

George B. Richerson, M.D., Ph.D.

Professor and Chairman
Department of Neurology
Professor, Molecular Physiology & Biophysics
The Roy J Carver Chair in Neuroscience
University of Iowa Carver College of Medicine

Born June 30, 1957; Lompoc, CA

Education 1980 B.S., Iowa State University, Aerospace Engineering, with Honors and Distinction.
1987 M.D., University of Iowa
1987 Ph.D., University of Iowa, Physiology & Biophysics.

Positions Professor and Chairman, Department of Neurology, University of Iowa. 2010-
The Roy J Carver Chair in Neuroscience, University of Iowa. 2010-
Departmental Executive Officer, Department of Neurology, University of Iowa. 2010-
Professor, Molecular Physiology & Biophysics, University of Iowa. 2010-
Faculty member, Graduate Program in Neuroscience, University of Iowa. 2010-
Director, Institute of Neurological Disease, University of Iowa. 2010-
Attending Neurologist, VA Hospital, Iowa City, IA. 2010-
Adjunct Professor, Department of Neurology, Yale University. 2010-

Previous Appointments

Professor of Neurology, Cellular & Molecular Physiology
and Neuroscience, Yale University. 2005-2010
Director, Neurology Residency Training Program. Yale-New Haven Hosp. 1996-2010
Attending Neurologist, VA Hospital, West Haven, CT 1991-2010
Acting Chairman, Dept of Neurology. Yale University. 5/2009 – 7/2009.
Acting Chief, Neurology Service, VA Hospital, West Haven, CT 2006-2007
Associate Professor. Yale University. 1997-2005
Assistant Professor. Yale University. 1991-1997
Co-Director, Neurology Residency Training Program. Yale-New Haven Hosp. 1995-96

Certification and licensure

Iowa Physicians and Surgeon's License, 2010-
Connecticut Physicians and Surgeon's License, 1989-2010
Diplomate, American Board of Psychiatry and Neurology #38684, 1993-

Clinical Training

Neurology Residency. Yale-New Haven Hospital. New Haven, CT. 1988-91.
Internship. Waterbury Hospital Health Center, Waterbury, CT. 1987-88.
Emergency Room Physician. VAMC. West Haven, CT. 1988-91.

Research Training

Postdoctoral Training: Section of Cellular & Molecular Neurobiology. Yale University
Advisor: Charles F. Stevens, MD, PhD. 7/89 - 3/90.

Doctoral Training: Department of Physiology & Biophysics. University of Iowa
Advisor: Peter A. Getting, PhD. 7/82 - 6/87
Summer Research Fellowships: Marine Biology Laboratories, Wood's Hole.
Advisor: Ronald Joyner, MD, PhD 1980, 1981.
Aerospace Engineer: NASA Langley Air Force Base, Hampton VA 1978, 1979.

Honors & Awards

Fellow of the American Epilepsy Society. Elected 11/2017
Invited Faculty, CURE Frontiers in Research Seminar Series, University of
Washington. Seattle, WA. 9/2016
Distinguished Visiting Professor. University of Nebraska, Department of Neurological
Sciences. Omaha, NE. 5/2013.
Residency Graduation Honorary Speaker. University of Nebraska, Department of
Neurological Sciences. Omaha, NE. 5/2013.
Distinguished Visiting Neuroscientist. Program in Neuroscience, University of Toronto.
Toronto, ON 10/2008.
Distinguished Alumnus, University of Iowa Medicine Alumni Society. 2006
Best Doctors in America. 2005-Present
Honorary Master of Science. Yale Graduate College, Yale University, 2005
Plenary lecturer. Scottish Neuroscience Society Annual Meeting. Glasgow, Scotland, 2004
Member, American Neurological Association. Elected in 9/2003.
Alberta Heritage Foundation Visiting Lecturer. University of Alberta and University of
Calgary, Alberta, Canada. 4/2001.
Michael Dekin Memorial Lecturer. 1st annual lecture. University of Medicine and
Dentistry of New Jersey. New Brunswick, NJ. 12/99.
Distinguished Alumnus speaker. University of Iowa, Medical Scientist Training
(MD/PhD) Program. 11/1997.
Chief Resident in Neurology. Yale University School of Medicine,
Department of Neurology. 1990-91.
Heath Award. Student Medical Research Day, 1986. University of Iowa.
Mead Johnson Award. National Student Research Forum. Galveston, TX. 1985
Borts Award. Student Medical Research Day, 1984. University of Iowa.
Grass Fellowship. Cold Spring Harbor Laboratories, Cold Spring Harbor, NY. 6/81.
"Neurophysiology of Behavior." Eric Kandel, Course Director.
1st place. Undergraduate Thesis Competition. Iowa State University.
Aerospace Engineering Department. 1980.
Tau Beta Pi, Sigma Gamma Tau – Engineering Honor Societies.

Active Grant Support

NIH/NINDS – U01 NS090414 10/1/2014 to 9/30/2019
Title: SUDEP - Respiratory and arousal mechanisms
PI: George Richerson, MD, PhD
Part of the Center for SUDEP Research / SUDEP Center Without Walls
Directors Jeff Noebels (Baylor U) & Sam Lhatoo (Case Western Reserve U)
Direct costs to U. of Iowa: \$430,000 per year; \$2,150,000 total
Total direct costs: \$3,600,000 per year; \$18,000,000 total
NIH/NINDS – U01 NS090407 10/1/2014 – 7/31/2019
Title: Center for SUDEP Research / SUDEP Center Without Walls
PI: Sam Lhatoo, MD

Subcontract for Clinical Research on SUDEP
Role: Project leader for the University of Iowa Component
NIH/NINDS – U01NS090414-S1 8/15/2017 - 7/31/2019
Diversity Supplement: SUDEP Research Alliance: Respiratory and Arousal
Mechanisms, Application 5 of 7
PI: George Richerson, MD, PhD
NIH/NINDS – R25 NS079173 Residency Training Grant 4/1/2012 – 6/30/2018
Carver College of Medicine Clinical Neuroscientist Training Program (CNS-TP)
PI: George Richerson, MD, PhD
NIH/NINDS – R01 NS096088 9/15/2016 to 8/31/2021
Title: Network mechanisms of seizure-induced cardiorespiratory impairment
PI: Hal Blumenfeld, MD, PhD
Role: Collaborator
NIH/NINDS – K12 7/1/16-6/30/18
PI: Brian Dlouhy, MD
Role: Co-Mentor
NIH/NINDS – F31 4/1/16-6/30/18
PI: Benton Purnell
Role: Co-Mentor

Previous Grant Support

NIH/NINDS - K08 7/1/12-6/30/17
PI: Nandakumar Narayanan, MD, PhD
Role: Co-Mentor
NIH/NINDS - K08 NS069667 7/1/11-6/30/16
PI: Gordon Buchanan, MD, PhD
Role: Mentor
University of Copenhagen. Collaborative agreement. Role of 5-HT neurons in
thermoregulation and body metabolism. 6/1/2014-5/31/2015.
Direct costs: \$168,993.
NIH/NHLBI - K23 7/1/11-6/30/14
PI: Brian Gehlbach, MD
Role: Mentor
NIH/NINDS – P20NS076916 SUDEP Center Without Walls. 9/1/2011 to 8/31/2014
PI: Jeff Noebels, MD, PhD
Predictive Genes, Mechanisms, and Clinical Biomarkers of SUDEP
Direct costs to Iowa: \$60,000 per year; \$300,000 total
Direct costs to Center without walls: \$300,000 per year; \$1,500,000 total
Howard Hughes Medical Institute - Medical Student Fellowship 7/1/2012 – 6/30/2013
PI: Nicholas Murray
Role: Mentor
NIH / NICHD, P01HD36379. 4/1/2003 – 3/31/2013.
PI on project: “Cellular Mechanisms of Serotonergic Neurons.”
PPG title: “The Ventral Medulla and the Sudden Infant Death Syndrome.”
PI: Hannah Kinney, MD. Children’s Hospital, Boston & Harvard Medical School
NIH / NICHD, R01HD052772. 2/1/2007 - 1/31/2012.
"Developmental defects in serotonin neurons and the response to O₂ and CO₂."
PI: George Richerson, MD, PhD
NIH / NINDS, R01. 4/1/2002 – 2/28/2012.

- “Non-vesicular GABA release via GABA transporter reversal.”
PI: George Richerson, MD, PhD
Bumpus Foundation. 7/1/06 – 6/30/11
“Degeneration of dopaminergic carotid body glomus cells in Parkinson’s Disease.”
PI: George Richerson, MD, PhD
NIH Pathway to Independence Award (K99) 7/1/09-6/30/11
PI: Matthew Hodges, PhD
Role: Mentor
VA Alcohol Research Center 1/1/07-12/31/11.
“Effect of benzodiazepine inverse agonists on the enhancement of tonic inhibition induced by EtOH.”
PI: John Krystal, MD
VAMC Special Neuroscience Fellowship 7/1/08-6/30/11
PI: Gordon Buchanan, MD, PhD
Role: Mentor
NIH Specialized Neuroscience Research Program 7/1/06-6/30/11
PI: Michael Harris, PhD; University of Alaska Fairbanks
Role: Collaborator
VAMC Special Neuroscience Fellowship 7/1/07-6/30/10
PI: Chris Ransom, MD, PhD
Role: Mentor
Parker B. Francis Award 7/1/06-6/30/09
PI: Matthew Hodges, PhD
Role: Fellowship mentor
Howard Hughes Medical Institute Student Fellowship 7/1/08-6/30/09
Fellowship mentor for Yale Medical Student Sean McEvoy
Role: Fellowship mentor
NIH Neuroscience Scholars Award, 7/2003-6/2008
PI: Sheree Johnson, PhD; Howard University
Role: Consultant
NIH / NHLBI, R01. 8/1/95 - 7/31/06.
“Mechanisms and localization of CO₂ sensitive medullary neurons.”
CJ Foundation for SIDS 7/1/04-6/30/06
Fellowship mentor for Carolin Dohle, MD
NIH / NINDS, Program Project Grant. 4/1/97 - 3/31/02.
PI on subproject: “Nonvesicular GABA Release and inhibition in epilepsy.”
“Yale Epilepsy Grant.” PI: Richard Mattson, MD.
Bumpus Foundation. 7/1/02 – 6/30/05.
“The role of non-vesicular release in the basal ganglia.”
Epilepsy Foundation of America. 7/1/95 - 6/30/96.
“Functional role of promoted release of GABA”
VAMC, Merit Review. 4/1/95 - 3/31/99.
“Mechanisms of CO₂ sensitive neurons.”
VAMC, Career Development Award. 7/1/91 - 6/30/95.
“Effect of changes in PCO₂ on medullary respiratory neurons in vitro.”
VAMC, Merit Review. 10/1/91 - 9/31/94.
“Effect of changes in PCO₂ on medullary respiratory neurons in vitro.”
NIH, Biomedical Research Service Grant. 7/1/91 - 6/30/92.

Grant Reviewer

NST-1 Study Section for K Awards, NINDS, Ad hoc, 2013- 2015; Permanent member 2015-2017; Chairman 2017-
MNG (Molecular Neurogenetics) Study Section, Ad hoc member 2015.
HHMI Medical Research Fellows Program, 2012-2015
NIH, College of CSR Reviewers, Center for Scientific Review, 2010-2012
NTRC (Neurotransporters, receptors and calcium signaling) Study Section, Chairman, 2006-2008; Permanent member, 2005-2008; Ad hoc member, 2003-2004, 2009
RIBT (Respiratory, integrative biology and translational research) Study Section, Ad hoc reviewer, 2003-
NIH, NHLBI, Review panel on Sleep Apnea / SCOR. Bethesda, MD. 3/2003
NIH, NINDS, Special Emphasis Panel on GABA.
NIH, NHLBI, Special Emphasis Panel on Respiratory Control, 1/2004
Ad hoc reviewer, Rett Syndrome Research Foundation, VA Merit Review Board, National Science Foundation, Citizens United for Research in Epilepsy (CURE).

Manuscript Reviewer

Science	Journal of Comparative Neurology
Nature	Journal of Applied Physiology
Nature Neuroscience	Journal of Neuroscience Methods
Journal of Physiology (London)	Journal of Pharmacology & Exp. Therapeutics
Journal of Neuroscience	Pediatric Research
Journal of Neurophysiology	Glia
Respiration Physiology	Annals of Neurology
Nerve & Muscle	Journal of Neuroscience Research
Epilepsy Research	Biological Psychiatry
Journal of Neurochemistry	American Journal of Physiology
Sleep	eLife

Committees & Service

Co-chair, Steering Committee, Partners Against Mortality in Epilepsy (PAME) Meeting, 2018
Search Committee for Chairman of Psychiatry, University of Iowa, 2017
Vice-Director, Partners Against Mortality in Epilepsy (PAME) Meeting, 2016
External Reviewer, Physician-Scientist Training Program, University of Michigan Department of Neurology, Ann Arbor, MI, 2015
Executive Committee, Medical Scientist Training Program, University of Iowa Carver College of Medicine, 2015-
Co-Chair, Search Committee for Director of The Neuroscience Institute, University of Iowa
Steering Committee, Center for SUDEP Research, NINDS/NIH, 2014-
Executive Committee, Center for SUDEP Research, NINDS/NIH, 2014-
Editor for Neurobiology: *Reference Module in Biomedical Sciences*; An on-line living current encyclopedia and article database covering the full spectrum of biomedical sciences. Elsevier Publishers, 2014-
Steering Committee; Partners Against Mortality in Epilepsy (PAME) Meetings; 2012 & 2014
Chair, Basic Science Program Committee. Partners Against Mortality in Epilepsy (P.A.M.E.) 2nd Biannual meeting. Minneapolis, MN 6/2013.
Internal Advisory Committee, Wellstone Center, University of Iowa, 2014-

Hospital Advisory Committee, University of Iowa, 2011-
University of Iowa Carver College of Medicine Space Committee, 2010-2013
Editorial Board, *US Neurology*, 2010-
Medical Advisory Board, CJ Foundation for SIDS, 2009-2012
Editorial Board, *Journal of Applied Physiology*, 2009-2010
SUDEP Task Force, American Epilepsy Society, 2009-2013
Editorial Board, *Respiratory Physiology & Neurobiology*, 2001-2009
Editorial Board, *Journal of Neurophysiology*, 2002-2008
Scientific Advisory Board, Aeromics Corp., 2006-
Chairman, Scientific Misconduct Investigation Committee, Yale University School of
Medicine. 2005.
Senior Appointments and Promotions Committee, Yale University School of Medicine. 2003-2004
Consultant, NIH Specialized Neuroscience Research Program, University Alaska Fairbanks, 2005-
Consultant, NIH Specialized Neuroscience Research Program, Howard University, 2003-
Program Committee, Society for Neuroscience. 1999-2002
Graduate Education Subcommittee, American Academy of Neurology. 2001-2004
Examiner, American Board of Psychiatry and Neurology, Oral Boards. 2000-2003
Investigators Workshop Committee, American Epilepsy Society. 2000-2003
Program Committee, Winter Conference on Brain Research. 2001-2005.
External Review Board, The Harvard/Dartmouth SIDS Program. 2001
Glaxo-Wellcome Institute for Neurology Education, Board of Regents. 1999-2002
Glaxo-Wellcome Institute for Epilepsy Education, Chairman, Board of Regents. 2001-2003
Admissions Committee, Interdepartmental Neuroscience PhD Program. Yale Univ. 1997-2002
Graduate Medical Education Committee, Yale University School of Medicine. 1999-2001
Research and Development Committee, VA Medical Center, West Haven, CT
Chairman 1995 - 1998. Member 1991 - 1994
Admissions Committee, University of Iowa Medical Scientist Training Program. 1983-85

Professional Society Membership

Society for Neuroscience
American Neurological Association
American Physiological Society
American Academy of Neurology
American Epilepsy Society
International Society for Serotonin Research

Selected Teaching

Patient Based Case Learning. University of Iowa Carver College of Medicine. Weekly
Sessions for one semester. First workup of patients. 2013-2015.
Morning Report. Yale New Haven Hospital Neurology Service. Weekly Session. 2009-2010.
Lecturer. Medical Physiology course for Yale Medical Students. "Respiratory Physiology."
2008-2010
Case Conference Leader. Medical Physiology course for Yale Medical Students.
Weekly 1.5 hour sessions, 26 weeks per year. 1995 - 2010.
Conference Director. Neurology Board Review Conference for neurology residents.
One hour session each week. 2002-2010.
Course Co-director. "Cellular and Molecular Mechanisms of Neurologic Disease." Yale
University School of Medicine, Spring Semester, 1994, 1996.

