

Andrew Z. Mason, Ph.D.

*Department of Biological Sciences
California State University Long Beach,
1250 Bellflower Boulevard,
Long Beach, CA 90840, USA.*

Telephone: (562) 985-5266

Email: zedmason@csulb.edu

Website: <http://www.csulb.edu/~zedmason/index.html>

A) ACADEMIC PREPARATION

A1. EDUCATION:

1972-1975 B.Sc., University of Wales, UK.
Major: Zoology and Marine Zoology
Minor: Oceanography

1975-1979 Ph.D., University of Wales, UK.
Cell Biology and Marine Biology

A2. PROFESSIONAL EXPERIENCE:

2004- Director. Institute for Integrated Research in Materials, Environments and Society (IIRMES), CSULB. U.S.A.

2005- Faculty of Environmental Science and Policy Program, CSULB, U.S.A.

1993- Professor. Department of Biological Sciences, CSULB. U.S.A.

1989-93: Associate Professor. Department of Biological Sciences, CSULB. U.S.A.

1985-89: Research Associate Professor. Molecular Ecology Institute, CSULB. U.S.A.

1984-85: Assistant Professor. Department of Biomedical Engineering, Institute of Orthopaedics, Postgraduate Medical Federation, U.C., University of London. United Kingdom.

1983-84: MRC Post Doctoral Research Associate. School of Biological Sciences, University of Sussex. United Kingdom.

1980-82: NERC Post Doctoral Research Associate. Department of Pure and Applied Zoology, University of Reading. United Kingdom.

A3. FELLOWSHIPS AND SCHOLARSHIPS:

- 1975-1979.** Natural Environmental Research Council Doctorate Fellowship.
1980-1982. Natural Environmental Research Council Postdoctoral Fellowship.
1983-1984. Medical Research Council Postdoctoral Fellowship.

B) INSTRUCTIONAL ACTIVITIES:

B1. TEACHING AWARDS AND HONORS:

- 1994-1995. Mayfield Award. Outstanding Faculty Member in College of Natural Sciences and Mathematics.
1996. Faculty Hall of Excellence. (One of 4 faculty Multi-Media projects for active display in the New Media Center).
- 1996-1997. Associated Student Outstanding Instructor of the Year
- 2001-2002. Mayfield Award. Outstanding Faculty Member in College of Natural Sciences and Mathematics.
- 2003-2004. CSULB Alumni Award Most Valuable Professor College of Natural Sciences and Mathematics.
- 2005-2006. Mayfield Award. Outstanding Faculty Member in College of Natural Sciences and Mathematics.

B2. INSTRUCTIONAL ASSIGNMENTS

I. Baccalaureate Teaching

University of North Wales: Laboratory Teaching Assistant
Molluscan Physiology,
Marine Biology,
Fisheries,
Marine Environmental Biology,
Invertebrate Physiology.

University of London: Assistant Professor (Lecturer)
Bioinorganic Chemistry,
Histology,
Histochemistry,
Biomechanics.

California State University Long Beach: Professor

Biology 211A:	Introductory Biology Part A.
Biology 340:	Molecular Cell Biology
Biology 464/564	Aquatic Toxicology
Biology 468/568	Principles and Applications of Electron Microscopy
Biology 446H	Research Design and Methods
Biology 496/596	Undergraduate Directed Research
Biology/Physics/Engineering 490	Nanotechnology
Biology 663	Graduate Seminar in Genetics and Development
Biology 698	Thesis

II. Post Baccalaureate Research Supervision:

Academic tutor and supervisor for postgraduates registered for the higher degrees of Ph.D. (during tenure at University of London) and M.Sc. (while at CSULB).

C) SCHOLARLY AND CREATIVE ACTIVITIES:

C1. ACADEMIC REVIEW PANELS:

C1.1. Journals:

Aquatic Toxicology
Journal of the Marine Biological Association of the United Kingdom.
Scanning Electron Microscopy.
Marine Environmental Research.
Bulletin of Marine Science
Cell and Tissue Research
Bulletin of the Southern California Academy of Sciences.
Analytical Biochemistry
Inorganic Biochemistry
Journal of Chromatography
Hydrobiologia
Invertebrate Biology
Comparative Biochemistry and Physiology
Bioscience
Journal of Inorganic Biochemistry
Marine Environmental Research

C1.2. Grants:

Natural Environmental Research Council, UK.
Natural Sciences and Engineering Research Council of Canada.
National Science Foundation.
SeaGrant
US. Department of Energy
National Oceanographic and Atmospheric Administration
National Institute of Health

C1.3. Books:

American Chemical Society Book Series.

Archipeligo Productions.

The Blue Crab, *Callinectes sapidus*, Eds. Kennedy, V. and Cornin, L.E. 2007. pp. 774. Maryland Sea Grant College. College Park, Maryland. USA

C1.4. Editorial Panels:

Marine Environmental Research (1994-Current)

C1.5. Editor:

Guest Editor for special symposium volume of Marine Environmental Research associated with the 2002 International Symposium of Pollutant Responses In Marine Organisms.

C1.6 Panel Member to Funding Agencies:

Program Grant: National Institute of Health Review Panel

C1.7 Others

2005-2007: Scripps Institute of Oceanography University of California, San Diego: external project reviewer, "Research on Sediments and Ecosystem Restoration in the Venice Lagoon," under the auspices of the Magistrato alle Acque di Venezia and the Consorzio Venezia Nuova.

C1.8 Awards

CSULB Distinguished Faculty Scholarly and Creative Achievement Award May 4th 2005.

C2. MEMBERSHIPS OF PROFESSIONAL SOCIETIES:

- i) Member of Subcommittee on Commission on Environmental Chemistry. IUPAC.
- ii) Member of Marine Biological Association of the United Kingdom.
- iii) Microscopical Society of America.
- iv) Southern California Society for Microscopy
- v) Southern California Environmental Chemistry Society.
- vi) Ray Society

C3. OFFICES HELD IN PROFESSIONAL SOCIETIES:

- i) Second Vice President, Southern California Society for Electron Microscopists: 1991-1992; 1994-1995
- ii) First Vice President, Southern California Society for Electron Microscopists: 1991-1992; 1995-1996
- iii) President, Southern California Society for Electron Microscopists: 1992-1993; 1997-1998

- iv) Member of Subcommittee on Commission on Environmental Chemistry. IUPAC 1995
- v) Past President Southern California Society for Electron Microscopists: 1998-1999
- vi) Treasurer and Co-Chair, Local Organizing Committee. 2001. Annual Joint Meeting for the Microscopical Society of America and Microbeam Analysis. Long Beach 5-9th August 2001. (see Proceeding of Microscopy and Microanalysis 7, Supp 2. pp. 1296).

C4. FUNDED GRANTS AND CONTRACTS:

C4.1 FUNDED EXTERNAL GRANTS AND CONTRACTS:

SERC (Scientific Engineering Research Council/National Research and Development Agency) / Johnson Matthey Research. Antibacterial Coatings for Endoprosthetic Implants; to Institute of Orthopaedics, Univ. London. June 1983-June 1985. (\$120,000)

Johnson Matthey Research/National Research and Development Agency. An *in vivo* study of a novel bactericidal coating in man; to Institute of Orthopaedics. Univ. London. July 1985-Feb. 1986. (\$35,000)

H. Stangers. SEM and Energy Dispersive X-Ray Microanalysis of Fractured Orthopaedic Components; to Institute of Orthopaedics. Univ. London. Feb. 1984-Oct. 1985 (\$30,000).

U.S. Department of Energy. Metal Metabolism and Adaptation in the Polychaete, *Neanthes arenaceodentata*; to Molecular Ecology Institute. Co-PI. California State University Long Beach. July 1986-June 1987 (\$510,310).

U.S. Environmental Protection Agency. Bioavailability, Metabolism and Toxicity of Barium and Related Metals; to Molecular Ecology Institute. California State University Long Beach. Co-PI. May 1987-May 1989 (\$281,885).

CBM Bioventures. Determination of Metal Levels in Sediments by Inductively Coupled Plasma Mass Spectroscopy; to Molecular Ecology Institute. California State University Long Beach. March 1988 \$75,000.

National Institute of Health AREA Award. Processes of Metal Selection and Rejection by Metal Accumulating Cells; PI; to Department of Biological Sciences. California State University Long Beach. May 1988-May 1990. \$65,000.

National Science Foundation Biological Instrumentation Program. Instrumentation Grant for the Purchase of a Transmission Electron Microscope; PI; to School of Natural Sciences, California State University Long Beach. Awarded April 89. \$183,572.

National Institute of Health MBRS Program, Mechanisms of Metal Accumulation by Cells; Faculty Investigator; to School of Natural Sciences, California State University Long Beach. 1989-1998. \$35,000.per annum

National Institute of Health AREA Award. ICPMS study of Cd Induced Alterations in Cu Metabolism. PI; to Department of Biological Sciences. California State University Long Beach. 1-R15-GM47702-01. June 1993-June 1997. \$101,407.

Seagrant. Food Web Structure and Heavy Metal Accumulation in a Recently Established Guild of Breeding Seabirds in Southern California;, Co-PI, to Department of Biological Sciences. California State University Fullerton. 1996-1999. \$134,000

U.S. Fish and Wildlife. Evaluation of the Toxicity of Ingested Cu and W/Bi/Sn pellets by the California Condor. Co-PI,. 1999-2000. \$30,000

National Science Foundation Major Research Instrumentation Program. Acquisition of an ICP-MS for California State University Long Beach PI, 1999-2000, \$238,886,

National Science Foundation Collaborative Research in Undergraduate Institutions Award Quantification of metal transfer from metallothionein to apo-metalloproteins using voltammetry on-line with HPLC/ICP-MS. PI,1999-2004, \$1,036,219

CSUPERB Initiative Grant. Software and hardware for a direct Injection Nebulization System for an ICP-MS, PI, \$14,000. 2000.

MARC Supplement Program for Communications technology. Project leader, PI Bauer, R. \$234,350.

Howard Hughes Medical Institute Proposal for the Development of Honors in the Biological Sciences Program at CSULB. Faculty team leader with Drs Merryfield, Archie, Kingsford, Lopez, McAbee and Wijte. Funded May 2000. \$1,600,000.

University College and Extension Services. Acquisition of a UV Laser Ablation System for Elemental Analysis of Solid Materials Via Inductively Coupled-Mass Spectrometry. Co PI. Oct 11th 2000. \$65,221.00

National Science Foundation Major Research Instrumentation Program. Acquisition of an Analytical Environmental Scanning Electron Microscope for Research and Training. Co-PI with Drs. Behl, Larson and Sample. \$224,237. Funded June 2002.

State Water Resources Control Board. Agreement # 01-163-180-0. Lake Elsinore TMDI and attainment of Water Quality Objectives. PI, \$214,924. Feb 1 2002 to April 1 2003.

National Science Foundation Major Research Instrumentation Program- BCS. Acquisition of a Time-Of-Flight ICP-MS for interdisciplinary research in Archeology, Geology and Biology at CSULB. Co-PI, \$207,523 1/23/03.

NSF NUE: A Tour in Nano-Land and Understanding the Nano-Landscape: Developing Multidisciplinary NUE Courses 0407447. Co-PI 8/30/04-7/31/06 \$100,000

A Proposal for the Development of an Institute for Interdisciplinary Research on Materials, Environments and Society. College of Deans and Executive Committee of the Academic Senate. PI. 7/30/04-6/30/07 salary for a Technician for 3 years.

ALLEN, J. and MASON, A.Z. State Water Resources Control Board. Assessment of foodweb transfer of organochlorine compounds and metals in fishes of Newport Bay, California, 2005-2006. PI \$275,532

Mason, A.Z. Principles and Applications of Inductively Coupled Plasma Mass Spectroscopy Workshop. CSUPERB. 2004-2005. PI \$13,182.

