

Date of Preparation October 1, 2021

DIANE C. CHUGANI, PH.D.

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Wilmington, DE 19803

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PERSONAL DATA:

Date of Birth: July 13, 1956
Washington D.C.
Marital Status: married, 2 children

EDUCATION:

1979 B.A. (cum laude), Psychology
University of Maryland, College Park, MD
1986 Ph.D., Pharmacology
University of California, Los Angeles

TRAINING:

1986-1988 Post-doctoral Fellow, Biological Chemistry
University of California, Los Angeles

FACULTY APPOINTMENTS:

1988-1992 Assistant Professor
Department of Radiological Sciences
Division of Nuclear Medicine and Biophysics
University of California, Los Angeles
1992-1993 Assistant Professor
Department of Pharmacology
University of California, Los Angeles
10/1/93 - 8/17/98 Assistant Professor
Departments of Pediatrics and Radiology
Wayne State University
Detroit, MI

8/18/98 - 8/21/99	Associate Professor Departments of Pediatrics and Radiology Wayne State University Detroit, MI
8/22/99 – 8/19/04	Associate Professor with tenure Departments of Pediatrics Wayne State University Detroit, MI
8/19/04-11/30/15	Professor with tenure Departments of Pediatrics Wayne State University Detroit, MI
11/01-2/07	Co-Director, PET Center Children's Hospital of Michigan
2/07-11/30/15	Director Translational Imaging Laboratory Children's Hospital of Michigan
3/08-11/30/15	Chief Division of Clinical Pharmacology and Toxicology Children's Hospital of Michigan
1/09-11/30/15	Director Children's Hospital of Michigan Autism Center Renamed University Pediatricians Autism Center
12/1/15-present	Professor, Voluntary appointment Departments of Pediatrics Wayne State University Detroit, MI
12/1/15-7/13/18	Principal Scientist Director of Neuroscience Research Nemours AI DuPont Hospital for Children Wilmington, DE
12/1/15-present	Affiliate Professor Department of Chemistry and Biochemistry University of Delaware Newark, DE
10/1/2016-present	Professor with tenure Communication Sciences and Disorders

University of Delaware
Newark, DE

MAJOR PROFESSIONAL SOCIETIES:

Executive Committee, International Society for Autism Research (2001, 2002)
Member, New York Academy of Science (2003)

HONORS/AWARDS:

NIH (NICHD) Mental Retardation Center Trainee Fellowship, UCLA (1986-1988)
Milestone Award from the Mental Illness Research Association (1997)
Ring of Hope Award from the Pheasant Ring Foundation (2001)
Executive Committee, International Society for Autism Research (2001, 2002)
Invited panelist, The White House, April 27, 2011
Member, Dana Alliance for Brain Initiative, 2011 to present

SERVICE:

Committee Service:

Member, University of Delaware Graduate Studies Committee, (2021-present)

Chair, Department of Communication Sciences and Disorders, Promotion and Tenure Committee (2021-present)

Member, University of Delaware College of Health Sciences, Promotion and Tenure Committee (2020)

Member, Department of Communication Sciences and Disorders, Ph.D. Graduate Student Committee (2020-present)

Member, College of Health Sciences, Employee and Student Training subcommittee of the CHS Diversity & Inclusion Committee (2020-present)

Member, University of Delaware, Institutional Review Board (2019-present)

Executive Committee Member, University of Delaware, Graduate College Council (2019-2020)

Member, University of Delaware, Pharmaceutical Sciences Committee (2017-2019)

Internal Advisory Council Alternate, Delaware Health Sciences Alliance (2016-2019)

Member, University of Delaware Research Fund Research Committee (2016)

Member, Department of Communication Science and Disorders, Search Committee (2016-2019)

WSU University Research Grant Committee—Life Sciences Subcommittee (2013-2015)

WSU, Co-Chair, Faculty Development Workgroup, School of Medicine Strategic Plan (2011)

WSU, Chair, Autism Working Group, Dept. of Pediatrics Strategic Plan (2008)

WSU CTSA Novel Research Initiatives Working Group (2007)

Member, Search Committee of Director of the Children's Research Center of Michigan (2005-2006)

WSU, Member, Search Committee for Genomics Core Director (2004)

WSU, Member, Search Committee for Pediatric Imaging Chief (2003)

Member, Wayne State University Imaging Research Oversight Committee (2001 to 2015)

Member, Children's Research Center of Michigan Research Committee (February 2001 to 2003)

WSU, Member, Radioactive Drug Research Committee (RDRC) (1994 to 2015)

WSU, Member, Department of Pediatrics Research Committee (July 1996-December 1998)

Coordinator, Department of Pharmacology Seminar Series, UCLA (1992-1993)

Member, Department of Pharmacology, UCLA, Graduate Curriculum Committee, UCLA (1992-1993)

Member, Department of Pharmacology, UCLA, Graduate Admissions Committee (1992-1993)

Member, Department of Pharmacology, UCLA, Search committee for recruitment of 3 faculty members at Asst. Professor level (1992-1993).

Member, Graduate Program in Neuroscience, UCLA, Admissions Committee (1990-1993).

Member, Department of Biomedical Physics, UCLA, Graduate Admissions Committee, (1989-1992)

Member, Department of Biomedical Physics, UCLA, Graduate Curriculum Committee, (1990-1992)

Scientific Advisory Boards:

Member, Research Council, Epilepsy Foundation of America, July 2006 to 2012.

Member, Professional Advisory Board, August 1999 to 2008.

Chair, Scientific Advisory Board, February 2000 to 2007.

The Sturge-Weber Foundation.

Member, Scientific Advisory Board for Autism Society of America, May 1997 to 2000.

Member, Scientific Advisory Board for Cure Autism Now, October 1998 to 2007 (CAN merged with Autism Speaks).

Member, Scientific Advisory Board for Autism Speaks, 2007 to 2008.
Member, Treatment Advisory Board for Autism Speaks, 2008 to present.

Member, Scientific Advisory Board for the Tuberous Sclerosis Association, August 1999 to present.

Member, Professional Advisory Board for Homes for Autism (previously the Pheasant Ring Foundation), February 2002 to 2015.

Member, Wayne County Autism Task Force (2012-2015)

Board member, Mental Illness Research Association, Local Michigan Foundation (2013-2015)

Scientific Meeting Organization

Co-organizer, Sturge-Weber Consensus Conference, June 1999

Program committee for the International Meeting for Autism Research (IMFAR), November 2001, 2003; May 2004

Program committee for International Meeting for IASSID—International Association for the Scientific Study of Intellectual Disability, June 2004

Co-Organizer for Autism Assessment and Treatment in Africa, Accra, Ghana, April 3-6, 2013, (supported by NIH R13 grant Dual PI)

NIH and DOD Grant Review:

Regular member, NIH Brain Disorders and Clinical Neuroscience (BDCN-2) Study Section 1998-2003.

Appointed to BDCN Member Conflict Special Emphasis Panel, November 2002.

Appointed to Department of Defense review for RFA regarding tuberous sclerosis complex. November 2002, 2003.

Appointed to NIH Special Emphasis Panel to review grants for the Innovative Autism RFA, July 24, 2001.

Appointed to NIH Special Emphasis Panel to review the program project grant "Program for Study of Neuroreceptor Binding in Man" submitted by Johns Hopkins PET Center, June 26-27, 1994.

Appointed to NIH Special Emphasis Panel to review program project grants in response to RFA on Autism. April 1997.

Appointed to NIH Special Emphasis Panel to review program project grant on Dyslexia at Bowman Gray School of Medicine, Wake Forest University, December 1997.

Appointed to ZMH1 BRB P05, NIMH Conte Centers For The Study Of Schizophrenia, March 16-17, 2004

Appointed to Department of Defense review for RFA regarding clinical trials for neurofibromatosis. July 2004.

NIH Site Visits for GCRC grants at Stanford University (November 2005) and UCLA (December 2005)

Ad Hoc Reviewer R13 grants for NIMH (March 2006)

Ad hoc reviewer, NIH NSD-B Review Committee (June 2007)

Ad hoc reviewer, NIH SEP (June 2008)

Reviewer NIMH Autism ARRA Editorial Board Review (June 19, 2009), NINDS Grand Opportunities "GO" Grant Review (July 31, 2009 and September 2, 2009)

NIH/NINDS Special Emphasis Panel member, "Centers Without Walls for Collaborative Research in the Epilepsies: Developing Disease Modifying or Prevention Therapies (U54)" RFA-NS-15-001, New Orleans, LA, March 2-3, 2015.

