

Curriculum Vitae

Amy Brooks-Kayal, MD

Current Position

Professor with Tenure, Departments of Pediatrics, Neurology and Pharmaceutical Sciences
Chief and Ponzio Family Chair in Pediatric Neurology
University of Colorado School of Medicine and School of Pharmacy & Pharmaceutical Sciences
Children's Hospital Colorado
13123 East 16th Avenue, Box B155
Aurora, CO 80045
Phone- 720-777-1865
Fax- 720-777-7285
Email- amy.brooks-kayal@childrenscolorado.org

Education

1984	BA	Cornell University, College of Arts and Sciences
1988	MD	Johns Hopkins University
1988-1991		Resident in Pediatrics, Children's Hospital of Philadelphia
1991-1992		Charles A. Dana Fellow in Neuroscience, Institute of Neuroscience
1992-1995		Resident in Child Neurology, Hospital of the University of Pennsylvania and Children's Hospital of Philadelphia

Academic Appointments

1993-1994	Assistant Instructor in Neurology, Department of Neurology, University of Pennsylvania School of Medicine
1994-1995	Instructor in Neurology, Department of Neurology, University of Pennsylvania School of Medicine
1995-2005	Assistant Professor of Neurology at the Children's Hospital of Philadelphia, University of Pennsylvania School of Medicine
2005-2008	Associate Professor of Neurology at the Children's Hospital of Philadelphia, University of Pennsylvania School of Medicine
2008-present	Professor of Pediatrics, University of Colorado School of Medicine
2008-present	Co-director, University of Colorado Translational Epilepsy Research Program
2009-present	Professor of Neurology, University of Colorado School of Medicine
2010-present	Professor of Pharmaceutical Sciences, University of Colorado Skaggs School of Pharmacy and Pharmaceutical Sciences
2011-present	Tenure, University of Colorado School of Medicine

Hospital and/or Administrative Appointments

1995-2008	Medical staff, Children's Hospital of Philadelphia and Hospital of the University of Pennsylvania
2008-present	Medical staff, Children's Hospital Colorado, Aurora, CO

2008-present	Chief, Division of Neurology, Department of Pediatrics, University of Colorado School of Medicine
2008-present	Chair, Department of Neurology, Children's Hospital Colorado, Aurora, CO
2008-present	Ponzio Family Chair in Pediatric Neurology, Children's Hospital Colorado, Aurora, CO
2008-present	Co-Director, Translational Epilepsy Research Program, University of Colorado Anschutz Medical Campus
2009-present	Physician Leader, Neuroscience Institute, Children's Hospital Colorado, Aurora, CO

Awards, Honors and Membership in Honorary Societies

1980	Cornell National Scholar Award
1984	Cornell Presidential Scholar Award
1984	Phi Beta Kappa, Phi Kappa Pi
1985	Barry Wood Biomedical Research Award
1988	Alpha Omega Alpha
1991	Charles A. Dana Research Fellowship in Neuroscience
1995	American Epilepsy Society Travel Award
1995	MAPS Scholar
1999	American Epilepsy Society Junior Investigator Research Award
1999	Child Neurology Society Young Investigator Award
2001	Child Neurology Foundation Award
2006	Board of Directors, American Epilepsy Society
2006	Elected to American Neurological Association
2007	NIH Epilepsy Benchmark Steward
2007	American Academy of Neurology Leadership Development Program
2008	Ponzio Family Endowed Chair in Pediatric Neurology, The Children's Hospital, Aurora CO
2009	Marquis, Who's Who in America Award
2009	Best Doctor's in America
2010	Nominating Committee, American Epilepsy Society
2011	Tenure, University of Colorado School of Medicine
2011	Executive Board, American Neurological Association
2011	Councilor, Professors of Child Neurology
2011	Chair, Merritt-Putnam Symposium at the American Epilepsy Society
2011-13	US News and World Report "Top Pediatric Neurologist"
2012	2 nd Vice-President, American Epilepsy Society
2013	Fellow, American Neurological Association
2013	Chair, Clinical Neuroplasticity and Neurotransmitters (CNNT) Study Section
2013	1 st Vice-President, American Epilepsy Society
2014	Advisory Council, National Institute of Neurological Disorder and Stroke
2014-15	President, American Epilepsy Society
2015-16	Past President, American Epilepsy Society
2016	Vice Chair, Gordon Research Conference on Epilepsy and Neuronal Synchronization
2016	Fellow, American Academy of Neurology
2016	Fellow, American Epilepsy Society

Memberships in Professional and Scientific Societies and Other Professional Activities

International

1991-present	Society for Neuroscience (Scientific Program Committee 2005-2008; Chair of CME
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1994-present Subcommittee 2006-2008; Awards Advisory Committee 2009-present)
International League Against Epilepsy (Pediatrics Commission 2014-2017;
Translational Epilepsy Research Task Force 2012-present)

National

1989-2008 American Academy of Pediatrics

1992-present American Academy of Neurology (Leadership Development Program- 2007;
Translational Neurology Subcommittee 2015-2017, Science Committee 2017-
2019; elected Fellow- 2016)

1992-present Child Neurology Society (Scientific Selection committee 2002-2004; Awards
committee 2003-2005 and Child Neurology Foundation Advocacy Committee 2004-
present)

1994-present American Epilepsy Society: President - 2014-15, VP 2012-2014; Fellow,
Nominations Committee 2016-2018; Research Recognition Award Committee
2012-2014; Chair, Merritt-Putnam Symposium-2012-2014; Translational Epilepsy
Research Task Force 2012-present; ILAE/AES Workshop on Preclinical
Development in Epilepsy, Workgroup Chair-2012; Nominating Committee 2010-
2012; Board of Directors 2007-2010; Governance Committee 2008-2011 (Chair
2013-2014); Research and Training committee 2007-2010; Basic Science
Committee 2006-2010; Chair of Scientific Program Committee 2005; Vice-Chair of
Scientific Program Committee 2004; Pediatric Epilepsy Committee 2004-present;
Investigators' Workshop committee 2001-2003; Task force on AED Development
2001-2006.

1999-2013 Epilepsy Foundation (Research Council)

2000-2012 Society for Pediatric Research

2001-2007 American Board of Psychiatry and Neurology (Examiner)

2001-2011 National Institutes of Health, National Institute of Neurological Diseases and
Stroke, Neurodevelopmental Effects of Anti-Epileptic Drugs Trial, Data and Safety
Monitoring Board

2001-2005 National Institutes of Health, National Institute of Neurological Disorders and Stroke
Clinical Neurosciences and Disease (CND) Study Section (Regular Member)

2001 National Institutes of Health, National Institute of Neurological Disorders and Stroke
Special Emphasis Panel for Developmental Pharmacology

2001 National Institutes of Health, National Institute of Neurological Disorders and Stroke
Special Emphasis Panel for Fellowships

2002 National Institutes of Health, National Institute of Neurological Disorders and Stroke
Workshop, Models for Epilepsy and Epileptogenesis

2002-2003 Partnership for Pediatric Epilepsy Research Study Section

2004 National Institutes of Health, National Institute of Neurological Disorders and Stroke
Workshop on Developmental Epilepsy Models

