CURRICULUM VITAE

KRISTIN MARGARET HAGER

CONTACT INFORMATION:

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EDUCATION:

1989: **B.Sc.** Microbiology. University of Illinois.
1996: **Ph.D.** Biochemistry and Genetics. University Alabama-Birmingham.
2000: **Postdoctoral Fellow.** Molecular/Cell Biology. University of Pennsylvania.

PROFESSIONAL EXPERIENCE:

1986-1987 **Undergraduate Researcher.** Department of Microbiology, University of Illi nois with Dr. B. Rissatti. *Bioaccumulation of Polycholinated Biphenyls in Fish Fatty Tissues*.

1988-1989: **Undergraduate Research Thesis.** Department of Biochemistry, University of Illinois. *Protein-Carbohydrate Interactions in Foam* with Dr. John Clark.

1990-1996: **Graduate Fellow,** University of Alabama-Birmingham. Department of Bio chemistry and Genetics. *Receptor-mediated binding and endocytosis of TLF in African Trypansome* with Dr. Stephen Hajduk.

1996-1999: **Postdoctoral Fellow,** University of Pennsylvania. Department of Biology. *Detection and characterization of specialized ER exit sites in the obligate intracellular parasite, Toxoplasma gondii* with Dr. David Roos.

2000-Present: **Assistant Professor**, Department of Biological Sciences, and Member Center for Tropical Disease and Research Training. University of Notre Dame. *The role of retention and retrieval in protein targeting, organelle biogenesis and stability in Toxoplasma gondii.*

HONORS, AWARDS, AND OTHER SPECIAL SCIENTIFIC RECOGNITIONS:

1989 Illinois Legislative Scholarship to the University of Illinois (Full Tuition).
1991 Biology of Parasitism Course (McCarthy Fellowship); MBL, Woods Hole, MA
1992 McKibbin Research Fellowship: Best Biochemistry Doctoral Research.

1993 Sigma Xi Award: Best Graduate Student Research,
1994 National Science Foundation (NSF) Travel Grant
2001 Faculty Research Development Award (University of Notre Dame).
2002 Ellison Medical Foundation New Scholar in Global Infectious Disease Award.
2003 Analytical & Quantitative Microscopy Course (IBM Fund for Women); Marine Biology Laboratory (MBL) at Woods Hole, MA.
2003 Recognized as a: "young researcher at the forefront of her field who has made a signifi cant contribution to science," by the National Academy of Sciences (USA) and the Alexander Von Humbolt Society (German counterpart to NAS). "German-American Frontiers in Science" (GAFOS). Irvine, CA.
2003 Organizer, 10th Annual "*German-American Beckman Frontiers of Science*" (GAFOS)
2004 Co-chair, 10th Annual "*German-American Frontiers in Science Symposium*" (GAFOS) June 23-26, 2004. Hamburg, Germany.
2004 Selected for inclusion in AcademicKeys Who's Who in Sciences Higher Education
2004 Organizer, 11th Annual "*German-American Frontiers in Science Symposium*" (GAFOS) October 15-16, 2004. NY, NY.
2005 Co-chair, 11th Annual "*German-American Frontiers in Science Symposium*" (GAFOS) June 3-5, 2005. Irvine, CA.
2006 Faculty Research Development Award (University of Notre Dame).
2007 Inclusion of our phylogenetics paper in the MBL institutional repository on the Woods Hole Open Access Server (WHOAS). The WHO library is a unique world-renowned library with collections ranging from biomedical, biological, ecological, and oceanographic sciences. It is internationally recognized as defining the current trends and practices in marine information sciences and bioinformatics.
2008 Organizer and Chair of Special Interest Subgroup Meeting: Retrograde Trafficking and Organelle Biogenesis, 48th Annual Meeting of the American Society for Cell Biology. December 13-17, 2008. San Francisco, CA.

PROFESSIONAL SOCIETIES:

Sigma Xi Scientific Research Society Membership: 1992-1996.
American Association for the Advancement of Science AAAS. Membership:1994-1996.
American Midwestern Conference for Parasitologists (AMCOP), member since 2000.
American Society of Cell Biologists (ASCB), member since February 2001.
Association for Women in Science (AWIS), member since February 2002.
AcademicKeys Who's Who in Sciences Higher Education (WWSHE), member since 2004
American Society for Microbiology (ASM), member since 2004.