NIH/NIBIB Special Emphasis Panel and site visit, P41 Biotechnology Resource Center review, Washington University in St. Louis, St. Louis, MO, November 19-20, 2015.

NIH Ad hoc reviewer, Child Psychopathology and Developmental Disorders Study Section, Bethesda, MD, June 2015, February 25, 2016.

Cell and Molecular Biology (CMB) peer review panel of the 2016 Tuberous Sclerosis Research Program (TSCR) for the Department of Defense Congressionally Directed Medical Research Programs (CDMRP), September, 2017

Appointed to Autism Research Program Integration Panel for the US Army Medical Research and Materiel Command (member, 2009-present), (Chair, 2020-present)

Foundation and International Grant Review:

Review grant proposals for the Sturge-Weber Foundation (2001)

Review grant proposals for the National Tuberous Sclerosis Association (1995, 2002)

Review grant proposals for CAN "Cure Autism Now" (December 1997, January 1999, January 2000, February 2001, January 2002, February 2003, September 2004, September 2005, September 2006)

Reviewer for Medical Research Council of Canada (November 1998)

Reviewer for Thrasher Research Fund (March 2001)

Reviewer for the McKnight Foundation (October 2001, 2003)

Reviewer for the PPP Foundation, UK (April 2003)
Reviewer for the Action Research Foundation, UK (July 2003)
Reviewer for Epilepsy Foundation of America (November 2005, November 2010, 2012, 2013)
Review grant proposals for Autism Speaks (May 2007, March 2008, May 2009, September 2011)
Chair grant review panels for Autism Speaks (July 2012, July 2013, May 2014)
Chaired Scientific Merit Review Committee, New Jersey Governor's Council for Medical Research and Treatment of Autism (April 2012, 2013, 2014, 2105)
Review for Genome Canada (2017)
Review for Medical Research Council in the UK as part of the MRC Newton Fund South Africa Mental Health Call (July 2018).

Ad hoc reviewer:

Cerebral Cortex
Journal of Biological Chemistry
Developmental Brain Research
Journal of Neuroscience Research
Archives of General Psychiatry
Journal Cerebral Blood Flow and Metabolism
Epilepsia
Annals of Neurology
Journal of Nuclear Medicine
Journal of Neuroscience
Journal of the Neurological Sciences
Neurology
Journal of Neurochemistry
NeuroImage
Archives of Neurology
Journal of Neurophysiology
Brain
Biological Psychiatry
Proceedings National Academy of Sciences
International Journal of Neuropsychopharmacology
New England Journal of Medicine
Lancet
Journal of Autism and Developmental Disorders
American Journal of Psychiatry
Synapse
Brain Research
Molecular Autism

Presented at EXPLORATHON 1995, 1996, and 1997; Program sponsored by Cranbrook and AAUW in which women scientists present their work to high school girls interested in careers in science.

Brain Awareness Week, March 2000, Presentation at West Maple Elementary School, Birmingham School District, Michigan.

TEACHING:

Taught at University of Delaware:

CSCD 815/816 Communication Sciences Research Methods and Ethics (1 credit)(2020-present)
Lectures in 2 Speech and Language Pathology classes for masters level students (2016-2017)
Capstone advisor for 3 masters SLP students (2017-present)
Faculty advisor for 3-4 masters SLP students (2018-present)

Mentor for Zhenghan Qi, Ph.D., Assistant Professor in Linguistics and Cognitive Sciences
Mentor for Kaja K. Jasińska, Ph.D., Assistant Professor, Linguistics and Cognitive Science
Mentor for Rebecca Hunting Pompon, Assistant Professor, Communication Sciences and Disorders

Taught at Wayne State University:

PYC 7150, 2 hours lectures on autism, July 2015

PYC 7890
4 hours, Journal article discussions, April 2014

Department of Pediatrics, Faculty/Fellow Lecture: "Pharmacotherapy in autism" April 12, 2006

Department of Pediatrics Grand Rounds, "Autism" April 14, 2006.

WSU Department of Psychiatry and Psychology, Hawthorne Center, Novi, MI invited lecture
"Autism"

PYC 7020
1.5 h Lecture entitled "Autism"
December 11, 2001

PYC 7020
1.5 h Lecture entitled "Autism"
February 8, 2000

Bio 7660--Neurobiology 2
4 x 1.5 hour lectures
March 23, 25, 30, April 1, 1999
Brain imaging: PET and MRI

PYC 7020
1.5 h Lecture entitled "Autism"
February 11, 1999

BMB 701

Application of basic biochemistry principals to PET scanning

1 lecture--30 minutes

November 17, 1998

Bio 7660--Neurobiology 2

3 x 1.5 hour lectures

March 26, 1998--Brain imaging: PET

April 2, 1998--Brain imaging: Motor learning

April 7, 1998--Brain imaging: Motor learning

PYC 7020

1.5 h Lecture entitled "Autism"

February 12, 1998

Psychopharmacology course for PGY-II Psychiatry Residents

1 h Lecture entitled "Application of PET to Psychiatry"

March 4, 1998

Didactic course for PGY-II Radiology Residents

1 h Lecture entitled "Clinical and research study of the brain with PET"

March 18, 1998

Neuroscience Survey 719, 2 hours, 50 students, "Neuroimaging"

December 1997, 1996, 1995

February 1996, Gave 2 lectures to Neurology Residents: "Excitatory and Inhibitory Neurotransmitters" and "Antiepileptic Drugs"

September 1994, Gave 3 lectures to Neurology Residents: "Neuronal Differentiation and Migration," "Formation, Structure and Function of Synapses" and "Blood Brain Barrier"

January 1994, Gave 2 lectures to Neurology Residents: "Antiepileptic Drugs: Mechanisms of Action" and "Antiepileptic Drugs: Pharmacokinetics and Drug Interactions"

Taught at UCLA:

Molecular Neurobiology 203M: Fall Quarter 1992, Taught one-half course (15 one hour lectures). This is a graduate course required for all first year Neuroscience graduate students.

Neurochemistry 203M: Fall Quarter 1991, Gave 8 lectures covering blood brain barrier, neurotransmitter synthesis, receptors. This is a graduate course required for all first year Neuroscience graduate students.

Pharmacology 200C: Spring Quarter 1993, Gave 3 lectures covering dopaminergic neurotransmission. This is a graduate course required for all second year pharmacology graduate students.

Developed course "Radiologic Anatomy and Physiology" which is now part of the Biomedical Physics core curriculum.

Fall Quarter 1988 Gave Interactive Teaching Course (IAT) to Freshman Medical Students entitled "Neurological and Psychiatric Disease with Positron Emission Tomography."

Fall Quarter 1989 Gave Interactive Teaching Course (IAT) to Sophomore Medical Students entitled "Positron Emission Tomography."

Member, Executive Committee for newly developed doctoral graduate program, "Translational Neuroscience Program," May 25, 2006 to September 2011.

Mentor for K12 award for Sujatha Kannan, M.D., Assistant Professor of Pediatrics (Division of Critical Care)

Mentor for K08 award for Sujatha Kannan, M.D., Assistant Professor of Pediatrics (Division of Critical Care)

Masters Thesis advisor for:

Jennifer Lee	Basic Medical Sciences (2000-2001)
Cynthia Husk	Basic Medical Sciences (2000-2001)

Ph.D. Thesis advisor for:

Sreenivasa Chandana	Pharmacology (Sept. 2001 – Sept 2004)
Carlos Batista	Translational Neuroscience Program (Sept. 2007-2013) [Carlos Batista was supported by a Pre-doctoral fellowship award from the Epilepsy Foundation of America]

Ph.D. rotation student:

Sreenivasa Chandana	Pharmacology (Jan. 2001-May 2001)
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Supervisor for Postdoctoral Fellows:

Michele Durand, Ph.D.	1988-1989
Hiroshi Shamoto, M.D.	1994-1996
Ednea daSilva, M.D.	1995-1999
Ferenc Nagy, M.D.	1996-1998
Kaku Niimura, M.D.	1996-1999
Csaba Juhasz, M.D.	1998-2001
Eishi Asano, M.D.	1999-2002
Zoltan Pfund, M.D.	1999-2002
Soo Joon Lee, M.D.	1999-2001
Kenji Kagawa, M.D.	2001-2003
Krisztina Benedek, M.D.	2002-2003
Tomomi Kimiwada, M.D.	2003-2004
Bharati Dasan Jadadeesan, M.D.	2003-2004
Thomas Eluvingthal, M.D.	2004-2006
Michael Behen, Ph.D.	2004-2006
Rajkumar Govindan, M.D.	2005-2012