2005-2008 Citizens United for Curing Epilepsy (CURE) Scientific Advisory Board Member

2005-2011	National EpiFellows Foundation (Scientific Advisory Board)
2005-2007	National Institute of Neurological Disease and Stroke Curing Epilepsy 2007 Conference: Translating Discoveries into Treatments (Chair of session "Beyond Seizures-Cognitive and Psychological Co-Morbidities of Epilepsy", Member of Executive Organizing Committee)
2006-present	American Neurological Association: Membership Committee 2009-2011; Executive Board 2010-2013; Nominating Committee 2016-2018; Fellow
2006	National Institutes of Health, Clinical Neuroplasticity and Neurotransmitters (CNNT) Study Section (ad hoc reviewer)
2007-2014	Epilepsy Research Benchmarks, National Institutes of Health, National Institute of Neurological Disorders and Stroke, Benchmark Steward and Co-Chair for Benchmark III, "Co-morbidities of Epilepsy"
2008-present	Professors of Child Neurology: Councilor 2011-2014
2010	National Institute of Neurological Disorders and Stroke (NINDS) workshop "Disease Modification and Antiepileptogenesis (AEG): Alignment of Clinical Targets and Criteria for Preclinical Studies"
2009 - 2010	National Institutes of Health, Developmental Brain Disorders (DBD) Study Section (ad hoc member)
2010 – 2014	National Institutes of Health, Clinical Neuroplasticity and Neurotransmitters (CNNT) Study Section (Regular Member 2010-2013; Chair, 2013- 2014)
2012	National Institutes of Health, National Institute of Neurological Disorders and Stroke Antiepileptic Drug Discovery (ADD) Program Review Panel.
2014	National Institutes of Health, National Institute of Neurological Disorders and Stroke, Center without Walls (U01) for Sudden Unexpected Death in Epilepsy, Chair
2014-18	National Institutes of Health, National Institute of Neurological Disorders and Stroke, National Advisory Neurological Disorders and Stroke Council member
2015	National Institutes of Health, National Institute of Neurological Disorders and Stroke Epilepsy Therapy Screening Program External Advisory Board

Specialty Certification

1991	Pediatrics, American Board of Pediatrics (recert 2/99)
1996	Neurology with Special Qualification in Child Neurology, American Board of Psychiatry and Neurology (recert 8/06)
1997	Added Qualification in Clinical Neurophysiology, American Board of Psychiatry and Neurology (recert 8/07)
2013	Added Qualification in Epilepsy, American Board of Psychiatry and Neurology

Licensure

2008	Colorado
1990	Pennsylvania

Organizing Roles in Scientific Meetings

Apr, 2001	Organizer and Chair, "Neurotransmitter Systems in Development and Epileptogenesis", Spring Epilepsy Research Conference, Grand Cayman, BWI
Dec, 2001	Organizer and Chair, "Gene Arrays in Epilepsy Research", Investigators Workshop at the American Epilepsy Society Annual Meeting Philadelphia, PA
Dec, 2001	Co-chair, "Novel Therapeutic Approaches in Pediatric Epilepsy" Symposium, American Epilepsy Society Annual Meeting Philadelphia, PA
Dec, 2002	Organizer, "Glutamate and GABA Transporters in Epilepsy", Investigators Workshop, American Epilepsy Society Annual Meeting Seattle, WA
May, 2003	Organizer and Chair, "New Approaches to Region and Cell Type Specific Gene Therapy in Epilepsy", Spring Epilepsy Research Conference Grand Cayman, BWI
Sept, 2003	Co-Organizer, CHOP/Pennsylvania Epilepsy Research Seminar Series Present
Dec, 2004	Vice-Chair, Scientific Program Committee, American Epilepsy Society Annual Meeting New Orleans, Louisiana
Dec, 2005	Chair, Scientific Program Committee, American Epilepsy Society Annual Meeting Washington, DC
Oct, 2006	CME Chair and Program Committee Member, Society for Neuroscience Annual Meeting Atlanta, GA
Mar, 2007	National Institute of Neurological Diseases and Stroke "Curing Epilepsy 2007: Translating Discoveries into Therapies" Conference, Member-Executive Organizing Committee, Session Chair "Beyond Seizures-Cognitive and Psychological Co-Morbidities of Epilepsy" Bethesda, MD
Dec, 2007	Organizer and Chair, "Mechanisms of Gene Regulation in Epilepsy", Investigators Workshop at the American Epilepsy Society Annual Meeting Philadelphia, PA
Aug, 2010	Discussion Leader, "Epigenetics, Gene Regulation and microRNAs in Epilepsy", Gordon Research Conferences, 2010 Mechanisms of Epilepsy & Neuronal Synchronization
Oct. 2011	Co-Organizer, "Coming together on epilepsy genetics: From human to model organisms, and back", The Jackson Laboratory, Bar Harbor, ME
April 2012	Co-Chair, Integrated Neuroscience Session: Epilepsy and Channelopathies, American Academy of Neurology Annual Meeting, New Orleans, LA
Sept 2012	Workgroup Chair on Co-Morbidities, ILAE/AES Conference on Preclinical Epilepsy Therapy Development, London, England
Dec 2012	Organizer and Chair, Merritt-Putnam Symposium, American Epilepsy Society Annual Meeting, Baltimore, MD
Oct 2013	Co-Chair, "Emerging challenges of epilepsy genetics to clinical practice", Symposium, American Neurological Association Annual meeting.
Dec 2013	Organizer and Chair, "Future Therapies: How we will be preventing and curing epilepsy in 2025", Merritt-Putnam Symposium, American Epilepsy Society Annual Meeting, Washington DC
Dec 2014	Organizer and Chair, "Stress, Cannabinoids and Epilepsy: The Science Behind the Buzz", Merritt-Putnam Symposium, American Epilepsy Society Annual Meeting, Seattle, WA
Apr 2015	Organizer and Co-Chair, "Future Therapies: How We Will Be Treating, Preventing, and Curing Epilepsy in the Year 2025", American Academy of Neurology Annual meeting, Integrated Neuroscience Session, Washington DC

- Dec 2015 Organizer and Chair, "Getting to Cure: the challenging road to disease modification and prevention for epilepsy", Presidential Symposium, American Epilepsy Society Annual Meeting, Philadelphia, PA
- April 2016 Organizer and Chair, "Precision Neurology I: The Promise and Perils of whole exome sequencing for neurological disorders" Symposium, American Academy of Neurology Annual Meeting, Vancouver, BC Canada
- Aug 2016 Vice-Chair, Gordon Research Conference on Epilepsy and Neuronal Synchronization, Girona, Spain
- April 2017 Organizer and Chair, "Developing the Treatments of Tomorrow: Taking Molecules from Lab to Human" Symposium, American Academy of Neurology Annual Meeting, Boston, MA

