

Tomáš Paus M.D., Ph.D.

CURRENT POSITION

Senior Scientist and Anne & Max Tanenbaum Chair in Population Neuroscience
Rotman Research Institute

Professor of Psychology and Psychiatry
University of Toronto

EDUCATION/DEGREES

- 1980 - 1986 Medical School of Purkyne (Masaryk) University, Brno, Czech Republic
1986 Obtained the **M.D. degree** from Purkyne (Masaryk) University
1986 - 1990 Ph.D. research in the Psychophysiology Unit, Institute of Physiology, Czechoslovak Academy of Sciences in Prague (Head of the Unit: Professor T. Radil).
1990 Obtained the **Ph.D. degree** in normal and pathological physiology from the Czechoslovak Academy of Sciences. Ph.D. dissertation title: *Voluntary maintenance of central-gaze fixation. Development, neuropsychology, and psychopathology of frontal-cortical functions in man.*

POST-DOCTORAL TRAINING

- 1990 - 1995 **McDonnell-Pew Post-Doctoral Research Fellow** in the Department of Neurology and Neurosurgery, Montreal Neurological Institute, McGill University; mentored by Drs. Michael Petrides and Brenda Milner

PROFESSIONAL EXPERIENCE

- 1995 - 1997 **Lecturer**, Department of Neurology and Neurosurgery, McGill University
1997 – 2002 **Assistant Professor**, Department of Neurology and Neurosurgery, McGill University
1999 – 2002 **Assistant Professor (Adjunct)**, Department of Psychology, McGill University
2002 – 2004 **Associate Professor**, Department of Neurology and Neurosurgery, McGill University
2002 – 2004 **Associate Professor (Adjunct)**, Department of Psychology, McGill University
2005 – 2009 **Professor and Chair in Developmental Cognitive Neuroscience**, Schools of Psychology and Community Health Sciences, University of Nottingham
2005 – 2010 **Adjunct Professor**, Departments of Neurology & Neurosurgery and Psychology, McGill University
2010 - 2012 **Special Professor in Developmental Cognitive Neuroscience**, School of Psychology, University of Nottingham
2010 - **Professor**, Departments of Psychology and Psychiatry, University of Toronto

HONORS AND AWARDS

- 1980 Young-Scientist Magazine Award for Best Research Paper (High school)
1982 Award for Outstanding Research Paper as a Medical Student
1984 Award for Outstanding Research Paper as a Medical Student
1984 European Medical-Student Exchange Program Travel Award
1986 M.D. with distinction

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1989	European Science Foundation (ESF) Travel Award
1995	Election to membership in the International Neuropsychology Symposium
1999	MRC (Canada) Scholarship Award
2001	Election to the Governing Council of the Organization for Human Brain Mapping.
2002	MNI Killam Scholar
2005	Royal Society Wolfson Merit Award
2006	Elected President of the International Society for Behavioural Neuroscience
2009	Gold Medal of Masaryk University, Czech Republic
2010	Elected a Fellow of the Association for Psychological Science

MEMBERSHIP IN LEARNED SOCIETIES

- Organization for Human Brain Mapping (Councillor and Chair of the Program Committee, 2001-2004)
- International Neuropsychology Symposium (Elected member in 1995)
- International Society for Behavioral Neuroscience (President, 2006-2010)
- Society for Neuroscience

PEER-REVIEW OF GRANTS AND FELLOWSHIPS

Canadian Psychiatric Research Foundation, German-Israeli Foundation for Scientific Research & Development, Granting Agency of the Czech Republic, Canadian Institutes for Health Research, Canadian Foundation for Innovation, National Institutes of Health, Medical Research Council, Wellcome Trust

PEER-REVIEW COMMITTEES

1999 (Feb)	National Institutes of Health (USA); Study Section on “Brain Disorders and Clinical Neuroscience 6” (ad hoc member).
1999-2002	Canadian Institutes for Health Research; Behavioural Sciences A Committee (member).
2005	Ad hoc Review panel to evaluate the Helmholtz Programme “Function and Dysfunction of the Nervous System, Forschungszentrum Jülich, Germany (member)
2007	Review committee on “Collaborations on cognitive performance and relevant disorders in humans”, German Federal Ministry for Education and Research, Germany (member)
2007	Appointments Committee for the position of a Director of the research field of Human Brain Mapping and a Chair of Structural Functional Brain Mapping, Jülich-Aachen Research Alliance (JARA), Research Centre Jülich, Germany (member)
2008-2009	Canadian Institutes for Health Research; Meeting, Planning and Dissemination Grant Program (member).
2010	National Institutes of Health (USA); Ad hoc review panel for an RFA on “Identification and Characterization of Sensitive Periods for Neurodevelopment in Studies of Mental Illness.
2011-2013	Canadian Institutes for Health Research; Behavioural Sciences B Committee (member).
2013-present	The Compute Canada Bioinformatics, Neuroscience and Medical Imaging Resource Allocation Subcommittee (Chair)
2013-present	The Compute Canada Resource Allocation Committee (member)
2015	National Institutes of Health (USA); Ad hoc review panel for an RFA on <i>Dimensional Approaches to Research Classification in Psychiatric Disorders</i> (RFA-MH-15-500), part of the Research Domain Criteria (RDoC) Project

EDITORIAL AND ADVISORY BOARDS

- 2000-present Human Brain Mapping (2002-present: Associate Editor)
- 2006-present Social Neuroscience (Associate Editor)
- 2007-present Brain Stimulation (Member)
- 2009-present Developmental Cognitive Neuroscience (Member)
- 2011-present International Journal of Developmental Science (Member)

- 2007-present Scientific Advisory Board (Member), Program in Perinatal Determinants of Brain and Mental Health, University of Lethbridge, Alberta, Canada
- 2008-present Scientific Advisory Board (Member), MIND Research Network, Albuquerque, New Mexico, U.S.A.
- 2008-2013 Advisory Board of NUTRIMENTHE, an EU-FP7 Project (Chair);
- 2009-2015 Advisory Committee of the NSF Centre for Learning in Informal and Formal Environments (LIFE), Seattle, U.S.A.

JOURNAL PEER REVIEW

American Journal of Psychiatry, Annals of Neurology, Behavioural Brain Research, Behavioral Neuroscience, Biological Psychiatry, Brain, Cerebral Cortex, European Journal of Neuroscience, Experimental Brain Research, Human Brain Mapping, Journal of Neurophysiology, Journal of Neuroscience, Nature Neuroscience, Nature Reviews Neuroscience, NeuroImage, Neuron, NeuroReport, Neuroscience Letters, Proceedings of the National Academy of Sciences, Psychiatry Research, Psychological Science, Psychophysiology, Science.