"Epilepsy" and "Introduction to the Neurologic Exam." Neurology didactic lectures for 3rd year medical students. 3 - 5 lectures per year. 1991 - 1996.

Thesis Advisor

Program

Successfully Defended

Sean McEvoy	MD, Yale University School of Medicine
Chris Severson	MD, Yale University School of Medicine
Simon Best	MD, Yale University School of Medicine
Jennifer Yee	MD, Yale University School of Medicine
Mackenzie Wehner	BA, Yale University
Rachel Flynn	BA, Yale University
Matthew Ua Cruadhlaioich	MS, Neuroscience, Yale University
Cory Massey	PhD, Neuroscience, University of Iowa
Jacob McGlashon	PhD, Neuroscience, University of Iowa
YuJaung Kim	PhD, Biomedical Engineering, University of Iowa
Katherine Proch	MD/PhD, Neuroscience, University of Iowa

In Progress

Frida Teran	MD/PhD, Neuroscience, University of Iowa
-------------	--

Thesis Committees

Program

Successfully Defended

Artis Montague	MD/PhD, Neuroscience, Yale University
Adetokunbo Oyelese	MD/PhD, Neuroscience, Yale University
Natalie Taylor	PhD, Physiology, Dartmouth Medical School
Haakon Nygaard	PhD, Investigative Medicine, Yale University
Andrea Corcoran	PhD, Biology & Wildlife, University of Alaska Fairbanks
Sachin Makani	PhD, Physiology, New York University
Collin Kreple	PhD, Molecular Physiology and Biophysics, University of Iowa
Calvin Carter	PhD, Neuroscience, University of Iowa
Atulya Iyengar	PhD, Neuroscience, University of Iowa
Madeleine Puissant	PhD, Physiology, Medical College of Wisconsin
Annie Tye	PhD, Neuroscience, University of Iowa
Amol Bhandare	PhD, Biomedical Sciences, Macquarie Univ, Sydney, Australia

In progress

Sunny Huang	PhD, Neuroscience, University of Iowa
Guanghao (Max) Liu	PhD, Neuroscience, University of Iowa
Benton Purnell	PhD, Neuroscience, University of Iowa

Current Lab Members

Yuanming Wu, MD	Associate Research Scientist
Eduardo Bravo, PhD	Postdoctoral Fellow
Frida Teran	MSTP Student
	NIH/NINDS Diversity Supplement
Amr Ellaithy	Neurology Resident
Harsh Kothari, MD	Pediatric Critical Care Fellow
Anthony Marincovich	Medical Student
Ryan Lechtenberg	Medical Student
Erik Arneson	Medical Student
Lori Smith	Laboratory Manager
Xiuqiong Zhou	Laboratory Technician
Hassan Ahamed	Biomedical Engineering Undergraduate Student
	STRIDE Fellowship, American Physiological Society, 2017
	Commended Poster Presentation, SURF 2017
Mia Poleksic	Biomedical Engineering Undergraduate Student
Megan Crotts	Neuroscience Undergraduate Student

Previous Lab Members

*Post held after leaving lab or current position
(*) Holds an independent academic position*

Postdoctoral Fellows

YuJaung Kim	Postdoctoral Fellow, U of Iowa
*Karina Bravo Flores, PhD	Assistant Professor, Universidad de O'Higgins, Rancagua, Chile
*Brian Gehlbach, MD	Assistant Professor, University of Iowa
	NHLBI K23 Awardee
*Brian Dlouhy, MD	Assistant Professor, University of Iowa
	NINDS K12 Awardee
Hannah Klein, MD, PhD	Neurology Resident; R25 Recipient
*Veronica Cerpa, PhD	Research Assistant Professor
	Universidad del Desarrollo (UDD), Santiago, Chile
*Levi Sowers, PhD	Postdoctoral Fellow, U of Iowa
*Gordon Buchanan, MD, PhD	Assistant Professor, University of Iowa, 2015 –
	Assistant Professor, Yale University, 2011 - 2015
	VA Special Neuroscience Fellowship Awardee
	NIH/NINDS K08 Awardee
*Matthew Gillum, PhD	Assistant Professor, University of Copenhagen, Denmark
Joanne Avraam, PhD	Postdoctoral Fellow, Melbourne, Australia
*Robert Huckstepp, PhD	Assistant Professor, University of Warwick, England
*Chris Ransom, MD, PhD	Acting Assistant Professor, University of Washington
	VA Special Neuroscience Fellowship Awardee
	VA CDA Awardee
*Matthew Hodges, PhD	Assistant Professor, Medical College of Wisconsin
	NIH/NHLBI K99 Awardee
	NIH R01
*Sheree Johnson, PhD	Assistant Professor, Howard University
	NIH K01 Awardee
Carolin Dohle, MD	Neurology Resident, Yale University
	CJ Foundation for SIDS Fellowship Awardee
Wengang Wang, MD	Associate Research Scientist, University of Washington

*Anuska Diez-Sampedro, PhD Assistant Professor, Physiology, University of Miami
Stefania Risso Bradley, PhD Staff Scientist, Acadia Pharm, San Diego, CA
*Fernando Peña-Ortega, PhD Associate Professor, Universidad Nacional Autónoma de México, Mexico City, Mexico
Heidi Gasparly, MD Epilepsy Fellow, Yale University
Epilepsy Foundation of America Fellowship Awardee
John Pizzonia, PhD Research Scientist, FujiFilm Life Sciences, New Haven, CT.
Jyoti Tiwari, PhD Research Scientist, Unilever Corp., India
Andrei Zaikine, PhD Research Fellow, Sydney Australia
*Osamu Honmou, MD Neurosurgeon, University of Osaka, Japan

Graduate and Medical Students (Short-term lab rotators not included)

Katy Proch MSTP Student
YuJaung Kim Biomedical Engineering Graduate Student
Jacob McGlashon Neuroscience Graduate Student
Cory Massey Postdoctoral Fellow, Baylor School of Medicine
Nicholas Murray, MD Neurology Resident, Stanford University
MD with Research Distinction from U Iowa
HHMI Fellowship Awardee
Winner, U Iowa Research week Poster competition for Translational Research
Royce Woodroffe, MD Neurosurgery Resident, University of Iowa
Rachael Brust, PhD Graduate Student, Genetics, Harvard Medical School
*Sean McEvoy, MD Neurosurgery Resident, University of Washington
Andrea Corcoran, PhD Postdoctoral Fellow, Dartmouth University
Maha Elsayed, PhD Graduate Student, Yale University Physiology PhD Program
Olatunde Bosu, MD Medical Student, Yale University
Simon Best, MD Otolaryngology Resident, Johns Hopkins Medical Center
*Chris Severson, MD Instructor in Neurology, Harvard Medical School
Victoria Kuohung, MD Medical Student, Yale University School of Medicine
Jennifer Yee, MD Internal Medicine Resident, Case Western Reserve Univ.
Chad Messer, PhD PhD student, Pharmacology, Yale U.

Undergraduates and Post-baccalaureates

Scott Erickson Undergraduate Student, University of Wisconsin – La Crosse
Ryan Lechtenberg Medical Student, University of Iowa
Okker Verhagen Undergraduate Student, University of Illinois Urbana-Champaign
Michelle Gorecki Medical student, Northwestern University
Caitlin Thirnbeck Medical student, Des Moines Osteopathic Medical School
Puneet Madaan Master's Student, Biomedical Engineering, University of Iowa
John Sayward Computer Technician, Yale University
Amalia Gonzalez Undergraduate Student, Brown University
Rachel Flynn Research Fellow, Cornell University
Rachel Jamison, MD, PhD Graduate Student, Yale University MD/PhD Program
Diana Richerson, VMD Veterinary Medicine Student, University of Pennsylvania
Mackenzie Wehner, MD Medical Student, Stanford University
Megan Faughnan, MD Medical Student, University of Connecticut
Brett Cassidy, MD Medical Student, Emory University
Kirsten Wagner, MD Medical Student, NYMC

Invited Lectures and Scientific Sessions

- Seminar Speaker. "Interactions between 5-HT neurons and neurons of the retrotrapezoid nucleus." Department of Physiology & Biophysics, Case Western Reserve University. Cleveland, OH. 3/2019.
- Symposium Speaker. "Basic Mechanisms of SUDEP." Investigators Workshop, American Epilepsy Society Annual Meeting. New Orleans, LA. 12/2018.
- Invited Faculty, Special Interest Group: "NIH and Non-Profit Research Resources/Junior Investigator Workshop: Pearls on writing a successful research proposal." American Epilepsy Society Annual Meeting. New Orleans, LA, 12/2018.
- Symposium Speaker. "Networks for Tonic Respiratory Drive, Chemoreception and SUDEP in Epilepsies," International Symposium NEWroscience 2018 "Looking for Epilepsy Cure Along Centuries and Across Cultures From Demons and Blessings to Brain Complex Networks and DNA Editing." Ribeirão Preto, São Paulo, Brasil, 9/2018.
- Symposium Speaker. "New monitoring paradigms in the EMU in the age of SUDEP." 3rd International Clinical Neurophysiology, Iowa City, IA, 7/2018
- Conference Co-Organizer. "Welcome: Conference Overview and Goals." Partners Against Mortality in Epilepsy (P.A.M.E.) 4th Biannual meeting. Alexandria, VA, 6/2018.
- Symposium Speaker. "Current Controversies & Future Directions in Basic Science of SUDEP." "Plenary 1: Combating Mortality in Epilepsy: Looking Back and Looking Ahead." Partners Against Mortality in Epilepsy (P.A.M.E.) 4th Biannual meeting. Alexandria, VA, 6/2018.
- Symposium Speaker. "Similarities and Potential Shared Mechanisms of SIDS and SUDEP." In: "Plenary 2: Basic Science Research," Partners Against Mortality in Epilepsy (P.A.M.E.) 4th Biannual meeting. Alexandria, VA, 6/2018.
- Neurology Grand Rounds. "SUDEP and SIDS: Not so sudden causes of death" Department of Neurology, Stanford University, Palo Alto, CA, 5/2018.
- Symposium Speaker. "Too afraid to breathe: The amygdala and apnea in *Scn1a* mutant mice." Spring Brain Conference, Sedona, AZ, 4/2018.
- Invited Speaker. "Nuts and Bolts of Building a Dual Career as a Clinician-Researcher." NINDS R25 Physician Scientist Training Program Meeting, Washington, DC, 3/2018.
- Seminar Speaker. "SUDEP: Neither Sudden Nor Unexpected?" Department of Physiology and Neurobiology, University of Connecticut. Storrs, CT. 2/2018.
- Speaker, Dietary Therapies Special Interest Group. "Effects of different ketogenic diets on SUDEP mortality in Dravet Syndrome mice. Washington, DC, American Epilepsy Society Meeting. 12/2017.
- Invited Faculty, Special Interest Group: "NIH and Non-Profit Research Resources/Junior Investigator Workshop: Pearls on writing a successful research proposal." American Epilepsy Society Annual Meeting. Washington, DC, 12/2017.
- Symposium Speaker, "Sudden death in genetic epilepsies." In: "5th Annual Fall Symposium." Department of Neurology, University of Iowa, Iowa City, IA, 10/2017.

- Symposium Speaker, "Interactions between 5-HT neurons and neurons of the retrotrapezoid nucleus." In: "Mechanisms of Central Respiratory Chemoreception." Oxford Conference on Respiratory Control, Oxford, England, 9/2017.
- Conference Organizer and Speaker. "Epilepsy Education For A Better Life: Comprehensive epilepsy management at Iowa: A program for patients, families and the community." Coralville, IA, 5/2017.
- Invited Speaker. "Nuts and Bolts of Building a Dual Career as a Clinician-Researcher." NINDS R25 Physician Scientist Training Program Meeting, Seattle, WA, 3/2017.
- Invited Speaker. "The controversial role of 5-HT neurons in central respiratory CO₂ chemoreception." Summer Course in Neuroscience: Advances in neural rhythms modulation and dysregulation. Programa de Doctorado en Neurociencia, Universidad de Santiago de Chile, Santiago, Chile. 1/2017.
- Invited Speaker. "Mechanisms of sudden death in epilepsy." Summer Course in Neuroscience: Advances in neural rhythms modulation and dysregulation. Programa de Doctorado en Neurociencia, Universidad de Santiago de Chile, Santiago, Chile. 1/2017.
- Invited Speaker. "SUDEP – Serotonin: The Anti-SuddenDeathAmine?" Universidad de Valparaiso. Valparaiso y Vina del Mar, Chile. 1/2017.
- Seminar Speaker. "SUDEP and SIDS: Is there a final common pathway for sudden death?" Center for Integrated Brain Research, Seattle Children's Hospital. Seattle, WA, 9/2016.
- Neurology Grand Rounds. "SUDEP: Neither sudden nor unexpected?" Department of Neurology, University of Washington, Seattle, WA, 9/2016.
- Symposium Speaker. "Changes in respiratory control induced by seizures." In: "What are the events that occur during and after a seizure that cause death in SUDEP?" Partners Against Mortality in Epilepsy (P.A.M.E.) 3rd Biannual meeting. Alexandria, VA 6/2016.
- Conference Organizer and Speaker. "Comprehensive epilepsy management at Iowa: A program for patients, families and the community." Coralville, IA, 5/2016.
- Invited Speaker. "Epilepsy: Causes and consequences." Mini Medical School. University of Iowa, Iowa City, IA, 5/2016.
- Neurology Grand Rounds. "SUDEP: Neither sudden nor unexpected?" Department of Neurology, University of Iowa, Iowa City, IA, 5/2016.
- Invited Speaker. "Developing a research career." In: "Navigating your Career: All Aboard!" American Academy of Neurology Meeting, Vancouver, BC, Canada. 4/2016.
- Epilepsy Lecture Series. "SUDEP: Neither sudden or unexpected?" Comprehensive Epilepsy Center, Northwestern University, Chicago, IL, 4/2016.
- Invited Speaker. "Nuts and Bolts of Building a Dual Career as a Clinician-Researcher." NINDS R25 Physician Scientist Training Program Meeting, Washington, DC, 3/2016.
- Symposium Speaker, "When Life Support Fails – Insights into the Mechanisms of Cardiorespiratory Collapse after Seizures." In: "UUUgh! The Unexpected, Unexplained and often Undetermined." National Association of Medical Examiner's Interim meeting, Las Vegas, NV, 2/2016.

