

Nicholas V.C. Ralston

Ph.D. Biomedical Research: Biochemistry

Research Summary:

My studies of the health benefits and risks associated with prenatal fish consumption provided insights into molecular mechanisms of mercury toxicity. High mercury exposures irreversibly inhibit selenium-dependent enzymes. Humans express 25 selenoenzymes, but only brain and endocrine tissues require their activities. Selenoenzymes employ selenocysteine (Sec), the 21st genetically encoded amino acid and most potent intracellular nucleophile in their active sites to catalyze reactions. My group identified 5 biochemical effects of mercury toxicity which we term "SOS Mechanisms" based on acronyms that define their actions, and developed the Health Benefit Value (HBV) which is the most reliably accurate means of predicting benefits or risks based on the mercury and selenium contents of foods. In our most recent work, we established the HBVs of over 14,000 ocean and fresh water fish and are updating the maternal seafood safety advisory while initiating international studies of previously unrecognized risks which can accompany consumption of low selenium, high mercury freshwater fish.

Philosophy of Education:

I am dedicated to preparing my students to be successful professionals in their areas of interest. I follow a multi-tiered approach of first getting them excited about learning the subject matter, then encouraging them to aspire to the highest standards they are capable of achieving. My goal is to inspire them to be lifelong learners and leaders in their professions by helping them find their passion in their field. My students tell me they especially appreciate gaining perspective on the real world challenges in their chosen careers, and I believe this is what inspires them to do their best to meet the expectations they will encounter in their future roles. I have had great mentors in my career, and recognize how important that was in my own professional development, so I take that role seriously. Feedback from my students indicates that they find my courses are challenging, but enjoyable and very educational. Since that is my goal, I believe I have fulfilled my role.

Courses and Services:

MPH 520/720 Environmental Health. I developed the course which teaches the key concepts, principles, and applications of the primary science disciplines that underpin the core of environmental health, providing an overview of the major pollutants, their detection, health impacts, and remediation as well as consideration of ethical and economic aspects. I developed the environmental health core curriculum for students in the Masters in Public Health (MPH) program (awaiting deployment) and am developing certification courses for public health specialty areas.

IDS 399/A&S 599 Sustainable Cities Initiative-Transforming English Coulee. I developed the Sustainable Cities Initiative for Grand Forks and the University of North Dakota and taught a course dedicated to proof of concept for the University. This was a multidisciplinary study involving UND students and faculty from multiple departments interacting with city, state, and federal agencies in solving real world problems and currently act as liaison between the UND campus and the community.

Nutrition 240 Principles of Nutrition. Lake Region State College. For the past several years I have taught nutrition with an emphasis on its significance in biochemistry and physiology as well as its fundamental anatomical interactions.

For the past several years I have taught seminars on environmental and epidemiological risk assessments regarding mercury exposures in relation to selenium nutrition and now teach 6 hour training sessions for scientists. I am developing a similar series of short courses for OB/GYN and family practice physicians, nutritionists, dieticians and other health professionals.

I provide keynote and grand rounds presentations on environmental health issues related to mechanisms of mercury toxicity, health benefits associated with dietary selenium and omega-3 fatty acid intakes, and currently advise a growing number of U.S. and foreign agencies regarding mercury and selenium issues in relation to human and environmental health.

I am currently developing an international forum on mercury toxicity and its effects on selenium physiology in preparation for a series of proposals for collaborative multinational research across North America and around the world.

Positions and Responsibilities:

2014-Present Executive Director, Sage Green NRG, llc.

My consulting group provides nutrition research guidance (hence, the “NRG” in the name) focused on improving the reliability of risk assessments and in relation to health effects of specific nutrients which are abundant in ocean fish. Maternal intake of these nutrients appear to be responsible for the 4-6 IQ point improvements in child outcomes shown to accompany seafood consumption, and may be important in treating traumatic brain injury and neurodegenerative diseases.

2015-Present Adjunct Faculty, Earth Systems Science and Policy, University of North Dakota.

Our EPA-STAR grant: “Fish Selenium Health Benefit Values in Mercury Risk Management” updated the equations for the HBV_{Se} criteria and established this index in over for 14,000 ocean and freshwater fish samples. I advise on nutrition in health assessments of risks vs. benefits of maternal fish consumption in studies that have been, are, or will soon be performed in the Seychelles, Hawaii, Saudi Arabia, Peru, and Reunion Island. I am currently developing a Toxicology Forum on selenium nutrition in mercury issues and writing a book about selenium and omega-3 nutrition in relation to mercury toxicity risks.

2013-Present Adjunct Faculty, Masters in Public Health Program, University of North Dakota.

I developed the curriculum for the environmental health core for the MPH program and initiated and currently teach the MPH courses in Environmental Health. I initiated the “Sustainable Cities Initiative” for multidisciplinary studies involving UND students and faculty interacting with city, state, and federal agencies and act as the liaison between the UND campus and the Grand Forks community to provide MPH students with practical areas for developing their familiarity with project work

2012-Present Adjunct Faculty, Undergraduate Nutrition, Lake Region College at Grand Forks Air Force Base.

I teach a series of undergraduate nutrition courses each year at the Grand Forks Air Force Base and may expand the offerings. These are popular, and we often have students from UND come to take our courses rather than those taught at UND.

2005–2015 Health Effects Program Leader, EERC, University of North Dakota.

My group defined the 5 “SOS” mechanisms of mercury toxicity. These mechanisms are pivotal in the toxicity of a variety of soft electrophilic metallic and organic toxicants, and may contribute to the pathology certain viral diseases and in adverse outcomes associated with certain chemotherapeutic and pharmacologic agents. In addition to leading research, I advise on mercury studies worldwide and serve on the EPA Science Advisory Board as a Mercury Review Panel Member, advisor to the North American Metals Council Selenium Working Group, and the editorial board for various journals. I coordinate and chair the “International Symposia on Selenium-Mercury Interactions” series of conferences.

2002–2015 Biomedical Research Scientist, EERC, University of North Dakota.

My background in the molecular basis of disease enabled me to identify the biochemical reactions and pathophysiology of mercury toxicity. This led us to develop the “Selenium Health Benefit Value” (HBV_{Se}) criterion, -the most reliably accurate means of assessing neonatal mercury exposure risks in relation to nutritional benefits of maternal fish consumption.

1998–2002 GS-12 Biochemist, Grand Forks Human Nutrition Research Center, USDA.

I studied the biochemistry and cell physiology of boron and selenium. I developed capillary electrophoresis chromatography methods to quantify transient molecular binding interactions and examined the significance of selenium in control of and response to acute and chronic inflammation in animal studies. This work increased understanding of selenium physiology and its roles in brain metabolism as well as its acute vulnerability to high mercury exposures in my current research program.

1986–1989 GS-9 Research Biologist, Grand Forks Human Nutrition Research Center, USDA.

