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October 18, 2021

British Columbia Utilities Commission  
Suite 410, 900 Howe Street  
Vancouver, BC  
V6Z 2N3

Attention: Mr. Patrick Wruck, Commission Secretary

Dear Mr. Wruck:

**Re: FortisBC Energy Inc. (FEI)**

**Application for a Certificate of Public Convenience and Necessity (CPCN) for Approval of the Advanced Metering Infrastructure (AMI) Project (AMI Project or AMI Application)**

**FEI Curriculum Vitae for Appendix F-1 and F-2 in Exhibit B-1**

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On May 5, 2021, FEI filed the above noted Application. It has come to FEI's attention that the Curriculum Vitae for Appendix F-1, Exponent RF Technology Report and F-2, Exponent RF Health Report in Exhibit B-1 were inadvertently omitted.

FEI respectfully submits the attached Curriculum Vitae of the following:

- Benjamin Cotts, Ph.D., P.E
- Pamela Dopart, Ph.D., CIH
- William H. Bailey, Ph.D.

If further information is required, please contact the undersigned.

Sincerely,

**FORTISBC ENERGY INC.**

***Original signed:***

Diane Roy

Attachments

cc (email only): Registered Parties



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Engineering & Scientific Consulting

## Benjamin R.T. Cotts, Ph.D., P.E.

Senior Managing Engineer | Electrical Engineering & Computer Science  
17000 Science Drive, Suite 200 | Bowie, MD 20715  
(301) 291-2519 tel | bcotts@exponent.com

### Professional Profile

Dr. Cotts is experienced in both applied and theoretical electromagnetics and plasma physics including modeling and measurement analyses of natural and anthropogenic electromagnetic fields such as space weather, and geomagnetic storms as well as in the initiation, field effects, and characteristics of lightning discharges. Dr. Cotts performs modeling and measurement studies of power system EMF, audible noise, and radio noise including evaluations of 500-kV AC and  $\pm 560$  kV DC transmission lines. Dr. Cotts has further experience in modeling magnetic fields and induced electric fields for offshore wind farms including those from wind turbines, offshore substations and subsea AC and DC transmission lines and is an officer in the IEEE working group for Corona and Field Effects overseeing IEEE standards 644, 430, 656, 1542, 1227, 2746, 1829 and 1308.

Dr. Cotts also performs various types of electromagnetic field evaluations for devices and systems including smart meter mesh networks and government/military communications facilities as well as exposure, EMI or EMC assessments. These assessments are provided for clients such as federal and state agencies, utilities, hospitals, medical-device manufacturers, construction developers, the U.S. military. In addition, Dr. Cotts regularly receives requests to perform exposure assessments for patients with pacemakers, ICDs, and other implantable medical devices and to remediate EMI issues for medical devices and in health care settings.

Dr. Cotts has been a leading figure in coordinating scientific outreach to developing countries through the United Nations International Heliophysical Year (IHY) and International Space Weather Initiative (ISWI) programs and was a founding member of a NASA/UN-sponsored conference series organized and led multiple conferences on atmospheric and space science.

Dr. Cotts's has a decade of experience with the initiation, field effects, and propagation of lightning discharges; combining remote sensing measurements of ionospheric disturbances with numerical modeling of atmospheric, ionospheric, and magnetospheric interactions to determine the role of global lightning on the removal of radiation belt electrons. These radiation belt electrons are a critical factor in space weather for determining the effective lifetime of spacecraft with electronics that can be irreversibly damaged by radiation belt electrons.

Additionally, Dr. Cotts software engineering experience includes the use of Matlab, C, C++, and a variety of other scientific packages including Mathematica and COMSOL. He has experience with auditing software processes and algorithms used during his investigations related to control systems involved in failure events.

## Academic Credentials & Professional Honors

Ph.D., Electrical Engineering, Stanford University, 2011

M.S., Electrical Engineering, Stanford University, 2004

B.S., Electrical Engineering, University of Portland, summa cum laude, 2002

Outstanding Student Paper Award, AGU Fall Meeting, San Francisco, California, 2004

Tau Beta Pi Engineering Honor Society

Delta Epsilon Sigma, National Scholastic Honor Society

Awarded "2017 IEEE Standards Medallion" For contributions to standards development in power and energy distribution.

Awarded the "2014 Fire Protection Research Foundation Medal" by the NFPA's Fire Protection Research Foundation for the 2013 research project ("Best Practices for Emergency Response to Incidents Involving Electric Vehicles Battery Hazards: A Report on Full-Scale Testing Results") that best exemplified the Foundation's fire safety mission at the National Fire Protection Association's Conference & Exposition, June 2014

## Licenses and Certifications

Licensed Professional Electrical Engineer, California, #21277

## Prior Experience

Post Doctoral Scholar, University of Colorado, Denver, 2011

International Science Outreach Manager, Stanford University, 2007-2011

Research Assistant, Stanford University, 2002-2011

Energy Research Fellow, Stanford Linear Accelerator Center, 2001

## Professional Affiliations

Institute of Electrical and Electronics Engineers — IEEE

International Committee on Electromagnetic Safety — ICES

International Council on Large Electric Systems — CIGRÉ

## Publications

### Peer Reviewed Publications

Gołkowski M, Gross NC, Moore RC, Cotts BRT, Mitchell M. Observation of local and conjugate ionospheric perturbations from individual oceanic lightning flashes. *Geophysical Research Letters* 2014; 41:273-279. doi:10.1002/2013GL058861.

NaitAmor, S, Cohen MB, T. Cotts BR, Ghalila H, AlAbdoaim MA, Graf K. Characteristics of long

recovery early VLF events observed by the North African AWESOME Network. *Journal of Geophysical Research: Space Physics* 2013; 10.1002/jgra.50448

Haldoupis, C, Cohen M, Arnone E, Cotts B, Dietrich S. The VLF fingerprint of elves: Step-like and long-recovery early VLF perturbations caused by powerful &plusmn;CG lightning EM pulses. *Journal of Geophysical Research: Space Physics*, 2013. doi: 10.1002/jgra.50489.

Haldoupis C, Cohen M, Cotts B, Arnone E, Inan U. Long-lasting D-region ionospheric modifications, caused by intense lightning in association with elve and sprite pairs. *Geophysical Research Letters* 2012; 39:L16801. doi:10.1029/2012GL052765.

Salut MM, Abdullah M, Graf KL, Cohen MB, Cotts BRT, Kumar S. Long recovery VLF perturbations associated with lightning discharges. *Journal of Geophysical Research* 2012; 117:A08311. doi:10.1029/2012JA017567.

Cotts BRT, Gołkowski M, Moore RC. Ionospheric effects of whistler waves from rocket-triggered lightning. *Geophysical Research Letters* 2011; 38:L24805. doi:10.1029/2011GL049869.

