CURRICULUM VITAE

February 12, 2016

D. Louis Collins

A. IDENTIFICATION

FULL NAME: Collins, Donald Louis

BIRTHDATE: September 17, 1964

BIRTHPLACE: San Francisco, California

CITIZENSHIP: American and Canadian

LANGUAGES: English and French, both written and spoken

HOME ADDRESS:
239 Stanley
St-Lambert, Quebec
CANADA J4R 2R7
Telephone: (450) 465-9977

WORK ADDRESS:
McConnell Brain Imaging Centre, WB314
Montréal Neurological Institute
McGill University
3801 University
Montréal, QC
CANADA H3A 2B4
Telephone: 514-398-4227
Fax: 514-398-2975
e-mail: louis.collins @mcgill.ca

B. EDUCATION (in reverse chronological order)

Post-Doctoral: **Postdoctoral Fellowship, 1995-1996**, INSERM U335
Research topics: *Nonlinear registration, automatic structure segmentation, analysis of anatomical morphometric variability*
Laboratoire SIM (Signaux et Images en Médecine),
Université de Rennes I, France

Graduate : **Ph.D., 1994** Biomedical Engineering
Thesis title : *3D model-based segmentation of individual brain structures from magnetic resonance imaging data*
Dept. of Biomedical Engineering & Montréal Neurological Institute
McGill University
Montréal,, QC, Canada

M.Eng., 1990 Electrical Engineering
Thesis title: *Volumetric Rendering of Medical Data: applications to stereotactic neurosurgery planning*
Dept. of Electrical Engineering
McGill University
Montréal, QC, Canada

Undergraduate: **B.Comp.Sc., 1987** Computer Science
Dean's Honor List. Member of Science College
Concordia University
Montréal, QC, Canada

DEC, **1983** Diplome d'Etude Collegiales in Pure and Applied Science.
College Jean de Brebeuf
Montréal, QC, Canada

C. APPOINTMENTS (in reverse chronological order)

University:

2011 to present: **McGill University**
Professor
Depts. Neurology & Neurosurgery and Biomedical Engineering

Associate Member
Centre for Intelligent Machines, ECE, McGill

Associate Member
McGill Centre for Studies in Aging

Associate Member
Medical Physics

2006 to 2011: **McGill University**
Associate Professor
Depts. Neurology & Neurosurgery and Biomedical Engineering

Associate Member

Centre for Intelligent Machines, ECE, McGill

1999-2006: **McGill University**
Assistant Professor
Depts. Neurology & Neurosurgery and Biomedical Engineering

1996-1999: **McGill University**
Research Associate
McConnell Brain Imaging Centre
Montréal Neurological Institute

1995-1996: **Université de Rennes I**
Research Associate
Department of Neurology and Neurosurgery, Laboratoire SIM (INSERM U335)

Hospital: Not applicable.

Other:
1983: **Concordia University**
Custom software engineer for blind users
Department of Computer Science

1984-1988: **ACADZ Inc:**
Co-founder and Vice President
Specialized in the design of PC-based software tools for architectural design sold internationally (10 employees)

D. SPECIAL HONORS, AWARDS, RECOGNITION

2007 - 2011: **Fonds de Recherche Santé Québec (FRSQ)**
Chercheur Boursier Senior Salary Award

2004-2007: **Fonds de Recherche Santé Québec (FRSQ)**
Chercheur Boursier Junior II Salary Award

2002-2007: **Killam Scholar**
Montreal Neurological Institute

2000-2004: **Fonds de Recherche Santé Québec (FRSQ)**
Chercheur Boursier Junior I Salary Award

1995-1996: **Human Frontier Science Program Organization (HFSPO)**
Postdoctoral scholarship (~$50k salary + ~$10k equipment per year)

1994: **Geddes prize for Biomedical Engineering** for PhD thesis

1993.	**K.G. McKenzie Prize**, Canadian Congress of Neurological Sciences. M.C. Preul, D.L. Collins, J.G. Villemure, A.O.A., G. Mohr, R.L.R., R. Pokrupa, R. Ethier, and D.L. Arnold, *Discrimination of human intracranial tumors in vivo using IH mr spectroscopic imaging and feature space for spectral pattern recognition,* in *Can J Neurolog Sci*, no. 20, p. S77, 1993.
1993:	**Killam Prize for Best Research Presentation, MNI Fellows' Day.** M. Preul, D.L. Collins, W. Feindel and D.L. Arnold, *Discrimination of human intracranial tumors in vivo using IH MR spectroscopic imaging.*
1990-1993:	**Fonds de la Recherche en Santé du Quebec (FRSQ)** Postgraduate Scholarship for Ph.D.
1991:	**Sylvia Sorkin Greenfield Award** for best paper in Medical Physics. C.J. Henri, D.L. Collins and T.M. Peters. *Multi-modality image integration for stereotactic surgical planning.* Medical Physics, 18(2):167-177
1990:	**Fonds pour la formation de chercheurs et l'aide à la Recherche (FCAR) :** Postgraduate Scholarship for Ph.D.
1988-1989:	**Fonds pour la formation de chercheurs et l'aide à la Recherche (FCAR) :** Postgraduate Scholarship for M.Eng.
Summer 82 and 83	**Natural Science and Engineering Research Council (NSERC):** Undergraduate Summer Research Award.

E. TEACHING

E1. McGill Courses

- Undergraduate: not applicable

- Post-graduate:
    - **399-650B, Advanced Medical Imaging**
      Department of Biomedical Engineering, 3 credits, 1999—present

      From 1999-2001 a 3 credit graduate course extended and directed by myself as a follow up to 563-607A (Physics of Medical Imaging). I gave approximately two thirds of the lectures (~**25 hours** class contact time, ~ **25 hours** preparation and coordination) with the remainder given by numerous invited members of McGill Faculty (~25-30 students). I managed the course, speakers, and assignments. I

graded the final project, a 30 page manuscript on a topic in medical imaging and an oral presentation.

This course provides a review of advanced techniques in medical imaging including: fast magnetic resonance imaging (MRI), functional MRI, MR angiography and quantitative flow measurement, spiral and dynamic x-ray computed tomography, 2D/3D positron emission tomography (PET), basic PET physiology, surgical planning and guidance, functional and anatomical brain mapping, 3D ultrasound, and medical imaging processing.

From 2002-2009 Since the number of students in the course decreased to 10-13 per year (reflecting the decrease in the number of students in the department), I changed the course structure to that of a journal club. In this format, each student selects an article from the field of medical imaging, presents it to his/her colleagues and drives the discussion with my occasional help. All other students prepare a short directed summary of the article that is submitted before class. Each student presents 2 papers during the session with a total of 20-26 papers discussed during the course. This results in ~ **39 hours** class contact time and ~ **25 hours** preparation and coordination. Evaluations available.

- **399-500A/B, Seminars in biomedical Engineering**
  Department of Biomedical Engineering, 3 credits, 1999-2003
  Organization and management of bi-weekly seminar course with invited speakers. In addition, each student in BME is required to attend the seminars and present one seminar related to on-going research. (~ **25 hours** preparation and coordination). No evaluations available.

- **399-501A, Selected Topics in Biomedical Engineering**
  Department of biomedical Engineering, 3 credits, 1999-2007
  I have taken on and extended this overview course that involves coordination of lectures (~ **20 hours**), assignments (~ **25 hours**) and grading course projects (~ **20 hours**) with (~ **9 hours** class contact time, ~ 15-25 students) per year.