As leader of the methods development group, much of my work centered on improving methods to isolate and purify leucocytes and platelets isolated from human or animal samples to measure their zinc and copper contents as a means of establishing nutritional status in mineral depletion and supplementation studies. I also developed and demonstrated zinc and copper enzyme assays that reflected trace element status in relation to human, animal, and cell culture studies.

1979–1986 Laboratory Technician III, Chemist I, Chemist II, University of North Dakota.

As a state employee working for the USDA Human Nutrition Research Center, I performed trace element and enzyme analysis of human and animal samples. I also developed new approaches for isolation and purification of blood fractions for nutrition studies and eventually became the leader of the methods development group for the research center. During this time, I advised architects on the design and contributed to the implementation of research laboratories in our new building.

1978-1979 High School Science Teacher, Roosevelt High School, Carson, ND.

I taught high school biology, advanced biology, and chemistry, established a science club that met biweekly, instituted student participation in science fair competition, and designed the new combined science laboratory-classroom for the school.

Education and Training:

1995–1998 Postdoctoral Fellow, Bowman Gray Medical School at Wake Forest University, Winston-Salem NC.

I studied the biochemical reactions that lead to the synthesis of bis(monoacyl-glycerol) phosphate (BMP), a phospholipid that comprises ~50% of lysosomal membranes because it avoids degradation by lysosomal lipases due to its unique sn1:sn1' structure. I synthesized the stereospecifically tritiated substrates for multiple laboratories and in my H₂¹⁸O hydrolysis studies to identify the crucial biochemical steps in BMP chemistry and synthesis and identified novel aspects of DHA incorporation.

1989–1995 Predoctoral Fellow, Biomedical Research Program, Mayo Medical Center, Rochester MN.

I joined the molecular pathology program at the Mayo Medical Center (Rochester, MN) and did research rotations in hematology, coagulation, molecular biology, laser fluorescence, and spectroscopy research prior to joining the thoracic disease group where I studied unique inflammatory pathways that lead to development of Byssinosis, a pulmonary disease acquired through chronic industrial exposure to inhaled organic dusts. I developed novel methods to quantify release of endogenous molecular forms to enable direct comparisons with release of exogenous (radiolabeled) inflammatory mediators.

1974-1978 Undergraduate Biology, Chemistry, and Earth Science, Mayville State University, Mayville, ND.

Laboratory instructor responsible for teaching biology, microbiology, and anatomy labs. Graduated with a B.S. composite major in biology with dual minors in chemistry and earth science. Also oversaw greenhouse work and judged science fairs.

Participation in Professional Societies:

President of UND Chapter of Sigma Xi Scientific Research Society

Society of Environmental Toxicology and Chemistry (SETAC)

American Association for Advancement of Science (AAAS)

International Society for Environmental Indicators (ISEI)

American Institute of Nutrition (AIN)

Society of Toxicology (SOT)

Book Chapters:

1. Ralston NVC, Azenkeng A, Ralston CR, and Raymond LJ. (2014) Chapter 19: Selenium-Health Benefit Values as Seafood Safety Criteria. In "Seafood Science; Advances in Chemistry, Technology and Applications" Se-Kwon Kim, Ed. CRC Press.
2. Ralston NVC, Azenkeng A, and Raymond LJ. (2011) Chapter 5: Mercury-Dependent Inhibition of Selenoenzymes and Mercury Toxicity. pp. 91-100; In, "Methylmercury and Neurotoxicity" of the Current Topics in Neurotoxicity series, M. Aschner and S. Ceccatelli Eds. Springer.
3. Raymond LJ, Seale L, and Ralston NVC. (2011) Chapter 31: Seafood Selenium in Relation to Assessments of Methylmercury Exposure Risks. In 3rd Edition of Selenium: Its Molecular Biology and Role in Human Health. Berry, M. and D. Hatfield, Eds. Springer.
4. Seale L, Ralston NVC, and Berry M. (2011) The Role of Selenium in Mitigating Mercury Toxicity. In; Biochemistry Research Trends series published by Nova Science Publishers Inc., New York. Nova Science Publishers-also published separately as a book, ISBN 978-1-61209-261-4.

Documentaries, websites, online interviews:

1. Ralston NVC, (December 4, 2014) Is it Safe to Eat Mercury Laden Fish? Available at "Live to 100 with Wendy Myers": <http://livetoto10.com/86-why-its-safe-to-eat-mercury-laden-fish-with-dr-nick-ralston/>
2. Raymond LJ., ..., Ralston NVC. (2011-2014) Fish, Mercury, and Nutrition: The Net Effects. Primary website maintained at: <http://www.undeerc.org/fish>.
3. Ralston NVC, Cornish, L., Murphy, S. (2014) Fighting Mercury Myths: Eliminating the Mistakes, Zombie Assumptions, and Misunderstandings. Online Webinar for Seafood Source.
4. Ralston NVC. (2014) Five Reasons why Concerns about Mercury are Misguided. Chris Kresser, Medicine for the 21st Century. <http://chriskresser.com/5-reasons-why-concerns-about-mercury-in-fish-are-misguided>.
5. Ralston NVC. (2013) Selenium vs. mercury exposures from ocean fish vs. whale meat. Seafood Source, with Sean Murphy, Available at; <http://www.seafoodsource.com/newsarticledetail.aspx?id=21614>.
6. Ralston NVC. (2012) The Truth About Toxic Mercury in Fish. Available at; Chris Kresser, Medicine for the 21st Century. <http://chriskresser.com/the-truth-about-toxic-mercury-in-fish>.
7. Raymond LJ., ..., Ralston N.V.C. (2011) PBS documentary; Fish, Mercury, and Nutrition: The Net Effects. Available at: <http://www.undeerc.org/fish/documentary.aspx>.
8. Raymond LJ, Ralston NVC. (2011) NOAA sponsored website on seafood safety. <http://www.undeerc.org/fish>.

9. Ralston NVC. (2010) Selenium, Seafood's "Secret Ingredient" to Protect Our Health. Seafood Services Australia website presentation parts 1 and 2. <http://www.seafood.net.au/page/?pid=1434&nid=403>.
10. Ralston NVC. (2009) Selenium Health Benefit Values as Seafood Safety Criteria. Webinar presentation on Dec 7, 2009 for U.C. Davis, maintained online at: <http://ucanr.org/selenium>.
11. Hightower J, Ralston NVC. (2009) Mercury Risks, Forum with Michael Krasny on KQED Public Radio, Public Media for Northern California. <http://www.kqed.org/a/forum/R902261000>.
12. Selenium Health Benefit Values as Seafood Safety Criteria. Webinar presentation on Dec 7, 2009 for U.C. Davis. Available online at: <http://ucanr.org/selenium>.