Review and Editorial Positions

- 1996-present Pediatric Emergency Care, Reviewer
- 2000-present Neuroscience Letters, Reviewer
- 2000-present Mental Retardation and Developmental Disabilities Reviews, Reviewer
- 2000-present Neuropharmacology, Reviewer
- 2002-present Journal of Neuroscience, Reviewer
- 2002-present Epilepsy Research, Reviewer
- 2004-present Neurobiology of Disease, Reviewer
- 2004-present Neuroscience, Reviewer
- 2005-present Annals of Neurology, Reviewer
- 2005-2009 Epilepsia, Associate Editor 2006-2009; Editorial Board Member 2005-2006
- 2011 Jasper's Basic Mechanisms of the Epilepsies. 4th edition. Noebels JL, Avoli M, Rogawski MA, et al., editors. Bethesda (MD): National Center for Biotechnology Information (US); 2011 (Section Editor).
- 2014-present Proceedings of the National Academy of Science, Reviewer
- 2015-present Experimental Neurology, Reviewer

Academic and Institutional Committees

- 1994-1995 Fellowship Training Committee, Children's Hospital of Philadelphia
- 1996-1997 Neuroscience Research Faculty Search Committee, Children's Hospital of Philadelphia
- 1996-1999 Hearings Committee for the Faculty Grievance Commission, University of Pennsylvania
- 1996-2002 Women Medical Student Association, Mentor, University of Pennsylvania
- 1999-2008 Pediatric Housestaff Selection Committee, Children's Hospital of Philadelphia
- 2000-2003 Neurology Housestaff Selection Committee, Hospital of the University of Pennsylvania
- 2002-2008 Neuroscience Graduate Group, University of Pennsylvania
- 2003-2007 Neuroscience Combined Degree (MD, PhD) Admissions Committee, University of Pennsylvania
- 2006-2008 Comprehensive Neuroscience Center Study Section, University of Pennsylvania
- 2006-2007 Center for Clinical Epidemiology and Biostatistics, Department of Biostatistics and Epidemiology-6 Year University Internal Review Committee
- 2007-2008 INS Seminar Committee, University of Pennsylvania
- 2008-present Rocky Mountain Neurological Disorders Center (P30) Steering Committee, University of Colorado Denver
- 2008-present Neuroscience Program Faculty, University of Colorado Denver
- 2008-2009 Basic Science Research Committee, The Children's Hospital, Aurora, CO
- 2008-2014 Child and Maternal Health Planning and Oversight Committee, Colorado Clinical Translational Research Center, University of Colorado Denver
- 2008-2009 Neurology Chair Search Committee, University of Colorado School of Medicine
- 2008-present Neuroscience Institute Governing Committee, Children's Hospital Colorado,

2009-2013	Clinical Capital Committee, Children's Hospital Colorado, Aurora, CO
2009-present	Steering Committee, Neuroscience Graduate Program, University of Colorado
2009-2010	Strategic Planning & Advisory Committee, University of Colorado School of Medicine Research Retreat
2009-2012	Research Advisory Committee, University of Colorado School of Medicine
2010-present	Advisory Committee, University of Colorado Neuroscience (CNS)
2011-2015	Boettcher Foundation Webb-Waring Biomedical Research Award Review Committee, University of Colorado
2011-2014	Research Executive Committee, Children's Hospital Colorado
2011-2014	Dean's Advisory Committee (for Dean's Distinguished Lecture Series), University of Colorado School of Medicine (Chair 2013-2014)
2013-2016	Search Committee, Section Head for Genetics, Department of Pediatrics, University of Colorado School of Medicine
2016-present	Search Committee, Chair, Department of Psychiatry, University of Colorado School of Medicine

Lectures by Invitation (Last 8 years)

Jan, 2008	"Mechanisms of GABA(A) Receptor Subunit Gene Regulation in Epilepsy", Winter Conference on Brain Research, Snowbird, UT
Feb, 2008	"GABA(A) Receptor Subunit Changes in TLE: Potential new targets for therapy", Neurology Grand Rounds, Stanford University, Palo Alto, CA
Mar, 2008	"GABA(A) Receptor Gene therapy for Epilepsy", New Horizons in the Development of Antiepileptic Drugs Meeting, Dublin, Ireland
April 2008	"GABA(A) Receptor Subunit Changes in TLE: Potential new targets for therapy", Neurology Grand Rounds, University of Pennsylvania, Philadelphia, PA
April 2008	"Mechanisms of Epilepsy in the Developing Brain", Child Neurology Course, American Academy of Neurology Annual Meeting, Chicago, IL
Aug, 2008	"Mechanisms of GABA(A) Receptor Subunit Gene Regulation during Epileptogenesis", Gordon Research Conference on Mechanisms of Epileptogenesis and Neuronal Synchronization, Colby College, Waterville, ME
Sept, 2008	"Molecular Mechanisms of GABA(A) Receptor Subunit Gene Regulation in Epilepsy: Potential new targets for therapy?", Neuroscience Program Seminar, University of Colorado-Denver, Denver, CO
Mar, 2009	"Molecular Mechanisms of GABA(A) Receptor Subunit Gene Regulation in Epilepsy", Plenary Lecture, 40 th Annual American Society for Neurochemistry Meeting, Charleston, SC
Mar, 2009	"Regulation of GABAA receptor subunit expression during epileptogenesis –Implications for therapeutics", Jasper's Basic Mechanisms of the Epilepsies Conference, Yosemite, CA
Mar, 2009	"Found in Translation: Going Bench to Bedside to develop new therapies for Epilepsy", University of Colorado School of Medicine, Neurology Grand Rounds, Denver, CO
May, 2009	"Epilepsy and Autistic Spectrum Disorder: Are there common developmental mechanisms?", International Symposium on Epilepsy in Autistic Spectrum Disorders, Kurume University, Kurume City, Fukuoka, Japan
May, 2009	"GABA _A receptor subunit changes in epilepsy: regulatory mechanisms and new therapeutic targets", John Hopkins University School of Medicine, Neurology Grand Rounds, Baltimore, MD
June 2009	"GABA _A Receptor Subunit Gene Regulation in Epilepsy", University of Colorado School of Medicine Department of Genetics Grand Rounds, Aurora, CO
July 2009	"GABA _A Receptor Subunit Gene Regulation in Epilepsy", University of California Irvine Epilepsy Center Seminar, Irvine, CA
Sept, 2009	"GABA _A Receptor Subunit Regulation during Epileptogenesis- What does it do and what can we do about it?", University of Colorado Neuroscience Program Retreat, Keystone, CO
Oct, 2009	"Molecular Mechanisms of Cognitive and Behavioral Co-Morbidities of Epilepsy in Children", Colorado Clinical Scholars Program, Aspen, CO
Oct, 2009	"New Approaches to Treatment of Neonatal Seizures", Colorado Clinical Scholars Program,

