

Curriculum Vitae

JAMES BRADFORD BURCH

BUSINESS ADDRESS Department of Epidemiology and Biostatistics
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EDUCATION

- 1997 **Ph.D., Environmental Health (Specialization: Epidemiology)**, Department of Environmental & Radiological Health Sciences, Colorado State University, Ft. Collins, CO.
- 1984 **M.S., Pharmaceutical Sciences (Major: Pharmacology)**, School of Pharmacy, University of Colorado, Boulder, CO.
- 1980 **B.A., Psychology, (Minors: Chemistry & Biology)**, Psychology Department, University of Colorado, Boulder, CO.

ACADEMIC & PROFESSIONAL EXPERIENCE

- 2005-Present **Assistant Professor (Tenure Track)**, Department of Epidemiology & Biostatistics, Cancer Prevention and Control Program, Arnold School of Public Health, Center for Colon Cancer Research, University of South Carolina, Columbia, SC.
- 2008-Present **Health Research Specialist**, Dorn Department of Veteran's Affairs Medical Center, Columbia, SC.
- 2008 **Consultant**, Environmental Public Health Tracking Network, South Carolina Department of Health & Environmental Control, Columbia, SC.
- 2000-2005 **Assistant Professor (Research Appointment)**, Department of Environmental & Radiological Health Sciences, Colorado State University, Fort Collins, CO.
- 1997 - 1999 **Post-Doctoral Fellow / Research Associate**, Department of Environmental Health, Colorado State University, Fort Collins, CO.
- 1995 -1996 **Graduate Research Assistant**, Department of Environmental Health, Colorado State University, Fort Collins, CO.
- 1994 -1995 **Consultant**, Health risk assessment for a CERCLA (Superfund) hazardous waste site (nuclear weapons production facility), SM Stoller Corp., Boulder, CO.

ACADEMIC & PROFESSIONAL EXPERIENCE (Continued):

- 1994 **Graduate Teaching Assistant**, Environmental Sanitation I (EH312), Fall Semester, Dept. of Environmental Health, Colorado State U., Fort Collins, CO.
- 1993 -1994 **Graduate Research Assistant**, Symptom and disease prevalence among residents living near the Rocky Mountain Arsenal (CERCLA - Superfund) hazardous waste site, Department of Environmental Health, Colorado State University, Ft. Collins, CO.
- 1992 -1993 **Project Scientist**, Management of health risk assessments for hazardous waste site investigations, Woodward-Clyde Consultants, Denver, CO.
- 1988 -1991 **Health & Safety Officer / Asst. Project Scientist**, Project management for: occupational health & safety, management of asbestos building materials, health risk assessments. Woodward-Clyde, Denver, CO and Frankfurt, Germany.
- 1986 -1988 **Senior Staff Scientist**, Health risk assessment for hazardous waste site investigations, environmental regulatory compliance, Woodward-Clyde Consultants, Denver, CO.
- 1985 **Research Technician**, Chemical and hydrological survey of the Orinoco River, Dept. of Biology, U. of Colorado Field Research Lab, Ciudad Bolivar, Venezuela.
- 1985 **Field Operations Supervisor**, Asbestos management & air monitoring, Environmental Testing Services, Denver, CO.
- 1984 **Biological Research Assistant**, Research on acid deposition in wilderness lakes, U.S. Forest Service, Durango, CO.
- 1981 -1984 **Graduate Research Assistant**, Role of cholinergic neurotransmitter receptors in the development of ethanol-nicotine tolerance and cross tolerance, School of Pharmacy, U. of Colo., Boulder, CO.
- 1980 -1981 **Professional Research Assistant**, Behavioral & pharmacogenetic aspects of ethanol and nicotine tolerance. Inst. Behavioral Genetics, U. of Colo., Boulder, CO.

RESEARCH EXPERIENCE

RESEARCH INTERESTS: Occupational, environmental, and molecular epidemiology, shift work, circadian rhythm disruption and cancer; role of environmental, social, genetic and endocrine factors in cancer risk; racial cancer disparities, role of melatonin as an anticarcinogenic hormone; biological effects of non-ionizing and ionizing radiation.

AWARDED, PENDING, AND COMPLETED RESEARCH GRANTS

Project Title: Melatonin and Circadian Rhythm Disruption among Police Officers. **Principal Investigator:** Jim Burch, MS, PhD, Department of Epidemiology and Biostatistics, University of South Carolina. **Agency:** National Institute for Occupational Safety & Health. **Period:** 12/17/07 - 12/16/09. **Project Costs:** \$11,236 Total.

Objectives: This study will test the hypothesis that police officers with low sleep:work salivary melatonin ratios, disrupted circadian cortisol secretion, or with specific genetic polymorphisms in melatonin or clock genes have an increased prevalence of sleep disruption, fatigue, or depressive symptoms. **Role:** PI. **Active.**

AWARDED, PENDING, AND COMPLETED RESEARCH GRANTS (Continued):

Project Title: Role of Genetic and Dietary Factors in Breast Cancer Risk: Study of a Population in Demographic Transition. **Principal Investigator:** Jim Burch, MS, PhD. **Agency:** University of South Carolina Office of Research and Economic Development. **Type:** Research Opportunity Program. **Period:** 5/01/09–4/30/10. **Project Costs:** \$20,000 Total Direct. **Objectives:** The specific aims of this project are to: 1.) genotype 500 breast cancer cases and 500 controls for 19 candidate single nucleotide polymorphisms (SNPs) associated with inflammation, carcinogen metabolism, and cell cycle/DNA repair pathways; and 2.) perform a case-control analysis to test the hypothesis that candidate SNPs are associated with increased breast cancer risk, and that subjects with both poor (pro-inflammatory, high-fat) diets and candidate risk genotypes have even greater breast cancer risks compared to subjects without a risk allele and with more healthy diets. **Role:** PI. **Active.**

Project Title: Spatial Assessment of Groundwater Uranium and Cancer Incidence, Kidney and Bladder Disease, and Hypertension in South Carolina. **Principal Investigator:** Jim Burch, MS, PhD, Department of Epidemiology and Biostatistics, University of South Carolina. **Period:** 6/1/08 - 5/31/10. **Project Costs:** Self-funded. **Objectives:** This study will use geographic information systems (GIS) and spatial statistical methods to test hypotheses that elevated groundwater uranium concentrations are associated with increased cancer incidence, or with elevated hospitalization rates for kidney or bladder disease or hypertension. Cluster analyses and three-dimensional isopleth mapping will also be used to characterize spatial disease patterns as they relate to statewide groundwater uranium concentrations in South Carolina. **Role:** PI. **Active.**

Project Title: Bright Light: An Adjunct Treatment for Combat PTSD. **Principal Investigator:** Shawn Youngstedt, PhD, Dept. of Exercise Science, University of South Carolina. **Agency:** Department of Veteran's Affairs. **Type:** Merit Award. **Period:** 2008-2011. **Project Costs:** \$592,000 Total. **Objectives:** This study will determine whether bright light is an effective adjunct treatment for combat-related post-traumatic stress disorder (PTSD), reducing clinical assessment of PTSD severity and associated morbidity. **Role:** Co-Investigator. **Active.**

Project Title: Epigenetics and Diet in the Carcinogenesis Process. **Project Co-Leaders:** Susan Steck, PhD and Jim Burch, MS, PhD, Department of Epidemiology and Biostatistics, University of South Carolina. **Agency:** National Cancer Institute. **Type:** Supplemental Grant **Center Title:** South Carolina Cancer Disparities Community Network. **Principal Investigator:** James Hebert, MSPH, ScD, Department of Epidemiology and Biostatistics, University of South Carolina. **Period:** 05/01/08–04/30/09. **Project Costs:** \$99,679 Direct. **Objectives:** The overall goal is to address, in a high-risk population heavily represented by African Americans, how dietary factors, including vitamin D status, influence epigenetic events in the carcinogenesis process. We will examine whether methylation of specific cancer-related genes, such as DNA repair genes, tumor suppressor genes, clock genes, and vitamin D-related genes vary between colon cancer cases, individuals with adenomatous polyps and polyp free controls. **Role:** Project Co-Leader. **Active.**

Project Title: Diet & Activity Community Trial: High-Risk Colon Polyps. **Principal Investigator:** James R. Hebert, ScD **Agency:** National Center on Minority Health and Health Disparities. **Type:** R24. **Period:** 7/1/2008 - 6/30/2013. **Project Costs:** \$ 2,829,568 Total. **Objectives:** The goal of this project, to reduce colon cancer-related health disparities, will be achieved by these Primary Aims: 1) conduct a faith-based community-designed screening program to identify individuals with colon polyps; 2) remove polyps detected in the screening process thereby preventing their transition to cancer and providing biospecimens for future studies; 3) conduct a case-control study to identify factors associated with polyp identification; and 4) design and test the effectiveness of a community-designed, family-based dietary and physical activity intervention to reduce inflammatory marker levels among participants with elevated colon cancer risks. **Role:** Co-Investigator. **Active.**

AWARDED, PENDING, AND COMPLETED RESEARCH GRANTS (Continued):