  This course provides an overview of how techniques from engineering and the physical sciences are applied to the study of selected physiological systems and biological signals. Using specific biological examples, systems are studied using: signal o finite-element analysis, system identification, modeling and simulation, computer control of experiments and data acquisition. Evaluations available.

- CME: not applicable

- Other
  - **endMS Research and Training Network** (Start Date: 2009)
    Multidisciplinary teaching activities integrated with research activities
    Award of $100,000 received from Quebec-Ottawa RRTC for three years

Dr. Pierre Duquette (PI) and team of which I am a member. Student component of group will include one student from my lab.

- **RRTC Journal Club**
  - **Chair -** Videoconference on *Imaging*. November 19, 2009

E2. Research Trainees (alphabetical order)

- Undergraduate and summer students
  - **BENOIT, Eric** May-Aug, 2003
    Project title: Integration of MINC in IGNS platform
  - **BENOIT, Eric** May-Aug, 2004
    Project title: Integration of vessel segmentation in IGNS platform
  - **BONEVILLE, Martin** Summer 1998
    Project title: Implementation of optical flow methods for non-linear MRI registration. Co-supervised with Dr. Evans (I was secondary supervisor).
  - **BONHOURE, Marie** Jan-Aug, 2001
    Project title: Calibration of Ultrasound images for IGNS
  - **BONNER, Simon** Sept 2000-Aug 2001
    Project title: Analysis of MRI data from a pediatric population
  - **BOUSICOT, Philippe-Eduard** May-Aug, 2004
    Project title: Identification of vertebral landmarks for shape modeling
  - **BOZZO, Anthony** June-Aug 2008
    Project title: Image Guided Neurosurgery
    Co-supervised with Dr. B. Goulet
  - **BROADBENT, Scott** May-Aug, 2005
    Project title: Development of an fMRI-compatible vibrotactile stimulator
  - **MERCIER, Laurence** May-Aug, 2002
    Project title: 3D Calibration of Ultrasound images for IGNS
  - **OSTERGAARD, Lasse Riis** Summer 1999,2000
    Project title: Enhancement, segmentation and modeling of blood vessels based on MRI and MRA volumetric data
  - **VAN MEER, Frederick** Jan-Jul 2000
    Project title: Evaluation of VTK-based visualization tools for atlas integration for image-guided neurosurgery

- Research Assistants and staff supervised
  - **DROUIN**, **Simon** 05/2010 **-** 8/2013
    Project title: software development for IGNS
  - **AUBERT-BROCHE, Berengere** 01/2008 – 05/2010
    Project title: Image Analysis in MS
  - **BAER, Larry** 08/2004-08/2005
    Project title: Software support and analysis for NIHPD
  - **BENOIT, Eric** 09/2004-04/2005
    Project title: Software support for IGNS
  - **DROUIN, Simon** 01/2003-08/2005
    Project title: Software development of IGNS
  - **FONOV, Vladimir** 09/2008 –
    Project title: Multidimensional Image Analysis
  - **KITCHING, Matthew** 11/2001-08/2004
    Project title: analysis of MRI data from a pediatric population

- **KOCHANOWSKA, Anka** 06/2005 –
  Project title: Software development for IGNS
- **LENEZET, Patricia** 02/2003-02/2005
  Project title: Software support for analysis of MS data
- **NAVARRO, Pablo** 04/2005-01/2007
  Project title: Software support and analysis of MS data

- Graduate Students
  I currently have 9 graduate students (2 co-supervised) and 2 postdoctoral fellows (1 co-supervised).

  - Doctoral students supervised
    - **BAILEY, Lara** Sept 2008 –
      Ph.D. candidate, Department of Biomedical Engineering
      Project Title: *MR-histological image registration*
    - **CARDASO, Alonso** Jan 2016 –
      Ph.D. candidate, Department of Biomedical Engineering
      Project Title: *MRI analysis of pediatric data in autism*
    - **CHAKRAVARTY, Mallar** Jan 2004-Dec 2007
      Ph.D., Department of Biomedical Engineering
      (transferred from BME M.Eng. Program)
      Project Title: *Atlas creation, validation and applications in Parkinson's disease*
    - **CHEN, Jacqueline** Sept 2001 – Dec 2007
      Ph.D., Department of Biomedical Engineering
      Project Title: *Analysis of Brain Atrophy in MS*
    - **CHEN, Sean** Aug 2008 – Mar 2014
      Ph.D. candidate, Department of Biomedical Engineering
      Project Title: *Segmentation and registration of blood vessels in IGNS*
    - **DADAR, Mahsa** September 2013 –
      Ph.D. candidate, Department of Biomedical Engineering
      Project Title: *MRI processing in neurodegenerative diseases*
    - **DERAKHSHAN, Mishkin** May 2007 – Mar 2014
      Ph.D. candidate, Department of Biomedical Engineering
      Project Title: *The in vivo detection of cortical demylination in multiple sclerosis*
    - **DROUIN, Simon** September 2013 -
      Ph.D. candidate, Department of Biomedical Engineering
      Project Title: *Augmented reality for image guided neurosurgery*
    - **DUCHESNE, Simon** Sept 2001-Jan 2006
      Ph.D., Department of Biomedical Engineering
      Project Title: *PCA-based MRI analysis in AD and TLE*
    - **GEDAMU, Elias** Oct 2006 – Jan 2011
      Ph.D. candidate, Department of Biomedical Engineering
      transferred from BME M.Eng programme
      (dropped back to M.Eng. due to medical reasons)
      Co-supervised with Dr. D. Arnold (I am primary supervisor)
      Project Title: *Image quality control*

- **GIRARD, Ian** September 2013 –
  Ph.D. candidate, Department of Biomedical Engineering
  Project Title: *Improved patient-image registration for image guided neurosurgery*.
- **GUIZARD, Nicolas** Sept 2008 - Oct 2015
  Ph.D. candidate, Department of Biomedical Engineering
  Project Title: *Non-linear image registration*
- **HU, Shiyan** Sept 2006 – May 2013
  Ph.D. candidate, Department of Biomedical Engineering
  Project Title: *Segmentation of Hippocampus*
- **KERSTEN, Marta** Sept 2008 - Mar 2015
  Ph.D. candidate, Department of Biomedical Engineering
  Project Title: *Visualization in IGNS*
  (note that the time includes 2 maternity leaves)
- **KEZELE, Irina** Mar 2003-Oct 2006
  Ph.D. candidate, Department of Biomedical Engineering
  (transferred from BME M.Eng. program)
  Project Title: *Analysis of regional and local atrophy in MS*
- **MERCIER, Laurence** Sept 2004 – November 2011
  Ph.D. candidate, Department of Biomedical Engineering
  Project Title: *Ultrasound-guided neurosurgery of cerebral tumours*
- **PELLETIER, Julie** Sept 2002- April 2007
  Ph.D. candidate, Department of Biomedical Engineering
  Project Title: *Automatic vertebral segmentation and registration for IGNS*
  (candidate left the program for personal reasons)
- **REINERTSEN, Ingrid** Jan 2002-Jan 2007
  Ph.D. candidate, Department of Biomedical Engineering
  Project Title: *Ultrasound-MRA registration for IGNS using blood vessels*
- **SANFORD, Ryan** Jan 2015 –
  Ph.D. candidate, Department of Biomedical Engineering
  Project Title: Image analysis and prognosis in HIV neurodegeneration
- **XIAO, Yiming** September 2011 -
  Ph.D. candidate, Department of Biomedical Engineering
  Project Title: *MRI acquisition and analysis for Parkinson's disease*
- **YAN, Charles** Sept 2006 – May 2015
  Ph.D. candidate, Department of Biomedical Engineering
  Project Title: *Intraoperative ultrasound for image guided spine surgery*
  (note that student was in med school from Sep 2011 to May 2015)
- **ZANDIFAR, Azar** September 2013 –
  Ph.D. candidate, Department of Biomedical Engineering
  Project Title: *Segmentation of medial temporal lobe structures in AD*

