

CURRICULUM VITAE
NATALIE C.G. FREEMAN

PRESENT TITLE: Associate Professor
Interim Director, Environmental Health Program
College of Public Health and Health Professions,
University of Florida, Gainesville, Florida

MAILING ADDRESS: Center for Environmental and Human Toxicology,
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University of Florida, Gainesville, Florida, 32611

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PRIMARY EMAIL ADDRESS: nfreeman@phhp.ufl.edu
SECONDARY EMAIL ADDRESS: nfreeman@ufl.edu

EDUCATION

B.A. 1967 University College, Rutgers University, New Brunswick, NJ
Area of concentration: Psychology.
Ph.D. 1976 Institute of Animal Behavior, Rutgers University, Newark, N.J.
Area of concentration: Developmental psychobiology - sensory physiology and behavior.
Dissertation: The Use of Thermal and Olfactory Cues by New Born Kittens.
M.P.H. 1990 Graduate Program in Public Health, Robert Wood Johnson Medical School, Piscataway, N.J.
Area of concentration: Epidemiology and quantitative methods.

PROFESSIONAL EXPERIENCE

2007 - present Interim Director, Environmental Health Program, College of Public Health and Health Professions
2007 - present Affiliate Associate Professor - College of Veterinary Medicine, University of Florida, Gainesville, FL
2004 - present Associate Professor - College of Public Health and Health Professions, University of Florida, Gainesville, FL.
2004 - 2007 Associate Professor - College of Veterinary Medicine, University of Florida, Gainesville, FL
2004 - present Member, Center for Environmental and Human Toxicology, University of Florida, Gainesville, FL
2001 - present Environmental Health Consultant
2001 - 2004 Adjunct Associate Professor - Environmental and Occupational Health Division, UMDNJ-School of Public Health, Piscataway, N.J.
2000 - 2003 Adjunct Associate Professor - Exposure Measurement and Assessment Division, Dept. of Environmental and Community Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, N.J.
1995 - 2004 Associate member, Rutgers University Graduate faculty, Department of Environmental Sciences, New Brunswick, N.J.
1994 -2000 Adjunct Assistant Professor - Exposure Measurement and Assessment Division, Dept. of Environmental and Community Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, N.J.
1993 - 2004 Associate member, Environmental and Occupational Health Sciences Institute, Piscataway, N.J.
1992 - 1994 Adjunct Instructor - Exposure Measurement and Assessment Division, Dept. of Environmental and Community Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, N.J.
1990 - 1992 Post doctoral fellow - Environmental and Occupational Health Sciences Institute, Exposure Measurement and Assessment Division, Dept. of Environmental and Community Medicine, UMDNJ-Robert Wood Johnson Medical School, Piscataway, N.J.

- 1977 - 1980 Post doctoral research specialist in neurobiology - Dept. of Anatomy, UMDNJ-Rutgers Medical School, Piscataway, N.J.
 1976 - 1977 Visiting lecturer - Dept. of Psychology, Rutgers University, Camden, N.J.
 1975 - 1976 Instructor - Dept. of Psychology, Rutgers University, Camden, N.J.

PROFESSIONAL SOCIETY AND JOURNAL ACTIVITIES

- Member: International Society of Exposure Analysis (ISEA)
- Member: Organizing Committee 1997 Annual Conference
- Member: Scientific Program Committee 2005 Annual Conference
- Secretary: 2007-2009
- Member: Scientific Program Committee 2008 Joint ISEA/ISEE Conference
- Member: International Society of Environmental Epidemiology (ISEE)
- Member: Program Committee 2004 Annual Conference
- Member: American Public Health Association
- Member: Florida Public Health Association
- Member: Florida Environmental Health Association

- Editorial Board member, Journal of Exposure Science and Environmental Epidemiology 2007-
- Associate Editor: Journal of Exposure Science and Environmental Epidemiology 2005-2007
- Reviewer: American Journal of Public Health
- Reviewer: Archives of Disease in Children
- Reviewer: Environmental Health
- Reviewer: Environmental Health Perspectives
- Reviewer: Environmental Science and Technology
- Reviewer: European Journal of Pediatrics
- Reviewer: Journal of Air and Waste Management Association
- Reviewer: Journal of Exposure Analysis and Environmental Epidemiology
- Reviewer: Journal of Pediatric Psychology
- Reviewer: Pediatrics
- Reviewer: Journal of Toxicology and Environmental Health
- Reviewer: Soil and Sediment Contamination

HONORS AND AWARDS

- Rutgers University Graduate Scholars Award, 1986-1987
- PHS traineeship in psychobiology, 1970-1973
- Vassar Club of Central New Jersey scholarship, 1959-1960

UNIVERSITY OF FLORIDA ACTIVITIES

- 2008 – present PPHP Dean’s Executive Leadership Group
- 2007 – 2008 Water Institute Symposium Planning Committee
- 2007 - present Institute of Child Health Policy Steering Committee
- 2007 - 2008 Epidemiology Search Committee, College of Public Health and Health Professions
- 2007 - present Environmental Health Search Committee, College of Public Health and Health Professions
- 2005 - present Coordinator, Environmental Health Program, College of Public Health & Health Professions
- 2005 - 2007 College of Public Health and Health Professions Curriculum Committee
- 2005 - present Public Health Program Operational Committee
- 2004 - present Public Health Program Executive Committee

PROFESSIONAL ACTIVITIES

- 2008 Member, Pediatric Environmental Health Service Units Workgroup (PEHSU): Evaluation of the ATSDR/ US EPA PEHSU activities

2007 Member, Children's Environmental Health Research Centers Workgroup: Review of the Research Translation of the US EPA/ NIEHS Centers for Children's Environmental Health and Disease Prevention Research

2006 US EPA expert panel member, State-of-the-Science Approaches for Observational Exposure Studies, Durham, North Carolina, November 28-29, 2006

2006 Ad hoc member, US EPA FIFRA Science Advisory Panel on effect of surface treatments of CCA treated wood. Arlington, Va November 13-16, 2006

2006 Invited presentation, National Academy of Sciences Institute of Medicine, Washington, DC, The human aspects of exposure: Culture, lifestyle and behavior, September 14, 2006

2006 NIEHS Review Committee for the Centers for Children's Environmental Health and Disease Prevention Research, San Diego, CA, March 9-11.

2006 Invited address, Fourth International Symposium on Children's Environmental Health, Tokyo, Japan, Children's exposure to pesticides, February 24, 2006.