- Invited participant, “New Approaches to Enhance the Physician Scientist Workforce.” NIH workshop. Bethesda, MD, 2/2016.
- Neurology Grand Rounds. “SUDEP: Neither sudden or unexpected?” Department of Neurology, University of Michigan, Ann Arbor, MI, 12/2015.
- Panelist and Mentor, NINDS R25 Physician Scientist Training Program Meeting, Washington, DC, 6/2015.
- Seminar Speaker, Department of Physiology. “Heterogeneity of serotonin neurons: Different features/shared goals?” Medical College of Wisconsin. Milwaukee, WI. 5/2015.
- Symposium Speaker. “Serotonin, breathing and SUDEP.” In: “The epidemiology, pathophysiology & prevention of SUDEP” Scientific Symposium, American Epilepsy Society Annual Meeting. Seattle, WA. 12/2014.
- Plenary Lecturer. “Disorders of breathing in neurological disease.” XIIIth Oxford Conference on Control of Breathing. Sydney, Australia. 10/2014.
- Symposium Speaker. “Basic Mechanisms of SUDEP.” SUDEP & Epilepsy Symposium. University of Calgary. Calgary, AB. 9/2014.
- Symposium Speaker. “Serotonin neurons in respiratory control and link to sudden unexpected death in epilepsy (SUDEP)” New Advances in the Neural Control of Breathing. 1st PanAmerican Congress of Physiological Sciences. Iguacu Falls, Brazil. 8/2014.
- Symposium Speaker. “Theories of respiratory chemoreception.” University of Sao Paulo. Sao Paulo, Brazil. 7/2014.
- Symposium Speaker and Chairman. “5-HT and SUDEP.” Respiratory session. Partners Against Mortality in Epilepsy (P.A.M.E.) 2nd Biannual meeting. Minneapolis, MN 6/2014.
- Discussant. NINDS Research Career Development Symposium: How to Be Successful in Academic Neuroscience. American Academy of Neurology Meeting, Philadelphia, PA. 4/2014.
- Symposium Speaker. “5-HT & SUDEP.” In: SUDEP: Time for prevention – Evidence and clinical translation. St Anne's College, Oxford, England. 3/2014.
- Speaker and Co-Chair, SUDEP Special Interest Group. American Epilepsy Society Meeting. 2013-15.
- Discussant. ANA/NINDS NIH K Awardee Mentoring Meeting. New Orleans, LA. 10/2013.
- Plenary Lecturer. “Warm Milk & Sudden Death: Role of Serotonin in SUDEP & SIDS.” Midbrains Conference, Carleton College, Northfield, MN. 10/2013.
- Neurology Grand Rounds Distinguished Visiting Professor. “Warm milk and sudden death: Serotonin and prevention of SUDEP.” University of Nebraska, Department of Neurological Sciences. Omaha, NE. 5/2013.
- Residency Graduation Honorary Speaker. University of Nebraska. Department of Neurological Sciences. “Why we make so many major decisions for the wrong reasons... ..and why it doesn't really matter.” Omaha, NE, 5/2013.
- Symposium Speaker. Curing Epilepsy; National Institutes of Health, NINDS. Natcher Auditorium, Bethesda, MD. 4/2013.

- Neurology Grand Rounds. "Warm milk and sudden death: Serotonopathy and SUDEP." Department of Neurology. University of Pennsylvania. Philadelphia, PA. 4/2013.
- Symposium Speaker. "Seizures, SUDEP and the Anti-Suddendethamine." In "New insights into the control of breathing." Spring Brain Conference. Sedona, AZ 3/2013.
- Mentor. AAN/NINDS NIH K Awardee Mentoring Meeting. San Diego, CA. 3/2013.
- Symposium Speaker. "Predictive Genes, Basic Mechanisms, and Clinical Biomarkers of SUDEP" Investigators Workshop, American Epilepsy Society Annual Meeting. San Diego, CA. 12/2012.
- Co-Chair, SUDEP Special Interest Group. "SUDEP: Explaining the unexplained." American Epilepsy Society Annual Meeting. San Diego, CA. 12/2012.
- Mentor. NINDS/NIH K Awardee Mentoring Meeting. American Neurological Association Annual Meeting. Boston, MA. 10/2012.
- Symposium Chairman and Speaker. "5-HT chemoreception and sudden death in epilepsy." XIIth Oxford Conference on 'Breathing, Emotion and Evolution.' Almelo, The Netherlands. 8/2012.
- Seminar Speaker. Warm milk and sudden death: How serotonin neurons protect you while you sleep. Department of Pediatrics, University of Iowa. 7/2012.
- Symposium Speaker. "SUDEP: The seizure – serotonin – breathing connection." University of Wisconsin Comparative Biosciences Retreat, Kemp Station, WI. 7/2012.
- Symposium Speaker. "Central chemoreception by serotonin neurons of the raphe." 5-HT Club Annual Meeting. Montpellier, France. 6/2012.
- Organizing Committee, Session Moderator and Speaker. Partners Against Mortality in Epilepsy (PAME) Conference on SUDEP. "Value and Role of Mouse Models of SUDEP." Evanston, IL. 6/2012.
- Symposium Speaker. "Warm milk and sudden death: How serotonin neurons protect you while you sleep." Mini Medical School program, "Breakthroughs in Understanding the Human Brain" University of Iowa. 4/2012.
- Seminar Speaker, Dept of Pharmacology. "Respiratory Depression: A Different Kind of Depression Prevented by Serotonin." University of Iowa. 4/2012.
- Co-Chair, SUDEP Special Interest Group. American Epilepsy Society Meeting. 12/2011.
- Mentor. ANA/NINDS NIH K Awardee Mentoring Meeting. San Diego, CA. 10/2011.
- Symposium Speaker. "A little warm milk with your Dilantin? Serotonin and translational models of SUDEP." Integrated Neuroscience Session. Child Epilepsy: Bench to Bedside. American Academy of Neurology Annual Meeting. Honolulu, HI. 4/2011.
- Seminar Speaker, Dept of Biology. "Living and (especially) dying without serotonin." University of Iowa. 3/2011.
- Seminar Speaker. "Sudden death and serotonin: Insights into SIDS & SUDEP using novel genetic tools." Dept of Biomedical Sciences, Iowa State University. Ames, IA. 3/2011.
- Keynote Speaker, Iowa Neurological Association Annual Meeting. "Update on the University of Iowa Department of Neurology." Des Moines, IA. 2/2011.

- Seminar Speaker, Pulmonary Research Conference. "Chemoreceptor control of breathing, serotonin and sudden death." University of Iowa. 2/2011.
- Psychiatry Grand Rounds. "Serotonin and neuropsychiatric disease: Are there shared mechanisms in seizures, depression, SUDEP and panic disorder?" University of Iowa. 2/2011.
- Symposium speaker. "Unusual modes of GABA signaling in the developing and adult brain." Winter Conference on Current Issues in Developmental Psychobiology. Playa Herradura, Costa Rica. 1/2011.
- Co-Chair, SUDEP Special Interest Group. American Epilepsy Society Annual Meeting. 2010.
- Plenary Speaker. "Neuromodulation of breathing by the 5-HT network." Scottish Young Physiologists Symposium, The Physiological Society. University of St Andrews, St Andrews, Scotland, 8/2010.
- Seminar Speaker, Dept of Molecular Physiology and Biophysics. "Serotonin neurons and multiple modes of pH regulation by the brain." University of Iowa. 8/2010.
- Symposium speaker. "The serotonin axis: Shared mechanisms for epilepsy, depression and SUDEP" in: Merritt-Putnam Symposium "Epilepsy Spectrum Disorder: New Mechanisms for Complex Syndromes." American Epilepsy Society Annual Meeting. Boston, MA, 12/2009.
- Neurology Grand Rounds: "Serotonin and sudden death: Insights into SIDS & SUDEP using novel genetic tools." University of Iowa. 11/2009.
- Symposium chairman and speaker. "The new molecular genetics of serotonin neuron development and physiology." Society for Neuroscience Annual Meeting. Chicago, IL, 10/2009
- Neurology Grand Rounds: "Life without serotonin: Insights into sudden death using new genetic tools." SUNY Stony Brook. 7/2009.
- Symposium speaker. "Central chemosensitivity by 5-HT neurons" 11th Oxford Conference on Modeling and Control of Breathing. Nara, Japan. 8/2009.
- Symposium speaker (Invited but declined due to conflict with symposium in Nara, Japan. "Thermoregulation and the sudden infant death syndrome (SIDS)" 3rd International Symposium on Physiology and Pharmacology of Temperature Regulation. Matsue, Japan. 8/2009.
- Symposium speaker. "Excitation or dysinhibition: Novel modes of regulation of excitability and GABAergic neurotransmission in epilepsy." Winter Conference on Brain Research. Copper Mountain, CO. 1/2009.
- Symposium speaker. "Rolling, Sleeping and Breathing: Serotonin Connection?" Winter Conference on Brain Research. Copper Mountain, CO. 1/2009.
- Symposium speaker. "Severe breathing defects in neonatal mice lacking central 5-HT neurons." Winter Conference on Current Issues in Developmental Psychobiology. St. Croix, U.S. Virgin Islands. 1/2009.
- Seminar speaker. "Nonvesicular neurotransmission via GABA transporter reversal." Mediterranean Institute of Neurobiology (INMED). Marseilles, France. 12/2008.

- Symposium speaker. "Critical role of 5-HT neurons in control of breathing in neonatal mice *in vivo* and *in vitro*" International Symposium on Respiratory Control. Saint Maximin en Provence, France. 12/2008.
- Symposium speaker. "Chemosensitivity of adult 5-HT neurons is not dependent on TASK channels" International Symposium on Respiratory Control. Saint Maximin en Provence, France. 12/2008.
- Workshop participant. NINDS multidisciplinary workshop on Sudden Unexplained Death in Epilepsy (SUDEP). Bethesda, MD. 11/2008.
- Seminar speaker. "Nonvesicular neurotransmission via GABA transporter reversal." Dept of Physiology, Emory University. Atlanta, GA 11/2008.
- Seminar speaker. "The ins and outs of the GABA transporter." Dept of Cellular & Molecular Physiology Retreat. Yale University. Westbrook, CT. 11/2008.
- Distinguished Visiting Neuroscientist. "Serotonin neurons, breathing and arousal: Implications for sudden infant death syndrome." Program in Neuroscience, University of Toronto. Toronto, ON 10/2008.
- Special lecturer. "Genetic models of serotonin dysfunction in neuropsychiatric disease." Department of Neurology. Yale University. 9/2008.
- Seminar speaker. "Role of 5-HT neurons in the control of breathing." Signature Interdisciplinary Program in Neuroscience, Florida State University. Tampa, FL 5/2008
- Invited lecture. "Inhibitory GABAergic neurotransmission: Who needs vesicles anyway?" Neuroscience Institute, Penn State University. University Park, PA. 4/2008.
- Symposium speaker. "Varied roles of BK-type potassium channels in the regulation of neuronal excitability: Which are important for epilepsy?" American Epilepsy Society Annual Meeting. Philadelphia, PA. 12/2007.
- Symposium Chairman and speaker. "5-HT neurons and regulation of CO₂ levels." Theoretical and Experimental Perspectives on Serotonin Function. Ericeira, Sintra, Portugal. 10/2007.
- Symposium Chairman and Speaker. "Defects in breathing and thermoregulation in mice lacking serotonin neurons." World Sleep 2007. Cairns, Australia. 9/2007
- Symposium speaker. "GAT1 is near equilibrium under normal physiological conditions and reverses easily in response to depolarization." The GABA System. Cold Spring Harbor Laboratory. Cold Spring Harbor, NY. 12/2006
- Chairman, Slide Session. "Respiratory control: Chemosensitivity, plasticity and rhythmicity." Society for Neuroscience Annual Meeting. Atlanta, GA. 10/2006
- Symposium speaker. "Central chemoreception." Xth Oxford Conference on Modeling and Control of Breathing. Lake Louise, Alberta, Canada. 9/2006
- Symposium speaker. "Specific deletion of serotonin neurons in transgenic mice leads to a severe defect in central respiratory chemoreception." Main Meeting of The Physiological Society. University College London. London, England. 7/2006
- Invited lecture. "Serotonin neurons as biosensors of CO₂ and pH." Center for Integrative Neuroscience and Engineering, University of Chicago. Chicago, IL. 5/2006

- Invited lecture. "Role of serotonin neurons as central CO₂ chemoreceptors." Neuroscience Program, University of Wisconsin. Madison, WI. 5/2006
- Symposium speaker. "Serotonin neurons and central chemoreception." FASEB Annual Meeting. San Francisco, CA. 4/2006
- Invited lecture. "Role of serotonin neurons as central CO₂ sensors." Neuroscience Program, Queen's University. Kingston, ON. 3/2006
- Invited lecture. "Sudden Infant Death Syndrome Research." CJ Foundation for SIDS 2006 National Conference. Philadelphia, PA. 2/2006.
- Invited lecture. "Serotonin: How can one molecule be involved in so many different diseases?" Research at Yale: Exploring the Edge. New Haven, CT. 12/2005
- Symposium Chairman. "Vesicular transporters." New perspectives in neurotransmitter transporter biology. Satellite for Society for Neuroscience Meeting. Washington, DC. 11/2005
- Symposium Chairman and Speaker. "Advances in the serotonin system – new insights into the pathogenesis of psychiatric disorders." European College of Neuropsychopharmacology. Amsterdam, The Netherlands. 10/2005
- Seminar speaker. "pHresh out of serotonin: Defects in breathing in mice with genetic deletion of serotonin neurons." Yale University Physiology Retreat. New Haven, CT. 10/2005
- Invited lecture. "Role of serotonin neurons as CO₂ sensors that help maintain pH homeostasis." Dept of Physiology, New York University. New York, NY. 9/2005
- Symposium speaker. "Serotonergic neurons & central CO₂ chemoreception." International SIDS Symposium. Hanover, New Hampshire. 8/2005
- Symposium speaker. "Peripheral and central chemoreceptors." International Society of Autonomic Neuroscience. Marseilles, France. 6/2005
- Symposium speaker. "Serotonin neurons as CO₂ sensors: Normal brain pH function and sudden infant death syndrome." Yale University Neuroscience PhD Program Annual Retreat. 5/2005
- Chairman, Featured Topic. "Molecules underlying diseases of the central and enteric nervous systems." International Union of Physiological Sciences. San Diego, CA. 4/2005
- Symposium speaker. "pH and brain pH function." Winter Conference on Brain Research. Breckenridge, CO. 1/2005
- Symposium speaker. "Moving Beyond GAT1: Emerging Role for Other GABA Transporters in the Control of Neuronal Function?" Winter Conference on Brain Research. Breckenridge, CO. 1/2005
- Neurology Grand Rounds. "Serotonin and brain pH function: Insights into adult neurological disease from SIDS." Yale University. 12/2004
- Invited lecture. "Serotonin neurons as CO₂ sensors: Is Sudden Infant Death Syndrome a defect in pH control?" Dept of Physiology. Case Western Reserve University. Cleveland, OH. 11/2004

- Plenary lecture. "Serotonin neurons as CO₂ sensors: Is Sudden Infant Death Syndrome a defect in pH control?" Scottish Neuroscience Group Annual Meeting. Glasgow, Scotland. 8/2004
- Symposium speaker. "Serotonin neurons as CO₂ sensors: Implications for sudden infant death syndrome." SIDS International Conference. Edmonton, Alberta. 7/2004
- Invited lecture. "Serotonergic neurons as CO₂ sensors: A neurobiological basis for panic disorder?" Henry Wellcome Laboratories for Integrative Neuroscience and Endocrinology. University of Bristol. Bristol, England. 5/2004
- Invited lecture. "Serotonin neurons and breathing: Implications for sudden infant death syndrome." Scottish Neuroscience Group. St. Andrews, Scotland. 5/2004
- Invited lecture. "Serotonin neurons as CO₂ sensors: Role in control of breathing." Program in Neuroscience. Princeton University. 4/2004
- Invited lecture. "Brainstem serotonin neurons as CO₂ sensors: Mechanisms and role in pH homeostasis." Department of Physiology and Neurobiology. University of Connecticut. Storrs, CT 2/2004
- Symposium chairman and speaker. "Dynamic control of transmitter uptake: New views of transporter function." Winter Conference on Brain Research. Copper Mountain, CO. 1/2004
- Chairman and speaker. "Role of tonic GABAergic inhibition in the normal and epileptic brain." Investigators Workshop, American Epilepsy Society Annual Meeting. Boston, MA, 12/2003
- Invited lecture. "Midbrain serotonergic neurons as sensors of acid/base balance: Implications for panic disorder and limbic function." Biological Sciences Training Program. Dept. of Psychiatry. Yale University School of Medicine. 12/2003
- Symposium chairman and speaker. "Serotonergic neurons and development: Implications for normal brain function and human disease." Society for Neuroscience Annual Meeting. New Orleans, LA, 11/2003
- Invited lecture. "Chemosensitivity of serotonergic neurons: Mechanisms and functional role." Advanced Physiology Seminars, Howard University. Washington, D.C. 9/2003
- Co-Chairman, Special Interest Social on Respiratory Control. FASEB Annual Meeting. San Diego, CA, 4/2003
- Meeting Co-Organizer, "Role of Serotonin in the CNS." Neurochemistry Winter Conference. Sölden, Austria. 4/2003
- Symposium chairman and speaker. "Role of serotonergic neurons in SIDS." In: "Serotonin and perinatal development." Neurochemistry Winter Conference, Sölden, Austria. 4/2003
- Invited lecture. "The ins and outs of the GABA transporter: A role in regulation of tonic inhibition." Division of Neuroscience, John Curtin School of Medical Research, Australian National University, Canberra, Australia. 2/2003
- Symposium speaker. "Respiratory chemoreception in mammalian respiratory networks." International Congress of Comparative Physiology and Biochemistry. La Trobe, Australia. 2/2003

