

## Dr Terrie Inder

### General Bio



Dr Inder is a dual boarded newborn medicine physician and child neurologist with her research focus in the newborn brain. She also undertakes clinical service within the neonatal intensive care unit. As all her research activities are clinical investigations, the research studies and clinical care of high-risk infants are tightly integrated. Dr Inder's primary research is targeted at understanding the timing, mechanisms and impact of cerebral injury and altered cerebral development in infants at high risk for adverse neurodevelopmental outcome, including the prematurely-born infant, the sick term-born infant, and the infant with congenital heart disease. Her aim in her investigations is to investigate means of accurate, early diagnosis of brain injury as well as developing treatments and preventive strategies to reduce subsequent disabilities. This research work has utilized technologies including near infrared spectroscopy, electroencephalography and magnetic resonance imaging. Dr Inder has held previous leadership positions in neonatal medicine as Director of the Intellectual and Developmental Disabilities Research Center at Washington University in St Louis, the Chair and Mary Ellen Avery Professor of the Department of Pediatric Newborn Medicine at the Brigham and Womens Hospital in Boston and in 2022 as Director for the new Center for Neonatal Research at Childrens Hospital of Orange County. Her mission has been to develop programs that integrate discovery and innovation alongside translation into clinical excellence while mentoring the next generation of academic clinicians.

**Curriculum Vitae  
Inder, Terrie Eleanor**

**Date:** 03/23/2023  
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**Education**

2/83-12/88	MBChB Bachelor of Medicine and Surgery	Medicine and Surgery	University of Otago, Dunedin, New Zealand
12/92-12/97	MD Doctor of Medicine	Thesis in Medicine	University of Otago, Dunedin, New Zealand
12/91-12/96	FRACP Fellow Royal Australasian College of Physicians	Fellow Royal Australasian College of Physicians	Royal Australasian College of Physicians – Pediatrics with subspecialty Perinatal
12/2013-12/2014	MSc Master of Science (Honorary)	Medical Science	Harvard Medical School

**Postdoctoral Training**

12/88 – 12/89	Intern	General Medicine and Surgery	Waikato Hospital
12/89 – 12/92	Resident	Pediatrics	Dunedin Hospital, University of Otago, Dunedin, New Zealand
12/92 – 12/95	Fellow	Pediatrics – Newborn Medicine	Christchurch Hospital, Otago Medical School, Christchurch, New Zealand
12/95 – 6/96	Chief Resident	Pediatrics	Christchurch Hospital, New Zealand
7/96 – 6/99	Resident	Child Neurology	Boston Children’s Hospital, Harvard Medical School

### Faculty Academic Appointments

1999 – 2001	Lecturer	Pediatrics	Christchurch School of Medicine, University of Otago School of Medicine, University of Auckland
1999 - 2001	Consultant Child Neurologist	Pediatric Neurology	Starship Children’s Hospital, University of Auckland, Auckland, New Zealand
2001 – 2005	Associate Professor	Pediatrics, Child Neurology	Royal Children’s Hospital and Royal Women’s Hospitals, Murdoch Children’s Research Institute and the Howard Florey Institute, University of Melbourne, Australia
2005 – 2010	Associate Professor	Pediatrics, Neurology and Radiology	Washington University School of Medicine, St. Louis
2010 – 2013	Professor	Pediatrics, Neurology and Radiology	Washington University School of Medicine, St. Louis
2013 - 2022	Professor	Pediatric Newborn Medicine	Harvard Medical School
2022-	Professor	Pediatrics	University of California, Irvine

### Hospital/Affiliated Institution Appointments

1999 – 2001	Neonatologist	Neonatology	Christchurch School of Medicine, New Zealand
1999-2001	Child Neurologist	Pediatric Neurology	Starship Children’s Hospital, University of Auckland, Auckland, New Zealand
2001 – 2005	Neonatal Attending	Neonatology	Royal Woman’s Hospital, Melbourne
2001 – 2005	Child Neurologist	Neurology	Royal Children’s Hospital, Melbourne
2005 – 2013	Attending	Newborn Medicine	St. Louis Children’s Hospital, USA
2005 - 2013	Attending	Neonatal Neurology	St. Louis Children’s Hospital, USA
2013 - 2022	Attending	Newborn Medicine	Brigham and Women’s Hospital, USA
2022 -	Attending	Newborn Medicine	Childrens Hospital of Orange County, California, USA

### Other Professional Positions

2002 – Present	Member	International Society for Magnetic Resonance in Medicine
2006 -2014	Member	Steering Committee Vermont Oxford Network Encephalopathy Registry
2010 – 2013	Member, Washington University in St. Louis Gender Equity Committee	Washington University School of Medicine, St. Louis

2010 – 2013	McDonnell Academy Ambassador, University of Melbourne	University of Melbourne
2010 – 2013	Member, Chancellor’s Steering Committee for McDonnell Academy	Washington University School of Medicine, St. Louis
2010 – Present	Member	American Society for Clinical Investigation
2010 – Present	Member	American Pediatric Society
2010 -2014	Member	Anesthetic and Life Support Drugs Advisory Committee, FDA, Washington DC
2010 – 2018	Member	SMART Tots Scientific Advisory Board Pediatric Anesthesia Neurotoxicity
2014-Present	Member (2014-2020) Guest Editor (2021-	Neonatal-Perinatal Sub-Board for the American Board of Pediatrics.
2018- Present	Standing Member	Developmental Brain Disorders Study Section Roster (anticipated 6 years)
2020-Present	Member – Steering Committee	Newborn Brain Society

#### Major Administrative Leadership Positions

2005 – 2013	Director, Washington University Neonatal Development Research Team	Washington University School of Medicine, St. Louis
2008, 2010	Course Director, Newborn Brain Symposium	Washington University School of Medicine, St. Louis
2010 – 2013	Director, Washington University Intellectual and Developmental Disabilities Research Center	Washington University School of Medicine, St. Louis
2009 – 2013	Co-Director, Patient Orientated Research Unit- Department of Pediatrics	Washington University School of Medicine, St. Louis
2010-2013	Ambassador, McDonnell Scholars Academy and member of the Chancellors Steering Committee	Washington University in St. Louis
2010 – 2013	Director, Clinical and Translational Science Award Pediatric Research Training	Washington University School of Medicine, St. Louis
2013 - 2022	Department Chair, Department of Pediatric Newborn Medicine	Brigham and Women’s Hospital Harvard Medical School
2019 - 2022	Chief of Pediatrics	Brigham and Women’s Faulkner Hospital
2022 -	Director	Center for Neonatal Research, Childrens Hospital of Orange County

#### Committee Service

2011-2013	Member	Gender Equity Committee, Washington University in St Louis
2013 – 2016	Member	Committee on Academic Appointments & Promotions, Harvard Medical School
2013	Member	BWH Research Committee Brigham & Women’s Hospital, Boston, MA

2013	Member	Brigham & Women's Office of Women's Affairs Brigham & Women's Hospital, Boston, MA
2016	Member	AMC Task Force Brigham & Women's Hospital, Boston, MA
2016	Member	Neurology Chair Search Committee Brigham & Women's Hospital, Boston, MA
2017	Member	Center for Faculty Development Task Force Brigham & Women's Hospital, Boston, MA
2017	Member	Connors Research Institute Director Search Committee Brigham & Women's Hospital, Boston, MA
2017	Member	Surgical Chair Search Committee Brigham & Women's Hospital, Boston, MA
2017	Member	CNO Search Committee Brigham & Women's Hospital, Boston, MA
2017	Member	BCH Chief Developmental Medicine Search Committee Boston Children's Hospital, Boston, MA
2018	Member	Education Task Force Brigham & Women's Hospital, Boston, MA
2018	Member	Search Committee, Chair of Anesthesia Brigham & Women's Hospital, Boston, MA
2018	Chair	Wellness Task Force Brigham & Women's Hospital, Boston, MA
2018	Member	Social Justice & Equity Task Force Brigham & Women's Hospital, Boston, MA
2018	Chair	Task Force on Search Committee's Brigham & Women's Hospital, Boston, MA
2018	Standing Study Section Member	Developmental Brain Disorders Study Section, National Institute of Health
2019	Member	Culture Squad Task Force Brigham & Women's Hospital, Boston, MA
2020	Member	OB/GYN Chair Search Committee Brigham & Women's Hospital, Boston, MA
2020	Member	Brigham & Women's Physician's Organization BWPO President Search Committee
2020-2022	Member	Brigham & Women's Physician's Organization Board, BWPO Department Chair Trustee
2020-2022	Chair	Diversity, Equity and Inclusion Taskforce Brigham & Women's Hospital Physician Organization
2020	Chair	Search Committee, Chair of Pathology, Brigham & Women's Hospital, Boston, MA
2022	Chair	March of Dimes Walk for Babies Fundraiser Boston, Massachusetts

## Professional Societies

1989 – 1992	Member	Waikato Postgraduate Society
1992 - Present	Member	Royal Australasian College of Physicians
1993 – 2003	Member	Paediatric Society of New Zealand
1994 – 2004	Member	New Zealand Perinatal Society
1995 – 2005	Member	International Society for Free Radical Research
1996 – Present	Active Member	Child Neurology Society
2000 – Present	Member	European Neonatal Brain Club
2001 – Present	Active Member	Society for Pediatric Research
2005 – Present	Active Member	Society for Magnetic Resonance Imaging in Medicine
2006 – Present	Active Member	American Academy of Pediatrics
2010 – Present	Active Member	American Pediatric Society

## Editorial Boards – Scientific Advisory Boards

2003 – 2008	Consultant	Brainz Research, New Zealand
2010 – 2014	Member	Scientific Advisory Board, Masimo Technologies, Palo Alto, CA, USA
2007 – 2015	Editorial Board	Journal of Pediatrics
2011 – 2019	Editorial Board	Journal of Neurodevelopmental Disorders
2016 – 2019	Member	Scientific Advisory, Square Roots Advocacy Organization for Pregnancy Wellbeing, D.C.
2017 – Present	Member	Aspect Imaging Advisory Board
2017 – Present	Member	149 Medical Advisory Board
2019 – Present	Member	Chiesi Farmaceutici Advisory Board
2019 – Present	Consultant	Shire/Takeda Pharmaceutical Company
2020 – Present	Scientific Advisory Board	Deck Therapeutics

## Grant Review Activities:

### National Institute of Health

<u>Study Section/SEP</u>	<u>Study Section/SEP Name</u>	<u>Meeting Class</u>	<u>Attendee Type</u>	<u>Attendee Class</u>	<u>Meeting Date</u>	<u>SRO Name</u>
ZNR REV T15	Pediatric applications NINR	Video Assisted Meeting	Non-standing member	Regular	2013/4/24	Dr. Tamiz 'Chelvi' Thyagarajan
ZNS1 SRB-B(38)	Program grant applications	Regular	Non-standing member	Regular	2012/11/07	Richard Crossland
<u>ZRG1 SBIB-P (05)</u>	SBIB Pediatric and Fetal Applications	Video Assisted Meeting	Non-Standing Member	Regular	2012/06/14	Weihua Rao
<u>ZRG1 SBIB-V (82)</u>	SBIB Pediatric and Fetal Applications	Video Assisted Meeting	Non-Standing Member	Regular	2012/06/14	John Firrell

<u>ZHD1 RRG-K (92)</u>	Patient-Oriented Research Career Development Application	Telephone Assisted Meeting	Non-Standing Member	Teleconference	2012/04/19	Anne Krey
<u>ZHD1 DSR-W (02)</u>	Mentored Training in Executive Functioning (EF)	Regular	Non-Standing Member	Teleconference	2011/12/13	Carla Wells
<u>ZRG1 SBIB-V (82)</u>	SBIB Pediatric and Fetal Applications	Editorial Board	Non-Standing Member	Regular	2011/10/28	John Firrell
<u>ZHD1 RRG-K (51)</u>	Patient-Oriented Research Career Development Award	Regular	Non-Standing Member	Teleconference	2011/04/27	Anne Krey
<u>DBD</u>	Developmental Brain Disorders Study Section	Regular	Non-Standing Member	Regular	2018/02/01	Pat Manos
<u>ZRG1 BDCN-M (90)</u>	Neurodevelopmental Disorders	Telephone Assisted Meeting	Non-Standing Member	Teleconference	2018/06/27	Pat Manos
<u>ZNSI SRB-A (22)</u>	Program Project Grant P01	Telephone Assisted Meeting	Non-Standing Meeting	Teleconference	2018/10/17	Clariu, Ana
<u>ZRG1 BDCN-M (90)</u>	Neurodevelopmental Disorders	Telephone Assisted Meeting	Non-Standing Meeting	Teleconference	2018/11/20	Pat Manos
<u>ZNS1 SRB-A (25)</u>	POI Reviewers Meeting	Regular	Standard Meeting	Standard Meeting	2019/0701	Ana Olariu
<u>ZNS1 SRB-A (25)</u>	POI Reviewers Meeting	Regular	Standard Meeting	Standard Meeting	2019/0610	Ana Olariu
<u>DBD</u>	Developmental Brain Disorders Study Section,	Regular	Standing Study Section Member	Regular	2018- current	Pat Manos

### Additional Grant Review

Review for National organizations including the Medical Research Council of New Zealand, National Health and Medical Council of Australia, Swiss National Foundation, Medical Research Council of the United Kingdom. Review for the Doris Duke Charitable Foundation, Smart Tots Foundation, United Cerebral Palsy and the Thrasher Foundation.