2006 Invited address, National Institute for Environmental Studies, Tokyo, Japan, Research methods for assessing children's health risks from chemicals in the environment, MNCPEs case study, February 23, 2006

2006 American Association for the Advancement of Sciences Invited Panel on Exposure Science, February 18, 2006, St. Louis, Mo.

2005 US EPA Workshop on the Analysis of Children's Measurements Data, September, 2005

2005 US EPA Colloquium on Soil/ Dust Ingestion Rates and Mouthing Behavior for Children and Adults, invited presentation on activity patterns of children, May, 2005

2005 US EPA Workshop on Future Directions for American's Children and the Environment, March 23-24, 2005, Washington, DC

2005 Short-list, US EPA joint Science Advisory Board/Science Advisory Panel/Children's Health Protection Advisory Committee Review Panel on the Jacksonville CHEERS project, February - April, 2005

2005 US EPA Workshop for Tracking Children's Health, March 2004

2005 Ad hoc member, US EPA FIFRA Science Advisory Panel on cumulative exposure assessment for N-methyl Carbamate, February, 2005

2004 Member, National Children's Study Time-Use Data Workshop, December, 2004

2004 Ad hoc member, US EPA FIFRA Science Advisory Panel on N-methyl Carbamate Cumulative Risk Assessment: Strategies and Methodologies for Exposure Assessment, December, 2004

2004 Ad hoc member, US EPA FIFRA Science Advisory Panel on model comparison of dietary and aggregate exposure, April 2004

2004 Member, US EPA Dietary Workshop, April 2004

2004 – present Member, US EPA Children's Health Protection Advisory Committee

2004 – 2006 Co-Chair, US EPA Children's Health Protection Advisory Committee Science Policy Work Group

2003 Ad hoc member, US EPA FIFRA Science Advisory Panel on model evaluation of children's exposure to metals from CCA treated wood, December 2003

2002 – 2004 Member, US EPA Children's Health Protection Advisory Committee Science and Research Work Group

2002 Ad hoc member, US EPA FIFRA Science Advisory Panel on children's exposure to metals from CCA treated wood, August 2002

2002 Ad hoc member, US EPA FIFRA Science Advisory Panel, model presentation, April 2002

2002 Ad hoc member, US EPA FIFRA Science Advisory Panel, Case Study 2 on Cumulative Risk, February 2002

2001 Co-chair, US EPA NERL workshop on micro and macro activities, May 2001

2001 Ad Hoc member, US EPA FIFRA Science Advisory Panel, Case Study 1 on Cumulative Risk, March 2001

2001 Member, Workshop on Children's Exposure to Pesticides, Berlin, Germany, September 2001

2001-2004 Advisor to the Trenton Department of Health Childhood Asthma Project, Trenton, N.J.

2001-2004 Member of the Pediatric Asthma Coalition of New Jersey

2000-2002 Member of the American School Health Association Asthma Advisory Committee
2000 Member, ATSDR Panel Soil Pica Workshop, Atlanta, June 2000
2000-2002 Member, US EPA Children's Health Protection Advisory Committee: Science and Research Work Group
1999 SGOMSEC14: Methodologies of Assessing Exposure to Combustion Products: Particles and Their Semi-Volatile Constituents. Utility for Pacific Rim Countries. East/West Center, Hawaii, November 1999
1999 Presenter, NIEHS workshop: The Role of Human Exposure on the Prevention of Environmental Disease, September 1999
1999 Ad Hoc member, US EPA FIFRA Science Advisory Panel on the development of exposure factors for evaluating residential exposure to pesticides, September 1999
1999 Ad Hoc member, US EPA FIFRA Science Advisory Panel on exposure factors for use in support of Food Quality Protection Act, July 1999
1999 Ad Hoc member, US EPA FIFRA Science Advisory Panel on use of the Food Quality Protection Act 10x safety factor, May 1999
1999 Ad Hoc member, US EPA FIFRA Science Advisory Panel on the Development of Aggregate Exposure and Risk Assessment Guidance, February 1999
1999-2000 Advisory Panel member, US EPA Children's Total Exposure to Persistent Pesticides and Persistent Organic Pollutants (CTEPP)
1999-2001 Advisor, NIAAA Alcohol Curriculum Development Project, Resource Center, EOHSI
1999-2004 Member, Isles Environmental Health Advisory Committee, Trenton, N.J.
1998 Scientific Advisor, Needs Assessment for Alcohol Education, Public Education, and Risk Communication Division, Resource Center, EOHSI
1998 Ad Hoc member, US EPA FIFRA Science Advisory Panel on Post-application Pesticide Exposure, March 1998
1997-2001 Advisor, Passaic Asthma Reduction Effort, Passaic, N.J.
1997 Chair, Sections on Age-specific Exposure Issues, 7th Annual meeting of the International Society of Exposure Analysis, November 1997, Research Triangle Park, NC.
1994-1995 Advisor, World Health Organization (WHO) Indoor Exposure Project, December 1994 - September 1995, Bilthoven, the Netherlands.
1993-1994 Validation of Questionnaire/Activity Data Expert Panel, Las Vegas, NV.
1993 NHEXAS Survey Development Expert Panel, April-September, 1993, Las Vegas.
1992 Chair, Section on Activity Patterns, US EPA Workshop on Pesticide Exposure, December 1992, Washington, D.C.
1992-2004 Advisor, ToxRap Environmental Education and Curriculum Development Project, Resource Center, EOHSI

SPONSORSHIP OF CANDIDATES FOR POST GRADUATE DEGREES

Shahnaz A. Vayghani, M.S., Environmental Science, Rutgers University, 1998
Karyn Reed, M.S., Ph.D., Environmental Science, Rutgers University, 1998
Somia Gurunathan, Ph.D., Environmental Science, Rutgers University, 1998
Rufus Edwards, Ph.D. Environmental Science, Rutgers University, 1999
Richard Opieken, Ph.D. Environmental Science, Rutgers University, 1999
Linda Bonnanno, Ph.D. Environmental Science, Rutgers University, 2000
Vito Ilacqua, Ph.D. Environmental Science, Rutgers University, 2002
Paromita Hore, Ph.D. School of Public Health, UMDNJ, 2003
Chang Ho Yu, Ph.D. Environmental Science, Rutgers University, 2005
Meghan Schuck, MPH College of Public Health and Health Professions, University of Florida, 2006
Zoe Finch, MPH College of Public Health and Health Professions, University of Florida, 2006
Adam Merry, MPH College of Public Health and Health Professions, University of Florida, 2007
David Lazar, MPH College of Public Health and Health Professions, University of Florida, 2007
Jennifer Rodriguez, MPH College of Public Health and Health Professions, University of Florida, 2007
Michaela Speirs, MPH College of Public Health and Health Professions, University of Florida, 2007
Jason Timm, MPH College of Public Health and Health Professions, University of Florida, 2007