Ajay Kumar, M.D.	2006-2009
Carlos Batista, M.D.	2006-2007
Upasana Shukla, Ph.D.	2012-2013
Monika Sharma, Ph.D.	2014-2015

Ph.D. Thesis committee member for:

Kirk Mahoney	Biomedical Physics (UCLA)
Lucia M. Notterpek	Neuroscience (UCLA)
Sanjay K. Vasu	Biological Chemistry (UCLA)
Susanne Koch	Cellular and Clinical Neurobiology Program (Wayne State, 1998) Department of Psychiatry and Behavioral Neurosciences
Sridhar Nimmagadda	Cancer Biology, Wayne State (Wayne State, 2002-2005)

M.S. Thesis committee member for:

Ian Wilds	Basic Medical Sciences (Wayne State, 1999)
Theresa Shaouni	Basic Medical Sciences (Wayne State, 2005- 2006)
Maen Karadsheh	Basic Medical Sciences (Wayne State, 2015)

Undergraduates and Medical Students trained in the laboratory:

Mark Fuster (1989)
Ajit Sarnaik (Summer, 1994)
Jennifer Lee (Summer, 1997; Summer, 1999)
Anita Valanju (Jan. 1998 - 1999)
Eric Slattery (Nov 2002-Sept 2003)

GRANT SUPPORT:

NIH Grant USHHS 2 P01 NS 15654
"Neuroscience Research with PET"
PI: Micheal E. Phelps
Principal Investigator Subproject III: Diane Chugani

DOE Contract DE-FC03-87ER60615
11/1/89 to 10/31/90 \$280,000

Japanese Epilepsy Association Grant
"Functional PET Studies of Television-induced Epilpesy"
3/95 - 2/98 \$100,000
PI: Harry T. Chugani
Co-PI: Diane C. Chugani

NIH Grant: R01 NS 34488
"Localization of Epileptic Foci with PET in Children"
Principal Investigator: Harry T. Chugani
Co-Investigator: Diane C. Chugani
Funded for period 12/1/96 to 11/30/99; Total award: \$559,279

Funded for period 9/15/00 to 8/31/05; Total award: \$1,496,125
Funded for period 9/1/05 to 8/31/10; Total award \$1,948,541

MIRA-Mental Illness Research Association
\$30,000 per year for years 1995, 1996, 1997 for PET Studies of Autism
\$12,500, July 1997 for "Autism Research Clinic"
awarded to Harry T. Chugani and Diane C. Chugani

Pheasant Ring Community
\$12,500 /year July 1997-2000 for "Autism Research Clinic"
awarded to Harry T. Chugani and Diane C. Chugani

Elks CRC for Cerebral Palsy, Principal Investigator: Diane C. Chugani
\$5,000 awarded May 1997 for PET studies of Cerebral Palsy

American Association for the Study of Headache
"A positron emission tomography study of serotonin synthesis in patients with migraine
headache" PI Seemant Chaturvedi, CoPI Diane Chugani
\$20,000 awarded June 1997

National Tuberos Sclerosis Association
"Alpha[C-11]methyl-tryptophan PET in Tuberos Sclerosis Complex"
PI Diane Chugani
2/01/98-1/31/99 \$25,254 awarded 12/97

NIH grant 1 R01 HD34942
Brain serotonin synthesis in autism
PI: Diane C. Chugani
Funded for period 12/15/98 to 11/30/01; Total award: \$758,181

NIH grant 1R01 NS 38324
Imaging tryptophan metabolism in tuberous sclerosis
PI: Diane C. Chugani
Funded for period 2/1/99 to 1/31/04; Total award: \$973,273

NIH grant 1 R13 NS38447
Sturge Weber Syndrome Consensus Conference
PI: Harry T. Chugani
Co-PI: Diane C. Chugani
Funded for period 4/01/1999 - 03/31/2000; Total award \$45,000

Children's Research Center of Michigan
Development of software tools for pediatric neuroimaging
PI: Otto Muzik
Co-PI: Diane C. Chugani
Funded for period 1/01/2000 - 12/31/2000; Total award \$49,363

NIH grant R01 HD40007-01

Ontogeny of human GABAA receptor complex measured with PET
PI: Otto Muzik
Co-PI: Diane C. Chugani
Funded for period 9-29-00 to 9-28-03, Total award \$550,000 direct costs

R21 DA015919-01 (Muzik)
Software tools for pediatric neuroimaging
PI: Otto Muzik
Co-Investigator: Diane C. Chugani
Funded for period 10/01/02-9/30/04 Total award \$300,000 direct costs

U01 HD37261-04S2
Pediatric Pharmacology Research Unit
PI: Jacob Aranda
Subproject title: Early pharmacotherapy aimed at neuroplasticity in autism
Subproject PI: Diane C. Chugani
Funded for period 9/30/02 to 12/31/03 Total award \$120,000 direct costs

R01 NS 41922
Longitudinal neuroimaging in Sturge-Weber syndrome
PI: Csaba Juhasz
Co-Investigator: Diane C. Chugani
July 1, 2003 to June 30, 2007, Total award \$950,000 direct costs

NIH R01 NS 45151
Tryptophan metabolism in children with epilepsy
PI: Diane Chugani
January 1, 2004 to December 31, 2007, Total award \$925,000 direct costs

NIH Research Grant (PI: C Juhasz)
Co-Investigator: Diane C. Chugani
NCI. Type RO1 CA123451 Period: 12/1/07 to 11/31/12
“Tryptophan metabolism in human brain tumors”
Co-Investigator, 5% effort
Total direct cost for entire project period: \$ 990,000

NICHD K08 HD50652 Career Development Award (PI: S Kannan)
Primary Mentor: D. Chugani
Imaging and therapy in maternal inflammation induced perinatal brain injury
9/01/07 - 8/31/11. Total direct costs \$510,084

NIH U01 NS61264 (Chugani DC) 2/1/08-1/31/16 2.8 Calendar Months
NIH/NINDS
“Early pharmacotherapy guided by biomarkers in autism”
February 1, 2008 to January 31, 2016, Total award \$5,800,000
Supplement Funded for period 2/1/13-1/31/14; Total award \$260,000

R01 NS064989 (Chugani HT) 8/1/10 - 7/31/16 0.6 Calendar Months
NIH/NINDS
“Identifying epileptogenic tubers in tuberous sclerosis”
Role: Co-I

1R01 HD069562-01 (Kannan S) 2/1/12-1/31/17 0.6 Calendar Months
NIH/NICHHD
“Mechanisms and novel therapy in intrauterine inflammation induced brain injury”
Role: Co-I

R01 CA123451 (Juhasz C) 2/1/14 – 1/31/19 0.6 Calendar Months
NIH/NCI \$207,000
“Tryptophan Metabolism in Human Brain Tumors”
Role: Co-I

R13-NS08615-01 HT Chugani/DC Chugani (Dual PIs) 1/2014-12/2014
NIH \$30,000
"Children with autism spectrum disorders in developing countries"

R01 NS079429 Dombkowski (PI) 4/11/14- 03/31/2017 1.8 Calendar Months
NIH/NINDS \$250,000
“The Role of microRNAs in Epilepsy of Tuberous Sclerosis Complex”
Role: Co-I

Consultant for University Autism Program Grant to PI Krista Clancy, Wayne State University
\$750,000, State of Michigan, November 1, 2015 to September 30, 2016.

U54 GM104941 Binder-MacLeod, S (PI) 9/25/2013 – 5/31/2018 1.8 Calendar Months
NIGMS \$3,973,000
“Delaware-CTR”
Role: Co-I

The overall goal of the Delaware Clinical and Translational Research Program is increasing the clinical and translational research readiness of the participating institutions, University of Delaware, AI DuPont-Nemours, Christiana Care Health System, and Medical University of South Carolina.

Role: Consultant, secondary mentor. K08 grant proposal. Lawrence Fung, MD, PhD, Stanford University, “GABAergic Neurophysiology in Autism Spectrum Disorder,” awarded 2016.