### Editorial Activities:

- Peer Reviewer:
  - Pediatrics
  - Journal of Pediatrics
  - JAMA
  - Lancet
  - Pediatric Research

- Journal of Pediatrics and Child Health
- Archives of Diseases in Childhood
- Annals of Neurology
- Early Human Development
- Journal of Perinatology
- Brain
- Acta Paediatrica
- Proceedings of the National Academy of Sciences
- New England Journal of Medicine
- Neuroimage
- Neurology

- Other Editorial Roles:

2007 – 2015	Editorial Board	Journal of Pediatrics
2011 – Present	Editorial Board	Journal of Neurodevelopmental Disorders

### Honors and Awards

1982	University Junior Scholarship		General Academic
1983	Stage 1 Psychology Prize (Janet Ferguson Memorial Prize)	University of Otago, New Zealand	Psychology
1983	Women's Federation Prize	University of Otago, New Zealand	Top female student in first year of University
1984	Physiology Prize	Otago Medical School, New Zealand	Top mark in Physiology
1985	Microbiology Prize, Sydney Champtaloup Memorial Prize	Otago Medical School, New Zealand	Top mark in Microbiology
1985	Junior Medical School Scholarship	Otago Medical School, New Zealand	Top aggregate grade in third year of medical school
1985	Clinical Physiology Prize, John Malcolm Memorial Prize	Otago Medical School, New Zealand	Top grade in clinical physiology
1987	Pathology Prize, T.H. Pullar Memorial Prize	Otago Medical School, New Zealand	Top grade in clinical pathology
1987	Fowler Scholarship in Medicine	Otago Medical School, New Zealand	Top aggregate mark in medical school class
1987	Renshaw Award	Otago Medical School, New Zealand	Top Summer Studentship Project
1988	Staff Prize in Psychiatry	Otago Medical School, New Zealand	Highest grade in Psychiatry
1988	Obstetrics and Gynaecology Prize	Otago Medical School, New Zealand	Highest grade in Obstetrics and Gynaecology
1988	Alumnus Association Prize	Otago Medical School, New Zealand	Highest aggregate grade in medical school class
1988	Travelling Scholarship in Medicine	Otago Medical School, New Zealand	Top graduate in medical class
1989	Waikato Young Investigator Award	Waikato Hospital Board Foundation	Best presentation at annual symposium



1992	Paediatric Research Fellowship	Masonic Lodge Fellowship, University of Otago	Competitive Fellowship application
1993	New Zealand Paediatric Society Young Investigators Award	New Zealand Paediatric Society	Best presentation at annual symposium
1994	Australasian Perinatal Society Young Presenters Award	Perinatal Society of Australia and New Zealand	Best presentation at annual symposium
1995	Australasian Perinatal Society Young Presenters Award	Perinatal Society of Australia and New Zealand	Best presentation at annual symposium
1995	HRC Young Investigator Award	Health Research Council of New Zealand	Competitive award in recognition of research potential
1999	Senior Research Fellowship	Health Research Council and New Zealand Neurological Foundation	Competitive fellowship to protect research time
1999	Clinical Resident Research Award	Society for Pediatric Research	Best presentation at annual symposium
2004	Child Neurology Society (USA) Young Investigator Award	Child Neurology Society (USA)	Competitive research application with review of research potential
2004	Barry Smith Memorial Lectureship	Toronto Hospital for Sick Children	Invited lectureship
2007	Paine Lectorship	Children's National Hospital, Washington DC	Invited lectureship
2008	Charter Day Lecture	Trinity College, Dublin, Ireland	Invited lectureship
2008	Dr. John J Fangman Lectureship	Children's Hospital, Minneapolis, MN	Invited lectureship
2008	Doris Duke Distinguished Clinical Scientist Award	Doris Duke Charitable Foundation	Competitive mentoring award in recognition of research and mentoring
2011	Hugs for Hero's Award	St Louis Children's Hospital Foundation	Clinical Award in recognition of clinical care and service
2012	Wendell Scott Lecture	Dept of Radiology, Washington University in St. Louis	Invited lectureship
2014	Mary Ellen Avery Professorship	Harvard Medical School	Endowed Chair
2015	Jewett Lecture	American College of Obstetrics and Gynecology	Invited Named Lectureship
2016	Estrellita and Yousef Karsh Visiting Professorship	Children's Hospital of Eastern Ontario, Canada	Invited Professor
2017	Sam Darwish Memorial Lecture	University of Calgary, Canada	Invited Lecture
2017	Finalist, Schwartz National Compassionate Caregiver of the Year Award	Schwartz Center, Boston	Award

2019	American Health Council	Honors, America's Best Doctors	Award
2021	Norman Kretchmer Visiting Professor	Stanford University	Invited Professor
2022	A. Clifford Barger Excellence in Mentoring Award	Harvard Medical School	Award
2022	Diana Woo Memorial Lecture	University of Chicago	Invited Professor

### **Report of Funded and Unfunded Projects:**

#### **Research Support:**

##### **Past**

<u>Years</u>	<u>Role</u>	<u>Funding Source</u> <u>Grant Type/#</u>	<u>If PI, Total</u> <u>direct</u>
1993 - 1996	Principal Investigator	Health Research Council of New Zealand	NZD\$125,000
The Influence of Selenium Supplementation on Clinical Outcome in New Zealand Very Low Birthweight Infants - a Nationwide Randomized Controlled Trial.			
This study was a randomized controlled trial of selenium supplementation in the neonatal intensive care unit in a selenium deficient geographical area to evaluate the impact of neonatal outcomes, particularly chronic lung disease.			
1993 - 1996	Principal Investigator	Health Research Council of New Zealand	NZD \$78,000
Mechanisms of Free Radical Mediated Injury in Chronic Lung Disease in VLBW Infants.			
To measure the levels of free radicals including lipid peroxides in the endotracheal aspirates of preterm infants and relate these measures to clinical outcomes.			
1999 - 2000	Principal Investigator	Canterbury Medical Research Foundation	NZD \$32,425
The Diagnosis of Periventricular White Matter Injury in the Premature Infant.			
This study undertook magnetic resonance imaging studies in preterm infants to define the nature of white matter injury.			
1999 - 2000	Principal Investigator	Lottery Research Group	NZD \$39,385
Measures of Free Radical Activity in the Cerebrospinal Fluid of Premature Infant			
To measure the presence of any free radical activity with lipid and protein oxidative products in the CSF of premature infants and relate this to brain injury.			
1999 - 2001	Principal Investigator	Lottery Research Group	NZD \$122,893
Quantitative Volumetric 3D Magnetic Resonance Imaging of the Premature Brain.			
To apply volumetric techniques on magnetic resonance imaging in preterm infants to gain insight into the impact of preterm birth on brain development.			
1999 - 2001	Principal Investigator	Health Research Council of New Zealand	NZD \$50,000
Quantitative Volumetric 3D Magnetic Resonance Imaging of the Premature Brain.			
To acquire equipment to assist with the application of brain volume techniques in the newborn brain.			

1999 - 2001	Principal Investigator	Lottery Research Group	NZD \$77,206
Investigation of Hypoxic-Ischemic Injury in the Premature Brain			
To evaluate the utility of bedside limited channel electroencephalography in defining hypoxic-ischemic brain injury in the preterm infant.			
2000 - 2001	Principal Investigator	Lottery Research Group	NZD \$70,000
The Relationship of Measures of Spectral Edge to Brain Injury in the Premature Infant.			
To apply measures of upper spectral edge frequency to define preterm infants at risk for brain injury derived from continuous bedside limited channel electroencephalography in the first three days of life.			
2000 - 2002	Principal Investigator	Health Research Council of New Zealand	NZD \$176,075
The Correlation of Measures of Electroencephalographic Activity with Neurological Outcome in the Premature Infant.			
To develop quantitative measures of brain function in the preterm infant using electroencephalographic activity and relate this to two-year outcomes.			
2001 - 2002	Principal Investigator	Neurological Foundation of New Zealand	NZD \$55,000
New Biomarkers of Oxidative Stress in Brain Injury in Premature Infants			
To investigate the application of new markers of protein and lipid oxidation in the blood, CSF and endotracheal aspirates of preterm infants in relation to morbidity.			
2001 - 2002	Principal Investigator	Neurological Foundation of New Zealand	NZD \$65,000
The Neurological and Developmental Outcome of Very Low Birthweight Infants at 2 years			
To complete the evaluation of developmental outcomes in preterm infants who had undergone advanced volumetric MRI studies to relate brain volumes to two-year outcomes.			
2002 - 2003	Principal Investigator	The Jack Brockhoff Foundation	AUD \$123,000
Utilization of Advanced MRI Techniques in Understanding Altered Brain Development in the Premature Infant			
To apply more advanced imaging techniques including brain volumes, diffusion imaging and brain metrics for pilot data in the evaluation of the impact of preterm birth on brain development.			
2002 - 2004	Principal Investigator	United Cerebral Palsy Research and Educational Foundation (USA)	USD \$100,000
Understanding Brain Injury and Altered Brain Development in the Premature Infant - Insights Utilizing Advanced MRI Techniques.			
To apply more advanced imaging techniques including brain volumes, diffusion imaging and brain metrics in the evaluation of the impact of preterm birth on the motor systems that may result in the elevated risk of cerebral palsy in preterm infants.			
2002 - 2005	Principal Investigator	National Health and Medical Research Council, Australia	AUD \$495,000
The Effect of Very Premature Birth on Brain Development			
To extend the application of magnetic resonance imaging (metrics, volumes, diffusion analysis) in 250 preterm infants at the time of discharge from the neonatal intensive care unit to evaluate the impact of different therapies such as morphine or breast milk exposure on brain development.			

2003 - 2004	Co-Investigator	Australian Financial Markets	AUD \$85,000
Early Intervention with premature Infants: Improving Medical, Neurobehavioral and Brain Functioning through Environmental Interventions.			
A pilot study to investigate the impact of training mothers in the neonatal intensive care unit to be more involved in the care of their preterm infant to reduce stress in both the infant and the mother.			
2003 - 2006	Principal Investigator	National Health and Medical Research Council	AUD \$621,000
Improving the Outcome of Premature Infants - A randomized trial of preventative care at home			
A randomized controlled trial examining the neurodevelopmental impact at 2 years of age from 8 visits by a psychologist and physical therapist in the first year of life after discharge from the neonatal intensive care unit for 200 preterm infants.			
2004 - 2007	Co-Investigator	National Health and Medical Research Council	AUD \$481,000
Insights into the Acute Cerebral Lesion of Childhood Diabetes and its Neuropsychological Consequences			
A longitudinal magnetic resonance and neuropsychological evaluation of children who present with new onset type I diabetes – with and without ketoacidosis – with four evaluations in the first six months including pre-treatment, one-week post-treatment, 4 weeks and 6 months after diagnosis.			
2004 - 2007	Principal Investigator	National Institutes of Health (NHLBI RO1 HL074942)	USD \$1,669,560
Ventilation Modes and CNS Injury in Baboons with BPD.			
To evaluate the impact of differing ventilation modes on brain neuroimaging and histological findings in a primate model of neonatal intensive care.			
2005 - 2005	Principal Investigator	The Jack Brockhoff Foundation	AUD \$35,000
Utilization of advanced MRI Techniques - Transporting Sick Newborns			
The aim of this study was to develop equipment to stabilize infants during transfer to the MRI scanner for evaluation.			
2005 - 2007	Co-Investigator	Australian Heart Foundation	AUD \$85,000
Incidence and Timing of Neurological Abnormalities, and Influence on Outcome After Infant Cardiac Surgery.			
This study was a multi-site observational study of 150 term born infants with congenital heart disease undertaking MRI scans and neurobehavior pre-operatively, post-operatively and at 3 months of age to define the nature and timing of brain injury and alterations in brain development.			
2005 - 2008	Co-Investigator	National Research Council	AUD \$541,000
Environmental Intervention with Premature Infants: Improving Medical, Neurobehavioral Development and Brain Functioning			

A randomized controlled study of the neurodevelopmental impact of a neonatal intensive care-based intervention for mothers and infants aimed to empower mothers in the care of their infants and reduce stress in the newborn infant.

2004- 2008	Principal Investigator	National Health and Medical Research Council	USD \$481,000
The ICE trial – A randomized trial of therapeutic hypothermia in term infants			
A randomized controlled trial to investigate the impact of therapeutic hypothermia using sport ice packs in term infants with hypoxic-ischemic encephalopathy.			