Christa Voepel, MPH College of Public Health and Health Professions, University of Florida, 2008
Anaya Mitra, MPH College of Public Health and Health Professions, University of Florida, 2008
Lindsay Mundy MPH College of Public Health and Health Professions, University of Florida, 2008
Colleen O'Fallon MPH College of Public Health and Health Professions, University of Florida, 2008
Kathy Boles MPH College of Public Health and Health Professions, University of Florida, 2008

TEACHING EXPERIENCE

1. PHC 6702 Exposure Measurement and Assessment, (instructor) College of Public Health and Health Professions, University of Florida, Summer B 2007
2. PHC 6927 Community Relations for Risk Assessors (aka Risk Communication) (instructor) College of Public Health and Health Professions, University of Florida, , Summer B 2007
3. SOS 6932 Soils, Water and Public Health, IFAS, University of Florida, Spring 2007, Spring 2008 (co-instructor)
4. VME 6603 Advanced Toxicology, College of Veterinary Medicine, University of Florida, Spring 2006 (guest lecturer), Spring 2008 (guest lecturer)
5. VME 6607 Human Health Risk Assessment, College of Veterinary Medicine, University of Florida, Fall 2005, Fall 2006, (co-instructor) Fall 2007 (lead-instructor)
6. PHC 6313 Environmental Health Concepts, College of Public Health and Health Professions, University of Florida, , Spring 2005, Spring 2006, Fall 2006 (web-based), (instructor), Spring 2007, Spring 2008, Summer 2008 (web-based)
7. ENOH 0699 Lecturer on Airborne Biologics in Advanced Industrial Hygiene course, MPH/Environmental Science program, SPH-UMDNJ/Rutgers University, New Brunswick, NJ
8. ENOH 0695 Lecturer on Time Activity Patterns in Exposure Assessment course, MPH/Environmental Science program, SPH-UMDNJ/Rutgers University, New Brunswick, NJ
9. ENOH 0695 Lecturer on Exposure Study Designs in Exposure Assessment course, MPH/Environmental Science program, SPH-UMDNJ/Rutgers University, New Brunswick, NJ
10. ENOH 0695 Lecturer on Survey Design in Exposure Assessment course, MPH/Environmental Science program, SPH-UMDNJ/Rutgers University, New Brunswick, NJ
11. 11:375:421 Lecturer on Welfare Effects of Air Pollutants in undergraduate course in Air Pollution, Cook College, Rutgers University, New Brunswick, NJ
12. 50: 830:101 Introductory Psychology, (instructor) Psychology Department, Rutgers University, Camden, NJ
13. 50: 830:215 Introductory Statistics, (instructor) Psychology Department, Rutgers University, Camden, NJ
14. 50: 830:325 Child Development, (instructor) Psychology Department, Rutgers University, Camden, NJ

GRANT HISTORY

1. Consultant, Evaluation of Community Duplicate Diet Methodology. RTI/Battelle contract from US EPA (Larry Michael, PI (RTI) 5/08-4/09.
2. Consultant, Environmental Sensors for Personal Exposure Assessment: Developing a personal aerosol sensor platform to link children's exposure to asthma severity. NIEHS, Charles Rodes, RTI, PI 3/08-2/10.
3. Consultant, Modeling children's dietary exposure to pesticides, RTI/Battelle contract from US EPA, Larry Michael, PI (RTI) 1/06-7/06.
4. Co-PI, SNRE pilot project grant, Asset Mapping and Environmental Health Needs Assessment in Lake Apopka Communities, Joan Flocks, PI, 9/2005-6/2006.
5. Co-I, US EPA contract: Exploring children's excess dietary exposure to pesticides, Stephanie Buehler, PI (Battelle), subcontracted through RTI International, 9/04-5/05.
6. Advisor, US EPA STAR grant: Aggregate Exposure Assessment: Longitudinal Surveys of Human Exposure-Related Behaviors, Roy Whitmore, PI (RTI), 5/04-4/08.
7. Consultant, American Chemistry Council/EPA: Understanding exposure to volatile organic air toxics, Panos Georgopoulos, PI (EOHSI), 1/04-12/06.
8. Co-I, NIEHS and EPA: Center for Childhood Neurotoxicology and Assessment, George Lambert, PI (EOHSI), 7/01-6/06.
9. Co-I, NCI: Exposure Methods Development, Paul Liroy, PI (EOHSI), 11/01-10/04.

10. Consultant, NIEHS education grant: SUC2ES2, Audrey Gotsch, PI (EOHHSI-SPH), 9/00-8/06.
11. PI, NIEHS exploratory grant: Dust reduction video development and assessment, 6/00-3/01.
12. PI, US EPA contract: Children's post-application pesticide pilot study, 11/99-10/00.
13. Co-I, US EPA STAR Grant: Ingestion of pesticides in children in an agricultural community on the US/Mexican border, Stuart Shalat, PI (EOHHSI), 10/1999-9/2002.
14. Co-I, US EPA STAR Grant: Vulnerability of children to organophosphorous pesticides in Yuma County, Arizona, Mary Kay O'Rourke, PI (U. Arizona), 10/1999-9/2002.
15. Co-I, US EPA: The Mentor Exposure Modeling Project, Panos Georgopoulos, PI (EOHHSI), 1999-2001.
16. Co-PI, DowAgro: Children's Pesticide Exposure Pilot Study, Paul Liroy, PI (EOHHSI), 7/1998-6/2000.
17. Co-I, NJDOHSS: Toms River Exposure Study, Paul Liroy, PI (EOHHSI), 5/1998-4/2000.
18. APHA: contract for book co-authored with Dona Schneider on reducing children's exposure to environmental contaminants, 1998.
19. Advisor, Robert Wood Johnson Foundation: Passaic Asthma Reduction Effort (PARE) Ellen Ziff, PI (Passaic Beth Israel Hospital), 7/1997-2001.
20. PI, US EPA: Role of activity patterns on children's exposure to environmental pollutants, 10/1997-3/1998.
21. US EPA: Graduate level training in exposure research, Clifford Weisel, PI (EOHHSI), 5/1996-1/1998.
22. PI, NJDEP: Evaluation of the influence of site remediation on residential exposure to pollutants from hazardous waste sites, 7/1996-4/1998.
23. Co-I, US EPA: Lead contamination of food in homes with lead burdened children, Linda Sheldon, PI (RTI), 9/1996-8/1997.
24. Co-I, US EPA cooperative agreement project: NHEXAS pilot study, Edo Pellizzari, PI (RTI), 10/1993-9/1998.
25. US VA: Evaluation of Persian Gulf Syndrome, Howard Kipen (EOHHSI) and B. Natanson (U.S.V.A.), Co-PI, 1994-1996.
26. Co-PI, NJ DEPE: Sources of chromium exposure in Jersey City, Paul Liroy, PI (EOHHSI), 1992-1994.
27. PI, US EPA: cooperative agreement project: Development of a questionnaire to assess dietary contributions to lead exposure in children participating in the Child Lead Exposure Assessment and Reduction Study (CLEARs), 1992-1993.