- International doctoral stagiare students supervised
  - **GARCIA-LORENZO, Daniel** Aug-Nov 2008
    Ph.D. candidate, INSERM, Rennes, France

Supervisor: Dr. Christian Barillot
Project Title: *MS lesion classification*

- Masters students supervised (alphabetical order)
  - **CARDASO, Alonso** September 2014 –
    M.Sc., Department of Biomedical Engineering
    Project Title: MRI analysis of pediatric data in autism
  - **CHAKRAVARTY, Mallar** Sept 2001-Jan 2004
    M.Eng., Department of Biomedical Engineering
    (transferred to BME Ph.D. program Jan 2004)
    Project Title: Creation of a 3D histological atlas
  - **DERAKHSHAN, Mishkin** May 2005 - May 2007
    M.Eng., Department of Biomedical Engineering
    Co-Supervised with Dr. Arnold (I am primary supervisor)
    Project Title: Detection of cortical lesions in Multiple Sclerosis
  - **DUCHESNE, Simon** Aug 2000-Aug 2001
    M.Sc. Department of Medical Physics
    Project Title: Shape analysis and segmentation of hippocampus
    Co-supervised with Dr. B. Pike (for Dept Med. Phys., I was primary supervisor)
  - **FRANCIS, Simon** April 2001-August 2004
    M.Sc. Department of Neurology and Neurosurgery
    Project Title: Automatic identification and quantification of MS lesions
  - **FU, Luke** may 2005-Nov 2006
    M.Sc. Department of Medical Physics
    Project Title: ACR QC/QA for a pediatric database
    Co-supervised with Dr. B. Pike (for Dept Med. Phys., I am primary supervisor)
  - **GEDAMU, Abraham** Sept 2005-2008
    M.Eng., Department of Biomedical Engineering
    Co-supervised with Dr. D. Arnold (I am primary supervisor)
    Project Title: Image intensity normalization
  - **GIRARD, Ian** Sept 2012 – 2013
    M.Sc., Department of Biomedical Engineering
    Project Title:
  - **GOULET, Benoit** Sept 2002-2009
    M.Eng., Department of Biomedical Engineering, U Montreal
    Co-supervised with Dr. J. deGuise (I am primary supervisor)
    Project Title: Image guided spine surgery
    (note that 7y duration was due to candidate being full time neurosurgeon)
  - **GU, Wei**, 1996-1997
    M.Sc. Department of Medical Physics
    Thesis Title: Automated Tracer-Independent MRI/PET Image registration
    Co-supervised with Dr. Evans. (I was secondary supervisor)
  - **HU, Shiyan**, Sept 2003-Aug 2006
    M.Eng., Department of Biomedical Engineering
    Project Title: Appearance-based segmentation

- **KEZELE, Irina** Jan 2001-Mar 2003
  M. Eng., Department of Biomedical Engineering
  (transferred to BME Ph.D. program mar 2003)
  Project Title: Analysis of MR diffusion tensor data
- **MERCIER, Laurence**, Sept 2002-August 2004
  M.Sc. Department of Biomedical Engineering
  Project Title: Review of calibration techniques for tracked ultrasound
- **REINERTSEN, Ingerid** Aug 2000-Dec 2001
  M .Sc., Department of Medical Physics
  Project Title: Implementation and evaluation of fMRI motion correction methods
  Co-supervised with Dr. B. Pike (for Dept Med. Phys., I was primary supervisor)
- **SANFORD, Ryan** September 2014 –
  M.Sc., Department of Biomedical Engineering
  Project Title: Image analysis in HIV neurodegeneration
- **WASSEF, Shafik** January 2011 -
  M.Sc., Department of Neurology and Neurosurgery
  Project Title: Computer Aided Techniques for Image Guided Neurosurgery.
- **XIAO, Yiming** Sept 2009 – 2011
  M.Sc**.,** Department of Biomedical Engineering
  Project Title: Susceptibility-enhanced MRI for deep brain stimulation (DBS) implantation

- International Graduate Research Trainees Supervised

  - **van GIESSEN, Anoukh** March 2010-August 2011
    M.Sc., Biomedical Image Sciences (BIS) University of Utrecht
    Project Title: Normal aging brain that develops Alzheimer's Disease
  - **Stephansen-Landberg**, Ulrik Aug 2011-Dec 2011
    M.Sc., Biomedical engineering, University Aalborg, Denmark
    Project title: appearance-based segmentation of lumbar vertebra

- Visiting scientists / sabbaticals
  - **VERIN, Marc**, April 6, 2011-November 2011
    Prof des Universités- Practicien Hospitalier, Clinique Neurologique
    CHU Pontchaillou-Rennes

  - **COULON, Olivier,** Aug 2010-Jul 2011
    CR CNRS, Laboratoire des Sciences de l'information des systèmes, équipe LXAO, ESIL, Marseille
    Projet title: automated analysis of cortical sulcal patterns in the human brain
  - **HAGAELEN, Claire**, Jul 2010-Jun 2011
    Prof, U Rennes, Faculté de médecine, neurochirugie
    Project title: Development of atlases for deep brain surgery
  - **HELLIER, Pierre** Aug 2006-Jun 2007
    CR INRIA, IRISA, CNRS, University de Rennes
    Project title: Ultrasound for image guided surgery

- **JANNIN, Pierre** July 2009-Jun 2010
  Prof. U Rennes, France
  Project Title: Methods for evaluation & validation in MS image analysis
- **MORANDI, Xavier** Aug 2000-Jul 2001
  Prof, U Rennes, Faculté de médecine, neurochirugie Project Title: Development of neurosurgical planning/IGNS tools

- Post doctoral research fellows

- **ARBEL, Tal** Apr 2000-Apr 2001
  Project Title: Integration of intraoperative ultrasound with preoperative MRI to characterize, quantify and correct for brain shift during craniotomy
- **BROCHE, Bérengère** September 2004-February 2007
  Project Title: Development of a numerical phantom for fMRI stimulation
- **BROWN, Robert** October 2009 –
  Project Title**:** Texture and MT analysis in MS
  Co-supervised with Dr. Douglas Arnold
- **COUPÉ, Pierrick** May 2008-June 2011
  Project Title: Image Guided Neurosurgery
- **FONOV, Vladimir** June 2005-Oct 2008
  Project Title: MR Image processing for a pediatric database
- **GARCIA LORENZO, Daniel** May 2010-October 2011
  Project Title: Development of image processing techniques in pediatric Multiple Sclerosis
- **JANKE, Andrew** Sept 2001-May 2002, Nov 2003-Feb 2004, June 2005-Dec 2006
  Project Title: Analysis of tissue deformations and atrophy in MS
- **LE GOUALHER, Georges**, 1997-2000
  Project Title: Automated sulcal extraction and identification
  Co-supervised with Dr. Evans (I was secondary supervisor)
- **LESTER, Hava**, Jan-Dec 1999
  Project Title: Non-linear registration with viscous fluid dynamics
- **MONTRAGNAT, Johan** Apr-Sep 2000
  Project Title: Methodology development for atrophy quantification in Multiple Sclerosis
- **NAKAMARA, Kunio** August 2013 – Nov 2015
  Project Title: Image analysis in MS
- **PRIMA, Sylvain** Sept 2001-Sept 2004
  Project Title: Analysis of brain atrophy in MS
- **RIVAZ, Hassan** December 1, 2010 – June 2014
  (co-supervised with Dr. Tal Arbel) I am primary supervisor
  Project Title: TBA
- **WEIER, Katrin** April 2013 – March 2015
  Project Title: Pediatric MS
- **ZELMANN, Rina** February 2013 –