- Aspen, CO
- Oct, 2009 "Effects of Early-Life Experience on Neurotransmitter Systems" in Plenary Session on "Stress and the Developing Brain," Child Neurology Society Meeting, Louisville, KY
- Oct, 2009 "Molecular regulation of GABA(A) receptor subunit expression", Synaptic Inhibition in Health and Disease conference, Chicago, IL
- Dec, 2009 "Mechanisms underlying Cognitive Impairment in Early- life Epilepsies", Merritt-Putnam Symposium, American Epilepsy Society, Boston, MA
- March 2010 "Regulation of GABAA α 1 receptor subunit expression during epileptogenesis –Implications for therapeutics", American Society of Neurochemistry Meeting, Santa Fe, New Mexico
- March 2011 "Molecular Mechanisms of GABA(A) Receptor Regulation in Epilepsy", Albert Einstein University, Neuroscience Seminar, Bronx, NY
- March 2011 "Epilepsy and Autism: Are there common developmental mechanisms", Montefiore Medical Center, Pediatric Neurology Grand Rounds, Bronx, NY
- July 2011 "GABA(A) Receptor Regulation in Epilepsy", Gordon Research Conference, Waterville, ME
- Sept 2011 "Gene Regulation in Epilepsy: Novel Pathways and New Therapeutic Targets", American Neurological Association Annual Meeting, Epilepsy Special Interest Group, San Diego CA
- Oct. 2011 "Circuits and synapses: Molecular mechanisms of seizures, cognitive deficits, and behavioral disorders", Child Neurology Annual Meeting Residents Seminar, Savannah, GA
- Oct. 2011 "Circuits and synapses as drug targets for seizure treatment", Child Neurology Society Annual meeting Residents Seminar, Savannah, GA
- Nov 2011 "Epilepsy, Intellectual Disability and Autism: Are there common developmental mechanisms", University of Colorado Neurology Grand Rounds, Denver, CO
- Dec. 2011 "Cell Signaling Pathways and Epileptogenesis", Investigator's Workshop, American Epilepsy Society Annual Meeting, Baltimore, MD
- Dec 2011 "JaK/STAT Signaling in Epilepsy: Potential New Therapeutic Targets", Neuroscience Seminar, Insitituto Mario Negri, Milan, Italy
- March 2012 "Mechanisms of cognitive and behavioural co-mobidities in paediatric epilepsies", British Paediatric Neurology Association, Pediatric Epilepsy Therapy 3, Edinburgh, Scotland
- April 2012 "Neonatal seizures: why do they happen, what do they do and how can we treat them better?", Grand Rounds, Washington University, St. Louis, MO
- April 2012 "Inherited and Acquired Modifications in Neurotransmitter Receptors in Epilepsy", Integrated Neuroscience in Epilepsy Symposium, American Academy of Neurology 64th annual meeting, New Orleans, LA
- May 2012 "GABA(A) Receptor Regulation in Epilepsy", Case Western Reserve University Epilepsy Grand Rounds, Cleveland, OH
- May 2012 "Common Mechanisms of Epilepsy and Autism", National Institute of Neurological Disorders and Stroke Workshop on Epilepsy and Autism, Washington DC
- June 2012 "GABA(A) Receptor Regulation in Epilepsy", Stanford University Epilepsy Program seminar, Palo Alto, CA
- June 2012 "Co-morbidities of Epilepsy", Interagency Conference on Research in Epilepsy, National Institutes of Health, Washington DC
- August 2012 "Developmental Epilepsy Syndromes and the questions they raise", Gordon Research Conference on Epilepsy and Neuronal Synchronization", Waterville Valley, NH
- Nov 2012 "GABA(A) Receptor Regulation in Epilepsy: following novel pathways to new therapies in Epilepsy", Pharmacology Departmental Seminar, University of Virginia, Charlottesville, VA
- Nov 2012 "Mechanisms of Cognitive and Behavioral Co-Morbidities in Pediatric Epilepsy", Neurology Grand Rounds, University of Virginia, Charlottesville, VA
- Dec 2012 "From Molecules to Cells, Networks and Seizures: How Does a Gene Cause Epilepsy?", Merritt-Putnam Symposium, American Epilepsy Society Meeting, San Diego, CA
- Feb 2013 "GABA_A Receptor Regulation: following novel pathways to new therapies in Epilepsy", Neurology Grand Rounds, Stanford University School of Medicine, Palo Alto, CA
- March 2013 "Epilepsy Basics" and "Epileptic Encephalopathies", lectures in Genetics of Intellectual Disabilities Course, University of Colorado Anschutz Medical Campus (Kathleen Gardiner, Course Director)
- June 2013 "Neonatal Seizures", Symposium Chair, International Epilepsy Congress, Montreal, Quebec, CA

- June 2013 "Current and upcoming therapies for neonatal seizures", Symposium Lecturer, International Epilepsy Congress, Montreal, Quebec, CA
- May 2013 "Preclinical Development of Disease Modifying Therapy for Epilepsy", First Annual Resident's Choice Lecture, Department of Neurology, Children's Hospital of Philadelphia and University of Pennsylvania, Philadelphia, PA
- May 2013 "Preclinical Development of Disease Modifying Therapy for Epilepsy", Neurosurgery Grand Rounds, University of Colorado School of Medicine, Denver, CO
- May 2013 "Preclinical Development of Disease Modifying Therapy for Epilepsy", Neurology Grand Rounds, Cleveland Clinic, Cleveland, OH
- Aug 2013 "Overview of Epilepsy Genetics", Symposium, Cook Children's Hospital, Ft. Worth, Tx
- Sept 2013 "Preclinical Development of Disease Modifying Therapy for Epilepsy", Neurology Grand Rounds, Einstein University, NY, NY
- Sept 2013 "Preclinical Development of Disease Modifying Therapy for Epilepsy", Neurology Grand Rounds, University of Rochester, Rochester, NY
- Oct 2013 "Emerging challenges of epilepsy genetics to clinical practice", Co-Chair, Symposium, American Neurological Association Annual meeting.
- Nov 2013 "Enduring alterations of transcription in epileptogenesis: Epigenetic or Episodic?", Symposium Speaker, Society for Neuroscience Annual Meeting, San Diego, CA
- Jan 2014 "JAK/STAT inhibition to prevent post-traumatic epileptogenesis", Winter conference on Brian Research, Steamboat Springs, Colorado
- March 2014 "JAK/STAT inhibition to prevent epileptogenesis", American Society of Neurochemistry Annual Meeting, Long Beach, CA
- April 2014 "Catastrophic Epilepsies of infancy and early childhood: What clinical syndromes are we trying to model?", Baylor College of Medicine, Houston, Texas
- August 2014 "Co-Morbidities of Network Dysfunction in Epilepsies and Related Disorders", Discussion Leader and Introduction, Gordon Research Conference on Epilepsy and Neuronal Synchronization, West Dover, VT
- October 2014 "Preclinical Development of Disease Modifying Therapy for Epilepsy", Grand Rounds, Harvard Medical School / Children's Hospital Boston, Boston, MA
- April 2015 "Getting to Cure: Opportunities and Challenges on the Road to Disease Modifying and Preventative Therapies for Epilepsy", Seminar, Boston University, Department of Pharmacology
- May 2015 "Comorbid Cognitive and Neuropsychiatric Disorders of Epilepsy and CNS Disorders with Seizures", Anticonvulsant Drug Development Program Symposium "Therapy Development in the Era of Team Science and Big Data: What will the Future Bring to the Patient with Epilepsy?", Park City Utah.
- June 2015 "Regulating aberrant plasticity after brain injury; following novel pathways to find new treatments", Symposium on Hippocampal Plasticity in Health and Disease, Spring Hippocampal Research Meeting, Taormina, Sicily, Italy
- Sept 2015 "Animal Models of Epilepsy Co-Morbidities: What do they tell us about mechanisms", Parallel Session, International Epilepsy Congress, Istanbul, Turkey
- Sept 2015 "JAK/STAT pathway activation as a molecular biomarker of epileptogenesis and cognitive co-morbidities after brain injury", Workshop on the Neurobiology of Epilepsy, Heybeliada Island, Istanbul, Turkey
- Sept 2015 "Strategic Planning", Leadership Development Symposium, International Epilepsy Congress, Istanbul, Turkey
- Oct 2015 "Cannabinoids", Neurobiology of Disease Symposium, Child Neurology Society Annual Meeting, Washington DC
- Nov 2015 "The challenge and promise of developing disease modifying therapies for epilepsy", George Washington University Epilepsy Grand Rounds, Washington, DC
- Nov 2015 "BDNF and JAK/STAT regulation after brain injury: potential new targets for disease modification in epilepsy", University of Colorado Neuroscience Retreat, Estes Park, CO
- Dec 2015 "Why make the journey: The need for disease modifying and preventative therapies for epilepsy", Presidential Symposium, American Epilepsy Society Annual Meeting, Philadelphia, PA
- Jan 2016 "JAK/STAT Regulation after Brain Injury: Potential New Targets for Disease Modification",