Project Title: SC FISH - South Carolina Forum for Investigative Studies of Hg (Mercury). **Principal Investigator:** Erik R. Svendsen, PhD, Department of Epidemiology and Biostatistics, University of South Carolina and South Carolina Department of Health and Environmental Control (DHEC) **Agency:** DHEC. **Type:** Internal Study **Period:** 10/1/08-9/30/10. **Project Costs:** \$250,045 Total. **Objectives:** This initiative will address two questions related to mercury contamination in sport fish caught in South Carolina (SC): 1). What is the burden of methylmercury exposure in the SC population? and 2). Are SC populations experiencing adverse health problems resulting from mercury consumption in locally caught fish? An initial study will compare rates of pre-term birth and low birth weight in areas with fish consumption advisories with other areas in SC using a geographic information system and spatial statistics. Subsequent cross-sectional and cohort studies will evaluate reproductive and neurological outcomes among pregnant women and subsistence fishermen in areas with elevated methylmercury levels in sport fish. **Role:** Co-Investigator. **Active.**

Project Title: Circadian Rhythm Disruption, Race and Breast Cancer Risk. **Project Leader:** Jim Burch, MS, PhD. **Agency:** National Center for Research Resources. **Type:** Center of Biomedical Research Excellence (COBRE). **Center Title:** South Carolina's Center for Cancer Research Excellence. **Principal Investigator:** James Hebert, MSPH, ScD, Department of Epidemiology and Biostatistics, University of South Carolina. **Period:** 11/1/06-10/31/11. **Project Costs:** \$639,768 Direct, \$912,465 Total. **Total COBRE Costs:** \$10,706,587. **Objectives:** In Phase 1, a case-control study will characterize symptoms of circadian disruption; identify its individual, environmental, and social predictors; sequence polymorphisms in circadian clock and melatonin genes; quantify sleep, rest/activity rhythms, and ambient light exposures; determine whether women with circadian disruption have increased BrCA risks, and whether circadian disruption differences among African and European Americans contribute to racial disparities in BrCA risk. In Phase 2, a pilot clinical trial will assess the feasibility of using evening melatonin administration to: improve circadian rhythms and sleep; reduce fatigue, depressive symptoms, and estrogen production; and enhance innate immunity. **Role:** Project Leader. **Pending.**

Project Title: Circadian Rhythm Disruption and Polyp Formation. **Principal Investigator:** Jim Burch, MS, PhD. **Agency:** National Institute of Environmental Health Sciences. **Type:** R21. **Period:** 12/01/08-11/30/10. **Project Costs:** \$275,000 Direct. **Objectives:** The specific aims are to conduct a case-control study to: 1.) test the hypothesis that circadian disruption is more frequent or severe among polyp cases than controls; and 2.) determine whether circadian disruption, or factors that predict disruption, are more frequent or severe among African American compared to European American men, and whether such differences contribute to racial disparities in polyp formation and colon cancer risk. **Role:** PI. **Pending.**

Project Title: Maintaining Healthy Weight By Strengthening South Carolina Families and Parents. **Co-Principal Investigators:** Edward Frongillo, PhD, Department of Health Promotion, Education & Behavior, and James Hebert, MSPH, ScD, University of South Carolina. **Agency:** National Heart, Lung, and Blood Institute. **Type:** U01 **Period:** 09/30/09-09/29/14 **Project Costs:** \$3,743,538 Direct, \$5,255,340 Total. **Objectives:** The proposed Center for Behavioral Intervention Development will develop interventions that improve the maintenance of beneficial weight changes through enhancing biological and family routines for diet and physical activity. This research will be conducted in three stages designed to answer specific research questions related to biology, behavior, stress and family systems and methods. **Role:** Co-Investigator. **In Revision.**

Project Title: Mumbai Cohort Study: Cancer Epidemiology In Urban India. **Principal Investigator:** James R. Hebert, ScD **Agency:** National Cancer Institute. **Type:** R01. **Period:** 7/1/2007-6/30/2012. **Project Costs:** \$13,123,723 Total. **Objectives:** This study will test hypotheses related to diet, other lifestyle factors, and potential genetic determinants of cancer in a population in the midst of a demographic, nutritional, and epidemiologic transition. **Role:** Co-Investigator. **In Revision.**

AWARDED, PENDING, AND COMPLETED RESEARCH GRANTS (Continued):

Project Title: Role of Circadian Disruption in Polyp Formation and Recurrence. **Principal Investigator:** Jim Burch, MS, PhD, Department of Epidemiology and Biostatistics, University of South Carolina. **Agency:** Department of Veteran's Affairs. **Type:** Research Career Development Award. **Period:** 5/31/2006-6/1/2008 **Costs:** 50% salary release. **Objectives:** The goal was to conduct a pilot study to evaluate whether: 1.) circadian disruption is associated with colorectal polyp development; 2.) the association between circadian disruption and cancer may be driven by inflammatory cytokine secretion, and; 3.) whether differences in circadian disruption may influence the racial disparity for colorectal cancer among African and European Americans. Inflammatory cytokine concentrations and genetic polymorphisms in circadian clock or melatonin genes were compared among patients with fatigue, depressive symptoms, or sleep disruption. **Role:** PI. **Completed.**

Project Title: Impact of Colonoscopies Performed by Primary Care Physicians. **Project Leader:** Sudha Xirasagar, PhD **Agency:** National Cancer Institute **Type:** R03 **Center Title:** South Carolina Cancer Disparities Community Network. **Principal Investigator:** James Hebert, MSPH, ScD, Department of Epidemiology and Biostatistics, University of South Carolina. **Period:** 6/1/07-5/31/09. **Project Costs:** \$49,979 Direct. **Objectives:** This project will examine the quality and effectiveness of screening colonoscopies performed by primary care physicians among African and European American patients. The impact of training African American physicians on patient compliance per American Cancer Society's recommendations will also be examined. **Role:** Scientific Advisor. Manuscripts in preparation. **Completed.**

Project Title: Endotoxin Exposure and Genetic Factors in Organic Dust Lung Disease. **Principal Investigator:** Steve Reynolds, PhD, CIH, Dept. Environmental & Radiological Health Sciences, Colorado State University. **Agency:** National Institute for Occupational Safety & Health **Type:** R01 Grant. **Period:** 9/1/03-8/31/08 **Costs:** \$408,099 Direct, \$491,397 Total **Objectives:** The primary goals of this study were to: characterize exposure to endotoxin-containing corn dust in a population of workers; evaluate respiratory symptoms, lung function, and immune markers in the same population; identify a measurement method for endotoxin that is the best predictor of these responses; and measure genetic markers to identify workers with increased endotoxin sensitivity. **Role:** Co-Investigator. One manuscript published, one in revision. **Completed.**

Project Title: Indoor Air Pollution and Respiratory Health among Honduran Women: Evaluating Intervention Effectiveness. **Principal Investigator:** Jim Burch, MS, PhD (prior to 2005). Steve Reynolds, PhD, CIH, and Jennifer Peel, PhD, MPH, Dept. Environmental & Radiological Health Sciences, Colorado State University. **Agency:** College Research Council, Colorado State University College of Veterinary Medicine and Biomedical Sciences. **Type:** Grant **Period:** 10/1/04-9/30/07 **Costs:** \$18,900 Direct. **Objectives:** This study quantified residential air pollutant exposures and respiratory health among non-smoking Honduran women using either low emission or traditional wood burning stoves to determine the effectiveness of an indoor air quality intervention. We hypothesized that homes without stoves had higher concentrations of carbon monoxide and particulate matter, and that women in these homes had reduced peak expiratory flow, more respiratory symptoms, and increased levels of the inflammation biomarker, C-reactive protein, compared to women in homes with improved stoves. **Role:** Initial PI and proposal co-author, now co-investigator. One manuscript published. **Completed.**

Project Title: Role of Melatonin in the Prevention of Breast Cancer in Patients with Gross Cystic Breast Disease. **Co-Principal Investigators:** Jim Burch, MS, PhD, and Robert Wells, PhD, Dept. Environmental & Radiological Health Sciences, Colorado State University **Agency:** U.S. Army Medical Research and Materiel Command **Type:** Grant - *Idea Award* **Period:** 9/1/99-8/31/04 **Costs:** \$392,836 Direct, \$508,081 Total. **Objectives:** This study measured melatonin and growth-related agents in human breast cyst fluid (BCF), quantified the proliferative effects of BCFs on human breast cancer cells, and evaluated the relationship between BCF components, growth properties, and known breast cancer risk factors. **Role:** Dr. Burch supervised a graduate student and a student hourly, directed subject recruitment and biological monitoring, performed statistical data analyses, and prepared reports. One manuscript published. **Completed.**

AWARDED, PENDING, AND COMPLETED RESEARCH GRANTS (Continued):

Project Title: Human Responses to Residential RF Exposure. **Principal Investigator:** John S. Reif, DVM, MSc, Dept. Environmental & Radiological Health Sciences, Colorado State University. **Agency:** National Institute of Environmental Health Sciences **Type:** R01 **Period:** 4/1/01-3/31/05 **Costs:** \$500,000 Direct, \$713,173 Total. **Objectives:** This study evaluated the effects of residential RF exposure on human biomarkers. The goal was to determine whether RF or 60 Hz exposures suppress melatonin, and to assess the melatonin-modulated effects of EMFs on oxidative DNA damage and repair, and immune markers. **Role:** Co-Investigator and a primary proposal author. Dr. Burch coordinated a population census, subject recruitment, RF/60 Hz and biological monitoring, data processing and statistical analyses. Two manuscripts published. **Completed.**