COMMITTEES

- 1996-2000 The Animal Care Committee of the Montreal Neurological Institute and Hospital, MNI/MNH (member)
- 1996-2001 The Radiation Safety Committee of the MNI/MNH (member)
- 1997-2000 Jeanne Timmins Costello Studentship Committee of the MNI (member)
- 1998 Task Force on the Future of Brain Imaging at the MNI (co-chair of an *ad hoc* committee)
- 1998-2001 Policy Advisory Committee of the MNI (member, elected for a 3-year term)
- 1999-2004 Residency in Clinical Pharmacology Program Committee (member)
- 2001-2004 Research Ethics Board of the Montreal Neurological Institute and Hospital (member)
- 2001-2004 The Governing Council of the Organization for Human Brain Mapping (Councillor, elected for a 3-year term; Chair, Program Committee)
- 2002-2004 Graduate Program Committee, Graduate Program in Neurological Sciences, Department of Neurology & Neurosurgery (member)
- 2002-2004 The Fellowship Committee of the Montreal Neurological Institute (member)
- 2005-2008 Management Group, School of Psychology, University of Nottingham (member)
- 2005-2009 MR Management Group, University of Nottingham (Chair)
- 2006-2009 Management Committee, Institute of Neuroscience, University of Nottingham (member)
- 2011-2013 Questionnaire Committee of the Ontario Health Study (member)
- 2012-2013 Scientific Steering Committee of the Ontario Health Study (member)
- 2014 Program Committee of the 2nd Annual Meeting of the Developmental Cognitive Neuroscience group, FLUX (Chair)
- 2014- Measurements Committee of the Ontario Health Study (member)

SUPERVISION OF STUDENTS AND FELLOWS

- 1993-1995 Francesco TOMAIUOLO, visiting PhD student; morphometric studies of the human

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cingulate sulcus.

- 1993-1998 Naim OTAKY, medical student; morphometric studies of the human cingulate cortex.
- 1994-1999 Lisa KOSKI, graduate student in the Department of Psychology; Ph.D. thesis on spatial attention; co-supervised with Dr. M. Petrides.
- 1993-1997 Nina HOFLE, graduate student in the Department of Neurology and Neurosurgery; M.Sc. thesis on sleep-waking mechanisms in humans; co-supervised with Drs. B. Jones and A. Evans.
- 1994-2001 Narly GOLESTANI, graduate student in the Department of Psychology; Ph.D. thesis on structural correlates of language skills; co-supervised with Dr. R. Zatorre.
- 1996-1999 Manou VAFAEE, graduate student in the Department of Neurology and Neurosurgery; Ph.D. thesis on *in-vivo* measurement of oxygen metabolism in mitochondrial disorders; member of the thesis committee.
- 1996 Robert JECH, M. D., neurology resident and graduate student in the Department of Neurology, School of Medicine, Charles University, Prague; correlation between brain morphology and electrophysiology in patients with multiple sclerosis.
- 1997-1999 Vincent BONHOMME, M.D., anaesthesiology fellow in the Department of Anaesthesia & Intensive Care Medicine, University Hospital of Liege, Liege, Belgium; M.Sc. thesis on functional neuroimaging and brain mechanisms of anaesthesia; thesis supervisor.
- 1999-2003 Kate WATKINS, post-doctoral fellow; supervisor.
- 1999-2000 Perttu SIPILA, M.Sc., research fellow; supervisor.
- 1999-2002 Katherine VELIKONJA, graduate student in the Department of Neurology and Neurosurgery; M.Sc. on sensori-motor integration; M.Sc. thesis supervisor.
- 1999-2004 Jennifer BARRETT, graduate student in the Department of Psychology; Ph.D. thesis on brain mechanisms of emotions and mood; thesis supervisor.
- 1999-2005 Philippe CHOUINARD, graduate student, co-supervised with Dr. G. Leonard.
- 1999-2001 Marie-Helene GROSBRAS, graduate student at University of Paris VI, France; Ph.D. on spatial representations and oculomotor control; co-supervised with Prof. Alain Berthoz.
- 1999-2002 Antonio STRAFELLA, M.D., post-doctoral fellow, co-supervised with Dr. Alain Dagher.
- 2000-2002 Theo KOLIVAKIS, M.D., psychiatry resident, supervisor.
- 2000-2003 Ysbrand VAN DER WERF, post-doctoral fellow; supervisor.
- 2002-2005 Marie-Helene GROSBRAS, post-doctoral fellow, supervisor.
- 2002-2008 Rosanne ALEONG, M.Sc., graduate student, Ph.D., thesis supervisor
- 2002-2005 Chadwick BOULAY, graduate student, M.Sc. thesis co-supervised with Dr. Daniel Guitton.
- 2003-2005 Valeria DELLA-MAGGIORE, post-doctoral fellow, supervisor
- 2003-2007 Catherine POULSEN, post-doctoral fellow, supervisor
- 2003-2006 Petr HANZALEK, post-doctoral fellow, supervisor
- 2003-2005 Catriona SYME, graduate student, M.Sc. thesis co-supervised with Dr. Zdenka Pausova
- 2003-2005 Chantal LAFRANCE, post-doctoral fellow, supervisor
- 2004-2006 Katja OSWALD, post-doctoral fellow, supervisor
- 2005-2008 Marije JANSEN, graduate student, Ph.D., thesis supervisor
- 2005-2008 Jennifer PERRIN, graduate student, Ph.D., thesis supervisor
- 2005-2008 Roberto TORO, post-doctoral fellow, supervisor
- 2006-2009 Pierre-Yves HERVE, post-doctoral fellow, supervisor
- 2006-2011 Daniel SHAW, graduate student, Ph.D. thesis supervisor

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2006-2011 Salomi KAFOURI, graduate student, Ph.D., thesis supervisor
2007-2009 Jamila ANDOH, post-doctoral fellow, supervisor
2007-2009 Lucy CRAGG, post-doctoral fellow, supervisor
2007-2009 Shahrdad LOTFIPOUR, post-doctoral fellow, supervisor
2008-2012 Irum NAWAZ-KHAN, graduate student, Ph.D. thesis supervisor
2008-2013 Klara MARECKOVA, graduate student, Ph.D., thesis supervisor
2010-2011 Amir TAHMASEBI, post-doctoral fellow, supervisor
2010-2011 Mallar CHAKRAVARTY, post-doctoral fellow, supervisor
2010-2014 Erin DICKIE, post-doctoral fellow, supervisor
2011-2015 Deborah SCHWARTZ, graduate student, Ph.D., thesis supervisor
2011-present Angelita WONG, graduate student, Ph.D. thesis supervisor
2011-2013 Ammar KHAIRULAH, graduate student, M.Sc. thesis supervisor
2011-2014 Marzia PESARESI, post-doctoral fellow, supervisor
2012-2015 Melissa PANGELINAN, post-doctoral fellow, supervisor
2012-2014 Courtney GRAY, graduate student, M.Sc. thesis supervisor
2013-2016 Leon FRENCH, post-doctoral fellow, supervisor
2014-present Lassi Bjornholm, MD/PhD student, co-supervisor
2014-present Johannes Pulkkinen, MD/PhD student, co-supervisor
2015-present Nadine Parker, graduate student, M.Sc. thesis supervisor
2016-present Ting Xu, post-doctoral fellow, co-supervisor
2016-present Jean Shin, post-doctoral fellow, co-supervisor

VISITING SCIENTISTS

1998 (August-Sept.) Dr. Irena REKTOROVÁ, Department of Neurology, School of Medicine, Masaryk University, Brno, Czech Republic (TMS and EEG, fMRI).
1999 (April) Dr. Lars KEMNA, Department of Nuclear Medicine, Institute of Medicine, Julich, Germany (TMS and PET).
1999 (May-July) Dr. Matthew RUSHWORTH, Department of Experimental Psychology, Oxford University, Great Britain (TMS and EEG, TMS and neuropsychology, fMRI).
1999 (July-August) Dr. Dong Soo LEE, Department of Nuclear Medicine, Seoul University, South Korea (TMS and PET).
2000 (April) Dr. Matthew RUSHWORTH
2000 (November) Dr. Eunjoo KANG, Department of Nuclear Medicine, Seoul University, South Korea (TMS).
2003 (April-July) Dr. Parvaneh ABBASALIPOUR, Department of Audiology, Hazrate Rassul Hospital, Tehran, Iran (MR-based morphometry).
2004 (May-Sept) Dr. Heidi JOHANSEN-BERG, Department of Experimental Psychology, Oxford University, U.K. (Diffusion tensor imaging and EEG-based coherence in the auditory system)
2004 (June-Nov) Dr. Mustafa AKTEKIN, Department of Anatomy, Mersin University, Turkey (MR-based morphometry)
2006 (Jan-March) Dr. Nicole DAVID, University of Dusseldorf, Germany (self-awareness)
2007 (June-Aug) Dr. Defang WANG, Department of Diagnostic Radiology, Prince of Wales Hospital, Hong Kong, China (computational neuroanatomy)