March 2016	Winter Conference on Brain Research, Breckenridge, CO. “Getting to Cure: Opportunities and Challenges on the Road to Disease Modifying Therapies for Epilepsy”, Department of Biomedical Sciences, College of Veterinary Medicine, Iowa State University, Ames, IA
March 2016	“Cannabinoids for Treatment of Pediatric Epilepsy: The Hype And The Evidence”, Marijuana and Cannabinoids: A Neuroscience Research Summit, National Institute for Drug Abuse, NIH Campus, Bethesda, MD
April 2016	JAK/STAT Regulation after Brain Injuries Potential New Targets for Disease Modification for Acquired Epilepsy? Waco, Tx
May 2016	BDNF & JAK/STAT Regulation after Brain Injuries Potential New Targets for Disease Modification for Acquired Epilepsy? University of Aix-Marseille, Marseille, France
Sept 2016	“Getting from mechanism to medicine: Insights from an academic’s journey into translational epilepsy research”, National Institute of Neurological Disorders and Stroke, Office of Translational Research
Nov 2016	“Getting from mechanism to medicine: Insights from an academic’s journey into translational epilepsy research”, Yale School of Medicine, Department of Pediatrics, Special Seminar, New Haven, CT.
Feb 2017	“Getting from mechanism to medicine: Insights from an academic’s journey into translational epilepsy research”, NYU School of Medicine, Pediatric Neurology Grand Rounds, NY, NY
March 2017	“Getting from mechanism to medicine: Opportunities and Challenges in the development of new therapies for epilepsy”, Purdue University, Neuroscience Seminar, Layfayette, IN
April 2017	“Epilepsy at the Cutting Edge: Using Novel Models for Therapeutic Advances”, American Academy of Neurology Annual Meeting, Frontiers of Neuroscience Plenary Session, Boston, MA

Thesis Committee Participation (2005-present)

PhD in Pharmacology	Daniel Roberts
Title:	Molecular Determinants of Epileptogenesis
Degree Granted:	2005
Institution:	Boston University
Prelim in Neuroscience	Keith Schutsky
Title:	Molecular and Cellular Mechanisms by which Beta1 signaling Promotes Contextual Memory Retrieval
Prelim Date:	2006
Institution:	University of Pennsylvania. Pharmacology Graduate Group
Prelim in Neuroscience	Matthew Abramian
Title:	Analyzing cell surface stability and function of extrasynaptic GABA(A) receptors
Prelim Date:	2006
Institution:	University of Pennsylvania, Neuroscience Graduate Group
PhD in Pharmacology	Yinghui Hu
Title:	Differential Regulation of GABRA1 Gene Expression in the CNS: A Role for CREB/ICER Transcription Factors and their Relevance to Temporal Lobe Epilepsy
Degree Granted:	2007
Institution:	Boston University

Prelim in Neuroscience LaTasha Crawford
Title: Characterizing the changes in the 5-HT and non-5HT neuronal circuitry of the DR on response to chronic social stress.
Prelim Date: 2007
Institution: University of Pennsylvania, Neuroscience Graduate Group

Prelim in Neuroscience McLean Pancoast
Title: Role of GABA(A) Receptors in Interneuron Migration
Prelim Date: 2007
Institution: University of Pennsylvania, Neuroscience Graduate Group

PhD in Neuroscience Ingrid Lund
Title: Regulation of the GABA(A) receptor, submitted in an animal model of temporal lobe epilepsy
Degree Granted: 2008
Institution: University of Pennsylvania, Neuroscience Graduate Group

PhD in Pharmacology Rebecca Benham
Title: JaK/STAT mediated regulation of GABRA1 Gene Expression
Degree Granted: 2012
Institution: Boston University

PhD in Neuroscience Shane Rowley (Chair of Thesis Committee)
Title: Mitochondrial mechanisms underlying epileptogenesis
Degree Granted: October 2014
Institution: University of Colorado School of Medicine, Neuroscience Training Program

PhD in Neuroscience Ajay Thomas
Title: ProBDNF signaling in epilepsy
Degree Granted: May 2015
Institution: University of Colorado School of Medicine, Neuroscience Training Program

PhD in Neuroscience Daniel Raible
Title: JaK/STAT signaling in post-traumatic epilepsy
Degree Granted: October 2014
Institution: University of Colorado School of Medicine, Neuroscience Training Program

PhD in Neuroscience Jennifer Pearson
Title: Targeting Gamma-Ketoaldehydes to Attenuate Cognitive Deficits Associated with Epileptogenesis
Degree Granted: March 2016
Institution: University of Colorado School of Medicine, Neuroscience Training Program

Research projects supervised/mentored

Ingrid Lund, PhD, Thesis student, University of Pennsylvania, 2003-2008
Topic: Regulation of GABAR Alpha1 subunit in an animal model of temporal lobe epilepsy.
(*Received individual NRSA grant from NINDS, providing \$120,000 over 3 years to the recipient)

Eric Marsh, MD, PhD*, Post-Doctoral Fellow 7/04-6/06, Children's Hospital of Philadelphia, Instructor 7/06-6/08, University of Pennsylvania School of Medicine (Presently Assistant Professor), Developmental Expression of Topic: Neurotransmitter Receptors in Migrating Inhibitory Neurons

(*Received Epilepsy Foundation Research-in-Training Fellowship for Clinicians, 7/04-6/05 (\$40,000), American Epilepsy Society Young Investigator Award 7/05-6/06 (\$50,000), Alavi-Dabiri Postdoctoral Fellowship Award 7/04 (\$3000) and New Investigator Award 7/07-6/08 (\$26,700) from the Mental Retardation Developmental Disabilities Center at CHOP 7/04-6/05, and a K12 Pediatric Scholars Award 7/05-6/07 (\$200,000; Alan Cohen PI.)