Project Title: depth electrode planning for epilepsy surgery

- Research Fellows
  - **WASSEF, Shafik** 08/2009 – 12/2010
    Co- supervised by Dr. Benoit Goulet

- Graduate Student committee member (alphabetical order)
  - **ALEONG, Rosanne** 10/2003 – 07/2008
    M.Sc. & Ph.D., Department of Neurology and Neurosurgery
  - **ANTEL, Samson** 01/2000-10/2003
    Ph.D., Department of Biomedical Engineering
  - **BERMUDEZ, Patrick** 2000-2003
    M.Sc., Department of Neurology and Neurosurgery
  - **BROOKS, Rupert** 03/2004 – 12/2008
    Ph.D., Department of Computer Science
  - **CAMPBELL, Jennifer** 06/2001-07/2005
    Ph.D., Department of Biomedical Engineering
  - **CARAMANOS, Zografos** 09/2009 - 12/2014
  - **CHEN, Jean** 04/2005- 03/2009
    Ph.D. Department of Biomedical Engineering
  - **CHOUINARD, Patrick** 03/2001-05/2003
    M.Sc., Department of Neurology and Neurosurgery
  - **DUERDEN, Emma** 01-09/2004
    M.Sc. Department of Neurology and Neurosurgery
  - **JIM, Bernice** 04/2005 – 05/2010
    Ph.D., Department of Biomedical Engineering
  - **LERCH, Jason** 09/2000-08/2005
    M.Sc. & Ph.D., Department of Neurology and Neurosurgery
  - **MACKEY, Michael Scott** 04/2002-01/2009
    M.Sc. & Ph.D., Department of Neurology and Neurosurgery
  - **TARDIF, Christine** 01/2006 – 01/2011
    Ph.D., Department of Biomedical Engineering
  - **VASILEVSKY, Alex** 01/2000-12/2001
    M.Sc., Department of Computer Science
  - **WATERBURY, Ray** 12/2000-2005
    Ph.D., Department of Biomedical Engineering
  - **SUBBANNA, Nagesh,** 09/2008-10/2015
    Ph.D. Electrical and Computer Eng.
  - **DENIGRIS, Dante,** 09/2008 -05/2014
    Ph.D. Electrical and Computer Eng.
  - **ELLIOT, Colm,** 09/2008 - 12/2015
    Ph.D. Electrical and Computer Eng.
  - **KARIM-AGHALOO, Nazanin,** 01/2009 **- 06/2015**
    Ph.D. Electrical and Computer Eng.

- Mentor for Graduate Program in NeuroScience
  All in Department of Neurology and Neurosurgery
  (alphabetical order)
  - **Achim, Amelie**, Ph.D., 09/2003-present
  - **Badwar, Amanpreet**, Ph.D., 09/2006- present
  - **Bakhtiari, Shahab,** Ph.D., 09/2012 - present
  - **Chochol, Caroline**, M.Sc., 09/2006- present
  - **Dedovic, Katarina**, M.Sc. & Ph.D., 09/2003- present
  - **Dionne, Nancy**, Ph.D., 09,1999-01/2002
  - **Feldman, Lisa**, Ph.D., 01/2001- present
  - **Funk, Thomas**, Ph.D., 01/2014 - present
  - **Hamidi, Shabnam,** Ph.D., 09/2011 – present
  - **Henderson, Amy**, M.Sc., 09/2004- present
  - **Hibbert, Andrew**, Ph.D., 09/1999 – 01/2002
  - **Holmes, Scott,** Ph.D., 09/2012 - present
  - **Kabashi, Edor**, Ph.D., 01/2001 – 09/2003
  - **Khawaja, Farhan**, M.Sc. & Ph.D., 01/2004 – present
  - **Kropf, Pascal,** Ph.D., 01/2010 – present
  - **Kulaga-Yoskovitz, Jessie**, M.Sc., 01/2011 - present
  - **LaForte,** M.Sc., 01/2010 - present
  - **Lee, Anna Fong**, Ph.D., 01/2001 – present
  - **MacIntyre, Leigh**, M.Sc., 01/2011 - present
  - **Miron, Veronique**, M.Sc. & Ph.D., 09-2004 – 12/2008
  - **Nakamura, Diane**, Ph.D., 09/2013 – present
  - **Nehra, Vikas,** M.Sc., 09/2011 - present
  - **Penicaud, Sidonie**, MSc & Ph.D., 09-2006 - present
  - **Pietruska, Karin**, M.Sc., 01/2006 - present
  - **Polosa, Anna**, M.Sc., 09/2006 - present
  - **Salehi, Amir**, Ph.D., 09/1997 – 09/2000
  - **Samiee, Soheila,** Ph.D., 09/2012 - present
  - **Sergerie, Karine**, Ph.D., 09/2004 – present
  - **Tahaei, Marziehsadat**, Ph.D., 09/2013 - present
  - **Tsui, James**, M.Sc. & Ph.D., 09/2006 - present
  - **Werbowetski, Tamra**, M.Sc. & Ph.D., 09/2000 – 12/2007
  - **Wong, Amy**, M.Sc., 09/2002 - 2005
  - **Zarate, Jean**, M.Sc &Ph.D., 09/2002 – 06/2009
  - **Zlatkina, Veronika**, M.Sc., 01/2006 - present

E3. Invited Lectures

- McGill Departments

1. **Presentation to the Prevent-AD group, McGill University:** *Image processing techniques for the diagnosis and prognosis in mild cognitive impairment and alzheimer's disease,* August 19, 2013
2. **Réseau de bio-imagerie du Québec – Montreal Neurological Institute:** *Mophometry analysis for diagnosis and prediction of Alzheimer's dementia,* April 18, 2013
3. **Presentation for the Lundbeck group, Montreal Neurological Institute:** *Recent work at the IPL for image analysis of MRI from elderly subjects,* February 24, 2013
4. **NSERC CREATE-MIA Computer Science, McGill University:** *Medical Image Processing in the IPL,* February 2013
5. **BIC Seminar Series**, **McConnell Brain Imaging Centre, Montreal Neurological Institute:** *Stereotaxic Space and Related Issues,* October 25, 2010
6. **BIC Seminar Series, McConnell Brain Imaging Centre, Montreal Neurological Institute:** *Stereotaxic Space and Related Issues*, November 16, 2009
7. **Simulation Technologies: Where Are We Now and Where Are We Going, Brain tumour Research Centre, Montreal Neurological Institute and Hospital** *Intraoperative Imaging Using Ultrasound: Realizing the Promise of Image guided Surgery*, October 15, 2009
8. **Medical Physics MDPH702** *Image registration,* Feb 20, 2006**.**
9. **Neuro at Night, Montreal Neurological Institute** *Tout ce que vous voulez savoir sur l'imagerie cérébrale,* May 18, 2004
6. **Workshop on electromagnetic fields in neurosurgery : Electromagnetic tracking in image guided neurosurgery, Dept Anatomy** *Integrated Functional Imaging and Neuro-Navigation,* August 24, 2002
10. **Friday Lunch Series, Montreal Neurological Institute** *Applications of Medical Image Processing,* March 16, 2001
11. **Neuro at Night, Montreal Neurological Institute** *Attacking Brain tumours and Epilepsy with image guided surgery,* Sept 12, 2000