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2008 (Jan-March) Dr. Paradee AUVICHAYAPAT, Khon Kaen University, Thailand (TMS)

RESEARCH GRANTS AND AWARDS

(The list below includes only grants on which I act/acted as the Principal Investigator)

Current

Prenatal maternal stress and brain maturation during adolescence

Principal Investigators: **T. Paus, S. King**

Co-investigators: Brunet, Hoge, Pruessner, Laplante, Pangelinan

Granting agency: Canadian Institutes of Health Research

Granting period: 2013-2018

Annual budget: \$ 100,000

The main focus of this project is the relationship between prenatal stress and maturation of white matter (WM) as a possible mediator of the effects of prenatal stress on psychopathology in adolescence. Here we assess possible consequences of prenatal maternal stress associated with the January 1998 Quebec ice storm: an independent life-event that distributed hardship in a quasi-random fashion. The primary aim of this study is to determine the extent to which prenatal stress modifies trajectories of WM maturation during adolescence. Based on the current knowledge, the overarching hypothesis to be tested here is that the brains of exposed boys are “demasculinized” while those of exposed girls are “defeminized”. The main test of this hypothesis will be the absence of a typical divergence (between boys and girls) of maturational trajectories in white matter, as assessed with multi-modal MR imaging, during adolescence.

Past (in reversed chronological order)

Programming the Brain across Generations: How early environment and genes shape vulnerability to addiction

Principal Investigators: **T. Paus, J. Veijola**

Co-investigators: Pausova, Vincent, de Luca, Gaudet, Conrod, Richer, Pike

Granting agency: CIHR

Granting period: 2011-2015

Annual budget: \$ 250,000

In this research, we will investigate the early environmental and genetic origins of addiction in adolescence and adulthood in two unique samples: the Saguenay Youth Study (SYS) and the Northern Finland Birth Cohort 1986 (NFBC1986). Altogether, the work will result in a total of 3,700 individual datasets clustered in 1,300 two-generational families (SYS: 1,000 adolescents, 900 parents; NFBC1986: 800 young adults, 1,000 parents). These datasets will include intermediate brain phenotypes, acquired with structural and functional MRI, and detailed assessments of addictive behaviour, psychopathology, and cognition. The in-depth phenotyping approach, together with the family-based design, place us in a strong position vis-à-vis GWAS-based studies of addiction.

Axon, Testosterone and Mental Health during Adolescence.

Principal Investigators: **T. Paus**

Co-investigators: Davey Smith, Gowland, May, Glaser, Joinson, Lewis, Susman

Granting agency: National Institutes of Health (USA)

Granting period: 2010-2015

Annual budget: \$ 275,000

This research combines two approaches: population and experimental neuroscience. Taking advantage of an existing birth cohort of adolescents in Bristol, England (ALSPAC), we investigate, with magnetic resonance imaging (MRI), the relationship between testosterone trajectories during adolescence and structural properties of white matter. We also use MRI and electron microscopy to test experimentally the effect of testosterone treatment on structural and functional properties of white matter in experimental

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animals (rats).

Long-term consequences of prenatal exposure to maternal cigarette smoking on brain structure, function and mental health in adolescence: role of genes and environment in brain development.

Principal Investigators: **T. Paus, D. Gaudet**

Co-investigators: Abrahamovicz, Laberge, Leonard, Pausova, Perron, Pike, Richer, Seguin.

Granting agency: Canadian Institutes of Health Research

Granting period: 2008-2013

Annual budget: \$ 275,000

This grant funded the completion of the Saguenay Youth Study.

Reinforcement-related behaviour in normal brain function and psychopathology (IMAGEN)

Coordinator: Gunter Schumann (Institute of Psychiatry)

Principal Investigator (Nottingham) and the Neuroimaging Workpackage Leader: **T. Paus**

Co-investigators (at UoN): Z. Pausova, P. Gowland

Granting agency: EU (FP6)

Granting period: 2006-2011

Total budget: € 11 mil (€675,000 for Nottingham)

The goal of this project was to identify the neurobiological and genetic basis of individual differences, during adolescence, in brain responses to reward, punishment and emotional cues, and to assess their relevance for mental disorder such as addiction. This was a multicentre functional and structural genetic-neuroimaging study of a cohort of 2,000 14-year old adolescents. We assessed association with markers of genes chosen from existing genomic information, and from our studies of animals selected for extreme phenotypes of impulsivity and other relevant behavioural traits. The study continues in part through funding secured by the current NIH grant (Paus: Axon, Testosterone and Mental Health during Adolescence).

Royal Society-Wolfson Merit Award

Personal award

Granting period: 2005-2010

Granting Agency: The Royal Society (London, UK)

Total award: £170,000

***In vivo* Studies of Neural Connectivity in Healthy and Disordered Human Brain.**

Principal Investigator: **T. Paus**

Co-Investigators: G. Leonard, L. Durcan, S. Bachneff and G. Chouinard

Granting agency: Canadian Institutes for Health Research

Granting period: 2002-2007

Annual budget: \$108,000

Equipment: \$ 57,000

This was an operating grant that funded research on studies of neural connectivity in the human brain; it used a combination of transcranial magnetic stimulation (TMS) and positron emission tomography (PET). Included in the grant were experiments to work out basic aspects of the technique, examine connectivity of the frontal cortex, measure changes in connectivity due to congenital hemiplegia and the effects of rehabilitation, and explore altered connectivity in schizophrenia.

Long-term consequences of prenatal exposure to maternal cigarette smoking on brain structure, function and mental health in adolescence: role of genes and environment in brain development.

Principal Investigator: **T. Paus**

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Co-investigators: Mathieu, Pausova, Perron, Pike, Seguin.

Granting agency: Canadian Institutes of Health Research
Granting period: 2002-2007
Annual budget: \$ 250,000

This grant had funded the first five years of the Saguenay Youth Study; it continued through a CIHR operating grant awarded in 2008.

Repetitive Transcranial Magnetic Stimulation and Depression: Mechanisms of Action.

Principal Investigator: **T. Paus**

Co-Investigators: A. Alonso, P. Barker, Z. Pausova

Granting agency: Canadian Institutes of Health Research
Granting period: 2004-2007
Annual budget: 65,056.00
Equipment: 40,607.00

This was an operating grant that funded research on studies of TMS-induced plasticity in fronto-cingulate circuits and its relationship to volitional control of speech; it used a combination of TMS, PET and functional MRI.

Increasing Human Potential: A longitudinal study of brain development during adolescence.

Principal Investigator: **T. Paus**

Principal Investigators of the Consortium: J. Mazziotta and P. Kuhl.

Granting agency: Santa Fe Institute Consortium
Granting period: 2002-2004
Annual budget: \$ 450,000

My laboratory took was one of the four members of The Santa Fe Institute Consortium, a group that had initiated a longitudinal study of brain development during infancy and adolescence. We studied changes in brain anatomy using Magnetic Resonance Imaging (MRI), brain physiology using Electroencephalography (EEG) and functional MRI, and behaviour, with the emphasis on social cognition and language.