Kayla Metzger, Neuroscience Graduate Rotation Student, University of Pennsylvania, Fall 2006

Topic: ARC promoter activity in dentate gyrus after status epilepticus

Carolyn Walsh, Undergraduate Summer Research Internship- Smith College, Summer 2006

Topic: Changes in Glucocorticoid Receptor Expression in Dentate Gyrus and changes after Early-life Status Epilepticus

Arnav Mukherjee, Undergraduate Independent Study Research- Bioengineering, University of Pennsylvania, Summer 2006-Spring 2007

Topic: Analysis of EEG to detect Biomarkers for Spontaneous Seizures

Ernest Gomez, Undergraduate Independent Study Research- Bioengineering, University of Pennsylvania, Summer 2006-Spring 2007

Topic: Arx Gene Excision: a Potential Mouse Model of Infantile Spasms

Meredith Mayo, Undergraduate Honors Thesis Research- Biology Program, University of Pennsylvania, Spring 2006-Spring 2007

Topic: Glucocorticoid Receptor Expression in Hippocampal Dentate Gyrus and changes after Early-life and Adult Status Epilepticus

Leslie Hope Tanyu, Neuroscience Graduate Rotation Student, University of Pennsylvania, Fall 2007

Topic: EGR3 regulation of ARC and GABRA4 in Hippocampal Dentate Granule Cells

Paulette McRae*, Post-Doctoral Research Fellow, Children's Hospital of Philadelphia, 11/07-present

Topic: Effects of Early-Life Seizure activity on development of the Extracellular Matrix.

(*Received Neurodevelopmental Disabilities Post-Doctoral Research Training Fellowship (\$40,000), 1/08-12/10)

Lauren Frey, M.D., Assistant Professor of Neurology, University of Colorado School of Medicine, 7/08-present. Topic: Mechanisms of Post-Traumatic Epilepsy

Yogendra Raol, Ph.D., Assistant Professor of Pediatrics, University of Colorado School of Medicine, 10/08-present

Topic: Development of novel therapies for Neonatal Seizures

(*Awarded a CCTSI Mentored Pilot Project Grant March 2009; Epilepsy Foundation Research Award Jan 2010)

Marco Gonzalez, PhD., Instructor of Pediatrics, University of Colorado School of Medicine, 10/08-present

Topic: Regulation of GABA(A) receptor assembly and trafficking in Epilepsy

(*applied for K01 award 6/09; scored 17, highly likely to be funded)

Dan Arndt, MD., Epilepsy Fellow, The Children's Hospital, Aurora CO, 7/1/09-6/30/10

Topic: "Continuous EEG monitoring in Pediatric moderate-severe traumatic brain injury"

(*Received a National EpiFellows grant for \$20,000)

Heidi Grabenstatter, PhD., Post-Doctoral Fellow, University of Colorado School of Medicine, 9/09-present

Topic: Inhibition of the JAK/STAT pathway effects on chronic epilepsy

(*Received Epilepsy Foundation Post-doctoral fellowship 1/10- \$45,000)

Dan Raible, Biomedical Sciences Program PhD student rotation, 11/09-2/10
Topic: GABA(A) receptor trafficking in Epilepsy

Ajay Thomas, MSTP rotation student, University of Colorado School of Medicine, 10/09-12/09.
Topic: Role of the JAK/STAT pathway in Neonatal Hypoxia Induced Seizures.

Ajay Thomas, MSTP/Neuroscience thesis student, University of Colorado School of Medicine, 1/10-5/15
Topic: Role of proNeurotrophin signaling in cell death and GABA(A) receptor regulation during epileptogenesis (*Received NINDS F31 Pre-Doctoral Fellowship)

Heidi Grabenstatter, Post-doctoral Fellow, University of Colorado School of Medicine, 4/01/2013-3/31/2018
Topic: Altered phosphorylation of connexin 43 contributes to increased gap-junction coupling. This project explored the role of altered phosphorylation of connexin 43 and gap--junction coupling in epilepsy development (*Received K22 award from NINDS)

Dan Raible: Neuroscience Training Program Thesis Student, 06/10 – 10/14
Topic: Role of JAK/STAT Signaling in Post-traumatic Epilepsy (*Received CTSA TL1 award)

Andrew Carrel, PhD., Post-Doctoral Fellow, University of Colorado School of Medicine, 9/12-4/16
Topic: Development of novel JAK/STAT inhibitors for disease modification in epilepsy

Christopher Ruzas, MD., Pediatric Critical Care Fellow, University of Colorado School of Medicine, 7-12/15
Topic: Role of proBDNF signaling in GABA(A) receptor regulation and pharmacoresistance during status epilepticus.

Grant Support

Ongoing Research Support

1K12NS089417-01 (NINDS) Amy Brooks-Kayal and Tim Benke (PIs) 7/1/2015-6/30/2020
Colorado Neurological Sciences Academic Development Award

This proposal will provide training and career development opportunities for early career Pediatric Neurologists focused in basic and translational science research and multidisciplinary, integrated, team science required for translation of basic discoveries into new therapies

R01 NS051710-11(NINDS) Amy Brooks-Kayal and Shelley Russek (PIs) 9/01/15-10/31/2019
GABA(A) Receptor Subunit Regulation in Epileptogenesis

The major goals of the proposed project is to elucidate the molecular mechanisms of BDNF and JaK/STAT regulation after status epilepticus, downstream gene regulation and functional impact.

Completed Research Support

Last 3 years:

R21NS083057 (NINDS) Amy Brooks-Kayal and Shelley Russek (PIs) 1/01/2014-12/31/2016
Development of novel JAK/STAT inhibitors for Epilepsy prevention and treatment

The major goal of this project is to optimize novel JAK/STAT inhibitors for epilepsy disease modification

W81XWH-11-1-0501 (DOD) Amy Brooks-Kayal (PI) 7/1/2011—6/30/2014
JAK/STAT Inhibition to prevent post-traumatic epileptogenesis

Goals of the study were to examine the role of the JaK/STAT pathway in post-traumatic epileptogenesis and determine new therapeutic targets for the prevention/treatment of epilepsy following traumatic brain injury.

1K01 NS069583 (NINDS) Marco Gonzalez (PI)/Brooks-Kayal (Mentor) 4/1/2010-3/31/2015
 GABA(A) Receptor Trafficking And Epileptogenesis
 This proposal will explore the molecular mechanisms regulating GABA-A Receptors (GABAAR) assembly and trafficking during epileptogenesis.

1F31NS078844-01A1(NINDS) Ajay Thomas (PI)/Brooks-Kayal (Mentor) 4/1/2013-6/30/2015
 Proneurotrophin signaling in epilepsy
 This proposal will explore the role of pro-BDNF and p75 Neurotrophin receptors in epileptogenesis

R01 NS05171-10 (NINDS) Amy Brooks-Kayal and Shelley Russek (PIs) 1/01/2006-8/31/2015
 GABA(A) Receptor Subunit Regulation in Epileptogenesis
 The major goals of this project are to elucidate the molecular mechanisms underlying the down regulation of the GABA(A) receptor alpha 1 subunit after status epilepticus.