- Within Canada

1. **Seminar de l'Unite de neuroimagerie functionelle, CRIUGM, Universite de Montreal,** *Recent work with ultrasound of image guided neurosurgery*, October 31, 2013
2. **COMP / CARO conference,** *IBIS: Neuronavigation with fast registration of pre-op MRI and intra-op Ultrasound*, Montreal, September 18, 2013
3. **Presentation L'Institut universitaire en santé mentale de Québec** (Robert-Giffard), *Recent work at the IPL for image analysis of MRI from elderly subjects*, October 30, 2012

4. **Conférence Midi CRIUGM,** *Recent developments at the IPL for image analysis of MRI from elderly subjects*, September 24 2012
5. **Canadian study on paediatric MS Workshop,** *Measuring global and localized longitudinal brain volumes in children with MS,* Toronto, September 14, 2012
6. **MITACS Workshop on Mathematics of Brain Imaging**. *Recent work at the IPL on spatio-temporal regularization for analysis of longitudinal data*, Simon Fraser University, July 12, 2012
7. **3rd annual NeuroInflammation symposium**. *MR image processing and measuring brain volume in children and adults with multiple sclerosis*, Toronto, March 30, 2012
8. **International Society in Magnetic Resonance in Medicine Meeting 2011** *Education Session: Absolute Beginners Guide to Anatomic and Functional MRI of the Brain "Registration, segmentation and atlases"*, Montreal, May 12, 2011.
9. **Centre de recherché Université Laval Robert-Giffard,** *Morphometric Analysis of MRI data : from infancy to old age*, February 11, 2011
10. **Bringing Clinical Relevance to Brain Atrophy Meeting**, *Introduction to the process of image segmentation,* Montreal, February 26, 2010
11. **In Vivo Montreal / CQDM,** *Creative partnerships in biopharmaceutical research "Development of MRI tools to facilitate the development of drugs to treat prodromal Alzheimer's disease (MCI)"*, June 8, 2009
12. **Workshop on Methods for Quantitative Diffusion MRI of the Human Brain,** *International Society for Magnetic Resonance in Medicine, Lake Louise, Alberta. Quality control procedures for single- and multi-center studies,* March 14th, 2005
13. **NEUROLOGY 2005: Third Annual Conference**. *Imagerie par resonance magnetique: integrité, protection et reparation neuronale,* (Hosted by Teva) Chateau Frontenac, Québec City, Québec, May 28th, 2005
14. **NEUROLOGY 2005**: **Third Annual Conference.** *Resonance et Atrophie,* (Hosted by Teva) Chateau Frontenac, Québec City, Québec, May 29th, 2005
15. **MS Nursing: Science and Art (Nov 5-7)**, *Imaging in multiple sclerosis,* Toronto, Nov. 06, 2004
16. **Tutorial presentation for Brain Awareness Week,** *The human brain,* Ecole Rabeau, St-Lambert, Qc, Sept 26, 2004
17. **From Bedside to Bench and Back: MS and Neuroinflammation** *Measuring atrophy in multiple sclerosis*, (Dr. A. Bar-Or, organizer), Montreal, May 13, 2004
18. **4th International conference on bioelectromagnitism: Le problème inverse en électroencéphalographie et magnétoencéphalographie**, *Segmentations des tissues de la tête,* Montréal, July 2, 2002

- International
    a. **Workshop Brittany Neurologists,** Sponsor:Teva, St-Malo, France, *Imagerie IRM de la SEP et de la maladie de Parkinson: Experience de l''institute neurologique de Montreal,* January 31, 2014
    b. **Neurology grand rounds CHU Pontchaillou,** Rennes, France, *Image processing for Parkinsons at the MNI/H,* January 29, 2014
    c. **Laboratoire Traitement du signal et de l'image,** Universite Rennes I, France, *Image guided surgery at the MNI/H,* January 28, 2014
    d. **Dementia Research Centre, Institute of Neurology, Queen Square,** London, UK, **University College,** *Towards automatic and robust segmentation of the hippocampus in both young and elderly adults with applications in AD*, September 25, 2009
    e. **Workshop on Alzheimer's Disease Neuroimaging Investigators' Meeting**, Seattle, Washington, *Towards robust automatic segmentation of hippocampus from multisite MRI data,* April 26, 2009.
    f. **University Aarhus,** Denmark, *Image guided neurosurgery at the Montreal Neurological Institute*, Nov. 24, 2008
    g. **Dept. Biomedical Engineering Seminar**, Yale University, "Recent progress in image guided surgery", Oct. 16, 2008
    h. **MICCAI 2008 Workshop**, Imaging the early brain, Organizer G. Gerig, *Status and early results from the NIH Study on Normal Brain Development,* Sept. 10, 2008.
    i. **Stealthlink User Group**, Satellite Meeting of MICCAI 2008, New York, *The Image Processing Laboratory*, Sept. 5, 2008.
    j. **ARSEP 2008**, Paris, France. *MRI-based quantification of brain atrophy and lesion volume: caveats and techniques*, Feb. 6, 2008.
    k. **New MRI Perspectives and Techniques in multiple sclerosis**, Edwards, Colorado, *Advanced image processing and measurement of atrophy*, Feb. 16th, 2007.
    l. **IRISA**, Campus Beaulieu, U Rennes, France, *Image Processing at the Brain Imaging Centre,* May 17, 2006.
    m. **Ecole Thematique INSERM**, Imagerie anatomique, Paris, *Quels atlas et comment les utiliser?* May 15th 2006.
    n. **Ecole Thematique INSERM**, Imagerie anatomique, Paris, *Analyse de la variabilité normale/anormale,* May 15th, 2006.
    o. **Association European Psychiatry**, Neuroimaging meeting in Utrecht, Holland, *Morphometric analysis of MRI data: from infancy to old age*, May 4-5, 2006.
    p. **Tutorial session for the International Conference on Medical Image Computing and Computer-assisted Intervention**, St-Malo, France (Dr. N. Ayache, organizer), *Change Detection and Quantification in Multiple-Sclerosis, Alzheimer disease, and between pre- and post-surgery images,* Sept 26, 2004.
    q. **International Workshop on the Measurement of Brain Atrophy in MS, Institute of Neurology, Queens Square, London** *Automated estimates of whole brain atrophy in MS,* December 7-8, 2000

r. **First International Conference on Medical Image Computing and Computer-Assisted Intervention: Tutorial,** Massachusetts Institute of Technology, Cambridge MA, USA,*Virtual body models and 3D anatomy atlases,* October 11-13, 1998.

s. **Workshop on Neurofunctional Images of the Human Brain,** Sponsored by the Working Group in Neuroinformatics and Computational Neuroscience of the Esprit Programme of the EC, INRIA Sophia Antipolis, France, *Probabilistic Atlases,* Oct 1-2, 1998.

t. **Caen Summer School in Cognitive NeuroScience: Approaching cognitive functions with neuroimaging methods,** Caen, France, *Quantitative image processing methods applied to neuroimaging,* June 2-7, 1997

u. **Epilepsy Research Group, National Society for Epilepsy, Chalfont Centre for Epilepsy,** Chalfont Centre for Epilepsy, Chalfont St. Peter, Gerrards Cross, UK, *Applications of non-rigid inter-subject registration: automatic segmentation and analysis of morphometric variability,* March 1, 1996.

