenberg T., Foderaro J.E., Jumaní R.S., **Ward G.E.** and Huston C.D. (2014) Identification of *Cryptosporidium parvum* Active Chemical Series by Repurposing the Open Access Malaria Box. Antimicrob Agents Chemother. 201:2731-9. PMCID: PMC3993250
- Leung, J.M., Rould, M.A., Konradt, C., Hunter, C.A., and **Ward, G.E.** (2014) Disruption of *TgPhlL1* alters specific parameters of *Toxoplasma gondii* motility measured in a quantitative, three-dimensional live motility assay PLOS ONE 9: e85763. PMCID: PMC3906025
- Tran, F., Odell, A.V., **Ward, G.E.***, Westwood, N.J.* (2013) A Modular Approach to Triazole-Containing Chemical Inducers of Dimerisation for Yeast Three-Hybrid Screening. Molecules 18, 11639-11657. PMCID: PMC4031444
- Parussini, F.P., Tang, Q., Moin, S.M., Mital, J.M., Urban, S.*, and **Ward, G.E.*** (2012) Intramembrane proteolysis of *Toxoplasma* Apical Membrane Antigen 1 facilitates host cell invasion but is dispensable for replication. Proc Natl Acad Sci U S A 109: 7463-8. PMCID: PMC3358886.
- Dotzler Barkhuff, W.D., Gilk, S.D., Whitmarsh, R., Tilley, L.D., Hunter, C., **Ward, G.E.** (2011). Targeted Disruption of *TgPhlL1* in *Toxoplasma gondii* Results in Altered Parasite Morphology and Fitness. PLOS ONE 6: e23977. PMCID: PMC3162014.
- Hall C.I., Reese M.L., Weerapana E., Child M.A., Bowyer P.W., Albrow V.E., Haraldsen J.D., Phillips M.R., Sandoval E.D., **Ward G.E.**, Cravatt B.F., Boothroyd J.C., Bogyo M. (2011) Chemical genetic screen identifies Toxoplasma DJ-1 as a regulator of

- parasite secretion, attachment, and invasion. *Proc Natl Acad Sci U S A*. 108:10568-73. PMID: PMC3127939.
- Sheiner, L., Santos, J.M, Klages, N., Parussini F., Jemmely, N., Friedrich, N., **Ward, G. E.**, Soldati-Favre, D. (2010) *Toxoplasma gondii* transmembrane microneme proteins and their modular design. *Molec. Microbiol.* 77: 912-929. PMID: PMC2982875.
- Heaslip, A.T., Carey, K.L., Catti, F., Warshaw, D.M., Westwood, N.J., Ballif, B.A., and **Ward G.E.** (2010) A small molecule inhibitor of *T. gondii* motility induces the posttranslational modification of myosin light chain-1 and inhibits myosin motor activity. *PLOS Pathogens* 6, e1000720. PMID: PMC2800044.
- Walton, J.G.A., Patterson, S. Liu, G., Haraldsen, J.D., Hollick, J.J., Slawin, A.M.Z., **Ward, G.E.**, and Westwood, N.J. (2009) Synthesis and Biological Evaluation of Functionalised Tetrahydro- β -carboline Analogues as Inhibitors of *Toxoplasma gondii* Invasion. *Org. Biomol. Chem.* 15, 3049-3060.
- Haraldsen, J.D., Liu, G., Botting, C.H., Walton, J.G.A., Storm, J., Phalen, T.J., Kwok, L.Y., Soldati-Favre, D., Heintz, N.H., Muller, S., Westwood*, N.J. and **Ward, G. E.*** (2009) Identification of conoidin A as a covalent inhibitor of peroxiredoxin II. *Org. Biomol. Chem.* 15, 3040-3048. NIHMSID: 101070
- Gilk, S.D, Gaskins, E., **Ward, G.E.**, and Beckers, C.J.M. (2009) GAP45 phosphorylation controls assembly of the *Toxoplasma* myosin XIV complex. *Euk. Cell* 8, 190-196. PMID: PMC2643604.
- Kato, N., Sakata, T., Breton, G., Le Roch, K. G., Nagle, A., Andersen, C., Bursulaya, B., Henson, K., Johnson, J., Kumar, K. A., Marr, F., Mason, D., McNamara, C., Plouffe, D., Ramachandran, V., Spooner, M., Tuntland, T., Zhou, Y., Peters, E. C., Chatterjee, A., Schultz, P. G., **Ward, G. E.**, Gray, N., Harper, J., and Winzeler, E.A. (2008) Gene expression signatures and small-molecule compounds link a protein kinase to *Plasmodium falciparum* motility. *Nat. Chem. Biol.* 4, 347-356.
- Evans, K.M., Haraldsen, J.D., Pearson, R.J., Slawin, A.M.Z, **Ward, G.E.** and Westwood, N.J. (2007) Synthesis and chemical characterisation of target identification reagents based on an inhibitor of human cell invasion by the parasite *Toxoplasma gondii*. *Org. Biomol. Chem.* 5, 2063-2069.
- Morgan, R.E., Evans, K.M., Patterson, S., Catti, F. **Ward, G.E.**, and Westwood, N.J. (2007) Targeting Invasion and Egress: From tools to drugs? *Curr Drug Targets* 8(1), 61-74.
- Brydges, S.D., Zhou, X.W., Hunyh, M., Harper, J.M., Mital, J., Ajoble, D., Daubener, W., **Ward, G.E.**, and Carruthers, V.B. (2006) Targeted Deletion of *MIC5* Enhances Trimming Proteolysis of *Toxoplasma* Invasion Proteins. *Euk. Cell* 5, 2174-2183. PMID: PMC1694808
- Gilk, S.D., Raviv, Y., Hu, K., Murray, J.M., Beckers, C.J.M., and **Ward, G.E.** (2006) Identification of PhIL1, a novel cytoskeletal protein of the *Toxoplasma gondii* pellicle, through photosensitized labeling with [125 I]-5-Iodonapthalene-1-azide (INA) *Euk. Cell* 5: 1622-1634. PMID: PMC1595352
- Mital, J., Schwarz, J. Taatjes, D.J. and **Ward, G.E.** (2005) Laser Scanning Cytometer-based Assays for Measuring Host Cell Attachment and Invasion by the Human Pathogen, *Toxoplasma gondii*. *Cytometry (Part A)* 69A:13-19. PMID: PMC1428790