Cotts BRT, Inan US, Lehtinen NG. Longitudinal dependence of lightning-induced electron precipitation. *Journal of Geophysical Research* 2011; 116:A10206. doi:10.1029/2011JA016581.

Cotts BRT. Global quantification of lightning-induced electron precipitation using very low frequency remote sensing. Doctoral Dissertation, Stanford University, 2011.

Haldoupis C, Amvrosiadi N, Cotts BRT, Van der Velde O, Chanrion O, Neubert T. More evidence for a one-to-one correlation between Sprites and Early VLF perturbations. *Journal of Geophysical Research* 2010, 115:A07304. doi:10.1029/2009JA015165.

NaitAmor S, Al Abdoaim MA, Cohen MB, Cotts BRT, Neubeurt T, Soula S, Chanrion O, Abdelatif T. VLF observations of ionospheric disturbances in association with TLEs from the Eurosprite-2007 Campaign, *Journal of Geophysical Research* 2010; 115:A00E47. doi:10.1029/2009JA015026.

Cotts BRT, Inan US. VLF observation of long ionospheric recovery events. *Geophysical Research Letters* 2007; 34:L14809. doi:10.1029/2007GL030094.

## Reports

Snyder DB, Bailey WH, Palmquist K, Cotts BRT, Olsen KR. Evaluation of Potential EMF Effects on Fish Species of Commercial or Recreational Fishing Importance in Southern New England. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Headquarters, Sterling, VA. OCS Study BOEM 2019-049, August 2019.

Long RT, Blum AF, Bress TJ, Cotts, BRT. Best practices for emergency response to incidents involving electric vehicle battery hazards. Fire Protection Research Foundation Report, 2013.

## Other Publications

Cotts, BRT, Graf KL, Bailey, WH. Electromagnetic Interference Considerations for Electrical Power Systems. Ch. 5 in: *The Power Grid: Smart, Secure, Green, and Reliable*. D'Andrade B (ed). Elsevier Ltd., 2017, 137-170.

Cotts, BRT, Prigmore, JR, Graf KL. HVDC Transmission for Renewable Energy Integration. Ch. 6 in: *The Power Grid: Smart, Secure, Green, and Reliable*. D'Andrade B (ed). Elsevier Ltd., 2017, 171-196.

Pooley M, Cotts B, Brennan, III JF. Compatibility of medical devices with electromagnetic and wireless

signals. North Carolina Associate of Defense Attorneys The Resource; 2017 Sept.

Phan SK, Stepan J, Cotts BRT. Electrical Conductor Spacing Standards for Printed Circuit Boards. Exponent Electrical Engineering and Computer Science Newsletter. Vol. 4, 2016.

Cotts BRT, Inan US, Lehtinen NG. Theoretical prediction of longitudinal dependence of electron precipitation due to lightning. AGU Fall Meeting, San Francisco, CA, December 14-18, 2009.

Inan US, Cotts BRT, Lehtinen NG. Long recovery early/fast events as possible evidence of persistent ionization by Giant Blue Jets. IUGG, Perugia, Italy, July 2-13, 2007.

Cotts BRT, Inan US, Lehtinen NG. Long recovery early/fast events as possible evidence of persistent ionization by Giant Blue Jets. URSI, Ottawa, Canada, July 22-26, 2007.

Cotts BRT, Inan US. Observation of daytime perturbations of VLF transmitter signals. ICAE, Beijing, China, August 13-17, 2007.

Cotts BRT, Inan US. Daytime early VLF perturbations exhibiting long recoveries and wide-angle scattering. AGU, San Francisco, CA, December 10-14, 2007.

Cotts BRT, Inan US. VLF observation of long ionospheric recovery events. AGU, San Francisco, CA, December 11-15, 2006.

Cotts BRT, Inan US, Pasko VP. Ray tracing techniques applied to sky wave observations of lightning-induced ionospheric effects on short range VLF paths. URSI, Boulder, CO, January 5-8, 2005.

Cotts BRT, Inan US. Ray-based modeling of lightning-induced ionospheric effects on short range VLF skywave signals. AGU, San Francisco, CA, December 5-9, 2005.

Cotts BRT, Inan US. Short range VLF sky wave observations of lightning-induced ionospheric effects. AGU, San Francisco, CA, December 13-17, 2004.

Cotts BRT, Inan US, Golkowski M. Lightning-induced electron precipitation measurements with VLF and the Arecibo Radar. PARS Summer School, Arecibo, PR, August 10-21, 2004.

Cotts BRT, Inan US, Selser E. ELF/VLF near-field imaging of modulated auroral-electrojet currents using a VLF interferometer. PARS Summer School, University of Fairbanks Alaska, August 11-21, 2003.

Cotts BRT, Inan US. Precipitation of energetic electrons by Magnetospherically Reecting (MR) Whistlers. AGU, San Francisco, CA, December 8-12, 2003.

## Peer Reviewer

Referee for Journal of Geophysical Research – Space Physics

Referee for Radiation Protection Dosimetry



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Engineering & Scientific Consulting

## Pamela J. Dopart, Ph.D., CIH

Managing Scientist | Health Sciences  
17000 Science Drive, Suite 200 | Bowie, MD 20715  
(301) 291-2508 tel | pdopart@exponent.com

### Professional Profile

Dr. Dopart is an environmental and occupational health scientist who specializes in exposure assessment methods to inform epidemiologic studies and health risk assessments. She has experience measuring, modeling, and evaluating exposures in occupational and environmental settings and from consumer products, and has developed estimates of exposure for a wide range of agents, including asbestos, chlorinated solvents, formaldehyde, ionizing radiation, lead and other metals, pesticides, and volatile organic compounds (VOCs). Her work also often involves synthesizing and interpreting epidemiologic literature. She also has experience in the assessment of exposure to extremely low frequency (ELF) and radiofrequency (RF) electromagnetic fields (EMF) in relation to potential biological and health effects.

Prior to joining Exponent, Dr. Dopart was in the Occupational and Environmental Epidemiology branch of the Division of Cancer Epidemiology and Genetics at the National Cancer Institute. Her research focused on improving methods for assessing occupational and environmental exposures for epidemiologic studies of cancer.

Dr. Dopart was awarded her Ph.D. in Environmental Health Sciences by The Johns Hopkins Bloomberg School of Public Health. Her dissertation research examined statistical methods for estimating missing or incomplete exposure data using an occupational cohort of naval shipyard workers. She also received an M.P.H. in Environmental Health Sciences, with a concentration in Industrial Hygiene, from the University of Michigan School of Public Health. She earned a certificate in health risk assessment from the Johns Hopkins' Risk Sciences and Public Policy program. She has presented her work at various national and international conferences, published in peer-reviewed scientific journals, and is an active member of the American Industrial Hygiene Association.