From perceptions to actions and back: Studies with brain stimulation and imaging.

Principal Investigator: **T. Paus**

Granting agency: Natural Sciences and Engineering Council of Canada
Granting period: 2001-2004
Annual budget: \$ 24,000

This was an operating grant that funded research on brain mechanisms underlying action observation and sensori-motor interactions; it used a combination of brain imaging (positron emission tomography, functional MRI) and brain stimulation (TMS). Included in the grant were studies on changes in cortical activity during observation of hand actions, speech-related lip movements and gaze shifts.

Long-term effects of prenatal exposure to cigarettes on brain structure and function in adolescence.

Principal Investigator: **T. Paus**

Co-investigators: Jacobs, Evans, Pike (MRI), Pausova, Hudson, Hamet, Gaudet (genetics), Kramer (epidemiology), Perron (sociology, education), Leonard, Richer (neuropsychology), Mathieu (neurology), Snipes (animal models), Leal (statistical genetics).

Granting agency: Valorisation-Recherche Québec
Granting period: 2000-2001
Budget: \$ 60,000

This was pilot funding awarded to facilitate development of a multi-disciplinary grant application. The proposed research program investigates the role of environmental and genetic factors on structure and

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function of the human brain. The project is multi-institutional and multi-disciplinary, and it includes parallel human and animal studies.

Integration of Neuroimaging and Electrophysiological Tools in Cognitive Neuroscience.

Principal Investigator: **T. Paus**

Granting agency: Canadian Foundation for Innovation: New Opportunities Program

Granting period: 1998-1999

Equipment: \$ 340,000

This grant provided funding for large-item equipment in my Montreal laboratory.

Development of an fMRI-compatible Transcranial Magnetic Stimulation

Principal Investigator: **T. Paus**

Co-Investigators: B. Pike, A.C. Evans

Industrial sponsors: Cadwell Laboratories Inc. (USA) and Siemens (Germany)

Granting period: 1998-1999

Award: \$ 80,000

This grant supported pilot work on the development of transcranial magnetic stimulation during functional magnetic-resonance imaging.

***In vivo* Studies of Neural Connectivity in Healthy and Disordered Human Brain**

Principal Investigator: **T. Paus**

Co-investigators: Leonard, Silver, Bachneff, Chouinard

Granting agency: Medical Research Council (Canada)

Granting period: 1996-2001

Award: \$ 200,000

This grant provided funding for the combined brain stimulation and imaging studies of the human brain.

INVITED LECTURES

- 1992 University of Illinois at Champaign-Urbana, (Anterior cingulate cortex of the human brain: a motor perspective)
University of California at Davis, (PET studies of human anterior cingulate cortex)
- 1993 International Neuropsychology Symposium, France, (Human anterior cingulate cortex: Where intention, drive, and motor-control interface?)
Charring Cross and Westminster Medical School, London, UK, (Role of the human anterior cingulate cortex in oculomotor control)
Department of Anatomy and Neurobiology, University of Ottawa, (Human anterior cingulate cortex: Control of action?)
- 1994 INSERM Unite 94 (Professor Marc Jeannerod), Lyon, France (Control of action: Insights from PET activation studies)
Department of Human Physiology, University of Parma, Italy, (Control of action: Insights from PET activation studies)
XII. European Workshop on Cognitive Neuropsychology, Bressanone, Italy, (Functional and structural neuroimaging of the human frontal cortex)
- 1995 Section of Neurobiology, Yale University School of Medicine, (Neuroimaging motor-to-sensory discharges in the human brain).
- 1997 Annual International Conference of the Learning Disabilities Association of America, Chicago, (Localization of function in the human brain: advantages and pitfalls of functional neuroimaging).
- 1997 Rotman's Research Institute, University of Toronto, Toronto, (Transcranial Magnetic

- Stimulation during PET: a new tool for studying neural connectivity in the human living brain).
- Department of Psychology, Vanderbilt University, Nashville, TN, (Functional interactions and connectivity in the human brain).
- National Institute of Mental Health, Bethesda, MD, (Functional interactions and connectivity in the human brain).
- Max-Planck Institute of Cognitive Neuroscience, Leipzig, Germany, (Functional connectivity in the human brain).
- 19th Annual Conference of the Cognitive Science Society, Stanford, CA, (Functional imaging: A bridge between the cognitive and neurosciences?).
- Department of Physiology, University of Montreal, Canada, (Attention, eye movements and the human frontal lobes).
- 1998 BioMag Laboratory, University of Helsinki, Finland, (Functional connectivity in the human brain).
- Department of Psychology, University of Montreal, Canada, (Combining neuroimaging with transcranial magnetic stimulation: a new tool in neuropsychology).
- MRC Movement and Balance Unit, London, Great Britain, (Function and structure of the human cingulate cortex).
- Workshop on “Combining techniques in non-invasive imaging of brain function”, Centre for Functional Neuroimaging, University College London, Great Britain, (Imaging the brain before, during and after transcranial magnetic stimulation).
- 4th Annual Conference for the Functional Mapping of the Human Brain, Brain Mapping Course, Montreal, Canada, (Combining brain imaging with brain stimulation).
- Workshop on “Executive Control and Frontal Lobe: Current Issues”, Hanse Institute for Advanced Study, Delmenhorst, Germany, (Anterior cingulate cortex: structural and functional subdivisions).
- 1999 Workshop on “Have we got connections? Mapping inter-regional connectivity in the human brain”, Winter Conference on Brain Research, Aspen, CO, (Transcranial magnetic stimulation during PET).
- Department of Clinical Neurological Sciences, University of Western Ontario, London, Canada, (Imaging the brain before, during, and after transcranial magnetic stimulation).
- Advanced Topics in Brain Mapping. Fifth International Conference on Functional Mapping of the Human Brain. Dusseldorf, Germany, (Transcranial Magnetic Stimulation).
- Department of Clinical Neuropsychology, IRCCS Santa Lucia, Rome, Italy, (Computational anatomy of the human brain).
- 21st International Summer School of Brain research, Amsterdam, The Netherlands, (Functional anatomy of arousal and attention systems in the human brain).
- Dynamical Neuroscience VII: Integration Across Multiple Imaging Modalities. Delray Beach, Florida, (Integration of transcranial magnetic stimulation and brain imaging).
- McDonnell Foundation Workshop on Transcranial Magnetic Stimulation, St. Louis, Missouri, (Combining stimulation and imaging of the human brain).
- 2000 Department of Physiology, Queens University, Kingston, Ontario, (In vivo studies of neural connectivity in the human brain).
- Department of Pediatrics, McGill University, Montreal, Quebec, (In vivo studies of brain connectivity in children and adolescents).
- 4th Dutch Endo-Neuro Meeting, Doorwerth, Netherlands, (Cortical excitability and the human thalamus).