Project Title: RF Exposure and Melatonin Levels in Heat Sealer Operators. **Subcontract Principal Investigator:** Jim Burch, MS, PhD, Dept. Environmental & Radiological Health Sciences, Colorado State University. **Principal Investigator:** Michael Yost, PhD, Department of Environmental and Occupational Health Sciences, U. of Washington. **Agency:** National Institute for Occupational Safety & Health **Type:** R01 **Period:** 8/1/00-7/31/03 **Costs:** \$209,669 Direct, \$301,604 Total **Objectives:** This study used personal monitoring to assess full-shift RF exposures among heat sealer operators on permanent day, swing, or night shifts, and examined melatonin production and several related biomarkers. The role of shift work on melatonin and sleep was also examined. **Role:** As subcontract PI, Dr. Burch was a primary proposal author and supervised all on-site data collection and analyses. One manuscript published. **Completed.**

Project Title: Factors Influencing Human Biological Responses to Magnetic Field Exposures. **Principal Investigator:** Jim Burch, MS, PhD, Dept. Environmental Health, Colorado State University. **Agency:** Platte River Power Authority **Type:** Grant **Period:** 7/1/00-6/30/02 **Costs:** \$9,056 Direct, \$9,962 Total **Objectives:** This project measured magnetic field characteristics in work environments linked with melatonin suppression. **Role:** PI. Dr. Burch supervised 3 research assistants, performed statistical analyses and prepared a technical report and manuscript. One manuscript published. **Completed.**

Project Title: The Role of Shift Work Adaptation on Stress and Performance **Principal Investigator:** Jim Burch, MS, PhD, Dept. Environmental Health, Colorado State University. **Agency:** College Research Council, Colorado State University College of Veterinary Medicine and Biomedical Sciences. **Type:** Grant **Period:** 7/1/00-6/30/01 **Costs:** \$19,986 Direct, No Indirect **Objectives:** This study evaluated work factors, coping strategies, sleep disruption, health outcomes and psychological stress among health care workers on different work shifts. **Role:** PI. One manuscript published. **Completed.**

Project Title: Melatonin as a Biomarker of Oxidative Stress. **Principal Investigator:** Howard Ramsdell, PhD, Dept. Environmental Health, Colorado State University. **Agency:** National Cancer Institute **Type:** RO3 **Period:** 3/1/98-2/29/00 **Costs:** \$49,971 Direct, \$72,458 Total **Objectives:** The study objective was to determine whether the melatonin metabolite, AMK, is a urinary marker of melatonin's antioxidant activity. **Role:** Co-investigator and proposal co-author. One abstract published. **Completed.**

Project Title: Physical Activity and Human Biological Responses to EMFs and Shift Work. **Principal Investigator:** Jim Burch, MS, PhD, Dept. Environmental & Radiol. Health Sci., Colorado State University. **Agency:** Dept. of Environmental Health Small Grants Program, Colorado State University **Type:** Grant. **Period:** 10/5/00-6/30/01 **Costs:** \$9,350 Direct, No Indirect. **Objectives:** The project goal was to identify EMF exposure characteristics that are critical for suppressing melatonin production in humans. The relationship between physical inactivity, temporally stable MF exposures, melatonin metabolite excretion, and sleep parameters will be evaluated using personal physical activity monitors. **Role:** PI. **Completed.**

AWARDED, PENDING, AND COMPLETED RESEARCH GRANTS (Continued):

Project Title: The Role of Inflammation in Human Toxicological Responses to Diesel Exhaust Exposure
Co-Principal Investigators: Jim Burch, MS, PhD, and Phil Bigelow, MHSc, PhD, Dept. Environmental Health, Colorado State University. **Agency:** College Research Council, Colorado State University College of Veterinary Medicine and Biomedical Sciences. **Type:** Grant **Period:** 7/1/99-6/30/02 **Costs:** \$29,493 Direct, No Indirect. **Objectives:** This study quantified personal diesel exhaust exposures in transportation workers to test the hypothesis that exposure was associated with increased urinary excretion of biomarkers of inflammation (leukotriene E4) and oxidative DNA damage and repair (8-OHdG). One abstract published. **Role:** Co-PI. **Completed.**

Project Title: Validation of Task-Specific Magnetic Field Exposures. **Principal Investigator:** Jim Burch, MS, PhD, Dept. Environmental Health, Colorado State University. **Agency:** U. of Washington **Type:** Subcontract **Period:** 7/1/99-8/31/99 **Costs:** \$4,290 Direct, \$6,220 Total **Objectives:** The objective was to compile magnetic field exposure data associated with specific occupational tasks in electric utility workers. A task-specific exposure matrix was developed. **Role:** Subcontract PI. **Completed.**

Project Title: Melatonin and Occupational Magnetic Field Exposure. **Principal Investigator:** John S. Reif, DVM, MSc, Dept. Environmental Health, Colorado State University **Agency:** NIEHS **Type:** RO1 **Period:** 8/1/96-7/31/99 **Costs:** \$504,550 Direct, \$708,799 Total **Objectives:** The goal was to determine whether melatonin production was reduced (Phase 1) and chronically suppressed (Phase 2) by 60 Hz magnetic field exposures in electric utility workers. **Role:** Co-Investigator and proposal co-author. Dr. Burch coordinated daily grant activities, supervised 2 GRAs and 2 hourly employees, directed recruitment, exposure monitoring, biochemical assays, custom software development, and data analyses. Three manuscripts published. **Completed.**

Project Title: Human Biological Responses to Occupational and Residential Magnetic Fields.
Principal Investigator: John S. Reif, DVM, MSc, Dept. Environmental Health, Colorado State University.
Agency: Platte River Power Authority & US DOE **Type:** Grant **Period:** 12/1/97-7/31/99 **Costs:** \$9,044 Direct, \$9,948 Total **Objectives:** The objectives of this project were to: 1) determine 60 Hz magnetic field exposures alter immune markers in peripheral lymphocytes from electric utility workers; and 2) determine whether residential wire codes were associated with decreased melatonin production in workers. **Role:** Co-investigator and proposal co-author. Dr. Burch managed daily activities, and supervised a graduate intern and an undergraduate independent study student. One manuscript published. **Completed.**

Project Title: Melatonin in Electric Utility Workers. **Principal Investigator:** John S. Reif, DVM, MSc, Dept. Environmental Health, Colorado State University. **Agency:** U.S. DOE **Type:** Research Contract **Period:** 2/1/95-1/31/96 **Costs:** \$32,909 Direct, \$47,718 Total **Objectives:** The study objective was to determine whether melatonin production in electric utility workers is reduced by exposure to 60 Hz magnetic fields. **Role on Project:** Co-investigator and proposal co-author. Dr. Burch directed daily project activities, supervised 1 GRA and 1 hourly employee. Three manuscripts published. **Completed.**

Project Title: Melatonin Levels in Electric Utility Workers. **Principal Investigator:** Jim Burch, MS, PhD, Dept. Environmental Health, Colorado State University. **Agency:** American Public Power Association **Type:** Scholarship **Period:** 3/1/95-2/28/96 **Costs:** \$3,000 Direct, No Indirect **Objectives:** Determine the feasibility of using melatonin production as a biological marker of exposure to magnetic fields. **Completed.**

HONORS, AWARDS, AND APPOINTMENTS

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| 2008 | Award for Excellence in Research, South Carolina Cancer Alliance, Columbia, SC. |
| 2007 | Certificate of Appreciation, Dept. of Veteran's Affairs, VISN 7 Research Group, Charleston, SC. |

HONORS, AWARDS, AND APPOINTMENTS (Continued):

- 2001 Merit in Authorship Award, American College of Occupational and Environmental Medicine, San Francisco, CA.
- 1998 Expert Panel Member, National Institute of Environmental Health Sciences EMF Science Review Symposium on Clinical and In Vivo Laboratory Findings, Phoenix, AZ.
- 1993-5 Citizen's Advisory Board, Rocky Flats Nuclear Weapons Production Facility (CERCLA Hazardous Waste Site), Colorado Department of Health, U.S. Environmental Protection Agency, and the U.S. Department of Energy.
- 1995 DEED Scholarship, American Public Power Association, Washington, DC.
- 1992 Project Excellence Award, Woodward-Clyde Consultants, Denver, CO.
- 1988 Letter of Commendation, U.S. Army Engineer Division, Europe, Stuttgart Area Office, Woodward-Clyde Consultants, Frankfurt, Germany.
- 1984 Rho Chi Pharmaceutical Honor Society, University of Colorado, Boulder, CO.
- 1984 Graduate School Advisory Council, University of Colorado, Boulder, CO.
- 1983 Graduate Student Dean's Award, School of Pharmacy, U. of Colorado, Boulder, CO.

