

EDUCATION

1978-1980 University of Southern Maine, Gorham, Me.

1980-1984 University of Vermont, Burlington, Vt.

Degree: Bachelor of Arts, Biology

1984-1990 Washington State University, Pullman, Wa.

Degree: Doctor of Philosophy, Biochemistry and Biophysics

AWARDS

- *NIH AREA* (2007-2010, **pending**): "Identification of amino-terminal structural elements that stabilize human apo A-I or promote its amyloidogenesis"
- *CSUPERB Award* (2007-2008): "Crystallographic analysis of substrate binding determinants in yeast and human kynureninase" (with Dr. Cindy Kellen-Yuen)
- *CSUS Instructionally Related Activities Award* (2007-2008): "Research Experiences in the Physical Sciences"
- *CSUS Research and Creative Activity Award* (2007, 2006, 2002-1999, 1997, 1996)
- *Sacramento City-County Office of Metropolitan Water Planning, Water Forum Award* (2005): "Biochemistry of Reproduction in Salmon and Salmon Eggs in the American River" (co- PI with Ronald Coleman, lead PI, in the Dept. of Biological Sciences)
- *CSUS Instructionally Related Activities Award* (2004-2005): "Research Experiences in the Physical Sciences"
- *NIH AREA Award* (2003-2007): "Analysis of a Conformational Switch"
- *Pedagogy Enhancement Award* (2003-2004): "Program Development in Chemistry: Establishing BS and MS Concentration Degrees in Biochemistry " (Note: this award was voluntarily declined)
- *CSUS Instructionally Related Activities Award* (2002-2004): "Summer Research Experiences for Chemistry and Physics Students"
- *NSF CCLI Award* (2001): "Undergraduate Interdisciplinary Molecular Biology Training Facility" (co-PI with Dr. Susanne Lindgren, lead PI, and Dr. Ruth Ballard in the Department of Biological Sciences)
- *Science Educational Equity Outstanding Faculty Award*, 2001
- *CSUPERB Award* (2000): "A PC Cluster For Molecular Modeling" (co-PI with Dr. Jack Russell)
- *Research Corporation Award* (1999-2004): "Investigation of a Conformational Switch: Characterization of the Amino-terminus of Human Apolipoprotein A-I"

SELECTED SERVICE ACTIVITIES

- Faculty Senate, 2002-2006
- Faculty senate readmissions subcommittee, 2001-2003
- Chair, Chemistry Department Graduate Committee, 2003-2006
- Assessment Coordinator, CIMERA, 2001-2004
- Campus Research and Creative Activities Award Program reviewer, 1999-2007
- Advisor for SEE, Science Educational Equity 1999-2007

PROFESSIONAL ORGANIZATIONS

Biophysical Society, Protein Society, AAAS, American Chemical Society

PUBLICATIONS

Subtle Structural Differences in Canine Apolipoprotein A-I Translate into Significant Lipid-binding Differences in Comparison to Human Apolipoprotein A-I. Roberts, L.M., Shasky, J.M. 2007 Manuscript completed for submission to FEBS Letts.

Mapping the Structural Transition in an Amyloidogenic Apolipoprotein A-I. Lagerstedt, J.O., Cavigliolo, G., Roberts, L.M., Hong, H.S., Jin, L.W., Fitzgerald, P.G., Oda, M.N., Voss, J.C. 2007 **Biochemistry** **46**, 9693-9699.

Developing Experimental Design and Trouble-shooting Skills in an Advanced Biochemistry Laboratory. Roberts, L.M. 2001. **Biochemistry and Molecular Biology Education** **29**, 10-15.

The Lipid-Free Structure of Apolipoprotein A-I: Effects of Amino-Terminal Deletions. Rogers, D.P., Roberts, L.M., Lebowitz, J., Anantharamaiah, G.M., Engler, J.A., Brouillette, C.G. 1998. **Biochemistry** **37**, 11714-11725 .

Structural Analysis of Apolipoprotein A-I: Effect of Amino- and Carboxyl-Terminal Deletions on the Lipid-Free Structure. Rogers, D.P., Roberts, L.M., Lebowitz, J., Engler, J.A., Brouillette, C.G. 1998. **Biochemistry** **37**, 945-955.

Structural Analysis of Apolipoprotein A-I: Limited Proteolysis of Methionine-Reduced and -Oxidized Lipid-Free and Lipid-Bound Human Apo A-I. Roberts, L.M., Ray, M.J., Shih, T.-W., Hayden, E., Reader, M.M., Brouillette, C.G. 1997. **Biochemistry** **36** , 7615-7624.

Truncation of the Amino Terminus of Human Apolipoprotein A-I Substantially Alters Only the Lipid-Free Conformation. Rogers, D.P., Brouillette, C.G., Engler, J.A., Tendian, S.W., Roberts, L.M., Mishra, V., Anantharamaiah, G.M., Lund-Katz, S., Phillips, M.C., Ray, M.J. 1997. **Biochemistry** **36** , 288-300.

Structural Changes Accompanying Chloroform-Induced Contraction of the Filamentous Phage fd. Roberts, L.M., Dunker, A.K. 1993. **Biochemistry** **32**, 10479-10488.

A Model for fd Phage Penetration and Assembly. Dunker, A.K., Ensign, L.D., Arnold, G.E., Roberts, L.M. 1991. **FEBS Letters** **292**, 271-274.

Proposed Molten Globule Intermediate in fd Phage Penetration and Assembly. Dunker, A.K., Ensign, L.D., Arnold, G.E., Roberts, L.M. 1991. **FEBS Letters** **292**, 275-278.