- Invited lecture. "Serotonin and pH chemoreception: A new meaning for the phrase 'dropping acid'." Physiology Dept., Northwestern University. 5/2002
- Co-Organizer, "Central Respiratory and Motor Control." Satellite Meeting of Neurochemistry Winter Conference. Sölden, Austria. 4/2002
- Symposium chairman and speaker. "Mechanisms of pH sensitivity of serotonergic neurons." In: "Brainstem response to hypoxia and hypercapnia." Neurochemistry Winter Conference, Sölden, Austria. 4/2002
- Symposium speaker. "The sudden infant death syndrome, sleep and breathing." FASEB Annual Meeting. New Orleans, LA. 4/2002
- Invited speaker. "The role of serotonergic neurons in respiratory chemoreception." Department of Physiology. Dartmouth University. Hanover, NH. 11/2001
- Chairperson, Slide Session. "Autonomic: Respiratory regulation, Chemoreception II." Society for Neuroscience Annual Meeting, San Diego CA. 11/2001
- Panelist, Special Interest Social. "The art of combining a career in clinical medicine and basic neuroscience." Society for Neuroscience Annual Meeting, San Diego CA. 11/2001
- Symposium speaker. "Cellular mechanisms of chemosensitivity in serotonergic raphe neurons." Neural control of breathing. Rotorua, New Zealand. 9/2001
- Neurology Grand Rounds. "Neurotransmission without vesicles?: GABA release via reversal of the transporter." Yale University. 5/2001
- Alberta Heritage Foundation Lecture. "Neurotransmission without vesicles?: GABA release via reversal of the transporter." University of Calgary. Calgary, Alberta. 4/2001
- Alberta Heritage Foundation Lecture. "The role of serotonergic neurons in central respiratory chemoreception." University of Calgary. Calgary, Alberta. 4/2001
- Alberta Heritage Foundation Lecture. "Neurotransmission without vesicles?: GABA release via reversal of the transporter." University of Alberta. Edmonton, Alberta. 4/2001
- Symposium chairman and speaker. "The raphe and breathing: What is the connection?" Winter Conference on Brain Research. Steamboat Springs, CO. 1/2001
- Symposium speaker. "The response to CO₂ and O₂: From ion channels to neural networks." Winter Conference on Brain Research. Steamboat Springs, CO. 1/2001
- Panelist, Special Interest Social. "The role of the medullary raphe." Society for Neuroscience Annual Meeting, New Orleans, LA. 11/2000
- Panelist, Special Interest Social. "The art of combining a career in clinical medicine and basic neuroscience." Society for Neuroscience Annual Meeting, New Orleans, LA. 11/2000
- Symposium speaker. "Serotonergic neurons of the medullary raphe possess a novel pH sensitive calcium-dependent cation current." Central Chemosensitivity 2000. Bochum, Germany. 8/2000
- 1st Annual Michael Dekin Memorial Lecturer. "Continuing the tradition: Understanding the neural network that controls ventilation by defining the properties of its component neurons." UMDNJ. New Brunswick, NJ. 12/1999
- Symposium chairman and speaker. "The medullary raphe: Such an obvious role in respiration, but what exactly is it?" FASEB Annual Meeting. Washington, D.C. 4/1999

- Neurology Grand Rounds. "Serotonin in neurological disease: Towards a unifying hypothesis." Yale University. 3/1999
- Symposium chairman and speaker. "Heavy breathing in Snowmass: The role of serotonin in the respiratory response to altitude." Winter Conference on Brain Research. Snowmass, CO. 1/1999
- Invited speaker. "Neural control of ventilation." The John B. Pierce Laboratory, New Haven, CT. 11/1998
- Symposium speaker. "Central Chemoreceptors: How, when, where?" FASEB Annual Meeting. San Francisco, CA. 4/1998
- Seminar speaker. "Carrier-mediated GABA release: Neuronal inhibition without vesicles?" Department of Physiology. Yale University. 1/1998
- Symposium speaker. "Carrier-mediated GABA release." Investigators Workshop, AES Annual Meeting. Boston, MA. 12/1997
- Symposium speaker. "Central chemoreceptors. Where are they and why are they so elusive?" Symposium in honor of Bernard Gee, MD. Yale University. 10/1997
- Invited speaker. "Carrier-mediated GABA release: A form of neurotransmission?" NIH/NINDS, Section of Motor Control. Bethesda, MD. 4/1997
- Invited speaker. "Chemosensitivity in the medullary raphe." Dartmouth University. Hanover, NH. 5/1997
- Invited lecture. "Chemosensitivity of neurons in the rostral ventral medulla." Division of Pulmonary Medicine, UMDNJ. 10/1996
- Neurology Grand Rounds. "Role of the GABA transporter in GABA release." University of Washington. Seattle, WA. 3/1996
- Invited speaker. "Chemosensitivity of medullary raphe neurons." Department of Physiology. University of Washington. Seattle, WA. 3/1996
- Symposium speaker. "Gabapentin: New insights into a novel antiepileptic and neuroprotective mechanism." Winter Conference on Brain Research. Snowmass, Colorado 1/1996
- Symposium speaker. "Electrophysiological response of CO₂ sensitive cells in the ventral medulla." American Thoracic Society Annual Meeting. Seattle, WA. 5/1995.
- Invited speaker. "Insights into the mechanism of action of gabapentin." Department of Pharmacology. University of Colorado. Denver, CO. 10/1994
- Neurology Grand Rounds. "Disorders of respiratory control." University of Colorado. Denver, CO. 10/1994
- Neurology Grand Rounds. "Central respiratory chemosensitivity." Washington University. St. Louis, MO. 6/1994
- Invited lecture. "Understanding the cellular mechanisms of respiration." Department of Biology. Stanford University. Palo Alto, CA. 3/1994
- Neurology Grand Rounds. "Neural control of breathing." Yale University. New Haven, CT. 1/1994

Symposium Chairman. "Understanding neural network function." Yale University, Interdepartmental Neuroscience Program Retreat. Woods Hole, MA. 1/1994

Seminar speaker. "Mechanisms of central respiratory chemoreception." Department of Physiology. Yale University. 5/1993

Seminar speaker. "Chemosensitivity of brainstem neurons." Yale University Physiology Retreat. Woods Hole, MA. 10/1993

Seminar Chairman. "GABA: Functions beyond inhibition." Winter Conference on Brain Research. Whistler, British Columbia. 1/1993

Seminar Speaker. "Perfused brain preparations in neurobiology." Winter Conference on Brain Research. Vail, CO. 1/1992

Invited speaker. "Pathophysiology and Treatment of Stroke" and "Stroke Case Presentations." Waterbury Hospital Health Center. 1992 & 93

Grand Rounds. "Neural Control of Respiration." Gaylord Hospital, Wallingford, CT. 1990

Invited speaker. "Respiration in the isolated guinea pig preparation." Northwestern University Medical School, Department of Physiology. 1986

Lay Press and Public Presentations

Epilepsy's Fatal Potential. River to River Talk Show. Iowa Public Radio. 1/6/2015.
<http://iowapublicradio.org/post/epilepsys-fatal-potential>.

Neurology Services Expand in the Quad Cities Area. Paula Sands Live. 2/23/2015.
<http://kwqc.com/2015/02/23/neurology-services-expand-in-the-qca/>

Publications

Articles

- 1) Wu, Y., K. Proch, F.A. Teran, & G.B. Richerson. Input from serotonin neurons contributes to chemosensitivity of Phox2b expressing retrotrapezoid neurons. (submitted), 2018.
- 2) Gehlbach, B.K., R.K. Sainju, D.K. Tadlock, D.N. Dragon, M.A. Granner & G.B. Richerson. Tolerability of a comprehensive cardiorespiratory monitoring protocol in an epilepsy monitoring unit. *Epilepsy & Behavior*. (in press) 2018
- 3) Chae, W.S., S. Choi, D. Sugiyama, G.B. Richerson, T.J. Brennan & S. Kang. The effect of thoracic epidural anesthesia in a rat model of phrenic motor inhibition after upper abdominal surgery. *Anesthesiol* (in press), 2018.
- 4) Murugesan, A., M.R. Sandhya Rani, J. Hampson, B. Zonjy, N. Laucey, C.L. Faingold, D. Friedman, O. Devinsky, R.K. Sainju, S. Schuele, B. Diehl, M. Nei, R.M. Harper, L.M. Bateman, G.B. Richerson & S.D. Lhatoo. Serum Serotonin Levels in Patients with Epileptic Seizures. *Epilepsia* 59:e91-e97, 2018.
- 5) Laucey, N., J. Hampson, B. Zonjy, M.R.S. Rani, A. Zaremba, R.K. Sainju, B.K. Gehlbach, S. Schuele, D. Friedman, M. Nei, R. Harper, L. Allen, B. Diehl, J. Millichap, L. Bateman, M. Granner, D. Dragon, G.B. Richerson, & S. Lhatoo. The incidence and significance of peri-ictal apnea in epileptic seizures. *Epilepsia* 59(3):573-582, 2018.
- 6) Kim, Y.J., E. Bravo, C.K. Thirnbeck, L.A. Smith-Mellecker, S.H. Kim, B.K. Gehlbach, L. Laux, D.R. Nordli, Jr. & G.B. Richerson. Severe Peri-ictal Respiratory Dysfunction is Common in Dravet Syndrome. *J Clinical Investigation*, 128(3):1141-1153, 2018.
- 7) Massey, C.A. & G.B. Richerson. Isoflurane, ketamine-xylazine, and urethane markedly alter breathing even at sub-therapeutic doses. *J Neurophysiol*, 118(4):2389-2401, 2017. [PMID: 28747467]
- 8) Dlouhy, B.J., M.A. Ciliberto, C.L. Cifra, P.A. Kirby, D.L. Schrock, M. Nashelsky, & G.B. Richerson. Unexpected death in a child with complex febrile seizures – similar pathophysiology to sudden unexpected death in epilepsy (SUDEP)? *Frontiers in Neurology*, 8:21, 2017. [PMID: 28203222] PMID: PMC5286923
- 9) Ransom, C.B., Z. Ye, W.J. Spain & G.B. Richerson. Modulation of tonic GABA currents by connexin hemichannel and anion channel antagonists. *Neurochem Res* 42(9):2551-2559, 2017. [PMID: 28401401]
- 10) Cerpa, V.J., Y. Wu, E.U. Bravo, F.A. Teran, R.S. Flynn & G.B. Richerson. Medullary 5-HT neurons: Switch from respiratory drive to chemoreception during postnatal development. *Neurosci* 344:1-14, 2017. [PMID: 27619736]
- 11) Buchanan, G.F. & G.B. Richerson. Epilepsy: A dietary supplement for SUDEP prevention? *Nature Rev Neurol* 12(9):495-6, 2016. [PMID: 27514288]

- 12) Devinsky, O., D.C. Hesdorffer, D. Thurman, S. Lhatoo, G.B. Richerson. Sudden Unexpected Death in Epilepsy: Epidemiology, Mechanisms & Prevention. *Lancet Neurology*, 15(10):1075-88, 2016. [PMID: 27571159]
- 13) Zhan, Q., G. Buchanan, J. Motelow, J. Andrews, P. Vitkovskiy, W. Chen, F. Serout, A. Gummadavelli, A. Kundishora, M. Furman, W. Li, X. Bo, G.B. Richerson, and H. Blumenfeld. Impaired serotonergic brainstem function during and following seizures. *J Neurosci*, 36(9):2711-22, 2016. [PMID: 26937010]
- 14) Richerson, G.B., D. Boison, C. Faingold & P. Ryvlin. SUDEP: From unwitnessed fatality to witnessed rescue: pharmacological intervention. *Epilepsia*, 57(Suppl 1):35-45, 2016. [PMID: 26749015]
- 15) Lhatoo, S., J. Noebels, V. Whittemore, and The NINDS Center for SUDEP Research. Sudden Unexpected Death in Epilepsy (SUDEP): Identifying Risk and Preventing Mortality. *Epilepsia* 56(11):1700-6, 2015. [PMID: 26494436]
- 16) Murray, N.M., G.F. Buchanan & G.B. Richerson. Sleep disruption caused by serotonin depletion is due to hypothermia. *Sleep*, 38(12):1985-93, 2015. [PMID: 26194567] PMCID: PMC4667392
- 17) Dlouhy, B.J., B.K. Gehlbach & G.B. Richerson. Sudden unexpected death in epilepsy (SUDEP): basic mechanisms and clinical implications for prevention. *J Neurol Neurosurg Psych*, 87(4):402-13, 2015. [PMID: 26979537]
- 18) Cerpa, V.J., M.L. Aylwin, S. Beltrán-Castillo, E.U. Bravo, I.R. Llona, G.B. Richerson & J.L. Eugén. Alteration of neonatal raphe neurons by prenatal-perinatal nicotine: Meaning for Sudden Infant Death Syndrome. *Am J Respir Cell Mol Biol*, 53(4):489-99, 2015. [PMID: 25695895] PMCID: PMC4742896
- 19) Dlouhy, B.J., B.K. Gehlbach, C.J. Kreple, H. Kawasaki, H. Oya, C. Buzza, M.A. Granner, M.J. Welsh, M.A. Howard III, J.A. Wemmie* and G.B. Richerson*. Breathing inhibited when seizures spread to the amygdala and upon amygdala stimulation. *J Neurosci*, 35(28):10281-9, 2015. [PMID: 26180203] PMCID: PMC4502266
- 20) Buchanan, G.F., H. Smith, A. MacAskill & G.B. Richerson. 5-HT_{2A} receptor activation is necessary for CO₂-induced arousal. *J Neurophysiol*, 114(1):233-43, 2015. [PMID: 25925320] PMCID: PMC4507958
- 21) Corcoran, A.E., G.B. Richerson & M.B. Harris. Functional link between the hypocretin and serotonin systems in the neural control of breathing and central chemosensitivity. *J Neurophysiol*, 114(1):381-9, 2015. [PMID: 25878157] PMCID: PMC4507970
- 22) McGlashan, J.B., A. Kozłowski, M. Gorecki, C. Thirnbeck, K. Markan, M.E. Kotas, M.J. Potthoff, G.B. Richerson & M.P. Gillum. Central serotonergic neurons activate and recruit thermogenic brown and beige fat and regulate glucose and lipid homeostasis. *Cell Metabolism*, 21(5):692-705, 2015. [PMID: 25955206] PMCID: PMC4565052
- 23) Massey, C.A., K.E. Iceman, S.L. Johansen, Y. Wu, M.B. Harris & George B. Richerson. Isoflurane abolishes spontaneous firing of serotonin neurons and masks their pH/CO₂