Journal Publications:

1. Ralston NVC, Ralston CR, Raymond LJ (2016) Selenium Health Benefit Values: Updated Criteria for Mercury Risk Assessments. *Biological Trace Element Research*. 171:262-269.
2. Gilman CL, Soon R, Sauvage L, Ralston NVC, Berry MJ (2015) Umbilical cord and placental mercury, selenium and selenoprotein mRNA expression in relation to maternal fish consumption. *Journal of Trace Elements in Biology and Medicine*. 30:17-24.
3. Soon R, Dye T, Ralston NVC, Berry MJ, Sauvage LM (2014) Seafood Consumption and Umbilical Cord Mercury Concentrations in a Multiethnic Maternal and Child Health Cohort. *BMC Pregnancy and Childbirth* 14:209. <http://www.biomedcentral.com/1471-2393/14/209>.
4. Raymond LJ, Deth RC, Ralston NVC (2014) Potential role of selenoenzymes and antioxidant metabolism in relation to autism etiology and pathology. *Autism Research and Treatment*. 2014:ID 164938:1-15.
5. Brockman JD, Raymond LJ, Ralston CR, Robertson JD, Bodkin N, Sharp N, Ralston NVC (2011) The nail as a noninvasive indicator of methylmercury exposures and mercury/selenium molar ratios in brain, kidney, and livers of Long-Evans rats. *Biological Trace Element Research*. 144:812-820.
6. Ralston NVC, Raymond LJ (2010) Dietary selenium's protective effects against methylmercury toxicity. *Toxicology*. 278:112-123.
7. Ralston NVC (2009) Introduction to 2nd Issue on Special Topic: Selenium and Mercury as Interactive Environmental Indicators. *Environmental Bioindicators*. 4(4):286-290.
8. Raymond LJ, Ralston NVC (2009) Selenium's Importance in Regulatory Issues Regarding Mercury. *Fuel Processing Technology*. 90(11):1333-1338.
9. Ralston NVC (2009) Editor's Introduction: Contrasting Influences of Selenium Status and Mercury Exposures on Environmental Health. *Environmental Bioindicators* 4(3):198-202.
10. Peterson SA, Ralston NVC, Peck DV, Sickle J, Robertson JD, Spate VL, Morris JS (2009) How Might Selenium Moderate the Toxic Effects of Mercury in Stream Fish of the Western U.S.? *Environmental Science and Technology*, 43:3919-3925.
11. Peterson SA, Ralston NVC, Whanger PD, Oldfield JE, Mosher WD (2009) Selenium and Mercury Interactions in Fish Tissue. *Environmental Bioindicators* 4(4):318-334.
12. Huggins F, Raverty SA, Nielsen OS, Sharp N, Robertson JD, Ralston NVC (2009) An XAFS Investigation of Mercury and Selenium in Beluga Whale Tissues. *Environmental Bioindicators* 4(4):291-302.
13. Ralston NVC (2009) Editor's Introduction: Contrasting Influences of Selenium Status and Mercury Exposures on Environmental Health. *Environmental Bioindicators* 4(3):198-202.
14. Ralston NVC (2008) Nano-Selenium Captures Mercury. *Nature Nanotechnology*. 3(9):527-528.
15. Ralston NVC, Ralston CR, Blackwell III JL, Raymond LJ. (2008) Dietary and Tissue Selenium in Relation to Methylmercury Toxicity. *Neurotoxicology* 29(5):802-811.
16. Berry MJ, Ralston NVC (2008) Mercury Toxicity and the Mitigating Role of Selenium. *EcoHealth* 5(4):456-459.
17. Ralston NVC (2008) 2008. Selenium-health benefit values as seafood safety criteria. *EcoHealth*. 5(4):442-455.
18. Brockman JD, Robertson JD, Morris JS, Ralston C, Raymond L, Ralston NVC. (2008) Nail as a Biomarker of Selenium and Methylmercury in a Rat Model. *J. Radioanalytical and Nuclear Chemistry* 276(1):59-64.
19. Ralston NVC, Blackwell III JL, Raymond LJ. (2007) Importance of Molar Ratios in Selenium-Dependent Protection against Methylmercury Toxicity. *Biological Trace Element Research* 119(3):255-268.
20. Kaneko JJ, Ralston NVC. (2007) Selenium and Mercury in Pelagic Fish in the Central North Pacific near Hawaii. *Biological Trace Element Research* 119(3):242-254.
21. Henshel D, Aschner M, Basu N, Bowerman W, Echeverria D, Gilbertson M, Ralston NVC, Wolfe M. (2007) New Bioindicators for Mercury Toxicological Assessment: Recommendations from the First International Bioindicators Roundtable. *Environmental Bioindicators* 2(3):183-207.
22. Cooper LT, Rader V, Ralston NVC. (2007) The Roles of Selenium and Mercury in the Pathogenesis of Viral Cardiomyopathy. *Congestive Heart Failure* 13(4):193-199.
23. Raymond LJ, and Ralston NVC. (2004) Mercury:Selenium Interactions and Health Implications. *Seychelles Medical*

- and Dental Journal, Special Issue, 7(1):72-77.
24. Sondreal EA, Benson SA, Pavlish JH, Ralston NVC. (2004) An overview of air quality III: Mercury, Trace Elements, and Particulate Matter. *Fuel Processing Technology* 85(6-7):425-440.
 25. Ralston NVC and Hunt, CD. (2004) Transmembrane partitioning of boron and other elements in RAW 264.7 and HL60 cell cultures. *Biological Trace Element Research* 98(2):181-191.
 26. Reeves PJ, Ralston NVC, Idso JP, Lukaski HC. (2004) Contrasting and Cooperative Effects of Copper and Iron Deficiencies in Male Rats fed Different Concentrations of Manganese and Different Sources of Sulfur Amino Acids in and AIN-93G-Based Diet. *Journal of Nutrition* 134(2):416-425.
 27. Ralston NVC and Hunt CD (2001) Diadenosine Phosphates and S-Adenosylmethionine: Novel Boron Binding Ligands Detected by Capillary Electrophoresis. *Biochim. Biophys. Acta* 1527:20-30.
 28. Ralston NVC, Schmid PJ, and Schmid HHO. (1998) Agonist Stimulated Phospholipid Turnover in Alveolar Macrophages. *Biochim. Biophys. Acta* 1393(1):211-21.
 29. Bates PJ, Ralston NVC, Vuk-Pavlovic Z, and Rohrbach MS. (1995) Calcium Influx is Required for Tannin-Mediated Arachidonic Acid Release from Alveolar Macrophages. *Am. J. Physiol.* 266:33-40.
 30. Castro M, Ralston NVC, Morgenthaler TI, Limper AH, and Rohrbach, MS. (1994) *Candida albicans* Stimulates Arachidonic Acid Liberation from Alveolar Macrophages through α -Mannan and β -Glucan Cell Wall Components. *Infect. Immun.* 62:3138-3145.
 31. Ralston NVC, and Rohrbach MS. (1994) Mass Determination of the Fatty Acids Released from Tannin-Stimulated Alveolar Macrophages. *Lipids* 29(2):103-109.
 32. Milne DB, Sims RL, Ralston, NVC. (1990) Manganese Content of Cellular Components of Blood. *Clinical Chemistry*. 36:3450-3452.
 33. Johnson PE, Hunt JE, Ralston, NVC. (1987) The Effect of Past and Current Dietary Zinc Intake on Zinc Absorption and Endogenous Excretion in the Rat. *Journal of Nutrition*, 118:1205-1209.
 34. Milne DB, Ralston NVC, Wallwork JC. (1985) Zinc Content of Cellular Components of Blood: Methods for Cell Separation and Analysis Evaluated. *Clinical Chemistry*, 31(1):65-69.
 35. Milne DB, Wallwork JC, Ralston NVC, Korynta EG. (1985) Zinc Content of Blood Cellular Components and Spleen and Lymph Node Mononuclear Cells in Zinc Deficient Rats. *J. Nutrition* 115:1073-1078.
 36. Milne DB, Wallwork JC, Ralston NVC. (1984) Analysis of Zinc in Blood Cellular Components as a Means of Assessment of Zinc Status. In *Trace Elements in Man and Animals-5*; Mills CF, Bremner I, Chesters JK, Eds.; CAB, Farnham Royal: UK, pp. 271-275.