MEETING PRESENTATIONS

Lipid-free Structure and Lipid-binding Properties of Canine Apo A-I: Effect of Subtle Tertiary Structural Differences on Lipid-Binding. Roberts, L.M., Shasky, J.M., Tendian, S.W. 2005 **Protein Science** **14** (Suppl. 1) **Abst. # 124. 2005**

Developing Experimental Design and Trouble-shooting Skills in an Advanced Biochemistry Lab. Roberts, L.M., McCarthy-Hintz, M., MacReynolds, K.D. **Protein Science** **15** (Suppl. 1) **Abst. # 487. 2005**

Infectivity of Phage fd I-forms and S-forms to E. Coli Cells. Smith, M., Roberts, L.M. CSUPERB Annual Biotechnology Symposium, Pomona, CA. 2002.

Insertion Competency of Filamentous Phage fd. Sean, P., Robertson, S.A., Wells, J.A., Contreras, A., Roberts, L.M. Protein Society Meeting, Philadelphia, PA. 2001.

Characterization of High Density Lipoproteins Containing Apolipoprotein A-I Deletion Mutants. Smyth, N., Almaraz, R., Galvan-Rueckert, F., Engler, J.A., Brouillette, C.G., Roberts, L.M. ACS National Meeting, San Francisco, CA. 2000.

An Insertion Competent Conformation of the Filamentous Phage fd: Fusion of I-forms With Lipid Vesicles. Robertson, S.A., Roberts, L.M. ACS National Meeting, San Francisco, CA. 2000.

Localization of Bacteriophage DNA Following Fusion of Phage with Lipid Vesicles. Wells, J., Contreras, A., Mercer, V., Roberts, L.M. Undergraduate ACS Meeting, Hayward, CA. 2000.

Chemical Modification of Tryptophan and Tyrosine Residues: Effect on Apolipoprotein A-I Conformation. Slack, D., McGann, S.J., Moore, L., Greene, S., Mymka, M., Woolsey, C., Roberts, L.M. **9th Annual ACS Undergraduate Research Symposium**, U.C. Santa Cruz. 1997.

Apolipoprotein A-I: A Naturally Occurring Molten Globule. Roberts, L.M., Rogers, D.P., Engler, J.A., Brouillette, C.G. **Protein Science** **5**, supp 1:79. 1996.

Investigation of the Effect of Methionine Oxidation on the Conformation of Soluble and Lipid-Bound Apolipoprotein A-I by Limited Proteolysis. Reader, M.M., Roberts, L.M., Brouillette, C.G. **Protein Science** **4**, supp 2:124. 1995.

Conformation of Apolipoprotein A-I on Reconstituted HDL Particles. Roberts, L.M., Brouillette, C.G. **Biophysical Journal** **66**, 402a. 1994.

V8 Proteolysis of Reconstituted HDL Particles: A Conformational Analysis. Hayden, E., Roberts, L.M., Brouillette, C.G. **Biophysical Journal** **66**, 402a. 1994.

Conformation of Lipid-Bound and Free Apolipoprotein A-I Probed by Chymotrypsin Proteolysis. Roberts, L.M., Ray, M.G., Shiu, T.-W., Brouillette, C.G. **Biophysical Journal** **66**, 299a. 1994.

Investigation of Oxidized and Reduced Soluble and Lipid-Bound Apolipoprotein A-I by Limited Proteolysis. Reader, M.M., Roberts, L.M., Brouillette, C.G. **Kentucky Academy of Sciences Annual Meeting**. 1994.

Conformational Analysis of Lipid-Bound and Non-Lipid-Bound Apolipoprotein A-I by Limited Proteolysis. Hayden E., Roberts, L.M., Brouillette, C.G. **Kentucky Academy of Sciences Annual Meeting**. (note: E. Hayden won an award for best presentation at this meeting). 1993.

The Molten Globule State is Involved in the Penetration and Assembly of the Filamentous Phage fd? Dunker, A.K., Ensign, L.D., Roberts, L.M., Arnold, G.E. **Biophysical Journal** **61**, 60a. 1992.

Proteolytic Digestion as a Conformational Probe of Free and Lipid-Bound Human Apolipoprotein A-I. Roberts, L.M., Brouillette, C.G. **Biophysical Journal** **61**, 88a. 1992.

Multiple Conformations of the fd Phage Coat Protein. Dunker, A.K., Arnold, G.E., Roberts, L.M. **Biophysical Journal** **59**, 203a. 1991.

Morphological Changes of the fd Phage Capsid and Conformational Changes of the Major Coat Protein. Dunker, A.K., Arnold, G.E., Roberts, L.M. **Proteins Gordon Conference**, June, 1991.

The Chloroform/Water Interface-Induced Contraction of the Filamentous Phage fd Provides a Model for fd Phage Assembly. Dunker, A.K., Roberts, L.M., Arnold, G.E. **12th International Conference on Bacteriophage Assembly**, 1991.

Conformations of the fd Coat Protein. Dunker, A.K., Arnold, G.E., Roberts, L.M. **Protein Society 5th Symposium**, June 22-26. 1991.

Structural Studies of the Contracted Forms of the Filamentous Phage fd. Roberts, L.M., Dunker, A.K. **Biophysical Journal** **55**, 157a. 1989.

Interface-induced Conformational Changes in the Filamentous Phage fd: Spectral Changes Associated with the Conversion of Phage to I-form or to Spheroids. Roberts, L.M., Dunker, A.K. **Biophysical Journal** **53**, 452a. 1989.