CNS Collaborative Research Amy Brooks-Kayal (Co-PI) 1/1/2013—6/30/2014
 in Translational Neuroscience (CCTSI, University of Colorado)
 Defining signaling pathway perturbations in epilepsy
 The studies used high-throughput protein analysis to analyze activation of signaling pathways in brain tissue from pediatric patients with medically intractable epilepsy & developmental epilepsy models in rodents.

Past 5-17 years:

- 6/11-2/12 Optimizing JAK/STAT inhibitors for primary prevention of epilepsy. Colorado Center for Drug Discovery (C2D2) Research Award; PI, 3% Effort, Annual Total: \$40,000.
- 7/10-12/11 JaK/STAT inhibition to prevent epilepsy development and progression. Citizens United for Research in Epilepsy (CURE) PI, 5% effort, Total: \$50,000
- 01/10-12/10 Inhibition of the JAK/STAT pathway effects on chronic epilepsy, Postdoctoral Fellowship Award; mentor to Heidi Grabenstatter (PI), Epilepsy Foundation, Total: \$45,000
- 01/10-12/10 Role of p75 Neurotrophin receptor signaling in epileptogenesis, American Epilepsy Society, PI, 5% effort, Total: \$50,000
- 04/06-03/11 Molecular Determinants of GABAR Gene Regulation, NIH R01; Co-PI, 9% effort, NINDS, Total: \$242,578
- 12/04-11/09 GABA Receptors in Developmental Epileptogenesis, NIH R01; PI, 40% effort, NINDS, Total: \$180,653 (No cost extension 11/09-11/10)
- 12/05-04/10 GABA(A) Receptor Subunit Regulation in Epileptogenesis, NIH R01; PI, 20% effort, NINDS, Total: \$235,350
- 07/06-06/08 Neurological Sciences Academic Development Award (K12), Training grant; Co-PI, 0% effort, NINDS, Total: \$119,000
- 07/98-06/08 Neurodevelopmental Disabilities Institutional (K12) Training Grant, Training Grant; Mentor, 0% effort, NICHD, Total: \$203,786
- 09/06-04/08 KCNQ channel opener efficacy for neonatal seizures, R21; Co-PI, 15% effort, NINDS, Total: \$163,981
- 01/03-07/06 Cellular Basis for Individual Vulnerability to Stress, Federal Grant; Co-I, 15% effort, Navy, Total: \$256,637
- 07/04-06/05 Behavioral and Electro-Physiological Characterization of a Novel Murine Model of Infantile Spasms, Private Foundation Grant; PI, 5% effort, Ethyl Brown Foerderer Fund for Excellence, Total: \$39,600
- 07/04-06/05 Regulation of Seizure-induced Changes in GABA(A) Receptor Expression, Private Foundation Grant; PI, 3% effort, American Epilepsy Society, Total: \$50,000
- 02/02-01/05 GABA(A) Receptor Gene Transfer to Prevent Epileptogenesis, Federal Grant (R21); Co-PI,

	17% effort, NINDS, Total: \$225,000
01/02-12/03	Molecular Characterization of Newly-born DGN in Pediatric Temporal Lobe Epilepsy, Private Foundation Grant; PI, 5% effort, Child Neurology Foundation, Total: \$50,000
04/99-03/04	GABA(A) Receptors in Developmental Epileptogenesis, NIH R01; PI, 40% effort, NINDS, Total: \$250,000
01/97-12/01	Developmental Regulation of GABA(A) Receptor Expression, Federal Grant (K08); PI, 75% effort, NINDS, Total: \$106,525
10/99-09/00	GABA(A) Receptors in Developmental Epileptogenesis, Private Foundation Grant; PI, 5% effort, Child Neurology Society, Total: \$20,000
07/99-06/00	Molecular Mechanisms of Developmental Epileptogenesis, Private Foundation Grant; PI, 20% effort, Epilepsy Foundation, Total: \$40,000
07/96-06/97	Developmental Regulation of GABA(A) Receptor Expression, Private Foundation Grant; PI, 20% effort, Research Foundation, Total: \$15,000
07/95-06/96	Transcriptional Regulation of GABA(A) Receptor Subunit Expression During Development, Private Foundation Grant; PI, 20% effort, McCabe Fund, Total: \$20,000
09/95-08/98	Molecular Aspects of Pediatric Science-CHRC, Training Grant (K12); Investigator, 25% effort, NIH, Total: \$75,000

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Research Publications, peer reviewed

1. Hohmann CF, **Brooks, AR** and Coyle JT: Neonatal Lesions of the Basal Forebrain Result in Abnormal Cortical Development. Dev Brain Research Vol. 42: 253-264, 1988.
2. **Brooks-Kayal, AR** and Pritchett DB: Developmental Changes in Human GABAA Receptor Subunit Composition. Annals of Neurology Vol. 34: 687-693, 1993.
3. **Brooks-Kayal, AR**, Liu GT, Menacker S, Heher, KL, Katowitz JA and Bilaniuk LT: Tonic Pupil and Orbital Glial-Neural Hamartoma in Infancy. Am J Ophthalmol Vol. 119: 809-811, 1995.
4. Amin J, **Brooks-Kayal AR** and Weiss DS: Two Tyrosine Residues on the alpha1 Subunit are crucial for Benzodiazepine Binding and Allosteric Modulation of GABAA Receptors. Mol Pharmacol Vol. 51: 833-841, 1997.
5. **Brooks-Kayal AR**, Jin H, Price M and Dichter MA: Developmental Expression of GABAA Receptor Subunit mRNAs in Individual Hippocampal Neurons In Vivo and In Vitro. J Neurochem Vol. 70: 1017-1028, 1998.
6. **Brooks-Kayal AR**, Munir M, Jin H and Robinson MB: The Glutamate Transporter, GLT-1, is expressed in Cultured Hippocampal Neurons. Neurochemistry International Vol. 33: 95-100, 1998.
7. **Brooks-Kayal, AR**, Shumate MD, Jin H, Rikhter TY, Coulter DA: Selective Changes in Single Cell GABAA Receptor Expression and Function in Temporal Lobe Epilepsy. Nature Medicine Vol. 4: 1166-1172, 1998.
8. Bergqvist AGC, Chee CM, Lushka LM and **Brooks-Kayal AR**: Treatment of Acquired Epileptic Aphasia with the Ketogenic Diet. J. Child Neurology Vol. 14: 696-701, 1999.
9. **Brooks-Kayal AR**, Shumate MD, Lin DD, Jin H, Rikhter TY, Coulter DA: Human neuronal gamma-aminobutyric acidA receptors: Coordinated subunit mRNA expression and functional correlates in individual dentate granule cells. J. Neuroscience Vol. 19: 8312-8318, 1999.