- Executive control, Errors and the Brain, Germany, (Subdivisions of the primate cingulate cortex and their cortical connections).
- 2000 Autumn School in Cognitive Neuroscience, United Kingdom, (Imaging and Stimulating the Human Brain).
- The 4th Pan Pacific Workshop on Brain Topography: Network Analysis of Neuroimaging Data, Irvine, CA, (Stimulating and imaging the human brain).
- Opportunities in Cognitive Neuroscience Research: Neuroimaging and Beyond; NINDS, Bethesda, MD, (Stimulating and imaging the human brain).
- The 39th Annual Meeting of the American College of Neuropsychopharmacology, San Juan, Puerto Rico, (Integration of transcranial magnetic stimulation and brain imaging).
- 2001 The 11th Annual Meeting of the Neural Control of Movement, Sevilla, Spain, 2001 (Action observation: Studies with brain imaging and stimulation).
- Annual Meeting of the Society of Biological Psychiatry, New Orleans, LA, (Transcranial Magnetic Stimulation and Brain Imaging in Psychiatry Research).
- 2002 National Institute of Mental Health, Bethesda, (Transcranial magnetic stimulation of the human frontal cortex: implications for rTMS treatment of depression).
- University of Montreal, School of Optometry, (From perceptions to actions and back: studies with brain stimulation and imaging).
- University of Dusseldorf, Functional Brain Connectivity Workshop, Dusseldorf, (Combination of TMS and PET in studies of neural connectivity).
- Annual Meeting of the Organization for Human Brain Mapping, Sendai, (Effective Connectivity of the Human Frontal Cortex and its Modulation by Repetitive Transcranial Magnetic Stimulation).
- Annual Meeting of the Organization for Human Brain Mapping, Sendai, (Experimental testing of meta-analytic predictions using TMS/PET).
- Korean Human Brain Mapping Symposium, Seoul National University, (Transcranial magnetic stimulation of the human frontal cortex: implications for rTMS treatment of depression).
- XXIII Congress of the Collegium Internationale Neuro-Psychopharmacologicum, Montreal, (PET studies of transcranial magnetic stimulation).
- Department of Neurology, Masaryk University, Brno, (Transcranial magnetic stimulation of the human frontal cortex: implications for rTMS treatment of depression).
- Les Quinzièmes Entretiens Jacques Cartier, Lyon, (Transcranial Magnetic Stimulation of the Human Frontal Cortex: Implications for rTMS Treatment of Depression).
- Department of Neuroscience, University of Western Ontario, London, (Exploring Sensori-Motor Interactions by Imaging and Stimulating the Human Brain).
- 2003 12th Annual Rotman conference on "Neuroimaging of Cognitive Functions", Toronto, (Exploring Sensori-Motor Interactions by Imaging and Stimulating the Human Brain).
- 25th Annual conference on "Neurobiology of severe mental disorders: from cell to bedside", Montreal, (Transcranial magnetic stimulation of the human frontal cortex: implications for rTMS treatment of depression).
- 2nd International Transcranial Magnetic Stimulation and Transcranial Direct Current Stimulation Symposium, Gottingen, Germany (Studies of neural connectivity in healthy and disordered human brain).
- Annual IBRO Conference, Prague, Czech Republic (From Centers to Networks: In vivo studies of neural connectivity in the human brain).
- GRIP conference, Montreal, (Mapping human brain development).

- The 2003 F.C. Donders Lecture, Nijmegen (Exploring sensori-motor interactions by imaging and stimulating the human brain).
- 12th International Congress of the European Society for Child and Adolescent Psychiatry, Paris (Imaging human brain development).
- 7th Annual Conference of the Los Alamos National Laboratory Foundation, Santa Fe (Increasing Human potential: Longitudinal studies of brain development).
- 2004 Annual meeting of the American Association for the Advancement in Science, Seattle (Magnetic resonance studies of brain maturation during childhood and adolescence).
- Frontiers in Neuroscience Day, Charleston, SC (From Centres to Networks: *In vivo* Studies of Neural Connectivity in the Human Brain).
- 3rd Functional Connectivity Workshop, Havana, Cuba (Changes in cortical excitability and connectivity induced by transcranial magnetic stimulation).
- BioMag 2004, Boston (Neural connectivity and its modulation by transcranial magnetic stimulation of the human frontal cortex).
- Brain Days, Utrecht University, The Netherlands (Transcranial Magnetic Stimulation of the Human Frontal Cortex: Implications for rTMS Treatment of Depression).
- Dalhousie University, Halifax (Exploring sensori-motor interactions by imaging and stimulating the human brain).
- 2005 Centre for Addiction and Mental Health, University of Toronto (Transcranial Magnetic Stimulation of the Human Frontal Cortex: Implications for rTMS Treatment of Depression).
- Hospital for Sick Children, University of Toronto (Mapping Brain Maturation and Cognitive Development during Adolescence).
- California Institute of Technology (Motor Cortex: Seeing, Hearing and Remembering).
- The Helmholtz Club, Southern California (Frontal Eye Field: Moving and Seeing).
- Brain Connectivity, Boca Raton, Florida (Neural Connectivity in the Lesioned Brain).
- Institute of Neurology, Queen Square, London (Motor Cortex: Seeing, Hearing and Remembering).
- Department of Experimental Psychology, University of Cambridge, Cambridge (Mapping Brain Maturation and Cognitive Development during Adolescence).
- MRC Brain and Cognition Sciences Unit, Cambridge (Motor Cortex: Seeing, Hearing and Remembering).
- Institute of Cognitive Neuroscience, Queen Square, London (Mapping Brain Maturation and Cognitive Development during Adolescence).
- Annual CBF and Metabolism Meeting, Amsterdam (Imaging and Stimulating the Human Brain).
- Fourth Asian-Pacific Congress of Anatomists, Kusadasi, Turkey (Mapping Neural Connectivity in the Human Brain).
- Annual meeting of the American Pediatric Neurology society, Los Angeles (Mapping Brain Maturation and Cognitive Development during Adolescence)
- Department of Experimental Psychology, University of Oxford (Mapping Brain Maturation and Cognitive Development during Adolescence)
- 2006 Danube Plenary Lecture, Brno, Czech Republic (Mapping the Human Brain)
- MRC Developmental, Social and Genetic Psychiatry Centre, London (Mapping Brain Maturation and Cognitive Development during Adolescence)
- Novartis Foundation, London (Inferring behaviour from structural MRI)
- Annual meeting of the Association of European Psychiatrist, Utrecht, The Netherlands

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(Mapping brain maturation during adolescence)
Summer school in structural imaging, Paris, France (Anatomy and Genetics)
Institute of Child Health, London (The Saguenay Youth Study)
Department of Psychology, University of Southampton (The Saguenay Youth Study)
Unilever, Rotterdam, The Netherlands (Brain Mapping in Large-scale Studies)
Neuroimaging of Stroke and Functional Recovery, Montalcino, Italy (Fronto-cortical Connectivity: A Perturbation Approach)
Department of Psychology, University of Birmingham (Multi-modal mapping of brain development)
Department of Psychiatry, University of Edinburgh (Prenatal environment, genes and the adolescent brain)
Centre for Mental Health and Addiction, University of Toronto (The Saguenay Youth Study)
Department of Psychology, University of Lancaster (Motor Cortex: Seeing, Hearing and Remembering)

2007

Department of Education, University of Strathclyde, Glasgow (Mapping Brain Maturation and Cognitive Development during Adolescence)
Walton Centre for Neurology and Neurosurgery, University of Liverpool (Imaging and Stimulating the Human Brain)
Department of Medical Epidemiology, University of Bristol (The Saguenay Youth Study: Brain & Behaviour)
Institute of Medicine, Julich Research Centre, Germany (Imaging and Stimulating the Human Brain)
Annual Dutch Endo-Neuro Meeting, Doorwerth, Netherlands (Is it the hormones?)
Department of Psychiatry, University of Sheffield (The Saguenay Youth Study)
The Annual Developmental Science Conference of the Yale/UCL-Anna Freud Centre Partnership, London (Adolescent Brain and Resistance to Peer Influences)
The Annual meeting of the European College of Neuropharmacology, Vienna, Austria (Mapping Brain Maturation and Cognitive Development during Adolescence)
51st Annual Unilever Research Prize Guest Speaker, Vlaardingen, The Netherlands (The Growing Brain)
Inaugural Symposium of NeuroSpin, Paris, France (Mapping Brain Maturation during Adolescence)