JOURNAL REVIEWER (Ad Hoc):

Cellular Microbiology
Journal of Cell Science
Experimental Parasitology
Journal of Parasitology
Parasitology International

RESEARCH PROJECTS ONGOING OR COMPLETED DURING THE LAST 3 YEARS:

Project: Membrane trafficking events in the regulation of organelle biogenesis and stability in Api-complexan Parasites
Total Funding: $200, 000, (first year= $50, 000)
Agency and Award: Ellison Medical Foundation. New Scholar in Global Infectious Disease.
Dates: 8/01/02 - 8/01/06. One Year No-Cost Extension - 08/01/07
Role in Project: Principle Investigator (ID-NS-0058-02).
Objective: To determine *Tg*ERD2s role in membrane trafficking, map its functional domains and determine if its expression is cell cycle dependent.

Project: *Toxoplasma gondii*: Secreted proteins that bind host microtubules
Total Funding: $10,000
Agency and Award: University of Notre Dame. Faculty Research Program Award (FRP).
Dates: 8/01/06 - 8/01/07.
Role in Project: Principal investigator
Objective: Develop preliminary data set concerning *Toxoplasma*'s ability to remodel host microtubule network.

Project: The Biology of a Changing World: An Integrated Approach to Studying Environmental and Global Health.
Total Funding: $3, 000, 000
Agency and Award: NSF/IGERT/ 0437019
Dates: 6/01/2005-5/30/2010
Role in Project: Faculty mentor - 5%
Objective: To train graduate students capable of designing and implementing scientifically sound solutions to pressing environmental and global health problems within the framework of human culture, economics, policy and law.

Project: Experimental Parasitology and Vector Biology
Total Funding: $74,824
Agency and Award: NIH/NIAID/TMP T32 7030; PI: Collins, F.
Dates: 08/01/1994-07/31/2005.
Role in Project: Participating Faculty, Mentor.
Objective: Mentor graduate students in Parasitology and Vector Biology.

PENDING:

Project: Secreted Virulence Factors
Total Funding: $50, 000
Agency and Award: American Heart Association (Affiliate: Greater Midwest), Grant-in-Aid
Dates: January 2009 - January 2011
Role in Project: Principal Investigator
Objective: Identify and localize secreted virulence factors that bind and regulate host microtubules.

PENDING (continued):

Project: Secreted Virulence Factors in *Toxoplasma gondii*
Total Funding: $1, 312, 500
Agency and Award: NIH, ROI. (AN3022952)
Dates: 4/01/09 - 09/07/14
Role in Project: Principal Investigator
Objective: Toxoplasma gondii is an obligate intracellular parasite. Drugs currently used in the management of toxoplasmosis are inactive against the cyst form (or "inactive form") of *T. gondii*, a form commonly found in the brain of infected AIDS patients. There is no cure and life-long maintenance therapy is required to suppress *Toxoplasma* encephalitis after initial therapy. Our research is designed to target the "resting" stage of the parasite by blocking the parasites ability to exploit host microtubules.

PREVIOUS AWARDS:

Project: *Toxoplasma gondii*: Molecular Studies on the Early Secretory Pathway.
Total Funding: $15,000
Agency and Award: University of Notre Dame. Faculty Research Program Award (FRP).
Dates: 8/01/01 - 8/01/02.
Role in Project: Principal investigator
Objective: Develop preliminary data set concerning sequence, expression and localization of the retrieval receptor *Tg*ERD2 in *Toxoplasma*.

Project: Analytical and Quantitative Microscopy - at the Marine Biological Laboratories (MBL)
Total Funding: $3000
Agency and Award: University of Notre Dame, Dean of Sciences, IBM Fund for Women
Dates: May 7-11, 2003
Role in Project: Student in Course
Objective: Bring cutting edge technology to laboratory and classroom, strengthen grant proposals, and network with leaders in field of cell biology.

PEER-REVIEWED PUBLICATIONS (PhD and Postdoc):

Hager, K.M., Pierce, M., Moore, R., Tytler, E., Esko, J., and S. Hajduk. 1994. Endocytosis of a cytotoxic human high density lipoprotein results in disruption of acidic intracellular vesicles and subsequent killing of African trypanosomes. *J. Cell Biol*. 126:155-167.