PUBLICATIONS

Peer-Reviewed Manuscripts (¹ Student Advisee, ² Professional Mentee):

1. **Burch JB**, Svendsen E, Siegel P, Wagner S¹, Keefe T, Mehaffy J, Serrano Martinez A, Bradford M, Baker L, Cranmer B, Saito R, Tessari J, Koehncke N, Prinz L, Von Essen S, Reynolds SJ. Endotoxin exposure and inflammation markers among agricultural workers in Colorado and Nebraska. *J Toxicol & Environ Health*. (In Press).
2. Clark ML¹, Peel JL, **Burch JB**, Nelson TL, Robinson MM, Conway S, Bachand AM, Reynolds SJ. Impact of improved cookstoves on indoor air pollution and adverse health effects among Honduran women. *International Journal of Environmental Health Research*. Available at: <http://www.informaworld.com>. doi: 10.1080/09603120902842705. 2009.
3. **Burch JB**, Tom J¹, Zhai Y², Criswell L¹, Leo E¹, Ogooussan K². Shiftwork impacts and adaptation among health care workers. *Occupational Medicine*. 59:159-166. 2009.
4. Wagner SE¹, **Burch JB**, Hussey J, Temples T, Bolick-Aldrich S, Mosely C, Liu Y, Hebert JR. Soil zinc content, groundwater usage and prostate cancer incidence in South Carolina. *Cancer Causes & Control*. 20(3):345-53. 2009.
5. Hébert JR, Daguiuse V, Hurley DM, Campbell R, Mosley CM, Adams SA, Puett R, **Burch JB**, Steck SE, Bolick-Aldrich SW. Mapping cancer mortality-to-incidence ratios to illustrate racial and gender disparities in a high-risk population. *Cancer*. 115:2539-52. 2009.

Peer-Reviewed Manuscripts (¹ Student Advisee, ² Professional Mentee) (Continued):

6. Du-Quiton J, Wood PA, **Burch JB**, Grutsch JF, Gupta D, Tyer K, Lis CG, Levin RD, Quiton D, Reynolds JL, Hrushesky WJM. Actigraphic assessment of daily sleep-activity pattern abnormalities reflect self-assessed depression and anxiety in outpatients with advanced non-small cell lung cancer. *Psycho-Oncology*. Available at: www.interscience.wiley.com. doi: 10.1002/pon.1539. 2009.
7. **Burch JB**, Reif JS, Yost MG. Geomagnetic activity and human melatonin metabolite excretion. *Neuroscience Letters*. 438:76-79. 2008.
8. Clark M¹, **Burch JB**, Yost MG, Zhai Y², Bachand A, Fitzpatrick CTE, Ramaprasad J, Cragin L², Reif JS. Biomonitoring of estrogen and melatonin metabolites among women residing near radio and television broadcasting transmitters. *Journal of Occupational & Environmental Medicine*. 49:1149-56. 2007.
9. **Burch JB**, Walling M¹, Rush A², Hennesey M², Craven W, Finlayson C, Anderson BO, Cosma G, Wells R. Melatonin and estrogen in breast cyst fluids. *Breast Cancer Research and Treatment*. 103:331-41. 2007.
10. Daguise VG, **Burch JB**, Horner M-J, Mosley CM, Hofseth LJ, Wargovich MJ, Lloyd SC, Hebert JR. Colorectal cancer disparities in south carolina: descriptive epidemiology, screening, special programs, and future direction. *The Journal of the South Carolina Medical Association*. 102:212-20. 2006.
11. Adams SA, Hebert JR, Bolick-Aldrich S, Daguise VG, Mosley CM, Modayil MV, Berger SH, Teas J, Mitas M, Cunningham JE, Steck SE, **Burch JB**, Butler WM, Horner M-J, Brandt HM. Breast cancer disparities in south carolina: early detection, special programs, and descriptive epidemiology. *The Journal of the South Carolina Medical Association*. 102:231-9. 2006.
12. **Burch JB**, Clark M¹, Yost G, Fitzpatrick CTE, Ramaprasad J, Bachand A, Reif JS. Radio frequency non-ionizing radiation in a community exposed to radio and television broadcasting. *Environ Health Perspect*. 114:248-53. 2006.
13. **Burch JB**, Yost MG, Johnson W¹, Allen E. Melatonin, sleep and shift work adaptation. *Journal of Occupational & Environmental Medicine*. 47:893-901. 2005.
14. Ichinose TA¹, **Burch JB**, Noonan CW², Yost MG, Keefe TJ, Bachand A, Mandeville R, Reif JS. Immune markers and ornithine decarboxylase activity among electric utility workers. *Journal of Occupational & Environmental Medicine*. 46:104-12. 2004.
15. Reif JS, **Burch JB**, Nuckols JR, Metzger L, Ellington D, Anger WK. Neurobehavioral effects of exposure to trichloroethylene through a municipal water supply. *Environmental Research*. 93:248-58. 2003.
16. **Burch JB**, Reif JS, Noonan CW², Ichinose T¹, Bachand A, Koleber TI², Yost MG. Melatonin metabolite excretion among cellular telephone users. *International Journal of Radiation Biology*. 78 (11): 1029-36. 2002.
17. Noonan CW², Reif JS, **Burch JB**, Ichinose TA¹, Yost MG, Magnusson K. Relationship between amyloid beta protein and melatonin metabolite in a study of electric utility workers. *Journal of Occupational & Environmental Medicine*. 44(8):769-775. 2002.

Peer-Reviewed Manuscripts (¹ Student Advisee, ² Professional Mentee) (Continued):

18. Mitsutake G, Otsuka K, Cornelissen G, Herold M, Gunther R, Dawes C, **Burch JB**, Watson D, Halberg F. Circadian and infradian rhythms in mood. *Biomedicine and Pharmacotherapy*. 55:94s-100s. 2001.
19. **Burch JB**, Reif JS, Noonan CW², Yost MG. Melatonin metabolite levels in workers exposed to 60 Hz magnetic fields: work in substations and with 3-phase conductors. *Journal of Occupational and Environmental Medicine*. 42:136-42. 2000. *Merit in Authorship Award: American College of Occupational and Environmental Medicine*.
20. **Burch JB**, Reif JS, Yost MG, Keefe TJ, Pitrat CA². Reduced excretion of a melatonin metabolite in workers exposed to 60 Hz magnetic fields. *American Journal of Epidemiology*. 150:27-36. 1999.
21. **Burch JB**, Reif JS, Yost MG. Geomagnetic disturbances are associated with reduced nocturnal excretion of a melatonin metabolite in humans. *Neuroscience Letters*. 266:209-212. 1999.
22. **Burch JB**, Reif JS, Yost MG, Keefe TJ, Pitrat CA². Nocturnal excretion of a urinary melatonin metabolite in electric utility workers. *Scandinavian J Work, Environment & Health*. 24:183-9. 1998.
23. **Burch JB**, DeFiebre CM, Marks MJ, Collins AC. Chronic ethanol or nicotine treatment results in partial cross-tolerance between these agents. 95:452-458. *Psychopharmacology*. 1988.
24. Collins AC, **Burch JB**, DeFiebre CM, Marks MJ. Tolerance to and cross-tolerance between ethanol and nicotine. *Pharmacology, Biochemistry and Behavior*. 29:365-374. 1988.
25. Marks MJ, Miner L, Cole-Harding S, **Burch JB**, and Collins AC. A genetic analysis of nicotine effects on open field activity. *Pharmacology, Biochemistry and Behavior*. 24:743-749. 1986.
26. Howerton TC, **Burch JB**, O'Connor MF, Miner LL, and Collins AC. A genetic analysis of ethanol, pentobarbital and methyprylon sleep-time response. *Alcoholism: Clinical and Experimental Research*. 8:546-550. 1984.
27. Marks MJ, Miner L, **Burch JB**, Fulker DW, and Collins AC. A diallel analysis of nicotine induced hypothermia. *Pharmacology, Biochemistry, and Behavior*. 21:953-959. 1984.
28. Marks MJ, O'Connor MF, Artman LD, **Burch JB**, and Collins AC. Chronic scopolamine infusion and cholinergic function. *Pharmacology, Biochemistry and Behavior*. 20:771-77. 1984.
29. Marks MJ, **Burch JB**, and Collins AC. Effects of chronic nicotine infusion on tolerance development and nicotinic receptors. *J. of Pharmacology and Experimental Therapeutics*. 226(3):817-825. 1983.
30. Marks MJ, **Burch JB**, and Collins AC. Genetics of nicotine response in four inbred strains of mice. *Journal of Pharmacology and Experimental Therapeutics*. 226(1):291-301. 1983.
31. Marks MJ, Patinkin DM, Artman LD, **Burch JB**, and Collins AC. Genetic influences on cholinergic drug response. *Pharmacology, Biochemistry and Behavior*. 15:271-279. 1981.