Mentor, NARSAD grant, 2017-2018 Zhenghan Qi, PhD, University of Delaware

Mentor, 2017-2019 UDRF Strategic Initiative Award, Zhenghan Qi, PhD, University of Delaware

R21 DC017576-01A (Qi) 09/01/19-08/31/22 0.24 calendar
The role of statistical learning in the atypical language development in ASD

Our proposed studies aim to test whether statistical learning, an essential skill for typical language acquisition, underlie the heterogeneity of language profiles in ASD using a combination of cutting-edge behavioral and neuroimaging technologies.

Role: Co-Investigator
Pending review

R56NS079429 (Dombkowski) 6/1/2019 - 5/31/2020 0.60 academic

NINDS \$13,348

The role of non-coding RNAs in epilepsy of tuberous sclerosis complex and focal cortical dysplasia type 2B.

Role: Site PI

Recently submitted grants

P20GM121330-01A1(Chugani D) 07/01/18-06/30/23 3.0 calendar
NIH/NIGMS \$7,800,000 (direct over 5 years)

The overall goal of this Center of Biomedical Research Excellence (COBRE) entitled “Nemours Center for Translational Neuroscience” is to develop a sustainable clinical and translational research center in DE that provides academic training for a cohort of young basic and clinical investigators who will develop and implement novel therapeutics and molecular imaging diagnostic biomarkers for disorders affecting the developing brain. Our center will integrate the development of molecular imaging diagnostic tests with targeted therapeutics in order to treat the right child with the right therapeutic intervention.

Role: Program Director/Principal Investigator

Outcome: Was contacted by NIH that grant was on the fund list and requesting JIT documentation. However, I could not accept the award as I left Nemours.

U54 GM104941 (Binder-Macleod) 09/26/18-05/31/23 1.0 calendar
NIH/NIGMS \$3,550,208 annual direct

Delaware Center for Clinical and Translational Research

The goals of this multi-center cooperative grant are to establish programs that support and accelerate clinical and translational research in the state of Delaware. My role is to lead and participate on the Mentoring Committee and provide mentorship to new researchers.

Role: Co-Investigator of Mentoring, Education, and Career Development Key Component Area

Outcome: This grant was awarded. I am not being funded on the new grant as my funding was at Nemours and I left that institution.

R01 NS079429-04 (Dombkowski) 07/01/19-06/30/24 1.2 calendar
NIH/NINDS \$408,276 annual direct

The role of non-coding RNAs in epilepsy of tuberous sclerosis complex and focal cortical dysplasia type 2B

The major goal of this grant is to delineate mechanisms involved in medically refractory epilepsy and identify new therapeutic targets.

Role: Co-Investigator

18th percentile, pending Council review

R01 HD101446

04/01/2020-03/31/2025

3.0 calendar

Disparities in language development: Role of immune response to chronic stress on parent language input and child language learning

This application aims to determine the role of socioeconomic status (SES), racial discrimination, and parent stress on chronic stress related changes in immune function as a mechanism contributing to disparities in child language development.

Role: PI

PUBLICATIONS:

1. Original observations in refereed journals

1. Chugani HT, Ackermann RF, **Chugani DC** and Engel J. (1984) Opioid-induced epileptogenic phenomena: anatomical, behavioral and electroencephalographic features. *Ann. Neurol.* 15:361-367.
2. Campbell IC, Durcan MJ, Cohen RM, Pickar D, **Chugani D** and Murphy DL. (1985) Chronic clorgyline and pargyline increase apomorphine-induced stereotypy in the rat. *Pharmacol. Biochem. Behav.* 23:921-925.
3. **Chugani DC**, Ackermann RF, and Phelps ME. (1988) In vivo 3-H-spiroperone binding: evidence for accumulation in corpus striatum by agonist-mediated receptor internalization. *J. Cereb. Blood Flow Metab.* 8:291-303.
4. Kedersha NL, Heuser JE, **Chugani DC**, and Rome LH. (1991) Vaults. III. Vault ribonucleoprotein particles open into flower-like structures with octagonal symmetry. *J. Cell Biol.* 112:225-235.
5. **Chugani DC**, Kedersha NL, and Rome LH. (1991) Vault immunofluorescence in the brain: new insights regarding the origin of microglia. *J. Neurosci.* 11:256-268.
6. **Chugani DC**, Rome LH, and Kedersha NL. (1993) Evidence that vault organelles localize to the nuclear pore complex, *J. Cell Sci.* 106:23-33.
7. Chugani HT, da Silva E, **Chugani DC**: (1996) Infantile spasms: III. Prognostic implications of bitemporal hypometabolism on positron emission tomography. *Annals of Neurology*, 39: 643-649.
8. Shamoto H, **Chugani DC**, Chugani HT: (1996) Glucose metabolism in the human cerebellum. 1: Anatomical-functional correlations. *Journal of Child Neurology*, 11: 451-457.
9. Chakraborty PK, Mangner TJ, **Chugani DC**, Muzik O, Chugani HT: (1996) A high yield and simplified procedure for the synthesis of α [¹¹C]Methyl-L-Tryptophan. *Nuclear Medicine and Biology*, 23: 1005-1008.

10. Chugani HT, Muller R-A, **Chugani DC**: (1996) Functional brain reorganization in children. *Brain and Development*, 18: 347-356.
11. Muzik O, **Chugani DC**, Chakraborty PK, Mangner T, Chugani HT: (1997) Analysis of [¹¹C]-alpha-methyl-tryptophan kinetics for the estimation of serotonin synthesis rate in vivo. *Journal of Cerebral Blood Flow and Metabolism*, 17: 659-669.
12. **Chugani DC**, Muzik O, Rothermel R, Behen M, Chakraborty P, Mangner T, da Silva EA, Chugani HT: (1997) Altered serotonin synthesis in the dentato-thalamo-cortical pathway in autistic boys. *Annals of Neurology*, 42: 666-669.
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C. E. A. BATISTA, **D. C. CHUGANI**, W. J. KUPSKY, C. JUHASZ, H. T. CHUGANI; Kynurenine pathway and multidrug resistance in Tuberous Sclerosis Complex (TSC). Society for Neuroscience, Nov 2007. Online.

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S. Kannan, F. Saadani-Makki, X. Lu, P. Chakraborty, H. Dai, O. Muzik, R. Romero, **D. Chugani**. 11C AMT uptake by small animal PET in a neonatal rabbit model of intrauterine inflammation induced brain injury Presented at Society for Neuroscience, Nov, 2008.

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Sivaswamy L, Rajan D, Kumar A, Behen M, Chugani HT, **Chugani D**. Study of cerebellar pathways in children with autistic spectrum disorder using MRI diffusion tensor imaging (MRI-DTI). Presented at the 38th Annual Meeting of the Child Neurology Society, October 14-17, 2009, Louisville, KY.

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Kumar A, Sundaram SK, Sivaswamy L, Behen ME, Makki MI, Chugani HT, **Chugani D**. Alterations in Frontal Lobe Tracts and Corpus Callosum in Young Children with Autism Spectrum Disorder. Presented in the 8th annual meeting of International Meeting for Autism Research, Chicago, USA, May 7-9, 2009.

Kannan S, Saadani-Makki F, Dai H, Chakraborty P, Romero R, **Chugani D**. Brain tryptophan metabolism using small animal PE in a neonatal rabbit model of maternal inflammation induced cerebral palsy *J Cerebral Blood Flow and Metabolism*, 2009; 29:S97.

Jeong JW, **Chugani DC**, Chugani HT. Altered dorsal and ventral dentatorubrothalamic pathways in children with autism. Presented at the 40th Annual meeting of the Child Neurology Society, October 26-29, 2011, Savannah, GA.

Jeong JW, Divadkar V, Chugani CD, Chugani HT, **Chugani DC**. Cortical activation in superior temporal gyrus and fusiform gyrus modulated by congruence of emotional content in music and face. *Proc. Int. Soc. Magnetic Resonance In Medicine*, Montréal, 2011.

Jeong JW, Kumar A, Govindan R, Chugani HT, **Chugani DC**. Atypical development of dentatothalamic pathway in children with autistic spectrum disorder. *Proc. Int. Soc. Magnetic Resonance In Medicine*, Montréal, 2011.

Jeong JW, Kumar A, Sundaram SK, Chugani HT, **Chugani DC**. Abnormal diffusivity changes in white matter regions of the children with autism spectrum disorder: comparison of TBSS, TSPOON, and SPM analysis. *Proc. Int. Soc. Magnetic Resonance In Medicine*, Montréal, 2011.