### Academic Credentials & Professional Honors

Ph.D., Environmental Health Sciences, Johns Hopkins School of Public Health, 2015

M.P.H., Environmental Health Sciences, University of Michigan, Ann Arbor, 2008

B.S., Chemistry, James Madison University, 2006

NCI Director's Intramural Innovation Award, 2017

American Industrial Hygiene Conference and Exposition Student Sponsorship, 2014

Johns Hopkins School of Public Health Morgan-James Scholarship Fund, 2013

3M Personal Safety Division's Occupational Health and Safety Scholarship, 2013

University of Michigan School of Public Health Marvin Selin Memorial Scholarship, 2008

American Industrial Hygiene Foundation Ralph G. Smith Scholarship, 2007

## Licenses and Certifications

Certified Industrial Hygienist (CIH), CP #11772

## Prior Experience

Postdoctoral Fellow, Division of Cancer Epidemiology and Genetics, National Cancer Institute, 2015-2018

Associate Health Scientist, ChemRisk, 2008-2010

Industrial Hygiene Intern, Sandia National Laboratories, 2007

## Professional Affiliations

American Industrial Hygiene Association

- Student and Early Career Professionals Committee (Past Chair)
- Conference Program Committee (2020-2023)

International Society of Exposure Science

Institute of Electrical and Electronics Engineers

International Committee on Electromagnetic Safety

## Publications

Bailey WH, Cotts BRT, Dopart PJ. Wireless 5G radiofrequency technology - An overview of small cell exposures, standards and science. *IEEE Access*. 2020 Aug; 8:140792-140797. doi:0.1109/ACCESS.2020.3010677.

Dopart PJ, Locke SJ, Cocco P, Bassig BA, Josse PR, Stewart PA, Purdue MP, Lan Q, Rothman N, Friesen MC. Estimation of source-specific occupational benzene exposure in a population-based case-control study of non-Hodgkin lymphoma. *Annals of Work Exposures and Health* 2019; 63(8):842-855.

Sauvé JF, Ramsay JM, Locke SJ, Dopart PJ, Josse PR, Zaebst DD, Albert PS, Cantor KP, Baris D, Jackson BP, Karagas MR, Hosain GM, Schwenn M, Johnson A, Purdue MP, Koutros S, Silverman DT, Friesen MC. Validity of retrospective occupational exposure estimates of lead and manganese in a case-control study. *Occupational and Environmental Medicine* 2019; 76(9):680-687.

Callahan CL, Friesen MC, Locke SJ, Dopart PJ, Stewart PA, Schwartz K, Ruterbusch JJ, Graubard BI, Chow WH, Rothman N, Hofmann JN, Purdue MP. Case-control investigation of occupational lead exposure and kidney cancer. *Occupational and Environmental Medicine* 2019;76(7):433-440.

Callahan CL, Locke SJ, Dopart PJ, Stewart PA, Schwartz K, Ruterbusch JJ, Graubard BI, Rothman N, Hofmann JN, Purdue MP, Friesen MC. Decision rule approach applied to estimate occupational lead exposure in a case-control study of kidney cancer. *American Journal of Industrial Medicine* 2018; 61(11):901-910.

Dopart PJ, Friesen MC. New opportunities in exposure assessment of occupational epidemiology: use of measurements to aid exposure reconstruction in population-based studies. *Current Environmental Health Reports* 2017; 4(3):355-363.

Madl, AK, Hollins DM, Devlin KD, Donovan EP, Dopart PJ, Scott PK, Perez AL. Airborne asbestos exposures associated with gasket and packing replacement: A simulation study and meta-analysis. *Regulatory Toxicology and Pharmacology* 2014; 69(3):304-319.

Cowan DM, Dopart P, Ferracini T, Sahmel J, Merryman K, Gaffney S, Paustenbach DJ. A cross-sectional analysis of reported corporate environmental sustainability practices. *Regulatory Toxicology and Pharmacology* 2010; 58(3):524-538.

### **Conference Abstracts**

Dopart PJ, Katki HA, Friesen MC. Evaluating differences in rater agreement between occupational subgroups to identify where to prioritize additional expert assessments. Poster presentation, International Society of Exposure Science Annual Meeting. Virtual, September 21-22, 2020.

Gauthier A, Dopart P, Freeman E. Strategies for risk prioritization of large product lines. Product Stewardship Conference (PSX). Virtual, September 15, 2020.

Dopart PJ, Cotts BRT. Mechanisms underlying interference to cardiovascular implantable electrical devices. Health Physics Society Midyear Meeting and Exhibition. Bethesda, MD, January 26-29, 2020.

Dopart P, Freeman E. Practical guide to evaluating dermal exposures to your consumer products. Product Stewardship Conference. Columbus, OH, September 10, 2019.

Dopart PJ, Chee EML, Curriero FC, Navas-Acien A, Matanoski GM, Lees PSJ. Systematic evaluation of bias associated with a multiple imputation approach for estimating missing exposure data. International Society of Exposure Science and International Society for Environmental Epidemiology Joint Meeting. Ottawa, Canada, August 26-30, 2018.

Dopart PJ, Ji BT, Xue S, Lu W, Stewart PA, Katki HA, Friesen MC. Prioritizing use of multiple experts in occupational exposure assessments using mean risk stratification. Poster presentation, Society for Epidemiologic Research 50th Annual Meeting, Seattle, WA, 2017.

Dopart PJ, Purdue MP, Locke SJ, Bassig BA, Ji BT, Xue S, Chow W, Lan Q, Rothman N, Friesen MC. Combining expert-based exposure intensity ratings with quantitative measurement data to estimate historical trichloroethylene exposure in a prospective population-based cohort. Poster presentation, DCEG Fellows' Training Symposium, Bethesda, MD, 2016.

Dopart PJ, Chee EML, Curriero FC, Navas-Acien A, Matanoski GM, Lees PSJ. Using multiple imputation to estimate missing radiation exposure data in an occupational cohort of naval shipyard workers. Poster presentation, Johns Hopkins Bloomberg School of Public Health EHS Research Retreat, Baltimore, MD, 2015.

Dopart PJ, Dalton PH, Maute C, Lees PSJ. Understanding factors related to between- and within-subject variation in an effort to better define SEGs. 23rd International Conference on Epidemiology in Occupational Health (EPICOH), Utrecht, The Netherlands, 2013.

Dopart PJ, Dalton PH, Maute C, Lees PSJ. Exploration of variation in SEGs in an effort to reduce exposure misclassification. 22nd Annual Meeting of the International Society of Exposure Science, Seattle, WA, 2012.