Tytler, E., D. Moore, M. Pierce, **K.M. Hager**, J. Esko, and S. Hajduk. 1995. Reconstitution of the Trypanosome Lytic Factor. The role of lipids and apolipoproteins in the cytotoxicity of a subspecies of human high-density lipoproteins toxic to *Trypanosoma brucei*. *Molec. Biochem. Parasitol*. 69:9-17.

Moore, D. R., A. Smith, **K. Hager**, R. Walden, J. Esko, and S. Hajduk. 1995. Developmentally regulated sensitivity of *Trypanosoma brucei brucei* to the cytotoxic effects of human high-density lipoprotein. *Exp. Parasitol*. 81:216-226.

Hager, K.M. and S. Hajduk. 1997. Mechanism of resistance of African trypanosomes to cytotoxic human HDL. *Nature*. 385: 823-825.

Hager, K.M., B. Striepen, L. Tilney and D.S. Roos. 1999. The nuclear envelope serves as an intermediary between the ER and the Golgi complex in the intracellular parasite *Toxoplasma gondii*. *J. Cell Science.* 112: 2631-2638.

Shimamura M, **K.M. Hager**, and S.L. Hajduk. 2001. The lysosomal targeting and intracellular metabolism of trypanosome lytic factor by *Trypanosoma brucei brucei*. *Mol. Biochem. Parasitol.* 115(2): 227-37.

REVIEWS (Peer-reviewed) AND BOOK CHAPTERS (PhD and Postdoc):

Hajduk, S., B. Adler, K. Bertrand, K. Fearon, **K. Hager**, K. Hancock, M. Harris, A. LeBlanc, R. Moore, V. Pollard, J. Priest, and Z. Wood. 1992. Molecular biology of African trypanosomes: de velopment of new strategies to combat an old disease. *Am. J. Med. Sci*. 303:258-270.

Hajduk, S., **K.M. Hager**, and J. Esko. 1992. High-density lipoprotein-mediated lysis of trypanosomes. *Parasitol*. *Today* 8:95-98.

Hajduk, S., **K.M., Hager**, and J. Esko. 1994. High-density lipoprotein killing of African trypano somes. *Ann. Rev. Microbiol*. 48:139-62.

Roos, D.S., M.J. Crawford, R.G.K. Donald, L.M. Fohl, **K.M. Hager**, J.C. Kissinger, M.G. Reynolds, B. Striepen, and W.J. Sullivan, Jr. 1999. Transport and trafficking: *Toxoplasma* as a model for *Plasmodium*. *Novartis Fdn. Symp.* 226.

Roos, D.S., J.A. Darling, M.G. Reynolds, **K.M. Hager**, B.S. Striepen and J.C. Kissinger. (1999) *Toxoplasma* as a model parasite: apicomplexan biochemistry, cell biology, molecular genetics, genomics and beyond. Biology of Parasitism. C. Tschudi and E. Pearce Editors. Kluwer Academic Publishers, Boston, Massachusettes.

PEER-REVIEWED PUBLICATIONS – produced at Notre Dame:

Pfluger S.L., H.V. Goodson, J.M. Moran, C.J. Ruggiero* ***(*undergraduate)***, X. Ye, K.M. Emmons, and **K.M. Hager**. 2005. A receptor for retrograde transport in the Apicomplexan parasite, *Toxoplasma gondii*. *Eukaryotic Cell*. 4(2): 432-42.

Smith S.S., S.L. Pfluger, E. E. Hjort ***(*undergraduate)***, A.G. McArthur, and **K.M. Hager**. 2007. Mo lecular evolution of the vesicle coat component βCOP in *Toxoplasma gondii*. *Molecular Phylogeny Evolution.* 44(3): 1284-1294.

Moran, J.M., Smith, S.S., and **K.M. Hager**. 2007. The apicomplexan parasite *Toxoplasma gondii* pos sesses a receptor for activated C kinase ortholog. *Biochemical and Biophysical Research Communications*. 363(3): 680-686.

Hager K.M.* and V. Caruthers. 2008. 'MAR'veling at parasite invasion. *Trends in Parasitology*. 24(2): 51-54. *Author for Correspondence.

Eggleston, T.L., Fitzpatrick, E. * ***(*RET@ND student***), and **K.M. Hager**. 2008. Parasitology as a

teaching tool: isolation of apicomplexan cysts from store bought meat. ***Cell Biology Education-Life Sciences Education (CBE-LSE)***. 7, 184-192.