Editorials, Book Chapters, Technical Reports & Proceedings:

1. **Burch JB** and Hrushesky WJM. The protective role of melatonin in breast cancer. *Breast Diseases*. 2009. (In Press).
2. Youngstedt SD, **Burch JB**. Pathophysiology, associations, and consequences of circadian rhythm sleep disorders. In Kushida CA (Ed), *Handbook of Sleep Disorders*. Taylor and Francis. Oxford, UK. pp. 123-135. 2008.
3. Reynolds SJ, **Burch JB**, Keefe T, Mehaffy J, Serrano Martinez A, Bradford M, Baker L, Cranmer B, Saito R, Tessari J, Koehncke N, Prinz L, Svendsen E, Von Essen S. Endotoxin exposure and genetic factors in organic dust lung disease. Final Report. (Grant No: 5 U50 OH008085) National Institute for Occupational Safety & Health. December, 2007.
4. **Burch JB**, Yost MG, Johnson W¹, Allen E. RF exposure and melatonin levels in heat sealer operators. Final Report. (Grant No: 5 R01 OH03885-02, PI: Yost). National Institute for Occupational Safety and Health. June, 2006.
5. Reif JS, **Burch JB**, Yost MG, Bachand A. Human responses to residential RF exposure. Final Report. (Grant No: 2 RO1 ES0008117-04, PI: Reif). National Institute of Environmental Health Sciences, Research Triangle Park, NC. August, 2005.
6. **Burch JB**, Walling M¹, Rush A², Hennesey M², Wells R. Role of melatonin in the prevention of breast cancer in patients with gross cystic breast disease. Final Report. (Grant No: DAMD17-99-1-9143). Dept. of Defense Breast Cancer Research Program, U.S. Army Medical Research and Materiel Command. Fort Detrick, MD. 2005.
7. **Burch JB**, Clark M¹, Bachand A, Yost MG, Reif JS. Biological monitoring in a community exposed to radio frequency radiation. *Revista ABHO (Brazilian Occupational Hygienists Association)*. December, 2004.
8. **Burch JB**, Reif JS, Noonan CW², Ichinose TA¹, van Wijngaarden, E², Yost, MG. Factors influencing human biological responses to occupational and residential magnetic field exposures. Final Report. Prepared for Platte River Power Authority. Fort Collins, CO. April, 2002.
9. Reif JS, Nuckols JR, **Burch JB**, Ellington D. Evaluation of priority health conditions in a community with historical contamination by trichloroethylene. Final Report. Agency for Toxic Substances and Disease Registry. Final Report. Atlanta, GA, July 23, 2000.
10. **Burch JB**, Reif JS, Noonan CW², Ichinose TA¹, van Wijngaarden E*, Yost, MG. Human biological responses to occupational and residential magnetic field exposures. Final Report. Prepared for Platte River Power Authority. Fort Collins, CO. January, 2000.
11. **Burch JB**, Metzger L, Reif JS. Prevalence of symptoms and disease in communities surrounding the Rocky Mountain Arsenal. In: Reproductive, neurobehavioral and other disorders in communities surrounding the rocky mountain arsenal. Final Report. Agency for Toxic Substances and Disease Registry, U.S. Dept. Health and Human Services. Atlanta, GA. 1995.
12. Ekambaram VV, **Burch JB**. High performance liquid chromatography as a viable field screening method. *Proc. 1st International Symposium on Field Screening Methods for Hazardous Waste Site Investigations*. U.S. Environmental Protection Agency. pp.361-365. Oct., 1988.

Abstracts (¹ Student Advisee, ² Professional Mentee):

1. Guess J¹ **Burch JB**, Ogoussan K, Zhang H, Wagner S, Hébert J, Wood P, Hofseth L, Singh U, Hrushesky WJE. Circadian disruption and circulating inflammatory cytokines. *Circadian Disruption and Cancer*. New York Academy of Sciences, New York, NY. June 19, 2009.
2. **Burch JB**, Wirth M¹, Violanti J, Burchfiel C, Fekedulegn D, Andrew M, Zhang H, Miller DB, Vena JE. Shift work duration and patterns of salivary cortisol among police officers. *Circadian Disruption and Cancer*. New York Academy of Sciences, New York, NY. June 19, 2009.
3. Vena JE, **Burch JB**, Violanti J. Stress and shift work: a deadly combination for cancer among police officers. *Circadian Disruption and Cancer*. New York Academy of Sciences, New York, NY. June 19, 2009.
4. Clark ML, Peel JL, **Burch JB**, Nelson TL, Robinson MM, Conway S, Bachand A, Reynolds SJ. Impact of improved cookstoves on indoor air pollution and adverse health effects among honduran women. *Epidemiol.* 19(6) Suppl:S190. 2008.
5. Wagner SE¹, **Burch JB**, Hussey J, Temples T, Bolick-Aldrich S, Mosely C, Liu Y, Hebert JR. Characterizing spatial and environmental determinants of prostate cancer using a geographic information system. *Epidemiol.* 18(5) Suppl:S155-6. 2007.
6. Reynolds SJ, Keefe T, Mehaffy J, Serrano Martinez A, Bradford M, Baker L, Cranmer B, Saito R, Tessari J, **Burch JB**, Koehncke N, Prinz L, Von Essen S. Endotoxin exposure and respiratory outcomes among agricultural workers in Colorado and Nebraska. *American Industrial Hygiene Conference and Exposition (AIHCE)*. Philadelphia, PA. June, 2007.
7. Clark ML¹, **Burch JB**, Yost MG, Cragin LA², Fitzpatrick CTE, Bachand AM, Ramaprasad J, Reif JS. Residential radiofrequency exposure and estrogen production among pre- and postmenopausal women. *Am J Epidemiol.* 163(11): S119. 2006.
8. Walling M¹, **Burch JB**, Rush A², Hennesey M², Craven W, Finlayson C, Anderson BO, Cosma G, Wells R. Associations between gross breast cyst composition and cancer risk factors. *Am J Epidemiol.* 163(11): S101. 2006.
9. Clark ML¹, Peel JL, Conway S, **Burch JB**, Reynolds SJ. Indoor air pollution and respiratory health among Honduran women. *Am J Epidemiol.* 163(11): S33. 2006.
10. Reynolds SJ, Cranmer B, Keefe T, Mehaffy J, Serrano Martinez A, Saito R, Tessari J, **Burch JB**, Koehncke N, Burch L, Wood E, Siegel P. Endotoxin exposure and respiratory outcomes among dairy, feedlot, and grain elevator workers in Colorado. *American Industrial Hygiene Conference and Exposition (AIHCE)*. Chicago, IL. May, 2006.
11. **Burch JB**, Yost MG, Clark M¹, Fitzpatrick CTE, Ramaprasad J, Bachand A, Reif JS. Radio frequency non-ionizing radiation in a community exposed to radio and TV broadcasting. *Epidemiology.* 16(5): S108-S109. 2005.
12. **Burch JB**, Reif JS, Noonan CW², Ichinose T¹, Bachand A, Koleber TL², Yost MG. Melatonin metabolite excretion among cellular telephone users (Abstract). *Annual Meeting of the Bioelectromagnetics Society*. Maui, HI, June, 2003.

Abstracts (¹ Student Advisee, ² Professional Mentee) (Continued):

13. **Burch JB**, Bigelow P, Bakjaji K². Biomonitoring of pulmonary inflammation and oxidative DNA damage among diesel exposed workers. *Epidemiology*. 13(4): S163. 2002.
14. **Burch JB**, Wells RL, Hennesey M, Finlayson C, Craven W, Anderson B, Cosma GN. Role of melatonin in the prevention of breast cancer in patients with gross cystic breast disease (Abstract). Era of Hope U.S. Dept. of Defense Breast Cancer Research Program Meeting, Orlando, FL. Sept., 2002.
15. **Burch JB**, Ichinose T¹, Reif JS, Noonan CW², Yost MG. Modulation of natural killer cells and ornithine decarboxylase activity in electric utility workers (Abstract). Annual Meeting of the Bioelectromagnetics Society. St. Paul, MN, June, 2001.
16. Ramsdell HS, **Burch JB**. Determination of N¹-acetyl-5-methoxykynuramine in human urine. *Toxicological Sciences*. 60(1S):415. 2001.
17. **Burch JB**, Bigelow P, Bakjaji K². Biomonitoring for the inflammation mediator, leukotriene E4, in diesel exposed workers (Abstract). American Industrial Hygiene Conference and Exposition (AIHCE), New Orleans, LA, June, 2001.
18. Noonan CW², Reif J, **Burch J**, Magnusson K. Magnetic fields, melatonin, and amyloid beta protein in electric utility workers. *Epidemiology*. 11:S136. 2000.
19. Mitsutake G, Cornelissen G, Otsuka K, Herold M, Dawes C, **Burch J**, Rawson MJ, Halberg F, Ferguson I. Relations between positive and negative affect and blood pressure in a clinically healthy man. Proceedings, 1st Annual International Symposium, Workshop on Chronoastrobiology and Chronotherapy. (Satellite Symposium, 7th Annual Meeting, Japanese Society for Chronobiology). Kudan, Chiyodaku, Tokyo, Japan, November 11, 2000. pp. 34-36.
20. **Burch JB**, Reif JS, Noonan CW², Yost MG. Reduced melatonin metabolite levels in electric utility workers. (Abstract). 21st Annual Meeting of the Bioelectromagnetics Society. Long Beach, CA, June, 1999.
21. **Burch JB**, Reif JS, Yost MG. Geomagnetic fields are associated with reduced excretion of a urinary melatonin metabolite (Abstract). 20th Annual Meeting of the Bioelectromagnetics Society. St. Petersburg, FL, June, 1998.
22. **Burch JB**, Reif JR, Pitrat CA², Keefe TJ, Yost MG. Cellular telephone use and excretion of a urinary melatonin metabolite (Abstract). Annual Review of Research on the Biological Effects of Electric and Magnetic Fields from the Generation, Delivery and Use of Electricity. U.S. Dept. of Energy. San Diego, CA. November, 1997.
23. Leeper EA, **Burch JB**. Toward external assessment of transient exposure for epidemiology (Abstract). Annual Review of Research on the Biological Effects of Electric and Magnetic Fields from the Generation, Delivery and Use of Electricity. U.S. Dept. of Energy. San Diego, CA. November, 1997.
24. Reif JS, **Burch JB**. Effects of exposure to magnetic fields on melatonin in humans (Abstract). 2nd World Congress for Electricity and Magnetism in Biology and Medicine. Bologna, June, 1997.