## Invited Presentations

Dopart PJ. Exposure to electromagnetic fields: effectively identifying quality publications and communicating the science. Oral presentation at the Florida American Industrial Hygiene Association Local Section and Florida Chapter of the Health Physics Society Fall 2019 Joint Meeting, Cape Canaveral, FL, October 18, 2019.

Dopart PJ. How to talk with stakeholders about EMF and health concerns. Oral presentation at the EUCI Best Practices in Public Engagement for Energy Projects conference, Waltham, MA, October 9, 2019.

Dopart PJ. Using multiple imputation to estimate missing radiation exposures. Oral presentation (guest lecture) in Methods in the Exposure Sciences, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, April 12, 2016.

Dopart PJ. Exposure, dose-response, and risk assessment. Oral presentation (guest lecture) in Introductory Principles of Environmental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, February 6, 2014.

Dopart PJ. Toxicity potential of chemicals commonly found in our environment. Oral presentation (guest lecture) for California College of the Arts, San Francisco, CA, March 4, 2010.

Dopart PJ. Toxicity potential of chemicals commonly found in building materials. Oral presentation (guest lecture) for Academy of Art University, San Francisco, CA, March 3, 2009.

## Peer Reviewer

Annals of Work Exposure and Health

Environmental Research

Radiation Protection Dosimetry



**Exponent**<sup>®</sup>  
Engineering & Scientific Consulting

## William H. Bailey, Ph.D.

Principal Scientist | Health Sciences  
17000 Science Drive, Suite 200 | Bowie, MD 20715  
(301) 291-2516 tel | [wbailey@exponent.com](mailto:wbailey@exponent.com)

### Professional Profile

Dr. Bailey specializes in applying state-of-the-art assessment methods to environmental and occupational health issues. His 30 years of training and experience include laboratory and epidemiologic research, health risk assessment, and comprehensive exposure analysis. Dr. Bailey has investigated exposures to alternating current, direct current, and radiofrequency electromagnetic fields, 'stray voltage', and electrical shock, as well as to a variety of chemical agents and air pollutants. He is particularly well known for his research on potential effects of electromagnetic fields on the environment and health and has served as an advisor to numerous state, federal, and international agencies. Currently, he is involved in research on exposures to marine life from submarine cables, respiratory exposures to ultrafine- and nanoparticles, and EMF and RF exposure guidelines.

Dr. Bailey has been a visiting scientist at the Cornell University Medical College and has lectured at Rutgers University, the University of Texas (San Antonio), and the Harvard School of Public Health. He was formerly Head of the Laboratory of Neuropharmacology and Environmental Toxicology at the New York State Institute for Basic Research, Staten Island, New York, and an Assistant Professor and NIH postdoctoral fellow in Neurochemistry at The Rockefeller University in New York.

### Academic Credentials & Professional Honors

Ph.D., Neuropsychology, City University of New York, 1975

M.B.A., University of Chicago, 1969

B.A., Dartmouth College, 1966

Sigma Xi

The Institute of Electrical and Electronics Engineers/International Committee on Electromagnetic Safety (Subcommittee 3, Safety Levels with Respect to Human Exposure to Fields (0 to -3 kHz) and Subcommittee 4, Safety Levels with Respect to Human Exposure to Radiofrequency Fields (3 kHz to 3 GHz)

Elected member of the Committee on Man and Radiation (COMAR) of the IEEE Engineering in Medicine and Biology Society, 1998-2001

### Academic Appointments

Visiting Scientist, Department of Pharmacology, Cornell University Medical College, New York, NY, 1986-2012

Visiting Scientist, The Jackson Laboratory, Bar Harbor, ME, 1984-1985

Head, Laboratory of Neuropharmacology and Environmental Toxicology, NYS Institute for Basic Research in Developmental Disabilities, Staten Island, NY, 1983-1987

Assistant Professor, The Rockefeller University, New York, NY, 1976-1983

Postdoctoral Fellow, Neurochemistry, The Rockefeller University, New York, NY, 1974-1976

Dissertation Research, The Rockefeller University, New York, NY, 1972-1974

CUNY Research Fellow, Dept. of Psychology, Queens College, City University of New York, Flushing, NY, 1969-1971

Clinical Research Assistant, Department of Psychiatry, University of Chicago; Psychiatric Psychosomatic Inst., Michael Reese Hospital, and Illinois State Psychiatric Inst, Chicago, IL, 1968-1969

### **Teaching Appointments**

Lecturer, University of Texas Health Science Center, Center for Environmental Radiation Toxicology, San Antonio, TX, 1998

Lecturer, Harvard School of Public Health, Office of Continuing Education, Boston, MA, 1995, 1997

Lecturer, Rutgers University, Office of Continuing Education, New Brunswick, NJ, 1991-1995

Adjunct Assistant Professor, Queens College, CUNY, Flushing, NY, 1978

Lecturer, Queens College, CUNY, Flushing, NY, 1969-1974

### **Prior Experience**

President, Bailey Research Associates, Inc., 1991-2000

Vice President, Environmental Research Information, Inc., 1987-1990

Head of Laboratory of Environmental Toxicology and Neuropharmacology, New York State Institute for Basic Research, 1983-1987

Assistant Professor, The Rockefeller University, 1976-1983

### **Professional Affiliations**

The Health Physics Society (Affiliate of the International Radiation Protection Society)

Society for Risk Analysis

International Society of Exposure Analysis

New York Academy of Sciences

American Association for the Advancement of Science (Life Time Member)

Society for Neuroscience/International Brain Research Organization

Bioelectromagnetics Society

The Institute of Electrical and Electronics Engineers (Life Member)

The Institute of Electrical and Electronics Engineers Engineering in Medicine and Biology Society

Conseil International des Grands Réseaux Électriques

## Publications

Bailey WH, Cotts B, Dopart PJ. Wireless 5G radiofrequency technology - An overview of small cell exposures, standards and science. *IEEE Access*. 2020 Aug; 8:140792-140797. doi:0.1109/ACCESS.2020.3010677.

IEEE International Committee on Electromagnetic Safety Technical Committee 95. Bailey WH, Bodemann R, Bushberg J, Chou C-K, Cleveland R, Faraone A, Foster KR, Gettman KE, Graf K, Harrington T, Hirata A, Kavet R, Keshvari J, Klauenberg BJ, Legros A, Maxson DP, Osepchuk JM, Reilly JP, Tell RA, Thansandote A, Yamazaki K, Ziskin MC, Zollman PM. Synopsis of IEEE Std C95.1™-2019 "IEEE Standard for Safety Levels With Respect to Human Exposure to Electric, Magnetic, and Electromagnetic Fields, 0 Hz to 300 GHz. *IEEE Access*. 2019 Dec; 7(1):171346-171356. doi: 10.1109/ACCESS.2019.2954823.