Annual and Final Project Reports (Certain projects span multiple-years):

- Ralston NVC (2016) Inter-laboratory Comparison of Selenium Analysis Results. Final Report on capabilities of analytical laboratories in regards to precision and accuracy in selenium measurements. NOAA 2016:1-9.
- Ralston NVC and Raymond LJ (2014) Annual Report: Fish Selenium-Health Benefit Values in Mercury Risk Management. STAR (Science To Achieve Results). Annual Report to EPA. 2014:1-7.
- Ralston NVC and Raymond LJ (2013) Annual Report: Fish Selenium-Health Benefit Values in Mercury Risk Management. STAR (Science To Achieve Results). Annual Report to EPA. 2013:1-15.
- Ralston NVC and Raymond LJ (2012) Fish Selenium-Health Benefit Values in Mercury Risk Management. STAR (Science To Achieve Results). Annual Report to EPA. 2012:1-7.
- Ralston, NVC (2012) Blood and Placental Mercury and Selenium Analysis Report for the University of Hawaii. 2012:1-5.
- Ralston, NVC (2011) Mercury and Sulfur Concentrations in Roots and Shoots of Plants Used in Phytoremediation. Final Report to Edenspace Systems Corporation 2011:1-4.
- Ralston, NVC (2011) Molecular Basis of Hg-Se Binding Interactions and Selenium's Influences on Mercury Bioaccumulation in Freshwater Fish. CATM[®] Final Report to DOE. 2011:167-172.
- Ralston, NVC (2011) Physiologically Based Pharmacokinetic Model of Mercury-Selenium Interactions. CATM[®] Final Report to DOE. 2011:173-183.
- Ralston, NVC (2011) Molecular Interactions of Toxic Metals. CATM[®] Final Report to DOE. 2011:184-193.
- Ralston, NVC (2011) Mercury-Se Interactions in Aquatic Ecosystems. CATM[®] Final Report to DOE. 2011:195-204.
- Ralston, NVC (2011) Mercury Metabolism and Se Physiology Studies. CATM[®] Final Report to DOE. 2011:205-215.
- Ralston, NVC (2011) Mercury's Interaction with Selenium. CATM[®] Final Report to DOE. 2011:167-172.
- Ralston, NVC (2011) Selenium Health Initiative Program II (SHIP II). Final Report to NOAA. 2011:1-5.
- Ralston, NVC (2010) Selenium Health Initiative Program I (SHIP I). Final Report to NOAA. 2010:1-5.
- Ralston, NVC (2010) Selenium Health Benefit Values as Seafood Safety Criteria. Final Report to NOAA 2010:1-15.
- Ralston, NVC (2009) Bioavailability and Efficacy of Selenium from Bigeye Tuna, Swordfish, and Mako Shark. Final Report to PacMar Inc. 2009:1-11.

- Ralston, NVC (2009) Summary of Interactions between Mercury and Selenium in Plants Tested. Final Report to Edenspace Systems Corporation. 2009:1-8.
- Ralston, NVC (2009) Environmental Biochemistry and Physiological Implications of Mercury-Selenium Interactions. Center for Air Toxic Metals (CATM[®]) Final Report to EPA. 2009:311-410.
- Ralston, NVC (2009) Task 116 – Selenium’s Role in the Seafood Safety Issue. Final Report to DOE. 2009:1-30.
- Ralston, NVC, Unrine JM, Wallschlager D. (2008) Selenium Biogeochemistry and Analysis of Selenium and its Species. Report for the North American Metals Council Selenium Working Group. 2008:1-58.
- Ralston, NVC (2008) Physiologically Based Pharmacokinetic Model of Hg-Se Interactions. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2008:123-136.
- Ralston, NVC (2008) Evaluation of Selenium's Role in Heavy Metal Bioaccumulation and Toxicity. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2008:137-148.
- Ralston, NVC (2008) Effects of Mercury Toxicity on Se-Dependent Molecular Pathways. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2008:149-156.
- Ralston, NVC (2008) Task 96–Phase 2 –Investigating the Importance of the Mercury–Selenium Interaction: Final Report to DOE. 2008:1-37.
- M Gilbert, V Dove, S Raverty, NVC Ralston, J. Bolton, and C. Tomey. (2008) Diagnostic summary report on samples collected from dead Irrawaddy dolphins along the Mekong River. Final Report to the World Wildlife Fund. 2008:1-22.
- Ralston, NVC (2007) Task 77 Health Implications of the Mercury–Selenium Interaction. Final Report to DOE. 2007:1-24.
- Ralston, NVC (2007) Physiologically Based Pharmacokinetic Model of Hg-Se Interactions. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2007:145-157.
- Ralston, NVC (2007) Molecular Interactions with Selenium. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2007:131-144.
- Ralston, NVC (2007) Evaluation of Selenium's Role in Heavy Metal Bioaccumulation and Toxicity. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2007:123-130.
- Ralston, NVC (2006) Mercury's Interaction with Selenium. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2006:167-172.
- Ralston, NVC (2006) Physiologically Based Pharmacokinetic Model of Hg-Se Interactions. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2006:172-184.
- Ralston, NVC (2006) Molecular Interactions of Toxic Metals. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2006:185-194.
- Ralston, NVC (2006) Mercury–Selenium Interactions in Aquatic Ecosystems. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2006:195-204.
- Ralston, NVC (2006) Mercury Metabolism and Selenium Physiology Studies. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2006:205-216.
- Ralston, NVC (2005) Molecular Interactions of Toxic Metals. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2005:181-188.
- Ralston, NVC (2005) Mercury–Selenium Interactions in Aquatic Ecosystems. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2007:165-180.
- Ralston, NVC (2005) Mercury Metabolism and Selenium Physiology Studies. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2005:147-164.
- Ralston, NVC (2004) Mercury Metabolism and Selenium Physiology Studies. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2004:105-114.
- Ralston, NVC (2003) Studies of Mercury Metabolism and Selenium Physiology. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2003:135-139.
- Ralston, NVC (2002) Potential Impact of Selenium on Mercury toxicity. Center for Air Toxic Metals (CATM[®]) Annual Report to EPA. 2002:111-113.