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Tiwari VN, Jeong JW, Sundaram SK, Chugani HT, **Chugani DC**. Atypical white matter microstructural integrity pattern in children with high functioning autism and low functioning autism identified with tract based spatial statistics. *Proc. Int. Soc. Magnetic Resonance In Medicine*, Montréal, 2011.

Jeong JW, Tiwari VN, Chugani HT, **Chugani DC**. Diffusion Tensor MRI Biomarker for Differentiating Children with High and Low Functioning Autism. 97th scientific assembly and annual meeting of Radiological Society of North America, Chicago, Nov. 27-Dec. 2, 2011.

Jeong JW, Govindan R, Tiwari VN, Chugani DC, **Chugani HT**. Localization of primary motor cortex using white matter connectivity between precentral gyrus and posterior limb of internal capsule. 97th scientific assembly and annual meeting of Radiological Society of North America, Chicago, Nov. 27-Dec. 2, 2011.

Batista C, Chugani HT, Cukovic D, Asano E, Dombkowski A, **Chugani D**. Kynurenine pathway in tuberous sclerosis complex (TSC): the pro-convulsant branch is upregulated in epileptogenic tubers. American Epilepsy Society annual meeting, Dec 2-6, 2011, Baltimore, MD.

J.-W Jeong, J.G. Kuentzel, V.A. Diwadkar, C.D. Chugani, H.T. **Chugani, D.C.** "Atypical auditory-visual integration mechanism in borderline personality disorder: a fMRI analysis using emotional congruence and incongruence and facial images", Proc. Int. Soc. Magnetic Resonance In Medicine, Melbourne, May 5-11, 2012.

J.-W. Jeong, **D.C. Chugani**, T. Hsia, V.N. Tiwari, H.T. Chugani, S.K. Sundaram, "New DTI marker characterizing white matter maturation in perisylvian language network: color-coded orientation component analysis", Proc. Int. Soc. Magnetic Resonance In Medicine, Melbourne, May 5-11, 2012.

Chugani DC. Neuroimaging symposium: Role of Serotonin Systems in Autism. Presented in the Joint Congress of the 12th International Child Neurology Congress and the 11th Asian and Oceanian Congress of Child Neurology, Brisbane, Australia, May 27-June 1, 2012.

Chugani DC. Diffusion Tensor Imaging symposium: DTI in autism. Presented in the Joint Congress of the 12th International Child Neurology Congress and the 11th Asian and Oceanian Congress of Child Neurology, Brisbane, Australia, May 27-June 1, 2012.

Kumar A, Muzik O, Behen M, Chakraborty P, Chugani HT, **Chugani DC**. In-vivo measurement of brain inflammation with [11C]-[R]-PK-11195 positron emission tomography in patients with autism spectrum disorder. Presented in the 41st National Meeting of the Child Neurology Society, Huntington Beach, CA, Oct 31-Nov 3, 2012.

Batista C, Chugani HT, Asano E, Cukovic D, Sood S, Dombkowski A, **Chugani DC**. The interplay between kynurenine pathway enzymes and the drug resistant-associated major vault protein in tuberous sclerosis complex: A report of 25 surgical cases. Presented at the American Epilepsy Society annual meeting, Nov 30-Dec 4, 2012, San Diego, CA.

J.-W Jeong, A. Kumar, H.T. Chugani, **D.C. Chugani**, "Altered Tryptophan Metabolism and White Matter Development in Cerebellum of Children with Autistic Spectrum Disorders", the 99th scientific assembly and annual meeting of Radiological Society of North America, Chicago, Dec. 1-Dec. 6 2013.

J.-W Jeong, J Kuentzel, C.D. Chugani, H.T. Chugani, **D.C. Chugani**, "Atypically Increased Functional Connectivity in Young Adults with Borderline Personality Disorder", Proc. Int. Soc. Magnetic Resonance In Medicine, Salt Lake City, April 20-26, 2013.

J.-W Jeong, E. Asano, **D.C. Chugani**, H.T. Chugani, "Automatic Detection of Primary Motor

Cortex and Corticospinal Tract Using Diffusion MRI Tractography", Proc. Int. Soc. Magnetic Resonance In Medicine, Salt Lake City, April 20-26, 2013.

Dombkowski AA, Batista CE, Cukovic D, Ranganathan R, Shukla U, Chugani HT, and **Chugani DC**. "Epilepsy risk genes are targets of aberrant microRNAs expressed in epileptogenic tubers of tuberous sclerosis complex patients." American Epilepsy Society Annual Meeting, Washington DC, Dec. 6-10, 2013.

Sundaram S, Chugani H, Maksabo JS, Chugani D. "Gene expression signature of activated microglia in infantile spasms: Implications for novel drug development." American Epilepsy Society Annual Meeting, Washington DC, Dec. 6-10, 2013.

Jeong JW, Shin J, Tiwari VN, Chugani HT, **Chugani DC**. In vivo detection of reduced purkinje cell fibers with diffusion MRI tractography in children with autism spectrum disorders. Proc. Int. Soc. Magnetic Resonance In Medicine, Milan, Italy, May 10-16, 2014.

Jeong JW, Kumar A, Behen ME, Ashah A, Chugani HT, **Chugani DC**. Whole brain connectivity pattern can differentiate between high and low functioning children with autism spectrum disorder: a brain connectome study. the 43rd annual meeting of Child Neurology Society. Columbus, OH. Oct 22-25 2014.

Dombkowski AA, Cukovic, Carruthers NJ, Stemmer PM, Chugani HT, **Chugani DC**. Quantitative proteomic profiling reveals repression of epilepsy risk genes due to aberrant microRNA activity in epileptogenic TSC tubers. American Epilepsy Society Meeting, Seattle, WS. Dec 2014.

Poster presentation. "Preliminary Evidence for a Role of Enterovirus 71 in Autistic Regression." Diane C. Chugani, Ph.D., Robert Fujinami, Ph.D., Harry T. Chugani, M.D., Max Wiznitzer, M.D., Sumit Parikh, M.D., Patricia A. Evans, M.D., Ph.D., Robin L. Hansen, M.D., Ruth Nass, M.D., James J. Janisse, Ph.D., Pamela Dixon-Thomas, Ph.D., Michael Behen, Ph.D., Robert Rothermel, Ph.D., Jacqueline S. Parker, Ajay Kumar, M.D., Ph.D., Otto Muzik, Ph.D., David J. Edwards, Pharm.D., and Deborah Hirtz, M.D., for the Autism Center of Excellence Network International Child Neurology Meeting, Amsterdam, Netherlands, May 2015.

Poster presentation. "Efficacy of Low Dose Bupirone for Restricted and Repetitive Behavior in Young Children with Autism Spectrum Disorder," Diane C. Chugani, Ph.D., Harry T. Chugani, M.D., Max Wiznitzer, M.D., Sumit Parikh, M.D., Patricia A. Evans, M.D., Ph.D., Robin L. Hansen, M.D., Ruth Nass, M.D., James J. Janisse, Ph.D., Pamela Dixon-Thomas, Ph.D., Michael Behen, Ph.D., Robert Rothermel, Ph.D., Jacqueline S. Parker, Ajay Kumar, M.D., Ph.D., Otto Muzik, Ph.D., David J. Edwards, Pharm.D., and Deborah Hirtz, M.D., for the Autism Center of Excellence Network International Child Neurology Meeting, Amsterdam, Netherlands, May 2015.

Platform presentation. Brain Tumor PET Imaging in a Transgenic Medulloblastoma Mouse Model Using a Novel ¹⁸F- labeled Tryptophan Tracer, Shaohui Zhang, Nagma Dalvi, Yangchun Xin, Alisa Litan, Xuyi Yue, Hua Li, Zhiqin Li, Hancheng Cai, Harry T. Chugani, Sigrid Langhans, Diane C. Chugani Society for Nuclear Medicine and Molecular Imaging Meeting, June, 2018.

Platform presentation. Evaluation of a novel ^{18}F -labeled tryptophan tracer for PET imaging of brain tumors in a medulloblastoma mouse model, Nagma Dalvi, Shaohui Zhang, Alisa Litan, Yangchun Xin, Xuyi Yue, Hua Li, Zhiqin Li, Hancheng Cai, Harry Chugani, Diane Chugani, Sigrid A. Langhans, to be presented at the Child Neurology Meeting to be held in October 2018.