2007 - 2008	Principal Investigator	Australian Heart Foundation	USD \$181,000
Neonatal Epileptic Seizures Cure Kids Foundation			
A randomized controlled trial to investigate the role of monitoring for seizure activity in term infants with hypoxic-ischemic encephalopathy.			

2007 - 2012	Co-Investigator	National Institute of Health (NINDS Sub Yale 07-0293)	USD \$16,583
Genes Target for IVH			
Site investigator to co-ordinate the collection of biological samples to define genes that may increase the risk of intraventricular hemorrhage in the preterm infant.			

2008 - 2011	Co-Investigator	NICHD R21 HD057512-01	USD \$275,000
Optical Imaging of Brain Function in the Preterm Infant. National Institute of Health			

2008 - 2011	Co-Investigator	National Institute of Health (NICHD R44-HD042872)	USD \$566,641
EEG Monitoring in Term Infants with Encephalopathy.			
A SBIR grant aimed at developing new algorithms to define the extent and pattern of brain injury from electroencephalography in term infants with hypoxic-ischemic encephalopathy.			

2008 - 2014	Principal Investigator	National Institute of Health (NICHD RO1 HD058056)	USD \$1,774,647
Neurobehavioral Impairments in Preterm Children - A Longitudinal MR Study.			
This study follows our original cohort of 227 preterm infants and 100 term born control infants who underwent MRI at the time of discharge from the NICU. These children have been followed with >90% success at 2 and 5 years. This grant funded the follow up and repeats MR imaging at 7 years of age with more advanced techniques to track longitudinal change in brain development through childhood and the relationship to outcomes. A competitive renewal was submitted with a score of 20 and will be revised for resubmission in the next two weeks.			

2008 - 2014	Principal Investigator	Doris Duke Distinguished Clinical Scientists Award	USD \$1,500,000
Understanding Brain Injury and Development in At-Risk Infants to Improve Outcomes			
This study explored the relationship of the neural progenitor population at the subventricular zone to outcomes in preterm infants. This grant also aimed to provide >50% of its resource toward mentorship and support for fellows and junior faculty.			

2009 - 2014	Principal Investigator	NICHD RO1HD057098	USD \$2,661,684
Understanding Neurobehavioral Deficits in Preterm Infants Through Imaging			
This study aims to define the nature and timing of alterations in brain development utilizing cortical cartography, diffusion and volumetry with serial MRI throughout the course of the NICU period. Infants receive between 2-4 scans prior to discharge and are followed up to 5 years for neurodevelopmental outcome.			
2010 - 2014	Co-Investigator	National Institute of Health (NICHD RO1 HD061619 PI: Cahill/Macones)	USD \$3,307,399
Predicting Fetal Acidemia with Intrapartum Electronic Fetal Heart Rate Monitoring.			
This study aims to correlate the electronic fetal heart monitoring patterns from 5,000 labors to cord pH. In addition, a subset of 200 infants – 50 with acidemia and 150 controls without acidemia – underwent MR imaging to understand the relationship of cord pH to brain injury. These images will also be studied for the relationship of maternal exposures to brain development.			
2010 - 2015	Principal Investigator	National Institute of Health (NICHD P30HD062171)	USD \$4,555,033
Washington University Intellectual and Developmental Disabilities Research Center.			
This grant is a new Intellectual and Developmental Disabilities Research Center with research focus will be on cerebral connectivity, genetics and environmental influences. More than 60 investigators from 12 university departments are involved in the center's research with use of the four Core services in Imaging, Translational Animal Models, Biostatistics and informatics and Phenotyping.			
2016-2019	Principal Investigator	CRICO Grant Program/ Risk Management Foundation	USD \$406,318
Implementation of optimal neuroprotection in the term born infant with encephalopathy			
The treatment of infants with mild HIE is currently an area of confusion and contention in neonatology. This study will perform early cerebral MRIs on a cohort of infants that were evaluated for hypothermia, but determined not to require treatment, and on a small cohort of healthy infants for control data. The cerebral MRI findings between these infants will be compared to those that were screened for TH and treated in-order to evaluate the sensitivity of current eligibility criteria for therapeutic hypothermia.			
2017-2018	Co-Investigator	SPS216730 - The Robertson Foundation- Duke University consortium (Kurtzberg)	USD \$34,500
A phase II multi-site study of autologous cord blood cells for hypoxic ischemic encephalopathy (HIE)			
This is Multicenter Phase 2 RCT to evaluate the effect of transfusing volume and red cell reduced autologous cord blood (rich in mononuclear cells) in improving the outcome of babies with moderate to severe encephalopathy receiving therapeutic hypothermia. Each baby will receive 1-2 transfusions in the first 48 hours of life. The primary outcome is survival and neurodevelopmental outcome at one year of age.			
2001 - 2019	Co- Investigator	NICHD5R01HD076258 – NIH-Boston Children’s consortium (Grant)	USD\$38,342
Perinatal Brain Injury: Potential of innovative NIRS to optimize hypothermia			
Neonatal encephalopathy continues to cause significant morbidity and the lack of a bedside tool to assess newborn brain health limits progress in neonatal care that could improve			

neurodevelopmental outcomes. The overall goal of this proposal is to determine if FDNIRS-DCS can screen for acute neonatal encephalopathy, assess response to treatment and predict outcomes in a population of at-risk neonates

2017-2020	Principal Investigator	Brigham Research Institute Transformative Award	USD \$287,500
Healthy Starts to Life - Transformative Award in Newborn Research			
This study proposes to build a new neonatal and childhood research platform, that will both expand on the existing LIFECODES platform alongside more in-depth pipelines for targeted populations of high-risk infants. LIFECODES is one of the nation’s largest pregnancy cohort studies with an extensive biobank of samples collected during pregnancy to research biomarkers of pregnancy complications including preterm birth and preeclampsia. To date, limited neonatal and no childhood data has been collected for these pregnancies.			

2014-2021	Principal Investigator	POM Wonderful LLC	USD \$750,000
Impact of maternal pomegranate ingestion on brain growth and development in infants with in-utero growth restriction.			
The objective of this research is to study the impact of maternal pomegranate ingestion on brain growth and development in infants with in-utero growth restriction.			

2019-2022	Principal Investigator	Deborah Monroe Noonan Memorial Fund Research Grant	USD \$25,000
Optimizing therapeutic hypothermia eligibility criteria			
This study aims to compare cerebral MRI findings between three groups – infants who were screened for TH and treated, those who were screened for TH and not treated, and healthy controls.			

2020-2022	Co-Investigator	NIH – 3R34DA050289-01S2 (Nelson)	USD \$53,535
The Cumulative Risk of Substance Exposure and Early Life Adversity on Child Health Development and Outcomes			
The COVID-19 pandemic has reached nearly every continent across the globe with a profound impact in the United States. There is limited information regarding the susceptibility of pregnant women to experience more severe illness, with corresponding implications for their child. While there is uncertainty surrounding the evidence of vertical transmission, consequential stress of contracting the infection while pregnant may pose a unique set of challenges for new infants and mothers in the current global, national, and local environments. Beyond the physical effects of the illness, contracting the virus during pregnancy is undoubtedly stressful.			

**Current**

2017-2023	Principal Investigator	CRICO Grant Program/ Risk Management Foundation	USD \$200,000
Optimizing the diagnoses of cerebral injury in newborn infants with mild neonatal encephalopathy			
The treatment of infants with mild HIE is currently an area of confusion and contention in neonatology. This study will perform early cerebral MRIs on a cohort of infants that were evaluated for hypothermia, but determined not to require treatment, and on a small cohort of healthy infants for control data. The cerebral MRI findings between these infants will be compared to those who			

were screened for TH and treated in order to evaluate the sensitivity of current eligibility criteria for therapeutic hypothermia.

2018-2023	Principal Investigator	NIH – R01HD091067 (Franceschini, Inder)	USD \$3,342,290
DCS cerebral blood flow monitor for extreme low-birth-weight infants			
We propose to develop a novel diffuse correlation spectroscopy (DCS) system optimized for quantitative monitoring of cerebral blood flow index in extremely premature infants. The successful development, validation and demonstration of clinical feasibility and effectiveness of our proposed technology will lead to new patient management approaches for reducing neurological injury, protecting neurocognitive function, and reducing the overall morbidity and mortality associated with prematurity.			

2019-2023	Principal Investigator	Charles H. Hood Foundation Major Grant - Child and Adolescent Mental Health	USD \$450,000
The evolution and consequences of perinatal ischemic brain injury			
Hypoxic-ischemic encephalopathy (HIE) is the most common form of neonatal brain injury, contributing to 25% of newborn deaths worldwide. This study aims to 1) define the nature of the temporal evolution of a perinatal ischemic brain injury, including its secondary impact on brain development, in term-born infants with HIE receiving therapeutic hypothermia compared to typical control infants; and 2) define the relationships between brain injury, subsequent cerebral development and neurodevelopmental outcome.			

2019-2024	Co-Investigator	NIH – R01HD097327 (Belfort)	USD \$3,796,466
Targeting human milk fortification to improve preterm infant growth and brain development			
This study will test an innovative strategy to individually target human milk fortification and eliminate macronutrient intake deficits during the neonatal intensive care unit hospitalization, which is a critical period for brain development in the very preterm infant. We will test the effects of this intervention on physical growth and body composition, early brain development assessed by MRI, and a range of neurodevelopmental outcomes at 2 years corrected age. The overall goal is to identify pragmatic nutrition-based clinical strategies for neonatal intensive care that improve long-term health and neurodevelopmental outcomes for the ~63,000 very preterm infants born each year in the U.S. and many more worldwide.			

2019-2023	Principal Investigator	NIH – R43NS110337 (Zimmermann, Inder)	USD \$556,270
Development and evaluation of diffuse correlation spectroscopy to monitor cerebral blood flow and detect intraventricular hemorrhage in extremely premature infants			
This project aims to develop a novel near-infrared diffuse correlation spectroscopy (DCS) system optimized for monitoring of the cerebral blood flow index in extremely premature infants. The successful development, validation and demonstration of clinical feasibility and effectiveness of the proposed technology will lead to new patient management approaches for reducing neurological injury, protecting neurocognitive function, and reducing the overall morbidity and mortality associated with prematurity.			

2022-2027	Principal Investigator	NIH – <a href="#">1UG3NS126701-01</a>	\$12,332,340.00
Thyroxine Treatment in Premature Infants with Intraventricular Hemorrhage: Phase III Clinical Trial (scored SEP 33% impact JIT, awaiting council review or resubmission)			



Intraventricular hemorrhage (IVH) remains a major complication of prematurity and the survivors of IVH suffer from cerebral palsy, cognitive deficits, and neurobehavioral disorders. We propose a Phase III multicenter randomized controlled trial of thyroid hormone treatment in extremely premature neonates (23- 28 weeks gestation) with grade II-IV IVH to enhance their neurodevelopmental outcome. We will perform post-discharge MRI of brain at 44±1 weeks of postmenstrual age and assess neurodevelopmental outcome at 2 years of age. The study will conclusively determine whether the T4 treatment enhances motor outcome and diminishes composite endpoint of death or disability in preterm infants with grade II-IV IVH.

2022 - 2027	Principal Investigator	National Institute of Health (NICHD RO1 HD058056-02)	USD \$4,774,647
<b>Neurobehavioral Impairments in Preterm Children - A Longitudinal MR Study.</b>			
This study follows our original cohort of 227 preterm infants and 100 term born control infants who underwent MRI at the time of discharge from the NICU. These children have been followed with >80% success at 2, 5, 7 and 13 years with previous MR imaging at term equivalent, 7 and 13 years confirming the impact of preterm birth on altered brain development. This grant will fund the follow up and repeat MR imaging at 20 years of age with more advanced techniques, including impact on cerebrovascular architecture for the first time, to track longitudinal change in brain development through childhood and the relationship to outcomes. Finally, risk factors for early cognitive decline including characterization of Epo2 and 4 status will be defined to commence investigation of the impact of preterm birth on risk for early cognitive decline.			

### **Teaching and Training:**

#### **Teaching of Students in Courses**

2007 - 2013	Lectures	Bio 4156	2 sessions
Principles and Application of Imaging Sciences			
2007 - 2013	Lectures	Bio 1015	2 sessions
Application of Neurobiological Principles			
2007 - 2013	Lectures	Chem 181	1 session
Freshman Chemistry Research Seminar Series			

Supervise on average three undergraduate students and three medical students for upto 12-month programs in clinical research each year.