Walker, M.E.* **(undergraduate*),** Hjort, E.E., **(undergraduate*),** Archer, W., and **K.M. Hager**. 2008. *Toxoplasma gondii* Alters Host Cell Microtubule Dynamics. ***Microbes and Infection. In press.***

Smith, S.S., Pfluger SL, T.T. Stedman, **K.M. Hager**. 2008. Dynamic cellular distribution and complex formation of *Toxoplasma* coatomer subunit, βcop. *In Submission, Experimental Parasitology.*

PEER-REVIEWED PUBLICATIONS IN PREPARATION– produced at Notre Dame:

Tripanthi, A., TT. Chui and K.M. Hager. Mutational analysis of *Toxoplasma* HDEL receptor. *In preparation.*

Tripanthi, A., TT. Chui, X. Ye, H.V. Goodson, and K.M. Hager. Plastid associated retrieval receptors in Apicomplexan parasites. *In preparation.*

INVITED LECTURES/PRESENTATIONS:

1994 Invited Lecturer, *Trypanosoma brucei rhodesiense Does not Endocytosis TLF*. Department of Geographic Medicine. University of Alabama-Birmingham.

1995 Invited Speaker, *Resistance to TLF lysis arises from an endocytic defect.* Molecular Parasitology Meeting, Marine Biological Laboratories (MBL) in Woods Hole, MA.

1997 Invited Seminar Speaker, *Differentiating between Binding and Endocytosis: A Tale of Two Trypanosomes.* University of Virginia, Richmond, Virginia.

2002 Invited Seminar Speaker, *Membrane Trafficking in Toxoplasma gondii*. Loyola University October 16, 2002. Chicago, IL.

2003 Invited Seminar Speaker, *Membrane Trafficking in the Opportunistic Pathogen, Toxoplasma gondii.* The Bay Paul Center Seminar Series. Marine Biological Laboratories-Woods Hole Oceanographic Institute (MBL-WHOI). May 16, 2003. Woods Hole, MA.

2003 Invited Presenter, Investigating the Identity and Role of Secretory Checkpoints within the Opportunistic Pathogen, *Toxoplasma gondii*. 9th Annual German-American Beckman Frontiers of Science Symposium, sponsored by the U.S. National Academy of Sciences, and the Alexander Von Humboldt Foundation. Arnold and Mabel Beckman Center of the National Academies of Sciences and Engineering. June 5-7, 2003. Irvine, CA.

2004 Invited Seminar Speaker, *Toxoplasma* and the Amazing Parasitic COPI Coat: Novel characteristics of *Tg*βCOP (TOP1). Department of Biochemistry and Chemistry, University of Windsor. February 13, 2004. Windsor, Canada.

2004 Invited Seminar Speaker, Success and Secretion in *Toxoplasma gondii*. Department of Medical Genetics, Research Institute, The Hospital for Sick Children. May 10, 2004. Toronto ON. Canada

2004 Invited Speaker, Analysis of Membrane Trafficking Events in the Regulation of Organelle Biogenesis and Stability in Apicomplexan Parasites. Ellison Medical Foundation Global Diseases Colloquium. July 22-24, 2004. Woods Hole, MA.

2005 Invited Speaker, The Role of Retrieval in Organelle Biogenesis and Stability. Chicago Area Mycology and Parasitology Meeting (CAMP). April 1, 2005. Chicago, IL.

2005 Invited Speaker, A Novel Class of Receptors in Apicomplexan Parasites. 9th Interna

tional *Toxoplasma* Congress. May 27-31. Corsica, Italy

2005 Invited Speaker, *Toxoplasma gondii* Hijacks and Remodels Host Cell Cytoskeleton. British Society for Cell Biology Meeting. Oct. 2-5, 2005. Edinburgh, Scotland.

2006 Invited Seminar Speaker, Secreted Virulence Factors in *T. gondii*. Seattle Biomedical Research Institute (SBRI). January 6, 2006. Seattle, WA.

2006 Invited Presenter, The ERD2 Receptor Family in *Toxoplasma gondii*. Burroughs Wellcome Fund (BWF), "Person, Place, or Thing – The Fluid Roles of Host, Microbe, and Environment in Infectious Diseases." August 3-5, 2006. Vancouver, BC. Canada.

2008 Invited Presenter, Why Study Protein Secretion in an Intracellular Parasite? "From the Faraway Nearby – intimate and distant drivers in our relationship with our microbial passengers and passers-by" Wellcome Fund (BWF), July 10-12, 2008. Denver, Colorado.