Extended Abstracts:

- Ralston NVC, Raymond LJ (2015) Functional Deletion of Brain Selenoenzymes by Methylmercury. In; Selenium in the Environment and Human Health. G.S. Banuelos and Z.-Q. Lin, Eds. Taylor and Francis (London, UK).
- Ralston NVC, Raymond LJ (2015) The “SOS” Mechanisms of Methylmercury Toxicity. In; Selenium in the Environment and Human Health. G.S. Banuelos and Z.-Q. Lin, Eds. Taylor and Francis (London, UK).
- Ralston NVC and Raymond LJ (2014) Selenium status and intake influences mercury exposure risk assessments, pp. 203-205: In, Selenium in the Environment and Human Health. G.S. Banuelos, Z.-Q. Lin, and Xuebin Yin, Eds. Taylor and Francis (London, UK).

- Robertson JD, Brockman JD, Bodkin NC, Griswold KM, Kyger JR, Raymond LJ, Ralston CR, and Ralston NVC. (2006) The Impact of Methylmercury on the Distribution of Selenium in Various Tissues. *Transactions of the American Nuclear Society*, 95:427-428.
- Raymond LJ, and Ralston NVC (2005) Physiological Implications of Mercury's Effects on Selenium Availability. North Dakota Academy of Science.
- Jordan CR, Raymond LJ, and Ralston NVC. (2005) Environmental Implications of Selenium's Effects on Mercury Retirement. North Dakota Academy of Science.
- Ralston NVC, Gallagher JR, Galbreath KC, and Zillioux EJ. (2005) Comparison of DNA Damage Resulting from Exposure to Various Nickel Species. North Dakota Academy of Science.
- Ralston, NVC, Pavlish, J and Sondreal, E (2003) Mercury, Trace Elements and Particulate Matter. Center for Air Toxic Metals (CATM®). *Air Quality*. 2003(9):1-12.
- Bates, PJ, NVC Ralston, Z Vuk-Pavlovic, and MS Rohrbach. (1994) The Role of Calcium in Tannin Mediated Arachidonate Release in Alveolar Macrophages. *Cotton Dust* 1994:335-339.
- Ralston NVC, and MS Rohrbach. (1994) Comparison of Endogenous and Exogenous Fatty Acid Release in response to Tannin and β -Glucan Stimulation. *Cotton Dust* 1994:340-346.
- Ralston NVC, Schelkoph GW, and Milne DB. (1989) Alterations of Physiological and Biochemical Blood Cell Indices by Copper Deficiency. *Proceedings of the North Dakota Academy of Science*. 43:61.
- Sims RL, Ralston NVC, and Milne DB. (1989) Distribution of Cu and Mn in Blood and Blood Fractions. *Proceedings of the North Dakota Academy of Science*. 43:64.
- Herbel JM, Ralston NVC, and Schuler TS, (1989) Enhanced Boron Digestion. *Proceedings of the North Dakota Academy of Science*. 43:102.
- Ralston NVC, and Milne DB. (1988) Opposing Effects of Zinc and Copper Deficiencies on Mean Platelet Volumes. *Proceedings of the North Dakota Academy of Science*. 42:64.
- Ralston NVC, Theisen PW, and Milne D.B. (1987) Effects of Hypertonic Anticoagulants on the Analytical Determinations of Plasma Constituents. *Proceedings of the North Dakota Academy of Science*. 41:81.
- Ralston NVC, Theisen PW, and Milne DB. (1987) Effect of Platelet Contamination on Quantitation of Leukocyte Constituents in Plasma. *Proceedings of the North Dakota Academy of Science*. 41:81.

Invited Lectures and Keynote Presentations:

- Mercury's Effects on Selenium Physiology: The Five "SOS" Mechanisms of Mercury Toxicity. Se2017 Conference. Commemorating the 200th Anniversary of the discovery of Selenium (August 13, 2017) Stockholm, Sweden.
- Mercury - Selenium Interactions: Biochemistry, Bioaccumulation. Short course for environmental toxicologists. SETAC North America, November 6, 2016; Orlando FL.
- When Mercury Shoots the Moon. 2016 Food and Nutrition Conference and Expo session; Is the Tide Turning on Seafood Advice? October 16, 2016; Boston MA.
- Mercury Can Steal the Moon, But Brighter Days are Ahead. Tribal Environmental Health Summit 2016. Northern Arizona University, June 20, 2016; Flagstaff, AZ.
- Selenium-Mercury Interactions: Molecular Mechanisms of Mercury Toxicity. 2015 Seychelles Seafood Quality Workshop Nutrition and Health Section, November 18, 2015; Victoria, Mahé, Republic of Seychelles.
- Functional Deletion of Brain Selenoenzyme Activities by Methylmercury. Keynote for the 4th International Conference on Selenium in the Environment and Human Health. October 18-21, 2015; Sao Paulo, Brazil.
- When Mercury Steals the Moon: New Insights into an Old Problem. Tox on Tap (Saskatoon's Science Café) Sept 15, 2015: Saskatoon SK, Canada.
- Confirmation, Support, and Advancements of the 2004 EPA/FDA Seafood Safety Advisory. Environmental Public Health Indicators, EPA STAR grant recipients meeting. Sept 24, 2014; Washington, DC.
- The "SOS" Mechanisms of Mercury Toxicity. Invited speaker; 53rd Annual Meeting of Society of Toxicology. March 24, 2014; Phoenix, AZ.
- Emphasizing the Nutritional Benefits of Regular Seafood Consumption. Keynote for Pacific Fisheries Technologists 2014 Meeting. February 24, 2014; Monterey, CA.
- Selenium Status and Intake Influences Mercury Exposure Risk Assessments. Invited speaker, 3rd International Selenium Conference. November 11, 2013; HeFei, China.
- New Research Perspectives on the Risk Assessment of Fish Consumption. Keynote for the ATID (Israeli Dietitian's Association Annual Meeting) October 9, 2013; Tel Aviv, Israel.
- Methylmercury's Environmental and Physiological Intersections with Selenium. Invited presentation before California office of Environmental Protection. August 23, 2013; Sacramento, CA.

Seafood Consumption During Pregnancy; The Good News: Seafood is Safe & Beneficial. The Bad News: Not Enough People Know This. Grand Rounds Endowed Lecture Series, Altru Hospital. April 10, 2013; Grand Forks ND.

Selenium-Health Benefit Values; The Most Reliably Accurate Seafood Criteria Currently Available. Gulf States Marine Fisheries Commission Meeting. Invited speaker March 20, 2013; Sandestin, FL.

Environmental and Health Effects of Mercury are offset by Selenium. Invited presentation for the Western States Congressional Caucus. March 9, 2013; Washington, DC.