Abstracts (¹ Student Advisee, ² Professional Mentee) (Continued):

25. **Burch JB**, Reif JR, Pitrat CA², Keefe TJ, Yost MG. Melatonin in electric utility workers (Abstract). Annual Review of Research on the Biological Effects of Electric and Magnetic Fields from the Generation, Delivery and Use of Electricity. U.S. DOE. San Antonio, TX. Nov., 1996.
26. **Burch JB**, Reif JS, Pitrat CA², Keefe TJ, Yost MG. Melatonin in electric utility workers (Abstract). 18th Annual Meeting of the Bioelectromagnetics Society. Victoria, BC, Canada. June, 1996.
27. Reif JS, **Burch JB**, Pitrat CA², Keefe TJ, Yost MG. Melatonin in electric utility workers (Abstract). Annual Review of Research on the Biological Effects of Electric and Magnetic Fields from the Generation, Delivery and Use of Electricity. U.S. Dept. of Energy. Palm Springs, CA. Nov. 1995.
28. **Burch JB**, Marks MJ, and Collins AC. Ethanol-nicotine tolerance and cross-tolerance: role of cholinergic receptors (Abstract). Alcoholism: Clinical and Experimental Research. 7(106). 1983.

TEACHING

Course Instruction:

<u>Class</u>	<u>Semester, Year</u>	<u>Role</u>
Principles of Epidemiology (EPID 410), Undergraduate	Fall, 2009 (Scheduled)	Course Instructor
Biological Basis of Public Health (EPID 725, USC), Graduate	Spring, 2007, 2008, 2009	Course Instructor
Environmental Factors & Human Health (EPID 747, USC), Graduate	Fall, 2006, 2007	Course Instructor
Seminar in Epidemiology (EPID 745, USC), Graduate	Fall, 2008	Course Coordinator
Principles of Epidemiology (EH332, CSU), Undergraduate	Spring, 2003, 2004	Course Instructor
Environmental & Occupational Epidemiology (EH658, CSU), Graduate	Spring, 2001, 2003	Course Instructor
Environmental Health Seminar (EH692/792, CSU), Graduate	Fall, 2000	Course Coordinator
Epidemiology Research Seminar (EH693A, CSU), Graduate	Spring & Fall, 2000 Fall, 2004	Course Coordinator
Environmental Sanitation I (EH312, CSU), Undergraduate	Fall, 1994	Graduate Teaching Assistant

Class Lectures:

<u>Class</u>	<u>Title</u>	<u>Semester, Year</u>
Social Epidemiology (EPID 794, USC)	Biology of Stress & its Relation to Disease	Fall, 2008
Seminar in Epidemiology (EPID 845, USC)	Shift Work & Cancer	Spring, 2008
Cancer Epidemiology (EPID 746, USC)	Environmental & Occupational Cancer Epidemiology	Fall, 2008
Seminar in Epidemiology (EPID 745, USC)	Shift Work, Circadian Rhythm Disruption & Cancer	Fall, 2007
Hallmarks of Cancer (BIOL 610, USC)	Circadian Disruption & Cancer	Spring, 2007
Cancer Epidemiology (EPID 746, USC)	Temporal Factors & Causality	Fall, 2006, 2008
Epidemiological Concepts in Selected Disease or Health Conditions (EPID 742, USC)	Air Pollution Epidemiology	Fall, 2005
Radiation Public Health (R561, CSU)	Epidemiology of Ionizing Radiation	Fall, 2003
Occupational Illness & Injury (PY680, CSU)	Shift Work & Breast Cancer	Spring, 2002
Epidemiology Colloquium (EH693A, CSU)	Use of GIS Modeling to Study the Neurotoxic Effects of Drinking Water Contamination	Spring, 2000
Human Disease & the Environment (EH430, CSU)	Health Effects of Non-Ionizing Radiation	Spring, 2000
Epidemiology Colloquium (EH693A, CSU)	Occupational EMF Exposure & Melatonin Suppression	Fall, 1999
Epidemiology Colloquium (EH693A, CSU)	Diesel Exposure, Lung Inflammation, & Oxidative DNA Damage	Fall, 1999
Advanced Occupational Health (EH536, CSU)	Shift Work, Circadian Rhythms, & Health	Spring, 1998-2005
Advanced Environmental Health (EH520, CSU)	Epidemiologic Investigations of Electromagnetic Field Exposures	Fall, 1996 & 1997

Class Lectures (Continued):

<u>Class</u>	<u>Title</u>	<u>Semester, Year</u>
Toxicology of Environmental Agents (EH501, CSU)	Melatonin's Physiological Properties & the Consequences of its Disrupted Secretion	Fall, 1997
Biomarkers in Environmental & Human Studies (EH696, CSU)	Melatonin as a Biomarker of Oxidative Stress in Humans	Spring, 1996
Environmental & Occupational Epidemiology (EH658, CSU)	Environmental & Occupational Epidemiology of Electromagnetic Field Exposure	Spring, 1995-1998
Industrial Hygiene (EH527, CSU)	Health & Safety Regulations for Hazardous Waste Sites	Fall, 1994
Epidemiologic Methods (EH532, CSU)	Human Health Risk Assessment Methods	Spring, 1994
Principles of Epidemiology (EH332, CSU)	Epidemiology of EMF Exposure	Spring, 1994

Professional Workshops & Training Courses:

<u>Course</u>	<u>Date/Location</u>	<u>Role</u>
OSHA Health & Safety Training for Hazardous Waste Sites	1988-1992 Woodward-Clyde Consultants, Denver, CO and Frankfurt, Germany	Instructor
AHERA Asbestos Operations & Maintenance Training	May, 1990 Woodward-Clyde Consultants, Frankfurt, Germany	Instructor

Graduate Student Advisees:

<u>Student Name</u>	<u>Degree</u>	<u>Role</u>	<u>Project Title</u>	<u>Dates</u>
Melanie Alexander	PhD	Dissertation Advisor	Undeclared	2009-Present
Sara Wagner (<i>Winner: Outstanding Graduate Student Research Award, USC Dept. of Epidemiology & Biostatistics</i>)	PhD	Dissertation Advisor	Groundwater Uranium & Chronic Disease Outcomes	2007-2008 (Completed)
Himal Dhotre	PhD	Dissertation & Academic Advisor	Sentinel Surveillance using Poison Control Center Data	2007-Present

Graduate Student Advisees (Continued):

<u>Student Name</u>	<u>Degree</u>	<u>Role</u>	<u>Project Title</u>	<u>Dates</u>
Eren Youmans	PhD	Dissertation & Academic Advisor	Epidemiology of HIV-infected women in South Carolina: Implications of previous incarceration	2007-Present
Michael Wirth	MSPH	Thesis Advisor	Circadian Disruption among Police Officers	2007-Present
Kathy Dhotre	PhD	Committee Member	Palliative Melatonin Administration among Breast Cancer Patients	2008-Present
Chris Kline	PhD	Committee Member	Changes in HPA Axis Functioning with Exercise Training in the Treatment of Insomnia	2008-Present
Ali Mansaray	PhD	Committee Member	Impact of Colonoscopies Performed by Primary Care Physicians.	2007-2008
Margie Walling	PhD	Dissertation Advisor (03-05) Committee Member (06-present)	Melatonin and Estrogen in Breast Cyst Fluids	2003-Present
Wright Culpeper	MSPH	Academic Advisor	Undeclared	2008-Present
Jaclyn Guess	MSPH	Thesis Advisor	Circadian Disruption & Polyp Formation	2007-2008 (Completed)
Lariessa Stumm	MSPH	Academic Advisor	Leptin & Prostate Cancer	2006-2008 (Completed)
Yusheng Zhai	MSPH	Committee Member	Impact of auxiliary information for parameter estimation in logistic regression with missing outcome data	2006-2007 (Completed)
Yeong Oh	MD, PhD	Committee Member	Seasonal and Monthly Cycles of Breast Cancer Susceptibility and Survival	2006-2008 (Completed)
Hao Zhu	MSPH	Academic Advisor	HIV & AIDS Surveillance	2005-2007 (Completed)

Graduate Student Advisees (Continued):