v. **Pattern-theoretic Knowledge Representation Workshop,** Washington University Medical School, *Non-rigid Inter-subject Registration Applied to the analysis of Morphometric Variability,* April 17-18, 1996.

w. **Functional Imaging Laboratory,** Welcome Department of Cognitive Neurology, Queens Square, London, UK, *Automatic segmentation and analysis of morphometric variability,* Feb 29, 1996

E4. CLINICAL TEACHING

Not applicable

F. Other contributions

- Grant Reviewer (review panels)
  - Member of the CIHR Medical Physics and Imaging Grants Review Panel (Spring 2005-Fall 2008

- Grant Reviewer (ad hoc reviews)
  - NSERC
  - CIHR
  - FRSQ chercheur boursier panel
  - Multiple Sclerosis Society of Canada
  - Burroughs Wellcome Foundation, UK

- Journal Reviewer (ad hoc reviews)
  - NeuroImage
  - IEEE Transactions on Medical Imaging
  - Medical Image analysis
  - Cerebral Cortex
  - Medical Physics
  - Human Brain Mapping
  - Journal of Computer Aided Design

- Conference Editorial/Review Board

  - Information Processing in Medical Imaging (IPMI: 1995; 1997; 2001; 2003)
  - Information Processing in Computer Assisted Intervention (IPCAI: 2010)
  - Medical Image Computing and Computer Assisted Intervention (MICCAI: 2001-2009)
  - Mathematical methods in Biomedical Image analysis (MMBIA: 2004)
  - MIAMS (satellite workshop of MICCAI) review board (2008-9)

- Conference Organization

  - Sixth International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI06). Chair local organizing committee, Montréal, Canada, November 15-18, 2003

- Workshop Organization

  - First MIAMS (Medical Image Analysis in Multiple Sclerosis) workshop, held in conjunction with MICCAI as a satellite workshop in New York, co-organized by

myself and Dr. C. Barillot and supported by EndMS Canada. 11 peer-reviewed papers presented. 2 invited talks. 29 international participants. Sept 6th, 2008.

- Second MIAMS (Medical Image Analysis in Multiple Sclerosis) workshop, held as a satellite workshop of MICCAI in London (England), co-organized by myself and Dr. C. Barillot and supported by EndMS Canada. 9 peer-reviewed papers presented. 2 invited talks. 30+ international participants. Sept 20th, 2009.
- First NeurOMIMe workshop on Objective Medical Image Methods Evaluation for Neurological and Neurosurgical Procedures. This workshop is the result of a French Equipe Associes grant (PIs C. Barillot, U Rennes and myself) Approximately 20 participants. Montreal Neurological Institute, Oct 23-25, 2006
- Second NeurOMIMe workshop on Objective Medical Image Methods Evaluation for Neurological and Neurosurgical Procedures. Approximately 20 participants. Montreal Neurological Institute, Nov 27-30, 2007

• Administrative Responsibilities/Committees

- Departmental
  - **McGill Consortium for Brain Imaging Research (MCBIR) Functional Planning Committee** (2000)
  - **Brain Imaging Centre Computing Infrastructure Committee**
    Chair: 2004-present
  - **Dept. Biomedical Engineering Graduate Committee**
    Member: 2005-present
  - **Graduate Program in NeuroScience Committee**
    Member: 2000-present
  - **Graduate Program in NeuroScience Admissions Committee**
    Secretary: 2004 – 2008
    Chair: 2008 - present

- Faculty
  - **Faculty of Graduate Studies and Research Council**
    - Biomedical Engineering representative
    - July 2000-June 2006
  - **Killam Lecture Series Committee**
    - Jan 1999-present
  - **MNI Named Lecture Committee**
    - Jan 2002-present
  - **Judge – Student Research Day, Faculty of Medicine**
    - December 5, 2001

- University

  * University Tenure Committee, Faculty of Education (May 2013-April 2016)

* **MUHC**: Planning Advisory Council – FPG57 MNI Research Space

- Other

* **Medical Imaging Technology Roadmap, Industry Canada**
Member of the working group *Image analysis and Visualization Working Group*
Co-author of the report published as volume 2 of the 5 volume set, June 2000.

* **Ph.D. Examination Committee (International)**

- **Simon Eskildsen,** Nov 26, 2008
  Dept. Biomedical Engineering, Aalborg University, Denmark
- **Pierrick Coupé,** Jan 16, 2008
  IRISA / INRIA, Campus Universitaire de Beaulieu, Rennes, France
- **Olivier Commowich**, Feb 14, 2007
  INRIA, Nice, France
- **Gwenaelle Douaud**, May 3, 2006
  Physics, Universite Paris-Sud 11, France

* **Ph.D. Examination Committee (Canadian)**

- **Alex Guimond**, December 1999
  Departement de genie biomedical, Université de Montréal
- **Perry Radau**, Jan 2001
  Department of Medical Biophysics, University of Western Ontario
- **Guo Ting**, July 2010
  Department of Biomedical Engineering, University of Western Ontario

* **Ph.D. Examination Committee McGill University**

- **Jean Marie Zarate,** June 12, 2009
  Department of Neurology and Neurosurgery
- **Veronique Miron,** Nov 21, 2008
  Department of Neurology and Neurosurgery
- **Rupert Books**, Aug 25, 2008
  Electrical and Computer Engineering
- **Edwin Sham**, Feb 25, 2008
  Dept. Physics
- **Tamra Werbowetski,** Dec 2007
  Department of Neurology and Neurosurgery
- **Amelie Achin,** Dec 4, 2006
  Department of Neurology and Neurosurgery
- **Amir Salehi**, April 1,2005
  Department of Neurology and Neurosurgery
- **Anna Lee**, May 25, 2005
  Department of Neurology and Neurosurgery
- **Arnaud Cachia**, Oct 24, 2004
  Department of Biomedical Engineering
- **Sylvain Bouix**, May 16, 2003
  Department of Computer Science

- **Steven Robbins**, Dec 15, 2003
  Department of Computer Science
- **Michel Audette**, May 2002
  Department of Biomedical Engineering
- **Roch Comeau**, August 2000
  Department of Biomedical Engineering

*** Ph.D. Candidacy Transfer Examination Committee**

- **Amelie Achin**, Nov 8 2008
  Department of Neurology and Neurosurgery, McGill University
- **Rosanne Aleong**, April 16th 2004
  Department of Neurology and Neurosurgery, McGill University
- **Amanpreet Badwar,** Dec 5 2008
  Department of Neurology and Neurosurgery, McGill University
- **Patrick Bermudez**, 2002
  Department of Neurology and Neurosurgery, McGill University
- **Philippe Chouinard**, 2003
  Department of Neurology and Neurosurgery, McGill University
- **Anna Fong Lee,** Dec 9, 2004
  Department of Neurology and Neurosurgery, McGill University
- **Amy Henderson**, Feb 3, 2007
  Department of Neurology and Neurosurgery, McGill University
- **Bernice Jim**, May 18th, 2005
  Department of Biomedical Engineering, McGill University
- **Farhan Khawaja,** June 19, 2009
  Department of Neurology and Neurosurgery, McGill University
- **Scott Mackey**, May 7th, 2003
  Department of Neurology and Neurosurgery, McGill University
- **Veronique Miron,** Apr 26, 2006
  Department of Neurology and Neurosurgery, McGill University
- **Anna Polosa,** June 6, 2009
  Department of Neurology and Neurosurgery, McGill University
- **Karine Sergerie**, July 5, 2007
  Department of Neurology and Neurosurgery, McGill University
- **James Tsui,** June 11 2008
  Department of Neurology and Neurosurgery, McGill University
- **Jean Mary Zarate**, Nov 19th, 2004
  Department of Neurology and Neurosurgery, McGill University
- **Veronika Zlatkina,** June 9, 2008
  Department of Neurology and Neurosurgery, McGill University