Mason, A.Z. 2004. State Waters Resources Control Board. Contract # 03-195-250-0. Subproject 7. June 1 2004- March 31 2006. Environmental Assessment of Canyon Lake CA. PI \$266,515

Mason, A.Z. A Proposal for the Development of a CSUPERB Core Facility for Elemental Micro-Chemical Analysis (FEMCA) at CSULB. Strategic Planning Committee of CSUPERB. June 2005- May 2007. PI \$155,846

McAbee, D. and Mason, A.Z. A proposal to the W.M. Keck Foundation for establishment of a Center for Education in Proteomic Analysis (CEPA). \$500,000. 9/1/5005 - 8/31/2008.

Mason, A.Z. State Waters Resources Control Board. Contract # 03-195-250-0 Supplement Subproject 7. Bioassessment and Ecotoxicological Analysis of Rivers in Southern California. June 1 2005- March 31 2006. \$170,775.

Mason, A.Z. State Water Quality Resources Control Board. Contract # 05-321-250-0 Bioassessment of the rivers, streams and Riparian Systems of Los Angeles, Orange and San Bernardino Counties, June 15th 2006 – July 1st 2008. \$127,713

Mason, A.Z. Analyses of metals and pesticides in California Least tern Eggs. Co-operative Agreement N6247-06-LT-R0034. U.S. Department of Navy. September 2006 –February 2008. \$16,954

Kelley, K., Fairey, R. and Mason, A.Z. Characterization of Environmental Endocrine Disruption in Wild Fishes in Dan Francisco Bay. \$80,000 September 2006 – August 2008.

Mason, A.Z. USPA National Coastal Assessment Program. HF Digestion of sediments as part of EPA EMAP Program. \$46,300. Jan 2007.

Mason, A.Z. State of Alaska Department of Environmental Conservation.

Environmental monitoring of sediments and Fish in Alaska. \$72,940. Jan 2007.

Mason, A.Z. Axial Field technology for a Dynamic Reaction Cell for Kinetic Resolution of Polyatomic Adducts formed in an Argon based Plasma. \$15,000. Perkin Elmer Corporation. March 2007.

Mason, A.Z. Principles and Applications of MALDI-TOF-TOF in Proteomics and Biotechnology. CSUPERB. May 2007 – December 2008. \$14,614.

Mason, A.Z. Metal Transfer Reactions between Stable Isotopically Doped Zn Proteins. NIH R15GM081855-01 Ass # 2955136. \$215,250. July 2007 – June 2010.

C4.2 EXTERNAL GRANT PROPOSALS PENDING:

Kelley, K. Mason, A.Z., Elamin, A. and Armstrong, J. Proteomics to Develop Relevant Phenotypic Biomarkers of Environmental Impacts on Wild Marine Fishes of Southern California. Submitted USC Seagrant: \$79,380.

C4.4. CSULB INTERNAL GRANTS AND AWARDS

SCAC proposal. Class B. A technique for studying the kinetics of copper metabolism in cells using stable isotopic ratio analysis by inductively coupled plasma mass spectroscopy. Scholarly and Creative Activity Committee 1989-1990. Awarded \$3000. 3 Weighted Teaching Units Release Time (WTU).

SCAC proposal. Minigrant. Directly coupled ion chromatography inductively coupled plasma mass spectroscopy for the simultaneous separation and quantification of cationic species in natural waters. Awarded Dec. 1989 \$5,000.

SCAC proposal. Class B. ICPMS study of stable 63/65 Cu fluxes through cells using isotope ratio analysis. Scholarly and Creative Activity Committee Spring 1990. Submitted 2nd Feb 1990; Funded May 10 1990; 3WTU, \$1400.

SCAC proposal. Class A Summer Stipend. Generation of an Invertebrate Genomic DNA Library for gene isolation and identification. Awarded October 1990

SCAC proposal. Class B. Isolation and sequencing of the metallothionein gene. Scholarly and Creative Activity Committee. Awarded August 19 1991; 3WTU.

SCAC proposal. Innovation in Teaching Grant. Production of an instructional video library for the Electron Microscopy Facility. Awarded Feb. 1992. 3WTU.

SCAC proposal. Class B. The Molecular Mechanism of Cadmium Toxicity. 3WTU, Awarded Spring 1998.

SCAC proposal. Minigrant Award. The Development of Sequentially Coupled Size Exclusion-ion exchange HPLC-ICP/MS for studying Metal Toxicity. \$5,000. Awarded Spring 1999

SCAC proposal. Class A Summer Stipend. The Development of technologies for Coupling Reverse Phase Chromatography Systems to an ICP-MS for Studying Metal Homeostasis and Toxicity. Awarded December 10th 1999.

SCAC proposal. Class A Summer Stipend. *In situ* EDX and WDX Microanalysis of Cu in the Gill Epithelia of Molluscs Exposed to Cu. Awarded December 2003 for AY 2004.

SCAC proposal. Class B. Gel Scanning by Laser Ablation ICPMS: A New Technique for Metalloprotein Analysis. Awarded Spring 2005 for Spring 2006.

SCAC proposal. Class A Summer Stipend. *Ligand-ligand metal transfer reactions detected by MALDI-TOF*. Awarded Spring 2006 for Summer 2006.

C5. PUBLICATIONS

C5.1 PUBLICATIONS IN PEER REVIEWED JOURNALS:

GEORGE, S.G., NOTT, J.A., PIRIE, B.J.S. and MASON, A.Z. (1976). A comparative quantitative study of cadmium retention in tissues of a marine bivalve during different fixation and embedding procedures. Proc. R. Microsc. Soc. (Micro '76 Suppl.) 11:42.

MASON, A.Z. and NOTT, J.A. (1980). A rapid, routine technique for the X-ray microanalysis of microincinerated cryosections: an SEM study of inorganic deposits in tissues of the marine gastropod *Littorina littorea* (L.). J. Histochem. Cytochem. 28:1301-1311.

MASON, A.Z. and NOTT, J.A. (1980). The association of the blood vessels and the excretory epithelium in the kidney of *Littorina littorea* (L.) (Mollusca, Gastropoda). Mar. Biol. Letters. 1:355-365.

MASON, A.Z. and NOTT, J.A. (1981). The role of intracellular biomineralized granules in the detoxification of metals in gastropods with special reference to the marine prosobranch *L. littorea* (L.). Aquatic Toxicology 1:239-256.

MASON, A.Z. and SIMKISS, K. (1982). Sites of mineral deposition in metal accumulating cells. Exptl. Cell Res. 139:383-391.

MASON, A.Z. (1983). Applications of microincineration in localizing biomineralized inorganic deposits in sectioned tissues. In: Biomineralization and Biological Metal Accumulation. pp. 378-387. Edited by P. Westbrock and E.W. de Jong.

Reidel Publs. Co. Amsterdam Holland.

- MASON, A.Z. (1983). The uptake, accumulation and excretion of metals by the marine prosobranch gastropod mollusc *Littorina littorea* (L.). Ph.D. Thesis pp 960. University of Wales.
- MASON, A.Z. and SIMKISS, K. (1983). Interactions between metals and their distributions in tissues of *Littorina littorea* (L.) collected from clean and polluted sites. J. Mar. Biol. Ass. U.K. 63:661-672.
- MASON, A.Z., SIMKISS, K. and RYAN, K. (1984). Ultrastructural localization of metals in specimens in *Littorina littorea* (L.) from polluted and non-polluted sites. J. Mar. Biol. Ass. U.K. 64:699-720.
- SIMKISS, K., TAYLOR, M. and MASON, A.Z. (1982). Bioaccumulation and detoxification of metals by marine molluscs - A review. Mar. Biol. Letters. 3:187-201.
- SIMKISS, K. and MASON, A.Z. (1984). Cellular responses of molluscan tissues to environmental metals. Mar. Environ. Res. 14:103-118.
- MASON, A.Z. and NOTT, J.A. (1985). Inter-laboratory comparability studies of measurements of trace elements using quantitative X-ray microanalysis. Optical and Electron Microscopy, Vol. 10:11.
- REES, J.A., ALI, S.Y. and MASON, A.Z. (1985). Scanning electron microscopy and microanalysis of "cuboid" crystals in human articular cartilage. Cell Mediated Calcification on matrix vesicles. pp 110-117, IV. International Conference on matrix vesicles. Jesus College, University of Cambridge.
- JENKINS, K.D. and MASON, A.Z. (1988). Mechanisms of Cadmium and Zinc accumulation in the polychaete *Neanthes arenaceodentata*. Mar. Environ. Res. 24, 173-174.
- MASON, A.Z., JENKINS K.D. and SULLIVAN P.A. (1988). Mechanisms of trace metal accumulation in the polychaete *Neanthes arenaceodentata*. J. Marine Biol. Ass. U.K. 68:61-80.
- JENKINS, K.D. and MASON, A.Z. (1988). Relationships between subcellular distributions of cadmium and perturbations in reproduction in the polychaete *Neanthes arenaceodentata*. Aq. Toxicol. 12:229-244.
- MASON, A.Z. (1988). Kinetics of ⁶⁵Zn uptake, accumulation and excretion by the marine gastropod mollusc *Littorina littorea*. Mar. Environ. Res. 24:135-139.
- STORMS, S.D., MASON, A.Z. and JENKINS, K.D. (1988). Zinc and cadmium accumulation in the errant marine polychaete *Neanthes arenaceodentata*; Saturation and Competition. FASEB Journal, Vol 2, March 1988.

- MASON, A.Z. (1989). An ICP-MS study of saline induced corrosion of stainless steel HPLC components-Is there a need to go to inert systems? Chromatogram. 10, 7-10.
- MASON A.Z. and JENKINS, K.D. (1990). Effects of feeding on zinc and cadmium accumulation by the polychaete *Neanthes arenaceodentata*: Chemical Speciation and Bioavailability 2, 33-47.
- MASON, A.Z., STORMS, S.D. and JENKINS, K.D. (1990). Metallothionein separation and analysis by directly coupled size exclusion high performance liquid chromatography inductively coupled plasma mass spectroscopy. Anal. Biochem. 186, 187-201.
- MASON A.Z. and JENKINS, K.D. (1991). Effects of Cadmium Bioavailability on the Cytoplasmic Accumulation of Cadmium in *Neanthes arenaceodentata*. Bulletin of Marine Science, 48, 524-529.
- GULLY, J.R. and MASON, A.Z. (1991). A technique for removing Na⁺ from Biological samples prior to 63/65 Cu Stable Isotopic Ratio Analysis by Inductively Coupled Plasma Mass Spectroscopy. Proceedings of the 8th International Biology Symposium pp. 95-103.
- MASON, A. Z. (1992). Competitive Interactions between metals for cytosolic ligands: A basis for Metal Toxicity. (Abstract). EOS, Transactions of the American Geophysical Union 1992 Spring Meeting, 73, (14) 164. April 7, 1992/Supplement
- MASON, A.Z., and STORMS, S.D. (1993). Applications of directly coupled size exclusion high performance chromatography inductively coupled plasma mass spectroscopy in environmental toxicology studies; a study of metal-ligand interactions in cytoplasmic samples. Mar. Environ. Res. 35, 19-23.
- MASON, A.Z. and GULLY, J.R. (1993). Identification of sites of Cu accumulation and turnover by stable isotopic ratio analysis. Mar. Environ. Res. 35, 59-63.
- GULLY, J.R. and MASON, A.Z. (1993). Cytosolic redistribution and enhanced accumulation of copper resulting from cadmium exposure in the gill tissue of *Littorina littorea*. Mar. Environ. Res. 35, 53-57.
- RONIS, M. and MASON, A.Z.(1996). The metabolism of testosterone by the periwinkle (*Littorina littorea*) *in vitro* and *in vivo*: Effects of Tributyl tin. Mar. Environ. Res. 42, 161-166.
- WOLF, S.J., BELL, J.R., DESHARNAIS, R.A. KIBAK, H and MASON, A.Z. (1997). EvolveIT - a World Wide Web based simulation for the teaching of evolution. Amer. J. Bot. 84: 261. 1997.
- MASON, A.Z. and MERAZ, R.(1998). Cytosolic Metal Speciation Studies by Sequential,