2008 Invited Seminar Speaker, Toxoplasma Actively Hijacks Host Microtubules. Department of Microbiology, Washington University, September 17, 2008, St. Louis, Mo.

2008 Invited Seminar Speaker, Retrieval and the Apicoplast: What's the ER Got To Do With It? Department of Medicine and Microbial Pathogenesis, Yale University School of Medicine, October 23, 2008. New Haven, CT.

2008 Invited Speaker, Retrieval and Organelle Biogenesis in the Apicomplexan Parasite, *Toxoplasma*. 48th Annual Meeting of the American Society for Cell Biology. December 13-17, 2008. San Francisco, CA.

CONTRIBUTED ABSTRACTS (Star * denotes presenter):

Hager, K.M.*, Moore, R, Esko, J., and S. L. Hajduk. A Human High Density Lipoprotein is Endocytosis and Targeted to an Acid Organelle by an African Trypanosome. Sigma Xi Graduate Student Research Day, UAB. September 1992

Hager, K.M.*, Moore, R, Esko, J, and S. L. Hajduk. Trojan Horse: Endocytosis of TLF Causes Auto digestion of Susceptible Trypanosomes. Sigma Xi Graduate Student Research UAB. September1993

Hager, K.M.* and S.L. Hajduk. Targeting an Acid Organelle for Destruction: How does TLF Lyse African Trypanosomes*?* Presenter, IX International Congress of Protozoology. Berlin, Germany.

Hager, K.M.* and S.L. Hajduk. Resistance to TLF lysis arises from an endocytic not from a defect in receptor binding. Molecular Parasitology Meeting, Marine Biological Laboratories (MBL) in Woods Hole, MA. September 17-21, 1995.

Hager, K.M.* and S.L. Hajduk. Escape from the Death Trap: Resistance of African Trypanosomes to Cytotoxic Human HDL. Molecular Parasitology Meeting, Marine Biological Laboratories (MBL) in Woods Hole, MA. USA. September 15-19, 1996

Hager, K.M.*, Striepen, B., and D.S. Roos. Secretion from the ER to the Golgi Occurs Via the Apical End of the Nuclear Envelope in the Parasite, *Toxoplasma gondii.* Molecular Parasitology Meeting, Marine Biological Laboratories (MBL). Woods Hole, MA. September 13-17, 1998

Hager, K.M.*, Striepen, B., D.S. Roos. Mapping The Early Secretory Pathway of *T. gondii*: Implica tions for Targeting and Retrieval to the Transitional ER. Molecular Parasitology Meeting, Marine Biological Laboratories (MBL). Woods Hole, MA. USA. September 12-16, 1999.

Pfluger S. * and **K.M. Hager**. Localization studies of TgβCOP. Annual Midwestern Conference of Parasitologists (AMCOP), Eastern Illinois. June 7-9, 2001.

Moran, J.M. * and **K.M. Hager**. The role of signaling in protein secretion in *Toxoplasma gondii.* AMCOP, Millikin University, Decatur, Illinois. June 76-8, 2002.

Pfluger S. *++ and **K.M. Hager**. Elucidating the Functional Role of TgβCOP in the Early Secretory

Pathway. AMCOP, Millikin University, Decatur, Illinois. June 6-8, 2002.
++ *Received Best Student Scientific Presentation Award.*

Hager, K.M.*, Guziec, K., and S. Pfluger. Analysis of membrane trafficking events in *Toxoplasma gondii*: Receptors and their role in organelle stability. Molecular Parasitology Meeting, MBL. Woods Hole, MA. September 22-26, 2002.

Moran, J.M.* and **K.M. Hager**. Protein interactions involved in COPI formation in *Toxoplasma gondii*. Molecular Parasitology Meeting, Marine Biological Laboratories (MBL). Woods Hole, MA. Sep tember 22-26, 2002.

Pfluger, S. ***,** Ruggiero, C. (undergraduate), and **K.M. Hager**. Pursuing the Role of βCOP in *Toxoplasma gondii*. Molecular Parasitology Meeting, Marine Biological Laboratories (MBL). Woods Hole, MA. September 22-26, 2002.

Pfluger, S., Goodson, H., and **K.M.Hager***. *Tg*ERD2: Retrograde Traffic in the Apicomplexan Para site, *Toxoplasma*. Eighth International Congress on Toxoplasmosis. Dolce Tarrytown House. Tarrytown, NY. May 23-27, 2003.

