

BIOGRAPHICAL SKETCH

Give the following information for the key personnel and consultants and collaborators. Begin with the principal investigator/program director. Photocopy this page for each person.

name	position title
Mari S. Golub	Adjunct Professor

EDUCATION (*Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.*)

INSTITUTION AND LOCATION	DEGREE	YEAR	FIELD OF STUDY
		CONFERRED	
Loyola University, Chicago	B.S.	1965	Psychology
University of Michigan, Ann Arbor	Ph.D.	1970	Psychopharmacology
University of California, Davis	Postdoc	1980	Perinatal Biology
University of California, Davis	M.S.	1984	Toxicology

RESEARCH AND/OR PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. DO NOT EXCEED TWO PAGES.

A. Research/Professional Experience

1970 Visiting Assistant Professor, University of Waterloo, Ontario.
 1971-1974 Research Associate, Dept. Psychiatry, Boston University School of Medicine.
 1974-1977 Lecturer, Sacramento City College and University of California, Davis.
 1976-1983 Assistant Research Behavioral Biologist, Dept. of Psychiatry, and California Regional Primate Research Center, Dept. of Internal Medicine, University of California, Davis.
 1983-1989 Associate Research Behavioral Biologist, Dept. of Internal Medicine and California Regional Primate Research Center, University of California, Davis.
 1989-1992 Associate Adjunct Professor, Dept. of Internal Medicine, University of California, Davis.
 1992-present Adjunct Professor, Dept. of Internal Medicine, University of California, Davis.
 1985-present Staff Toxicologist, Dept. of Health Services & Cal/EPA, State of California.
 1990-1994 Member, Toxicology Study Section, NIH.
 Certified, American Board of Toxicology, 1985.

Awards: March of Dimes, State of Illinois and Loyola University undergraduate scholarships; NIH (NIMH) predoctoral fellowship; NIH (NRSA) postdoctoral fellowship.

B. Publications (Recent)

Golub, M.S., M.E. Gershwin, C.L. Keen. Behavioral and hematological consequences of marginal iron-zinc nutrition in adolescent monkeys and the effect of a powdered beef supplement. *American Journal of Clinical Nutrition*, 70(6):1059-68, 1999.
Golub, M.S., C.L. Keen, J. Commisso, C.B. Salocks and T.R. Hathaway. Arsenic tissue concentration of immature mice after oral exposure to gold mine tailings. *Environmental Geochemistry and Health*, 21:199-209, 1999.
 Kwik-Urbe, C.L., M.S. Golub, C.L. Keen. Behavioral consequences of marginal iron deficiency during development in a murine model. *Neurobehavioral Toxicology and Teratology*, 21:661-672, 1999.
Golub, M.S., and C.L. Keen. Effects of dietary aluminum on pubertal and young adult mice. *Neurobehavioral Toxicology and Teratology*, 21(5):595-602, 1999.
Golub, M.S., B. Han and C.L. Keen. Aluminum uptake and effects on transferrin mediated iron uptake in primary cultures of rat neurons, astrocytes and oligodendrocytes. *Neurotoxicology*, 20:961-970, 1999.
Golub, M.S., and R.P. Tarara. Morphometric studies of myelination in the spinal cord of mice exposed developmentally to aluminum. *Neurotoxicology*, 20:953-960, 1999.
Golub, M.S. Adolescent health and the environment. *Environmental Health Perspectives*, 108:355-362, 2000.