2008

Department of Psychology, University of Essex (Multimodal Mapping of Brain Development)
Institute of Mental Health, University of British Columbia, Vancouver, Canada (Multimodal Mapping of Brain Maturation during Adolescence)
Brain Research Centre, University of British Columbia, Vancouver, Canada (Population Neuroscience: Mapping Brain Development)
41st Annual Winter Conference on Brain Research, Snowbird, Utah (Meta-Co-activations: Revealing Generic features of Functional Connectivity?)
Montreal Neurological Institute, Montreal, Canada (Multi-modal Mapping of the Adolescent Brain)
Department of Psychology, Glasgow University (The Growing Brain)
Department of Psychology, Strathclyde University, Glasgow (The Adolescent Brain)
Department of Psychology, Hull University, Hull (Multi-modal Mapping of the Adolescent Brain)

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Max Planck Institute of Brain and Cognition, Leipzig, Germany (Multimodal Mapping of Brain Maturation during Adolescence)

Addiction & Neuroscience, Verona, Italy (Population Neuroscience: Maternal Smoking and Adolescent Brain)

Cognitive Neuroscience Conference Nijmegen, Nijmegen, The Netherlands (Multi-modal Mapping of the Adolescent Brain)

MIND Research Network, Albuquerque, New Mexico, U.S.A. (Multimodal Mapping of Adolescent Brain)

20th Biennial ISSBD meeting, Wurzburg, Germany (Mapping Brain Maturation and Cognitive Development during Adolescence)

Department of Psychology, Hallam University, Sheffield ((How Environment and Genes Shape Adolescent Brain)

Department of Neuroscience, Leuven University, Belgium (How Environment and Genes Shape Adolescent Brain)

Department of Psychiatry, University of Cardiff (How Environment and Genes Shape Adolescent Brain)

2009 Workshop on Cohort Studies and Neuroimaging, NeuroSpin, Paris, France (Population Neuroscience: A New Merging of Disciplines)

Climate Change and Natural Disasters: Potential effects on pregnant women and their children, Douglas Mental Health University Institute, Montreal, Canada (Saguenay Youth Study: Maternal smoking during pregnancy and adolescent brain)

Satellite symposium at the 5th International Meeting on Steroids and Nervous System, Torino, Italy (The Growth of White Matter in the Adolescent Brain: Role of testosterone and androgen receptor)

Department of Psychology, Royal Holloway, London (How Environment and Genes Shape Adolescent Brain)

Symposium on "Adolescence: Brain Plasticity & Psychopathology", Madison, Wisconsin, USA (How environment and genes shape adolescent brain)

Symposium on "Methods and Challenges in Developmental Neuroimaging", Amsterdam, The Netherlands (How environment and genes shape adolescent brain)

20th EUNETHYDIS meeting on "Current controversies and emerging themes", Winchester, England (Keynote Speaker: How environment and genes shape adolescent brain)

Adolescent Brain Development & Behaviour; A Symposium to Celebrate the 40th Anniversaries of Youthdale Treatment Centres and the Division of Child Psychiatry at the University of Toronto, Toronto, Canada (Keynote Speaker: How environment and genes shape adolescent brain)

Symposium on "Nutrition and cognition in children: possible mechanism of action" during the 19th International Congress of Nutrition, Bangkok, Thailand (Population neuroscience and nutrition: Role of large-scale studies with magnetic resonance imaging)

ESF-COST High-Level Research Conference on "Law and Neuroscience: our Growing Understanding of the Human Brain and its Impact on our Legal System, Acquafredda di Maratea, Italy (Causality in Brain Images?)

Department of Psychiatry, University of Cambridge, UK (Sex, Drugs and the Adolescent Brain)

Workshop on "Methodologies to assess long-term effects of nutrition on brain function", International Life Sciences Institute, Brussels, Belgium (Brain Imaging: A tool for evidence-based nutrition across generations?)

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- University of Tübingen and the Max Planck Institute for Biological Cybernetics, Tübingen, Germany (How environment and genes shape adolescent brain)
- Third Vogt-Brodmann Symposium, Julich, Germany (How environment and genes shape adolescent brain)
- 2010 Symposium on ADHD: Clinical and Basic Research, Oslo, Norway (How environment and genes shape adolescent brain)
- Special lecture, Chenevier-Fondation FondaMental, INSERM U955, Paris, France (Adolescent brain: pruning or myelination?)
- Workshop on Neuroimaging, Neuroscience and the Law, Halifax (Neuroimaging: The technologies and the interpretative challenges)
- Symposium on White Matter, 14th Annual meeting of the International Society for Behavioural Neuroscience, Collioure, France (Sexual dimorphism in the adolescence brain: Myelin or axon?)
- Workshop on Gene Function Meets Brain Function, 16th Annual Meeting of the Organization for Human Brain Mapping, Barcelona, Spain (Population neuroscience: new merging of disciplines)
- Symposium on Shaping the Social Brain & Behaviour during Development, 21st Biennial Meeting of the International Society for the Study of Behavioral Development, Lusaka, Zambia (How environment and genes shape adolescent brain)
- Department of Orthopedics, the Chinese University of Hong Kong (How environment and genes shape adolescent brain)
- Department of Physiology, Khon Kaen University, Thailand (Mapping the human brain: From tools to concepts)
- States of Mind NET Annual Meeting and Workshop on the neurobiology and ethics of decision making, Jackson's Point, Ontario (Imaging adolescent brain: Causes and consequences)
- The Pierre Deloze keynote speaker at the the 9^e Colloque of the Société québécoise de transplantation, Orford, Quebec (The adolescent brain: Is it different?)
- The 35th Annual Distinguished Scholar Lecture Series, Department of Psychology, University of Alberta, Edmonton, Alberta (How environment and genes shape adolescent brain; Sexual dimorphism in white matter: Myelin or axon?; and The face network in the adolescent brain)
- The MIND Institute, Albuquerque, NM (Population neuroscience: A new merging of disciplines)
- Department of Epidemiology, Erasmus University, Rotterdam, The Netherlands (Population neuroscience: A new merging of disciplines)
- Castang Foundation workshop on "The placenta and neurodisability", London, UK (Maternal smoking and he offspring brain)
- 2011 Ebbinghaus Series, Department of Psychology, University of Toronto (Hormones and Faces)
- Neuroscience and Cognitive Sciences Program, University of Maryland, College Park, USA (Population neuroscience and social cognition)
- Canadian Institute for Advanced Research: Social Embedding and Life Course Development, Vancouver, BC (How environment and genes shape adolescent brain)
- International Conference on Social Neuroscience, Utrecht University, The Netherlands (Population neuroscience and social cognition)
- Center for Cognitive and Social Neuroscience, University of Chicago, Chicago, USA

(How environment and genes shape adolescent brain)

Wiring the brain: Making connections, Powerscourt, Ireland (Sex hormones and connectivity in the adolescent brain)

Danish Research Centre for Magnetic Resonance, Copenhagen University, Copenhagen Denmark (How environment and genes shape adolescent brain)

International Conference on "Reward and Regulation in Adolescence: contexts for positive growth", Brock University, Canada (How environment and genes shape adolescent brain)

The Optimal Brain Symposium, Hamilton, Canada (How environment and genes shape adolescent brain and The face & hand networks in the adolescent brain)

Boosting the Brain, Karolinska Institute, Stockholm, Sweden (Social cues and adolescent brain)

Adolescent maturation and drug use, the Spanish Society of Drug Dependence, Madrid-Valencia, Spain (Adolescent brain: Mothers, peers and drug experimentation)

2nd Annual Youthdale Conference, Toronto, Canada (Hormones and faces)

2012 Presidential Lecture, 6th Annual Canadian Neuroscience Meeting, Vancouver (How environment and genes shape the adolescent brain)

Nutrition and Cognitive Functions. A symposium organized by the Nutrimenthe project, Rotterdam, The Netherlands (Brain imaging: a tool for evidence-based nutrition across generations)

A medical-expert seminar at 89th Annual Conference of the Canadian Paediatric Society, London, ON (The adolescent brain: what's changing and why?)