- On-line, SE-IE/HPLC-ICPMS. Mar. Environ. Res. 46, 573-577.
- VALENCIA, R, GERPE, M, TRIMMER, J, TORY BUCKMAN, T. MASON, A.Z. AND OLSSON, P-E. (1998). The Effect of Estrogen on Cadmium Distribution in Rainbow Trout (*Oncorhynchus mykiss*). Mar. Environ. Res. 46, 167-171.
- KENNETT, D.J., NEFF, H., GLASCOCK, M.D. and MASON, A.Z. (2001). Interface-Archaeology and Technology. A Geochemical Revolution: Inductively Coupled Plasma Mass Spectrometry. Soc. Am. Arch. Bull. Jan 2001, 22-26.
- MASON, A.Z. and BORJA, .M. R. (2002). Cu turnover in proteins of the visceral complex of *Littorina littorea* by stable isotopic analysis using coupled HPLC/ICP-MS. Mar. Environ. Res. 54, 351-355.
- FURATA, S., ORITZ, F., SUN, X., WU, H-S, MASON, A.Z. and MOMAD, J. (2002). Copper uptake is required for pyrrolidine dithiocarbamate mediated oxidation and protein level increase of p53 in cells. Biochem. J. 365, 639-648.
- SCHLENK, D. SAPOZHNIKOVA, E., BAQUIRIAN, J.P. and Mason A.Z. (2002) Utilization of biochemical and health endpoints in fish to guide analytical chemistry analyses of sediments. Environmental Toxicology and Chemistry 21:2138-2145.
- REISH, D.J and MASON, A.Z. (2003). Radiocarbon dating and Metal Analysis of "fossil" and living calcareous tubes of *Protula* (Annelida: Polychaeta). Hydrobiologia 496, 371-383.
- BACA, J.A., De la REE, A.B., ZHOU, F. and MASON, A.Z. (2003) Anodic stripping voltammetry combined on line with ICP-MS via a direct injection high efficiency nebulizer. Anal. Chem. 75, 2507-2511.
- MASON, A.Z., PERICO, N., MOELLER, R., THRIFFLETON, K., POTTER, T and LLOYD. D. (2004) Metal donation and apo-metalloenzyme activation by stable isotopically labeled metallothionein. Mar. Environ. Res. 58, 371-375
- GARCÍA-HERNÁNDEZ, J., SAPOZHNIKOVA Y.V., SCHLENK, D., MASON, A.Z., HINOJOSA-HUERTA, O. RIVERA-DÍAZ, J. RAMOS-DELGADO, N. and SÁNCHEZ-BON, G. (2006). Concentration of contaminants in breeding bird eggs from the Colorado river delta, Mexico. Environ. Toxicol. Chem. 25, 1640-1647.
- HALE, L.F. DUDGEON, J.V. MASON A.Z and LOWE, C. (2006). Elemental signatures in the vertebral cartilage of the round stingray, *Urobatis halleri*, from Seal Beach, California. Environ. Biol. Fish. 77, 317-325.
- Z. A. OZTUG, S. PADUA, S. DOWNES, C. BOWMAN, J. ROSALES, J. HOSKINS, C. KWON, A. Z. MASON, J. RODRIGUEZ, P. DOUCETTE, B. SHAW, J. S. VALENTINE, and J. A. Cohlberg. Amyloid Formation from Human Superoxide Dismutase is promoted by Loss of Metal Ions and by Mutations Related to Familial Amyotrophic Lateral Sclerosis. (Submitted: Biochem. J.)

MADU, I, CHIKNEYAN, Z, ZHOU, F. and MASON, A.Z. Voltammetric Studies of Apometallothioneins and Cd²⁺- and Zn²⁺-Reconstituted Metallothioneins, *Langmuir* In Press.

MASON, A.Z., MOELLER, R., THRIPPLETON, and LLOYD. D. The use of stable-isotopically labeled proteins and directly coupled HPLC-ICP-MS for quantitatively monitoring the transfer of metals between proteins. (Accepted 4/26/07. In Press: Analytical Biochemistry).

CABRERA, A., ALONZO, E., SAUBLE, E., CHU, Y-L., LINDER, M., SATO, D.S., and MASON, A.Z. Copper binding components of serum and cytoplasm, copper turnover and excretion, as determined in the mouse with large doses of ⁶⁵Cu. Submitted. *Biochem. Biophys. Acta*.

GRAY, L.A., KIDANE, T.Z., NGUYEN, A., AKAGI, S., PETRASEK, K., CHU, Y-H, PHAM, T.N., CABRERA, A., KANTARDJIEFF, K., MASON A.Z., and LINDER, M.C. Multiple copper proteins and ferro-oxidases in mouse and human plasma. Submitted. *Biochem. Biophys. Acta*.

THRIPPLETON, K, SHI, D., MASON, A.Z., PARKER, D. and SCHLENK, D. Selenium Toxicity in Japanese Medaka (*Orizias latipes*): Protein Interference or Oxidative Stress? In preparation. *J. Aquat. Toxicol*.

C5.2. BOOK CHAPTERS AND MANUAL PUBLICATIONS.

SIMKISS, K. and MASON, A.Z. (1983). Metal ions: Metabolic and Toxic effects. In: *Biology of Mollusca*. Edited by K.M. Wilbur. Academic Press, New York. pp. 101-164.

MASON A.Z. and JENKINS, (1995). Metal Speciation and Bioavailability in Aquatic Systems. International Union of Pure and Applied Chemistry series (IUPAC). Chapter 10 Metal Detoxification in Aquatic Organisms. Pp 479-609. J. Wiley Publishers. (Eds. A. Tessier and D.R. Turner).

MASON, A.Z., POTTER, T., WEBSTER, J. AND MERAZ, R.F. Metalloprotein Crosstalk: Quantifying Zn atom exchange between isotopically labeled proteins using directly coupled HPLC-ICPMS. In *Plasma Source Mass Spectrometry, Current Trends and Future Developments*. The Royal Society of Chemistry Special Publication 301: 3-27(2005).

MASON, A.Z., CARLBERG, D., GHARAKHANIAN, E., BRUSSLAN, J and PALMIER, C. (2003). *Laboratory Manual for the Biological Sciences*. Burgess Publishing, ISBN# 0-536-80364-1 7th Ed 2004.

C5.2. TECHNICAL REPORTS

MASON, A.Z. 2004-2005 Annual Report for the Institute of Integrated Research in Materials, Environments and Societies.

<http://www.csulb.edu/programs/iirmes/pdfs/IIRMESAnnual2005.pdf> Pp. 67

MASON, A.Z. 2005-2006 Annual Report for the Institute of Integrated Research in Materials, Environments and Societies.

<http://www.csulb.edu/programs/iirmes/pdfs/IIRMESAnnual2006.pdf> Pp. 82

MASON, A.Z. 2005-2007. Annual Report for the Core Facility for Elemental Microchemical Analysis. To Strategic Planning Council of CSUPERB. March 30th Pp. 29.

C6. PRESENTATIONS

C6.1. INVITED SEMINARS AND PRESENTATIONS AT SYMPOSIA AND SCIENTIFIC MEETINGS;

MASON, A.Z. (Feb. 1980). Mathematical modeling to determine the kinetics of ⁶⁵Zn transfer in anatomical and physiological compartments. Society for Experimental Biology, University of Newcastle, U.K.

MASON, A.Z. & NOTT, J.A. (May 1981). Role of inorganic deposits in the cellular detoxification and regulation of metals. First International Symposium on Responses of Marine Organisms to Pollutants, Plymouth, U.K.

MASON, A.Z. (June 1982). Applications of microincineration in localizing biomineralized inorganic deposits in sectioned tissues. Fourth International Symposium on Biomineralization, Amsterdam, Holland.

MASON, A.Z. (Jan. 1983). Metal accumulation - an experimental approach. Society for Experimental Biology, University of Bristol, U.K.

SIMKISS, K. & MASON, A.Z. (April 1983.) Bioaccumulation of metals - a conceptual approach. Second International Symposium on Responses of Marine Organisms to Pollutants, Woods Hole Marine Station, Massachusetts, U.S.A.

ALI, S.Y., REES, J. and MASON, A.Z. (June 1985). The role of cuboid crystals in human arthritic cartilage in causing osteoarthritis. The IV International Conference on Cell Mediated Calcification, Jesus College, University of Cambridge, U.K.

MASON, A.Z. (June 1986). Cellular systems involved in metal recognition. Gordon Research Conference on Estuarine Processes, Plymouth, New Hampshire.

JENKINS, K. and MASON, A.Z. (April 1987). Mechanisms of Cd and Zn accumulation in the polychaete *Neanthes arenaceodentata*. Fourth International

Symposium on Responses of Marine Organisms to Pollutants, Woods Hole Marine Station.

MASON, A.Z. (April 1987). Zinc uptake, accumulation and excretion by the marine prosobranch gastropod *L. littorea*. Fourth International Symposium on Responses of Marine Organisms to Pollutants, Woods Hole Marine Station, Massachusetts, U.S.A.

JENKINS, K. and MASON, A.Z. (Sept. 1987). Relationships between metal speciation and metal accumulation and subcellular distributions in polychaetes. Bioavailability of Trace Metals Symposium; at the 194 Annual Meeting of the American Chemical Society, New Orleans, Louisiana, U.S.A.

MASON, A. Z. and JENKINS, K. (Nov. 1987). Metal bioavailability and accumulation in marine invertebrates. 8th Annual Meeting of the Society of Environmental Toxicology and Chemistry. Pensacola.

MASON, A.Z., HOWE, S. and JENKINS, K. (Jan. 1988). Direct analysis of high performance liquid chromatography eluent by inductively coupled plasma mass spectroscopy. Winter Conference on Plasma Source Atomic Spectroscopy. San Diego. U.S.A.

MASON, A.Z. and STORMS, S.D. (Feb. 1988). Analysis of metallothionein in polychaetes by direct high performance liquid chromatography-inductively coupled plasma mass spectroscopy. Gordon Research Conference on Estuarine Processes. Ventura. U.S.A.

JENKINS, K.D. and MASON, A.Z. (April 1988). Mechanisms of Cadmium and Zinc accumulation in the polychaete *Neanthes arenaceodentata*. 4th International Symposium on Responses of Marine Organisms to Pollutants. Woods Hole. Massachusetts. Mar. Environ. Res. 24, 173-174

MASON, A. Z. and JENKINS, K. (Sept. 1988). Low molecular weight binding Ligands: Indicators of metal- induced stress? Division of Environmental Chemistry; at the 196th Annual Meeting of the American Chemical Society, Los Angeles, U.S.A.

MASON, A.Z. (May 1989). Chromatography interfaced ICPMS. Southern California Association of Mass Spectroscopists, Santa Fe Springs.

MASON, A.Z. (June 1989). EDX and HPLC/ICP-MS studies of metal interactions in marine invertebrates: Southern California Coastal Water Research Project.

MASON, A.Z. (Sept 1989). Chromatography interfaced inductively coupled plasma mass spectroscopy: A new technique for metalloprotein separation and analysis. Department of Chemistry and Biochemistry, California State University Long Beach.