Poster presentation. APPLICATION OF THE NEW PET RADIOTRACER ^{18}F -GE180 TO IMAGE NEUROINFLAMMATION IN CHILDREN, Harry T. Chugani, Hua Li, Shaohui Zhang, Badal Jain, Alana Salvucci, Xuyi Yue, Rahul Nikam, Yangchun Xin, Diane C. Chugani, to be presented at the Child Neurology Meeting to be held in October 2018.

Abstract. PILOT STUDY WITH NEW PET RADIOTRACER ^{18}F -GE180 TO IMAGE NEUROINFLAMMATION IN YOUTHS WITH NEUROPSYCHIATRIC SYMPTOMS, Josephine Elia, Hua Li, Shaohui Zhang, Xuyi Yue, Rahul Nikam, Yangchun Xin, Zachariah Prankun, Andrew Weller, Sanju V. George, Diane C. Chugani, Harry T. Chugani. submitted for presentation at the American Academy of Child and Adolescent Psychiatry October 2018.

1. Invited and/or refereed national/international meetings

Third International Symposium on Basic Mechanisms of the Epilepsies: Cellular and Molecular Approaches, [^{11}C]Flumazenil PET in children with intractable epilepsy. San Diego, CA, April 1996.

Think Tank on Neurology of Autism sponsored by CAN "Cure Autism Now" Group, March 8-9, 1997, "Altered brain serotonin synthesis in autism measured with PET."

International Symposium on Alternating Hemiplegia, May 16-17, 1997, Seattle, Washington, "Can altered tryptophan metabolism mimick respiratory chain mitochondrial encephalomyopathy?"

"Cure Autism Now" Parent and Professional Conference, October 18, 1997, New York, NY. "Alterations of serotonin synthesis in autism."

Invited panelist: Approaches to developmental and learning disorders in infants and children: Theory and practice 1997, Rockville, MD, November 1997

Invited speaker at "Workshop to explore the implications of brain research for improving early childhood" sponsored by the New Jersey State Department of Education and Education Commission of the States. "Are there implications from brain research developments for improving early childhood?" Trenton, NJ; March 5, 1998

Invited conference speaker at the Gatlinburg Conference on Research and Theory in Mental Retardation and Developmental Disabilities. "PET technologies in Mental Retardation/Developmental Disabilities Research", Charleston, South Carolina; March 11, 1998

Invited to participate in "Animal model of autism workshop" sponsored by Cure Autism Now Foundation, Los Angeles, CA, March 15, 1998

Invited conference participant at Tuberous Sclerosis Complex Consensus Conference sponsored by NINDS and NICHD., Annapolis, MD, July 10-11, 1998

Invited speaker at the National Family Conference on Tuberous Sclerosis; July 22-25, 1999; "Behavior concerns and autism and PDD: Treatment and current research."

Invited speaker at the Neurobiology of Autism, International School of the Neurological Sciences, 9th Annual Symposium of the Child Neurology Section, Rome, Italy, June 25-26, 1999.

Invited speaker at Autism Conference entitled "Autismo: Ricerca scientifica e impegno della societa" in Catania, Sicily, June 27, 1999.

Invited speaker at the annual meeting of the British Association for Psychopharmacology, Symposium in Harrogate, England, July 28, 1999 "Towards Understanding Autism", talk entitled "The Neurochemistry of Autism."

Invited speaker at "International Conference on Autism and Disorders of Relating and Communicating", in McLean, Virginia, November 13, 1999, "Altered serotonin synthesis capacity in autism."

Invited speaker (could not attend due to family illness) at "Behavioural Disorders in Tuberous Sclerosis: Concepts and Current Research" in Cambridge, England January 14-16, 2000, "Functional Imaging in Autistic Spectrum Disorder in Tuberous Sclerosis Complex".

Invited speaker at the National Tuberous Sclerosis Center Without Wall Meeting, Boston, Mass., March 24, 2000, "Epilepsy and Autism in Tuberous Sclerosis Complex."

Invited speaker at the Second Hershey Conference on Developmental Cerebral Blood Flow and Metabolism, Hershey Pennsylvania, June 8-11, 2000, "Ontogeny of Human GABAA Receptor Binding Studied with PET."

Invited speaker at the Sturge-Weber Foundation Family Conference, Atlanta, Georgia, June 23, 2000, June 23, 2000.

Chugani DC, Behen ME, Asano E, Lee J, Rothermel R, Muzik O, Chugani HT: Behavioral subtypes of autistic children show differences in regional brain serotonin synthesis. Soc. Neurosci. Abstracts, 2000, platform presentation.

Invited speaker at conference entitled "New Biological Directions in Autism," Orlando, FL, October 14, 2000, "Neuroimaging techniques in Autism."

Invited speaker at conference entitled "6th Annual Conference: Current trends in Autism," Danvers, MA, October 20, 2000, "Functional imaging in Autism."

Invited speaker at “Microbiology, Immunology and Toxicology of Autism and Other Neurodevelopmental Disorders,” Banbury Center, Cold Spring Harbor Laboratory, February 11-14, 2001.

Invited speaker at “Tuberous Sclerosis Behavioral Meeting,” Cincinnati, OH, March 23-25, 2001, “AMT-PET in the evaluation of autism in Tuberous Sclerosis Complex.”

Invited speaker at Yonsei University School of Medicine, Seoul, Korea, June 19, 2001, “Functional imaging studies in autism.”

Invited speaker at the Sturge-Weber Foundation Family Conference, Schaumburg, IL. June 28-July 1, 2001, “Update on Research Funded by The Sturge-Weber Foundation.”

Invited speaker at “Potential Cellular and Molecular Mechanisms in Autism and Related Disorders” Sponsored by NICHD and NIEHS, Co-sponsored by NIMH, NINDS, and NIDCD September 6-7, 2001, “Abnormal serotonin (5-HT) synthesis in autistic brain.”

Invited speaker at Children's Mercy Hospital, Kansas City, MO, December 7, 2001, “Functional imaging in children with autism: Results point to strategies for pharmacological intervention.”

Invited speaker at “Autism Clinical Trials Task Force” sponsored by Cure Autism Now, Santa Monica California, April 12-14, 2002.

Invited speaker at International Assoc. for the Scientific Study of Intellectual Disability Conference, University College Dublin, June 12-15, 2002.

Invited speaker at Satellite Symposium of the Joint Congress of ICNA and AOCNA, Hong Kong Sept. 18-19, 2002 entitled “Autism/Neuromuscular Disorders”.

Invited speaker at American College of Neuropsychopharmacology, San Juan Puerto Rico, December 8-12, 2002, Study group on “Autism: New views from brain imaging.”

Invited speaker at “2003 Tuberous Sclerosis Complex Brain/Behaviour Workshop,” Cambridge, England, January 10-12, 2003, “PET/MRI studies”.

Invited speaker at Postgraduate course entitled “Autism and pervasive developmental disorders”, Assisi, Italy, March 19-21, 2003.

Invited panelist, NINDS Imaging Markers of Epileptogenesis: New Research Directions, Washington, DC, April 10-11, 2003.

Invited speaker, New York Academy of Sciences “Functional Imaging and Neuropathology of Autism,” New York, NY, May 20, 2003.

Invited lecturer, National Institute for Child and Family Development, Mahidol University, Bangkok, Thailand, July 21, 2003.

Invited speaker, 9th Annual Conference of the Autism Research Foundation, “Current Trends in Autism”, Newton MA, October 24, 2003.

Invited speaker, 7th International Conference of the Interdisciplinary Council on Developmental and Learning Disorders “Autism and Disorders of Relating and Communicating”, Tysons Corner, VA, November 8, 2003.

Invited speaker, UC Davis Epilepsy and Autism Conference, “Serotonin and GABA in autism and pediatric epilepsies,” Sacramento, CA, March 26-28, 2004

Invited speaker, Dutch EndoNeuroPsycho Meeting, “Neurochemical characteristics of epileptogenic lesions: PET experience,” Amsterdam, Netherlands, June 3-4, 2004.

Invited speaker, Universite Paris, Hopital Robert-Debre, “Pathophysiology of autistic syndromes,” Paris, France, June 23, 2004.

Invited speaker, National Alliance for Autism Research Workshop “Integrating the Clinical and Basic Sciences of Autism,” presentation entitled Brain serotonin synthesis: Role in genetic and pharmacology studies. Fort Lauderdale, Florida, November 12-13, 2004.

Invited keynote speaker, Learning & the Brain Conference, presentation entitled “The Adaptability of the Developing Brain: Plasticity, Experiences, Critical Learning Periods and Autism in Children and Adolescents,” Boston, MA, April 28, 2005.