- chemosensitivity. *J Neurophysiol*, 113(7):2879-88, 2015. [PMID: 25695656] PMCID: PMC4416618
- 24) Richerson, G.B & L.M. Bateman. Partners Against Mortality in Epilepsy Conference Summary. *Epilepsy Currents*, 14(6) Supplement:16-18, 2014.
- 25) Brust, R.D., A.E. Corcoran, G.B. Richerson, E.E. Nattie, S.M. Dymecki. Functional and developmental identification of a molecular subtype of brain serotonergic neuron specialized to regulate breathing dynamics. *Cell Reports*, 9(6):2152-65, 2014. [PMID: 25497093] PMCID: PMC4351771
- 26) Cerpa, V.A. A. Gonzalez & G.B. Richerson. Diphtheria toxin treatment of Pet-1-Cre floxed diphtheria toxin receptor mice disrupts thermoregulation without affecting respiratory chemoreception. *Neurosci*, 279:65-76, 2014. [PMID: 25171790] PMCID: PMC4443915
- 27) Buchanan, G.F., N.M. Murray, M.A. Hajek & G.B. Richerson. Serotonin neurones have anticonvulsant effects and reduce seizure-induced mortality. *J Physiol*, 592(19):4395-4410, 2014. [PMID: 25107926] PMCID: PMC4215784
- 28) Massey, C.A., Sowers, L.P., Dlouhy, B.J. & G.B. Richerson. Mechanisms of sudden unexpected death in epilepsy: the pathway to prevention. *Nature Rev Neurol*, 10:271-282, 2014. [PMID: 24752120] PMCID: PMC4565133
- 29) Teran, F.A., C.A. Massey & G.B. Richerson. Serotonin neurons and central respiratory chemoreception: Where are we now? *Prog Brain Res*, 209:207-233, 2014. [PMID: 24746050] PMCID: PMC4486262
- 30) Price, M.P., H. Gong, M.G. Parsons, J.R. Kundert, L.R. Reznikov, L. Bernardinelli, K. Chaloner, G.F. Buchanan, J.A. Wemmie, G.B. Richerson, M.D. Cassell & M.J. Welsh. Localization and behaviors in null mice suggest that ASIC1 and ASIC2 modulate responses to aversive stimuli. *Genes Brain and Behavior*, 13(2):179-94, 2014. [PMID: 24256442] PMCID: PMC3998777
- 31) Corcoran, A.E., K.G. Commons, J.C. Smith, M.B. Harris & G.B. Richerson. Dual effects of 5-HT_{1a} receptor activation on breathing in neonatal mice. *J Neurosci*, 34(1):51-59, 2014. [PMID: 24381267] PMCID: PMC3866493
- 32) Iceman, K.E., M.B. Harris, G.B. Richerson. Medullary serotonin neurons are CO₂-sensitive *in situ*. *J Neurophysiol*, 110(11):2536-44, 2013. [PMID: 24047906] PMCID: PMC3882770
- 33) Massey, C.A., G. Kim, A.E. Corcoran, R.L. Haynes, D.S. Paterson, K.J. Cummings, S.M. Dymecki, G.B. Richerson, E.E. Nattie, H.C. Kinney, and K.G. Commons. Development of brainstem 5-HT_{1A} receptor binding sites in serotonin neuron-deficient mice. *J Neurochem*, 126(6):749-57, 2013. [PMID: 23692315] PMCID: PMC3987866
- 34) Sowers, L.P., C.A. Massey, B.K. Gehlbach, M.A. Granner & G.B. Richerson. Sudden unexpected death in epilepsy: Fatal post-ictal respiratory and arousal mechanisms. *Resp Physiol & Neurobiol*, 189(2):315-23, 2013. [PMID: 23707877] PMCID: PMC4467545

- 35) Sowers, L.P., L. Loo, Y. Wu, E. Campbell, J.D. Ulrich, S. Wu, L. Paemka, T. Wassink, K. Meyer, X. Bing, H. El-Shanti, Y.M. Usachev, N. Ueno, R.J. Manak, A.J. Shepherd, P.J. Ferguson, G.B. Richerson, D.P. Mohapatra, J.A. Wemmie, A.G. Bassuk. Disruption of the non-canonical Wnt gene PRICKLE2 leads to autism-like behaviors with evidence for hippocampal synaptic dysfunction. *Mol Psych*, 18(10):1077-89, 2013. [PMID: 23711981] PMCID: PMC4163749
- 36) Richerson, G.B. SUDEP – Serotonin: The Anti-SuddenDeathAmine? *Epilepsy Currents*, 13(5):241-4, 2013. [PMID: 24348119] PMCID: 3854735
- 37) Richerson, G.B. PAME 2012: Summary of Session VI. *Epilepsy Currents*, 13(2) Supplement:5-21, 2013. [PMID: 25484628] PMCID: PMC4242516
- 38) Corcoran, A.E., G.B. Richerson & M.B. Harris. Serotonergic mechanisms are necessary for central respiratory chemoresponsiveness *in situ*. *Resp Physiol & Neurobiol*, 186(2):214-20, 2013. [PMID: 23454177] PMCID: PMC3645885
- 39) Ransom, C.B., W. Tao, Y. Wu, W.J. Spain & G.B. Richerson. Rapid regulation of tonic GABA currents in cultured rat hippocampal neurons. *J Neurophysiol*, 109(3):803-12, 2013. [PMID: 23114210] PMCID: PMC3567397
- 40) Dymecki, S.M., Ray, R.R., Brust, R.D., Corcoran, A.E., Kim, J.C., Richerson, G.B., and Nattie, E. Response to Comment on “Impaired respiratory and body temperature control upon acute serotonergic neuron inhibition.” *Science* 337(6095): 646c, 2013. [PMID: 21798952] PMCID: PMC3729433
- 41) Ray, R., A. Corcoran, R. Brust, J. C. Kim, G.B. Richerson, E.E. Nattie & S. M. Dymecki. Homeostatic imbalance upon acute *in vivo* serotonergic neuron inhibition. *Science* 333(6042): 637-642, 2011. [PMID: 21798952] PMCID: PMC3729433 (*Science Editor’s Choice*). (*Faculty of 1000*).
- 42) Bravata D.M., Concato J, Fried T, Ranjbar N, Sadarangani T, McClain V, Struve F, Zygmunt L, Knight H.J., Lo A, Richerson G.B., Gorman M, Williams L.S., Brass L.M., Agostini J, Mohsenin V, Roux F, Yaggi H.K. Continuous positive airway pressure: Evaluation of a novel therapy for patients with acute ischemic stroke. *Sleep* 34(9):1271-77, 2011. [PMID: 21886365] PMCID: PMC3157669
- 43) Hodges, M.R., S. Best, G.B. Richerson. Altered ventilatory and thermoregulatory control in male and female adult Pet-1 null mice. *Resp Physiol Neurobiol* 177(2):133-40, 2011. [PMID: 21453797]
- 44) Richerson, G.B. & G.F. Buchanan. The serotonin axis: Shared mechanisms in seizures, depression, and SUDEP. *Epilepsia* 52 (Suppl 1):28-38, 2011. [PMID: 21214537] PMCID: PMC3052632
- 45) Buchanan, G.F. & G.B. Richerson. Central serotonin neurons are required for arousal to CO₂. *PNAS* 107(37): 16354-9, 2010. [PMID: 20805497] PMCID: PMC2941296

- 46) Ransom, C.B. Y. Wu & G.B. Richerson. Postdepolarization Potentiation of GABA_A Receptors: A Novel Mechanism Regulating Tonic Conductance in Hippocampal Neurons. *J Neurosci* 30(22):7672-7684, 2010. [PMID: 20519542] PMCID: PMC2902370
- 47) Bravata, D.M., J. Concato, T. Fried, N. Ranjbar, T. Sadarangani, V. McClain, F. Struve, L. Zygmunt, H.J. Knight, A.C. Lo, George B Richerson, Mark Gorman, Linda S. Williams, Lawrence M Brass, Joseph Agostini, Vahid Mohsenin, Francoise Roux, and H Klar Yaggi. Auto-Titrating Continuous Positive Airway Pressure for Patients With Acute Transient Ischemic Attack. A Randomized Feasibility Trial. *Stroke* 41(7):1464-1470, 2010. [PMID: 20508184] [NIHMS: 213418]
- 48) Hodges, M.R. & G.B. Richerson. Medullary serotonin neurons and their roles in central respiratory chemoreception. *Respir Physiol Neurobiol* 173(3): 256-263, 2010. [PMID: 20226279]
- 49) Richerson, G.B. Respiratory plasticity in sleep apnoea: Should it be harnessed or restrained? *J Physiol* 588(1):3-4, 2010. [PMID: 20045895] PMCID: PMC2821532
- 50) Hodges, M.R. & G.B. Richerson. The role of medullary serotonin (5-HT) neurons in respiratory control: contributions to eupneic ventilation, CO₂ chemoreception, and thermoregulation. *J Appl Physiol* 108(5):1425-1432, 2010. [PMID: 20133432] PMCID: PMC2867541
- 51) Corcoran, A., G. Richerson & M. Harris. Modulation of respiratory activity by hypocretin-1 (orexin A) *in situ* and *in vitro*. *Adv Exp Biol Med* 669: 109-13, 2010. [PMID: 20217331] [NIHMS: 212681]
- 52) Hodges, M.R., M. Wehner, J. Aungst, J.C. Smith & G.B. Richerson. Transgenic mice lacking serotonin neurons have severe apnea and high mortality during development. *J Neurosci* 29(33):10341-10349, 2009. [PMID: 19692608] PMCID: PMC2755228
- 53) Corcoran, A.E., M.R. Hodges, Y. Wu, W. Wang, C.J. Wylie, E.S. Deneris and G.B. Richerson. Medullary serotonin neurons and central CO₂ chemoreception. *Respir Physiol Neurobiol* 168:49-58, 2009.
- 54) Buchanan, G.F. & G.B. Richerson. Role of chemoreceptors in mediating dyspnea. *Respir Physiol Neurobiol* 167(1):9-19, 2009.
- 55) Ptak, K., T. Yamanishi, J. Aungst, L.S. Milesco, R. Zhang, G.B. Richerson & J.C. Smith. Raphé neurons stimulate respiratory circuit activity by multiple mechanisms via endogenously released serotonin and substance P. *J Neurosci* 29(12): 3720-37, 2009.
- 56) Kinney, H.C., G.B. Richerson, S.M. Dymecki, R.A. Darnall & E.E. Nattie. The brainstem and serotonin in the sudden infant death syndrome. *Annual Rev Pathol* 4: 517-550, 2009.
- 57) Hodges, M.R. & G.B. Richerson. Contributions of 5-HT neurons to respiratory control: Neuromodulatory and trophic effects. *Respir Physiol Neurobiol* 164: 222-232, 2008.

- 58) Hodges, M.R. & G.B. Richerson. Interaction between defects in ventilatory and thermoregulatory control in mice with near-complete absence of 5-HT neurons. *Respir Physiol Neurobiol* 164:350-357, 2008.
- 59) Johnson, S.M., M.A. Haxhiu & G.B. Richerson. GFP expressing Locus Coeruleus neurons from Prp57 transgenic mice exhibit differential CO₂/H⁺ responses in primary cell culture. *J Appl Physiol* 105(4):1301-11, 2008.
- 60) Hodges, M.R., G.J. Tattersall, M.B. Harris, S.D. McEvoy, D.N. Richerson, E.S. Deneris, R.L. Johnson, Z.F. Chen & G.B. Richerson. Defects in breathing and thermoregulation in mice with near-complete absence of central serotonin neurons. *J Neurosci* 28(10): 2495-2505, 2008. [PMID: 18322094]
- 61) Wu, Y., W. Wang, A. Diez-Sampedro & G.B. Richerson. Nonvesicular inhibitory neurotransmission via reversal of the GABA transporter GAT-1. *Neuron* 56(5): 851-65, 2007.
- 62) Wang, W. & G.B. Richerson. Changes in glucose do not alter baseline firing rate or chemosensitivity of serotonin neurons cultured from the medullary raphé. *Respir Physiol Neurobiol* 157(2-3):235-41, 2007.
- 63) Wu, Y., W. Wang & G.B. Richerson. The transmembrane sodium gradient influences ambient GABA concentration by altering the equilibrium of GABA transporters. *J Neurophysiol* 96: 2425-2436, 2006.
- 64) Diez-Sampedro, A., W.R. Silverman, J.F. Bautista & G.B. Richerson. Mechanism of increased open probability by a mutation of the BK channel. *J Neurophysiol* 96: 1507-1516, 2006.
- 65) Du, W., J.F. Bautista, H. Yang, A. Diez-Sampedro, S.A. You, L. Wang, P. Kotagal, H.O. Lüders, J. Shi, J. Cui, G.B. Richerson & Q. Wang. Calcium-sensitive potassium channelopathy in human epilepsy and paroxysmal movement disorder. *Nature Genetics* 37(7): 733-738, 2005.
- 66) Richerson, G.B., W. Wang, M.R. Hodges, C.I. Dohle & A. Diez-Sampedro. Homing in on the specific phenotype(s) of central respiratory chemoreceptors. *Exp Physiol* 90(3): 259-269, 2005.
- 67) Richerson, G.B., W. Wang, M.R. Hodges, C.I. Dohle & A. Diez-Sampedro. Commentary on "Retrotrapezoid nucleus: a litmus test for the identification of central chemoreceptors." *Exp Physiol* 90(3): 247-257, 2005.
- 68) Richerson, G.B. Serotonergic neurons as carbon dioxide sensors that maintain pH homeostasis. *Nature Reviews Neuroscience* 5:449-461, 2004.
- 69) Bouyer, P., S. Risso Bradley, J. Zhao, W. Wang, G.B. Richerson & W.F. Boron. Effect of extracellular acid-base disturbances on the intracellular pH of neurons cultured from rat medullary raphé or hippocampus. *J Physiol (Lond)* 559:85-101, 2004.

- 70) Richerson, G.B. Looking for GABA in all the wrong places: The relevance of extrasynaptic GABA_A receptors to epilepsy. *Epilepsy Currents* 4(6): 239-242, 2004.
- 71) Richerson, G.B. & J.M. Bekkers. Learning to take a deep breath – with BDNF. *Nature Medicine* 10(1):25-26, 2004.
- 72) Nattie, E.E., A. Li, G. Richerson & D.A. Lappi. Medullary serotonergic neurons and adjacent neurons that express neurokinin-1 receptors are both involved in chemoreception in vivo. *J Physiol (Lond)* 556(1): 235-253, 2004.
- 73) Richerson, G.B. & Y. Wu. Role of the GABA transporter in epilepsy. *Adv Exp Med Biol* 548: 76-91, 2004.
- 74) Severson, C.A., W. Wang, V.A. Pieribone, C.I. Dohle & G.B. Richerson. Midbrain serotonergic neurons are central pH chemoreceptors. *Nature Neurosci* 6(11):1139-1140, 2003.
- 75) Richerson, G.B. & Y. Wu. Dynamic equilibrium of neurotransmitter transporters: not just for reuptake anymore. *J Neurophysiol* 90:1363-1374, 2003. [PMID: 12966170]
- 76) Wu, Y., W. Wang & G.B. Richerson. Vigabatrin induces tonic inhibition via GABA transporter reversal without increasing vesicular GABA release. *J Neurophysiol* 89(4): 2021-2034, 2003.
- 77) Bradley, S. Risso, V. A. Pieribone, W. Wang, C.A. Severson, R. A. Jacobs & G. B. Richerson. Chemosensitive serotonergic neurons are closely associated with large medullary arteries. *Nature Neurosci* 5(5): 401-402, 2002.
- 78) Wang, W., S. Risso Bradley & G.B. Richerson. Quantification of the response of rat medullary raphe neurones to independent changes in pH_o and PCO₂. *J Physiol (Lond)* 540(3): 951-970, 2002.
- 79) Wu, Y., W. Wang & G.B. Richerson. GABA transaminase inhibition induces spontaneous and enhances depolarization-evoked GABA efflux via reversal of the GABA transporter. *J Neurosci* 21(8):2630-2639, 2001.
- 80) Wang, W., A.V. Zaykin, J.K. Tiwari, S. Risso Bradley & G.B. Richerson. Acidosis-stimulated neurons of the medullary raphe are serotonergic. *J Neurophysiol* 85:2224-2235, 2001.
- 81) Richerson, G.B., W. Wang, J.K. Tiwari & S. Risso Bradley. Chemosensitivity of serotonergic neurons in the rostral ventral medulla. *Respir Physiol* 129: 175-189, 2001.
- 82) Bautista, J., E. Wyllie & G.B. Richerson. Refractory seizures in a 17-year-old: Re-evaluating therapy. *NeuroNetwork* 2(1):2-3, 2000.
- 83) Wang, W., & G.B. Richerson. Chemosensitivity of nonrespiratory rat neurons in primary tissue culture. *Brain Research* 860:119-129, 2000.