*** M.Sc. Thesis Examination Committee**

- **Nathalie Chang**, November 2004
  Department of Biomedical Engineering, McGill University
- **Caroline Chocol,** June 5 2008
  Department of Neurology and Neurosurgery, McGill University

- **Karin Pietruska**, June 18, 2008
  Department of Neurology and Neurosurgery, McGill University
- **Sidonie Penicaud,** Dec 13, 2007
  Department of Neurology and Neurosurgery, McGill University
- **Amy Wong**, April 18th, 2005
  Department of Neurology and Neurosurgery, McGill University

- Other contributions
  - Developed publicly available software for automatic stereotaxic registration (ftp:/ftp.mni.mcgill.ca/pub/mni_autoreg/mni_autoreg-0.98.tar.gz) and nonlinear registration (ftp://ftp.mni.mcgill.ca/pub/mni_autoreg/mni_animal-0.5.tar.gz). The software tools included in these packages have been downloaded and used by over 100 laboratories. In addition, many of my collaborations are based on the use of this software for research in medical imaging. Finally, the models developed and distributed with this package are included in SPM (Statistical Parametric Mapping, J. Ashburner and K. Friston), FSL (Steve Smith and Mark Jenkinson, Oxford) and define the standard coordinate system used in most functional brain mapping papers published in the literature.

- Public Outreach
  Discussant – *History and Application of Brain Mapping at the Montreal Neurological Institute*, MNI's 75th Anniversary Celebration Symposium, November 3, 2009.

- Consulting
  - NeuroRx Research, Montreal Canada
    (May 2005-present)

G. RESEARCH

G1. **Research Activities**

Past

- development of computerized stereoscopic tools for stereotactic neurosurgery planning
- manual and automatic 3D registration
- volume Visualization (volume/surface rendering) applied to medical images
- data compositing for image merging
- automatic tissue classification/quantification from MR images
- image/signal processing for MR spectroscopy data analysis
- development of interactive software tools for image analysis for Multiple Sclerosis (msp)
- automatic identification of tumour types from MRS data

Current

- automatic volumetric segmentation of cerebral structures
- brain mapping
- analysis of neuroanatomical morphometric variability
- automatic sulcal extraction and identification
- stereotaxic methods applied to image processing techniques
- optical-flow techniques applied to non-linear registration
- automatic stereotaxic registration of MR and PET data
- design and implementation of realistic digital anthropomorphic cerebral phantoms for image simulation and algorithm validation (http://www.bic.mni.mcgill.ca/brainweb)
- application of above techniques to computerized image guidedneurosurgery and to quantification and analysis of multiple sclerosis
- image analysis for diagnosis and prediction of prognosis in epilepsy and Alheimer's dementia

G2. **Personal (Salary) Support Awards**

- Chercheur-boursier, Senior
  "Quantification spatiotemporelle de l'atrophie cérebrale chez les patient attients de sclérose en plaques'' *Fonds de la Recherche en Santé du Québec*
  07/2007-06/2011

- Chercheur-boursier, Junior 2
  "Quantification spatiotemporelle de l'atrophie cérebrale chez les patient attients de sclérose en plaques'' *Fonds de la Recherche en Santé du Québec*
  07/2004-06/2007, $45 000/year

- Chercheur-boursier, Junior 1
  "Quantification et caracterisation de l'atrophie cérébrale chez les patients attients de sclérose en plaques'' *Fond de la Recherche en Santé du Québec*
  07/2000-06/2004, $43,000/year

G3. **Research Grants Held**

(in reverse chronological order of starting date)

CURRENT:

- CIHR Foundation Grant
  Shifting the Paradigm of Spinal Cord Quantitative MRI, PI: J. Cohen-Adad, D.; collaborators: Arnold, B. De Leener, S. Nadeau, N. Stikov, **D.L. Collins,** T. Duval, B. Perraud, R. Topfer, D. Côté, N. Lopez-Rios, S. Rossignol, 07/2015-06/2020, $644,455

- Weston Hospital Institute: Early Phase Clinical Trials Program 2014
  Proof of Concept: Trial of Probucol, an Inducer of apoE, for Prevention of Alzheimer's Dementia, J. Breitner, J. Poirier, S. Gautier, P. Rosa, A.C. Evans, P.E. Etienne, **D.L. Collins**, P. Bellec, G. Multhaup, R. Hoge, 07/2015-06/2020, $1,500,000

- NSERC Discovery Grant
  Image registration for image guided surgery, **D.L.Collins**, 04/2015—3/2020, $470,000

- Brain Canada: CQDM
  Drug Delivery Across the Human Blood-Brain Barrier, N. Yoganathan, D.L.Collins, D. Stanimirovic, B. Chakravarthy, J. Soucy, P. Rosa-Neto, M. Waterson, J. Gillard
  04/2015-03/2018 $1,496,800 (my share: $50,000/year)

- Alz Association- Alzheimer's Association/Michael J. Fox Foundation/W. Garfield Weston Foundation *MRI biomarkers for prediction of cognitive decline in AD and PD,* Alain Dagher, **D.L.Collins**, 08/2014-07/2016, $149,998

- Brain Canada Platform
  CBRAIN: Canadian Brain Research and Informatics Platform, Faisal Beg, Pierre Bellec, **D.L. Collins,** Alan Evans, 07/2014-06/2017, $2,999,961 (my share $40k/y)

- MS Society of Canada
  Analysis of atrophy in pediatric-onset MS, **D.L. Collins,** D.L. Arnold, B. Banwell, 04/2014-03/2017, $360,281

- CIHR-CCNA
  Canadian Consortium for Neurodegeneration and Aging, H. Chertkow, **D.L. Collins,** ~200 more 04/2014-03/2019, $31.555 million (my share $0)

- CIHR HIV Clinical Trials Network: Pilot Grant Program
  Brain imaging for monitoring and predicting response to cognitive training in HIV-associated neurocognitive disorder, L. Fellows, **D.L. Collins**, N. Mayo, M. Brouillette 01/08/2014 – 31/07/2015, $50,000

- NSERC Collaborative Research and Training Experience
  NSERC CREATE: Medical Physics Research Training Network (MPRTN)
  J. Seuntjens, A. Reader, G.B. Pike, J. Nadeau, I. El Naqa, S. Devic, P. Després, **D.L. Collins** and L. Beaulieu 05/2013 – 04/2018, $1,650,000

- NSERC Collaborative Research and Training Experience
  NSERC CREATE: Medical Imaging Research Training Network
  K. Siddiqi, **D.L. Collins,** T. Arbel, C. Laporte, M. Descoteaux, and G.B. Pike 05/2012 – 04/2017, $1,650,000

<u>PAST</u>

- FRSQ-Pfizer Innovation Grant
  Entre le laboratoire et le chevet : validation de bio-marqueurs optimisés par résonance magnétique pour le diagnostic clinique précoce et le prognostic dans la maladie d'Alzheimer
  D.L. Collins, S Duchesne, H Chertkow and S. Gauthier, 06/2012-05/2015, $595,000