Invited panelist, Cure Autism Now Imaging Summit, Los Angeles, CA January 22-24, 2006.

Visiting professor, Illinois Autism Colloquium, DeKalb, Illinois April 6-7, 2006.

Co-Chair, Biochemical Biomarkers Group, NIH Workshop on “Biomarkers of Epileptogenesis” Septemer 7-8, 2006, Bethesda, MD.

Invited speaker, Third Residential Course on Developmental Cognitive Neurosciences. *Mental retardation*, Orvieto, Italy, November 15-17, 2006.

Invited speaker, NIH Workshop Angiogenesis in the Nervous System. “Defining the vascular phenotype in Sturge Weber Syndrome” Bethesda, MD December 11-13, 2006.

Invited speaker, 2007 IDEAS Round Table and Conference, “Imaging GABA-A receptors with PET: Preliminary results in children with chromosome 15q duplications.” Boston, MA, June 28, 2007.

Invited speaker, Congress of Asian Psychiatry, “Understanding alterations during brain development with PET: A guide to new treatment approaches for autism.” Goa, Indian, August 4, 2007.

Invited speaker, Amrita Institute of Medical Sciences, Raja Association of Neurologists and Indian Epilepsy Association, “Autism Spectrum Disorders —Recent Concepts.” Cochin, Kerala, India, August 7, 2007.

Invited speaker, Srree Chitra Tirunal Institute for Medical Sciences & Technology, “Understanding alterations during brain development with PET: A guide to new treatment approaches for autism.” Trivandrum, Kerala, India, August 9, 2007.

Invited speaker, International Tuberous Sclerosis Research Symposium, “Autism and TSC: What is the link?” Annapolis, MD, September 23, 2007.

Invited speaker in the Course Advanced Topics in Epilepsy and Functional Neuroimaging, 1. “General principle and strategies of functional neuroimaging.” 2. “New insights for compounds in the search for epileptic cortex..” Departamento de Neurologia, Psiquiatria e Psicologia Médica Faculade de Medicina de Ribeirão Preto – USP, Brazil. February 18-23, 2007.

Invited speaker in the Course Advanced Topics in Epilepsy and Functional Neuroimaging, 1. “General principle and strategies of functional neuroimaging.” 2. “New insights for compounds in the search for epileptic cortex..” Departamento de Neurologia, Psiquiatria e Psicologia Médica Faculade de Medicina de Ribeirão Preto – USP, Brazil. February 18-23, 2007.

Invited speaker. British Indian Psychiatric Association Convention. June 14-15, 2008, Nottingham, England, UK.

Invited speaker MGH 2008-2009 Autism and Developmental Disorders Colloquium Series. December 9, 2008.

Substituted for Dr. Sujatha Kannan (she was an invited speaker but could not attend due to pregnancy) at the NIH sponsored Neurobiology of Disease in Children Symposium at the Child Neurology Meeting, November 5, 2008. In addition, Dr. Chugani’s graduate student, Carlos Batista, won a Young Investigator Award presented during this symposium.

Invited speaker at UCLA Center for Autism and Treatment Affinity Group Seminar, Application of Molecular Imaging in the Design of Interventions for Autism, January 9, 2009.

Invited speaker at Casa Colina’s Eighth Annual Trends in Autism Conference, Claremont, California, March 14, 2009.

Invited speaker at Neurogenomics and Neuroimaging of Developmental Disorders Symposium, Dubrovnik, Croatia, April 30-May 5, 2009.

Invited speaker for Neuropathology/Neuroimaging Symposium, International Meeting for Autism Research, Chicago, IL, May 9, 2009.

Invited speaker. The Autism Research Foundation Think Tank 2009. November 14-15, 2009. Boston, MA Lecture title: “Serotonin Developmental Regulation in Autism”.

Invited speaker. Emory University School of Medicine. December 15, 2009, Atlanta, GA. Lecture title: “Application of Molecular Imaging in the Design of Interventions for Autism”.

Invited speaker. Society for Nuclear Medicine Conjoint Mid-Winter Meetings. January 31, 2010, Albuquerque, New Mexico. Lecture Title: “Application of Novel PET Probes in Children with Neurodevelopmental Disorders.”

Invited speaker. Canadian Society of Pharmacology & Therapeutics, Toronto, Canada, June 4, 2010. Lecture title: “Application of PET Imaging in the Design of Interventions for Autism.”

Organized national workshop co-sponsored by Wayne State University and the NICHD Perinatology Branch, “Fetal Origins of Autism” August 15, 2011.

Invited speaker. NIH Autism Centers of Excellence annual meeting, March 7-8, 2011

Invited speaker. Autism Drug Development Workshop, Philadelphia, PA, March 14, 2011, “Neurochemistry of Autism”

Invited speaker. Symposium “Autism and PDD: Neuropathology, Pharmacotherapies and New Directions: at the American Society for Pharmacology and Experimental Therapeutics, Title: Serotonin dysregulation in autism spectrum disorders. April 9-13, 2011, Washington, DC.

Invited panelist: National Advisory Board Meeting, New Frontiers in Autism Spectrum Disorders: An exploration of Sapropterin (BH4), July 28-29, 2011, Denver, Colorado.

Invited speaker: International Child Neurology Association Meeting, Brisbane, Australia, May30, 2012, “Application of Diffusion Tensor Imaging in Children with Autism Spectrum Disorder” and June 1, 2012 “Serotonin Systems in Autism.”

Invited speaker: 3rd Saudi International Pediatric Neurology Conference, Riyadh, Saudi Arabia, Nov. 12, 2012, “Advances in Autism: Diagnostic and Therapeutic Perspectives.”

Invited speaker: Zilka Neurogenetic Institute of the Keck School of Medicine, University of Southern California, Oct. 3, 2012, “Role of Tryptophan Metabolism by the Serotonin and Kynurenine Pathways in Neurodevelopmental Disorders.”

Invited speaker: First Myanmar Child Neurology Association Meeting, “An Overview of Autism Spectrum Disorders” Yangon, Myanmar February 17, 2013.

Invited speaker: Myanmar Autism Association, Assessment and Treatments for Autism Spectrum Disorders, Yangon Myanmar, February 18, 2013.

Invited speaker: Autism: 2013 and Beyond, American University of Beirut Medical Center, "Role of Molecular and Structural Imaging in Autism Spectrum Disorders" Beirut, Lebanon, June 16, 2013.

Invited speaker: 5th International Congress West Syndrome Foundation, “Altered tryptophan metabolism by the serotonin and kynurenine pathways in infantile spasms and autism: Basis for new treatments.” November 7-8, 2013, Madrid, Spain.

Meeting organizer and speaker: Autism in Africa, Accra, Ghana, February 2014.

Invited speaker, Dana Foundation and American Association for the Advancement of Science Capitol Hill Briefing, Washington, DC, July 17, 2014.

Invited speaker. “Serotonin agonists for autism and cognitive dysfunction: Implications for Jacobsen Syndrome,” 9th International 11q Conference, San Diego, California, June 25, 2014

Invited Speaker. Neurobiology of Disease in Children Symposium. Pharmacological Treatment for Autism Spectrum Disorders: Present and Future. Columbus, Ohio, October 22, 2014.

Invited Speaker. TARF Think Tank, “Treatment for Autism Spectrum Disorders.” Boston, MA, February 17, 2015.

Invited Speaker, NINDS Tuberous Sclerosis Workshop, “Clinical Biomarkers: Focus on Imaging,” March 11, 2015.

Invited speaker. Neonatal and Pediatric Pearls (NAPP) Lecture Series in India, February 6, 2016 Bangalore. February 13, 2016 New Delhi, “Neuroinflammation in Neurodevelopmental Disorders” and “VLBW Infant: Risk, Assessment and Intervention for Autism”

Invited speaker and visiting professor. “Recent Advances in Autism,” Deenanath Mangeshkar Hospital, Pune, India. February 7, 2016.

Invited speaker and discussant. NIH BRAIN initiative grant “AMPET, the wearable PET scanner”, PI: Julie Brefczynski-Lewis, West Virginia University, “Challenges and Opportunities Associated with Molecular Imaging in Children,” GE Global Headquarters, Nyskayuna, New York, March 3-4, 2016.

Invited speaker. Nemours Jacksonville, Florida. “Role of Neuroimaging in Treatment Trials for Neurodevelopmental Disorders,” April 27, 2016.