10. Dlugos DJ, Moss E, Duhaime AC and **Brooks-Kayal AR**: Language-related cognitive declines after left temporal lobectomy in children. *Pediatr Neurol* Vol. 21: 444-9, 1999.
11. **Brooks-Kayal AR**, Shumate MD, Jin H, Kelly ME, Rikhter TY, Coulter DA: GABAA Receptor subunit expression predicts functional changes during postnatal development of Dentate Granule Cells. *J Neurochem* Vol. 77: 1266-1278, 2001.
12. Raol YR, Lynch DR, **Brooks-Kayal AR**: Role of Excitatory Amino Acids in Developmental Epilepsies. *Mental Retardation and Developmental Disabilities Research Reviews* 7: 254-260, 2001.
13. Crino PB, Jin H, Robinson MB, Coulter DA, **Brooks-Kayal AR**: Increased Expression of The Neuronal Glutamate Transporter (EAAT3/EAAC1) In Hippocampal and Neocortical Epilepsy. *Epilepsia* Vol. 43(3): 211-218, 2002.
14. Porter BE, **Brooks-Kayal AR**, Golden JA: Disorders of Neuronal Development and Epilepsy. *Archives of Neurology* 59: 361-365, 2002.
15. Hsu F, Zhang G, Raol YH, Valentino R, Coulter DA, and **Brooks-Kayal, AR**: Repeated handling with maternal separation in the neonatal period permanently alters hippocampal GABAA receptors and behavioral stress responses. *Proc Natl Acad Sci USA*. 100(21): 12213-12218, 2003.
16. Raol YH, Budreck EC, **Brooks-Kayal AR**: Epilepsy After Early Life Seizures Is Independent of Structural Hippocampal Injury. *Annals of Neurology* Vol. 53: 503-511, 2003.
17. Kao A, Mariani J, McDonald-McGinn DM, Maisenbacher MK, **Brooks-Kayal AR**, Zackai EH, and Lynch DR: Increased Prevalence of Unprovoked Seizures in Patients with a 22q11.2 Deletion. *American J. of Medical Genetics* 129A(1): 29-34, 2004.
18. Porter BE, Maronski M, **Brooks-Kayal AR**: Fate of Newborn Dentate Granule Cells after Early Life Status Epilepticus. *Epilepsia* 45(1): 13-19, 2004.
19. Zhang G, Raol YH, Hsu FC, Coulter DA, **Brooks-Kayal AR**: Effects of Status Epilepticus on Hippocampal GABAA Receptors are Age-Dependent. *Neuroscience* 125(2): 299-303, 2004.
20. Zhang G, Raol YH, Hsu F, and **Brooks-Kayal AR**: Long-term Alterations in Glutamate Receptor and Transporter Expression Following Early-Life Seizures are Associated with Increased Seizure Susceptibility. *J Neurochem* Vol. 88: 91-101, 2004.
21. Raizen D. M., **Brooks-Kayal A.R.**, Steinkrauss L., Tennekoon G.I., Stanley C.A., and Kelly A.: Central nervous system hyperexcitability associated with glutamate dehydrogenase gain of function mutations. *Pediatrics* 146(3): 388-394, March 2005.
22. Porter BE, Zhang G, Celix J, Hsu FC, Raol YSH, Telfeian A, Gallagher PR, Coulter DA, **Brooks-Kayal AR**: Heterogeneous GABA(A) Receptor Subunit Expression in Pediatric Epilepsy Patients. *Neurobiology of Disease* 18(3): 484-489, April 2005.
23. **Brooks-Kayal AR**: Rearranging Receptors. *Epilepsia* Vol. 46(Suppl.7): 29-38, 2005.
24. Raol YSH, Zhang G, Budreck EC, **Brooks-Kayal AR**: Long-term Effects of Diazepam and Phenobarbital Treatment during Development on GABA Receptors, Transporters and GAD. *Neuroscience* 132(2): 399-407, 2005.
25. Roberts D, Raol YSH, Budrick E, Lund I, Passini M, Wolfe J, **Brooks-Kayal AR***, Russek SJ*: Egr3 stimulation of GABRA4 promoter activity as a mechanism for seizure-induced upregulation of GABA(A) receptor $\alpha 4$ subunit expression. *Proc Natl Acad Sci USA* Vol. 102(33): 11894-11899,

2005 (*co-senior authors).

26. Frye C, Rhodes M, Raol YSH, **Brooks-Kayal AR**: Early postnatal stimulation alters pregnane neurosteroids in the Hippocampus. Psychopharmacology 186(3): 343-50, 2006.
27. Porter B, Cui X, and **Brooks-Kayal AR**: Status epilepticus differentially alters AMPA and kainate receptor subunit expression in mature and immature dentate granule neurons. Eur J. Neurosci 23(11): 2857-63, 2006.
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29. Raol YSH, Zhang G, Lund I, Porter B, Maronski M and **Brooks-Kayal AR**: Increased GABA (A) receptor alpha 1 subunit expression in hippocampal dentate gyrus after early-life status epilepticus. Epilepsia 47(10): 1665-1673, 2006.
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31. Marsh E, **Brooks-Kayal AR**, Porter B: Seizures and Antiepileptic Drugs: Does Exposure Alter Normal Brain Development? Epilepsia 47(12): 1999-2010, 2006.
32. Marsh ED, Minarcik J, Campbell K, **Brooks-Kayal AR**, Golden JA: FACS-array gene expression analysis during early development of mouse telencephalic interneurons. Dev Neurobiol. 68(4):434-45, 2008.
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34. Lund IV, Hu Y, Raol YSH, Benham RS, Faris R, Russek SJ, **Brooks-Kayal AR**: BDNF selectively regulates GABA-A receptor transcription by activation of the JAK/STAT pathway, Science Signaling, 1([1]41ra9), 2008. NIHMS 95677.
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- and disease-modifying treatments affecting cognitive and neuropsychiatric comorbidities of epilepsy. *Epilepsia*. 2013 Aug;54 Suppl 4:44-60. doi: 10.1111/epi.12298. Review.
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- epilepticus in mice are associated with reduced proBDNF cleavage machinery, *eNeuro*. 2016 Mar 30;3(1). pii: ENEURO.0020-15.2016. doi: 10.1523/ENEURO.0020-15.2016. PMID: 27057559
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69. Simonato M, Iyengar S, Brooks-Kayal A, Collins S, Depaulis A, Howells DW, Jensen F, Liao J, Macleod MR, Patel M, Potschka H, Walker M, Whittemore V, Sena ES. Identification and characterization of outcome measures reported in animal models of epilepsy. Protocol for a systematic review of the literature. *Epilepsia*. 2016 *In Press*

Research Publications, non-peer reviewed

1. Dlugos DD and **Brooks-Kayal AR**: A 4-Year-Old with Pica, Progressive Incoordination and Decreased Responsiveness. *Semin. Pediatr. Neurol* Vol. 6: 164-167, 1999.
2. Strober JB, Zuppa A, and **Brooks-Kayal, AR**: A 15-Year-Old with Back Pain, Fever, and Leg Numbness. *Semin. Pediatr. Neurol* Vol. 6: 190-195, 1999.

Abstracts (Last 5 years)

1. **Brooks-Kayal AR**, Benham R, Raol YSH, Gonzalez M, and Russek SJ. BDNF signaling to the JaK/STAT pathway via the p75 Neurotrophin receptor. *Winter conference on Brain Research*. Breckenridge, CO, 2010
2. Gonzalez M, Cruz del Angel Y, Russek SJ, **Brooks-Kayal AR**, Grabenstatter H. WP1066 slows the progression of pilocarpine-induced epilepsy by inhibiting the phosphorylation of STAT3, *American Epilepsy Society*, San Antonio, TX 2010.
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