- MASON, A.Z. (Dec 1989). Metal speciation in biological samples and natural waters by chromatography interfaced inductively coupled plasma mass spectroscopy. 1989 International Chemical Congress of Pacific Basin Societies, Honolulu Hawaii. 196th Annual Meeting of the American Chemical Society.
- MASON, A.Z. (March 1990). An analytical electron microscopy study of metal selection and rejection by molluscan cells. Southern California Society of Electron Microscopists. Chevron Research. La Habra, California.
- MASON, A.Z. (April 1990) HPLC-ICPMS: A new technique for metalloprotein separation and analysis. University of North Carolina, Charlotte, North Carolina.
- MASON, A.Z. (May 1990). Metal-ligand interactions in molluscan cells - a strategy for controlling the utilization and detoxification of metals. California State University Fullerton.
- MASON, A.Z. (November 1991). Applications of Inductively Coupled Plasma Mass Spectroscopy for Environmental Studies. Jackson State University, Mississippi.
- MASON, A.Z. (November 1992). Cellular mechanisms of Metal Detoxification. California State University San Bernadino.
- GULLY, J. and MASON, A.Z. (June 1990). A technique for studying copper metabolism in marine invertebrates using stable isotopic ratio analysis. 8th International Marine Biology Symposium, Ensenada, Mexico.
- MASON, A.Z. (Oct. 1990). ICPMS: A new technology for studying metal metabolism and homeostasis. First Annual Long Beach Research Conference, Long Beach.
- MASON, A.Z. (May 1991). ICPMS: A new technique for studying the kinetics of Cu metabolism. Department of Anatomy and Physiology, California State University Long Beach.
- MASON, A.Z. (April 1991). Applications of Inductively Coupled Plasma Mass Spectroscopy for the study of metal metabolism in marine organisms. 6th International Symposium on Responses of Marine Organisms to Pollutants. Woods Hole. Massachusetts.
- JENKINS, K.D. and MASON, A.Z. (Oct. 1991). Relationships between Cd²⁺ activity cadmium bioaccumulation and sublethal toxicity in the polychaete *Neanthes arenaceodentata*: 18th Annual Aquatic Toxicity Workshop. Ottawa, Canada.
- MASON, A.Z. (Nov. 1991). Quantitative energy dispersive X- ray microanalysis of biomineralized concretions from the cells of *Littorina littorea*. 1st CSU Electron Microscopy Colloquium. Long Beach.
- MASON, A. Z. (May 1992). Competitive Interactions between metals for cytosolic ligands: A basis for Metal Toxicity. American Geophysical Union Spring Meeting.

Montreal, Canada.

- MASON, A.Z. (June 1993). Molluscs as indicators of Coastal Pollution, Symposium on Contemporary Research on Mollusca, Western Society of Malacologists, La Jolla, California.
- MASON, A.Z. (April 1993). Copper Turnover between Cells and Proteins. 2nd CSU Electron Microscopy Colloquium, San Leandro, California.
- MASON, A.Z. (April 1994). Low Temperature Ashing Procedures for Microscopy and Microanalysis. 3rd CSU Electron Microscopy Colloquium, San Bernadino, California.
- MASON, A.Z. (June 1994). Metal Excesses and Deficiencies: Two sides of the same toxicological coin. Tenth International Symposium on Marine Biology, Ensenada, Mexico.
- MASON, A.Z. (Oct 1994). Competitive Interactions between Cd and Cu for metallothionein-like proteins. 21st Aq. Tox. Workshops, Sarnia, Ontario, Canada.
- RONIS, M. and MASON, A.Z. (April 1995). The metabolism of testosterone by the periwinkle (*Littorina littorea*) in vitro and in vivo: Effects of Tributyl tin. 8th International Symposium on Responses of Marine Organisms to Pollutants. Asilomar, California.
- MASON, A.Z. and RONIS, M. (May 1995). Tributyl tin induced steroidal imbalance and imposex in marine gastropods. Southern California Academy of Sciences Symposium on Toxicology and Chemistry: Environmental perspective. California State University Fullerton, California.
- MASON, A. Z. and RONIS, M.J.J. (May 5-6th 1996). Tributyltin induced sex reversal in molluscs. 4rd CSU Electron Microscopy Colloquium, San Diego, California.
- MASON, A.Z. and MERAZ, R. (Nov. 1996). Cytosolic Metal Speciation by Sequential On-line, SE-IE/HPLC-ICPMS. CSULB/LBMMC/VAMCLB Seventh Annual Long Beach Research Symposium. Long Beach, California.
- MASON, A.Z. (Oct 1996). Sex, Chemistry and Pork-Pies. Department of Biological Sciences, California State University Long Beach.
- MASON, A.Z. and MERAZ, R. (April, 1997). Cytosolic Metal Speciation Studies by Sequential, On-line, SE-IE/HPLC-ICPMS. 9th International Symposium on Responses of Marine Organisms to Pollutants. Bergen, Norway.
- WOLF, STEVEN J., JEFFREY R. BELL, ROBERT A. DESHARNAIS, HENRIK KIBAK and ANDREW Z. MASON. EvolveIT - a World Wide Web based simulation for the teaching of evolution. American Institute of Biological Sciences annual meeting. Montreal, Canada, August 5, 1997.

- MASON, A.Z. (October 1997). SE-IE/HPLC-ICPMS for the determination of metalloprotein complexes in marine invertebrates. 24th Aq. Tox. Workshops, Niagara Falls, Ontario, Canada.
- MASON, A.Z. (December 1997). Biological Effects and Thresholds of Chemical Contaminants. Southern California Environmental Chemists Society.
- MASON, A.Z. (1999). Budget presentation and Program Overview to Executive Council of the Microscopy Society of America for Microscopy and Microanalysis for 2001 Meeting to be held in Long Beach. Portland Convention Center, Oregon, 5 Aug 1999.
- MASON, A.Z. and BORJA, M. (2000). HPLC-ICPMS: A novel technique for studying the kinetic transfer of Cu between proteins. Southern California Society for Microscopy and Microanalysis, Anaheim. 2 March 2000.
- MASON, A.Z. and BORJA, M. (2000). The development of a new technique for monitoring the kinetic exchange of metals in proteins. CSU San Marcos. 5 April 2000.
- MASON, A.Z. and BORJA, M. (2000). Metal Toxicity: Wrong Metal, Wrong Time, Wrong Place. Southern California Environmental Chemists Society. Southern California Coastal Water research project. Westminster. 5th April 2000.
- MASON, A.Z. (2000). Tour Workshop Speaker for Perkin Elmer Corporation. Chromatography Interfaced ICP-MS. Metal Transfer in Proteins. May 31st 2000, Buena Park Holiday Inn; June 1st 2000, Pleasanton Hilton, Pleasanton. June 7th 2000, Greenwood Inn, Beaverton Oregon.
- MASON, A.Z. (2000). Presentation and Proposed Budget to Executive Committee of Microscopical Society of America and Microbeam Analysis Society for Meetings to be held at Long Beach in 2001. Microscopy and Microanalysis, Aug 13-17 2000 Philadelphia.
- Time Money and Mentors. (2001). An Interview. Howard Hughes Medical Institute Bulletin, Jan. 2001 30- 33.
- MASON, A.Z. (2001). Biological Speciation of Metals in Organisms by Two Dimensional HPLC/ICP-MS. February 28th, University of California Riverside.
- MASON A.Z. and BORJA, M. R. (2001). Cu Turnover In Proteins Of The Visceral Complex Of *Littorina Littorea* By Stable Isotopic Analysis Using Coupled HPLC/ICP-MS. 11th International Symposium on Responses of Marine Organisms to Pollutants. 10-13th July, Plymouth England.
- REISH, D.J and MASON, A.Z. (2001). Radiocarbon dating and Metal Analysis of "fossil" and living calcareous tubes of *Protula* (Annelida: Polychaeta). International Polychaete Conference. July 2-6, 2001. Reykjavik, Iceland.

- HORN, M., MASON, A.Z., SMITH, D., LOGOTHETIS, E. and COLLINS, C. (2002). Trophic Positions and Heavy Metal Concentrations of Terns at Two California Nesting Colonies. PSG Santa Barbara Feb 20th 2002
- LARSON, D.O., SAKAI, S., NEFF, H. and MASON, A.Z. (2002). LA-ICP-MS as a Bulk chemical characterization technique: comparison of LA-ICP-MS, MD-ICP-MS and INAA data on Virgin Branch Anasazi Ceramics. Annual Meeting of the Society for American Archaeology. 24th March 2002. Colorado
- MASON, A.Z. (2002). Quantitative transfer of metals between proteins by stable isotopic analysis and coupled HPLC-ICP-MS. Southern California Society for Microscopy and Microanalysis. Queen Mary, Long Beach, CA. June 1st 2002.
- MASON, A.Z. (2002). Quantitative measurements of metal transfer from stable isotopically labeled ⁶⁷Zn₇ metallothionein IIb to apo-metalloenzyme substrates. 29th Aquatic Toxicology Workshops. Oct. 20-23rd. 2002. Whistler, British Columbia. Canada.
- MASON, A.Z. and PERICO, N. (2003). Development of an Integrated HPLC-ICP-MS System for the Quantification of Metal Transfer between Proteins. CSUPERB. 13th Jan. Pomona 2003
- MASON, A.Z. PERICO, N., MOELLER, R., THRIPPLETON, K., POTTER, T. and LLOYD, D. (2003) Metal donation and apo-metalloenzyme activation by stable isotopically labeled metallothionein. 12th International Symposium on Responses of Marine Organisms to Pollutants. 9-13th May, Tampa, Florida.
- MASON A.Z. (2003). New Applications of Atomic Plasma Spectroscopy in Marine and Environmental Science. Dept of Biological Sciences CSULB Nov 2003.
- MASON, A.Z. (2004). A Proposal for the Development of a Core Micro-Analytical Facility at CSULB. Strategic Planning Committee of CSUPERB. Sixteenth CSU Biotechnology Symposium, San Jose, Jan 16-18, 2004.
- Y. SAPOZHNIKOVA, J. GARCIA-HERNANDEZ, A.Z. MASON, AND D. SCHLENK. (2004) Persistent Bioaccumulative Toxic (PBT) chemicals in Pacific Flyway migratory birds. 228th ACS National Meeting, Philadelphia, PA, August 22-26, 2004 in Philadelphia.
- MASON, A.Z. Analyses are Elementary at CSULB. Press telegram. p1 and 5. Monday June 17th 2004.
- MASON, A.Z. (2004) "Novel Methodologies for Studying Metal Metabolism in Marine Organisms". Scripps Institute of Oceanography. 15th October 2004
- MASON, A.Z., POTTER, T. AND WEBSTER, J. (2004). Metalloprotein Crosstalk: Quantifying Zn atom exchange between isotopically labeled proteins using directly coupled HPLC-ICPMS. 9th International Conference on Plasma Source Mass Spectrometry. University of Durham, U.K. 12th-17th September 2004. Best Presentation of Conference.

- MASON, A.Z. Improving Biology Education: Theory & Practice. The Use of Internet Technology in the Introductory Biology Laboratory. Sponsored by W.H. Freeman Publishers and Sinauer Associates. Long Beach, CA, 29th October 2004.
- MASON, A.Z. and DUDGEON, J (2005). CSUPERB Core Facility for Micro-Chemical Elemental Analysis. 17th Annual CSUPERB Conference, Los Angeles, Jan 14-16th 2005.
- MASON, A.Z., POTTER, T. WEBSTER, J. and MERAZ, F. (2005). Probing metal-ligand interactions using stable isotopically labeled proteins and directly coupled HPLC-ICP-MS. Southern California Academy of Sciences, Loyola Marymount University, Los Angeles, May 20-21st, 2005.
- MASON, A.Z. (2005) IIRMES: A new collaborative paradigm for staying on the cutting rather than the bleeding edge of Science. Department of Physics and Astronomy CSULB, 24th October 2005.
- MASON, A.Z. and DUDGEON, J V. (2006). CSUPERB Core Facility for Elemental Micro-Chemical Analysis (FEMCA). 18th Annual CSUPERB Conference, San Jose, Jan 13-15th 2006.
- MASON, A.Z. (2006). " New Challenges Facing the CSU System: Research Expansion or Extinction in the Experimental Sciences?" Romberg Tiburon Center for Environmental Studies, San Francisco State University. May 9th 2006.
- MASON, A.Z. (2006). New Analytical Methodologies for Studying the Biological Roles of Metals in Marine Organisms. Romberg Tiburon Center for Environmental Studies, San Francisco State University. San Francisco State University. May 10th 2006.
- MASON, A.Z. (2006). Biomarkers of Toxicant Exposure: Roles of Metallothioneins in Metal Detoxification and Homeostasis. 87th Annual Meeting of American Association Advancement of Sciences, San Diego June 18th -22nd
- MASON, A.Z. (2006). An Evaluation of the SIOSED Project. Sept, 11-12th Thetis, Venice Italy.
- MASON, A.Z. and DUDGEON, J V. (2007). CSUPERB Core Facility for Elemental Micro-Chemical Analysis (FEMCA). 19th Annual CSUPERB Conference, Los Angeles, Jan 12-14th 2007.
- ELAMIN, A. McABEE, D. and MASON, A.Z. Center for Education in Proteomics. (CEPA). 19th Annual CSUPERB Conference, Los Angeles, Jan 12-14th 2007.
- MASON, A.Z. (2007). The roles of metallothionein in metal detoxification and homeostasis: Probing Metallothionein Functionality Using New Tools" Southern California Society for Environmental Toxicology and Chemistry. Irvine, Feb. 13th.