Pfluger, S, Goodson, H.V., Moran, J.M., Ruggiero, CM, (undergraduate), Ye, X., Emmons, K.M. and **K.M. Hager *.** Investigating the Identity and Role of Secretory Checkpoints within the Opportunistic Pathogen, *Toxoplasma gondii*. 9th Annual German-American Beckman Frontiers of Science Symposium, sponsored by the U.S. National Academy of Sciences, and the Alexander Von Humboldt Foundation. Arnold and Mabel Beckman Center of the National Academies of Sciences and Engineering in Irvine, CA. June 5-7, 2003.

Pfluger, S., Moran, JM., Ruggiero, C. (undergraduate), **K.M. Hager*.** Secretory Checkpoints within the Pathogen, *Toxoplasma*. 43rd Annual Meeting of the American Society For Cell Biology. San Francisco, CA. December 13-17, 2003.

Pluger, S., Moran, J.M., Smith, S.S., Stedman, T.T., Ananovanich, S., **K.M. Hager*.** Secretory Check points: The Key to Understanding Protein Targeting In Apicomplexa. Molecular Parasitology Meeting, Marine Biological Laboratories (MBL). Woods Hole, MA. September 19-22, 2004.

Ye, X, Goodson, H.V., **K.M.Hager***. Probing the Role of Retrieval in *Toxoplasma gondii* using the Receptor, *Tg*ERD2. 44th Annual Meeting of the American Society for Cell Biology. Washington, D.C. December 3-8, 2004.

Smith, S.S.*, Ye, X, K.M.Hager. Characterizing *Toxoplasma gondii* β-COP like Protein (TOP1). 44th Annual Meeting of the American Society for Cell Biology. Washington, D.C. December 3-8, 2004.

Clark, K. * (undergraduate), Xin Ye, and **K.M. Hager**. Functional Studies of *Tg*ERD-GFP. Chicago Area Mycology and Parasitology Meeting (CAMP). Chicago, IL., April 1, 2005.

Ye, X.* and **K. M. Hager**. Cloning and Localization of a Novel Group of ERD2 Receptors. Chicago Area Mycology and Parasitology Meeting (CAMP). Chicago, IL., April 1, 2005.

Smith, S.S.* and **K.M. Hager**. *Tg*βCOP Localization During the Lytic Cycle. Chicago Area Mycology and Parasitology Meeting (CAMP). Chicago, IL., April 1, 2005.

Chui, T.T. (undergraduate), *, and K.M. Hager. Plastid-Associated ERD-like Protein (PERLs) in *Toxoplasma gondii*. Molecular Parasitology Meeting, Marine Biological Laboratories (MBL). Woods Hole, MA. September 11-15, 2005.

Smith, S.S.*, Pluger, S., Moran, J.M., Ye, X., and K.M. Hager. Characterizing *Tg*βCOP. Molecular Parasitology Meeting, Marine Biological Laboratories (MBL). Woods Hole, MA. September 11-15, 2005.

Walker, M.E.* (undergraduate), Ye, X., and **K.M. Hager**. Secreted Virulence Factors. Molecular Parasitology Meeting, Marine Biological Laboratories (MBL). Woods Hole, MA. September 11-15, 2005.

Smith, SS.*, Ye, X, **K.M.Hager**. *Toxoplasma gondii* βCOP Localization and Interactions During Infec tion. Abstract Proceedings of: 45th Annual Meeting of the American Society for Cell Biology. San Francisco, CA. December 10-14, 2005.

Smith, SS. *, Ye, X, **K.M. Hager**. *Toxoplasma gondii* βCOP and RACK1. Chicago Area Mycology and Parasitology Meeting (CAMP). Chicago, IL., April 28, 2006.

Hjort, E.E. (undergraduate*), S.S. Smith, D. Xu, A.G. McArthur, X. Gu., **K.M. Hager**, Molecular evolution of beta-COP, a vesicle coat component. Chicago Area Mycology and Parasitology Meeting (CAMP). Chicago, IL., April 28, 2006.

Smith, S. S.*, and **KM. Hager**. Vesicle Coat Component, βCOP: Location and dynamic interactions within the protozoan parasite *Toxoplasma gondii*. Chicago Area Mycology and Parasitology Meeting (CAMP). Chicago, IL., September 7, 2007.