GRANTS pending

28. FLDEP Risk Communication Plan for ERNL program, Co-I, Steve Roberts, PI
29. NICHD Florida National Children's Study, Co-I, Steve Lipschultz, (U Miami), PI

COMMUNITY SERVICE

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| 2008 | Presentation on the National Children's Study to the Baker County Board of Commissioners, 4/1/08. |
| 2008 | Presentation on the National Children's Study to the Baker County School District administration, Baker County, Florida, 3/11/08. |
| 2008 | Presentation on the National Children's Study to the Baker County Department of Health, Baker County, Florida, 2/15/08. |
| 2007 | Presentation of the results of the Lake Apopka Community Assessment at the John Bridges Community Center, Apopka, Fl 5/10/07 |
| 2007 | Outreach at Levy County Health Fair, Bronson, Fl, 3/24/07 |
| 2006 | Presentation on Lake Apopka study at the John Bridges Community Center, Apopka, Fl 2/09/06 |
| 2006 | Presentation on Lake Apopka study at the Zellwood RCMA Center, Zellwood, Fl, 2/09/06 |
| 2005 | Joint WellFlorida Council and Women for Wise Growth meeting on Community Health: Importance of Air and Water Pollution. Invited presentation on environmental contributions to asthma Gainesville, Fl., October 27, 2005 |
| 2005 | Advisor, Alachua County Radon Task Group, Gainesville, Fl. |
| 2005 | Presentation on air quality and health to Gainesville City Commission, January 31, 2005 |
| 2004 | Member, Montgomery Township Planning Board Bikeway and Sidewalk Subcommittee, Montgomery Township, NJ |
| 2002-2004 | Member, Montgomery Township Zoning Board of Adjustment, Montgomery Township, NJ |

2001-2004 Member, Montgomery Township Ad Hoc Committee on the Environmental Status of the North Princeton Developmental Center (NPDC), Montgomery Township, NJ

2001 Presentations to Public Health Nurses of Tennessee and Georgia on prevention of children's exposure to environmental contaminants, Chattanooga, TN and Rome, GA

2001-2004 Advisor to the Trenton Department of Health Childhood Asthma Project, Trenton, NJ

2001-2004 Member of the Pediatric Asthma Coalition of New Jersey

2000-2003 Member of the American School Health Association Asthma Advisory Committee

2000 Democratic Candidate, Montgomery Township Committee, Montgomery Township, NJ

1999-2004 Member, Isles Environmental Health Advisory Committee, Trenton, NJ

1999 Presentation on children's exposure to pesticides to congressional aides, Washington, DC, May 1999

1999 Presentation about the Toms River Exposure Study to Toms River science teachers, Toms River, NJ

1998 PBS interview on children's exposure to pesticides

1998 Presentation on children's exposure to pesticides to congressional aides, Washington, DC, April 1998

1998-2001 Presentations on exposure assessment to secondary school teachers attending ToxRap training sessions, Resource Center, EOHSI

1997-2004 Democratic County Committee Woman, Somerset County, NJ

1997 Presentation on occupations in exposure assessment/public health at the Science Day program, Campbell School, Metuchen, NJ

1997-2001 Advisor, Passaic Asthma Reduction Effort, Passaic, NJ

1997-2001 Presentations on exposure assessment to elementary school teachers attending ToxRap training sessions, Resource Center, EOHSI

1997 Presentation on lead studies and implications to the Jersey City Lead Education Advisory Commission, Jersey City, NJ

1994 - 1996 Member, Citizens for Open Space Preservation, Montgomery Township, NJ

1994 Chair, Clinic on Motivating Underachieving Students, National School Boards Association Annual Meeting, New Orleans, LA

1994 Mentor, Liberty Science Center students

1994 Presentation on occupations in environmental science and public health, Union Catholic High School Career Day Program, Union County, NJ

1994 Presentation on dust borne pollutants and hygiene practices, New Brunswick Public Schools Environmental Science Program, New Brunswick, NJ

1993 Presentation on acid rain, Montgomery Township Schools Environmental Science Program, Montgomery Township, NJ

1993 - 1994 co-founder, Montgomery Township Residential Committee to Oversee Superfund Site Remediation, Montgomery Township, NJ

1993 - 1994 Member, Somerset Country School Boards Association Scholarship Committee

1991 - 1993 Vice President/ program chair, Central Jersey Orchid Society

1990 - 1992 Trustee, Montgomery Township Education Foundation, Montgomery Township, NJ

1989 - 1991 Member, Montgomery Township Open Space Commission, Montgomery Township, NJ

1985 - 1994 Member, Montgomery Township Board of Education, Montgomery Township, NJ

1993 -1994 Vice President

1993 -1994 Chairman - Policy Committee

1992 -1993 Member - CSA Site Review Committee

1992 Chairman - Board Member Appointment Committee

1992 -1994 Member - Affirmative Action Committee

1992 -1994 Member - Policy Committee

1991 -1992 Chairman - Policy Committee

1990 -1994 Member - Contracted Services Committee

1989 -1990	Vice President
1986 -1990	Chairman - Policy Committee
1986	Member - CSA Site Review Committee
1980 - 1990	Democratic County Committee Woman, Somerset County, NJ
1980 - 1982	Rolling Hills Girl Scout Council, Cookie Sale Coordinator, Montgomery Township, NJ
1975 - 1978	Democratic County Committee Woman, Mercer County, NJ