- Golub, M.S., C.L. Keen and M.E. Gershwin. Moderate zinc-iron deprivation influences behavior but not growth in adolescent rhesus monkeys. *Journal of Nutrition*, 130:354S-357S, 2000.
- Golub, M.S., S.L. Germann, and C.L. Keen. Lifelong feeding of a high aluminum diet to mice. *Toxicology*, 150:107-117, 2000.
- Kwik-Uribe, C.L., M.S. Golub, and C.L. Keen. Chronic marginal iron intakes during early development in mice alter brain iron concentrations and behavior despite postnatal iron supplementation. *Journal of Nutrition*, 130(8):2040-2048, 2000.
- Kwik-Uribe, C.L., D. Gietzen, J.B. German, M.S. Golub, and C.L. Keen. Chronic marginal iron intakes during early development in mice result in persistent changes in dopamine metabolism and myelin composition. *Journal of Nutrition*, 130(11):2821-2830, 2000.
- Golub, M.S. and S.L. Germann. Long-term consequences of developmental exposure to aluminum in a suboptimal diet for growth and behavior of Swiss Webster mice. *Neurotoxicology and Teratology*, 23:365-372, 2001.
- Golub, Mari S. Cognitive testing (delayed non-match to sample) during oral treatment of female adolescent monkeys with the estrogenic pesticide methoxychlor. *Neurotoxicology and Teratology*, 24:87-92, 2002.
- Golub, M.S., W. Zhang, C.L. Keen, and T. Goldkorn. Cellular actions of Al at low (1.25 μ M) concentrations in primary oligodendrocyte culture. *Brain Research*, 941:82-90, 2002.
- Golub, M.S., C.E. Hogrefe, S.L. Germann, B.L. Lasley, K. Natarajan, and A.F. Tarantal. Effects of exogenous estrogenic agents on pubertal growth and reproductive system maturation in female rhesus monkeys. *Toxicological Sciences*, 74:103-113, 2002.
- Golub, M.S., S.L. Germann, and C.L. Keen. Developmental aluminum toxicity in mice can be modulated by low concentrations of minerals (Fe, Zn, P, Ca, Mg) in the diet. *Biological Trace Element Research*, 93:213-225, 2003.
- (Selected)**
- Golub, M.S., B. Han and C.L. Keen. Iron and manganese uptake by offspring of lactating mice fed a high aluminum diet. *Toxicology*, 109:111-118, 1996.
- Golub, M.S., B. Han, and C.L. Keen. Aluminum alters iron and manganese uptake and regulation of surface transferrin receptors in primary rat oligodendrocyte cultures. *Brain Research*, 719:72-77, 1996.
- Golub, M.S., B. Han and C.L. Keen. Developmental patterns of aluminum and five essential mineral elements in the central nervous system of the fetal and infant guinea pig. *Biological Trace Element Research*, 55:241-251, 1996.
- Verstraeten, S.V., M.S. Golub, C.L. Keen and P.I. Oteiza. Myelin is a preferential target of aluminum-mediated oxidative damage. *Archives of Biochemistry and Biophysics*, 344(2):289-294, 1997.
- Yokel, R.E. and M.S. Golub (eds). Research Issues in Aluminum Toxicity. Taylor & Francis, Washington, D.C., 256 pp, 1997.
- Golub, M.S. and S.L. Germann. Aluminum effects on operant performance and food motivation of mice. *Neurotoxicology and Teratology*, 20:421-427, 1998.
- Golub, M.S., M. Macintosh, and N. Baumrind. Arsenic developmental toxicity: animal studies and human concerns. *Journal of Toxicology and Environmental Health*, 1:199-237, 1998.
- Verstraeten, S.V., C.L. Keen, M.S. Golub and P.I. Oteiza. Membrane composition can influence the rate of Al³⁺-mediated lipid oxidation. Effect of galactolipids. *Biochemical Journal*, 333:833-838, 1998.
- Golub, M.S. and J.L. Domingo. Fetal aluminum accumulation [letter]. *Teratology*, 58:225-226, 1998.
- Golub M.S., M. A. Kaaekuahiwi, P.H. Eisele, H. Zhang, A.D.Jones, and J.H. Eisele Jr. Newborn tissue concentrations of bupivacaine following maternal epidural administration during labor in guinea pigs. *Biology of the Neonate*, 74:304-313, 1998.
- Golub, M.S. Cigarette smoking, substance abuse, nutritional status and immune function. Chapter prepared for Nutrition and Immunology: Principles and Practice. M. E. Gershwin, B. German, C.L. Keen (eds), Humana Press, pp. 275-280, 1999.

C. RESEARCH SUPPORT:**Ongoing Support:**

"Estrogen in a transgenic model for Alzheimer's disease". Agency: UC Davis Health System. Period: 2003-2005. The long-term goal is to establish a mouse model for evaluating estrogen therapies of menopausal women that will reduce the risk of Alzheimer's disease. The immediate goal is to determine the feasibility of combining several already established techniques to produce the animal model. Principal Investigator prepared grant proposal, designed studies. This project was initiated on 8/01/03.

"Brain and Behavior in Early Iron Deficiency". Agency: NIH:NICHHD. Period: 2001-2006. HD39386. Iron deficiency in nonhuman primates as a model for the public health problem of developmental iron deficiency anemia (IDA) and infant cognitive disorders. Principal Investigator prepared grant proposal, designed studies. This project was initiated on 4/01/01.

Recent/Completed Support:

"Endocrine disruption in adolescence". Agency: U.S. EPA. Period: 1999-2003.

Study seeks to determine whether low levels of estrogenic chemicals can disrupt adolescent maturation of rhesus monkeys. Principal Investigator prepared grant proposal, designed studies. This project was initiated in 9/1/1999.

"A Mouse Model for Chronic Oral Aluminum Toxicity". Agency: NIH. Period 1987-2000. Investigated chronic oral aluminum toxicity in mice. Principle Investigator prepared grant proposal, designed studies.