#### **Teaching of Residents, Clinical Fellows and Research Fellows**

2007 - 2013	Lectures	Newborn Medicine Fellowship Program	1 session
Neonatal Neurology and brain injury			

2007 - 2013	Bedside teaching rounds	Newborn medicine and Neurology residents and fellows	monthly
Examination and review of imaging and pathophysiology for 1-2 infants with neonatal neurological disorders in the NICU			
2014 -2022	Didactic Resident Teaching	Newborn medicine and Neurology residents and fellows	6 sessions
Neonatal Neurology and Brain Injury			
2014- 2022	Bedside teaching rounds	Newborn medicine and Neurology residents and fellows	20 sessions
Neonatal Neurology, Examination of the newborn and understanding of diagnosis and treatment of common neonatal neurology conditions			
2014-2022	Harvard-MIT Health Sciences & Technology	Neuroprotection for the Newborn	1 session
Neonatal Neurology, Examination of the newborn and understanding of diagnosis and treatment of common neonatal neurology conditions			

### Clinical Supervisory and Training Requirements

Professor in Pediatrics responsible for teaching newborn medicine, child neurology, and neonatal neurology of medical students, residents and fellows. Additional responsibilities in assisting residents and fellows in research in the field of neonatal neurology.

### Formally Supervised Career Development Trainees

1. Mentored Career Development Awardees	Name and Degree	Current Title
2008 – 2015	Steve Liao, MD	Assistant Professor, Newborn Medicine, Washington University, St. Louis, MO
Institutional KL2 career development award. Completed Master’s in Clinical Investigation. Successful Loan Repayment Program (NIH). Academic clinical investigator		
2008 – current	Christopher Smyser, MD	Professor, Neurology Washington University, St. Louis
Awarded K02 2014 – 2019. Successful Loan Repayment Program (NIH)		
2009 – current	David Limbrick, MD, PhD	Professor, Dept of Neurosurgery, Chief of Pediatric Neurosurgery, St Louis Childrens Hospital. Washington University, St. Louis, MO
Mentor for K23 Award from NINDS. Created National Hydrocephalus Center. Successful Loan Repayment Program (NIH)		

Principal Investigator and co-investigator multiple R Awards		
2009 – Current	Cynthia Ortinau, MD	Assistant Professor, Newborn Medicine, Washington University, St. Louis, MO
Successful funding application for three-year Foundation support. Institutional KL2 career development award Successful Loan Repayment Program (NIH) Mentor for 2018-2023 K23 award.		
2010 – current	Cynthia Rogers, MD	Professor, Child Psychiatry, Division Director, Child Psychiatry Washington University, St. Louis, MO
Institutional KL2 career development award. K23 award 2014-2018 with Loan Repayment Program (NIH) 2016- current Principal Investigator multiple R Awards National Institute of Health		
2010 – current	Roberta Pineda, PhD, OTR/L	Assistant Professor, Occupational Therapy, University of Southern California
Institutional K12 career development award. 2021 Principal investigator National Institute of Health R01		
2014- current	Brian Walsh	Assistant Professor, University of Cork, Ireland
2014 T32 Mentored Clinical Research Award 2018 CRICO Professional Organization Project Grant Award 2020 National Irish Health Council Investigator Award		
2015-current	Rimi Sen, MD	Assistant Professor, Pediatric Newborn Medicine, Brigham & Women’s Hospital, Boston, MA
K23 Mentored Clinical Research Award - Advisory Group Massachusetts Life Sciences Major Award National Institute of Health R Award		
2018-current	Cindy Liu, PhD	Assistant Professor, Pediatric Newborn Medicine, Brigham & Women’s Hospital, Boston, MA
Mentor of K23 Mentored Clinical Research Award		
2018-current	CC Lee, MD	Associate Professor, Pediatric Newborn Medicine, Brigham & Women’s Hospital, Boston, MA
Mentor of K23 Mentored Clinical Research Award 2018-2023 2022 Successful two R01-Awards National Institute of Health		

2019 – current	Carmen Monthe-Dreze MD	Instructor, Pediatric Newborn Medicine, Harvard Medical School, Boston
NIH Diversity Career Development Award. Harvard Medical School Diversity and Inclusion Career Development Award. Successful Loan Repayment Program (NIH)		

2018 – current	Mohamed El-Dib, MD	Assistant Professor, Pediatric Newborn Medicine, Brigham & Women’s Hospital, Boston, MA
Funded clinical investigator focused in neonatal neuroscience		

2018 – current	Carmina Erdei, MD	Assistant Professor, Pediatric Newborn Medicine, Brigham & Women’s Hospital, Boston, MA
Funded clinical investigator dual boarded neonatologist and developmental pediatrician		

<b>2. PhD Students</b>	<b>Name and Degree</b>	<b>Current Title</b>
2003 – 2007	Nisha Brown, PhD	Research Fellow, UOM
PhD awarded 2007. Remains active Research Fellow in Neonatal Neurobehavior		

2003 – 2007	Rodney Hunt, PhD	Division Director, Royal Children’s Hospital
PhD awarded 2007. Division Director Newborn Medicine Royal Children’s Hospital, Melbourne		

2004-2009	Deanne Thompson, PhD	Scientist, NHMRC Fellowship
PhD Awarded 2009. Director of Imaging Analysis Laboratory Murdoch Children’s research Institute, Melbourne supervising several trainees. Recognized as Research Fellow by the National Health and Research Council		

2004 – 2010	Divyen Shah	Senior Lecturer, Queen Mary University of London
PhD awarded 2009. Active academic appointment in London. Completed 12 manuscripts related to PhD work		

2005 – 2009	Jason Hill, MD, PhD	Pediatric Resident, Columbia, New York City
Manuscripts in Cerebral Cortex and Journal of Neuroscience. PhD Awarded 2009		

2005 – 2009	Alicia Spittle, PhD	NHMRC Research Fellow, UOM
Eight manuscripts. PhD Awarded 2009. L’Oreal Scientific Finalist Australia. Independent Funding for salary and ongoing research		

2006 – 2010	Andrew Knutsen, PhD	NIH Fellowship
PhD awarded 2010. Postdoctoral Research Fellow at the National Institute of Health		

2006 – 2010	Jennifer Griffith, MD, PhD	Pediatric Neurology Fellow, Washington University, St. Louis, MO
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PhD Awarded 2010. Completed two manuscripts
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2006 - 2010	Timothy Mitchell, PhD	Postdoc, Washington University, St. Louis, MO
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PhD Awarded 2010. Completed two manuscripts. Postdoctoral Fellowship being undertaken
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2008 - 2013	Joan Smith, PhD	Nurse Practitioner, St. Louis Children's Hospital
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PhD Awarded 2013. Completed two manuscripts. Recognized as PhD nurse leader for institution
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2008 - 2013	Yuning Zhang, PhD	Washington University, St. Louis, MO
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PhD Awarded 2013. Teaching position at University of Virginia
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**Invited Presentations – Local, National and International Presentations:**

**Local**

1999	New Perspectives on Brain Injury in Neonates	Need
	24th Australian and New Zealand Conference in Pediatric and Neonatal Intensive Care, Christchurch, New Zealand	Symposium

2000	A Window into the Neonatal Brain.	Grand Rounds
	Starship Children's Hospital, Auckland, New Zealand	

2001	Neuromuscular Disorders in Children	Grand Rounds
	Starship Children's Hospital, Auckland, New Zealand	

2003	Is it Birth Asphyxia?	Symposium
	Hopkins Symposium 2003, Royal Children's Hospital, Melbourne Australia	

2003	Pathogenesis of the Major Neuropathologies in the Preterm Brain.	Symposium
	Nurturing Neonatal Neurons Kitchen Scholar Symposium. Melbourne	

2003	Advanced MRI Techniques	Symposium
	Nurturing Neonatal Neurons Kitchen Scholar Symposium. Melbourne	

2004	Continuous EEG monitoring in the PICU	Symposium
	Australasian Intensive Care Meeting Melbourne	

2005	The Journey in Understanding Cerebral Injury in the Newborn Brain	Grand Rounds
	Royal Women's Hospital, University of Melbourne	

2005	Insights in vivo for the At-Risk Newborn Brain	Pediatric Grand Rounds
Washington University St. Louis, USA		
2005	Defining in-vivo the At-Risk Newborn Brain	Grand Rounds
St. Louis Children's Hospital. Washington University, St. Louis, USA		
2005	Seizures in the Newborn - Who? Why? And What Next?	Teaching Seminar
Early Bird Pediatric Conference, St. Louis Children's Hospital		
2006	New Advances in Understanding Injury and Altered Development in the Brain of the Preterm Infant.	Teaching Seminar
Perinatal Meeting, Barnes Jewish Hospital, St. Louis		
2006	Insights into Injury in the Newborn Brain - Where and Why? Hope Center for Neurological Diseases	Seminar Series
Washington University, St. Louis		
2006	Mechanisms of Injury in the Newborn Brain - Understanding the Basics of Lesional Neuropathology - Who, When, and Why?	Symposium
Newborn Brain Symposium. St. Louis Children's Hospital		
2006	Understanding Cerebral Injury, It's Recognition of Technologies and Impact on Development - Translation into my clinical practice in 2006	Symposium
Newborn Brain Symposium. St. Louis Children's Hospital		
2008	Insights into Injury and Abnormal Development in the Newborn Brain	Seminar
Clinical Pediatric Update. Washington University		
2009	Inside the Newborn Brain - The Application of MR imaging in Evaluation of Brain Injury and Development	Symposium
Washington University Imaging Retreat		
2012	Advances in Caring for the Newborn Brain, SANS Speaker	Symposium
American Society for Pediatric Neurosurgery, St. Louis, MO		
2012	The Application of Advanced Imaging Methods to the Developing Brain	Seminar Series
Department of Psychiatry Research Presentation, Washington University		
2015	Changing Guidelines for HIE	Symposium

District Meeting – American College of Obstetrics and Gynecology – Jewett Lectureship		
2015	Alterations in Brain Development in the Preterm Infant	Symposium
Child Neurology Grand Rounds: Barlow Lecture, Massachusetts General Hospital, Boston, MA		
2015	Imaging Insights in the Newborn Brain	Symposium
Brain Map Symposium, Martinos Center, Massachusetts General Hospital, Boston, MA		
2015	Therapeutic Hypothermia – The old, the new and the cool	Grand Rounds
OB/GYN Grand Rounds, Brigham & Women’s Hospital, Boston MA		
2015	Why building a Better Brain is Important	Symposium
Discover Brigham Day, Brigham & Women’s Hospital, Boston, MA		
2015	Early Sensory Experience & Brain Structure Function	Symposium
Harvard Catalyst Child Health Symposium Plenary, Harvard Medical School, Boston, MA		
2015	Therapeutic Hypothermia in Neonatal Encephalopathy	Grand Rounds
OB/GYN Grand Rounds, Newton Wellesley Hospital , Wellesley, MA		
2016	aEEG maturation and applications in Preterm infants Cases of aEEG use in preterm infants and complex clinical conditions	Keynote Speaker
Department of Pediatric Newborn Medicine (BWH) Neonatal aEEG Workshop		
2017	"Therapeutic Hypothermia in Neonates"	Grand Rounds
BWH OB Grand Rounds, Brigham & Women’s Hospital, Boston, MA		
2017	NICU Didactic for OB/GYN Residents	Lecture
1. Premature babies - brain injury, altered brain development, 2. neurodevelopmental outcomes etc. for preterm 2. Term babies – 3. hypothermia and outcomes for HIE		
BWH OG/GYN Residents, Brigham & Women’s Hospital, Boston, MA		
2017	The effects of Hypoglycemia on the developing brain	Grand Rounds
BWH Pediatric Newborn Medicine Grand Rounds, Brigham & Women’s Hospital, Boston, MA		
2017	Protecting the Newborn Brain	Grand Rounds
St. Elizabeth Medical Center , Boston, MA		

2017	The Influence of NICU Experience on Brain Development in Preterm Infants	Keynote Speaker
Harvard Neonatal Epidemiology Conference, Boston, MA		
2017	Department of Pediatric Newborn Medicine: 2017 Onward	Grand Rounds
BWH, Department of Pediatric Newborn Medicine Brigham & Women's Hospital, Boston, MA		
2017	Department of OB/GYN – Maternal Fetal Medicine	Keynote Speaker
Protecting the Newborn Brain		
2017	aEEG Maturations and Applications in Premature Infants Brain MRI In Preterm Infants	Keynote Speaker
New England Neonatal aEEG and Neuroimaging Workshop, Boston, MA		
2018	The Influence of the NICU Experience on Brain Development in Preterm Infants	Grand Rounds
Beth Israel Deaconess Medical Center, Boston, MA		
2018	The Impact of Environment & Exposure on Brain Development in the Premature Infant.	Grand Rounds
Pediatric Grand Rounds / Boston Medical Center, Boston, MA		
2018	Advances in the NICU – neurological development, management and outcomes	Keynote Speaker
Advances in NICU Feeding Management, 3-day workshop, Boston, MA		
2018	Advances in Understanding the Newborn Brain – Injury and Protection	Keynote Speaker
Pentucket Medical Associates – Journal Club		
2018	2018 Department of Pediatric Newborn Medicine Review	Grand Rounds
Brigham & Women's Hospital, Boston MA		
2018	Therapeutic Hypothermia in the Newborn	Keynote Speaker
Pathways to Safer Care, CRICO Hub Week, Boston, MA		
2018	The Science of Pain – The Newborn	Keynote Speaker
HMS Media Fellowship, Brigham & Women's Hospital, Boston, MA		