- 84) Wang, W., G.B. Richerson. Development of chemosensitivity of rat medullary raphe neurons. *Neurosci* 90(3):1001-1011, 1999.
- 85) Wang, W., J. Pizzonia, & G.B. Richerson. Chemosensitivity of rat medullary raphe neurones in primary tissue culture. *J Physiol (Lond)* 511(2):433-450, 1998.
- 86) Gaspary, H., W. Wang, & G.B. Richerson. Carrier-mediated GABA release induces GABA receptor conductances in hippocampal neurons. *J Neurophysiol* 80:270-281, 1998.
- 87) Richerson, G.B. Sudden Infant Death: The role of central chemosensitivity. *Neuroscientist* 3(1):309-313, 1997.
- 88) Richerson, G.B. & H.L. Gaspary. Carrier-mediated GABA release: Is there a functional role? *Neuroscientist* 3(3):151-157, 1997.
- 89) Richerson, G.B. Chloride: An anaplastic anion? *Neuroreport* 7:969-970, 1996.
- 90) Richerson, G.B. Response to CO₂ of neurons in the rostral ventral medulla *in vitro*. *J Neurophysiol* 73(3):933-944, 1995.
- 91) Honmou, O., J.D. Kocsis & G.B. Richerson. Gabapentin potentiates the conductance increase induced by nipecotic acid in CA1 pyramidal neurons *in vitro*. *Epi Res* 20:193-202, 1995.
- 92) Richerson, G.B. & C. Messer. Effect of composition of experimental solutions on neuronal survival during rat brain slicing. *Exp Neurol* 131:133-143, 1995.
- 93) Oyelese, A.A., D.L. Eng, G.B. Richerson & J.D. Kocsis. Nerve injury enhances GABA_A receptor mediated conductances in a subclass of sensory neurons. *J Neurophysiol* 74(2):673-683, 1995.
- 94) Richerson, G.B. & P.A. Getting. Medullary respiratory neurons in the guinea pig. Localization and firing patterns. *Brain Res* 591:79-87, 1992.
- 95) Bekkers, J.M., G.B. Richerson & C.F. Stevens. Origin of variability in quantal size in cultured hippocampal neurons and hippocampal slices. *PNAS* 87:5359-5362, 1990.
- 96) Richerson, G.B. & P.A. Getting. Preservation of integrative function in a perfused guinea pig brain. *Brain Res* 517:7-18, 1990.
- 97) Richerson, G.B. & P.A. Getting. Maintenance of complex neural function during perfusion of the mammalian brain. *Brain Res* 409:128-132, 1987.
- 98) Richerson, G.B. The respiratory centers of the guinea pig: *In vivo* and perfused brain studies. Ph.D. Dissertation. May 1987.
- 99) Dekin, M.S., G.B. Richerson & P.A. Getting. Thyrotropin-releasing hormone induces rhythmic bursting in neurons of the nucleus tractus solitarius. *Science* 229:67-69, 1985.

* - Authors contributed equally to the work.

Book Chapters

- 1) Richerson G.B. Neurobiology, *Reference Module in Biomedical Sciences*. ed. M. Caplan. Elsevier, Oxford U.K 2015. doi: 10.1016/B978-0-12-801238-3.99492-3.
- 2) Buchanan, G.F. & G.B. Richerson. Current evidence for a role of serotonin in SUDEP. In: *Sudden unexpected death in epilepsy: a global conversation*, eds. D. Chapman, B. Moss, R. Panelli, and R. Pollard, Epilepsy Australia Ltd, Camberwell, Victoria, 2015.
- 3) Massey, C.A. & G.B. Richerson. Overview of Section on Current Research on Causes of SUDEP. In: *Sudden unexpected death in epilepsy: a global conversation*, eds. D. Chapman, B. Moss, R. Panelli, and R. Pollard, Epilepsy Australia Ltd, Camberwell, Victoria, 2015.
- 4) Richerson, G.B. & W.F. Boron. Control of ventilation. In: *Textbook of Medical Physiology, 3rd Edition*, Edited by Boulpaep, E. and W.F. Boron . WB Saunders, Co, New York, NY. 2013.
- 5) Richerson, G.B. The autonomic nervous system. In: *Textbook of Medical Physiology, 3rd Edition*, Edited by Boulpaep, E. and W.F. Boron . WB Saunders, Co, New York, NY. 2013.
- 6) Dyken, M.E., G.B. Richerson & C.L. Glenn. Obstructive sleep apnea associated with cerebral hypoxemia. In Chokroverty *Atlas of Sleep Medicine*, 2013.
- 7) Richerson, G.B., G. Aston-Jones & C.B. Saper. Brainstem modulation of brain function. In: *Principles of Neural Science*, Fifth edition. Edited by Kandel, E.R., J.H. Schwartz, T.M. Jessel, A.J. Hudspeth & S.A. Siegelbaum, 2012.
- 8) Saper, C.B., G.B. Richerson & A. Lumsden. The brainstem and cranial nerves. In: *Principles of Neural Science*, Fifth edition. Edited by Kandel, E.R., J.H. Schwartz, T.M. Jessel, A.J. Hudspeth & S.A. Siegelbaum, 2012.
- 9) Dyken, M.E., G.B. Richerson & K.B. Im. Sleep Apnea, Stroke Risk Factors and the Arousal Response. In: *Sleep, Stroke, and Cardiovascular Disease*. Edited by Culebras, A. Cambridge Univ Press, 2013
- 10) Buchanan, G.F. and G.B. Richerson. The role of the neurotransmitter serotonin in SUDEP. In: *Sudden unexpected death in epilepsy: a global conversation*, eds. D. Chapman, B. Moss, R. Panelli, and R. Pollard, Epilepsy Australia Ltd, Camberwell, Victoria, 2011.
- 11) Ransom, C.B. & G.B. Richerson. GABA transporters: Regulation of tonic inhibition. In: *Encyclopedia of Basic Epilepsy Research*. Edited by P.A. Schwartzkroin. Elsevier, Oxford, UK. 3:1380-1388, 2009.
- 12) Ransom, C.B. & G.B. Richerson. GABA transporters as targets of antiepileptic drugs. In: *Encyclopedia of Basic Epilepsy Research*. Edited by P.A. Schwartzkroin. Elsevier, Oxford, UK. 1:66-74, 2009.

- 13) Dohle, C.I. & G.B. Richerson. 5-HT neurons and central CO₂ chemoreception. In: *The Behavioural Neurobiology of Serotonin*. Edited by C.P. Muller & B.L. Jacobs. Elsevier, Amsterdam, 2009.
- 14) Richerson, G.B. & W.F. Boron. Control of ventilation. In: *Textbook of Medical Physiology, 2nd Edition*, Edited by Boulpaep, E. and W.F. Boron . WB Saunders, Co, New York, NY. 2009.
- 15) Richerson, G.B. The autonomic nervous system. In: *Textbook of Medical Physiology, 2nd Edition*, Edited by Boulpaep, E. and W.F. Boron . WB Saunders, Co, New York, NY. 2009.
- 16) Richerson, G.B. Medullary raphe nuclei and respiratory control. In: *Encyclopedia of Neuroscience*. Edited by Binder, M.D., N. Hirokawa, & U. Windhorst, M.C. Hirsch. Springer-Verlag, Heidelberg, Germany. 2008.
- 17) Buchanan, G.F., Hodges, M.R. & G.B. Richerson. Contribution of chemosensitive 5-HT neurons to interactions between the sleep/wake cycle and respiratory control. In: *Serotonin and Sleep: Molecular, Functional and Clinical Aspects*. Edited by Monti, J.M., S.R. Pandi-Perumal, B.L. Jacobs & D. Nutt. Birkhauser Verlag AG, Basel, Switzerland. 2008.
- 18) Richerson, G.B. & W.F. Boron. Control of ventilation. In: *Textbook of Medical Physiology*, Edited by Boulpaep, E. and W.F. Boron . WB Saunders, Co, New York, NY. 2002.
- 19) Richerson, G.B. The autonomic nervous system. In: *Textbook of Medical Physiology*, Edited by Boulpaep, E. and W.F. Boron . WB Saunders, Co, New York, NY. 2002.
- 20) Richerson, G.B. pH effects on respiratory neurons. in *pH and Brain Function*. edited by Kaila, K., & B.R. Ransom. John Wiley & Sons, New York, NY. 1998.
- 21) Dekin, M.S., S.M. Johnson, G.B. Richerson & P.A. Getting. Biophysical properties of bulbospinal neurons in the ventral part of the nucleus tractus solitarius in guinea pigs. in *Respiratory muscles and their neuromotor control*. edited by Sieck, G.C., S.C. Gandevia & W.E. Cameron. Alan R. Liss, New York, NY. pp. 17-26, 1987.
- 22) Dekin, M.S., P.A. Getting & G.B. Richerson. Characterization of NTS neurons in brain stem slices from the guinea pig. in *Neurogenesis of Central Respiratory Rhythm: Electrophysiological, Pharmacological and Clinical Aspects*. edited by Bianchi, A.L. & M. Denavit-Saubi. MTP press, Lancaster, England. p. 169, 1985.

Selected Abstracts

Teran, F.A., Y.J. Kim, G.B. Richerson. The ketogenic diet affects serotonin levels in the mouse brain. Amer. Epilep. Soc., 2018.

Sainju, R.K., D.N. Dragon, H.B. Winnike, M.A. Granner, B.K. Gehlbach, G.B. Richerson. Interictal hypercapnic ventilatory response correlates with severity of peri-ictal hypoventilation. Amer. Epilep. Soc., 2018.

- Teran, F.A., Y. Kim & G.B. Richerson. The ketogenic diet increases serotonin levels in the mouse brain. Soc. Neurosci. Abstr. 44, 2018.
- Marincovich, A., E. Bravo, Y. Kim, B. Dlouhy & G.B. Richerson. Amygdala lesions prevent seizure-induced respiratory arrest and death in two mouse models of SUDEP. Soc. Neurosci. Abstr. 44, 2018.
- Vilella, L., N. Lacuey, J. Hampson, R. Sanju, B. Gehlbach, G. Richerson, D. Friedman, O. Devinsky, B. Zony, N. Hupp, A. Zaremba, M. Rani, N. Shafiabadi, X. Zhao, V. Reick-Mitrisin, K. Strohl, S. Schuele, M. Nei, R. Harper, C. Scott, B. Diehl, L. Bateman, P. Ryvlin & S. Lhatoo. Peri-ictal Breathing Dysfunction in Generalized Convulsive Seizures. Partners Against Mortality in Epilepsy, 2018.
- Sanju, R., D. Dragon, H. Winnike, M. Granner, B. Gehlbach & G. Richerson. Interictal CO₂ Chemosensitivity Correlates with Severity of Hypercapnia After Generalized Tonic-Clonic Seizures. Partners Against Mortality in Epilepsy, 2018.
- Bravo, E., A. Marincovich, Y. Kim, C. Massey, B. Dlouhy & G. Richerson. The Amygdala Is Required for Peri-ictal Respiratory Dysfunction and SUDEP in DBA/1 and *Scn1a*^{R1407X/+} Mice. Partners Against Mortality in Epilepsy, 2018.
- Teran, F., Y. Kim & G. Richerson. Effect of the Ketogenic Diet on Monoamine Levels in the Mouse Brain. Partners Against Mortality in Epilepsy, 2018.
- Kim, Y., A. Finer, K. Emaus, E. Bravo, F.A. Teran, A. Bassuk & G.B. Richerson. Effects of Ketogenic Diet in a Dravet Syndrome mouse model. Amer. Epilep. Soc., 2017.
- Bravo, E., A. Marincovich, Y. Kim, C. Massey, B. Dlouhy & G.B. Richerson. Prevention of postictal ventilatory arrest with amygdala lesions in mice. Amer. Epilep. Soc., 2017.
- Teran, F., G.B. Richerson, Y. Kim & E. Bravo. The Ketogenic Diet: Effects on 5-HT metabolism. Amer. Epilep. Soc., 2017.
- Sainju, R.K., D.N. Dragon, H. Winnike, M. Nashelsky, M. Granner, G.B. Richerson & B. Gehlbach. Ventilatory response to CO₂ in patients with epilepsy. Amer. Epilep. Soc., 2017.
- Kim, Y., E. Bravo, C.K. Thirnbeck, L.A. Smith-Mellecker, S.H. Kim, B.K. Gehlbach, L. Laux, D.R. Nordli, Jr. & G.B. Richerson. Severe postictal respiratory dysfunction in Dravet Syndrome. Soc. Neurosci. Abstr. 43, 2017.
- Bravo, E. Y. Kim & G.B. Richerson. Central cholinergic neurotransmission and severe respiratory abnormalities in a mouse model of Dravet Syndrome and SUDEP. Soc. Neurosci. Abstr. 43, 2017.
- Lechtenberg, R.J., C.A. Massey & G.B. Richerson. The effect of 5-HT₂ and 5-HT₇ receptor antagonists on baseline breathing and the hypercapnic ventilatory response in mice *in vivo*. Soc. Neurosci. Abstr. 43, 2017.

- Bravo, E., Y. Kim & G.B. Richerson. Postictal respiratory dysfunction is the primary cause of sudden death in a Dravet mouse model. *Soc. Neurosci. Abstr.* 42, 2016.
- Kim, Y., E. Bravo & G.B. Richerson. Postictal apnea is the primary cause of sudden death in a Dravet Syndrome mouse model. *Partners Against Mortality in Epilepsy*, 2016.
- Sainju, R., B. Gehlbach, M. Granner & G.B. Richerson. Occurrence of central ictal apnea in temporal lobe seizures is independent of seizure spread and laterality of seizure onset: a case study. *Partners Against Mortality in Epilepsy*, 2016.
- Massey, C.A., Y. Wu, Y. Kim, E. Bravo & G.B. Richerson. Effects of a Dravet syndrome-linked *Scn1a* mutation on breathing in mice. *Amer. Epilep. Soc.*, 2015.
- Kim, Y., E. Bravo & G.B. Richerson. Postictal apnea is a biomarker of sudden death in two mouse seizure models. *Amer. Epilep. Soc.*, 2015.
- Bravo, E., Y. Kim & G.B. Richerson. Ventilatory arrest is the primary initiating event that leads to sudden death after heat-induced seizures in a Dravet mouse model. *Amer. Epilep. Soc.*, 2015.
- Talman, W.T., D.N. Dragon, S. Jones, Y. Wu, L. Lin & G.B. Richerson. Astrocytic lesions that spare neurons in the nucleus tractus solitarius interfere with cardiorespiratory control. *Soc. Neurosci. Abstr.* 41, 2015.
- Massey, C.A., C.K. Thirnbeck & G.B. Richerson. Urethane and ketamine/xylazine at sub-therapeutic levels cause a major depression of the HCVR in adult mice. *Soc. Neurosci. Abstr.* 41, 2015.
- Zhan, Q., G. Buchanan, J. Motelow, F. Serout, W. Chen, A. Gummadavelli, J. Andrews, P. Vitkovskiy, M. Furman, W. Li, G.B. Richerson and H. Blumenfeld. Peri-ictal impairment of brainstem 5-HT neurons: Insight into depressed arousal, reduced ventilation and sudden unexpected death in epilepsy (SUDEP). *Amer. Epilep. Soc.*, 2014.
- Im, K., M. Dyken, G.B. Richerson. Effect of Serotonin on Profound Hypoxemia In Sleep Apnea: A cross-sectional Study of Depressed OSA Patients. *Sleep* 2014. Abstr.0069
- Ransom, C.B., Z. Ye, W. Spain, G.B. Richerson; Modulation of tonic GABA currents by anion channel antagonists and connexin hemichannel antagonists. *Soc. Neurosci. Abstr.* 39, 2013.
- Buchanan, G.F. M.A. Hajek, G.B. Richerson. Activation of 5-HT receptors prevents seizure-related respiratory arrest and death in wild-type and 5-HT neuron deficient mice. *Amer. Epilep. Soc.* 2013.
- Kim, Y., L. Sowers, G. F. Buchanan, G. B. Richerson; Is there a common mechanism of sudden death in mouse inducible seizure models? *Soc. Neurosci. Abstr.* 39, 2013.
- Y. Wu, A. Zaykin, W. Wang, M. R. Hodges, C. J. Wylie, E. S. Deneris, G. B. Richerson. Medullary raphe serotonin neuron chemosensitivity is not dependent on ATP release or neuroglia. *Soc. Neurosci. Abstr.*, 39, 2013.