- Alexander, D.L., Mital, J., **Ward, G.E.**, Bradley, P. and Boothroyd, J. (2005) Identification of the Moving Junction Complex of *Toxoplasma gondii*: A Collaboration Between Distinct Secretory Organelles. *PLOS Pathogens* 1, 137-149. PMID: PMC1262624
- Mital, J., Meissner, M., Soldati, D. and **Ward, G.E.** (2005) Conditional expression of *Toxoplasma gondii* Apical Membrane Antigen-1 (TgAMA1) demonstrates that TgAMA1 plays a critical role in host cell invasion. *Mol Biol. Cell*, 16, 4341-4349. PMID: PMC1196342
- Carey, K.L., Jongco, A., Kim, K. and **Ward, G.E.** (2004) The *Toxoplasma gondii* Rhoptry Protein, ROP4, is Secreted into the Parasitophorous Vacuole and Becomes Phosphorylated in Infected Cells. *Euk. Cell*, 3, 1320-30. PMID: PMC522600
- Gaskins, E., Gilk, S., DeVore, N., Mann, T., **Ward, G.** and Beckers, C.J. (2004) Identification of the Membrane Receptor of a Class XIV Myosin in *Toxoplasma gondii*. *J. Cell Biol.* 165, 383-393. PMID: PMC2172186
- Carey, K.L., Westwood,* N.J., Mitchison, T.J., and **Ward, G.E.*** (2004) A Small-Molecule Approach to Studying Invasive Mechanisms of *Toxoplasma gondii*. *PNAS* 101, 7433-7438. PMID: PMC409936
- Wichroski, M.J. and **Ward, G.E.** (2003) Biosynthesis of Glycosylphosphatidylinositol is Essential to the Survival of the Protozoan Parasite *Toxoplasma gondii*. *Euk. Cell* 2, 1132-1136. PMID: PMC219362
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- Bogyo, M and **Ward, G.E.** (2013). *Toxoplasma gondii* Chemical Biology. In *Toxoplasma gondii: The Model Apicomplexan - Perspective and Methods* (Weiss, L and Kim, K. - eds), 703-726.
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PATENTS

“Identification of Anti-Protozoal Agents”

N.J. Westwood, **G.E. Ward**, K.L. Carey and T.J. Mitchison
Patent No. US 7,067,315 B2, issued 6/27/06

“Toxoplasma gondii Apical Membrane Antigen-1”

G.E. Ward and C.G. Donahue
Non-provisional application (S/N 10/039,770) filed with the USPTO 11/9/01

INVITED SEMINARS (SINCE 10/96)