2018	Therapeutic Hypothermia – Cooling and Evidence of Impact on Outcome?	Keynote Speaker
CRICO Law Day December 7		
2018	“Seizures in the Newborn – What we know and don’t know in 2018”	Grand Rounds
Brigham & Women’s Hospital, Boston, MA		
2019	Brain Injury and altered brain development in the preterm infant – insights to alter NICU practice to improve outcomes	Keynote Speaker
Columbia University Irving Medical Center, New York		
2019	Advances in the NICU – neurological development, management, and outcomes	Keynote Speaker
Advances in NICU Feeding Management Workshop, BWH, Boston, MA		
2019	Preterm Birth and Neonatal Brain Injury	Keynote Speaker
New England Perinatal Society: 2018 Scientific Meeting, Newport Rhode Island		
2019	Protecting the Newborn Brain	Keynote Speaker
Boston Children’s Hospital – Resident Lecture Series Boston, MA		
2019	Neurodevelopmental Disorders Symposium (Boston Children’s Hospital)	Speaker
Measuring, Forecasting and Reducing Stress for Healthy Brain Development and Mental Health		
2020	Brigham & Women’s Hospital, Department of Pediatric Newborn Medicine Grand Rounds	Grand Rounds
The State of the Department of Pediatric Newborn Medicine 2020		
2020	Newborn Brain Society & Brigham & Women’s Hospital Department of Pediatric Newborn Medicine Grand Rounds	Grand Rounds
Clinical Use of MRI in the Preterm Infant		
2020	Neurology Seminar Series Brigham & Women’s Hospital	Neurology Seminar Series - Virtual Speaker
Balancing Maternal Health and Fetal Risk in Epilepsy: Dual or Dueling Exposure Considerations		
2020	Neurology Seminar Series Brigham & Women’s Hospital	Neurology Seminar Series - Virtual

		Speaker
	Balancing Maternal Health and Fetal Risk in Epilepsy: Dual or Dueling Exposure Considerations	
2020	Newborn Brain Society	Neurology Seminar Series - Virtual Keynote Speaker
	Insights into the Pathways to Adverse Neurodevelopmental Outcomes in the Preterm Infant?	
2020	Boston Children's Hospital, Boston MA	Newborn Medicine Summer Conference Series - Virtual Keynote Speaker
	Neonatal Encephalopathy	
2021	Boston Children's Hospital, Boston MA	BCH Fellows Core Curriculum Series Virtual Keynote Speaker
	Burnout & Culture at BWH	
2021	Boston Children's Hospital, Boston MA	BCH Fellows Core Curriculum Series Virtual Keynote Speaker
	Therapeutic Hypothermia and Care of Neonatal Encephalopathy	
2022	Boston Children's Hospital, Boston MA	Newborn Medicine Summer Conference Series - Virtual Keynote Speaker
	Neonatal Encephalopathy	
2022	University of California, Irvine	Newborn Medicine Fellows Conference series
	Brain Injury in the Newborn	
2023	Intraventricular Hemorrhage Insights into Reduction	Invited Lecture
	Nursing Education Childrens Hospital Orange County	
2023	Therapeutic Hypothermia - Who and Why	Invited Lecture
	Neuroprotection Education Sessions for Nursing and Physicians Childrens Hospital Orange County	

## Regional

1999	Asphyxia and Neuro-imaging.	Symposium
	The Perinatal Society of New Zealand National Conference, Wellington, New Zealand	

2000	Mechanisms of Brain Injury in the Premature Infant - Identification of the High-Risk Infant.	Symposium
The Perinatal Society of Australia and New Zealand, Brisbane, Australia		
2012	<u>Neurodevelopmental Outcomes in Preterm Infants</u>	Seminar
Thompson Center Colloquium, Columbia, MO		
2012	Neuroprotection in the Newborn Brain.	Symposium
Missouri Valley Child Neurology Colloquium		
2012	Being Born Too Early or Too Small – Impact on Brain Development and Outcome	Symposium
HCA Conference Overland Park, Kansas City		
2013	Improving Outcomes in Preterm Infants	Symposium
Laura Trainor Neonatal Research Day, Brigham & Women's Hospital, Boston		
2014	Improving Neurological outcomes in High Risk Infants	Symposium
Harvard Medical School of Public Health, Boston		
2014	Neuroprotection in Neonatal Encephalopathy in the Term Infant	Symposium
Grand Rounds, Department of Obstetrics & Gynecology, Massachusetts General Hospital, Boston		
2014	Neuroprotection – The Future is Here	Symposium
Combined Pediatric and Obstetric Gynecology Grand Rounds – Newton Wellesley Hospital, Newton		
2014	Therapeutic Hypothermia	Symposium
Obstetrics and Gynecology Grand Rounds, Brigham & Women's Hospital, Boston		
2014	Neuroprotection in the Term Infant	Symposium
Grand Rounds Department of Newborn Medicine, Brigham & Women's Hospital, Boston		
2014	Neuroprotection for the Newborn	Symposium
Reproductive Biology Fall Seminar, Harvard MIT Health Sciences, Boston		

2015	Impacting the High-Risk Newborn Brain, Who, How, When	Grand Rounds
MGH Neurology Grand Rounds, Barlow Lecture		

2015	Cocktails and Ice – Therapy for Neonatal Encephalopathy	Grand Rounds
Annual March Course – Department of OB/GYN, Brigham & Women’s Hospital, HMS		

2015	Changing Guidelines for HIE	Symposium
District Meeting – American College of Obstetrics and Gynecology – Jewett Lectureship		

2015	Outcomes of VLBW Infants	Symposium
Bresnan Course – Harvard Medical School		

2015	MRI Imaging in the High-Risk Brain – to be or not to be	Keynote Speaker
Annual New England Conference on Prenatal Research		

2015	MRI Imaging in the High-Risk Brain – to be or not to be	Keynote Speaker
Annual New England Conference on Prenatal Research		

2021	My journey in my career – a discovery in the newborn brain	Keynote Speaker
Brigham and Women’s Summer Student Presentation, July 2021		

2022	Improving Neurological Outcomes in the preterm infant	Keynote Speaker
Academic Day for Neonatologists, Irvine, CA November 2022		

2023	Mild Encephalopathy - to Cool or not to Cool	Invited Lecture
California Association of Neonatologists		

## National

2002	MRI in Infancy	Grand Rounds
Grand Rounds, Princess Margaret Hospital, Perth, Western Australia		

2002	Altered Brain Development in the Premature Infant?	Grand Rounds
Telethon Child Health Institute, Perth, Western Australia		

2002	New Insights into Post-Hemorrhagic Hydrocephalus in the Newborn	Symposium
Pediatric Neurosurgeons Australasian Meeting		

2003	Brain Injury in the Preterm Infants: Recent Discoveries in Neuroimaging. Perinatal Brain Injury: pathophysiology and clinical aspects.	Pediatric Grand Rounds
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Symposia in Pediatric Neurology - Neuroprotection in the Neonate. The Children's Hospital, Sydney		The T.Y. Nelson Department of Neurology
2003	Minding the at-Risk Infant Brain - Insights Utilizing MR/EEG	Pediatric Grand Rounds
Washington University, St. Louis, USA		
2004	The Preterm Infant: What can we do to Optimize Neurodevelopmental Outcomes?	Symposium
Perinatal Society Australia and New Zealand Regional Meeting, Queensland		
2004	Outcomes of Neonatal Epilepsy	Symposium
Epilepsy Society of Australia. Sydney		
2005	Cerebral Injury in the Preterm Infant.	Symposium
Neoprep American Academy of Pediatrics San Diego		
2005	State of the Art in Neonatal Encephalopathy	Symposium
Vermont Oxford Neonatal Annual Meeting, Washington DC		
2006	Research with Bedside EEG Monitors	Symposium
1st International Conference on Neonatal Brain Monitoring. Florida, USA		
2006	Monitoring the Preterm Brain-Harvard Neonatal Medicine Program	Grand Rounds
Beth Israel Hospital		
2006	MR Imaging in the Preterm Infant	Symposium
Pediatric Academic Societies Plenary Session		
2006	The Newly Born Anzus Alliance	Symposium
Volpe Symposium Boston, USA		
2006	aEEG Monitoring	Web based teaching seminar
Vermont Oxford Network web-based training		
2006	Understanding the Target in Neuroprotection in the Preterm Brain	Symposium
Hershey Conference Developmental Brain Injury, Princeton		
2006	Neonatal Brain Monitoring	Symposium
Child Neurology Society Pittsburg, USA		

2006	MRI Insights into the Cerebral Lesions Associated with Adverse Outcome in the Preterm Infant	Symposium
Neonatal Hot Topics		
2007	Application of MRI in Brain Injury and Development in Infants - Who? Where? Why? And What to do next? with Adverse Outcome in the Preterm Infant	Symposium
Frontiers in Science Program, San Antonio Texas,		
2007	MR Techniques in the Newborn Brain - II	Symposium
Clinical Applications NeoFest, Cincinnati, OH		
2007	Neonatal Imaging: What Does the Radiologist Contribute?	Symposium
Society for Pediatric Radiology Annual Meeting, Miami, FL		
2007	Hypoxic - Ischemic Injury in the Newborn: New Concepts of Pathogenesis and Investigation	Lecture
Paine Lectorship, Washington DC		
2007	Chairperson of the "Improving the Treatment of Neonatal Seizures" Workshop	Workshop seminar
NINDS, NIH, Washington DC		
2007	Imaging in Term Encephalopathy	Symposium
AAP Perinatal Meeting San Francisco CA		
2007	Imaging in the Preterm Brain - Now and in the Future Neuroprotection and Encephalopathy Clinical Applications of bedside EEG tools in the NICU	Symposium
Neonatology 2007 Conference, Miami FL		
2007	Evaluating the Newborn Brain	Grand Rounds
Cooper Hospital, Robert Johnson Medical School, New Jersey		
2007	New Insights into Newborn Brain Injury - Who? Where? Why?	Grand Rounds
Children's Hospital of Wisconsin		
2007	Intraventricular Hemorrhage and Periventricular White Matter Injury Neoprep	Symposium
Atlanta		
2007	aEEG Current Usage	Symposium
Hot Topics, Washington DC		

2008	Advances in the Recognition and Management of the Term Asphyxiated Infant	Symposium
Perinatal Research Society, Santa Fe		
2008	Current and Future Studies - Neonatal Seizures.	Symposium
Pediatric Academic Society. Hawaii		
2008	New Diagnostic Approaches in Hypoxic Ischemic Encephalopathy	Symposium
American Academy of Pediatrics 31st Seminar on Perinatal Medicine. Santa Fe		Abbott Education
2009	Timing of MRI in Infants who have been cooled	Symposium
Conference on Brain Monitoring and Neuroprotection. Florida		
2009	"Advanced MR Imaging in Brain Injury, Timing in Injury and Potential Intervention"	Symposium
International Society for Magnetic Resonance in Medicine, Honolulu Hawaii		
2009	Nutrition and the Brain	Symposium
Academy of Pediatrics Fellowship Training Course Santa Fe, New Mexico		
2010	The Impact of Hypothermia on Neuroimaging in Term Encephalopathy	Symposium
NICHD Workshop		
2010	Imaging the Preterm Brain	Symposium
American Academy of Pediatrics. San Francisco		
2010	Infection and the Newborn Brain	Symposium
Neonatal Hot Topics. Washington DC		
2011	Imaging the Developing Brain.	Visiting Professor
Emery Lectureship. Vermont, Maine		
2011	Imaging the Brain and Neonatal Outcomes	Symposium
NEO Conference. Orlando ,Florida		
2011	The Impact of Preterm Birth on the Brain: Who? Where? Why?	Symposium
Issues in Neonatology. New York		
2011	Nutrition and Brain Development in the Preterm Where? Why?	Symposium
Providence Neonatal GI Summit. Providence, Rhode Island		