Invited speaker, NICHD 2015-16 Sumner J. Yaffe Memorial Lecture Series in Pediatric Clinical Pharmacology, “Imaging Biomarkers in Pediatric Therapeutics: Risks vs. Benefits,” <http://www.event.com/events/2016-sumner-yaffe-lecture-series/custom-17-f36dfc41b8d9428d9>, Rockville, MD, June 16, 2016.

Invited speaker. 10th 11q R and R International Conference, “Medical Therapy for Autism” and panel discussant “Future Clinical Trials for Autism in Jacobsen Syndrome,” June 26-30, 2016, San Diego, CA.

Invited speaker. TARF Think Tank, “Time to give up on Autism Spectrum Disorder?” February 18, 2017, Boston, MA.

Invited speaker. 2017 New Frontiers in Pediatric Neurology, Children’s Medical Center Dallas “Role of Neuroimaging in Treatment Trials for Neurodevelopmental Disorders,” June 2, 2017, Dallas, TX.

Invited speaker. FamilieSCN2a Foundation Family & Professional Conference, “SCN2A and Autism: Role of Cerebellum?” July 14-15, 2017, Wilmington, DE.

Invited speaker. TARF Think Tank, "Role of Guanylate Cyclase 2C (GUCY2C) and Uroguanylin in Gut and Brain in ASD?" February 17, 2018, Boston, MA.

2. Invited and/or refereed local/regional meetings

Symposium entitled "Brain Imaging: Implications for the Diagnosis and Treatment of Neuropsychiatric Disorders" September 20, 1997, Dearborn, Michigan. "PET studies of serotonin synthesis in childhood autistic disorders."

Symposium entitled "Developmental Neuroimaging in Psychiatric Disorders" Dearborn, MI, June 13, 1998, "Positron emission tomography studies in children with autism."

Conference sponsored by Early On Michigan entitled "Windows of Opportunity" October 29, 1999, Bay Harbor, Michigan, "Research in Childhood Autism."

Symposium entitled "Cure Autism Now Illinois Chapter Fall Conference 1999: Bio-medical Update" September 28, 1999, St. Charles, Illinois, "PET imaging studies in autistic children."

Psychiatrist Quarterly Conference of the Oakland County Community Health Authority, September 12, 1999, Bloomfield Hills, MI, "Autism research at Children's Hospital of Michigan/Wayne State University."

16th Annual Developmental Disabilities Conference, Michigan State University, April 4, 2000, Lansing, Michigan, "Application of PET to study children with autism."

4th Annual Issues and Challenges: The Child with Special Health Care Needs, Children's Hospital of Michigan, November 4, 2000, "Autism treatment and research."

TSC Midwest Conference, October 1, 2005, Ann Arbor, Michigan, "Overview of Tuberous Sclerosis Complex: Management and Treatment."

Invited speaker: Autism Conference: Awareness, community resources, intervention and parent and family issues, Michigan University, Kalamazoo, MI, April 23, 2010, Lecture title: "Biological advances in understanding autism."

TS Alliance 2013 Regional TSC Conference, "How studies of brain tissue from epilepsy surgery can lead to new drug treatments for epilepsy," Grand Rapids, Michigan, May 11, 2013.

Wayne County Community Mental Health, "Molecular Imaging in Autism: Relevance for the Development of New Clinical Treatments," January 24, 2013.

3. Invited seminars or lectures

DMC Executive Management Team Presentation, "Recent Developments in Autism: Science, Health Care Systems and Outcomes," September 18, 2013.

Invited Speaker. Otolaryngology Research Seminar Series. Wayne State University. January 14, 2009 Lecture title: "The role of serotonin in autism".

Invited speaker, Merrill Palmer Skillman Colloquium, "Application of molecular imaging in the design of novel interventions for developmental disorders." January 30, 2008.

Invited speaker, Grand Rounds, Division of Endocrinology, Department of Internal Medicine, Wayne State University, "HPA/HPO Axis in Borderline Personality Disorder," May 30, 2007.

Invited speaker Johns Hopkins University School of Medicine/Kennedy Krieger Institute Distinguished Scientist Lecture Series, "Understanding alterations during brain development with PET: A guide to new treatment approaches for autism," April 19, 2007.

Invited seminar, College of Pharmacy, Wayne State University, "Pharmacotherapy aimed at neuroplasticity in autism," January 18, 2005.

Invited speaker, University of Michigan Autism and Communication Disorders Center Autism Lecture Series, "The Role of Altered Serotonin Mechanisms for Brain Development in Autism," September 30, 2004.

Grand Rounds, Department of Psychiatry, Wayne State University, "Tuberous Sclerosis Complex: Genetics, Cell Biology, Behavior and Imaging," January 21, 2004.

Invited speaker, Cellular and Clinical Neurobiology seminar series, Wayne State University, November 25, 2003.

Invited speaker, BIRD seminar series, Wayne State University, March 31, 2003.

Invited seminar speaker, Department of Anatomy, Wayne State University, April 30, 2003.

Grand Rounds, Child Psychiatry, Wayne State University, May 14, 2002, "The role of functional imaging in the design of interventions for autism."

Invited seminar, Molecular Imaging Seminar, May 10, 2002 University of Washington, Seattle, "Role of PET Imaging in Autism."

Invited seminar, Department of Pharmacology, Wayne State University, May 11, 2001, "Functional imaging in autistic children."

Grand Rounds, Department of Pediatrics, Wayne State University, December 1, 2000, "PET Scanning research in Autism."

Grand Rounds, Department of Dermatology, Wayne State University, September 6, 2000, "Sturge-Weber Syndrome: Overview of features and new research."

Invited seminar, University of Michigan, Institute for Human Adjustment, Autism Faculty Seminar, March 31, 2000, "Role of functional imaging in autism."

Invited seminar, Department of Pediatrics, Division of Child Development and Rehabilitative Medicine, University of Pennsylvania, October 5, 1999, "Alteration of brain serotonin synthesis in autism."

Grand Rounds, Department of Pediatrics, Wayne State University, September 3, 1999, "Neuroimaging with PET in autistic children."

Grand Rounds, Department of Neurology (Child Neurology), Wayne State University, May 21, 1999, "Measurement of serotonin synthesis with PET in neurological disorders."

Grand Rounds, Department of Child Psychiatry, Wayne State University, April 13, 1999, "Alpha[C-11]methyl-L-tryptophan PET measures serotonin and kynurenine pathway metabolism: Implications for study of psychiatric and neurological disorders."

Grand Rounds, Department of Pediatrics, DeVos Children's Hospital, Grand Rapids, MI, September 1, 1998, "Recent developments in autism research."

Grand Rounds, Department of Radiology, University of Iowa, August 6, 1998, "Application of new tracers for Positron Emission Tomography."

Keynote speaker: Annual Research Day, Department of Psychiatry, Medical College of Ohio, Toledo, Ohio, April 9, 1998.

Killiam Lecture Series, Montreal Neurological Institute, McGill University, October 14, 1997, Montreal, Canada, "Alpha[C-11]methyl-L-tryptophan PET: Application to childhood disorders."

Grand Rounds, Department of Psychiatry, University of Alabama at Birmingham, May 6, 1997, "Altered brain serotonin synthesis in autism measured with PET."

Grand Rounds, Department of Neurology (Pediatric Neurology), Wayne State University, December 20, 1996, "Brain serotonin synthesis measured with alpha[C-11]methyl-tryptophan positron emission tomography in normal and autistic subjects."

Grand Rounds, Department of Psychiatry and Behavioral Neurosciences, Wayne State University, December 18, 1996, "Altered brain serotonin synthesis in autism measured with PET"

Institute National de la Sante' et de la Recherche Medicale, Neurobiologie Cellulaire et Fonctionnelle, Faculte de Medecine Pitie-Salpetriere, May 1991, "Unlocking Vaults: Organelle in search of a function."

Dr. Nicole Le Douarin, College de France, Institute d'Embryologie Cellulaire et Moleculaire, May 1991, "Vault immunofluorescence in brain: New insights regarding the origin of microglia."

UC Irvine Department of Pharmacology Seminar, March 1990, "Clues about receptor regulation from in vivo ligand binding studies."

Beckman Institute of Neuroscience, City of Hope, Duarte, California. November 1989, seminar speaker, "Role of receptor-mediated endocytosis in the regulation of the D2 dopamine receptor."

Neurology 200 (Neurology Grand Rounds, UCLA) October 26, 1988. "Receptor dynamics of the dopamine system."