PUBLICATIONS

A. REFEREED ORIGINAL ARTICLES IN JOURNALS:

1. Xue, J, Zartarian, V, Tolve, N, Moya, J, **Freeman, N**, Beamer, P, and AuYeung, W (2008) A meta analysis of children's object-to-mouth frequency data for estimating non-dietary ingestion exposure. submitted *Risk Analysis*.
2. Xue, J., Zartarian, V., Moya, J., **Freeman, N.**, Beamer, P., Black, K., Tolve, N., and Shalat, S. (2007) A meta-analysis of children's hand-to-mouth frequency data for estimating non-dietary ingestion exposure. *Risk Analysis* 27: 411-421.
3. Hore, P., Zartarian, V., Xue, J., Ozkaynak, H., Wang, S-W., Yang, Y., Chu, P., Sheldon, L., Robson, M., Needham, L., Barr, D., **Freeman, N.**, Georgopoulos, P., and Liroy, P.J. (2006) Deterministic application of CPPAES field measurements for testing the performance of a physically based probabilistic population model in estimating children's residential exposure and dose to chlorpyrifos. *Science of the Total Environment*, 366: 525-537.
4. Black, K., Shalat, S.L., **Freeman, N.C.G.**, Jimenez, M., Donnelly, K.C., and Calvin, J.A. (2005) Children's mouthing and food handling behavior in an agricultural community on the U.S.-Mexico border. *Journal of Exposure Analysis and Environmental Epidemiology*. 15: 244-251.
5. Hore, P., Robson, M., **Freeman, N.C.G.**, Zhang, J., Ozkaynak, H., Tolve, N., Sheldon, L., Needham, L., Barr, D. and Liroy, P.J. (2005) Chlorpyrifos accumulation patterns for child accessible surfaces and objects and urinary metabolite excretion by children for two weeks after professional crack and crevice application. *Environmental Health Perspectives*. 113: 211-219.
6. **Freeman, N.C.G.**, Hore, P., Black, K., Jimenez, M., Sheldon, L., Tolve, N., and Liroy, P.J. (2005) Contribution of children's activities to pesticide hand loading following residential pesticide application. *Journal of Exposure Analysis and Environmental Epidemiology* 15: 81-88.
7. Schneider, D., **Freeman, N.C.G.**, and McGarvey, P. (2004) Asthma prevalence among a cohort of mostly Hispanic urban primary school children. *Archives of Environmental Health* 59: 4-13.
8. **Freeman, N.C.G.**, Shalat, S.L., Black, K., Jimenez, M., Donnelly, K.C., Calvin, J.A., and Ramirez, J. (2004) Seasonal pesticide use in a rural community on the U.S.-Mexico border. *Journal of Exposure Analysis and Environmental Epidemiology* 14: 473-478.
9. Carrillo-Zuniga, G., Coutinho, C., Shalat, S.L., **Freeman, N.C.G.**, Black, K., Jimenez, M., Calvin, J., Ramirez, J., Marchenko, Y., Cizmas, L., Donnelly, K.C. (2004) Potential sources of childhood exposure to pesticides in an agricultural community. *Journal of Children's Health* 2: 29-37.
10. Roy, A., Ouyang, M., **Freeman, N.**, Quackenboss, J., Georgopoulos, P.G., and Liroy, P.J. (2003) Environmental, Dietary, Demographic, and Activity Variables Associated with Biomarkers of Exposure for Benzene and Lead. *Journal of Exposure Analysis and Environmental Epidemiology* 13: 417-426.
11. **Freeman, N.C.G.**, Schneider, D., McGarvey, P. (2003) The relationship of health insurance to the diagnosis and management of asthma and respiratory problems in children in a predominantly Hispanic urban community. *American Journal of Public Health* 93: 1316-1319.
12. **Freeman, N.C.G.**, Schneider, D., McGarvey, P. (2003) Household exposure factors, asthma and school absenteeism in a predominantly Hispanic community. *Journal of Exposure Analysis and Environmental Epidemiology* 13: 169-176.
13. Illagua, V., **Freeman, N.C.G.**, Fagliano, J. and Liroy, P.J. (2003) The historical record of air pollution as defined by attic dust. *Atmospheric Environment* 37: 2379-2389.