<u>Student Name</u>	<u>Degree</u>	<u>Role</u>	<u>Project Title</u>	<u>Dates</u>
Sara Wagner <i>(Winner: USC Graduate School, Arnold School of Public Health & Dept Epidemiol. & Biostatistics Travel Awards, 2007; & Public Health Traineeship, 2005-2006)</i>	MSPH	Thesis Advisor	Geographical Determinants Contributing to the Racial Prostate Cancer Disparity in South Carolina	2005-2006 (Completed)
Maggie Clark	PhD	Committee Member	Indoor Air Pollution & Respiratory Health among Honduran Women	2005-2008 (Completed)
John Wolownik	MSPH	Academic Advisor	Undeclared	2005
Lori Cragin	PhD	Committee Member	Melatonin & Residential RF Exposure	2003-2005
Kishig Jamiyansharav	PhD	Committee Member	Mongolian Air Quality Monitoring	2003-2005
Kerri Bain-Phillips	MA	Committee Member	Health Education at Poudre Valley Hospital	2004-2005 (Completed)
Maggie Clark <i>(Winner: Outstanding Graduate Student Award)</i>	MS	Thesis Advisor	Estrogen, Melatonin & Residential RF Exposure	2001-2005 (Completed)
Travers Ichinose <i>(Winner: Outstanding Graduate Student & John R. Bagby Awards)</i>	MS	Thesis Advisor	Modulation of the Immune System by Magnetic Fields in a Group of Electric Utility Workers	1999-2001 (Completed)
Edward Leo	PhD	Dissertation Advisor	The Role of Shift Work Adaptation on Stress and Performance	2000-2002
Lela Criswell	MS	Committee Member	Workplace Stress & Physical Conditioning	2000-2005
Wendy Johnson	PhD	Dissertation Co-Advisor	RF Exposure and Melatonin Levels in Heat Sealer Operators	2000-2002
Edwin van Wijngaarden	MS	Internship Co-Advisor	Human Biological Responses to Occupational & Residential Magnetic Field Exposures	1996-98 (Completed)
Curtis Noonan	PhD	Research Supervisor	Neurodegenerative Disease & Occupational Magnetic Fields Exposure	1997-2000 (Completed)

Undergraduate Student Advisees:

<u>Student Name</u>	<u>Role</u>	<u>Project Title</u>	<u>Dates</u>
Kinda Bakjaji	MS	Research Co-Advisor Occupational Exposure to Diesel Exhaust and Leukotriene E4 Excretion	1998-2000 (Completed)
Terri Koleber	MS	Research Co-Advisor EMF Exposure, Depression and 5-HIAA excretion in Utility Workers	1998-1999 (Completed)
Jackie Vivar	Research Supervisor	Survey of Circadian and Psychosocial Factors among Colonoscopy Patients	2008-2009
Laquissa Boyd	Internship Supervisor	Physical Activity Monitoring & Evaluation	Summer, 2007 (Completed)
Jasmine Tom (Winner: John R. Bagby Award)	Honors Thesis Advisor	Shift Work & Stress among Nurses, RF Exposure Assessment in Workers	2002-2005 (Completed)
Shannon Oliver	Internship Supervisor	Indoor Air Pollution & Respiratory Health among Honduran Women	2004-2005 (Completed)
Victoria Stark	Internship Supervisor	Workplace Monitoring of RF Heat Sealer Operators	S/F, 2001 Spring, 2002 (Completed)
Amanda Wood	Independent Study Supervisor	Factors Influencing Human Biological Responses to Magnetic Field Exposures	Spring, 2001 (Completed)
Travers Ichinose	Independent Study Supervisor	Human Biological Responses to Occupational & Residential Magnetic Fields	Fall, 1998 (Completed)

Professional Research Activities Supervised:

<u>Name</u>	<u>Job Title</u>	<u>Project Title</u>	<u>Dates</u>
Debjani Chanda	Research Assistant	Endotoxin Exposure and Genetic Factors in Organic Dust Lung Disease	2007
Yusheng Zhai, MSPH	Research Assistant	Human Responses to RF Exposure, Circadian Rest/Activity Rhythms	2005-2007
Kisito Ogoussan, MSPH, MD	Research Associate	Role of Circadian Disruption in Polyp Formation and Recurrence	2005-2007

Professional Research Activities Supervised (Continued):

<u>Name</u>	<u>Job Title</u>	<u>Project Title</u>	<u>Dates</u>
Kari Everett	Student Hourly	RF Exposure and Melatonin Levels in Heat Sealer Operators	2004
Adam Rush	Research Associate	Role of Melatonin in the Prevention of Breast Cancer in Patients with Gross Cystic Breast Disease	2003
Clover Stout	Student Hourly	Role of Melatonin in the Prevention of Breast Cancer in Patients with Gross Cystic Breast Disease	2003
Angela Coss	Research Associate	Human Responses to Residential RF Exposure	2002-2003
Maxine Hennessy, MS	Research Associate	Role of Melatonin in the Prevention of Breast Cancer in Patients with Gross Cystic Breast Disease	2000-2002
Kathryn Gallagher	Student Hourly	Role of Melatonin in the Prevention of Breast Cancer in Patients with Gross Cystic Breast Disease	2001-2002
Sarah Carroll	Student Hourly	Role of Melatonin in the Prevention of Breast Cancer in Patients with Gross Cystic Breast Disease	2000-2001
Robyn Anderson	Student Hourly	Melatonin & Occupational Magnetic Field Exposure	1998
Jeanette Haddock	Student Hourly	Melatonin & Occupational Magnetic Field Exposure	1996-1997
Kristina Reyner	Student Hourly	Human Biological Responses to Occupational & Residential Magnetic Fields	1996-1997
Lee Ann Kempton	Student Hourly	Human Biological Responses to Occupational and Residential Magnetic Fields	1996-1997

PRESENTATIONS

Invited Presentations:

<u>Title</u>	<u>Organization</u>	<u>Location/Date</u>
Colorectal Cancer Research at the South Carolina Cancer Prevention & Control Program	Hollings Cancer Center Spring Research Symposium, Medical University of South Carolina	Charleston, SC March, 2009
Communities Living Near Radio & TV Broadcasting Transmitters	Fairleigh Dickinson University Public Policy Forum. Wireless: Science, Public Policy & the BioInitiative Report	Newark, NJ, 2009 (Postponed, new date to be determined)
SCOPE SC, South Carolina's Statewide Colorectal Cancer Screening Program.	SC Primary Health Care Association Clinical Network,	Columbia, SC, July, 2008
Circadian Rhythm Disruption & Cancer	Department of Veteran's Affairs VISN-7 Research Meeting,	Charleston, SC October, 2007
Circadian Rhythm Disruption & Cancer	Department of Veteran's Affairs Medical Center, VA Research Day	Columbia, SC, May, 2007
Biological Monitoring in a Community Exposed to Radio Frequency Radiation	Brazilian Occupational Hygienists Association	Sao Paulo, Brazil (Teleconference) Aug., 2004
Neurobehavioral Effects of Exposure to Trichloroethylene Through a Municipal Water Supply	U.S. Environmental Protection Agency (USEPA), Office for Environmental Assessment	Wash., DC Feb., 2003
Biomonitoring for the Inflammation Mediator, Leukotriene E4, in Diesel Exposed Workers	Div. of Environmental & Occupational Health Sciences, National Jewish Medical & Research Center	Denver, CO April, 2001
Evaluation of Priority Health Conditions in a Community with Historical Contamination by Trichloroethylene	Rocky Mt. Arsenal Residential Advisory Board & the US Agency for Toxic Substances & Disease Registry	Denver, CO April, 2001
Evaluation of Priority Health Conditions in a Community with Historical Contamination by Trichloroethylene	Lowry AFB Residential Advisory Board & the US Agency for Toxic Substances & Disease Registry	Denver, CO Feb, 2001
Melatonin in Electric Utility Workers	Dept. of Environmental Health, U. of Washington	Seattle, WA May 8, 1997
Melatonin in Electric Utility Workers	U.S. Department of Energy Melatonin Summit Conference	Portland, OR May 3-6, 1995

Invited Presentations (Continued):

<u>Title</u>	<u>Organization</u>	<u>Location/Date</u>
Melatonin as a Potential Biomarker of Exposure to Magnetic Fields	Colorado Health Effects Communicators Conference	Lakewood, CO Feb. 6, 1995
Risk Communication for Risk Assessment (EH648)	Dept. of Environmental Health, Colorado State University	Ft. Collins, CO. Apr, 1992

Conference Presentations:

<u>Type</u>	<u>Title</u>	<u>Organization</u>	<u>Location/Date</u>
Poster	Characterizing Spatial and Environmental Determinants of Prostate Cancer using a Geographic Information System	International Society of Environmental Epidemiology	Mexico City, Mexico, Sept, 2007
Platform	Radio frequency non-ionizing radiation in a community exposed to radio and TV broadcasting	International Society of Environmental Epidemiology	Johannesburg, South Africa Sept, 2005
Platform	Melatonin metabolite excretion among cellular telephone users	Annual Meeting of the Bioelectromagnetics Society	Maui, HI, June, 2003
Poster	Breast cancer risk in women with gross cystic breast disease: role of endocrine, genetic, and environmental markers	Avon Breast Cancer Retreat U. of Colo. Health Sci. Center, Fitzsimmons Campus.	Denver, CO March, 2002
Poster	Biomonitoring of pulmonary inflammation and oxidative DNA damage among diesel exposed workers.	International Society of Environmental Epidemiology	Vancouver, BC August, 2002
Poster	Role of melatonin in the prevention of breast cancer in patients with gross cystic breast disease.	Era of Hope US Dept. of Defense Breast Cancer Research Program Meeting	Orlando, FL Sept., 2002
Poster	Modulation of natural killer cells & ornithine decarboxylase activity in electric utility workers	Annual Meeting of the Bioelectromagnetics Society	St. Paul, MN June, 2001
Platform	Reduced melatonin metabolite levels in electric utility workers: replication study.	Annual Meeting of the Bioelectromagnetics Society	Long Beach, CA, June, 1999
Poster	Geomagnetic fields are associated with reduced excretion of a urinary melatonin metabolite.	Annual Meeting of the Bioelectromagnetics Society	St. Petersburg, FL June, 1998

