

INSTRUMENTATION EXPERIENCE

1. Thermocycler/PCR system used for the Polymerase Chain Reaction
2. Agarose Gel Electrophoresis
3. Gas Chromatograph for Dissolved Inorganic Carbon concentration measurements
4. Spectrophotometer for DNA adsorption measurements
5. Media, culture, and buffer preparation
6. Cell culturing of parasites
7. DNA/RNA isolation and extraction preparation techniques
8. Fluorescence Microscopy
9. qPCR analysis

RESEARCH EXPERIENCES

Ph.D. Project Title: “The Partial Characterization of a *Plasmodium falciparum* Not1 gene (PF11_0049),” conducted at the Interdisciplinary Research Building (IDRB) at USF. Research Advisor: Dr. John Adams, Professor, Department of Global Health.

Research Goal: The objective of this work is to characterize PF11_0049 and validate the phenotype of the Not1 mutant, which results in delayed invasion into red blood cells.

M.S. Project Title: “Stable Carbon Isotope Discrimination by the Form IC RubisCO Enzyme of the Extremely Metabolically Versatile Bacterium, *Rhodobacter sphaeroides*”, at the Bio Science Facility (BSF) at the University of South Florida (USF). Research advisor: Dr. Kathleen Scott, Assistant Professor, Department of Biology at USF.

Research Goal: The purpose of this work was to determine the ϵ values for the form IC RubisCO enzyme from *R. sphaeroides*. Sampling the full phylogenetic breadth of RubisCO enzymes for isotopic discrimination makes it possible to constrain the range of $\delta^{13}\text{C}$ values of organisms fixing carbon via the Calvin-Benson cycle.

Undergraduate Project Title: "Genotyping the Hearts of Transgenic Rats Overexpressing the Human Atrial Essential Myosin Light Chain", in the Department of Molecular Muscle Physiology at the Max-Delbrück-Center for Molecular Medicine in Berlin-Büch, Germany. Research advisors: Dr. Ingo Morano and Dr. Ahmed Ihab Abdelaziz at the Max-Delbrück-Center for Molecular Medicine (2002).

Research Goal: Our findings determined that by over-expressing this gene in animals, in order to alter the fatal effects of hypertrophic cardiomyopathy, the frequency with which the myosin heads attach to the actin filaments increases. This effect boosts the speed of contraction and allows the forced blood flow to relax within the valves of the heart that were constricted by muscle enlargement.

PUBLICATIONS

Kathleen M. Scott, Stefan M. Sievert, Fereniki N. Abril, Lois A. Ball, Chantell J. Barrett, Rodrigo A. Blake, Amanda J. Boller, Patrick S. G. Chain, Justine A. Clark, Carisa R. Davis, Chris Detter, Kimberly F. Do, Kimberly P. Dobrinski, Brandon I. Faza, Kelly A. Fitzpatrick, Sharyn K. Freyermuth, Tara L. Harmer, Loren J. Hauser, Michael Hügler, Cheryl A. Kerfeld, Martin G. Klotz, William W. Kong, Miriam Land, Alla Lapidus, Frank W. Larimer, Dana L. Longo, Susan Lucas, Stephanie A. Malfatti, Steven E. Massey, Darlene D. Martin, Zoe McCuddin, Folker Meyer, Jessica L. Moore, Luis H. Ocampo Jr., John H. Paul, Ian T. Paulsen, Douglas K. Reep, Qinghu Ren, Rachel L. Ross, Priscila Y. Sato, **Phaedra Thomas**, Lance E. Tinkham, Gary T. Zeruth. (2006) “The genome of deep-sea vent chemolithoautotroph *Thiomicrospira crunogena* XCL-2.” PLoS Biology. Volume 4 (Issue 12): 2196-2212

Phaedra Thomas

Page 3

Sievert SM, Scott KM, Klotz MG, Chain PS, Hauser LJ, Hemp J, Hügler M, Land M, Lapidus A, Larimer FW, Lucas S, Malfatti SA, Meyer F, Paulsen IT, Ren Q, Simon J; USF Genomics Class (**Phaedra Thomas**). 2008. "The genome of the epsilonproteobacterial chemolithoautotroph *Sulfurimonas denitrificans*." Applied and Environmental Microbiology. Volume 74 (Issue 4): 1145-1156