14. Shalat, S.L., Donnelly, K.C., **Freeman, N.C.G.**, Calvin, J.A., Ramesh, S., Jimenez, M., Black, K., Coutinho, C., Needham, L.L., Barr, D.B., and Ramirez, J. (2003) Non-dietary ingestion of pesticides by children in an agricultural community on the U.S./Mexico border: Preliminary results. *Journal of Exposure Analysis and Environmental Epidemiology* 13:42-50.
15. Chow, J.C., Wilson, W.E., Engelbrecht, J.P., **Freeman, N.C.G.**, Hanninen, O., Hashim, J.H., Jantunen, M., Koistinen, K., Michaud, J-P, Saenz de Tejada, S., Watson, J.G., Wei, F., Yasuno, M., and Zhu, T. (2002) Exposure Measures. *Chemosphere*. 49: 873-901.
16. **Freeman, N.C.G.** and Saenz de Tejada, S. (2002) Methods for collecting time-activity information related to exposure to combustion products. *Chemosphere*. 49: 979-992.
17. Liroy, P.J., **Freeman, N.C.G.**, and Millette, J.R. (2002) Dust: a metric for use in residential and building exposure assessment, and forensic source characterization. *Environmental Health Perspectives* 110: 969-983.
18. **Freeman, N.C.G.**, Schneider, D., and McGarvey, P. (2002) School-based screening for asthma in 3rd grade urban children: the Passaic Asthma Reduction Effort Survey (PARE). *American Journal of Public Health* 92: 45-46.
19. **Freeman, N.C.G.**, Jimenez, M., Reed, K.J., Gurunathan, S., Edwards, R., Roy, A., Adgate, J., Pellizzari, E.D., Quackenboss, J., Sexton, K., and Liroy, P.J. (2001) Quantitative analysis of children's activity patterns of children: The Minnesota Children's Pesticide Exposure Study. *Journal of Exposure Analysis and Environmental Epidemiology* 11: 501-509.
20. **Freeman, N.C.G.**, Sheldon, L., Jimenez, M., Melnyk, L., Pellizzari, E., and Berry, M. (2001) Contribution of children's activities to lead contamination of food. *Journal of Exposure Analysis and Environmental Epidemiology*. 11: 407-413.
21. Bonanno, L., **Freeman, N.C.G.**, Greenberg, M., and Liroy, P.J. (2001) Multivariate analysis of selected metals, particulate, and volatile organic compounds and household characteristics and activities using NHEXAS Midwestern US States Data Base. *Applied Occupational and Environmental Hygiene*. 16: 859-874.
22. Adgate, J.L., Barr, D.B., Clayton, C. A., Eberly, L., **Freeman, N.C.G.**, Liroy, P.J., Needham, L.L., Pellizzari, E.D., Quackenboss, J.J., Roy, A., and Sexton, K. (2001) Measurement of children's exposure to pesticides: analysis of urinary metabolite levels in a probability based sample. *Environmental Health Perspectives* 109: 583-590.
23. Opiekun, R.E., **Freeman, N.C.G.**, Fiedler, N.L., and Liroy, P.J. (2001) An evaluation of vehicle use and maintenance patterns of health individuals and those self-described as sensitive to the fuel additive methyl tertiary-butyl ether. *Journal of Exposure Analysis and Environmental Epidemiology*. 11: 79-85.
24. Schneider, D. and **Freeman, N.C.G.** (2001) Childhood environmental health risks: A state-of-the-art conference. *Archives of Environmental Health*. 56: 103-110.
25. Adgate, J.L., Clayton, C.A., Quackenboss, Thomas, K.W., Whitmore, R.W., Pellizzari, E.D., Liroy, P.J., Shubat, P., Stroebel, C., **Freeman, N.C.G.**, and Sexton, K. (2000) Measurement of multipollutant and multipathway exposures in a probability-based sample of children: practical strategies for effective field studies. *J. Exposure Analysis and Environmental Epidemiology*. 10: 650-661.
26. O'Rourke, M.K., Lizardi, P.S., Rogan, S.P., **Freeman, N.C.**, Aguirre, A., and Saint, C.G. (2000) Pesticide exposure and creatinine variation among young children. *J. Exposure Analysis and Environmental Epidemiology* 10: 672-681.
27. Buckley, B, Ettinger, A., Hore, P., Reed, K., Liroy, P.J., and **Freeman, N.C.G.** (2000) Using observational information to collect quality data from field studies using children as subjects. *J. Exposure Analysis and Environmental Epidemiology*. 10: 695-702.
28. Melnyk, L.J., Berry, M.R., Sheldon, L.S., **Freeman, N.C.G.**, Pellizzari, E.D., and Kinman, R.N. (2000) Dietary exposure of children in lead-laden environments. *J. Exposure Analysis and Environmental Epidemiology*. 10: 723-731.
29. Liroy, PJ, Edwards, R., **Freeman, N.C.G.**, Gurunathan, S., Pellizzari, E., Adgate, J.L., Quackenboss, J., and Sexton, K. (2000) Residential levels of insecticides and a herbicide measured by the EL and LWW sampler and comparisons to hand rinses and urine metabolites. *J. Exposure Analysis and Environmental Epidemiology*. 10: 327-340.

30. **Freeman, N.C.G.**, Stern, A.H., and Lioy, P.J. (2000) Reduction in residential chromium following site remediation. *J. Air and Waste Management Association* 50: 174-185.
31. Cohen-Hubel, E., Sheldon, L, McCurdy, T, Rigas, M., Burke, J, Zartarian, V., and **Freeman, N.C.G.** (2000) Exposure assessment for children: a review of the factors influencing exposure of children, and the data available to characterize and assess that exposure. *Environmental Health Perspectives* 108:475-486.
32. Quackenboss, J.J., Pellizzari, E.D., Shubat, P., Adgate, J.L., Thomas, K.W., **Freeman, N.C.G.**, Whitmore, R.W., Stroebel, C., Lioy, P.J., Clayton, A., and Sexton, K. (2000) Design strategy for a multi pathway pesticide exposure study in children. *J. Exposure Analysis and Environmental Epidemiology* 10: 145-158.
33. **Freeman, N.C.G.**, Lioy, P.J., Pellizzari, E., Zelon, H., Thomas, K., Clayton, A., and Quackenboss, J. (1999) Responses to the Region 5 NHEXAS time/activity diary. *J. Exposure Analysis and Environmental Epidemiology*. 9: 414-426.
34. Reed, K.J., Jimenez, M., Lioy, P.J., and **Freeman, N.C.G.** (1999) Quantification of children's hand and mouthing activities. *J. Exposure Analysis and Environmental Epidemiology*. 9: 513-520.
35. Stern, A.H., Fagliano, J.A., Savrin, J.E., **Freeman, N.C.G.**, and Lioy, P.J. (1998) The association of chromium in household dust with urinary chromium in residences adjacent to chromate production waste sites. *Environmental Health Perspectives*. 106: 833-839.
36. Gurunathan, S., Robson, M., **Freeman, N.**, Buckley, B., Roy, A., Meyer, L., Bukowski, J., and Lioy, P.J. (1998) Accumulation of Chlorpyrifos on residential surfaces and on/in toys accessible to children. *Environmental Health Perspectives* 106: 9-16.
37. **Freeman, N.C.G.**, Stern, A.H., and Lioy, P.J. (1997) Exposure to chromium in house dust in a Chromium Surveillance Project. *Archives of Environmental Health* 52: 212-219.
38. **Freeman, N.C.G.**, Ettinger, A., Berry, M., and Rhoads, G. (1997) Association of hygiene and food related behaviors with blood lead levels of young children from lead contaminated homes. *J. Exposure Analysis and Environmental Epidemiology* 7: 103-118.
39. Stern, A.H., **Freeman, N.C.G.**, and Gochfeld, M. (1996) Response to "Urinary excretion of chromium following ingestion of chromite-ore process residues in humans: Implications of biomonitoring". *Risk Analysis* 16: 605-608.
40. **Freeman, N.C.G.**, Wainman, T., and Lioy, P.J. (1996) Field testing of the LWW dust sampler and the association of observed household factors with dust loadings. *J. Occupational and Industrial Hygiene* 11: 476-483.
41. Pellizzari, E., Lioy, P., Quackenboss, J., Whitmore, R., Clayton, A., **Freeman, N.**, Waldman, J., Thomas, K., Rodes, C., and Wilcosky, T. (1995) Population-based exposure measurements in EPA Region 5: A phase I field study in support of the national human exposure assessment survey. *J. Exposure Analysis and Environmental Epidemiology* 5:327-358.
42. **Freeman, N.C.G.**, Wainman, T., Stern, A.H., Shupack, S., and Lioy, P.J. (1995) The effect of remediation of chromium waste sites on chromium levels in urine of children living in the surrounding neighborhood. *J. Air and Waste Management Association* 45:604-614.
43. Waldman, J.M., Bilder, S.M., **Freeman, N.C.G.**, and Friedman, M. (1993) A portable datalogger to evaluate recall-based time-use measures. *J. Exposure Analysis and Environmental Epidemiology*, 3: 39-48.
44. Lioy, P.J., **Freeman, N.C.G.**, Wainman, T., Stern, A.H., Boesch, R., Howell, T., and Shupack, S.I. (1992) Microenvironmental analysis of residential exposure to chromium laden wastes in and around New Jersey homes. *Risk Analysis* 12: 287-299.
45. Stern, A.H., **Freeman, N.C.G.**, Pleban, P., Boesch, R., Wainman, T., Howell, T., Shupack, S.I., Johnson, B.B., and Lioy, P.J. (1992) Residential exposure to chromium - urine biological monitoring in conjunction with environmental exposure monitoring. *Environmental Research* 58: 147-162.
46. Buckley, T.J., Waldman, J.M., **Freeman, N.C.G.**, Marple, V.A., Turner, W.A., and Lioy, P.J. (1991) Calibration, intersampler comparison, and field application of a new PM-10 personal air sampling impactor. *Aerosol Science and Technology*, 14: 380-387.