TEACHING EXPERIENCE:

Research Experiences for Teachers (RET) at Notre Dame. RET@ND is a program of summer research projects for high school teachers from the Michiana region. Funded by the National Science Foundation (NSF). Created a new curricular module for use in freshman non-majors and/or high school laboratories. Summer 2007, Teacher: Eileen Fitzpatrick, Washington High School.

Topics in Cell Biology, 570, Sole Instructor, University of Notre Dame. Spring 2007-8. 1 Credit. (12 lectures, 4 students)

Cell Biology & Genetics of Host-Parasite Interactions, BIOS 579, Sole Instructor, University of Notre Dame. Spring 2002-2005. 3 Credits. (35 lectures a semester, 4-6 students/semester).

Cell Biology, BIO341, Sole Instructor. University of Notre Dame, Fall 2001-2004, 2006, 2007. 3 Credits. Typical class size: 120-140 students. Forty (40) lectures a semester, office hours, weekly review session. No teaching assistants.

Undergraduate Research, BIOS 498, Sole Instructor, Spring 2001-Present. Credits, variable.

Biological Sciences I. BIOS 10161 (Guest Lecturer), University of Notre Dame. Fall 2004. 3 credit.

Microbes and Man. BIOS10115. (Guest Lecturer), University of Notre Dame, Fall 2004. 3 credits.

Research & Dissertation, BIOS 699, Sole Instructor, University of Notre Dame. Spring 2001-Present.

Medical and Veterinary Parasitology, BIOS 415, (Guest Lecturer), University of Notre Dame. Spring 2000. 3 credits.

Touch the Future 2000, *Workshop leader*: A celebration of women in math and science. American Association of University Women (AAUW), Lansdale, Pennsylvania branch.

Advanced Cell Biology, BIO480, (Lecturer, Teaching Assistant), University of Pennsylvania. Fall 1997, 1998, 1999. 3 Credits.

BioTeach, JHS500, BioTeach is a UAB graduate level, introductory course in molecular biology designed for high school science teachers. (Teaching Assistant), University of Alabama-Birmingham. Summer 1995. 6 credits.

Biology, second grade, Guest Science Teacher: Cooperative Interactions: Ants, Avondale Elementary School. Winter 1991.

FACULTY TRAINING EXPERIENCE:

Graduate Student Advisor:

Stacy Pfluger, Masters Student. 2001-2004. Dissertation Topic: Localization Studies of *Tg*βCOP (TOP1) and Implications for Its Role in the Secretory Pathway of *Toxoplasma gondii*". Public Defense of Master's Thesis, April 7, 2004. Awards: Pre-doctoral fellow on NIH Experimental Parasitology and Vector Biology Training Grant 8/00-12/02. Recipient, Chester A. Herrick Award at Annual Midwestern Conference of Parasitologists (AMCOP) 2002 (as a result was extended the opportunity to present at the National Meeting in Nova Scotia 2003). Employed at Texas Vet Lab Incorporated since 11/2003. 2006-Present: Baylor Graduate Student in Biology, PhD program. Current Address: Department of Biology, Baylor University, Waco, Texas, 76798-7388

Jennifer Moran, Masters Student, 2001-2004. Dissertation Topic: Characterization of *Toxoplasma* RACK1: Implications for a Novel "interRACKtion." Public Defense of Master's Thesis, March 29, 2004. Awards: Recipient of University of Notre Dame Clare Booth Luce Fellowship for Outstanding Woman Graduate Student. 2005-Present: Scientific consultant and manager at Epic Systems Hospital Software Firm in Madison, Wisconsin.

Sarita Mendoca, Rotation student, 2002. Research Topic: *Tg*Sar1: Role in specialized ER exit sites in *Toxoplasma gondii*.

Sherri Smith, Ph.D. Student, June 2003-Present. Research Topic: Structure/function studies of *Tg*βCOP, a novel parasite coatomer protein. Awards: Recipient of research scholarship 2008.

Rachel Kasubolski, Rotation student, 2004. Research Topic: PRP1: calcium and invasion.

Abhisek Tripanth, Ph.D. Student August 2006-Present. Research Topic: Structure/Function Studies of ERD2 Family of Receptors.

James Clancy, Rotation student. September 2007. *Toxoplasma gondii* blocks host cells from finishing cytokinesis.

Work Study Advisor:
Tim Chiu: Work Study Student, Queensland University. Kingston, Canada. June 2005-January 2006. Research Topic: Plastid-Associated Retrieval Receptors in Apicomplexan Parasites. 2007-Present: PhD program.