Maternal Seafood Consumption During Pregnancy; The Good News: Everything Finally Makes Sense. The Bad News: Not Enough People Know About It. UND CME Grand Rounds, January 17, 2013; Bismarck ND.

Seafood Safety and Benefits: The Pivotal Role of Selenium in the Mercury Issue. Invited speaker, Gordon Research Conference, Oceans and Human Health on June 6, 2012; Biddeford, ME.

Safety and Benefits of Fish Consumption During Pregnancy: The Pivotal Role of Selenium in the Seafood Mercury Issue. Invited seminar at Wake Forest University, November 2, 2011; Winston Salem, NC.

The Pivotal Role of Selenium in Molecular Mechanisms of Methylmercury Toxicity. 2nd International Conference on Selenium in the Environment and Human Health, Invited speaker, October 23, 2011; Suzhou, China.

Selenium's Pivotal Roles in Relation to Mercury Exposure Risks. Promoting Healthy Communities: Environmental Public Health Indicators EPA-STAR Grant Forum. Invited speaker, September 26, 2011; Washington, DC.

Selenium's Role in Seafood Safety Issues Regarding Mercury. International Seafood and Health Conference, Invited speaker, November 9, 2010; Melbourne, Australia.

Mercury Exposure Risks are Inversely Related to Selenium Availability. Alaska Quicksilver Summit, Invited speaker, October 28, 2010; Girdwood, AK.

Selenium's Pivotal Role in Regard to the Health Risks of Methylmercury in Seafood. 2010 Hawaii Seafood Symposium, Invited speaker, October 21, 2010; Honolulu, HI.

Maternal and Fetal Benefits of Ocean Fish Consumption during Pregnancy. Presentation for St. Alexis Hospital Grand Rounds. Invited speaker, September 8, 2010; Bismarck, ND.

Methylmercury is an Irreversible Inhibitor of Selenoenzymes with Vital Functions. Presentation for the Mercury Research Forum. Invited speaker, May 11, 2010; Sarasota, FL.

Dietary Selenium from Seafood Consumption Prevents Methylmercury Toxicity. Krieger Endowed Lecture; Grand Rounds at the Kapiolani Medical Center on April 7, 2010; Honolulu, HI.

Mercury, Selenium and Risks and Benefits of Fish Consumption. Combined Federal Agencies Science Consortium Meeting. Invited Speaker, May 6, 2009; Stennis Space Center, MS.

Dietary Selenium In Prevention and Treatment Of Mercury Toxicity. Pacific Fisheries Technologists Meeting. Keynote speaker, February 4, 2008; San Francisco, CA.

Mercury Inhibition of Selenium Enzymes and Metabolic Cycles. Presentation for the INBRE Meeting, Salish-Kootenai University. Invited speaker Sept 17, 2008; Pablo, MT.

Selenium's Pivotal Role in the Seafood Safety Issue. Presentation for the Maternal Nutrition Initiative Working Group Meeting. Invited speaker, June 30, 2007; Chicago, IL.

Methyl Mercury and Potential Selenium Modulation. Florida Sea Grant-University of Florida / IFAS In-Service Training Program, Keynote speaker, March 27, 2007; Gainesville, FL.

Significance of Mercury's Molecular Interactions with Selenium. First International Symposium on Selenium-Mercury Interactions. Keynote speaker, February 23, 2007; La Jolla, CA.

Significance of Mercury-Selenium Interactions in the Seafood Safety Issue. Seafood Science and Technology Conference, Invited speaker, November 14, 2006; San Antonio, TX.

Selenium's Interactions with Mercury. Seychelles Child Development Study Group Meeting May 9, 2005; Rochester, NY.

Selenium's Role in the Mercury Issue. National Fisheries Institute Annual Meeting, April 19, 2005; New Orleans, LA.

Mercury's effects on selenium metabolism. Center for Food Safety and Applied Nutrition, US Food and Drug Administration, April 12, 2005; College Park, MD.

Selenium Modulation of Toxicant Effects in Seafood. Selections to balance benefits and risks. Institute of Medicine: National Academy of Science, Invited speaker, April 11, 2005; Washington, DC.

Combating the Methylmercury Scare. Panel presentation at Boston International Seafood Meeting. Invited Speaker, March 11, 2005; Boston, MA.

Mercury and Selenium: Balancing the Biochemical Equation. Platform Panelist Presentation for Air Quality III Sept 15, 2002; Arlington, VA.

Other Platform Presentations:

Mercury and Selenium Bioaccumulation and Toxicity are Inversely Related: Now We Know Why. North American Metals Council, Selenium Working Group (NAMC-SWG) June 10, 2015. Saskatoon, SK. Canada.

Selenium Diminishes Mercury Bioaccumulation and Toxicity: How Might this Influence EPA's Emission Limitation Guidelines (ELG) Regarding Selenium? Webinar for National Rural Electric Cooperative Association. April 22, 2015.

The North American SAMPLLE (Selenium Alleviation of Mercury Pollution in Lentic and Lotic Ecosystems) Study: Preliminary Data and Considerations. North American Selenium Working Group. Nov 14, 2014; Vancouver, BC.

Mercury Bioaccumulation and Toxicity are Inversely Related to Selenium. 35th International SETAC Meeting. Nov 12, 2014; Vancouver, BC.

Mercury-Selenium Interactions: A Review of Biochemical Mechanisms, Bioaccumulation, Effects and Toxicity Considerations. 35th International SETAC Meeting. Nov 9, 2014; Vancouver, BC.

The Pivotal Role of Selenium in Relation to the Fish Mercury Issue. Presentation for the North American Metals Council Selenium Working Group Meeting, Nov 18, 2011; Boston, MA.

Mercury's Effects on Brain Selenoenzyme Activities. Presentation for the 27th International Neurotoxicology Conference, Nov 1, 2011; Research Triangle Park, NC.

Methylmercury Irreversibly Inhibits Selenoenzymes. Presentation for the 26th International Neurotoxicology Conference; Nov 9, 2010; Portland, OR.

Mercury's Risks and Selenium's Benefits in Environmental Health. Presentation for the 3rd International Symposium on Selenium Mercury Interactions. Nov 19, 2009; New Orleans, LA.

Nutritional Benefits of Eating Seafood During Pregnancy are Greater than the Previously Assumed Risks. Presentation for the University of Oregon. Oct 29, 2009; Corvallis, OR.

Selenium Health Benefit Values are more Accurate than Mercury as Risk Criteria. Presentation for Air Quality VII. Oct 26, 2009; Arlington, VA.

Does Selenium vs. Mercury Make Seafood a Safer Choice? Florida Agricultural Extension Agency Statewide Meeting. Oct 1, 2009; Gainesville, FL.

Selenium-Health Benefit Values (Se-HBV) are Superior Mercury Risk Assessment Criteria. Presentation for the EUEC. Feb 21, 2008; Phoenix, AZ.