47. **Freeman, N.C.G.**, Waldman, J.M., and Lioy, P.J. (1991) Design and evaluation of a location and activity log used for assessing personal exposure to air pollutants. *J. Exposure Analysis and Environmental Epidemiology*, 1: 327-338.
48. Egger, M.D., **Freeman, N.C.G.**, Jacquin, M.F., Proshansky, E., and Semba, K. (1986) Dorsal horn cells in the cat responding to stimulation of the plantar cushion. *Brain Research*, 383: 68-82.
49. Egger, M.D., **Freeman, N.C.G.**, Malamed, S., Masarachia, P., and Proshansky, E. (1981) Electron microscopic observations of terminals of functionally identified afferent fibers in cat spinal cord. *Brain Research*, 207: 157-162.
50. Egger, M.D., **Freeman, N.C.G.**, and Proshansky, E. (1980) Morphology of spinal motoneurons mediating a cutaneous spinal reflex. *Journal of Physiology*, 306: 349-363.
51. Mayer, A.D., **Freeman, N.C.G.**, and Rosenblatt, J.S. (1979) Ontogeny of maternal behavior in laboratory rats: Factors underlying changes in responsiveness from 30-90 days. *Developmental Psychobiology*, 12: 425-440.
52. **Freeman, N.C.G.** and Rosenblatt, J.S. (1978) The interrelationship between thermal and olfactory stimulation in the development of home orientation in newborn kittens. *Developmental Psychobiology*, 11: 437-457.
53. **Freeman, N.C.G.** and Rosenblatt, J.S. (1978) Specificity of litter odors - the control of home orientation among kittens. *Developmental Psychobiology*, 11: 459-468.
54. **Freeman, N.C.G.** and Suedfeld, P. (1969) Classical conditioning of verbal meaning: the roles of awareness, meaningfulness, and evaluative loading. *Psychological Record*, 19: 335-338.

B. ARTICLES, CHAPTERS, BOOKS, OTHER PROFESSIONAL COMMUNICATIONS:

1. **Freeman, N.C.G.** (2007) Children's Risk Assessment p 315-344 in Risk Assessment for Environmental Health, M. Robson and W. Toscano, eds. Jossey-Bass, San Francisco, 628 pp.
2. Barr, D.B., Bradman, A., **Freeman, N.C.G.**, Whyatt, R.M., Wang, R.Y., Naeher, L., and Eskenazi, B. (2006) Studying the relationship of pesticide exposure and human development p 253-286 in Clinical and Developmental Neurotoxicology, David C. Bellinger, ed. Taylor & Francis Group, 504 pp.
3. Lioy, P., Leuret, E., Spengler, J., Brauer, M., Buckley, T., **Freeman, N.**, Jantunen, M., Kissel, J., Lebowitz, M., Maroni, M., Moschandreas, D., Nieuwenhuijsen, M., Seifert, B., Zmirou-Navier, D. (2005) Defining Exposure Science. *Journal of Exposure Analysis and Environmental Epidemiology* 15: 463
4. Federal Institute for Health Protection of Consumers and Veterinary Medicine (2002) Exposure of children to substances used as ingredients of pesticides. BGVV, Berlin, 130 pp.
5. Lioy, P.J., Roy, A., and **Freeman, N.C.G.** (2002) The analysis of human exposures to contaminants in the environment. In, R. Eteis, ed. Oxford Textbook of Public Health. 4th ed., Oxford University Press, London.
6. **Freeman, N.C.G.** and Pivnik, E. (2001) Dust does not discriminate. An 8 minute training video on dust reduction methods. Winner of the 2001 Golden Aurora Award, New York International Festival of Independent Video and Film Producers.
7. Schneider, D. and **Freeman, N.C.G.** (2000) Children's Environmental Health: Reducing risk in a dangerous world. American Public Health Association 157 pp.
8. World Health Organization, (1996) Assessment of Exposure to Indoor Air Pollutants. WHO Regional Publications European Series, #78, WHO, Copenhagen, 139 pp.
9. **Freeman, N.C.G.** and Lioy, P.J. (1993) Use of questionnaires for assessment of exposure to airborne pollutants. in U. Mohr, ed. Advances in Controlled Clinical Inhalation Studies, Springer-Verlag, 285-295.
10. Lioy, P.J., **Freeman, N.C.G.**, Wainman, T., Kitsa, V., Shupack, S., and Stern, A.H. (1991) Exposure to chromium derived from waste used as fill on/and adjacent to residential settings. Proceedings of the 1991 EPA/AWMA International Symposium: Measurement of Toxic and Related Air Pollutants. 627-632.