Bailey WH, Williams AL, Leonhard MJ. Exposure of laboratory animals to small air ions: a systematic review of biological and behavioral studies. *Biomed Eng Online*. 2018 Jun 5;17(1):72. doi: 10.1186/s12938-018-0499-z

Schmiedchen K, Petri AK, Driessen S, Bailey WH. Systematic review of biological effects of exposure to static electric fields. Part II: Invertebrates and plants. *Environ Res*. 2018 Jan;160:60-76. doi: 10.1016/j.envres.2017.09.013. Epub 2017 Oct 3.

Petri AK, Schmiedchen K, Stunder D, Dechent D, Kraus T, Bailey WH, Driessen S. Biological effects of exposure to static electric fields in humans and vertebrates: A systematic review. *Environ Health* 2017 Apr 17; 16(1):41. doi: 10.1186/s12940-017-0248-y.

Bailey WH. Review of epidemiology of electromagnetic fields, Martin Rössli, Editor. *Health Physics* 2015; 109:606-607.

Chang ET, Adami H-O, Bailey WH, Boffetta P, Krieger RI, Moolgavkar SH, Mandel JS. Validity of geographically modeled environmental exposure estimates. *Crit Rev Toxicol* 2014 May; 44:450-466. doi: 10.3109/10408444.2014.902029.

Alexander DD, Bailey WH, Perez V, Mitchell ME, Su S. Air ions and respiratory function outcomes: A comprehensive review. *J Negat Results Biomed* 2013 Sep 9; 12(1):14. doi: 10.1186/1477-5751-12-14.

Perez V, Alexander DD, Bailey WH. Air ions and mood outcomes: A review and meta-analysis. *BMC Psychiatry* 2013 Jan 15; 13(1):29. doi: 10.1186/1471-244X-13-29.

Bailey WH, Johnson GB, Bishop J, Hetrick T, Su S. Measurements of charged aerosols near +/- 500 kV DC transmission lines and in other environments. *IEEE Transactions on Power Delivery* 2012; 27:371-379.

Shkolnikov YP, Bailey WH. Electromagnetic interference and exposure from household wireless networks. 2011 IEEE Symposium on Product Compliance Engineering (PSES), October 1-5, 2011.

Kavet R, Bailey WH, Bracken TD, Patterson RM. Recent advances in research relevant to electric and magnetic field exposure guidelines. *Bioelectromagnetics* 2008; 29:499-526.

Bailey WH, Wagner M. IARC evaluation of ELF magnetic fields: Public understanding of the 0.4 $\mu$ T exposure metric. *Journal of Exposure Science and Environmental Epidemiology* 2008; 18:233-235.

Bailey WH, Erdreich L. Accounting for human variability and sensitivity in setting standards for electromagnetic fields. *Health Physics* 2007; 92:649-657.

Bailey WH, Nyenhuis JA. Thresholds for 60-Hz magnetic field stimulation of peripheral nerves in human subjects. *Bioelectromagnetics* 2005; 26:462-468.

Bracken TD, Senior RS, Bailey WH. DC electric fields from corona-generated space charge near AC transmission lines. *IEEE Transactions on Power Delivery* 2005; 20:1692-1702.

Bailey WH. Dealing with uncertainty in formulating occupational and public exposure limits. *Health Physics* 2002; 83:402-408.

Bailey WH. Health effects relevant to the setting of EMF exposure limits. *Health Physics* 2002; 83:376-386.

Kavet R, Stuchly MA, Bailey WH, Bracken TD. Evaluation of biological effects, dosimetric models, and exposure assessment related to ELF electric- and magnetic-field guidelines. *Applied Occupational and Environmental Hygiene* 2001; 16:1118-1138.

Bailey WH. ICNIRP recommendation for limiting public exposure to 4 Hz-1 kHz electric and magnetic fields. *Health Physics* 1999; 77:97-98.

Bailey WH. Principles of risk assessment with application to current EMF risk communication issues. In: *EMF Risk Perception and Communication*. Repacholi MH, Muc AM (eds), World Health Organization, Geneva, 1999.

De Santo RS, Bailey WH. Environmental justice tools and assessment practices. *Proceedings, American Public Transit Association*, 1999.

Bailey WH, Su SH, Bracken TD. Probabilistic approach to ranking sources of uncertainty in ELF magnetic field exposure limits. *Health Physics* 1999; 77:282-290.

Bailey WH. Field parameters. *Proceedings, EMF Engineering Review Symposium, Status and Summary of EMF Engineering Research*. Bracken TD and Montgomery JH (eds), Oak Ridge National Laboratory, Oak Ridge, TN, April 28-29, 1998.

Bailey WH. Policy implications. *Proceedings, EMF Engineering Review Symposium, Status and Summary of EMF Engineering Research*. Bracken TD and Montgomery JH (eds), Oak Ridge National Laboratory, Oak Ridge, TN, April 28-29, 1998.

Bailey WH. Probabilistic approaches to deriving risk-based exposure guidelines: Application to extremely low frequency magnetic fields. In: *Non-Ionising Radiation*. Dennis JA and Stather JW (eds), Special Issue of *Radiation Protection Dosimetry* 1997; 72:327-336.

Bailey WH, Su SH, Bracken TD, Kavet R. Summary and evaluation of guidelines for occupational exposure to power frequency electric and magnetic fields. *Health Physics* 1997; 73:433-453.

Bracken TD, Senior RS, Rankin RF, Bailey WH, Kavet R. Magnetic field exposures in the electric utility

industry relevant to occupational guideline levels. *Applied Occupational and Environmental Hygiene* 1997; 12:756-768.

Blondin J-P, Nguyen D-H, Sbeghen J, Goulet D, Cardinal C, Maruvada P-S, Plante M, and Bailey WH. Human perception of electric fields and ion currents associated with high voltage DC transmission lines. *Bioelectromagnetics* 1996; 17:230-241.

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Koh SD, Vernon M, Bailey WH. Free-recall learning of word lists by prelingual deaf subjects. *Journal of Verbal Learning and Verbal Behavior* 1971; 10:542-574.

### **Book Chapters**

Cotts B, Graf K, Bailey WH, Murphy P. Electromagnetic interference considerations for electrical power systems. In *The Power Grid: Smart, Secure, Green and Reliable*. D'Andrade B (ed), Academic Press, New York, NY 2017.

Bailey WH. Principles of risk assessment and their limitations. In: *Risk Perception, Risk Communication and its Application to EMF Exposure*. Matthes R, Bernhardt JH, Repacholi MH (eds), International Commission on Non-Ionizing Radiation Protection, Oberschleissheim, Germany, 1998.