- C. A. Massey, Y. Wu, A. Zaykin, W. Wang, M. R. Hodges, C. J. Wylie, E. S. Deneris, G. B. Richerson. A novel pH-sensitive calcium- activated nonselective cation current is responsible for medullary raphe 5-HT neuron chemosensitivity. Soc. Neurosci. Abstr. 39, 2013.
- N. M. Murray, K. L. Proch , Y. Wu , E. Bravo, C. A. Massey, L. P. Sowers, G. B. Richerson. Anatomy and electrophysiology of neurons in the medulla that co-localize 5-HT and thyrotropin-releasing hormone. Soc. Neurosci. Abstr. 39, 2013
- S. L. Johansen , K . E. Iceman , G. B. Richerson , M. B. Harris. IA The response of CO₂-inhibited neurons to isoflurane: Evidence for a heterogeneous population of medullary raphé GABA neurons. Soc. Neurosci. Abstr. 39, 2013.
- G. F. Buchanan, N. M. Murray, G. B. Richerson; Controlling for ambient temperature eliminates effects of 5-HT depletion by PCPA on sleep architecture in the mouse. Soc. Neurosci. Abstr. 39, 2013.
- L. P. Sowers, L. Loo, Y. Wu, T. Wassink, P. J. Ferguson, J. A. Wemmie, G. Richerson, D. P. Mohapatra, A., G. Bassuk; Hippocampal synaptic abnormalities and autism like behaviors associated with disruption of the non-canonical Wnt gene Prickle2. Soc. Neurosci. Abstr. 39, 2013.
- V. Cerpa, A. D. Miller, G. B. Richerson, N. S. Narayanan. Dorsal raphe serotonergic neurons and levodopa-induced dyskinesia in Parkinson's disease. Soc. Neurosci. Abstr. 38 2013.
- E. Bravo, V. Cerpa, S. Beltran-Castillo, I. Llonia, G. B. Richerson, J. Eugenin; Prenatal nicotine exposure depresses raphé serotonergic drive to the pre- Bötzing Complex. Soc. Neurosci. Abstr., 38, 2012.
- J. Avraam, K. L. Proch, Y. Wu , G.B. Richerson; Fetal nicotine blunts pH chemosensitivity of 5-HT neurons in vitro and the ventilatory response to CO₂ of WT but not Lmx1b CKO mice in vivo. Soc. Neurosci. Abstr. 38 2012.
- C. A. Massey, Y. WU, G. B. Richerson; Isoflurane eliminate serotonin (5-HT) neuron chemosensitivity in vitro and markedly depresses the hypercapnic ventilatory response in vivo. Soc. Neurosci. Abstr. 38, 2012.
- V. Cerpa, E. Bravo, G. B. Richerson, J. Eugenin ; Prenatal nicotine exposure reduces the activity of Raphe Obscurus neurons from P3 mice. Soc. Neurosci. Abstr. 38 2012.
- S.L Johansen, K. E. Iceman, G. B. Richerson, M. B. Harris; Influence of isoflurane on CO₂ sensitive and insensitive raphé neurons. Soc. Neurosci. Abstr. 38, 2012.
- R. D. Brust, A. E. Corcoran , R. S. Ray, E. E. Nattie , G. B. Richerson. M. Dymecki. Refining the serotonergic contribution to central chemosensitivity. Soc. Neurosci. Abstr. 38, 2012.
- G. F. Buchanan & G. B. Richerson, Cardiac, respiratory, and cortical function after electrically induced seizures in wild- type and 5- HT deficient mice. Amer. Epilep. Soc. 2012.

Avraam, J., Y. Wu & G.B. Richerson. Cholinergic effects on chemosensitivity of cultured 5-HT neurons. Soc. Neurosci. Abstr., 37, 2011.

Ray, R., A. Corcoran, R. Brust, J. C. Kim, G.B. Richerson, E.E. Nattie & S. M. Dymecki. Inducible, repeatable and specific inhibition of serotonergic neurons in unanaesthetized mice reveals essential roles in respiratory and body temperature homeostasis. Soc. Neurosci. Abstr., 37, 2011.

Commons, K.G., C.A. Massey, R.L. Haynes, D.S. Paterson, A.E. Corcoran, K.J. Cummings, G.B. Richerson, E.E. Nattie, H.C. Kinney, G. Kim. Postnatal development of medullary 5-HT_{1a} receptor binding in mice with genetic deficits in serotonin neurotransmission. Soc. Neurosci. Abstr., 37, 2011.

Ransom, C.B., Y. Wu & G.B. Richerson. Rapid regulation of tonic GABA currents in cultured hippocampal neurons. Soc. Neurosci. Abstr., 37, 2011.

Cerpa, V., A. Gonzalez, & G.B. Richerson. Central 5-HT neurons are essential for maintenance of body temperature in males more than females. Soc. Neurosci. Abstr., 37, 2011.

Buchanan, G. F. & G. B. Richerson. Prevention of CO₂-induced arousal by pharmacologic manipulation of 5-HT receptors in mice. Soc. Neurosci. Abstr., 37, 2011.

Iceman, K.E., G.B. Richerson & M.B. Harris. Relative proportion and distribution of chemosensitive serotonergic neurons in medullary raphe *in situ*. The FASEB Journal, 25:847.4, 2011.

Cerpa, V.E., A. Gonzalez & G.B. Richerson. Acute deletion of central 5-HT neurons in DTR adult mice decreases body temperature in males more than females. The FASEB Journal, 25:854.5, 2011.

Ransom, C.B., N.Y.C. Lam, Z. Ye & G.B. Richerson. Modulation of tonic GABA currents in cultured rat hippocampal neurons by connexin hemichannel blockers. Winter Conf. Brain Res. Keystone, CO, Jan., 2011.

Ransom, C.B., Y. Wu & G.B. Richerson. Multiple mechanisms rapidly regulate tonic GABA currents in cultured rat hippocampal neurons. *Epilepsia*, 2010.

Cerpa, V. & G.B. Richerson. Development of chemosensitivity to CO₂ and O₂ in mice with absence of central serotonin neurons *in vivo*. Soc. Neurosci. Abstr., 36, 2010.

Avraam, J., Y. Wu & G.B. Richerson. Cholinergic mechanisms involved in chemosensitivity of cultured 5-HT neurons. Soc. Neurosci. Abstr., 36, 2010.

Iceman, K.E., Richerson, G.B. & M.B. Harris. Identification of chemosensitive and insensitive serotonergic and GABAergic neurons in rat medullary raphe nuclei. Soc. Neurosci. Abstr., 36, 2010.

Brust, R.D., Richerson, G.B., Wu, Y. & S.M. Dymecki. Mapping chemosensitivity onto genetically-defined serotonergic neuron subtypes. Soc. Neurosci. Abstr., 36, 2010.

- Huckstepp, R.T.R., Corcoran, A.E. & G.B. Richerson. Serotonergic raphe neurons are required for normal burst rate and chemosensitivity in medullary slices. *Soc. Neurosci. Abstr.*, 36, 2010.
- Corcoran, A.E., G.B. Richerson & M.B. Harris. Modulation of neuroventilation and central chemosensitivity: serotonergic and hypocretinergic effects. *The FASEB Journal* 24:1026.5, 2010.
- Cerpa, V.E., R. Flynn, R. Jamison & G.B. Richerson. Neonatal mice lacking serotonin neurons have high mortality that is worsened on exposure to hypoxia and hypercapnia. *The FASEB Journal* 24:613.10, 2010.
- Ransom, C.B., Y. Wu & G.B. Richerson. Post-depolarization potentiation of GABA_A receptors: a novel mechanism regulating tonic inhibition in hippocampal neurons. *Epilepsia*, 2009.
- Buchanan, G. F. & G. B. Richerson. Increased seizure susceptibility and post-ictal respiratory suppression in mice with genetic deletion of 5-HT neurons. *Epilepsia*, 2009.
- Buchanan, G. F. & G. B. Richerson. Effect of genetic deletion of 5-HT neurons on sleep and arousal. *Soc. Neurosci. Abstr.*, 35, 2009.
- Corcoran, A.E., J.C. Smith, M.B. Harris & G.B. Richerson. Differentiating pre- vs. post- synaptic effects of 5-HT_{1a} receptor activation on breathing. *Soc. Neurosci. Abstr.*, 35, 2009.
- Hodges, M.R., Y. Wu, G. B. Richerson. Chemosensitivity of mouse 5-HT neurons to hypercapnic acidosis is dependent upon age and temperature in brainstem slices *in vitro*. *Soc. Neurosci. Abstr.*, 35, 2009.
- Wu, Y. M.R. Hodges, W. Wang, A. Zaykin, C.J. Wylie, E.S. Deneris, G.B. Richerson. Hypercapnic acidosis inhibits a calcium-activated non-selective cation current in mature serotonergic neurons. *Soc. Neurosci. Abstr.*, 35, 2009.
- Richerson, G.B., Y. Wu, M.R. Hodges, W. Wang, A. Zaykin, C.J. Wylie & E.S. Deneris. Acidosis inhibits a calcium-activated non-selective cation current in mature serotonergic neurons. The 11th Oxford Conference on Modeling and Control of Breathing, Nara, Japan. 7/2009.
- Richerson, G.B., M.R. Wehner, M.R. Hodges, K. Ptak, J. Aungst & J.C. Smith. Critical role of 5-HT neurons in control of breathing in neonatal mice *in vivo* and *in vitro*. International Symposium on Respiratory Control. Saint Maximin en Provence, France. 12/2008.
- Ptak, K., J. Aungst, T. Yamanishi, L.S. Milesco, R. Zhang, G.B. Richerson & J.C. Smith. Raphé neurons stimulate respiratory circuit activity by endogenously released serotonin and substance P. *Soc. Neurosci. Abstr.*, 34, 2008.
- Richerson, G.B., M.R. Wehner, M.R. Hodges, K. Ptak, J. Aungst & J.C. Smith. Neonatal mice lacking central 5-HT neurons have severe apnea and a high mortality. *Soc. Neurosci. Abstr.*, 34, 2008.

- Hodges, M.R., K. Ptak, J. Aungst, J.C. Smith & G.B. Richerson. Neonatal mice lacking central 5-HT neurons exhibit abnormal respiratory motor patterns *in vitro*. Soc. Neurosci. Abstr., 34, 2008.
- Wu, Y., M.R. Hodges & G.B. Richerson. Stimulation by hypercapnic acidosis in mouse 5-HT neurons *in vitro* is enhanced by age and increased temperature. Soc. Neurosci. Abstr., 34, 2008.
- Ransom, C.B., Y. Wu & G.B. Richerson. Voltage-dependent properties of extrasynaptic GABA_A receptors in cultured rat hippocampal neurons. Soc. Neurosci. Abstr., 34, 2008.
- Johnson, S.M., V. Rogulin & G.B. Richerson. Expression of pH sensitive ion channels in CO₂/H⁺ sensitive GFP+ locus coeruleus neurons of Prp57 transgenic mice. Soc. Neurosci. Abstr., 34, 2008.
- Bravata DM, Concato J, Fried T, Ranjbar N, Sadarangani T, Struve F, Gorman M, McClain V, Lo A, Richerson GB, Williams LS, Agostini J, Yaggi HK. The prevalence of positional sleep apnea among patients with acute ischemic stroke and transient ischemic attacks. Stroke 39(2): 616, 2008.
- Gillum, M.P., I.T. Azam, M.R. Wehner, M.R. Hodges, K.A. Maguire-Zeiss, H.J. Federoff & G.B. Richerson. Carotid body dysfunction and altered oxygen homeostasis in models of Parkinson's disease. The FASEB Journal 2008; 22:1231.5.
- Johnson, S.M., V. Rogulin & G.B. Richerson. Prp57 transgenic mice express multiple pH sensitive ion channels in CO₂/H⁺ sensitive GFP+ locus coeruleus neurons. FASEB Abstr., 21, 2008.
- Corcoran, A.E., G.B. Richerson & M.B. Harris. Serotonin (5-HT) facilitates ventilation via distinct 5HT₂ and 5HT₄ receptor-mediated mechanisms *in situ*, in the arterially perfused rat brainstem preparation. FASEB Abstr., 21, 2008.
- Buchanan, G. F., Hodges, M. R., and Richerson, G. B. Deficiency in hypercapnia-induced arousal in mice with genetic deletion of 5-HT neurons. Soc. Neurosci. Abstr., 33, 2007.
- Hodges, M. R., Tattersall, G. J., Harris, M. B., McEvoy, S., Richerson, D. N., Chen, Z. F., Deneris, E. S., Johnson, R. L., and Richerson, G. B. Genetic deletion of 5-HT neurons leads to impaired brown adipose tissue (BAT) activation. Soc. Neurosci. Abstr., 33. 2007.
- Corcoran, A.E., G.B. Richerson, M.B. Harris. The role of serotonin (5-HT) and post-synaptic 5-HT receptor subtypes in the ventilatory response to hypercapnia *in situ*. Soc. Neurosci. Abstr., 33. 2007.
- Johnson, S.M., M.A. Haxhiu, G.B. Richerson. GFP expressing locus coeruleus neurons exhibit intrinsic CO₂/H⁺ responses in primary cell culture. Soc. Neurosci. Abstr., 33. 2007.
- Johnson, S.M., M.A. Haxhiu, G.B. Richerson. GFP expressing locus coeruleus neurons from prp57 transgenic mice exhibit intrinsic CO₂/H⁺ responses in primary cell culture. FASEB Abstr., 20, 2007.

