

MARY SOHN

Department of Chemistry
Florida Institute of Technology
150 West University Boulevard, Melbourne, FL 32901
(321) 674-7379

EDUCATION

Ph.D. in Analytical Chemistry awarded October, 1979, Lehigh University

M.S. in Analytical Chemistry awarded May, 1978, Lehigh University

B.A. in Chemistry awarded September, 1973, Queens College, CUNY

PRESENT POSITION

Professor of Chemistry

Department of Chemistry, Florida Institute of Technology

TEACHING EXPERIENCE

1993 – current Professor of Chemistry at Florida Institute of Technology.

Courses currently teaching include:

analytical chemistry, freshman chemistry and environmental chemistry.

CURRENT RESEARCH

Presently conducting research on the nature of estuarine, marine, and soil sedimentary humus, adsorption of metals and selenium onto model and natural sedimentary phases, metal complexation by humic acids, NMR and GC/MS analysis of soil and sedimentary organic matter, trace metal and selenium analysis of sediments.

SELECTED PUBLICATIONS AND PRESENTATIONS:

- "The Nature and Metal Ion Complex Formation Constants of Fresh Water and Estuarine Sedimentary Humic Acids", Mary L. Sohn, Ph.D. Dissertation, Lehigh University, Bethlehem, Pa., 1979.
- "The Complexation of Mercuric and Phenylmercuric Ions by Sedimentary Humic Acids," Mary Sohn, National ACS Meeting, August 1981.
- "Metal Ion Complex Formation Constants of Some Sedimentary Humic Acids with Zn(II), Cu(II) and Cd(II)", Mary L. Sohn and Michael C. Hughes, *Geochim. Cosmochim. Acta*, (1981) Vol. 45. pp. 2393-2399.
- "The Adsorption of Organomercury Compounds from Seawater onto Sedimentary Phases", C. Dalland, E. Schumacher, M. L. Sohn, in *Organic Marine Geochemistry*, M.L. Sohn, Ed., ACS Symposium Series Volume, #305, (1986) pp 360-381.
- "Determination of Cu, Cr and Zn in the Sediments of Canals Receiving Electronic Component Industry Effluent" Lisa Hooper and Mary L. Sohn, Florida Academy of Sciences Meeting, April 9, 1986.
- "¹³C NMR Spectra and Cu (II) Formation Constants for Humic Acids from Fluvial, Estuarine and Marine Sediments" Mary Sohn and Dennis Weese. *Marine Chemistry* (1986), 20 (1), pp 61-72.
- *Marine Chemistry*. Vol. 20, No. 1 (Oct., 1986) Guest editors: Mary Sohn and John Trefry. Special edition of journal based on ACS Symposium organized by M.L. Sohn.

- "The Adsorption of Cd(II) from Seawater by Humic Acids of Various Sources of Origin," Mary Sohn and Scott Rajski, *Organic Geochemistry*, (1990), 15 (4), pp. 439-447.
- *Marine Chemistry*, F. Millero and M. Sohn, (textbook) CRC press, (1992), Boca Raton, FL, 531 pp.
- "Functional Group Content of Humic Acids Related to Conditional Zn²⁺ and Cd²⁺ Formation Constants," D.F. Cameron and M.L. Sohn, *Sci. Tot. Environm.*, (1992), 113, pp. 121-132.
- "Determining Sources of Organic Matter of Florida Primary Water Bodies," Mary Sohn and Neal Julien, National ACS Meeting, March, (1993).
- "Sediment Mapping and Analysis in Crystal River/Kings Bay and Lake Panasoffkee," (Final Report submitted to the Southwest Florida Water Management District) T. Belanger, H. Heck, M. Sohn and P. R. Sweets (1993).
- "Organic Matter Inputs to Lake Panasoffkee and Crystal River/Kings Bay, Florida," M. Sohn and N. Julien, Florida ACS Meeting, May (1993).
- "The Use of Selected Sediment Analyses to Answer Lake Management Questions: A Case Study for Lake Panasoffkee, Florida", T.V. Belanger, M. Sohn, H. H. Heck, P.R. Sweets, H.A. Harris, N. Julien, *Chem. & Ecol.* (1995) 11 (3)pp. 229-254.
- "In vivo ³¹P NMR Spectroscopic Analysis of the Response of Fish to Environmental Stress", A.B. Brown, M.L. Sohn, P.A. Cardullo, D.E. Wagner, and J.M. Shenker, 1997 Annual Meeting of the Florida Sections, ACS (Orlando, FL, May (1997).

Proposed CUAP Research Area: *Development of a Sampling and Analysis Program to Monitor Toxic Metals in Tisza and Danube River Sediments.* Short and long term effects of the recent mine accident which contaminated the Danube River may be dramatic and may negatively impact the economic development of the region. The nature and distribution of toxic metals that were introduced to the sediments by this event must be investigated before meaningful remediation can be implemented. This tragic accident also provides a unique opportunity for Hungarian students to sample and analyze contaminated sediments and to develop a long-term database on the status of the riverine sediments as part of an undergraduate curriculum. First year activities would include American-Hungarian collaboration on an evaluation of existing resources and the development of proposals to supplement those resources as well as curriculum development. The goal is to set up a sediment sampling and analysis program that would be incorporated into an undergraduate curriculum that stresses environmental awareness and evaluation.

First-year costs for this project (\$2000) would cover travel to BUTE and subsistence for Dr. Mary Sohn, an environmental geochemist specializing in sediment analysis, to facilitate program and curriculum planning. First year activities would also include the development of joint Florida Tech./BUTE proposals to implement the program. Subsequent year funding needs will be determined after the initial activity has been completed.