2011	Insights into the Impact Preterm Birth on Developmental Outcomes – Risk and Resilience. Neuroprotection in the Newborn Brain – Where are we at?	Grand Rounds
Emery Lecture. Vermont		
2011	Surgery and the Preterm Infant. Early Biomarkers for Adverse Outcome Following Preterm Birth.	Symposium
Pediatric Academic Societies and Asian Society for Pediatric Research. Denver, Colorado		
2011	Brain Injury in the Term Born Infant	Symposium
33 <sup>rd</sup> Seminar on Neonatal Perinatal Medical. Santa Fe New Mexico		Abbott Education
2011	What’s New in Imaging	Symposium
Neonatal Hot Topics Washington, DC		
2011	Insights Into Brain Development in the Preterm infant	Seminar series
Oxford University		
2011	The Impact of Preterm Birth on Brain Development	Grand Rounds
Department of Neurology Cornell University		
2012	Post HIE Imaging: Present and Near Future in the hypothermia Era	Symposium
Duke University, North Carolina		
2012	Inside the Newborn Brain – Imaging Insights in the Impact of Preterm Birth	Pediatric Grand Rounds
UCLA		
2012	The Journey of Discovery of the Impact of Preterm Birth on Brain Development	Symposium
Harvard Neonatal Fellows Annual Symposium		
2012	Imaging Clues In Neuroscience – The Impact of Preterm Birth	Pediatric Grand Rounds
UCSD, San Diego, CA		
2013	Imaging Neuroprotection in the Newborn Brain	Grand Rounds
Case Western Visiting Professor, Cleveland, USA		
2013	Neuroprotection in the Newborn Brain	Invited Speaker
Dialogues in Neonatology, Duke University, North Carolina		
2013	Electrophysiological Monitoring of the Newborn Brain	Invited Speaker



American Academy of Neurology, San Diego		
2013	Electrophysiological Monitoring of the Newborn Brain	Keynote Speaker
Perinatal Society of Australasia, Adelaide, Australia		
2013	Brain Development using Imaging	Keynote Speaker
Pediatric Academic Society, Washington DC, USA		
2013	Protecting the Newborn Brain	Keynote Speaker
Southern Florida Neonatology Meeting, Marco Island, Florida		
2013	The impact of environment on brain development	Keynote Speaker
Vermont Oxford Quality Meeting, Chicago, USA		
2013	The impact of Prematurity on Brain Development	Keynote Speaker
Laura Trainor Education Nursing Day, Boston, USA		
2014	White Matter Injury – Latest Pathophysiology Insights	Keynote Speaker
Dialogues in Newborn Medicine, Duke University, North Carolina, USA		
2014	Neurodevelopmental outcomes in the preterm infant	Keynote Speaker
Jerry Elliott Memorial Lecture, New England Conference on Perinatal Research		
2014	Neurodevelopmental outcomes in the preterm infant	Keynote Speaker
Issues in Neonatology 2014, Boston, MA, USA		
2014	Wiring & Firing – Impact on the Developing Brain	Keynote Speaker
Columbia University Memorial Lecture, Newborn Medicine, Department of Pediatrics, New York City		
2014	Imaging the Newborn Brain – Advances in Perinatal Medicine	Keynote Speaker
Children’s Hospital, Philadelphia		
2014	Single Patient Rooms – Awareness of Potential Pitfalls	Keynote Speaker
Washington D.C.		
2015	What does the Neurologist want to know from Fetal MRI? Predictive Value of Neuroimaging in the Premature Infant	Keynote Speaker
Advances in Fetal and Neonatal Imaging, Orlando, Florida		

2015	Term Encephalopathy – New Frozen Frontiers Nurturing the Premature Brain	Keynote Speaker
SWAN Messer Lectureship, Austin, TX		
2015	Nature and Pathway to Altered Brain Development in the Preterm Infant Neonatal Encephalopathy in the Term Infant- Etiology, Therapy and Outcome	Keynote Speaker
Annual Neonatology Symposium – Vanderbilt University		
2015	Exposures in the NICU – Influences on Brain Development	Keynote Speaker
Annual Memorial Conference, Columbia University, NYC		
2015	Influence of the Environment & Expense of Brain development & outcome Posthemorrhagic Hydrocephalus– what should we do?	Keynote Speaker
Annual International Neonatal Conference 2015, Miami, Florida		
2015	Single Patient Rooms – Awareness of Potential Pitfalls	Keynote Speaker
Neonatal Hot Topics, Washington, DC		
2015	Experience and its impact on brain development	Keynote Speaker
Neonatal Hot Topics, Washington, DC		
2016	Imaging in Neonatal Neurology	Keynote Speaker
American Academy of Pediatrics, San Francisco, CA		
2016	Impact of Respiratory Care on Neurological Outcomes in Preterm Infants	Keynote Speaker
Bubble CPAP Conference, Washington, DC		
2016	Experience and its impact on brain development as well as the potential role of NDMA mediated neurotoxicity in the immature brain	Keynote Speaker
Neonatal Hot Topics, Washington, DC		
2016	Understanding the adverse Neurological Outcomes of the Preterm Infant	Keynote Speaker
Kahan-Goodman Lecture, Cleveland, Ohio		
2017	Vulnerabilities and Resiliency Across the Life Span Continuing the Conversation: Brain Health	Keynote Speaker
Spotlight Health 2017, Aspen, CO		

2017	Insights into Neurological Consequences of Preterm Birth	Keynote Speaker
Cerebral Palsy Program Children’s National, Washington, DC		
2017	Effect of NICU Environment including ventilation on brain development	Keynote Speaker
6 <sup>th</sup> Annual Bubble CPAP and Non-Invasive Respiratory Management of the Neonate Conference, Chapel Hill, NC		
2017	Mild Encephalopathy – to cool or not to cool	Keynote Speaker
The Children’s Hospital Neonatal Consortium Annual Meeting, Columbus, OH		
2017	Nutrition to Cognition	Keynote Speaker
Abbott Nutrition “Cognition Summit, Chicago, IL		
2018	Nutrition to Cognition	Keynote Speaker
Abbott Nutrition “Cognition Summit, Chicago, IL		
2018	Impact of Environment and Exposures on Brain Development	Grand Rounds
2018 New Frontier in Maternal-Fetal & Neonatal Care Conference Children’s Hospital & Medical Center, Omaha NE		
2018	New Insights into the Pathogenesis and Treatment of Term Hypoxic Ischemic Encephalopathy (HIE)	Keynote Speaker
2018 New Frontier in Maternal-Fetal & Neonatal Care Conference Children’s Hospital & Medical Center, Omaha NE		
2018	New Insights into the Pathogenesis and Treatment of Term Hypoxic Ischemic Encephalopathy (HIE)	Keynote Speaker
University of Virginia Health System, Grand Rounds, Charlottesville, VA		
2018	1. Neonatal seizures – monitoring, therapy and outcomes 2. The Encephalopathy of Prematurity – what and why?	Keynote Speaker
Miami Neonatology Conference, 2018, Miami, FL		
2019	Mechanisms and Biomarkers of Brain Injury and Healing in HIE	Keynote Speaker
HIE Symposium -Developing the Future, Norfolk, VA		
2019	1. Development of the Immature Brain and Implications for the NICU Environment	Keynote Speaker

	2. Utility of the MRI in Establishing Prognosis	
11 <sup>th</sup> International Conference on Brain Monitoring and Neuroprotection in the Newborn, Clearwater, FL		
2019	1. The impact of neonatal environment, exposures and growth on neurodevelopment in the preterm infant 2. Neuroprotection in the term born infant – hypothermia plus...	Keynote Speaker
40 <sup>th</sup> Annual Seminar of Neonatal Perinatal Medicine, Santa Fe, New Mexico		
2019	1. To Cool or not to Cool – Decision making around therapeutic hypothermia 2. Impact of environment and experience on brain development in the preterm infant 3. Seizures in the newborn infant 4. Intraventricular hemorrhage in 2019 – where are we at? 5. Infection in the newborn nervous system 6. Advances in neuromuscular disease in the newborn	Keynote Speaker
Southeastern Association of Neonatologist, Marco Island FL		
2019	1. Shedding Light on the Neonatal Brain 2. Technologies to Assist in Diagnosing Early Brain Injury: NIRS, EEG and MRI 3. Neurobehavioral Impairments in Preterm Neonates	Keynote Speaker
7 <sup>th</sup> Annual Fall Conference on Current Concepts in Neonatal Care (Symposium Medicus)		
2019	1. Neonatal MRI: The Who? Why: When and How: 2. To Cool or Not to Cool	Keynote Speaker
Florida Neonatal Neurologic Network Annual State Meeting – Nemours Children’s Hospital, Orlando, FL		
2020	1. Improving Neurological Outcomes in High Risk Infants	Grand Rounds
The Children’s Hospital at Montefiore at Albert Einstein College of Medicine, Bronx, NY		
2020	1. Shedding light through Imaging in the Newborn Brain – A Wise Choice 2. The challenges for the caregiver in the NICU Burnout - and more	Keynote Speaker
33 <sup>rd</sup> Annual Graves Conference on the Environment and Care for High Risk Newborns, Clearwater Beach. FL		

2020	Insights for Improving Neurodevelopmental Outcomes in High Risk Infants	Guest Lecture
UCLA Mattel Children’s Hospital, Los Angeles, CA		
2020	The Power of Magnetic Resonance Imaging Insights in Neonatal Encephalopathy	Guest Lecture
Aspect Imaging, Los Angeles, CA Virtual Meeting		
2020	Understanding the impact of brain injury on neurological outcomes in the preterm infant Review the impact of experience and exposures in the neonatal intensive care unit on brain development and outcomes in the preterm infant Advocate for parental presence and engagement in the NICU as of critical value to neurodevelopment in the preterm infant.	Keynote Speaker
18 <sup>th</sup> Annual academic Day for Neonatologists, CHOC Children’s Hospital, Orange, CA Virtual Meeting		
2020	Neonatal Therapy in the NICU – Leading Brain Rehabilitation & Development	Keynote Speaker
National Association of Neonatal Therapists (NANT) Virtual Meeting		
2020	What is the prognostic utility of MRI at time of discharge?	Keynote Speaker/Journal Club
Neonatal Heart Society – Neoheart /CHOC Children’s Hospital		
2021	Pathway to Improving Outcomes in the Preterm infant – Role of Neonatal Therapy in the NICU	Keynote Speaker
NANT 11 Conference – Virtual		
2021	Imaging in the Preterm Infant – is it Immature?	Grand Rounds
NYU Child Neurology Grand Rounds		
2021	Reinforcing the old and redefining the new approaches to improving neurological outcomes in the NICU	Keynote Speaker
Cleveland Children’s Clinic – Neonatal Brain Club Lecture Series Virtual Meeting		
2021	The impact of infection and inflammation of the developing brain	Keynote Speaker
2021 Small Baby Curse (Aspect Imaging) Virtual Meeting		

2021	1. Brain development in the ELBW in the NICU – environment and exposures matter 2. Brain Monitoring in the ELBW – who, when and why?	Keynote Speaker
Miami Neonatology 2021, Miami Florida		
2021	1. Postnatal Corticosteroids: good, bad or ugly 2. Pathophysiology and neuropathology of post-hemorrhagic ventricular dilation 3. Does preterm birth reprogram brain growth and function: What does it mean for the future adult?	Keystone Speaker
Pediatric Academic Society Annual Meeting, May 2021, Virtual		
2021	Reinforcing the old and redefining the new approaches to improving neurological outcomes in the NICU	Keynote Speaker
AAP Neonatal Regional Meeting, New Mexico, June 2021, Virtual		
2021	1. Brain injury in the preterm term infant – where are we at in 2021? 2. Improving neurodevelopmental outcomes in the high-risk infant – Science and AA	Keynote Speaker
Stanford Ketchmer Professorship, September 2021		
2021	Reinforcing the old and redefining the new approaches to improving neurological outcomes in the NICU	Keynote Speaker
Rutgers University Grand Rounds		
2021	1. Pattern of brain injury in the term infant – neuroprotection and neurorehabilitation approaches 2. Improving neurodevelopmental outcomes in the preterm infant – reinforcing the old and redefining the new approaches	Keystone Speaker
Pediatric Physical Therapy Conference, Rhode Island, November 2021		
2022	Improving neurological outcomes in the NICU	Invited Lecture
University of Chicago Grand Rounds March 2022		
2022	1. Physician Burnout 2. Improving neurodevelopmental outcomes in the preterm infant – reinforcing the old and redefining the new approaches	Chair of Seminar and Keynote Lecturer
American Academy of Pediatrics Neonatal Perinatal Fellows Conference, Santa Fe, New Mexico June 2022		
2023	Improving neurological outcomes in the NICU	Invited Lecture
Loma Linda Longo Symposium Presentation		

2023	Less Invasive Interventions; Consider the Developing Brain	Invited Lecture
PDA Stenting in Cyanotic Newborns: Comprehensive Management Strategies from Fetus to Toddler - San Diego		

## International

1999	aEEG Current Usage	Symposium
Neonatal Hot Topics, Washington, D.C.		
2001	Advances in Neuro-Imaging	Symposium
Neonatal Hot Topics , Washington, D.C.		