Selenium-Health Benefit Values (Se-HBV) are Superior Mercury Risk Assessment Criteria. Presentation for the Green Team. Nov 21, 2008; Bismarck, ND.

Selenium-Health Benefit Values (Se-HBV) are Superior Mercury Risk Assessment Criteria. Presentation for the 16th International Environmental Bioindicators Conference. Nov 12, 2008; Orlando, FL

Dietary Selenium Alleviates Methylmercury Toxicity. Presentation for the 25th International Neurotoxicology Conference. Oct 13, 2008; Rochester, NY.

Importance of Mercury-Selenium Interactions in Mercury Toxicity, Presented before the Mercury Task Force Meeting. July 24, 2008; Bismarck, ND.

Mercury Inhibition of Selenium Enzymes and Metabolic Cycles. Presentation for INBRE Meeting, Montana University, Sept 18, 2008; Butte, MT.

Role of Selenium in the Mercury Issue. Presentation for the EPA NHEERL. June, 19, 2008; Corvallis, OR.

Selenium: Analysis and Speciation in Environmental Samples. Presentation for the North American Minerals Council – Selenium Working Group. June 11, 2008; Boise, ID

Physiological Interactions Between Mercury and Selenium Determine their Environmental Interactions. Presentation for SETAC North America. Nov 14, 2007; Milwaukee, WI.

Role of Selenium in Seafood Risk:Benefit Evaluations. Presentation for the International Society for Trace Element Research in Humans. Oct 26, 2007; Heraklion, Crete.

Methylmercury and Potential Selenium Modulation. Benefits and Risks Associated with Seafood. Presentation for the Seafood Producers Association. March 26, 2007; San Francisco, CA.

Selenium's Role in Seafood Safety Issues Regarding Mercury Exposure. Presentation for senior management staff of National Seafood Inspection Laboratory, NOAA. March 12, 2007; Pascagoula, MS.

Significance of Mercury's Molecular Interactions with Selenium. Presentation for the Fisheries Council Meeting. Feb 23, 2007; Washington DC.

Changing Paradigms of Selenium's role in Counteracting Mercury Toxicity. Presentation for the Animal and Range Sciences, North Dakota State University. June 12, 2006; Fargo, ND.

Selenium Sequestration and the Mechanism of Mercury Toxicity. Presentation for the U.S. Food and Drug Administration on June 12, 2006; Washington, DC.

Selenium Interactions in the Seafood Safety Issue. Presentation for the Seafood Science and Technology Conference held Nov 14, 2006; San Antonio, TX.

Selenium Physiology, Bioavailability, Bioaccumulation, and Remediation. Presentation for the Selenium Working Group on Nov 4, 2006; Bromont, Canada.

Selenium Sequestration and the Mechanism of Mercury Toxicity. Presentation for the Seafood Safety Workshop. Aug 25, 2006; Honolulu, HI.

The Role of Selenium Sequestration in the Mechanism of Mercury Toxicity. International Conference on Mercury as a Global Pollutant. Aug 11, 2006; Madison, WI.

Selenium Protective Effects against Mercury Toxicity September, 2006. Presentation for the Mercury Taskforce. Aug, 2006; Bismarck, ND.

Selenium's Protective Effects against Methylmercury Bioaccumulation and Toxicity. Presentation for the 14th International Bioindicators Meeting. May, 2006; Baltimore, MD.

The Role of Selenium Sequestration in the Molecular Mechanism of Mercury Toxicity. Presented for the Seafood & Health Meeting. Dec, 2005; Washington DC.

Importance of Selenium in the Mercury Issue. Conference on the Environment. Nov, 2005; Minneapolis, MN.

Physiological and Environmental Importance of Mercury-Selenium Interactions. Presented for the National Fish Forum. Sept, 2005; Baltimore, MD.

Selenium's Interactions with Mercury. Seychelles Child Development Study Group Meeting, May, 2005; Rochester, NY.

Comparison of DNA damage resulting from exposure to various nickel species. North Dakota Academy of Science, April, 2005; Grand Forks, ND.

Selenium as an Indicator of Susceptibility to Mercury Toxicity: The "tonic to target" paradigm shift. 20th Annual International Conference on Soils Sediments and Water. Oct, 2004; Atlanta, GA.

Potential Mechanisms of Mercury Toxicity: Impact of Mercury on Selenium Physiology. Seychelles Child Development Study Group. Aug, 2003; Rochester, NY.

The Physiological and Environmental Significance of Mercury Selenium Interactions, Sept, 2003; Mercury Roundtable. (Nationwide Internet presentation for USGS, EPA, and other interested scientists).

Insights into Potential Mechanisms of Mercury Toxicity: Impact of Mercury on Selenium Physiology Seychelles Child Development Study Group Meeting. Aug, 2003; Rochester, NY.

Selenium Dependent Physiology, Mercury-Selenium Interactions & Mercury Pathophysiology. Patuxent Wildlife Refuge. July, 2003; Patuxent, MD.

Selenium Dependent Physiology, Mercury-Selenium Interactions & Mercury Pathophysiology. U.S. Geologic Survey. July, 2003; Reston, VA.

Bis(monoacylglycerol)phosphate Synthesis and Remodeling in RAW 264.7 Cells. 32nd Annual Southeastern Regional Lipid Conference. Nov, 1997; Cashiers, NC.

Poster Presentations:

The "SOS" Mechanisms of Methylmercury Toxicity. Session presentation at the 4th International Conference on Selenium in the Environment and Human Health. October 18-21, 2015; Sao Paulo, Brazil.

Methylmercury-Selenium Molar Ratios are Direct Determinants of Mercury Toxicity. 35th International SETAC Meeting. Nov 11, 2014; Vancouver, BC.

The Importance of Selenium Concentration in Assessments of Mercury Exposure Risks. 30th International SETAC Meeting. Nov 18, 2009; New Orleans, LA.

Selenium-Health Benefit Values Provide more Accurate Predictions of Mercury-Dependent Health Risks. 30th International SETAC Meeting. Nov 18, 2009; New Orleans, LA.

Selenium Enhanced Phytoremediation in Mercury Contaminated Aquatic and Terrestrial Systems. 30th International SETAC Meeting. Nov 18, 2009; New Orleans, LA.

Selenium from Fish Protein Prevents Methylmercury Toxicity. EPA 2009 National Forum on Contaminants in Fish on Nov 5, 2009; Portland OR.

Selenium-Health Benefit Values Provide more Accurate Predictions of Mercury-Dependent Risks. EPA 2009 National Forum on Contaminants in Fish. Nov 5, 2009; Portland OR.

Selenium-Health Benefit Values (Se-HBV) are Superior Mercury Risk Assessment Criteria. 16th International Environmental Bioindicators Conference. Nov 12, 2008; Orlando, FL

Dietary Selenium Alleviates Methylmercury Toxicity. 25th International Neurotoxicology Conference. Oct 13, 2008; Rochester, NY.