Conference Presentations (Continued):

<u>Type</u>	<u>Title</u>	<u>Organization</u>	<u>Location/Date</u>
Poster	Cellular telephone use & excretion of a urinary melatonin metabolite.	Annual Review of Research on the Biological Effects of Electric & Magnetic Fields from the Generation, Delivery & Use of Electricity, U.S. Dept. of Energy	San Diego, CA Nov, 1997
Platform	Melatonin levels in electric utility workers	Annual Review of Research on the Biological Effects of Electric & Magnetic Fields from the Generation, Delivery & Use of Electricity, U.S. Dept. of Energy	San Antonio, TX Nov, 1996
Platform	Melatonin levels in electric utility workers	Annual Epidemiology Exchange	Denver, CO Nov 10, 1995

SERVICE - Academic:

<u>Activity</u>	<u>Organization</u>	<u>Dates</u>
Institutional Review Board	University of South Carolina, Columbia, SC	2008-Present
Graduate Admissions Committee	Department of Epidemiology & Biostatistics, University of South Carolina	2008-Present
CEPH Accreditation Student Committee	Arnold School of Public Health, University of South Carolina	2008
Judge, Undergraduate Research in Public Health	South Carolina Academy of Science, Annual Meeting, Midlands Technical College, Columbia, SC	2007
Curriculum Committee	Department of Epidemiology & Biostatistics, University of South Carolina	2005-Present
Curriculum Committee	Arnold School of Public Health, University of South Carolina	2006
Grant Proposal Review Committee	South Carolina Cancer Disparities Community Network, National Cancer Institute R03 Pilot Projects, University of South Carolina	2006

SERVICE - Academic (Continued):

<u>Activity</u>	<u>Organization</u>	<u>Dates</u>
Grant Proposal Review Committee	Office of Research & Arnold School of Public Health, SEED Grant Program, University of South Carolina	2005
Search Committee, Post-Doctoral Fellow, Environmental Health	Dept. of Environmental & Radiological Health Sciences, Colorado State University Advanced Systems Laboratory	2003
Conflict of Commitment/ Conflict of Interest Review Committee	College of Veterinary Medicine and Biomedical Sciences, Colorado State University	2002-2005
Search Committee, Ergonomics/Human Factors Faculty Position	Dept. of Environmental Health, Colorado State University	2002

SERVICE - Professional & Community:

<u>Activity</u>	<u>Organization</u>	<u>Dates</u>
Peer Review Study Section	National Institute of Environmental Health Sciences (NIEHS), Children's Environmental Health and Disease Prevention Research Centers	2009
Consultant	South Carolina Cancer Control Advisory Committee, State Dept. of Health and Environmental Control	2009-Present
Peer Review Study Section	National Institute of Environmental Health Sciences (NIEHS), Superfund Basic Research & Training Program	2008
Consultant	Environmental Public Health Tracking Network, South Carolina Dept. of Health and Environmental Control	2008
Research Review Committee	Dorn Veteran's Affairs Medical Center, Columbia, SC	2008-Present
Institutional Review Board	Eau Claire Cooperative Health Care Centers, Columbia, SC	2008-Present
Research and Development Committee	Dorn Veteran's Affairs Medical Center, Columbia, SC	2007-2008

SERVICE - Professional & Community (Continued):

<u>Activity</u>	<u>Organization</u>	<u>Dates</u>
Peer Review Study Section	National Institutes of Health (NIH), Center for Scientific Review, Program for Basic/Biomedical Sciences, International and Cooperative Projects & Global Research Initiative	2007
Chairman, Screening Subcommittee	Colorectal Cancer Work Group South Carolina Cancer Alliance	2007-2009
Colorectal Cancer Work Group	South Carolina Cancer Alliance	2006-Present
Research Task Force	South Carolina Cancer Alliance	2005-Present
Peer Review Study Section	National Institutes of Health, National Cancer Institute (NCI), Small Grants Program for Cancer Epidemiology & Cancer Prevention	2006
Peer Review Study Section	National Institute for Occupational Safety & Health (NIOSH), National Occupational Research Agenda, Intramural Program Proposal Review	2004
Peer Review Study Section	National Institute for Occupational Safety & Health (NIOSH), National Occupational Research Agenda, Intramural Program & Project Pre-Proposal Review	2004
Co-Chair, Environmental & Occupational Health Committee, Colorado State Asthma Plan	Colorado Dept. of Public Health & Environment, Colorado Asthma Coalition	2003-2004
Scientific Program Committee, Annual Epidemiological Research Exchange	U. of Colo. School of Medicine, Colo. Dept. of Public Health & Environment, CSU Dept. of Environmental Health, Colo. Public Health Association	2001-2005
Expert Panel Member	National Institute of Environmental Health Sciences (NIEHS) EMF Science Review, Symposium on Clinical and In Vivo Laboratory Findings	1998

Ad Hoc Manuscript Peer Review for:

American Journal of Epidemiology
Breast Cancer Research & Treatment
Bioelectromagnetics
Cancer Investigation
Chemosphere
Chronobiology International
Journal of Clinical Epidemiology
International Journal of Biometeorology
International Journal of Health Geographics
International Journal of Radiation Biology
Natural Hazards
Neuroscience Letters
U.S. Geological Survey, Water Resources Division
U.S. National Institute for Occupational Safety and Health (NIOSH)

Professional Associations:

International Society of Environmental Epidemiology (2002-Present)
American Association for Cancer Research (2007-2009)
Bioelectromagnetics Society (1993-2004)
Society for Epidemiologic Research (1993-4)
Society of Environmental Toxicology and Chemistry (1987-9)
National Environmental Health Association (1986-7)
Air Pollution Control Association (1986-7)
Behavior Genetics Association (1984)

SELECTED PROFESSIONAL EXPERIENCE (1986-1993):

- Risk Assessment Coordinator for a U.S. Air Force base with 13 separate hazardous waste source areas. Received Woodward-Clyde Project Excellence Award (1992).
- Project Coordinator for a human health risk assessment at the Rocky Flats nuclear weapons production facility (903 Pad-Operable Unit 2), Golden, CO. Prepared human health and ecological risk assessments for numerous other hazardous waste sites including: a pesticide formulating plant, several military installations, a battery reprocessing facility, several hazardous waste incinerators, a municipal landfill, mining facilities, and a wood treatment plant. These projects included the identification or development of health-based chemical specific clean-up concentrations.
- Project Manager for 12 asbestos-related projects that included: the inspection of more than 800 buildings for asbestos containing materials, the collection and analysis of bulk material, dust, and air samples for asbestos quantification, preparation of inspection reports and asbestos management plans, inspection of asbestos abatement projects, and consultation concerning U.S. and German regulations pertaining to asbestos management, abatement, and disposal. Letter of commendation received from U.S. Army Engineer Division, Europe (1988).

SELECTED PROFESSIONAL EXPERIENCE (1986-1993) (Continued):

- As Health & Safety Officer, developed and implemented site-specific health and safety plans for hazardous waste site investigations, monitored projects for regulatory compliance, supervised training, medical monitoring, and respiratory protection programs, performed air quality and biological monitoring for exposure to pesticides, polycyclic aromatic and chlorinated hydrocarbons, volatile aromatic compounds, and heavy metals.

CERTIFICATIONS AND PROFESSIONAL DEVELOPMENT

Travel Scholarship - Genetic Epidemiology, Eastern Tennessee State University, Summer Epidemiology Institute, Johnson City, TN, May, 2008.

Genomic Epidemiology, International Society of Environmental Epidemiology. Mexico City, Mexico. September, 2007.

Approaches to Complex Pathways in Molecular Epidemiology, American Association for Cancer Research. Albuquerque, NM. May, 2007.

Genetic Epidemiology, Epidemiology Congress, Second North American Congress of Epidemiology. Seattle, WA. June, 2006

Population Health Risk Assessment for Epidemiologists, International Society of Environmental Epidemiology. Johannesburg, South Africa, Sept, 2005.

Spirometry Training, Dept. of Environmental & Radiological Health Sciences, Colorado State University, May, 2004.

WebCT Bootcamp Workshop, Colo. State U. Office of Instructional Services, Sept., 2002.

Protection of Human Subjects, Colo. State U. Office of Regulatory Compliance, August, 2000.

Advanced Risk Assessment, USEPA Region VIII, 1991.

Data Collection for Risk Assessment, USEPA Region VIII, 1991.

OSHA Hazardous Waste Health & Safety Training (included Level B certification), 1986-1990.

USEPA AHERA Asbestos Abatement Contractor/Supervisor, 1990.

USEPA AHERA Asbestos Management Planner, 1988.

USEPA AHERA Asbestos Building Inspector, 1988.

Environmental Epidemiology, Colo. Dept. of Health/Colo. Environmental Health Assoc., 1985.

Hazardous Waste Management, Dept. Environmental Health & Safety, U. of Colorado, 1984.

Radiation Safety, Dept. Environmental Health & Safety, U. of Colorado, 1981.

Emergency Medical Technician, Colorado Dept. of Health, 1981-1984.

Standard First Aid and Cardiopulmonary Resuscitation, American Red Cross, 1978-1989.