2002	Clinical Applications of Magnetic Resonance Imaging Research	Symposium
Federation of Associations of Oceania and Pacific Perinatologists, Christchurch, New Zealand		

2002	Neonatal Seizures	Symposium
Federation of Associations of Oceania and Pacific Perinatologists, Christchurch, New Zealand		

2002	Neonatal Neuroimaging	Symposium
Society for Pediatric Research Perinatal Brain Club - Baltimore, USA		

2002	Opening a Window into our Understanding Brain Development in the Newborn Infant.	Symposium
National Seminar 'Storming the Brain; Early Experience and Brain Development' Wellington, New Zealand		

2002	The Assessment of Cerebral Injury in the Newborn - EEG and MR tools	Grand Rounds
Newborn Medicine Program, Harvard Medical School, USA		

2002	MR Techniques in Assessing the Newborn Brain	Workshop
Siemens Pediatric MR Workshop, Erlangen, Germany		

2002	The Nature of Cerebral Injury in the Premature Baboon Model - Impact of Respiratory Therapies	Seminar NIH
Institute of Heart, Lung, and Blood, NIH, Washington, USA		

2002	Quantitative MR Techniques in the Premature Infant	Symposium
European Neonatal Brain Club, Madrid		

2003	Understanding the Effect of Premature Birth on Brain Development - Insights Utilizing Magnetic Resonance Imaging.	Pediatric Grand Rounds
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University of California San Francisco, USA		
2003	Clinical Use of Multimodal Neurophysiological Monitoring. Monitoring the CNS of the Neonate with Neurophysiological Methods	Symposium
Perinatal Medicine Symposium, Sahlgrenska University Hospital, Sweden		
2003	Brain Injury in the Preterm Infants: Recent Discoveries in Neuroimaging. Perinatal Brain Injury: pathophysiology and clinical aspects.	Symposium
Berzelius Symposia 59, Swedish Society of Medicine		Swedish Society of Medicine
2003	Imaging in Hypoxic-Ischemic Encephalopathy	Symposium
Berzelius Symposia 59, Swedish Society of Medicine		Swedish Society of Medicine
2003	Insights into the Cerebral Lesion in the Prematurely Born Infant Utilizing Advances in-vivo Magnetic Resonance Techniques.	Symposium
International Neonatal Conference "Neonatology 2003", University of Miami, Florida, USA		
2003	The Utility of Bedside EEG Tools in the NICU - From Cerebral Function Monitors to Full Conventional EEG.	Symposium
International Neonatal Conference "Neonatology 2003", University of Miami, Florida, USA		
2003	Cooling the Term Encephalopathic Infant - The Evidence for whom, when, and why by which mode should we offer hypothermia.	Symposium
International Neonatal Conference "Neonatology 2003", University of Miami, Florida, USA		
2003	Inhaled Nitric Oxide and Baboons	Symposium
Hot Topics in Neonatology. Washington, USA		
2004	Baboon Model of Periventricular White Matter Injury	Symposium
Hershey Conference on Developmental Brain Injury Asilomar, USA		
2004	Looking inside the Cerebral Lesion - Designing Interventions to Match Children	Symposium
gEarly Childhood Conference, Wellington New Zealand		
2004	Understanding Cerebral Injury in the Newborn Infant	Seminar Series
Neonatal Conference. Boston Children's Hospital, Harvard Medical School		



2004	The Long and Winding Road to Neuroprotection in the Newborn Brain.	Neurology Grand Rounds
Cornell University. Department of Newborn Medicine, New York		
2004	Cerebral Injury in the Newborn Brain - the Pathway to Rational Neuroprotection.	Seminar Series
Newborn Conference, UCSF Medical Center, UCSF, San Francisco		
2004	Predicting Outcome of Neonatal Encephalopathy.	Symposium
Child Neurology Society, Ottawa Canada		
2004	Barry Smith Memorial Lecture	Visiting Professor
Toronto Hospital for Sick Children		
2006	Evaluating the Premature Infant Brain	Grand Rounds
Auckland Hospital, New Zealand		
2007	Evaluation of the High-Risk Brain - MRI and EEG	Symposium
Irish Perinatal Society, Belfast		
2008	Evaluation of the High-Risk Brain - MRI and EEG	Symposium
Irish Perinatal Society, Belfast		
2008	Establishing Prognosis with Currently Available Data	Symposium
The 3rd International Conference on Brain Monitoring and Neuroprotection, Vienna		
2008	Evaluation of the High-Risk Term Infant-from Bedside to EEG to MRI	Symposium
SIENBA Mar Del Plata, Argentina		
2009	International Symposium on Neonatology; Neuroprotection; Brain Injury and Brain Development in the Preterm Infant; Neuroimaging in the NICU	Symposium
Sao Paulo Brazil		
2009	Imaging in the Newborn Intensive Care Unit: Neuroprotection	Symposium
Chile National Neonatal Symposium, Sao Pauo, Chile		
2010	Reducing the Risk of Intraventricular Hemorrhage and Periventricular Leukomalacia and Improve Outcomes in the Preterm Infant. Infection and the Newborn Brain.	Symposium
Pediatric Academic Society Meeting. Vancouver, Canada		
2010	Brain Injury in the Preterm Brain	Symposium

	Cool Topics in the Newborn. Melbourne, Australia	
2011	Neuroimaging in the Newborn. New Techniques of Neuroimaging.	Symposium
	The 6 <sup>th</sup> International Conference on Brain Monitoring and Neuro-protection in the Newborn. Amsterdam	
2011	Common Lesions in the Newborn Brain	Symposium
	ISMRM, Montreal	
2011	Neuroimaging in the Term Encephalopathic Infant	Grand rounds
	Toronto Sick Kids University of Toronto	
2012	Update on the Washington University IDDRC	Seminar
	NICHD Bethesda	
2012	Ten things that I have learn from Imaging on Brain Development	Symposium
	International SNAP symposium, University of Melbourne, Melbourne, Australia	
2012	Neonatal brain injury	Symposium
	Ipokrates Lectureship Seminar Program, Utrecht, Holland	
2012	Insights into Brain Injury in the Newborn Brain	Symposium
	European Pediatric Academy Meeting, Istanbul	
2012	Imaging Neuroprotection in the Newborn Brain	Grand Rounds
	University of Geneva, Switzerland	
2013	Seizures in the Preterm Infant	Keynote Speaker
	International Society for Neonatal Seizures, Tokyo, Japan	
2013	The impact of preterm birth on brain development	Keynote Speaker
	Perinatal Society of Australasia, Adelaide, Australia	
2013	Electrophysiological Monitoring of the Newborn Brain	Keynote Speaker
	Perinatal Society of Australasia, Adelaide, Australia	
2013	Magnetic Resonance Imaging of the Developing Brain	Keynote Speaker
	Innovative Neuroscience Planning Group, Melbourne, Australia	
2013	Protecting the Newborn Brain	Keynote Speaker
	New Zealand Pediatric Society Meeting, Dunedin, New Zealand	
2014	Imaging the Newborn Brain	Keynote Speaker

Society of Neonatology, Bangkok, Thailand		
2014	Seizures in the Newborn Infant	Keynote Speaker
Society of Neonatology, Bangkok, Thailand		
2014	The unrecognized impact of systemic infection on the immature brain - opportunities to improve outcomes	Invited Speaker Sepsis Club
Pediatric Academic Society, Vancouver, Canada		
2015	Advances in Imaging the Newborn Brain	Keynote Speaker
Neonatal Physicians, Israel, Tel Aviv, Israel		
2015	Impact of Preterm Birth Protecting the Developing Brain Improving what we do not fully understand	Keynote Speaker
International Neuropsychological Society, Sydney, Australia		
2015	MRI in the Term Infant – Workshop Monitoring the Newborn Brain – Which Technique for which Question	Keynote Speaker
Brain Monitoring and Neuroprotection, Cork, Ireland		
2016	Advances in Understanding Neurological Outcomes in the Prematurely Born Infant Optimizing Therapeutic Hypothermia	Grand Rounds
The Estrellita and Yousef Karsh Visiting Professorship / Children's Hospital of Eastern Ontario		
2016	Alterations in Preterm Brain Development related to the environment and experience Post-Hemorrhagic hydrocephalus. Are there any new insights?	Keynote Speaker
Seminaire En Neurologie Neonatle, Reims, France		
2017	1. Updates on Brain Injury – IVH and PVL in the preterm infant 2. Term Encephalopathy – How to Improve Outcomes 3. The impact of the environment on outcomes in the preterm infant	Keynote Speaker
33 <sup>rd</sup> Annual Obstetrics & Gynecology, Perinatal Medicine, Neonatology and the Law on Medical Negligence and Risk Management, Cabo San Lucas, Mexico		
2017	1. Therapeutic Hypothermia for Newborns 2. Seizures in the Newborn Infant 3. IVH and PHVD	Keynote Speaker
International Neonatology Symposium: Bangkok, Thailand		

2017	1. Mild Encephalopathy in the Term Born Infant – To cool or not to cool? 2. Nutrition in the NICU and Cognition	Keynote Speaker
Neonatal Neurology Mini-Symposium, (Sam Darwish Memorial Lecture) Calgary, Canada		
2017	Nutrition to Cognition	Keynote Speaker
Abbott Nutrition “Cognition Summit, Chicago, IL		
2017	The Advantage of neonatal MRI with case studies	Keynote Speaker
Aspect Imaging, Israel		
2018	1. Enhancing Brain Development before Birth 2. NICU of Tomorrow: How to Enhance Development 3. MRI new Ways to look at the Brain	Keynote Speaker
The 7 <sup>th</sup> Congress of the European Academy of Paediatric Societies (EAPS)		
2019	1. To cool or note to cool: who, how & when? 2. “Brain Injury” in the premature baby 3. MRI - Understanding the tool and its application to timing and nature of brain injury	Keynote Speaker
35 <sup>th</sup> Annual Obstetrics, Gynecology, Perinatal Medicine, Neonatology and the Law, Tufts University School of Medicine, Paradise Island, Bahamas		
2019	Insight into the Encephalopathy of Prematurity – Pathways and Consequences	Keynote Speaker
Canadian National Perinatal Research Meeting - CNPRM		
2019	Is MRI brain imaging relevant for long-term neuro-developmental outcomes following neonatal hypoxic ischemic event	Keynote Speaker
Journées Nationales de Neonatologists, Paris, France		
2019	Neuroimaging insights into the pathway to adverse Neurological outcomes in the preterm infant	Keynote Speaker
Conference, Geneva		
2020	Advances in Optimizing Neurological Outcomes in High Risk Infants	Keynote Speaker
ACCYPN Board Meeting Webinar, Perth, Australia		
2020	Preterm Birth and Aging	Keynote Speaker
European Academy of Pediatric Society – 2020 Virtual, Barcelona, Spain		
2021	The winding path of academic medicine for women – tips for trail finding	Keynote Speaker

International Women's Day – 2021 Virtual, Mater Research Institute, Faculty of Medicine, The University of Queensland, South Brisbane, Queensland		
2021	The Role of MRI Informing the Newborn Brain – A Tale of a Kiwi Girl	Keynote Speaker
SMRT National Chapter – Pacific Radiology, Virtual, Auckland, NZ		
2021	MRI in the preterm infant – long-term followup	Keynote Speaker
Brazil Neonatal Annual Conference, May 2021, Virtual		
2021	Therapeutic hypothermia – Outside the lines	Keynote Speaker
Canadian Paediatric Society Annual Conference, June 2021		
2021	The Utility of MRI in the Newborn	Keynote Speaker
Mexican Paediatric Society Annual Conference, August 2021		
2021	The utility of MRI in preterm prior to discharge	Keynote Speaker
Children's Hospital Orange County, July 2021 (Amir Ashrafi)		
2021	1. Stroke-like lesions in congenital heart disease 2. Caring for the caregiver – why and how	Keynote Speaker
European Pediatric Society Annual Meeting, September 2021, Virtual		
2022	1. Workshop: Neuroimaging in preterm infants: (Terrie Inder and Christopher Smyser) 2. Debate Session: Neuroimaging practices in preterm infants: Terrie Inder vs. Dwayne Pursley	
13 <sup>th</sup> International Newborn Brain Conference, Clearwater, Florida February 2022		
2023	1. Improving neurological outcomes in the preterm infant: science meets nature. 2. Neonatal Seizures: what we know and what we do not yet know guiding care in 2023? 3. Therapeutic Hypothermia in Neonatal encephalopathy: Who? How? and Where next?	
XIX EDUCATIONAL EVENT OF THE IBERO-AMERICAN SOCIETY OF NEONATOLOGY, Argentina November 2023		
2023	1. Neuroimaging in the High-risk infant	Keynote Speaker
Medicolegal Conference, Florence, Italy September 2023		
2023	1. Magnetic Resonance Imaging in the High-risk infant	Keynote Speaker

## **Clinical Activities:**

### **Medical Licensure and Board Certification**

- 1988 Registered Medical Practitioner with New Zealand Medical Council 15892
- 1999 Board eligible Child Neurology
- 2000 Registered Medical Practitioner of the Medical Practitioners Board of Victoria, Australia
- 2005 Registered Medical Practitioner Missouri Board of Healing Arts, Missouri, USA
- 2008 Board Certified in Pediatrics, American Board of Pediatrics –
- 2009 Board Certified in Perinatal - Neonatal Medicine, American Board of Pediatrics
- 2013 Registered Medical Practitioner of the Commonwealth of Massachusetts Board of Registration in Medicine
- 2022 Registered Medical Practitioner Medical Board of California

### **Clinical Activity**

Attending newborn medicine specialist caring for high risk infants for 6-8 weeks/annum at Childrens Hospital of Orange County Neonatal Intensive Care Unit.