Mercury and Selenium in Beluga Whale and Irrawaddy Dolphin Tissues, 28th International SETAC North America Annual Meeting. Nov 13, 2007; Milwaukee, WI.

Significance of Dietary Selenium in Prevention and Treatment of Mercury Toxicity. 28th International Annual Meeting, SETAC North America. Nov 13, 2007; Milwaukee, WI.

Importance of Selenium in Seafood Risk:Benefit Evaluations. 28th International SETAC North America Annual Meeting. Nov 13, 2007; Milwaukee, WI.

Role of Selenium in Seafood Risk:Benefit Evaluations. International Society for Trace Element Research in Humans on Oct 26, 2007; Heraklion, Crete.

Dietary Selenium's Influence on Prevention and Treatment of Mercury toxicity. International Society for Toxicology and Chemistry. Nov, 2006; Montreal, Canada.

Environmental Selenium's Effects on Mercury Bioaccumulation and Retirement. International Society for Toxicology and Chemistry. Nov, 2006; Montreal, Canada.

Selenium's "Protective" Effects against Mercury Toxicity. Neurotoxicology Meeting: Neurotoxicity in Aging and Development session. September, 2006; Little Rock, AR.

The Role of Selenium Sequestration in the Mechanism of Mercury Toxicity. International Conference on Mercury as a Global Pollutant. Aug, 2006; Madison, WI.

Selenium as a Bioindicator of Susceptibility to Methylmercury Bioaccumulation and Toxicity. 14th International Bioindicators Meeting. May, 2006; Baltimore, MD.

Physiological and environmental importance of mercury-selenium interactions. 2005 National Forum on Contaminants in Fish. Sept, 2005; Baltimore, MD.

Insights into Potential Mechanisms of Mercury Toxicity. Valuing Externalities Workshop. Feb, 2003; McLean, VA.

Porcine Brain contains Abundant Low Molecular Weight Selenomolecules. Experimental Biology Federation Proceedings. April, 2002; New Orleans, LA.

Boron Incorporation by RAW 264.7 Macrophages Indicated by Differences in Intracellular and Extracellular Concentrations. Experimental Biology Federation Proceedings. April, 2001; Orlando, FL.

Biological Boron Interactions: Charge and Structure Characteristics Required for Boroester Formation. Experimental Biology Federation Proceedings. April, 2000; San Diego, CA.

Evidence for Mono- and Dicomplex Boroester Formation in Biomolecules: Capillary Electrophoresis Studies. Experimental Biology Federation Proceedings. April, 1999; Washington DC.

Synthesis of Bis(monoacyl glycerol) Phosphate. Experimental Biology Proceedings April, 1998; San Francisco, CA.

Synthesis and Remodeling of Bis(Monoacyl glycerol)-Phosphate in RAW 264.7 cells; Significance in Lysosomal Integrity and Function. 32nd Annual Southeastern Lipid Conference. Lipid Proceedings. Nov, 1997. Cashiers, NC.

Endogenous vs. Exogenous Arachidonate Turnover in Stimulated Alveolar Macrophages. Experimental Biology Proceedings. April, 1996; Washington DC.

Dual Mechanisms of Controlling Inflammation in Rabbit Alveolar Macrophages, Opposing Influences of Arachidonate Deacylation and Reacylation Activities. 31st Southeastern Lipid Conference. Lipid Proceedings. 1996; Columbia, SC.

Acyl turnover in Macrophage Lipids as detected by ¹⁸O Incorporation. 30th Southeastern Lipid Conference. Lipid Proceedings. 1995; Cashiers, NC.

Actual vs. Apparent PLA₂ Selectivity in Macrophages: Comparison of Direct and Radiolabeled Fatty Acid Determinations. Experimental Biology Federation Proceedings. April, 1994. San Diego, CA

Comparison of Absolute and Radiolabeled Arachidonate Release from Macrophages Stimulated with Tannin and β -1,3-Glucan. Keystone Symposia: Lipid second Messengers Journal of Cellular Biochemistry, January, 1994. Taos, NM.

Mass Determinations of the Fatty Acids released from Macrophages Challenged with Condensed Tannin or β -1,3-Glucan. Journal of Leukocyte Biology Supplement December, 1992: Charleston, SC.

Effect of Dietary Copper on Platelet Volume and Cytochrome c Oxidase in Platelets. Experimental Biology Federation Proceedings. April 1989; New Orleans, LA.

Reduced Platelet Size in Zinc Deficiency: Implications in Assays of Conditions Associated with Zinc Deficiency. Experimental Biology Federation Proceedings. April 1988; Las Vegas, NV.

Meeting Coordinator/Chair:

Currently developing the seventh International Symposium on Selenium-Mercury Interactions, potentially in coordination with the International Conference on Selenium in Health and the Environment in Stockholm Sweden, in August 2017.

Leading the preparation of a proposal for an International Toxicology Forum to address the biochemical mechanism of mercury, cadmium, platinum, and other inorganic and organic soft electrophilic agents.

Coordinator/workshop teacher; Mechanisms and Meaning of the Inverse Relationships Between Mercury and Selenium in Freshwater Fish: SETAC; November 6, 2016; Orlando, FL.

Coordinator and chair; Methylmercury's Modes of Action: New Approaches to Understanding an Old Problem. 53rd Annual Meeting of Society of Toxicology. March 24, 2014; Phoenix, AZ.

Coordinator/workshop teacher; Mercury-Selenium Interactions in Ocean and Freshwater Fish: SETAC; November 9, 2014; Vancouver, BC. Canada.

Contributed to developing sessions, identifying and inviting speakers and chaired the research studies sessions at the 2010 Hawaii Seafood Symposium, October 21, 2010; Honolulu, HI.

Chaired the "Seafood Effects in Humans" session at the International Seafood and Health Conference, Nov 9, 2010; Melbourne, Australia.

- Proposed, organized, coordinated and chaired the 4th International Symposium on Selenium-Mercury Interactions. November 11, 2010; Portland, OR.
- Proposed, organized, coordinated and chaired the 3rd International Symposium on Selenium-Mercury Interactions. November 19, 2009; New Orleans, LA.
- Proposed, organized, coordinated, chaired, and guest edited two special issues of Environmental Bioindicators that included articles by speakers at the 2nd International Symposium on Selenium-Mercury Interactions Meeting. November 11-14, 2008; Orlando, FL.
- Organized selection and invitations of speakers and preparation of a special issue in Biological Trace Element Research that included articles by speakers at the First International Symposium on Selenium-Mercury Interactions Meeting. February 22-24, 2007; La Jolla, CA.
- Coordinated and chaired the Physiological and Environmental Implications of Hg-Se Interactions Session. 8th International Conference on Mercury as a Global Pollutant. August 10, 2006; Madison, WI.
- Coordinated and chaired the Environmental Mercury Experts Research Forum. Energy & Environmental Research Center, University of North Dakota. November 16, 2004; Grand Forks, ND.