MERRYFIELD, M. and MASON, A.Z. (2007). The Student as Scholar. Association of American Colleges and Universities. Long Beach, CA. April 19th- 21st.

MASON, A.Z. (2007). Linking environmental analyses to biological effects: A new application of directly coupled HPLC-ICPMS for studying inter-protein metal transfer phenomena governing metal homeostasis and toxicity. Tour Workshop Speaker for Perkin Elmer Corporation. May 16th 2007, Buena Park, California.

MASON, A.Z. (2007). Directly Coupled HPLC-ICP-MS: A New Methodology for Probing The Kinetics of Interprotein Metal Transfer Reactions. Department of Chemistry and Biochemistry, California State University Fullerton. Fall 2007.

C6.2. WORKSHOPS OFFERED OR ATTENDED:

Participant. IBI Recombinant DNA Workshop. CSULB, 1987.

Participant. UCLA Colloquium on Metal Ion Homeostasis: Molecular Biology and Chemistry. April 10-16. 1988. Frisco, Colorado.

Participant. Millipore Corporation, Waters Chromatography Division. New Applications and Technology Forum. Recent Advances in Life Science HPLC Applications. UCI. July 26 1989.

Participant. Thermo-Jarrell Ash Corporation. Ion Chromatography interfaced Optical Emission Spectroscopy. IT Corporation, November 28-29th. 1989.

Participant. Reichert-LKB workshop on Ultracryomicrotomy. UCI. 3rd May, 1990.

Participant. CSUPERB Workshop on Capillary Electrophoresis. California State University Pomona, 16th Jan. 1992.

Organizer, ICP-MS Workshop for CSU Faculty and Students. Jan 6th 2000

Participant Perkin Elmer ICP-MS Users Workshop Feb 9-11 2000 San Jose. California

Organizer, ICP-MS Workshop for CSU Faculty and Students. Sept 29th 2000

Presenter. "Support for Scholarly Activity" CSULB Annual Retreat. Sept 28th 2000

Presenter, HHMI Workshop on Critical Thinking. Aug 22nd 2001

Presenter, University Grant Writing Institute Workshop Jan 23-25th 2001

Participant Aquatic Toxicology workshops July 8-11th 2001 Plymouth University,

England

Organizer, ICP-MS Workshop for CSU Faculty and Students. June 17th 2002

Participant and Presenter for HHMI Sponsored Workshop on Bioethics in the Curriculum. 22nd Jan 2004 CSULB.

Invited Participant and Contributor to Perkin Elmer ICP-MS Users Workshop on Chromatography Interfaced ICP-MS. Sept 24-26 2002 San Jose. California.

Organizer, CSUPERB Workshop on ICP-MS: Principles and Applications in Biotechnology. June 13-17th CSULB. 2005

Participant. Applied Biosystems. Proteomics Workshop and use of the AB4800 MALDI-TOF-TOF MS/MS. Aug 28th -31st 2006. Natick, Massachusetts.

C6.3 STUDENT PRESENTATIONS:

STORMS, S.D., MASON, A.Z. and JENKINS, K.D. (1988). Zinc and cadmium accumulation in the errant marine polychaete *Neanthes arenaceodentata*; Saturation and Competition. FASEB Journal, Vol 2, March 1988.

GULLY, J. AND MASON, A.Z. (1990). A technique for studying copper metabolism in marine invertebrates using stable isotopic ratio analysis. Presented at 8th International Marine Biology Symposium, Ensenada, Mexico. June 4th-8th. 1990.

GULLY, J. AND MASON, A.Z. (1991). Cytosolic redistribution and enhanced accumulation of Cu resulting from cadmium exposure in the gill of tissue of *Littorina littorea*. 6th International Symposium on Responses of Marine Organisms to Pollutants. Woods Hole. 24-26 April 1991.

SUGAR, M., MASON, A.Z. and DOUGLASS, T.G. An ultrastructural study of the Epicardium of *Littorina littorea* (Mollusca, Gastropoda, Prosobranchia): A putative site of ultrafiltration. Southern California Academy of Sciences, Natural History Museum, USC. May 10th, 1991.

BROWN, J. and MASON, A.Z. Hemocyanin synthesis by the Pore Cells of the marine prosobranch mollusc *Littorina littorea*. 1st CSU Electron Microscopy Colloquium, 22-24 Nov. 1991. Long Beach.

SUGAR, M. and MASON, A.Z. An ultrastructural study of the heart of *Littorina littorea* (Mollusca, Gastropoda, Prosobranchia): 1st CSU Electron Microscopy Colloquium, 22-24 Nov. 1991. Long Beach.

MEZA, J. and MASON, A.Z. (1991). Metallothionein isolation and purification from the marine gastropod mollusc *Littorina littorea*. NIGMS Minority Programs Symposium, Nov. 3-6th, 1991, Washington, D.C.

- SISNEROS, J. (1992). Isolation, Purification and Characterization of a novel 20,000 Da Cd-binding protein from the marine prosobranch mollusc *Littorina littorea*. CSULB Long Beach Annual Student Research Competition. March 13th 1992.
- BROWN, J. (1992). Immunocytochemical localization of hemocyanin in the marine prosobranch mollusc *Littorina littorea*. CSULB Long Beach Annual Student Research Competition. March 13th 1992.
- PIASICK L. (1992). The effects of anthracene on the gill tissue of *Littorina littorea*: An ultrastructural Study. CSULB Long Beach Annual Student Research Competition. March 13th 1992.
- HARPER, R. and MASON, A.Z. (1993). Ultrastructural Evaluation of the effects of freezing rate on cell damage in the marine prosobranch *Littorina Littorea*. Second CSU Electron Microscopy Conference. 23-24th April, San Leandro. California.
- MASON, A.Z. and BROWN J.E. (1993). Copper Turnover between Cells and Proteins. Second CSU Electron Microscopy Conference. 23-24th April, San Leandro. California.
- KAMINSKY, M. E. and MASON. A.Z. (1993). Ultrastructural localization of iron in the stomach epithelial cells of a marine mollusc. Southern California Academy of Sciences. June 4-5th. Long Beach.
- PALMIER, C. and MASON, A.Z. (1993). Generation of a Genomic Library from the marine mollusc *Littorina Littorea*. Western Society of Malacologist Symposia. 27th June- 1 July. La Jolla, California.
- MENON, J., MASON, A.Z. and ARP, A. (1993). Lysosomal and Mitochondrial Morphology in Sulphide Exposed Epithelia of *Urechis caupo*. American Society of Zoologists, Dec 23-30, Los Angeles.
- SETO, S.L., MASON, A.Z. and ARP, A. (1993). Anal Vesicle granules accumulate sulfur and iron in *Urechis caupo*. American Society of Zoologists, Dec 23-30, Los Angeles.
- LAYNE, J. and MASON, A.Z. (1994). The ultrastructural response of *Ulva* to Cd. 3rd CSU EM Colloquium. April 8-10, San Bernadino. J.Electron. Microsc. Tech. 29, 493.
- MOFFET, C. and MASON, A.Z. (1994). An ultrastructural comparison of cnidocytes in two life stages of *Aurelia aurita*. 3rd CSU EM Colloquium. April 8-10, San Bernadino. J.Electron. Micsrosc. Tech. 29, 494.
- RAJAB, A. and MASON, A.Z. (1994). Ultrastructural changes in the dinoflagellate *Amphidinium cateria* caused by U.V. radiation. 3rd CSU EM Colloquium. April 8-10, San Bernadino. J.Electron. Micsrosc. Tech. 29, 494.
- RANDALL, J and MASON, A.Z. (1994). Metal binding and detoxification by intracellular

- biomineralized concretions. SAS Student Research Symposium. Sponsored by HHMI and NIH. Aug. 25th 1994.
- BITAR, F., LAYNE, J. and MASON, A.Z. (1994). Role of metallothionein in metal induced deactivation of cytochrome C oxidase. SAS Student Research Symposium. Sponsored by HHMI and NIH. Aug. 25th 1994.
- WILLSIE, J.K., MASON, A.Z. and ARP, A.J. (1995). Sulphide detoxification pathways in *Urechis caupo*: tracking sulfur via ³⁵S labelling and HPLC. Society for Experimental Biology, Birmingham, England.
- BORJA, M., JOHNSON, M., and MASON, A.Z. (1996). An Ultrastructural study on the transportation and intracellular Incorporation of Nematocysts by the predatory nudibranch mollusc *Hermisenda crassicornis*. Committee for Advanced Science Training Symposium. California Museum of Science and Industry, Los Angeles. Feb 3.
- JOHNSON M. and MASON, A.Z. (1996). An Ultrastructural study on the transportation and intracellular Incorporation of Nematocysts by the predatory nudibranch mollusc *Hermisenda crassicornis*. CSULB Undergraduate Research Symposium. March 9th 1996.
- RANDALL, J. VALENCIA, R., DELMONTE, S., BOYLE, J. and MASON, A.Z. (1995). Tributyl tin accumulation and metabolism by the marine gastropod *Littorina littorea*. NIGMS Conference, Washington, D.C. Oct. 11-15.
- WHITE, J.K., MASON, A.Z. and ARP, A.J. (1995). Sulphide detoxification pathways in *Urechis caupo*: tracking sulfur via 35S-labeling and HPLC. I.U.B.S. Conference Birmingham, England. Published: *Physiol. Zool.* p137, Vol 68 (4).
- BORJA, M., JOHNSON, M. and MASON, A.Z. (1996). An Ultrastructural Study on the Transportation and Intracellular Incorporation of Coelenterate Nematocysts by the predatory nudibranch mollusc *Hermisenda crassicornis*. 4th CSU EM Colloquium. May 4-6th, San Diego.
- VALENCIA, R.M., MASON, A, Z., RISEBOROUGH, R., CLENDENEN, D. and LOWENSTEIN, L. (1996). A preliminary Evaluation of the Toxicological Effects of Ingested Pb, Cu and Bi on California Condors (*Gymnogyps californianus*). CSNM Student Research Competition.
- VALENCIA, R.M., TRIMMER, J.E., BUCKMAN, T.L. and MASON, A, Z. (1996). The Metabolic Effects of Cadmium During Oestradiol-17 B induction of Vitellogenesis in Rainbow Trout (*Oncorhynchus mykiss*). CSNM Student Research Competition.
- PHAM, M.E., MOFFETT, C., ABBOTT, M., LEWIS, A. and MASON, A.Z. (1996). The Development of a Cu deficient cell line. CSNM Student Research Competition.
- DELMONTE, S., RANDALL, J., VALENCIA, R.M., BOYLE, J. And MASON, A.Z. (1996).