### **Clinical Innovations**

#### **1. Creation of a specialized fetal and neonatal neurological consultation service including training**

We have developed a training pipeline for neurologists and newborn medicine specialists to recognize the neuropathology within the NICU infant population. We are working with the Child Neurology Society a formal recognition of a 1-2-year fellowship program. This clinical service provides high quality trained clinical care to optimize outcomes in infants.

#### **2. Optimization of magnetic resonance imaging of the high- risk newborn infant without sedation or anesthesia**

We have undertaken >2,000 MRI scans for clinical and research purposes in high risk infants without sedation. We have published guidelines, run workshops and circulate free of charge a DVD educating the clinical team how to gently swaddle and handle an infant to gain high quality clinical MR images. Around the USA many infants do not have access to MR imaging as it is required that they undergo general anesthesia. Our clinical teaching in this area has changed practice with MRI becoming the appropriate gold standard that can be more available to the infant.

#### **3. Recognition of the importance of electroencephalographic monitoring of encephalopathic infants**

We studied, published and have educated that close to 90% of newborn seizures are subclinical in nature with no recognition by the clinical nursing or physician team. We have also documented those seizures recognized on EEG can be readily managed with a reduction in total seizure burden and a trend toward improved outcomes in the infants who receive full EEG brain monitoring. This has increased the recognition and clinical demand for limited channel or full video EEG in the NICU environment for any infant with neurological concerns.

#### **4. Developed an independent neonatal neurological examination form for evaluation of encephalopathy**

We developed an independent encephalopathy evaluation tool which has been adopted nationally in many centers to assist in the documentation of the neurological examination.

## **5. Developed and evaluated a novel in-NICU magnetic resonance imaging system for term and preterm infants**

We developed a novel in-NICU MRI system for term and preterm infants with Israeli based company Aspect imaging owned by Stewart Resnick (the Wonderful company, CA) for application in high risk infants for the evaluation of preterm and term born infants with brain injury and alterations in brain development. During 2020-2021 utilized imaging system in >200 infants.

## **6. Assisted in FDA approval and application of nutritional tools in the NICU**

We worked with both MIRIS human milk analyzer to establish FDA approval and applied the measurement of human milk macronutrient composition to body composition using a Peapod body composition device and human brain development using magnetic resonance imaging.

## **7. Development of music therapy approach in the NICU**

We worked with BOSE developing new music compositions and testing their impact on cerebrovascular physiology to identify music that calmed sick infants and then applied this in our clinical environment.

## **Publications**

320 publications

H-index: 76

Total citations 21,000 (average per annum last 3 years 2,000 per annum)

50 articles with >100 citations, average 49 citations per publication (n=427 in web of science)

### **1990**

1. **Inder T**, Geddis DC. Factors Influencing the Use of Infant Car Restraints. Accident Analysis and Prevention, June 1990; 22(3): 297-300. PMID: 2393477

### **1994**

2. **Inder TE**, Graham P, Sanderson K, Taylor B. Lipid Peroxidation as a Measure of Oxygen Free Radical Damage in the Very Low Birthweight Infant. Archives of Disease in Childhood 1994; 70: F107-F111. PMID: 8154902

### **1995**

3. **Inder TE**, Carr AC, Winterbourn CC, Darlow BA. Vitamin A and E Status in Very Low Birthweight Infants - Development of an Improved Parenteral Delivery System. Journal of Pediatrics 1995; 126: 128-131. PMID: 7815202
4. Neuzil J, Darlow BA, **Inder TE**, Sluis KB, Winterbourn CC, Stocker R. Oxidation of Lipid Emulsion by Ambient and Phototherapy Lights: Potential Toxicity of Routine Parenteral Neonatal Feeding. Journal of Pediatrics 1995; 126: 785-790. PMID: 7752007
5. Darlow BA, **Inder TE**, Sluis DB, Nuthall GA, Mogridge N, Winterbourn CC. Selenium Status of Infants Randomized to be Fed Either a Selenium Supplemented or a Standard Cows Milk Formula. Journal of Paediatrics and Child Health 1995; 31: 339-344. PMID: 7576895
6. Darlow BA, **Inder TE**, Graham P, Sluis KB, Malpas R, Taylor BJ, Winterbourn CC. The Relationship of Selenium Status to Respiratory Outcome in the Very Low Birthweight Infant. Pediatrics 1995; 96: 314-319. PMID: 7630691

### **1996**

7. **Inder TE**, Darlow BA, Sluis DB, Winterbourn CC, Graham P, Sanderson KJ, Taylor BJ. The Correlation of Elevated Levels of an Index of Lipid Peroxidation (MDA-TBA) with Adverse Outcome in the VLBW Infant. *Acta Paediatrica* 1996; 85: 1116-1122. PMID: 8888929

#### 1997

8. Darlow BA, Sluis KB, **Inder TE**, Winterbourn CC. Endotracheal Suctioning of the Neonate: Balancing Clinical and Research Needs. *Pediatric Pulmonology* 1997; 23(3): 217-221. PMID: 9094731
9. **Inder TE**, Clemett RS, Austin NC, Graham P, Darlow BA. High Iron Status in VLBW Infants is Associated with Increased Risk of Retinopathy of Prematurity. *Journal of Pediatrics* 1997;131:541-4. PMID: 9386655

#### 1998

10. **Inder TE**, Graham P, Winterbourn C, Austin N, Darlow B. Plasma Vitamin A Levels in the Very Low Birthweight Infant- Relationship to Respiratory Outcome. *Early Human Development* 1998 Sep;52(2):155-68. PMID: 9783817
11. **Inder TE**, Volpe JJ. Recovery of Congenital Isolated Pharyngeal Dysfunction: Implications for Early Management. *Pediatric Neurology* 1998;19(3) 222-4. PMID: 9806141

#### 1999

12. **Inder TE**, Huppi PS, Warfield S, Kikinis R, Zientara G, Barnes PD, Volpe JJ. Periventricular White Matter Injury in the Premature Infant is Associated with a Reduction in Cerebral Cortical Gray Matter Volume at Term. *Annals of Neurology* 1999;46(5):755-760. PMID: 10553993
13. **Inder TE**, Huppi PS, Zientara GP et al. Early Detection of Periventricular Leukomalacia by Diffusion Weighted Magnetic Resonance Imaging Techniques. *Journal of Pediatrics* 1999;134:5:631-4

#### 2000

14. Darlow BA, Winterbourn CC, **Inder TE**, Graham PJ, Harding JE, Weston PJ, Austin NC, Elder DE, Mogridge N, Buss HI, Sluis KB. The Effect of Selenium Supplementation on Outcome in Very Low Birthweight Infants: A Randomised Controlled Trial. *Journals of Pediatrics* 2000;136:473-480. PMID: 10753245
15. Winterbourn CC, Chan T, Buss H, **Inder TE**, Darlow BA. Protein Carbonyls and Lipid Peroxidation in Premature Infants: Associations with Chronic Lung Disease and Retinopathy and Effects of Selenium Supplementation. *Pediatric Research* 2000; 48:84-90. PMID: 10879804

#### 2001

16. Murphy BP, **Inder TE**, Huppi PS, Zientara GP, Kikinis R, Jolesz FA, Volpe JJ. Impaired Cerebral Cortical Gray Matter Growth Following Treatment with Dexamethasone for Neonatal Chronic Lung Disease. *Pediatrics* 2001; 107:217-221. PMID: 11158449
17. Warfield SK, Rexilius J, Huppi PS, **Inder TE**, Miller EG, Wells WM, Zientara GP, Jolesz FA, Kikinis R. A Binary Entropy Measure to Assess Non-rigid Registration Algorithms. *MICCAI* 2001; 266-274.
18. Huppi PS, Murphy B, Maier SE, Zientara GP, **Inder TE**, Barnes PD, Kikinis R, Jolesz FA, Volpe JJ. Microstructural Brain Development after Cerebral Perinatal White Matter Injury Assessed by Diffusion Tensor Magnetic Resonance Imaging. *Pediatrics* 2001; 107;455-460. PMID: 11230582

#### 2002

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### 3. Case Reports (n=8)

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#### **4. Textbooks**

1. Associate Editor Volpe's Neurology of the Newborn, 6th ed. Philadelphia: Elsevier (38 chapters, 1189 pages, 614 Tables, 829 Figures, approximately 14,551 references), 2018, (Textbook Chapters).
2. Senior Associate Editor Volpe's Neurology of the Newborn, 7th ed. Philadelphia: Elsevier (43 chapters, 1489 pages), 2024, (In Press)
3. Co-Editor Perlman - Neurology: Neonatology Questions and Controversies, 4th edition 2023 (In Press) - 15 chapters

#### **Narrative – Dr Terrie Inder**

I am a dual boarded newborn medicine physician and child neurologist with my predominant academic effort (75%) being focused on research in the newborn brain. I also undertake clinical service within the neonatal intensive care unit. As all our research activities are clinical investigations, our studies and clinical care of high-risk infants are tightly integrated. My research is targeted at understanding the timing, mechanisms and impact of cerebral injury and altered cerebral development in the human infant. Thus, my studies have focused on infants at high risk for brain injury including the prematurely-born infant, the sick term-born infant, and the infant with congenital heart disease. I aim to investigate means of accurate, early diagnosis of brain injury as well as developing treatments and preventive strategies to reduce subsequent disabilities. This research work has utilized technologies including near infrared spectroscopy, electroencephalography and magnetic resonance imaging. The findings from our research are often translated rapidly into clinical practice by newborn medicine attendings desiring to improve the neurological outcomes in their high-risk infants.

Alongside this focused research effort, I have acquired leadership skills in neuroscience research and academic activities, including mentorship, with a particular focus on innovation. From 2001-2005, I founded a new magnetic resonance imaging facility at the Murdoch Childrens Research Institute with a philanthropic gift of \$40M. This novel imaging center required co-operation across multiple departments, research institutes and with the regional and state government.

In 2005-13, I was recruited to Washington University in St Louis to establish a center of excellence in neonatal neurology. I founded the Washington University Neonatal Development Research (WUNDER) team which consisted of 12 physician scientists and 14 staff with an annual budget of \$2M to undertake our focused neonatal neurology investigations. In 2010-13, I was successful in gaining National Institute of Health funding for the first new Intellectual and Developmental Disabilities Research Center in the last two decades. I was the founding Director of the Washington University Intellectual and Developmental Disabilities Research Center (WUIDDRC), which consisted of four research cores in imaging; neuropsychology and genetics; translational animal models; biostatistics and bioinformatics to accelerate research findings in infants and children both at risk and with developmental disabilities supporting over 50 investigators. During my years at Washington University in St Louis, my commitment to mentoring the next generation of clinical investigators was recognized with the Doris Duke Distinguished Clinical Scientist Award and with the success of six K-level career trainees who all remain dedicated R-funded investigators in research leadership.

In 2013, I was recruited to be the first Chair of Pediatric Newborn Medicine at the Brigham and Women's Hospital with appointment as the Mary Ellen Avery Professor in Pediatrics at Harvard Medical School. The Department has over 100 employees with 50 physicians providing clinical newborn care to over 12,000 newborns with two neonatal intensive care units with 80 neonatal beds with an annual budget of close to \$20M. During this period, we rebuilt a new clinical facility extending by 20 beds with a novel design system optimizing differing models of care, established a neonatal transport program and built a consolidated network, established >50 clinical care pathways and created novel programs in fetal

care, specialized clinical care for neonatal neurocritical care and small baby care. We also optimized safety and quality through optimal multidisciplinary teamwork with novel leadership and organizational structures empowering all team members. The academic mission in the Department grew from \$1M to close to >\$15M with continuing growth, and with research activities in neonatal neuroscience, pulmonary medicine, genetics and global health. The Department educates more than 200 trainees in pediatric and neonatal medicine with a commitment to national and international teaching. I have also had the privilege of recruiting and retaining 6 K-level career trainees of whom three have become R-funded while the remaining complete training.

In 2022, I was recruited to be the inaugural Director of the Center for Neonatal Research at Childrens Hospital Orange County partnering with the University of California, Irvine to expand perinatal research within this very large and active clinical environment alongside assisting in faculty and fellow mentorship and education.

Finally, at an institutional level, I have assisted in leadership in task forces around physician wellness, female faculty, diversity and equity, research leadership and strategic and financial leadership.