Bailey WH. Biological responses to air ions: Is there a role for serotonin? pp. 151-160. In: *Air Ions: Physical and Biological Aspects*. Charry JM and Kavet R (eds). CRC Press, Boca Raton, FL, 1987.

Weiss JM, Bailey WH, Goodman PA, Hoffman LJ, Ambrose MJ, Salman S, Charry JM. A model for neurochemical study of depression. pp. 195-223. In: *Behavioral Models and the Analysis of Drug Action*. Spiegelstein MY, Levy A (eds), Elsevier Scientific, Amsterdam, 1982.

Bailey WH. Mnemonic significance of neurohypophyseal peptides. pp. 787-804. In: *Changing Concepts of the Nervous System*. Morrison AR, Strick PL (eds), Academic Press, New York, NY, 1981.

Bailey WH, Weiss, JM. Avoidance conditioning and endocrine function in Brattleboro rats. pp 371-395. In: *Endogenous Peptides and Learning and Memory Process*. Martinez JL, Jensen RA, Messing RB, Rigter H, McGaugh JL (eds), Academic Press, New York, NY, 1981.

Weiss JM, Glazer H, Pohorecky LA, Bailey WH, Schneider L. Coping behavior and stress-induced behavioral depression: Studies of the role of brain catecholamines. pp. 125-160. In: *The Psychobiology of the Depressive Disorders: Implications for the Effects of Stress*. Depue R (ed), Academic Press, New York, NY, 1979.

### **Technical Reports**

Snyder DB, Bailey WH, Palmquist K, Cotts BRT, Olsen KR. Evaluation of Potential EMF Effects on Fish Species of Commercial or Recreational Fishing Importance in Southern New England. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Headquarters, Sterling, VA. OCS Study BOEM 2019-049, August 2019.

Normandeau, Exponent, Tricas T, Gill A. Effects of EMFs from undersea power cables on elasmobranchs and other marine species. U.S. Dept. of the Interior, Bureau of Ocean Energy Management, Regulation, and Enforcement, Pacific OCS Region, Camarillo, CA. OCS Study BOEMRE 2011-09, May 2011.

Jardini JA, et al. Electric field and ion current environment of HVDC overhead transmission lines. Report of Joint Working Group B4/C3/B2.50, CIGRÉ, August 2011.

Johnson GB, Bracken TD, Bailey WH. Charging and transport of aerosols near AC transmission lines: A literature review. EPRI, Palo Alto, CA, 2003.

Bailey WH. Probabilistic approach to ranking sources of uncertainty in ELF magnetic-field exposure limits. In: Evaluation of Occupational Magnetic Exposure Guidelines, Interim Report, EPRI Report TR-111501, 1998.

Bracken TD, Bailey WH, Su SH, Senior RS, Rankin RF. Evaluation of occupational magnetic-field exposure guidelines; Interim Report. EPRI Report TR-108113, 1997.

Bailey WH, Weil DE, Stewart JR. HVDC Power Transmission Environmental Issues Review. Oak Ridge National Laboratory, Oak Ridge, TN, 1996.

Bailey WH. Melatonin responses to EMF. Proceedings, Health Implications of EMF Neural Effects Workshop, Report TR-104327s, EPRI, 1994.

Bailey WH. Recent neurobiological and behavioral research: Overview of the New York State powerlines project. In: Power-Frequency Electric and Magnetic Field Research, EPRI, 1989.

Bailey WH, Bissell M, Dorn CR, Hoppel WA, Sheppard AR, Stebbings, JH. Comments of the MEQB Science Advisors on Electrical Environment Outside the Right of Way of CU-TR-1, Report 5. Science Advisor Reports to the Minnesota Environmental Quality Board, 1986.

Bailey WH, Bissell M, Brambl RM, Dorn CR, Hoppel WA, Sheppard AR, Stebbings JH. A health and safety evaluation of the +/- 400 KV powerline. Science Advisor's Report to the Minnesota Environmental Quality Board, 1982.

Charry JM, Bailey WH, Weiss JM. Critical annotated bibliographical review of air ion effects on biology and behavior. Rockefeller University, New York, NY, 1982.

Bailey WH. Avoidance behavior in rats with hereditary hypothalamic diabetes insipidus. Dissertation, City University of New York, 1975.

### **Invited Presentations**

Chou CK, Petersen R, Foster K, Hirata A, Ziskin M, Reilly JP, Tell R, Faraone A, Klauenberg BJ, Kavet R, Graf K, Cleveland R, Thansandote A, Bushberg J, Bailey W, Osepchuk J, Legros A, Yamazaki K, Bodemann R. Revision of IEEE Standards C95.1-2005 and C95.6-2002. BioEM2018 - Joint Annual Meeting of The Bioelectromagnetics Society and the European BioElectromagnetics Association, Piran, Portorož, Slovenia, June 29, 2018.

Bailey WH. Thresholds for peripheral nerve stimulation by ELF magnetic fields in humans. Presentation at Bundesamt für Strahlenschutz Workshop on Action and Perception Thresholds of Static and ELF Magnetic and Electric Fields and Contact Currents in Humans, Munich, Germany, October 26-27, 2016.

Bailey WH. Update on scientific developments regarding extremely low frequency and radiofrequency fields and health. Committee on Man and Radiation (COMAR) of the IEEE Engineering in Medicine and Biology Society, January 11, 2016.

Bailey WH. Measurements of charged aerosols around DC transmission lines and other locations. International Committee on Electromagnetic Safety TC95/ Subcommittee 3: Safety Levels with Respect to



Human Exposure to Electromagnetic Fields, 0 - 3 kHz, December 2011.

Bailey WH, Erdreich LS. Human sensitivity and variability in response to electromagnetic fields: Implications for standard setting. International Workshop on EMF Dosimetry and Biophysical Aspects Relevant to Setting Exposure Guidelines. International Commission on Non-Ionizing Radiation Protection, Berlin, March 2006.

Bailey WH. Research-based approach to setting electric and magnetic field exposure guidelines (0-3000 Hz). IEEE Committee on Electromagnetic Safety, December 2005.

Bailey WH. Conference Keynote Presentation. Research supporting 50/60 Hz electric and magnetic field exposure guidelines. Canadian Radiation Protection Association, Annual Conference, Winnipeg, June 2005.

Bailey WH. Scientific methodology for assessing public health issues: A case study of EMF. Canadian Radiation Protection Association, Annual Conference, Public Information for Teachers, Winnipeg, June 2005.

Bailey WH. Assessment of potential environmental effects of electromagnetic fields from submarine cables. Connecticut Academy of Science and Engineering, Long Island Sound Bottomlands Symposium: Study of Benthic Habitats, July 2004.

De Santo RS, Coe M, Bailey WH. Environmental justice assessment and the use of GIS tools and methods. National Association of Environmental Professionals, 27th Annual Conference, Dearborn, MI, June 2002.