PRESENTATIONS

P.J. Thomas¹, A.J. Boller¹, Zhandong Zhao², F. R. Tabita², C.M. Cavanaugh³, and K.M. Scott¹
¹Univ. of South Florida, Tampa, FL; ²Ohio State Univ., Columbus, OH; ³Harvard Univ., Cambridge, MA. "Stable Carbon Isotope Discrimination by Form IC Rubisco Enzymes of the Extremely Metabolically Versatile *Rhodobacter sphaeroides* and *Ralstonia eutropha*." Poster Presentations: American Society for Microbiology (ASM) 106th General Meeting, May 2006, Orlando, FL.; American Geophysical Union (AGU) Fall 2006 Meeting, December 2006, San Francisco, CA; 3rd Annual USF Interdisciplinary Research Symposium, April 2007, Tampa, FL; and the (OCB) Ocean Carbon Biogeochemistry Workshop, July 2007, Woods Hole, MA.

P.J. Thomas¹, A.J. Boller¹, Zhandong Zhao², F. R. Tabita², C.M. Cavanaugh³, and K.M. Scott¹
¹Univ. of South Florida, Tampa, FL; ²Ohio State Univ., Columbus, OH; ³Harvard Univ., Cambridge, MA. "Stable Carbon Isotope Discrimination by the Form IC RubisCO Enzyme of the Extremely Metabolically Versatile Bacterium, *Rhodobacter sphaeroides*." Poster Presentations: (FGLSAMP) Florida-Georgia Louis Stokes Alliance for Minority Participation Expo 2008, February 2008, Gainesville, FL and the American Society of Limnology and Oceanography (ASLO) 2008 Ocean Sciences Meeting, March 2008, Orlando, FL.

Batson, B. L.; **Thomas, P. J.**; Ithier, W.; Mayo, M.; Haynes, S.; Pyrtle, A. J.; Betzer, P.; Bhansali, S.; Greene, B.; and Turner, R. "The FGLSAMP Bridge to the Doctorate Project at the University of South Florida: A Model for the Retention of Minority Graduate Students in the Ocean Sciences." Oral Presentation: American Society of Limnology and Oceanography (ASLO) 2008 Ocean Sciences Meeting, March 2008, Orlando, FL.

P.J. Thomas¹, N. Singh, B. Balu¹, and J. H. Adams¹
¹Department of Global Health, Univ. of South Florida, Tampa, FL. "Analysis of Pyruvate Kinase as a Drug Target in the Life Cycle of *Plasmodium falciparum* Malaria." Poster Presentation: USF Graduate Student Research Symposium, October 2009, Tampa, FL.

P.J. Thomas¹, B. Balu¹, A. Naumov¹, and J. H. Adams¹
¹Department of Global Health, Univ. of South Florida, Tampa, FL. "The Partial Characterization of a *Plasmodium falciparum* Not1 gene (PF11_0049)." Oral Presentation: LSAMP Bridge to the Doctorate Retreat, January 2011, Tampa, FL.

P.J. Thomas¹, B. Balu¹, A. Naumov¹, and J. H. Adams¹
¹Department of Global Health, Univ. of South Florida, Tampa, FL. "The Partial Characterization of a *Plasmodium falciparum* Not1 gene (PF11_0049)." Poster Presentation: USF Research Day, February 2011, Tampa, FL.

PROFESSIONAL SERVICE AND SYNERGISTIC ACTIVITIES

Graduate Student Research Assistant. Ph.D. Project:

- "The Partial Characterization of a *Plasmodium falciparum* Not1 gene (PF11_0049)," Doctoral Research at the University of South Florida.

Graduate Student Research Assistant. M.S. Thesis Project:

- "Stable Carbon Isotope Discrimination by the Form IC RubisCO Enzyme of the Extremely Metabolically Versatile Bacterium, *Rhodobacter sphaeroides*," Master's Research at the University of South Florida.

Phaedra Thomas
Page 4

Student Member, American Association for the Advancement of Science (AAAS)

Student Member, American Society of Tropical Medicine and Hygiene (ASTMH)

Student Member, American Society for Microbiology (ASM)

Member, Phi Sigma Theta National Honor Society

Member, Minorities Striving and Pursuing Higher Degrees of Success (MS PHD'S) in Earth System Science

Member, Beta Kappa Chi Scientific Honor Society

Member, Alpha Kappa Mu Honor Society

Member, Florida-Georgia Louis Stokes Alliance for Minority Participation (FGLSAMP)