- Hodges, M.R., W. Wang, Z.F. Chen, E.S. Deneris, R.L. Johnson & G.B. Richerson. Adult mice with genetic deletion of 5-HT neurons exhibit a severe loss of central chemoreception. *FASEB Abstr.*, 20, 2007.
- Richerson, G.B., Y. Wu, W. Wang & A. Díez-Sampedro. GAT1 is near equilibrium under normal physiological conditions and reverses easily in response to depolarization. *The GABAergic System*. Cold Spring Harbor Laboratory, NY. 2006.
- Fieldman, D.M., M.B. Harris & G.B. Richerson. Inhibiting serotonergic neurons abolishes hypercapnic ventilatory sensitivity in the unanesthetized in situ perfused rat brainstem preparation. *Soc. Neurosci. Abstr.*, 32, 2006.
- Toppin, V.A., A. Kober, G.B. Richerson, W.M. St. John & M.B. Harris. Activation of 5HT1A receptors with 8-OH-DPAT does not prevent gasping but may impair autoresuscitation. *Soc. Neurosci. Abstr.*, 32, 2006.
- Ptak, K., R. Zhang, L.S. Milescu, G.B. Richerson & J.C. Smith. Modulation of neuronal activity in the pre-Bötzinger complex by medullary raphe neurons. *Soc. Neurosci. Abstr.*, 32, 2006.
- Hodges, M.R., Z.F. Chen, E.S. Deneris, R.L. Johnson & G.B. Richerson. Genetic deletion of 5-HT neurons does not influence the hypoxic ventilatory response, baseline temperature or the response to mild hyper- or hypo-thermia, but blunts the hypercapnic ventilatory response and prevents thermoregulation in response to severe cold exposure. *Soc. Neurosci. Abstr.*, 32, 2006.
- Ptak, K, R. Zhang, L.S. Milescu, G.B. Richerson, and J.C. Smith. Modulation of neuronal activity in the pre-Bötzinger complex by medullary raphe neurons. Oxford Conference, Banff, Alberta. 2006.
- Hodges, M.R., Z.F. Chen, E.S. Deneris, R.L. Johnson & G.B. Richerson. Adult mice with 5-HT neuron-specific knockout of *Lmx1b* exhibit an attenuated hypercapnic ventilatory response. *FASEB Abstr.*, 19, 2006.
- Dohle, C.I., C.J. Wylie, E.S. Deneris & G.B. Richerson. Relationship between dendrites of serotonin neurons and large midline vessels of the medulla. *FASEB Abstr.*, 19, 2006.
- Díez-Sampedro, A., W.R. Silverman, J.F. Bautista & G.B. Richerson. A mutation in the BK channel leads to increased calcium sensitivity and epilepsy. *Biophysical Soc. Abstr.*, 2006.
- Wu, Y., W. Wang & G.B. Richerson. Tonic inhibition in hippocampal cultures is due to GABA release via two distinct nonvesicular mechanisms. *Soc. Neurosci. Abstr.*, 31, 2005.
- Wang, W., S.M. Johnson & G.B. Richerson. Putative central chemoreceptors of the medullary raphe are not responsive to changes in glucose. *Soc. Neurosci. Abstr.*, 31, 2005.
- Hodges, M.R., S. Best, E.S. Deneris & G.B. Richerson. Adult Pet-1 knockout mice exhibit an attenuated hypercapnic ventilatory response. *Soc. Neurosci. Abstr.*, 31, 2005.

- Ptak, K., L.S. Milesco, G.B. Richerson & J.C. Smith. Modulation of neuronal activity in the pre-Bötzinger complex by medullary raphe neurons. *Soc. Neurosci. Abstr.*, 31, 2005.
- Hodges, M.R., W. Wang & G.B. Richerson. Acidosis-inhibited raphé neurons are GABAergic. *FASEB Abstr.*, 19, 2005.
- Dohle, C.I. & G.B. Richerson. Lack of smooth muscle in arteries next to serotonergic neurons: Reduction of the diffusion barrier for CO₂ in areas of central chemoreceptors. *FASEB Abstr.*, 19, 2005.
- Ptak, K., H. Koizumi, G. Richerson & J.C. Smith. Medullary raphe neurons and serotonergic modulation of neuronal activity in the pre-Bötzinger complex. *Soc. Neurosci. Abstr.*, 30, 2004.
- Ua Cruadhlaich, M.A.I. & G.B. Richerson. Use of multielectrode arrays in recording from cultured chemosensitive medullary raphe neurons. *FASEB Abstr.*, 18, 2004.
- Richerson, G.B. Control of Brain pH by the Serotonergic System: Changes in Early Postnatal Development. *Soc. Neurosci. Abstr.*, 29, 2003.
- Wu, Y. & G.B. Richerson. Nonvesicular neurotransmission can occur between hippocampal neurons via reversal of the GABA transporter. *Soc. Neurosci. Abstr.*, 29, 2003.
- Richerson, G.B. Role of serotonergic neurons in SIDS. *Neurochemistry Winter Conference*, Sölden, Austria. 4/2003.
- Richerson, G.B. Respiratory chemoreception in mammalian respiratory networks. *International Congress of Comparative Physiology and Biochemistry*. La Trobe, Australia. 2/2003.
- Harris, M.B., G.B. Richerson & W.M. St. John. Serotonergic modulation of ventilatory pattern in the perfused rat brainstem. *Soc. Neurosci. Abstr.*, 28, 2002.
- Bradley, S. Risso, W. Wang, C.A. Severson, I. Choi, C.C. Bradley & G.B. Richerson. Characterization of a pH sensitive calcium-activated cation current in serotonergic medullary neurons. *Soc. Neurosci. Abstr.*, 28, 2002.
- Severson, C.A., W. Wang & G.B. Richerson. Serotonergic neurons of the midbrain raphe are stimulated by acidosis and are closely associated with arteries. *Soc. Neurosci. Abstr.*, 28, 2002.
- Wu, Y. & G.B. Richerson. Vigabatrin enhances tonic GABAergic inhibition mediated by carrier-mediated GABA release, without affecting vesicular GABA release. *Soc. Neurosci. Abstr.*, 28, 2002.
- Wang, W., C.A. Severson & G.B. Richerson. Serotonergic neurons from the rat midbrain are chemosensitive in slices and in culture. *Soc. Neurosci. Abstr.*, 28, 2002.
- Nattie, E.E., A. Li, G. Richerson & D. Lappi. Specific killing of rat medullary raphe 5-HT neurons by a serotonin transporter antibody-saporin conjugate reduces the ventilatory response to increased CO₂ during sleep and wakefulness. *Soc. Neurosci. Abstr.*, 28, 2002.

- Richerson, G.B. The sudden infant death syndrome, sleep and breathing. *FASEB Abstr.*, 16, 2002.
- Richerson, G.B. Cellular mechanisms of chemosensitivity in serotonergic raphe neurons. *Neural control of breathing*. Rotorua, New Zealand. 9/2001.
- Richerson, G.B., S. Risso Bradley, W. Wang & V.A. Pieribone. Serotonergic neurons that project to the phrenic nuclei are located near large arteries on the ventral surface of the medulla. *Soc. Neurosci. Abstr.*, 27, 2001.
- Wu, Y., W. Wang & G.B. Richerson. Inhibition of GABA transaminase induces activation of synaptic GABA_A receptors due to nonvesicular GABA release. *Soc. Neurosci. Abstr.*, 27, 2001.
- Wang, W. & G.B. Richerson. Quantification of the response of serotonergic neurons to independent changes in pH_o and PCO₂. *Soc. Neurosci. Abstr.*, 27, 2001.
- Ua Cruadhlaich; M.A.I., W. Wang; J.K. Tiwari & G.B. Richerson. Mathematical modeling of serotonergic rat medullary raphe neurons exhibiting a novel pH-regulated Ca²⁺-activated cation current. *Soc. Neurosci. Abstr.*, 27, 2001.
- Bouyer, P., S. Risso Bradley, J. Zhao, R.M. Fitzsimonds, W. Wang, G.B. Richerson & W.F. Boron. Intracellular pH (pH_i) response of medullary raphe neurons during extracellular acid-base perturbations. *Soc. Neurosci. Abstr.*, 27, 2001.
- Bradley, S. Risso, G.B. Richerson, J.D. Rojas, P. Bouyer & W.F. Boron. Distribution of Na/HCO₃ cotransporters in rat brain with subtype-specific antibodies. *Soc. Neurosci. Abstr.*, 27, 2001.
- Grichtchenko, I.I., S. Risso Bradley, J.D. Rojas, G.B. Richerson & W.F. Boron. Localization of the Na⁺-driven Cl/HCO₃ exchanger protein (NDCBE1) in rat brain. *Soc. Neurosci. Abstr.*, 27, 2001.
- Richerson, G.B. The raphe and breathing: What is the connection? Session Chair. *Winter Conf. Brain Res.* Steamboat Springs, CO, Jan., 2001.
- Richerson, G.B. The response to CO₂ and O₂: From ion channels to networks. *Winter Conf. Brain Res.* Steamboat Springs, CO, Jan., 2001.
- Richerson, G.B. & Y. Wu. Vigabatrin induces an increase in GABA release due to reversal of the GABA transporter. *Epilepsia*, 2000.
- Tiwari, J.K., A.V. Zaykin, M. Ua Cruadhlaich, W. Wang & G.B. Richerson. A novel pH sensitive cation current is present in putative central chemoreceptors of the medullary raphe. *Soc. Neurosci. Abstr.*, 26, 2000.
- Bouyer, P., S. Risso Bradley, J. Zhao, W. Wang, W.F. Boron & G.B. Richerson. Neurons of the medullary raphe have a uniform pH_i response to CO₂. *Soc. Neurosci. Abstr.*, 26, 2000.

- Wang, W., S. Risso Bradley & G.B. Richerson. Muscarinic receptor activation enhances chemosensitivity of medullary raphe neurons. *Soc. Neurosci. Abstr.*, 26, 2000.
- Wu, Y., W. Wang & G.B. Richerson. Rat hippocampal neurons can inhibit each other via reversal of the GABA transporter. *Soc. Neurosci. Abstr.*, 26, 2000.
- Bradley, S. Risso, V.A. Pieribone, R.A. Jacobs, G.B. Richerson. Acidosis-stimulated neurons of the medullary raphe are closely associated with basilar penetrating arteries. *Soc. Neurosci. Abstr.*, 26, 2000.
- Tiwari, J.K., A.V. Zaykin, M. Ua Cruadhlaioich & G.B. Richerson. Serotonergic neurons of the medullary raphe possess a novel pH sensitive calcium-dependent cation current. *Central Chemosensitivity 2000*, Bochum, Germany. August 2000.
- Richerson, G.B. & W. Wang. Chemosensitivity of serotonergic CNS neurons is enhanced by muscarinic receptor activation. *FASEB Abstr.* 2000
- Wang, W. & G.B. Richerson. Neurons cultured from the region of the midbrain raphe are chemosensitive to acidosis. *Soc. Neurosci. Abstr.*, 25:71.10, 1999.
- Wu, Y., W. Wang & G.B. Richerson. Non-vesicular GABA release is enhanced by anticonvulsants that increase brain [GABA]. *Soc. Neurosci. Abstr.*, 1999.
- Richerson, G.B. & Y. Wu. Vigabatrin & gabapentin enhance carrier-mediated GABA release. *Epilepsia*, 1999.
- Richerson, G.B. The medullary raphe and respiration: Such an obvious role, but what exactly is it? *FASEB Special Topic*. Washington, DC, April, 1999
- Richerson, G.B. Heavy breathing in Snowmass: The role of serotonin in the response to high altitude. *Winter Conf. Brain Res.* Session Chair. Snowmass, CO, Jan., 1999.
- Richerson, G.B. W. Wang, & J.H. Pizzonia. Quantification of the degree of chemosensitivity of medullary raphe neurons in tissue culture. *FASEB Abstr.* 1998.
- Wang, W. & G.B. Richerson. Chemosensitivity of medullary raphe neurons increases postnatally. *Soc. Neurosci. Abstr.*, 1998.
- Richerson, G.B. & Wang, W. Medullary raphe neurons stimulated by acidosis are serotonergic. *Soc. Neurosci. Abstr.*, 1998.
- Richerson, G.B. Is the function of the GABA transporters altered in epilepsy? Scientific Workshop: Organizer, Charles Ribak. American Epilepsy Society Annual Meeting Boston, 1997.
- Richerson, G.B., & W. Wang. Ventromedial medullary neurons have a high degree of intrinsic chemosensitivity. *Soc. Neurosci. Abstr.*, 1997.
- Wang, W., J. Zhao, W.F. Boron, & G.B. Richerson. Effect of isocapnic acidosis and isohydric hypercapnea on firing rate and pH_i of chemosensitive medullary neurons. *Soc. Neurosci. Abstr.*, 27:171.14 1997.

- Pizzonia, J.H., W. Wang & G.B. Richerson. Neurotransmitter expression in cocultures prepared from rat medullary raphe. *Soc. Neurosci. Abstr.*, 1997.
- Gasparly, H.L. & G.B. Richerson. Role of carrier-mediated GABA release in seizures. *Epilepsia*, 1996.
- Zhao, J., G.B. Richerson, W. Wang, & W.F. Boron. Effect of respiratory acid-base changes on intracellular pH of ventromedial medullary neurons. *pHysiology of Acid-Base Regulation: From Molecules to Humans*, APS Conference, Snowmass, CO, 1996.
- Richerson, G.B., W. Wang, & J.H. Pizzonia. Properties of cultured rat ventromedial medullary neurons sensitive to acidosis. *Neural Control of Breathing: Molecular to Organismal Perspectives*, APS Conference, Madison, WI, 1996
- Richerson, G.B. & W. Wang. Mechanisms of rat ventromedial medullary neurons sensitive to acidosis. *Soc. Neurosci. Abstr.*, 1996.
- Wang, W. & G.B. Richerson. Rat ventromedial medullary neurons sensitive to acidosis are bulbospinal. *Soc. Neurosci. Abstr.*, 1996.
- Gasparly, H.L. & G.B. Richerson. Carrier-mediated GABA release induced by high $[K^+]_o$ and low $[Na^+]_o$ increases whole cell conductance in hippocampal neurons. *Soc. Neurosci. Abstr.*, 1996.
- Richerson, G.B. Gabapentin: New insights into a novel antiepileptic and neuroprotective mechanism. *Winter Conf. Brain Res.* 29:51, 1996.
- Richerson, G.B. Electrophysiological response of CO₂ sensitive cells in the ventral medulla. Central CO₂ chemoreceptors: Where are they? How do they work? *Am. J. Resp. Crit. Care Med.*, 151(4):D7, 1995
- Richerson, G.B. & J.H. Pizzonia. Electrophysiology of medullary raphe neurons in slices and tissue culture. *Soc. Neurosci. Abstr.* 21: 1995.
- Richerson, G.B. GABA: Functions beyond inhibition. *Winter Conf. Brain Res.* 26:34, 1993.
- Richerson, G.B. CO₂ modulates pacemaker neurons in the medullary raphe and parapyramidal region of the rat *in vitro*. *Soc. Neurosci. Abstr.* 19: 1993.
- Oyelese, A.A. G.B. Richerson, S.F. Holloway, D.L. Eng & J.D. Kocsis. GABA_A-induced conductance and cell size distribution of rat dorsal root ganglion neurons following nerve ligation. *Soc. Neurosci. Abstr.* 19: 1993.
- G.B. Richerson. Electrophysiologic effects of changes in PCO₂ on rat medullary neurons *in vitro*. *Soc. Neurosci. Abstr.* 18: 1992.
- Eng, D.L., J.D. Kocsis & G.B. Richerson. Chronic nerve ligation leads to enhanced GABA_A receptor-induced conductances in a subclass of rat dorsal root ganglion neurons. *Soc. Neurosci. Abstr.* 18: 1992.

- Richerson, G.B. Perfused brain preparations in neurobiology. *Winter Conf. Brain Res.* 24:31, 1991.
- Richerson, G.B. & P.A. Getting. Viability of the respiratory system in a perfused brain: A model for studying neural function. *Clinical Research* 34(3): 1005A, 1986.
- Richerson, G.B. & P.A. Getting. Maintenance of complex circuit function during perfusion of the mammalian brain. *Soc. Neurosci. Abstr.* 12: 1986.
- Richerson, G.B. & P.A. Getting. Medullary respiratory neurons of the guinea pig. *Fed. Proc.* 43(3): 320, 1984.
- Richerson, G.B. & P.A. Getting. Respiratory activity in a perfused guinea pig brain spinal cord preparation. *Soc. Neurosci. Abstr.* 10: 1984.
- Dekin, M.S., G.B. Richerson & P.A. Getting. Thyrotropin-releasing hormone induces spontaneous bursting in neurons of the nucleus tractus solitarius. *Soc. Neurosci. Abstr.* 10: 1984.
- Richerson, G.B. & P.A. Getting. Characteristics of respiratory neurons in the guinea pig. *Soc. Neurosci. Abstr.* 9: 1983.