Bailey WH. Applications to enhance safety: Research to understand and control potential risks. Human Factors and Safety Research, Volpe National Transportation Systems Center/Dutch Ministry of Transport, Cambridge, MA, November 2000.

Bailey WH. EMF health effects review. EMF Exposure Guideline Workshop, Brussels Belgium, June 2000.

Bailey WH. Dealing with uncertainty when formulating guidelines. EMF Exposure Guideline Workshop, Brussels Belgium, June 2000.

Bailey WH. Field parameters: Policy implications. EMF Engineering Review Symposium, Status and Summary of EMF Engineering Research, Charleston, SC, April 1998.

Bailey WH. Principles of risk assessment: Application to current issues. Symposium on EMF Risk Perception and Communication, World Health Organization, Ottawa, Canada, August 1998.

Bailey WH. Current guidelines for occupational exposure to power frequency magnetic fields. EPRI EMF Seminar, New Research Horizons, March 1997.

Bailey WH. Methods to assess potential health risks of cell telephone electromagnetic fields. IBC Conference — Cell Telephones: Is there a Health Risk? Washington, DC, June 1997.

Bailey WH. Principles of risk assessment and their limitations. Symposium on Risk Perception, Risk Communication and its Application to EMF Exposure, International Commission on Non-Ionizing Radiation Protection, Vienna, Austria, October 1997.

Bailey WH. Probabilistic approach for setting guidelines to limit induction effects. IEEE Standards Coordinating Committee 28: Non-Ionizing Radiation, Subcommittee 3 (0-3 kHz), June 1997.

Bailey WH. Power frequency field exposure guidelines. IEEE Standards Coordinating Committee 28: Non-Ionizing Radiation, Subcommittee 3 (0-3 kHz), June 1996.

Bailey WH. Epidemiology and experimental studies. American Industrial Hygiene Conference, Washington, DC, May 1996.

Bailey WH. Review of 60 Hz epidemiology studies. EMF Workshop, Canadian Radiation Protection Association, Ontario, Canada, June 1993.

Bailey WH. Biological and health research on electric and magnetic fields. American Industrial Hygiene Association, Fredrickton, New Brunswick, Canada, October 1992.

Bailey WH. Electromagnetic fields and health. Institute of Electrical and Electronics Engineers, Bethlehem, PA, January 1992.

Bailey WH, Weiss JM. Psychological factors in experimental heart pathology. Visiting Scholar Presentation, National Heart Lung and Blood Institute, Bethesda, MD, March 1977.

### **Presentations**

Williams AI, Bailey WH. Toxicologic assessment of air ion exposures in laboratory animals. Poster presentation at 53rd Annual Meeting of the Society of Toxicology, Phoenix, AZ, March 26, 2014.

Perez V, Alexander DD, Bailey WH. Air ions and mood outcomes: A review and meta-analysis. Poster presentation at the American College of Epidemiology, Chicago, IL, September 8-11, 2012.

Shkolnikov Y, Bailey WH. Electromagnetic interference and exposure from household wireless networks. Product Safety Engineering Society Meeting, San Diego, CA, October 2011.

Nestler E, Trichas T, Pembroke A, Bailey W. Will undersea power cables from offshore wind projects affect sharks? North American Offshore Wind Conference & Exhibition, Atlantic City, NJ, October 2010.

Nestler E, Pembroke A, Bailey W. Effects of EMFs from undersea power lines on marine species. Energy Ocean International, Ft. Lauderdale, FL, June 2010.

Pembroke A, Bailey W. Effects of EMFs from undersea power cables on elasmobranchs and other marine species. Windpower 2010 Conference and Exhibition, Dallas, TX, 2010.

Bailey WH. Clarifying the neurological basis for ELF guidelines. Workshop on Practical Implementation of ELF and RF Guidelines. The Bioelectromagnetics Society 29th Annual Meeting, Kanazawa, Japan, June 2007.

Sun B, Urban B, Bailey W. AERMOD simulation of near-field dispersion of natural gas plume from accidental pipeline rupture. Air and Waste Management Association: Health Environments: Rebirth and Renewal, New Orleans, LA, June 2006.

Bailey WH, Johnson G, Bracken TD. Method for measuring charge on aerosol particles near AC transmission lines. Joint Meeting of The Bioelectromagnetics Society and The European BioElectromagnetics Association, Dublin Ireland, June 2005.

Bailey WH, Bracken TD, Senior RS. Long-term monitoring of static electric field and space charge near AC transmission Lines. The Bioelectromagnetics Society, 26th Annual Meeting, Washington, DC, June 2004.

Bailey WH, Erdreich L, Waller L, Mariano K. Childhood leukemia in relation to 25-Hz and 60-Hz magnetic

fields along the Washington DC — Boston rail line. Society for Epidemiologic Research, 35th Annual Meeting, Palm Desert CA, June 2002. American Journal of Epidemiology 2002; 155:S38.

Erdreich L, Klauenberg BJ, Bailey WH, Murphy MR. Comparing radiofrequency standards around the world. Health Physics Society 43rd Annual Meeting, Minneapolis, MN, July 1998.

Bracken TD, Senior RS, Rankin RF, Bailey WH, Kavet R. Relevance of occupational guidelines to utility worker magnetic-field exposures. Second World Congress for Electricity and Magnetism in Biology and Medicine, Bologna, Italy, June 1997.

Weil DE, Erdreich LS, Bailey WH. Are 60-Hz magnetic fields cancer causing agents? Mechanisms and Prevention of Environmentally Caused Cancers, The Lovelace Institutes 1995 Annual Symposium, La Fonda, Santa Fe, NM, October 1995.

Bailey WH. Neurobiological research on extremely-low-frequency electric and magnetic fields: A review to guide future research. Sixteenth Annual Meeting of the Bioelectromagnetics Society, Copenhagen, Denmark, June 1994.

Blondin J-P, Nguyen D-H, Sbeghen J, Maruvada PS, Plante M, Bailey WH, Goulet D. The perception of DC electric fields and ion currents in human observers. Annual Meeting of the Canadian Psychological Association, Penticton, British Columbia, Canada, June 1994.

Erdreich LS, Bailey WH, Weil DE. Science, standards and public policy challenges for ELF fields. American Public Health Association 122nd Annual Meeting, Washington, DC, October 1994.

Bailey WH, Charry JM. Particle deposition on simulated VDT operators: Influence of DC electric fields. 10th Annual Meeting of the Bioelectromagnetics Society, June 1988.

Charry JM, Bailey WH. Contribution of charge on VDTs and simulated VDT operators to DC electric fields at facial surfaces. 10th Annual Meeting of the Bioelectromagnetics Society, June 1988.