- 10/15 Brandeis University, Molecular Genetics Program
- 10/15 Boston College, Department of Biology
- 10/15 Stony Brook University, Stony Brook University Libraries “Open Access, Open Data, Open Minds” Symposium
- 5/14 Université Montpellier 2, LabEx EPIGENMED
- 3/14 University of Glasgow, Wellcome Center for Molecular Parasitology
- 3/14 University of Glasgow, Institute of Infection, Immunity and Inflammation
- 11/13 Indiana University, Department of Biology
- 11/12 Oklahoma Health Sciences Center, Department of Microbiology and Immunology
- 2/12 Dartmouth Medical School Microbial Pathogenesis Retreat
- 1/12 University of California, Davis, Joint Seminar in Molecular Biology
- 1/12 University of California, Davis, Career Luncheon Series, Molecular and Cellular Biology Training Program
- 9/10 21st Annual Molecular Parasitology Meeting, Marine Biological Laboratory
- 5/09 Rocky Mountain Laboratories, Laboratory of Intracellular Parasites
- 4/09 Drexel University, Center for Molecular Parasitology
- 12/08 University of California, Berkeley, Department of Plant and Microbial Biology
- 12/08 University of California, San Francisco, Department of Microbiology and Immunology

5/08 Purdue University, Forum on Scholarly Communication
10/07 McGill University, Institute of Parasitology
10/07 Association of Research Libraries 75th Anniversary Membership Meeting, Washington DC
6/07 Ninth International Toxoplasmosis Conference, Chico Hot Springs, Montana
4/07 University of Wisconsin, Madison, Department of Medical Microbiology and Immunology
11/06 Boston College, Department of Biology
11/06 University of Vermont, Department of Biochemistry
10/06 XXI Annual Meeting of the Argentinean Society of Protozoology, Cordoba
10/06 University of Pennsylvania, Department of Pathobiology
5/06 University of Vermont, Infectious Diseases Conference
1/06 Stanford University, Department of Microbiology and Immunology
11/05 Brown University, Department of Molecular & Cellular Biology & Biochemistry
10/05 Washington University, Department of Molecular Microbiology
10/05 Cornell University, Department of Molecular Biology and Genetics
5/05 Eighth International Toxoplasmosis Conference, Ajaccio, Corsica
4/05 Keystone Symposium, Drugs Against Protozoan Parasites
2/05 Division of Physical Biochemistry, NIMR Mill Hill U.K.
11/04 Green Mountain Antibodies, Inc., Winooski VT
6/04 McGill University, Center for Study of Host Resistance
10/03 Tufts University, School of Veterinary Medicine
11/03 Dartmouth College, Department of Pathology
6/03 Trudeau Institute, Saranac Lake NY
5/03 University of Vermont, Department of Pharmacology
5/03 Seventh International Toxoplasmosis Conference, Tarrytown, New York
2/03 Dartmouth Medical School, Department of Microbiology and Immunology Annual Retreat
2/03 University of Vermont, Department of Physiology and Biophysics Muscle Club
10/02 Harvard Medical School, Institute for Chemistry and Cell Biology Annual Retreat
10/02 National Cancer Institute, Frederick MD
10/02 BioTek Inc, Colchester VT
6/02 Gordon Research Conference, The Biology of Host-Parasite Interactions
5/02 Harvard School of Public Health, Department of Immunology and Infectious

Diseases

- 10/01 University of Georgia, Department of Cellular Biology
- 10/01 Louisiana State University, Department of Biological Sciences
- 5/01 Sixth International Toxoplasmosis Conference, Freising Germany
- 4/01 University of Pennsylvania, Department of Pathobiology
- 11/00 University of Vermont, Infectious Diseases Conference
- 10/00 Skidmore College, Department of Biology
- 9/00 Eleventh Annual Molecular Parasitology Meeting, Woods Hole MA; **chair** of Session 4 (Apicomplexa Surface and Invasion)
- 7/00 Molecular Mechanisms of Cell-Cell Interaction, San Diego CA; **conference co-organizer**
- 4/00 CALS Research and Scholarship Seminar Series, University of Vermont
- 2/00 Dartmouth College Department of Microbiology and Immunology Toxoplasma Conference, Holderness NH
- 9/99 Fifth International Toxoplasmosis Conference, Point Reyes, California
- 8/98 Ninth International Congress of Parasitology, Chiba, Japan
- 10/98 New and Re-emerging Infectious Diseases Conference, University of Illinois at Urbana Champaign
- 10/97 Notre Dame University, Department of Biological Sciences
- 9/97 University of Vermont, Department of Biology
- 5/97 McGill University, Institute of Parasitology
- 4/97 Cornell University, Department of Microbiology
- 1/97 Keystone Symposium on Molecular and Cellular Biology of Apicomplexan Parasites