Invited Symposium: Sex differences in brain function, International Neuropsychological Society, Oslo, Norway (Sex-hormone genes and connectivity in the adolescent brain)

Invited Symposium: The adolescent brain, 8th FENC Forum of Neuroscience, Barcelona, Spain (Population neuroscience and social cognition: what is shaping face perception?)

The Future of Human Longevity: Focusing on you. Conference at the Swiss Re Centre for Global Dialogue, Zurich, Switzerland (Population Neuroscience)

1st Annual Health Care Summit, The U.S. Chamber of Commerce, Washington D.C. (a panelist on "Using data to drive delivery system innovation)

Central European Institute of Technology Seminar Series, Brno, Czech Republic (How environment and genes shape the adolescent brain)

2013 Institute for Life Course and Aging, University of Toronto, Toronto (Population neuroscience of the trans-generational brain)

Annual Baycrest Research Conference, Toronto (Population neuroscience across generations)

20th Annual Conference of the International Society for Behavioural Neuroscience, Montreal (Adolescent brain: Genes and plasticity)

Imaging Genetics Workshop, 19th Annual Meeting of the Organization for Human Brain Mapping, Seattle (Identifying Informative Phenotypes in Large Functional Imaging Studies: An Application of Genome-Wide Complex Trait Analysis)

Department of Psychiatry, Dalhousie University, Halifax (Adolescent Brain: Genes and Plasticity)

NUTRIMENTHE International Conference, Granada, Spain (Population Neuroscience of the Adolescent Brain)

7th International Congress on Shwachman-Diamond Syndrome, Toronto (Population

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Neuroscience of the Adolescent Brain)

Symposium in Honor of 95th Birthday of Brenda Milner, Montreal (Population Neuroscience of the Adolescent Brain)

Department of Social Medicine, Bristol, United Kingdom (Population Neuroscience of the Adolescent Brain)

Cold Spring Harbor Symposium on the Adolescent Brain, Banbury Centre, New York (Adolescent Brain Development)

The 52nd meeting of the American College of Neuropharmacology, Florida (Population Neuroscience and Psychiatric Genetics: a two-way street)

2014

Student International Health Initiatives' Conference, McMaster University, Hamilton (The Adolescent Brain: Opportunities and Risks)

School of Population and Public Health, University of British Columbia, Vancouver (Population Neuroscience of the Growing Brain)

Toronto Western Hospital (White Matter as a Transport System)

Hotchkiss Brain Institute, University of Calgary (Population Neuroscience of the Adolescent Brain)

International Congress on Epilepsy, Brain and Mind, Brno, Czech Republic (Population Neuroscience and Social Cognition)

Youthdale Spring Conference, Toronto (Population Neuroscience of the Brain in Transition)

Conference on the "Relevance of Population Neuroscience for Understanding Human Development", Ann Arbor, Michigan (Population Neuroscience of the Adolescent Brain)

The Conte Centre, University of California Irvine, Irvine, California (Population Neuroscience of the Growing Brain)

Conference on Epidemiological Birth Cohort Studies, dedicated to the memory of Professor Paula Rantakallio, Oulu University, Finland (Population Neuroscience of the Adolescent Brain)

Summer School on "Connectomics 2014: The wiring diagram of the human brain", University of Bordeaux, France (two lectures: Population Neuroscience of the Growing Brain and White Matter as a Transport System)

Neuroanatomy Course on "Linking magnetic resonance imaging (MRI) to the neuroanatomy of the human brain", University of Copenhagen, Denmark (two lectures: Population Neuroscience of the Growing Brain and White Matter as a Transport System)

B-Debate on "Environment of the child brain development", Barcelona, Spain (Population Neuroscience of the Growing Brain)

Department of Psychology, University of New Mexico, Albuquerque (Population Neuroscience of the Adolescent Brain)

MIND Research Network, Albuquerque, New Mexico (White Matter as a Transport System)

Professional Enrichment Series for Teachers, Santa Fe Alliance for Science, Santa Fe, New Mexico (The Human Brain and its Development through Adolescence)

2015

Grand Rounds, Department of Psychiatry, Wayne State University, Detroit, MI (White Matter as a transport System)

Society of Actuaries, Chicago, IL (Health Span vs. Life Span: Why the Mismatch)

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Nathan Kline Institute, Orangeburg, NY (Population Neuroscience: Observing to Change)
World Congress on Behavior and Emotions, Porto Alegre, Brazil (Population Neuroscience: What Shapes the Human Brain; Shaping the Brain in Health and Disease)

Sunnybrook Research Institute, Toronto (White Matter as a Transport System)

University of Sao Paulo, Sao Paulo, Brazil (Population Neuroscience)

Royal Danish Academy of Sciences and Letters, CIMBI Symposium, Copenhagen, Denmark (How Environment and Genes Shape the Adolescent Brain)

World Congress of Psychiatric Genetics - Educational Day, Toronto (Population Neuroscience)

Symposium on "Adolescent brain & mind and self-regulation", Tokyo, Japan (How Genes and Experience Shape the Adolescent Brain)

National Institute on Drug Abuse, Division of Epidemiology, Services and Prevention Research, Bethesda, MD (Population Neuroscience of the Adolescent Brain)

2016

Seminar, Central European Institute of Technology, Brno, Czech Republic (White Matter as a Transport System)

Seminar, Neuroscience Program, Michigan State University, Lansing, MI (White Matter as a Transport System)

PhD Course on the brain and behavior changes across the life span, University of Copenhagen Denmark (Principles of Population Neuroscience)

Seminar, Department of Psychiatry, Dalhousie University, Halifax, Nova Scotia (White Matter as a Transport System)

PUBLICATIONS*

A total of 225 peer-reviewed articles, 2 books and 18 chapters;

~29,000 citations, h-index: 81. <http://scholar.google.ca/citations?user=LL3M0c8AAAAJ&hl=en&oi=ao>

Refereed papers (*Papers cited more than 500 times are in bold).