11. **Freeman, N.C.G.**, Waldman, J.M., and Lioy, P.J. (1989) Evaluation of a daily activity diary designed to identify exposure sources. Air and Waste Management Association, 82nd Annual Meeting, June 1989, 89-100.2.
12. **Freeman, N.C.G.**, Waldman, J.M., and Lioy, P.J. (1988) Design of a self-administered daily activity questionnaire for evaluating exposure to combustion products. Proceedings of the 1988 EPA/APCA International Symposium: Measurement of Toxic and Related Air Pollutants. 720-726.
13. Egger, M.D., **Freeman, N.C.G.**, and Proshansky, E. (1981) The significance of laminar arrangement. In A.G. Brown and M. Rethelyi (eds.) Spinal Cord Sensation: Sensory Processing in the Dorsal Horn. Scottish Press, Edinburgh, Scotland.

C. PUBLISHED ABSTRACTS:

1. **Freeman, N.**, Schuck, M., Finch, Z., Economos, E., Roberts, S., and Flocks, J. (2006) Assessment of residents' Environmental health perceptions. Epidemiology 17: S451.
2. Black, K., **Freeman, N.C.G.**, Shalat, S.L., Donnelly, K.C., Calvin, J.A. and Jimenez, M. (2002) Children's activity patterns in a Texas *colonia*. Epidemiology 13: S175.
3. Shalat, S.L., Donnelly, K.C., **Freeman, N.C.G.**, Calvin, J., Black, K., Jimenez, M., Coutino, C., Needham, L., Barr, D., and Ramirez, J. (2002) Quantitative behavioral assessment as a tool for modeling pesticide dose in children. Epidemiology 13: S174.
4. Melnyk, L.J., Berry, M.R., Sheldon, L.S., **Freeman, N.C.G.**, and Pellizzari, E. (1999) Dietary exposure of children to lead. American Chemical Society extended abstract.
5. Buckley, B., Ettinger, A., Reed, K., Hore, P., Lioy, P.J., and **Freeman, N.C.G.** (1999) Sample collection in children, or How do I get a quality sample when my sample won't hold still? American Chemical Society extended abstract.
6. Sexton, K., Pellizzari, E.D., Quackenboss, J.J., Lioy, P.J., Shubat, P., Adgate, J.L., Whitmore, R.W., Church, T.R., Stroebel, C., Ramachandran, G., Clayton, A., Fredrickson, A., Roberts, M., Greaves, I.A., and **Freeman, N.** (1999) Measuring children: exposure to hazardous environmental mixtures: Two case studies illustrating complexities and challenges. American Chemical Society extended abstract.
7. Edwards, RD, **Freeman, N.C.G.**, Adgate, JL, Sexton, K, Quackenboss, J, Pellizarri, ED, and Lioy, PJ (1999) Residential pesticide leaves by the EH sampler and comparison to hand rinses and urine metabolite levels. Epidemiology 10: S111.
8. **Freeman, N.C.G.**, Ettinger, A., Berry, M., Rhoads, G.G., and Lioy, P.J., (1995) Association of dietary habits with blood lead levels of young children from lead contaminated homes. Epidemiology 6: S23
9. **Freeman, N.C.G.**, Ettinger, A., Berry, M., Rhoads, G. and Lioy, P.J., (1995) Association of hygiene and food related behaviors with blood lead levels of young children from lead contaminated homes. Epidemiology 6: S59
10. **Freeman, N.C.G.**, Savrin, J.E., Fagliano, J.A., Stern, A.H., and Lioy, P.J., (1995) Contamination of dust in households near chromium waste sites. Epidemiology 6:S60
11. **Freeman, N.C.G.**, Wainman, T., Grady, T., Berry, M., and Lioy, P.J., (1995) Field testing of the LWW dust sampler and the association of observed household factors with dust loadings. Epidemiology 6 :S39
12. Pellizzari, E., Lioy, P., Quackenboss, J., Whitmore, R., Thomas, K., Clayton, A., **Freeman, N.**, Zelon, H., Waldman, J., and Rodes, C., (1995) NHEXAS: A pilot study in EPA Region 5. Epidemiology 6: S61
13. Reed, K., Lioy, J., and **Freeman, N.C.G.**, (1995) Development and field testing of a Time/Activity Diary to be used in NHEXAS. Epidemiology 6: S19.
14. Stern, AH, **Freeman, N.C.G.**, Pleben, P (1991) Biomonitoring for chromium levels in the urine of individuals living adjacent to chromate production waste sites. American Chemistry Society 202: 9 ACSC Part 2.
15. Egger, M.D., **Freeman, N.C.G.**, Jacquin, M.F., Proshansky, E., and Semba, K. (1985) Dorsal horn cells with similar receptive fields display a wide variety of dendritic forms. Neuroscience Abstracts, 11: 219.
16. Breckenridge, M.B., and **Freeman, N.C.G.** (1982) Geographic factors in ambulatory care for the elderly. Gerontologist, 22, part 5:95.

17. Egger, M.D., **Freeman, N.C.G.**, Masarachia, P., Malamed, S., and Proshansky, E. (1980) Spinal terminations of low threshold mechanoreceptive afferent fibers. Neuroscience Abstracts, 6: 490.
18. Egger, M.D., **Freeman, N.C.G.**, and Proshansky, E. (1980) Patterns of projections into the dorsal horn of low threshold cutaneous mechanoreceptive afferent fibers from the glabrous skin of the cat's foot. Anatomical Record, 196: 52A-53A.
19. Egger, M.D., **Freeman, N.C.G.**, and Proshansky, E., (1979) Axon collaterals of dorsal horn cells responding to cutaneous stimulation. Neuroscience Abstracts, 5: 722.
20. Proshansky, E., **Freeman, N.C.G.**, and Egger, M.D. (1979) Intracellular staining of functionally identified dorsal horn cells in the cat. Anatomical Record, 193: 658.
21. Egger, M.D., **Freeman, N.C.G.**, Proshansky, E., and Sachs, S.D. (1978) Morphology of spinal motoneurons mediating a cutaneous reflex. Anatomical Record, 190: 389.
22. **Freeman, N.C.G.** (1976) The use of thermal and olfactory cues by newborn kittens. Bulletin New Jersey Academy of Sciences, 21:28.

RESEARCH INTERESTS

Children's environmental health

Human exposure measurement and assessment

Community-based environmental health assessment and education