Bailey WH, Charry, JM. Dosimetric response of rats to small air ions: Importance of relative humidity. EPRI/DOE Contractors Review, November 1986. Charry JM, Bailey WH, Bracken TD (eds). DC electric fields, air ions and respirable particulate levels in proximity to VDTs. International Conference on VDTs and Health, Stockholm, Sweden, June 12-15 1986.

Charry JM, Bailey WH. Air ion and DC field strengths at  $10^4$  ions/cm<sup>3</sup> in the Rockefeller University Small Animal Exposure Chambers. EPRI/DOE Contractors Review, November 1985.

Charry JM, Bailey WH. DC Electrical environment in proximity to VDTs. 7th Annual Meeting of the Bioelectromagnetics Society, June 1985.

Bailey WH, Collins RL, Lahita RG. Cerebral lateralization: Association with serum antibodies to DNA in selected bred mouse lines. Society for Neuroscience, 1985.

Kavet R, Bailey WH, Charry JM. Respiratory neuroendocrine cells: A plausible site for air ion effects. Seventh Annual Meeting of The Bioelectromagnetics Society, June 1985.

Bailey WH, Charry JM. Measurement of neurotransmitter release and utilization in selected brain regions of rats exposed to DC electric fields and atmospheric space charge. 23rd Hanford Life Sciences Symposium, Richland, WA, October 1984.

Bailey WH, Charry JM, Weiss JM, Cardle K, Shapiro M. Regional analysis of biogenic amine turnover in rat brain after exposure to electrically charged air molecules (air ions). Society for Neuroscience, 1983.

Bailey WH. Biological effects of air ions: Fact and fancy. American Institute of Medical Climatology Conference on Environmental Ions and Related Biological Effects, October 1982.

Goodman PA, Weiss JM, Hoffman LJ, Ambrose MJ, Bailey WH, Charry, JM. Reversal of behavioral depression by infusion of an A2 adrenergic agonist into the locus coeruleus. Society for Neuroscience, November 1982.

Charry JM, Bailey WH. Biochemical and behavioral effects of small air ions. Electric Power Research Institute Workshop, April 1981.

Bailey WH, Alonson DR, Weiss JM, Chin S. Predictability: A psychologic/ behavioral variable affecting stress-induced myocardial pathology in the rat. Society for Neuroscience, November 1980.

Salman SL, Weiss JM, Bailey WH, Joh TH. Relationship between endogenous brain tyrosine hydroxylase and social behavior of rats. Society of Neuroscience, November 1980.

Bailey WH, Maclusky S. Appearance of creatine kinase isoenzymes in rat plasma following myocardial injury produced by isoproterenol. Fed Assoc Soc Exp Biol, April 1978.

Bailey WH, Maclusky S. Appearance of creatine kinase isoenzymes in rat plasma following myocardial injury by isoproterenol. Fed Proc 1978; 37:889.

Bailey WH, Weiss JM. Effect of ACTH 4-10 on passive avoidance of rats lacking vasopressin (Brattleboro strain). Eastern Psychological Association, April 1976.

## Advisory Appointments

National Institute of Environmental Health Sciences, National Toxicology Program, Participation in research study to update Level of Concern categories to better integrate evidence for toxicity and extent of human exposure, 2017

Bundesamt für Strahlenschutz - Federal Office for Radiation Protection. Summarize recent research and recommend research direction on magnetic field stimulation of peripheral nerves, 2016

Federal Office for Radiation Protection - Germany, Technical input to assessment of static and ELF exposures to public from updating national transmission network, 2016

RWTH Aachen University. Workshop on human perception thresholds in static electric fields from high-voltage direct current (HVDC) transmission lines, 2015

ZonMw - Netherlands Organization for Health Research and Development, 2012; 2007-2008, reviewer for National Programme on EMF and Health

US Bureau of Ocean Energy Management, Regulation and Enforcement, 2009-2010

Canadian National Collaborating Centre for Environmental Health, reviewer of Centre reports, 2008

Island Regulatory and Appeals Commission, province of Prince Edward Island, Canada, 2008

National Institute of Environmental Health Sciences/ National Institutes of Health, Review Committee, Neurotoxicology, Superfund Hazardous Substances Basic Research and Training Program, 2004

National Institute of Environmental Health Sciences, Review Committee Role of Air Pollutants in Cardiovascular Disease, 2004

Working Group on Non-Ionizing Radiation, Static and Extremely Low-Frequency Electromagnetic Fields, International Agency for Research on Cancer, 2000-2002

Working Group, EMF Risk Perception and Communication, World Health Organization, 1998-2005

Member, International Committee on Electromagnetic Safety, Subcommittee 3 - Safety Levels with Respect to Human Exposure to Fields (0 to 3 kHz) and Subcommittee 4 - Safety Levels with Respect to Human Exposure (3kHz to 3GHz), Institute of Electrical and Electronics Engineers (IEEE), 1996-present

Invited participant, National Institute of Environmental Health Sciences, EMF Science Review Symposium: Clinical and In Vivo Laboratory Findings, 1998

Working Group, EMF Risk Perception and Communication, International Commission on Non-Ionizing Radiation Protection, 1997

U.S. Department of Energy, RAPID EMF Engineering Review, 1997

Oak Ridge National Laboratory, 1996

American Arbitration Association International Center for Dispute Resolution, 1995-1996

U.S. Department of Energy, 1995

National Institute for Occupational Safety and Health, 1994-1995

Federal Rail Administration, 1993-1996

U.S. Forest Service, 1993

New York State Department of Environmental Conservation, 1993

National Science Foundation

National Institutes of Health, Special Study Section — Electromagnetics, 1991-1993

Maryland Public Service Commission and Maryland Department of Natural Resources, Scientific Advisor on health issues pertaining to HVAC Transmission Lines, 1988-1989

Scientific advisor on biological aspects of electromagnetic fields, Electric Power Research Institute, Palo Alto, CA, 1985-1989

U.S. Public Health Service, NIMH: Psychopharmacology and Neuropsychology Review Committee, 1984

Consultant on biochemical analysis, Colgan Institute of Nutritional Science, Carlsbad, CA, 1982-1983

Behavioral Medicine Abstracts, Editor, animal behavior and physiology, 1981-1983

Consultant on biological and behavioral effects of high-voltage DC transmission lines, Vermont Department of Public Service, Montpelier, VT, 1981-1982

Scientific advisory committee on health and safety effects of a high-voltage DC transmission line, Minnesota Environmental Quality Board, St. Paul, MN, 1981-1982

Consultant on biochemical diagnostics, Biokinetix Corp., Stamford, CT, 1978-1980

## Editorships & Editorial Review Boards

Associate Editor, Non-Ionizing Radiation, Health Physics, 1996-present