1. Paus, T. Vitamin C influence on attention and vigilance. Scripta Medica 55:113-118, 1982.
2. Paus, T. An automatic device for monitoring the level of visual vigilance. Studia Psychologica 25:172-176, 1983.
3. Paus, T. The development of sustained attention in children might be related to the maturation of frontal cortical functions. Acta Neurobiologiae Experimentalis 49:51-55, 1989.
4. Paus, T., Babenko, V. and Radil, T. Development of an ability to maintain verbally instructed central gaze fixation studied in 8 to 10 year children. International Journal of Psychophysiology 10:53-61, 1990.
5. Paus T, Kalina M, Patocková, L., Angerová, Y., Cerný, R., Mecír, P., Bauer, J. and Krabec, P. Medial vs. lateral frontal lobe lesions and differential impairment of central gaze fixation maintenance in man. Brain 114:2051-2067, 1991.
6. Paus, T. Two modes of central gaze fixation maintenance and oculomotor distractibility in schizophrenics. Schizophrenia Research 5:145-152, 1991.
7. **Paus, T., Petrides, M., Evans, AC, Meyer, E. Role of the human anterior cingulate cortex in the control of oculomotor, manual, and speech responses: A positron emission tomography study. Journal of Neurophysiology 70:453-469, 1993.**
8. Paus, T., Marrett, S., Worsley K. J., and Evans, A. C. Extra-retinal modulation of cerebral blood-flow in the human visual cortex: implications for saccadic suppression. Journal of Neurophysiology, 74:2179-

2183, 1995.

9. Paus, T., Tomaiuolo, F., Otaky, N., MacDonald, D., Petrides, M., Atlas, J., Morris, R., Evans, A.C. Human cingulate and paracingulate sulci: pattern, variability, asymmetry, and probabilistic map. Cerebral Cortex 6:207-214, 1996.
10. **Paus, T. Location and function of the human frontal eye-field: a selective review. Neuropsychologia 34:475-483, 1996.**
11. Paus, T., Perry, D., Zatorre, R., Worsley, K. J., and Evans, A. C. Modulation of cerebral blood-flow in the human auditory cortex during speech: role of motor-to-sensory discharges. European Journal of Neuroscience, 8:2236-2246, 1996.
12. Paus, T., Marrett, S., Worsley, K. and Evans, A. C. Imaging motor-to-sensory discharges in the human brain: an experimental tool for the assessment of functional connectivity. NeuroImage 4:78-86, 1996.
13. Paus, T., Otaky, N., Caramanos, Z., MacDonald, D., Zijdenbos, A., D'Avirro, D., Gutmans, D., Holmes, C., Tomaiuolo, F. and Evans, A. C. In-vivo morphometry of the intrasulcal gray-matter in the human cingulate, paracingulate and superior-rostral sulci: hemispheric asymmetries and gender differences. The Journal of Comparative Neurology 376:664-673, 1996.
14. Paus, T., Zatorre, R. J., Hofle, N., Caramanos, Z., Gotman, J., Petrides, M., and Evans, A. C. Time-related changes in neural systems underlying attention and arousal during the performance of an auditory vigilance task. Journal of Cognitive Neuroscience, 9:392-408, 1997.
15. **Paus, T., Jech, R., Thompson, C. J., Comeau, R., Peters, T. and Evans, A. Transcranial magnetic stimulation during positron emission tomography: a new method for studying connectivity of the human cerebral cortex. Journal of Neuroscience, 17:3178-3184, 1997.**
16. Tomaiuolo, F., Ptito, A., Paus, T., Marzi, C. and Ptito, M. Spatial summation across the vertical meridian after complete or partial hemispherectomy. Brain 120:795-803, 1997.
17. Hofle, N., Paus, T., Reutens, D., Fiset, P., Gotman, J., Evans, A.C. and Jones, B.E. Regional cerebral blood flow changes as a function of delta and spindle wave activity in during slow wave sleep in humans. Journal of Neuroscience, 17:4800-4808, 1997.
18. Paus, T., Jech, R., Thompson, C. J., Comeau, R., Peters, T. and Evans, A. Dose-dependent reduction in cerebral blood-flow during rapid-rate transcranial magnetic stimulation of the human sensori-motor cortex. Journal of Neurophysiology 79:1102-1107, 1998.
19. Koski, L., Paus, T., Petrides, M. Directed attention after unilateral frontal excisions in humans. Neuropsychologia 36:1363-1371, 1998.
20. Paus, T., Koski, L., Caramanos, Z., Westbury, C. Regional differences in the effects of task difficulty and motor output on blood-flow response in the human anterior cingulate cortex: a review of 107 PET activation studies. Neuroreport 9:R37-R47, 1998.
21. Paus, T. and Wolforth, M. Transcranial magnetic stimulation during PET: Reaching and verifying the target site. Human Brain Mapping 6:399-402, 1998.
22. Thompson, C.J., Paus, T., Clancy, R. Magnetic shielding requirements for PET detectors during transcranial magnetic stimulation. IEEE Trans. Nucl. Sci. 45:1303-1307, 1998.
23. Worsley, K.J., Cao, J., Paus, T., Petrides, M., Evans, A.C. Applications of random field theory to functional connectivity. Human Brain Mapping 6:364-367, 1998.
24. Rainville, P., Hofbauer, R.K., Paus, T., Duncan, G.H., Bushnell, M.C., Price, D.D. Cerebral mechanisms of hypnotic induction and suggestion. Journal of Cognitive Neuroscience 11:110-125, 1999.
25. Paus, T. Imaging the brain before, during, and after transcranial magnetic stimulation. Neuropsychologia 37:219-224, 1999.
26. **Paus, T., Zijdenbos, A., Worsley, K., D. Collins, D.L., Blumenthal, J., Giedd, J.N., Rapoport, J.L., Evans, A.C. Structural maturation of neural pathways in children and adolescents: in vivo**

study. Science 283:1908-1911, 1999.

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29. Koski, L., Paus, T., Hofle, N., Petrides, M. Increased blood-flow in basal ganglia when using cues to direct attention. Experimental Brain Research 129:241-246, 1999.
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31. **Giedd J.N., Blumenthal J., Jeffries N.O., Castellanos F.X., Liu H., Zijdenbos A., Paus T., Evans AC, Rapoport JL. Brain development during childhood and adolescence: a longitudinal MRI study. Nature Neuroscience 2:861-863, 1999.**
32. Koski L. and Paus T. Functional connectivity of the anterior cingulate cortex within the human frontal lobe: a brain-mapping meta-analysis. Experimental Brain Research 133:55-65, 2000. (<http://dx.doi.org/10.1007/s002210000400>).
33. Strafella, A. and Paus, T. Modulation of cortical excitability during action observation: a transcranial magnetic stimulation study. NeuroReport 11:2289-2292, 2000.
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39. **Strafella A., Paus T., Barrett J., Dagher A. Repetitive transcranial magnetic stimulation of the human prefrontal cortex induces dopamine release in the caudate nucleus. Journal of Neuroscience 21:RC157 (1-4), 2001.**
40. **Paus T. Primate anterior cingulate cortex: Where motor control, drive and cognition interface. Nature Reviews Neuroscience 2:417-424, 2001.**
41. Paus T., Sipila P.K., Strafella A.P. Synchronization of neuronal activity in the human sensori-motor cortex by transcranial magnetic stimulation: a combined TMS/EEG study. Journal of Neurophysiology 86:1983-1990, 2001.
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- Neuroscience 14:1405-1411, 2001.
44. Pujol J., Lopez A., Deus J., Cardoner N., Vallejo J., Capdevilla A., Paus T. Anatomical variability of the anterior cingulate gyrus and basic dimensions of human personality. Neuroimage 15:847-855, 2002.
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 48. Chung M.K., Worsley K.J., Robbins S., Paus T., Taylor J., Giedd J.N., Rapoport J.L., Evans A.C. Deformation-based surface morphometry applied to gray matter deformation. NeuroImage 18:198-213, 2003.
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 53. **Strafella A.P., Paus T, Fraccio M., Dagher A. Striatal dopamine release induced by repetitive transcranial magnetic stimulation of the human motor cortex. Brain 126:2609-2615, 2003.**
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Cognitive Sciences 9:60-68, 2005.

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