Undergraduate Advisor:

Tom Musich: Identifying, cloning and expressing *Tg*ARF-GAP, 2007-Present: PhD student University Massachusettes Medical School; Christy Ruggiero, EM analysis of retrograde mutants, 2004-2007: technician for Dr. Li at School of Veterinary Medicine, Louisiana State University; Keina Thomas, Localization studies of a unique *T. gondii* cytoskeletal protein (also a **Candax ME McNair** "Trio" Summer Scholar, a program directed at building minority diversity in the research sciences) now applying for graduate school; Jay Deimel, Immunoprecipitation of unique *T. gondii* cytoskeletal protein, 2005-Present: medical school. Anthony Chambers, *Tg*ARF mutants, 2005-2006: Investment Banker, Chicago, IL.; Cynthia Chaghouri, Characterization of cell cycle protein (REU student). Chris Davis 01/05-05/05: Identify and characterize parasite microtubule binding proteins (MAPs). Kathrine Clark 9/04-9/05, Testing TgERD2-GFP ability to complement the yeast erd null, 2007-Present: attending medical school. Maggie Walker, Identify and characterizing of microtubule rearrangement in *T. gondii* infected host cells. 2007-Present: PhD student Northwestern University. Recipient St. Mary's department of Biology "Mother Rose Elizabeth Biology" award for service and academic excellence in biology. Sigma Xi "outstanding research" award. Liz Hjort, Phylogenetic Analysis of *Toxoplasma* βCOP with respect to functional divergence. 2007-Present: PhD student Northwestern University. Caitlin Regan. Ultrastructure analysis of retrieval mutants. Mark Gorsche. Secreted factors that bind host microtubules.

RET Mentor in Conjunction with Kaneb Center for Teaching and Learning:
Teacher: Eileen Fitzpatrick, Washington High School: Development of new laboratory module entitled: 'Isolation of *T. gondii* cysts from supermarket sausage'.

Committee Member (thesis):
Stacy Pfluger, M.s. Department of Biological Sciences. Graduated with M.S. in October 2003.
Jennifer Moran, MS. Department of Biological Sciences. Graduated with MS. In April 2004.
Bharath Balu, Ph.D, Department of Biological Sciences. Graduated with Ph.D in Spring 2005.
Francisco Noria, Ph.D., Department of Chemistry and Biochemistry. 2003-Present.
Sherri Smith, Ph.D. Department of Biological Sciences. (June 2003-Present).
Lindsay Sweet, Ph.D, Department of Biological Sciences. (Feb. 2006-present).

Abishek Tripathi, Ph.D. Department of Biological Sciences. (Aug. 2006-present).
Jackie Garrison, Ph.D., Department of Aerospace and Mechanical Engineering (Oct. 2007-Present).

Outside Chairperson for Doctoral Dissertation Defense:
Kevin Miller, Department of Chemistry and Biochemistry (April 3, 2003)
Jeiying Jiao, Department of Chemistry and Biochemistry (July 1, 2004)
Keith Calkins, Department of Physics (March 16, 2005)
Kelly Fennell, Department of Chemistry and Biochemistry (April 12, 2007)

Outside Chairperson for PhD Oral Candidacy Examination:
Angela Kohlhaas, Department of Mathematics (November 7, 2006)

SERVICE (University of Notre Dame):

Department of Biology

Graduate Student Relations Committee (Sept. 2002-present)
Graduate Student Recruitment Weekend (Sept. 2003, 2004, 2005)
Committee Member (thesis): Bharath Balu, Ph.D. (Sept 2001-2005); Lindsay Sweet current. (Feb. 2006-present).

College of Science

Outside Chairperson for Doctoral Dissertation Defense: Kevin Miller, Department of Chemistry and Biochemistry (04/03/03); Jeiying Jiao, Department of Chemistry and Biochemistry (07/01/04), Keith Calkins, Department of Physics (March 16, 2005), Kelly Fennell, Department of Chemistry and Biochemistry (4/12/07).

Outside Chairperson for PhD Oral Candidacy Examination: Angela Kohlhaas, Department of Mathematics (November 7, 2006)

Committee Member (thesis): Francisco Noria, Ph.D student: Biochemistry (Sept 2003-Present).
Jackie Garrison, Ph.D student: Bioengineering (Dec. 2007-Present).