- Testosterone and Tributyltin Metabolism by *Littorina littorea*: An Investigation of TBT induced Imposex among Marine Gastropod Molluscs. CSNM Student Research Competition.
- MERAZ, R., GOODRICH, V, T. and MASON, A.Z. (1996). The effects of continued Cd exposure on Cu accumulation and speciation in the cytosol and whole parts of various tissues of *Littorina littorea*. CSNM Student Research Competition.
- VALENCIA, R, GERPE, M, TRIMMER, J, TORY BUCKMAN, T. MASON, A.Z. AND OLSSON, P-E. (April, 1997). The Effect of Estrogen on Cadmium Distribution in Rainbow Trout (*Oncorhynchus mykiss*). 9th International Symposium on Responses of Marine Organisms to Pollutants. Bergen, Norway.
- BRYANT, J., JOHNSON, M., MERAZ, R. and MASON, A.Z. (August 1997). Purification of Metallothionein from the marine Gastropod *Littorina littorea*. CSNM Student Research Symposium, Aug. 28 1997.
- BRYANT, J., JOHNSON, M., MERAZ, R. and MASON, A.Z. (August 1997). Characterization and Quantification of mBBr Labeled thiolic proteins using HPLC with fluorometric detection. CSNM Student Research Symposium, Aug. 28 1997.
- OPIE, L., PETTIS, A., RODGERS, J. BOYLE, J, GONSALVES, J, ORIHUELA, V. and MASON, A.Z. (August 1997). A study of the induction of metallothionein synthesis on Exposure to Cadmium, Copper and Zinc in the mollusc *Littorina littorea*. CSNM Student Research Symposium, Aug. 28 1997.
- RANDALL, J., OROZOCO, A., and MASON, A.Z. (August 1997). The effects of Tributyltin on testosterone uptake and metabolism within the marine Gastropod *Littorina littorea*. CSNM Student Research Symposium, Aug. 28 1997.
- VALENCIA, R, GONSALVES, J., SILVERMAN, MASON, A.Z., A. CLENDENAN, D. RISEBOROUGH, R. RIDEOUT, B., SUTHERLAND-SMITH, M., ZUBA, J.R. and WELDY, S.H. (August 1997). Toxicological effects of copper and tungsten-tin-bismuth (TTB) bullets on California Condors (*Gymnogyps californianus*). CSNM Student Research Symposium, Aug. 28 1997.
- FRANCIS, S., MICHAEL, M., CUMMINGS, I., HUYHN, H., PHAN, L., MERAZ, R. and MASON, A.Z. (1998). Preliminary Evaluation of the use of stable isotopic analyses to monitor the kinetics of Cu loss from tissues. CSNM Student Research Symposium, Aug. 1998.
- MERAZ, R. and MASON, A.Z. (1998). An ICPMS study of Cu metabolism in the marine mollusc *Littorina littorea*. CSNM Student Research Symposium, Aug. 1998.
- MERAZ, R. and MASON, A.Z. (1998). An ICP-MS Study of Cu Metabolism in the marine Prosobranch Mollusc *Littorina littorea*. National Minority research Symposium. November 23rd 1998 New York.

MERAZ, R. and MASON, A.Z. (1998). An ICP-MS Study of Cu Metabolism. 9th Annual Long Beach Research Symposium. Nov 20th 1998

MERAZ, R. (1999). An ICP-MS Study of Copper Metabolism in the Marine Prosobranch *Littorina littorea*. (CSU Research Competition. Placed 1st, Science and Engineering)

FRANCIS, S. (1999). Kinetics of Copper Metabolism in *Littorina littorea*: A Study using Stable Isotopic Ratio Analysis (CSU Research Competition. Placed 2nd, Science and Engineering)

BORJA, M., HARRIS, M. and MASON, A.Z. (1999). Estimations of Cu turnover in cytosolic proteins of the visceral complex of *Littorina littorea* by stable isotopic dilution analysis and coupled HPLC/ICP-MS. CNSM Student Research Symposium, August, 1999.

MERAZ, R. August (1999). Metal substitutions and interactions in the digestive gland of crabs. Department of Molecular Biology, Odense University, Denmark.

BORJA, M., HARRIS, M. and MASON, A.Z. (1999). Cu Turnover in Cytosolic Proteins of the Visceral Complex of *Littorina littorea* by Stable Isotopic Ratio Analysis and coupled HPLC/ICP-MS. (1999) National Minority Research Symposium. Nov. 1999. Crowne Plaza, Phoenix, AZ

BORJA, M., HARRIS, M. and MASON, A.Z. (1999). Cu Turnover in Cytosolic Proteins of *Littorina littorea* by Stable Isotopic Ratio Analysis and coupled HPLC/ICP-MS. (1999) Annual SCUR (Southern California Undergraduate Research) Conference. November 20, 1999. Loyola Marymount University, Los Angeles, CA.

BORJA, M., HARRIS, M. and MASON, A.Z. (1999). Cu Turnover in the Visceral Complex of *Littorina littorea* by Stable Isotopic Dilution Analysis and coupled HPLC/ICP-MS. 80th Annual Western Society of Naturalist Meeting. Dec. 26-29, 1999. Marriot, Monterey, CA.

BORJA, M., HARRIS, M. and MASON, A.Z. (2000). Cu Turnover in the Visceral Complex of *Littorina littorea* by Stable Isotopic Dilution Analysis and coupled HPLC/ICP-MS. 25th Annual WCBSUR (West Coast Biological Sciences Undergraduate Research) Conference April 29, 2000. Point Loma Nazarene University, San Diego, CA

BORJA, M. (2000). Cu analyses by Stable Isotopic Dilution Analysis and coupled HPLC/ICP-MS. CSULB Student Research Competition, March, 2000. CSU Long Beach.

JARVIS, E. (2000). Mercury bioaccumulation with age in kelp bass, *Paralabrax clathratus*, caught near the isthmus at Santa Catalina Island, CA. Second Place, CSU 14th Annual Student Research Competition, California State Polytechnic

University, Pomona, May 5th 2000.

- HARRIS, M and MASON, A.Z. (2000). Preparation of Apo-metallothionein for use in metal turnover analysis. National Minority Research Symposium Nov 8-11 Washington D.C. 2000.
- HUYNH, H., and MASON, A.Z. (2000). Reactivation kinetics of Apo-Alkaline Phosphatase with Zn. McNair Scholars program. July 27th 2000
- HUYNH, H., LLOYD, D. and MASON, A.Z. (2000). Synthesis and Molecular Analysis of Apo-alkaline Phosphatase; a Putative Substrate for Metallothionein. SCUR (Southern California Undergraduate Research Symposium). Nov. 18, 2000. CSULB.
- LLOYD, D. and MASON, A.Z. (2000). The Separation, Identification and Molecular Analysis of Complex Mixtures of Metalloproteins and Polypeptides by Tandemly Linked 2D HPLC-ICPMS. 24 Aug. 2000. SCUR (Southern California Undergraduate Research Symposium) Nov. 18, 2000.
- MOELLER, R. and MASON, A.Z. (2000). Quantification of Reduced Glutathione and Glutathione Disulphide using glutathione Reductase and 2-Vinylpyridine. SCUR (Southern California Undergraduate Research Symposium). Nov. 18, 2000. CSULB
- BORJA, M, THRIppLETON, K.A. and MASON, A.Z. (2000). Purification, Isolation and Molecular Analysis of Apo-hemocyanin from the Garden Snail *Helix aspersa*, using Potassium Cyanide and Coupled HPLC/ICPMS. National Minority Research Symposium Nov 8-11 Washington D.C. 2000.
- BORJA, M. R. and MASON, A.Z. (2000). The Use of Stable Isotopic Copper Ratio Analyses for Monitoring Cu fluxes in Proteins. 24 Aug. 2000. SAS Student Research Symposium, CSULB.
- TORRES, R., ADESINA, B., AKHAVAN, M. and MASON, A.Z. (2000). The Effect of Tributyl Tin (TBT) on Glutathione-S-Transferase (GST) of the Common Garden Snail, *Helix aspersa*. 24 Aug. 2000. SAS Student Research Symposium, CSULB.
- THRIppLETON, K.A., POTTER, T. and MASON, A.Z. (2001). Preparation of Stable Isotopically Labeled ⁶⁷Zn₇MTIIb for the Quantification of Zinc Transfer to Apo-Protein Substrates. 18th Sept. 2001. SAS Student Research Symposium, CSULB.
- LLOYD, D., MARKOCH, D. and MASON, A.Z. (2001). Effects of Oxidized and Reduced Glutathione on Metal Donation from Zinc-Metallothionein to Apo-Alkaline Phosphatase. 18th Sept. 2001. SAS Student Research Symposium, CSULB.

- CHAMBERS, T. and MASON, A.Z. (2001). Separation of Metal-binding Proteins Using Reverse Phase High Performance Liquid Chromatography. 18th Sept. 2001.SAS Student Research Symposium, CSULB.
- MOELLER, R.C. and MASON, A.Z. (2001). Reconstitution of Apo-Carbonic Anhydrase by Zinc Metallothionein. 18th Sept. 2001.SAS Student Research Symposium, CSULB.
- POTTER, T., THRIPPLETON, K.A., and MASON, A.Z. (2001). An assessment of different protocols for the generation of stable isotopically labeled $^{67}\text{Zn}_7\text{MTIIb}$. 2001 Annual Biomedical Research Conference for Minority Students. Oct 31-Nov 3. Orlando, Florida.
- THRIPPLETON, K., MARKOCH, D., LLOYD, D. and MASON, A.Z. (2002). Quantification and Analysis of Metal Transfer from Mono-isotopically labeled $^{67}\text{ZnMTIIb}$ to the Zinc Dependent Enzyme Alkaline Phosphatase. Southern California Undergraduate Research Conference. California State University Northridge. April 13th 2002.
- MOELLER, R., POTTER, T. and MASON, A.Z. (2002). Reconstitution of apo-Carbonic Anhydrase with Mono-isotopically labeled $^{67}\text{ZnMTIIb}$. Southern California Undergraduate Research Conference. California State University Northridge. April 13th 2002
- ESCOBEDO, A., BACA, A. MASON, A.Z. and ZHOU, F. (2002). Trace Metal Depermination of CASS-4 seawater using differential pulse voltammetry combined on-line with Inductively Coupled Plasma Mass Spectroscopy. Southern California Undergraduate Research Conference, California State University Northridge. April 13th 2002.
- POTTER, T. and REEVES, R.H. (2002). Localization of the Translocation Breakpoint in Ts65Dn, a Mouse Model for Down Syndrome. Annual Biomedical Research Conference for Minority Students. New Orleans. Nov 13-16th 2002.
- PERICO, N. and MASON, A.Z. (2002). Metal Transfer from Monoisotopically Labeled $^{67}\text{Zn}_7\text{MTIIb}$ to Apo-Alkaline Phosphatase. Annual Biomedical Research Conference for Minority Students. New Orleans. Nov 13-16th 2002.
- BERNIER, S. H, THAI, Q.C. and MASON, A.Z. (2002). LAM (Laser Ablation Microprobe) and ICP-MS (Inductively Coupled Plasma Mass Spectrometry) Study of Metal Accumulation in the Bodies and Jaws of the Polychaete *Neanthes arenaceodentata*. Annual Biomedical Research Conference for Minority Students. New Orleans. Nov 13-16th 2002.
- De La REE, ZHOU, F, BACA, A. and MASON, A.Z. (2003). Studies of Metal transfer and Release of Metallothionein at a Modified Glassy Carbon electrode by Electrochemical ICP-Mass Spectrometry. Annual Biomedical Research Conference for Minority Students. San Diego. October 15th-18th 2003.

- MADU, Z. S. CHIKNEYAN F. ZHOU, A. Z. MASON, Voltammetric Studies of Apo-Metallothioneins and Metal-Reconstituted Metallothioneins, Pittsburgh Conference, Orlando, FL, March 9-14, 2003.
- BACA, A. J., DE LA REE, A., ZHOU, F. and MASON, A.Z. On-Line Combination of Electrochemistry with ICP-AES and with ICP-MS and Related Applications, Invited talk, 30th Federation of Analytical Chemistry and Spectroscopy Society, Fort Lauderdale, FL. October, 2003.
- BERNIER, S.H. and MASON, A.Z. (2003). Subcellular distribution of metals in the polychaete *Neanthes arenaceodentata*. Annual Biomedical Research Conference for Minority Students. San Diego Nov 2003.
- WEBSTER, J., POTTER, T. and MASON, A.Z. (2004). Direct evidence of redox controlled Intermolecular Transfer of Monoisotopically labeled Zn between Metallothionein Isoforms and Apo-alkaline Phosphatase using HPLC-ICPMS. Sixteenth CSU Biotechnology Symposium, San Jose, Jan 16-18, 2004.
- LONG, A.D., BRUSSLAN, J.A. and MASON, A.Z. (2004). RT-PCR and IE-HPLC-ICPMS Analyses of Metallothionein Genes and Protein Isoforms in the Marine Prosobranch Gastropod *Littorina littorea* following Exposure and Induction by Elevated Concentrations of Cadmium. Sixteenth CSU Biotechnology Symposium, San Jose, Jan 16-18, 2004.
- WEBSTER, J., POTTER, T.M. and MASON, A.Z. Direct Evidence of intermolecular Transfer of monoisotopically labeled Zn between Metallothionein Isoforms and Apoalkaline Phosphatase using HPLC-ICPMS. First Place 17th Annual CSULB Student Research Competition. March 5th, 2004
- BERNIER, S.H. and MASON, A.Z. Correlative distributions of metals in polychaetes upon exposure to Cd, Zn and Cu. May 2004. Southern California Academy of the Sciences, California State University Long Beach
- BERNIER, S.H. and MASON, A.Z. Laser Ablation and HPLC-ICPMS studies of metal accumulations in polychaetes jaws. Annual Biomedical Research Conference for Minority Students. Dallas. Nov 2004.
- ZEYNEP A. OZTUG, SHELBY PADUA, ANDREW Z. MASON, PETER A. DOUCETTE, BRYAN F. SHAW, JOAN S. VALENTINE, JORGE A. RODRIGUEZ, JEFFREY A. COHLBERG. Removal of Metals and Reduction of the Disulfide Bond Promote Amyloid Formation from Cu,Zn Superoxide Dismutase. 49th Annual Meeting Biophysical Society. Feb 12-16, 2005. Long Beach, CA.
- Do, T., CABRERA, A., GRAY, L.W. MASON, A.Z. and LINDER, M.C. Copper uptake mechanisms for hepatic cells: Uptake from serum albumin. 17th Annual CSUPERB Conference, Los Angeles, Jan 14-16th 2005.
- CABRERA, A., ALONZO, E., SATO, D. MASON, A.Z and LINDER, M.C. Effects of

excess copper on its distribution to serum and cytoplasmic components and their turnover, determined with stable isotopes in mice. FASEB, April 2-6th, 2005, San Diego.

THRIPPLETON, K., MASON, A.Z. and SCHLENK, D. Identification of seleno-proteins in selenium sensitive tissues in *Japanese Medaka* by directly coupled HPLC-ICP-MS. Society of Experimental Toxicology, New Orleans, March 6-10th 2005.

THRIPPLETON, K., MASON, A.Z. and SCHLENK, D. Identification of seleno-proteins in selenium sensitive tissues in *Japanese Medaka* by directly coupled HPLC-ICP-MS. Society of Experimental Toxicology, Society of Environmental Toxicology and Chemistry (SETAC) 26th Annual Meeting, Baltimore, MD, November 2005.

MERAZ, R.F., POTTER, T.M., WEBSTER, J. and MASON, A.Z. Modeling Zn exchange kinetics in metallothionein isoforms. 30th annual West Coast Biological Sciences: Undergraduate Research Conference. April 30, 2005. Santa Clara University

SATO, D. and MASON, A.Z. The use of stable isotopically labeled ⁶⁵Cu to study copper metabolism in mice. BRIDGES Symposium. CNSM. July 2005

LATTOS, J., HILDAGO, G., WIMMER, M., EVANS, N. and MASON, A.Z. The Kinetic Transfer of Cadmium Between Isotopically Labelled Metallothionein 1 and Metallothionein 2 Using Directly Coupled AE-HPLC-ICP-MS. CNSM Student Research Symposium. 9th September 2005.

CHU, Y-H., MASON, A.Z. and LINDER M. C. Metal Binding Components of Human Serum as Determined by HPLC/ICP MS. 18th Annual CSUPERB Conference, San Jose, Jan 13-15th 2006.

CHU, Y-H., SEGURA, A., KIDANE, T., GRAY, L.W., CABRERA, A., WANG, T., NGUYEN, T., NGUYEN, A., GRAY, L., PETRASEK, K., AKAGI, S., SAUBLE, E and LINDER, M.C. (2006). Copper binding components and two additional ferroxidases in mouse and human blood plasma and serum. 5th Biometals Symposium, Oregon, Jul 30th – Aug 6th, 2006.

GONZALEZ, A., PLANUTYTE, L., SAUBLE, E., THON, V., MASON, A.Z. and LINDER, M.C. (2006). How ferritin releases its iron through entry into lysosomes and proteolysis, and the potential roles of DMT1 and a form of low molecular weight iron in these processes. 5th Biometals Symposium, Oregon, Jul 30th – Aug 6th, 2006.

HALE, L.F. DUDGEON, J.V. MASON A.Z and LOWE, C. Elemental signatures in the vertebral cartilage of the round stingray, *Urobatis halleri*, from Seal Beach, California. [Joint Meeting of Ichthyologists and Herpetologists](#), 6-11 July, 2005 Tampa, Florida.

HALE, L.F. DUDGEON, J.V. LOWE, C. and MASON A.Z Elemental signatures in the vertebral cartilage of the round stingray, *Urobatis halleri*, from Seal Beach, California. Joint Meeting of Ichthyologists and Herpetologists. July 12-17th 2006 New Orleans.

LECKY, A., JOHNSON and MASON, A.Z. Gel scanning by laser ablation ICP-MS. A new technique for metalloprotein Analysis. CNSM Student Presentations, Long Beach. Sept 1st 2006.

C7. STUDENT AWARDS AND HONORS:

BROWN, J. CSULB Loomis Award for research on "Hemocyanin synthesis by the Pore Cells of the marine gastropod *Littorina littorea*". May 1990.

PALMIER, C. CSULB Loomis Award for research on "Identification and cloning of the metallothionein gene from the marine gastropod *Littorina littorea*". May 1991.

BROWN, J. CSULB Loomis Award for research on "Synthesis and catabolism of hemocyanin by the marine prosobranch gastropod *Littorina littorea*". May 1992.

GULLY, J. (1991). First Place CSU Student Research Competition, CSU Hayward.

SUGAR, M. (1991). First Prize (\$6,000 award) National Science Scholar; National High School Science Fair. Awarded by President G. Bush Sr.

LAYNE, J. (1994). Best Student Oral Presentation and Paper. 3rd CSU EM Colloquium.

BORJA, M. (1996). Isaacs Award in Marine Biology (\$10,000 award) California High School Science Fair.

VALENCIA (1998). Southern California Academy of Sciences ARCO Award Environmental Science for best student Paper.

MERAZ, R. (1998). Plenary presentation at the National Minority Student Symposium, New York, Nov. 1998

MERAZ, R. (1999). An ICP-MS Study of Copper Metabolism in the Marine Prosobranch *Littorina littorea*. (Second Place, Twelfth Annual CSULB Student Research Competition, First Place, CSU Research Competition, Science and Engineering, March 12th CSU Bakersfield).

FRANCIS, S. (1999). Kinetics of Copper Metabolism in *Littorina littorea*: A Study using Stable Isotopic Ratio Analysis (First Place, Twelfth Annual CSULB Student Research Competition, CSU Research Competition. Placed 2nd, Science and Engineering, March 12th CSU Bakersfield).

FRANCIS, S. (2000). Determination of the Tissue Specific Kinetics of Copper

Accumulation, Elimination and Redistribution in *Littorina littorea* by Stable Isotopic Ratio Analysis. Showcase: An Academic Affairs Digest. 16-19.

JARVIS, E. (2000). Mercury Bioaccumulation with Age in Kelp Bass, *Paralabrax clathratus*, Caught near the Isthmus at Santa Catalina Island, CA. Second Place, Thirteenth Annual CSULB Student Research Competition, Second Place in Science and Engineering, CSU Annual Student Research Competition, California State Polytechnic University, Pomona, May 5th 2000.

BORJA, M. April 29th 2000. Best Student presentation 25th Annual WCBSUR (West Coast Biological Sciences Undergraduate Research) Conference April 29, 2000. Point Loma Nazarene University, San Diego, CA.

BORJA, M. Jensen-SAS Scholarship 1999.

HUYNH, H. McNair Scholarship 1999-2000. Synthesis and Molecular Analysis of Apo-Alkaline Phosphatase; A putative Substrate for Metallothionein. The McNair Journal, 2001, 8-16.

LLOYD, D. The Separation, Identification, and Molecular Analysis of Complex Mixtures of Metalloproteins and Polypeptides by tandemly linked two-dimensional HPLC-ICPMS. (Fourteenth Annual CSULB Student Research Competition, March 9, 2001 Second Place and was CSULB representative in Science and Engineering to CSU competition at San Jose State University).

MARKOCH, D. Southern California Tuna Club Scholarship 2001.

CHAMBERS, T. Beckman Scholarship 2000-2001.

PERICO, N. McNair Scholarship 2002-2003. Metal transfer from Mono-isotopically labeled $^{67}\text{Zn}_7\text{MTIIb}$ to Apo-metalloenzymes. The McNair Journal, 2003, 27-36.

PERICO, N. 2003. A New technique for the Quantitative Study of Metal Transfer between Proteins. Second Place, Fifteenth Annual CSULB Student Research Competition.

POTTER, T. 2003 Localization of the Translocation Breakpoint in Ts65Dn, a Mouse Model for Down Syndrome. First Place, Fifteenth Annual CSULB Student Research Competition. First Place, Science and Engineering, CSU Student Research Competition.

WEBSTER, J., POTTER, T.M. and MASON, A.Z. Direct Evidence of intermolecular Transfer of monoisotopically labeled Zn between Metallothionein Isoforms and Apoalkaline Phosphatase using HPLC-ICPMS. First Place 17th Annual CSULB Student Research Competition. March 5th, 2004 and First Place 17th Annual CSU Statewide Student Research Competition. May 1st California State University Northridge, 2004.

POTTER, T.M. College of Natural Sciences and Mathematics 2004. Outstanding Graduate Award.

LATTOS, J. The Frank Shatzlein Scholarship Award in Physiology. 2004

WEBSTER, J. 2005 Robert Rhodes Award, Outstanding Baccalaureate Candidate in Biological Sciences.

HILDAGO, G.E. 2007 Robert Rhodes Award, Outstanding Baccalaureate Candidate in Biological Sciences

C8. MAJOR ADVISOR MASTERS THESES AWARDED:

PALMIER, C. (1993). Preparation of a Genomic library from *Littorina littorea*.

BROWN, J. (1995). Hemocyanin synthesis by Prosobranch Pore Cells.

MOFFETT, C. (1998). The Effects of Cadmium on Copper Deficient Cells.

DELMONTE, S. (1999). Testosterone and TBT metabolism by *Littorina littorea*.

VALENCIA, R. (2002). TTC and Copper Toxicity in the Turkey Vulture

C9. CURRENT ADVISOR: MASTER CANDIDATES:

LONG, A. California State University Long Beach

ZEMEL, H. California State University Long Beach

C10. THESIS COMMITTEE MEMBER OF PAST MASTERS RECIPIENTS:

SISNEROS, J. (1993). California State University Long Beach

RAJAB, A. (1995). California State University Long Beach

De la CUESTA, J. (1995). California State University Long Beach

WILSIE, J. (1999). California State University San Francisco

SETO, S. (2000). California State University San Francisco

ROKEPE, T. (2002). California State University San Francisco

PINHO, M. (2002). California State University Long Beach

NICHOLSON, G. (2001). California State University Long Beach

BLASIUS, M. (2007). California State University Long Beach

C11. COMMITTEE MEMBER: CURRENT MASTERS CANDIDATES

PETERSON, M. California State University Long Beach

FLORES, R. California State University Long Beach

WOO, M. California State University San Francisco

REYES, J. California State University Long Beach

FINK, L. California State University Long Beach

YU-LIN C. California State University Long Beach

HILL, V. California State University Long Beach

D) CSULB UNIVERSITY SERVICE

D1. Departmental Committees:

Department Seminar Committee: 1989-1993.
Genetics and Development Group Safety Committee member: 1991.
Grade Appeals Committee: 1990-92
Curriculum Committee. 1990-1993
Molecular Aspects of Biological Sciences (MABS) Group. 1987-1993
Introductory Biology Development Committee 1992
Chair, Department Seminar Committee 1996-97
Retention, Tenure and Promotion Committee 1993-1994
Retention, Tenure and Promotion Committee 1994-1995
Chair, Core Curriculum Development Committee 1994-1995
Genetics Hiring Committee 1993-1994
Chair, Comparative Physiologist Hiring Committee 1994-1995
Immunology Hiring Committee 1997-1998
Ichthyology Hiring Committee 1997-1998
Chair, Immunology Hiring Committee 1998-1999
Department Curriculum committee 190-1993
Department Executive Council 1995, 1996, 1997
Group Leader: Cellular and Molecular group 1994-1996
Group Leader: Marine Group 1997-1998
Departmental Chair Nominating Committee 1997
Departmental Self Study Committee 1998
Chair, Immunology Hiring Committee 1998-1999
Chair, Grade Appeals Committee 1999-2000.
Wetlands Plant Ecology Hiring Committee 2000-2001.
Reproductive Biology Hiring Committee 2000-2001
Reproductive Biology Hiring Committee 2001-2002
Departmental RTP Committee 2003-2004
Department of Geological Sciences RTP Committee 2003-2004.
Departmental RTP Committee 2003-2004
Chair, Departmental RTP Committee 2004-2005
Post Tenure Review Committee 2006
Chair, Post Tenure Review Committee 2007
Coastal Salt Marsh Plant Ecology Hiring Committee 2007

D2. College Committees:

ITSC Committee. 1999
MBRS Advisory Group: 1996-Present
Director, College Electron Microscopy Facility: 1990-1999
SCORE Advisory Committee 2000-Present
HHMI Advisory Committee 2000-Present
Microbeam Analysis Support Technician II. 2003-2004. Chair, Selection Committee.
Responsible for job description, duties, screening and exception to hiring freeze
policy justification.

College of Natural Sciences and Mathematics Awards Committee 2005-2006.
Instructional Support Assistant III. CSUPERB Microanalytical Support Technician. .
MALDI-TOF Research Technician. 2006. Co-Chair, Selection Committee.
Responsible for job description, duties, screening.
Microbeam Analysis Support Technician III. 2007. Chair, Selection Committee.
Responsible for job description, duties, screening.

D3. University Committees:

Baseline Allocation Technical services ATS Committee. 1998-2001
University Radiation Safety Committee: 1988-1997
University Animal Welfare Committee: Member 1995-1998
University Academic Integrity Committee 1997-2002
University Peer Panel for Faculty Disputes. 1997-1999
University GE Reform Workshop Committee. 1997-1998
Chair, Animal Welfare Board: 1999.
Academic Senate Appointed Task Force Committee on Scholarly Activity 2000
Chair, Associate Vice President for Graduate Studies and Research Search
Committee: 2000-2001.
Dean Search Committee for College of Natural Sciences and Mathematics 2003-
2004
Animal Welfare Board 2003-2005
Director of IIRMES 2004-
Chair, Animal Welfare Board: 2005-
Faculty Appointment to Environmental Science and Policy Program
Appointment to Interdisciplinary Studies Program Planning and Review Committee.

D4. CSU Committees:

Chair, CSU State-Wide Electron Microscopy Committee, 1990-1991.
Nomination: External Reviewer Department of Biological Sciences, California State
University San Marcos 2003-2004
University Representative for CSUPERB-LA BASIN 2005-Present. (C-LAB) liaison.
CSULA- 2007. NIH-Research Infrastructure in Minority Institutions (RIMI) program
External review Committee
Access to Excellence Planning Committee – Panelist CSULB February 23rd 2007

E. COMMUNITY SERVICE AND OUTREACH:

High School Outreach, Downey High School Career Day

Armenian Mesrobain Elementary High School Science Project Adviser

Lennox Middle School Science Adviser

Science Fair Judge. Long Beach Unified School District.

Guest Lectures and Tours, Long Beach Polytechnic High School Pace Program

Mentor and Research Advisor for High School PACE Program.

Research Adviser, Committee for Advanced Science Training Symposium

Judge. Undergraduate Research Award. Annual Biomedical Research Conference for Minority Students. New Orleans. Nov 13-16th 2002.

Judge. 1st Glen Nagel Award for Undergraduate Research. Sixteenth CSU Biotechnology Symposium, San Jose, Jan 16-18, 2004.

External Reviewer, Tenure-Track Faculty Tenure Decision, Department of Biological Sciences CUNY

External Reviewer, Promotion Decision, Department of Biological Sciences CUNY

Marine Science Career Education Forum Panel Member. Aquarium of the Pacific April 19th 2005. A Forum arranged by Assembly Member Betty Karnette , 54th District.

F: CSULB RESEARCH TRAINING:

F1. ALPHABETICAL LIST OF UNDERGRADUATE AND MASTERS STUDENTS:

Aaron Orozoco; (MARC Scholar; MBRS Scholar)
Alex Habibe; (US Fish and Wildlife; Volunteer)
Alex Long; (Masters Candidate)
Alfred Baca; (NSF Scholar)
Alison Meyer; (Masters Candidate)
Alison Silverman; (US Fish and Wildlife; Volunteer)
Allison Pettis; (Biology 496 Directed Research)
Amy Pound; (Volunteer)
Anna de la Ree; (NSF Scholar)
Anthony Carbrera (CSUF)
Bimpe Edsina; (BRIDGES Scholar)
Brian Baker; (Biology 496 Directed Research)
Brian Owens (Biology 496 Directed Research, CSULB, HHMI, NSF Scholar)
Charles Moffett; (Biology 496 Directed Research)
Charlotte Mata; (Volunteer)
Christine McGiffert; (MARC Scholar; MBRS Scholar)
Cynthia Rizzo; (US Fish and Wildlife; Volunteer)
Diana Markoch; (NSF Scholar)
Douglas Lloyd; (NSF Scholar)
Douglas Neilson; (Biology 496 Directed Research)
Edward Pak; (Biology 496 Directed Research)
Elaine Logothetis; (Seagrant; Masters Candidate)
Elana Quiones; (Biology 496 Directed Research)

Emily McKenzie; (Biology 496 Directed Research; MBRS Scholar)
Erica Jarvis; (Catalina Semester Research Project)
Erin Alonzo (CSUF)
Fahed Bitar; (Biology 496 Directed Research)
Gale Smith; (Volunteer)
Grant Graves; (Biology 496 Directed Research)
Gregory Merrick; (Biology 496 Directed Research)
Hayley Zemel (CSULB)
Helen Huyn; (McNair Scholar)
Helen Thao; (Seagrant)
Hitesh Blatt; (Volunteer)
Ikenna Madu (CSULA)
James Tang (NSF Scholar)
Jason Attala; (Volunteer)
Jeff Layne; (Biology 496 Directed Research)
Jeffery White; (Biology 496 Directed Research)
Joanna Gonsalves; (Marc Scholar)
Johnathan Mudry; (Biology 496 Directed Research)
Johnathan Webster; (NSF Scholar)
Jose Meza; (MARC Scholar;MBRS Scholar)
Joseph Gully; (Masters Candidate)
Joseph Sisneros; (MARC Scholar; Biology 496 Directed Research)
Joshua Bryant; (Volunteer)
Joulia Cummings; (Seagrant)
Juan Campos; (MARC Scholar; Biology 496 Directed Research)
Julia Willsie; (Masters Candidate)
Kelly Thrippleton; (NSF Scholar)
Lalit Patel; (CAST Scholar)
Lan Troung; (US Fish and Wildlife; Volunteer)
Lana Phan; (Volunteer)
Lily Doan (Directed Research,CSULB)
Linda Mandel; (Biology 496 Directed Research)
Lisa Opie; (Biology 496 Directed Research)
Lisa Todd; (Volunteer)
Lori Anding; (Volunteer)
Lori Hale (CSULB, Masters thesis)
Marcy Abbot; (Biology 496 Directed Research)
Marina Sugar (NSF High School Scholar)
Mathew Harris; (MBRS Scholar)
Mathew Wimmer; (Volunteer)
Michael Arce; (Volunteer)
Michael Giblin; (Biology 496 Directed Research)
Michael Kaminsky; (PACE High School Scholar)
Michael Lee (BRIDGES Scholar)
Michelle Higley; (MBRS Scholar)
Michelle Johnson; (Biology 496 Directed Research)
Michelle Woo; (Masters Candidate)
Misty Borja; (Biology 496 Directed Research)

Nabil Gerges; (US Fish and Wildlife; Volunteer)
Natalie Evans; (HHMI Scholar)
Natalie Perico; (McNair Scholar, NSF Scholar)
Olelewe Ogbonna (BRIDGES Scholar)
Phong Lai; (US Fish and Wildlife; Volunteer)
Que-Chau Thai; (Bridges Program)
Rachel Boornazian (Directed Research, CSULB)
Ramon Valencia; (Biology 496 Directed Research; MBRS Scholar)
Rhonda Kaetzel; (Volunteer)
Rhonda Moeller; (NSF Scholar)
Richard Meraz; (MARC Scholar; NSF Scholar; Biology 496 Directed Research)
Ronna Torres; (BRIDGES Scholar)
Samantha Hua; (US Fish and Wildlife; Volunteer)
Samiya Ilmudeen (Wellesley College)
Samuel Bernier; (BRIDGES Scholar; MARC Scholar)
Saryna Bahadarakhann (Directed Research, CSULB)
Scott Riggins; (Biology 496 Directed Research)
Scott Storms; (Biology 496 Directed Research)
Shelly Seto; (Masters Candidate)
Simone Francis; (Biology 496 Directed Research)
Suzanne Delmonte; (Biology 496 Directed Research)
Tiffany Potter; (NSF Scholar)
Tina Chambers; (Beckman Scholar)
Yee Kim (CSULA)
Zarui Chikneyan (CSULA)

F2. Ph.D. CANDIDATES

Linda Hooper (CSU Forgivable Loan Doctoral Sponsor, UCR)
Kelly Thripleton (UCR)

F3. COMMUNITY COLLEGE FACULTY RESEARCH TRAINING

Adel Rajab (Cyprus College)
Dee Sato (Cyprus College)
Dave Boyle (Cerritos College)

Current Undergraduate Students

Geraldine Hidalgo; (Biology 496 Directed Research CSULB, HHMI, NSF Scholar)
Jessica Lattos; (Biology 496 Directed Research)
Matt Wimmer (Biology 496 Directed Research, CSULB, HHMI, NSF Scholar)
Eric Sauble (CSUF)
David Kullman (CSULB)
Hieu Nguyen (CSULB)
Sameh Mikhail (CSULB)
Issa Mirmehdi (CSULB)