- FQRNT Team Grant
  Reconstruction Angulaire et Radiale dans l'IRM de Diffusion
  (Radian and angular Reconstruction in Diffusion MRI)
  K. Siddiqi, **D.L. Collins** and G.B. Pike, 04/2011-03/2014, $126,000

- CIHR Operating Grant

Development and validation of MRI biomarkers for diagnosis and prognosis of prodromal Alzheimer's disease
D.L. Collins and D.L. Arnold, 01/2011-03/2014, $383,741

- Fonds de recherche sur la nature et les technologies
  Analyse de forme dans le cerveau
  K. Siddiqi, **D.L. Collins** and G.B. Pike 2010-2013 $258,000 +$16 000 equipment

- CHRP Collaborative Health Research Projects (NSERC & CIHR)
  Computational and statistical tools for image-guided neurosurgery of brain tumours
  D.L. Collins, A. Olivier, M. Petrides, J. Cooperstock, T. Arbel, D. Klein, R. Del Maestro, K. Petrecca and T. Peters, 2010-2013, Total: $628,198

- CECR Centres of Excellence Commercialization Research Grant
  Development of MRI tools to facilitate the development of drugs to treat prodromal Alzheimer's disease (MCI)
  D.L. Collins and D.L. Arnold, 06/2010-05/2012, Total: $85,050

- CECR Centre of Excellence Commercialization and Research Grant
  MR Venography for Image Guided Neurosurgery
  GB Pike, **D.L. Collins** and A. Olivier, 06/2010-05/2012, $57,500

- CIHR Operating Grant
  Image guided neurosurgery: Improving guidance during spinal surgery
  D.L. Collins and B. Goulet, 2009-2013, Total: $ 1,004,631

- CIHR Priority Announcement thorough IMHA
  Image Guided Neurosurgery
  D.L. Collins and B.Goulet, 04/2009-03/2010, $100,000

- CIHR Operating Grant
  Quantification of Brain Atrophy in Multiple Sclerosis
  D.L. Collins 05/2007-04/2011, $140,000//year

- FQRNT Team Grant (Operating)
  Analyse d'image du cerveau
  K. Siddiqi, **D.L. Collins** and B. Pike 07/2007-06/2010, $ 65,000/year

- FQRNT Team Grant (Equipment)
  Analyse d'image du cerveau
  K. Siddiqi, **D.L. Collins** and B. Pike 07/2007-06/2010, $ 16,000/year

- NSERC Strategic Grant
  Tissue Segmentation in MRI
  D.L. Collins and T. Arbel, 09/2007-09/2010, $ 216,000/year

- NSERC Discovery Grant
  Atlasing for Image guided surgery
  D.L. Collins, 2006-2012, $40,000/year

- CIHR Operating Grant
  Image-guided neurosurgery : Improving guidance during spinal surgery
  D.L. Collins and B. Goulet 2005-2009, $154 000 for year 1
- CIHR POPs Grant
  Automated analysis of neurological diseases
  D.L. Collins 2004-2005, $100 000 for year
- FCAR Team Grant
  Biomedical Imaging Analysis
  K. Siddiqi, **D.L. Collins** and B. Pike 2003-2006, $45 000/year
- Fonds France Canada
  Development d'un logiciel d'analyse de la variabilite des plissements du cortex humain
  D.L. Collins and J-F Mangin 2003-2004, $10 000 for 1 year
- NIH: Human Brain Mapping supplement
  Computational anatomy and visualization
  D.A. Rottenberg, **D.L. Collins**, C. Davatzicos and J. Stern 2003-2006, my share $50 000 per year
- CIHR Operating Grant
  Quantification of cerebral atrophy in multiple sclerosis
  D.L. Collins 2003-2006, $104 551 for year 1
- NIH Operating Grant
  Neuroimaging Neuroinformatics
  A.C. Evans, G.B. Pike, **D.L. Collins** and K. Worsley 2002-2006, my share $42 000 per year
- NSERC Collaborative Health Research Project
  Integrated environment for Image Guided Neurosurgery : Improved functional, anatomical and atlas mapping
  D.L. Collins, T. Arbel, M. Petrides and J. Doyon, April 2002-March 2005 Total $151 103; $154 112; $160 837
- CIHR Operating Grant
  Magnetic Resonance Spectroscopy and Imaging of Temporal Lobe Epilepsy
  D.Arnold, A. Bernasconi, **D.L. Collins** 2002-2005 Total: $130 872; $109 313; $129 663; share - $16 000/yr
- CIHR Operating Grant
  Magnetic Resonance Imaging of Multiple Sclerosis
  D. Arnold, **D.L. Collins**, A Vandal 2002-2007 Total: $124 544/yr; share $16 000/yr
- IRIS/PRECARN
  TULIP: Three-dimensional Ultrasound for Image guided Procedures
  T.M. Peters, A. Fenster, **D.L. Collins**, R. Rohling 2002-2005 Total $155 000/yr; share $42 000

- Canadian Foundation for Innovation
  Research Facility for Image Guided Neurosurgery
  D.L. Collins Spring 2001 $381 968
- NSERC Operating Grant
  Non-linear registration and image processing for neuro-surgical atlasing
  D.L. Collins 2001-2006 $35 000/year
- MRC Operating Grant
  Quantification of cerebral atrophy in multiple sclerosis
  D.L. Collins and D.L. Arnold 2000-2003 Total: $85 358; $56 564; $34 466
- FCAR Nouveau chercheur, individual and equipment
  Computerized anatomical atlasing for neurosurgical planning
  D.L. Collins, 2000-2003 $15 000/year + $25 000 equipment
- McGill Internal equipment grant (Faculty Graduate Studies and Research
  Software environment for image guided surgery
  D.L. Collins 2000 $20 000
- MRC Operating Grant
  Electrical, metabolic and structural analysis of human eliptogenic regions
  J. Gotman, **D.L. Collins**, F. Dubeau and G.B. Pike 2000-2002 Total: $70 192/year; share nil
- Multiple Sclerosis Society of Canada
  Imaging axonal damage and disability in MS
  D.L. Arnold, G.B. Pike and **D.L. Collins** 2000-2001 $81 187/year; share nil
- FCAR Nouveau chercheur, Team Grant
  Shape segmentation and analysis in medical images
  K. Siddiqi and **D.L. Collins** 2000-2002 $30 000/year + $25 000 equipment. Share $15 000/year + $12, 500 equipment
- Montreal Neurological Institute Start-up Grant
  D.L. Collins $95 000

Research Grants Pending

- CIHR: The Danish Council for Independent Research
  The cellular substrates of brain maturation changes
  T. Dyrby, K. Skak Madsen, W. Baaré, S. Eskildsen, M. Ptito, M. Burke, **D.L. Collins**, 12/2015-11/2018, $ 0

- CIHR Collaborative Health Research Projects (NSERC Partnered)
  A collaborative platform for image guided neurosurgery
  D.L. Collins, K. Petreeca, T. Arbel, M. Descoteaux, G. Fichtinger, T. Peters, H. Rivaz, 2015-2018, $580,000

- Progessive MS Alliance; Collaborative Network Award. D. Arnold, J. Simon, C. Guttmann, J. Wolinsky, N. De Stefano, F. Barkhof, M.P. Sormani, G. Cutter, **D.L. Collins**, L. Kappos, O. Ciccarelli, D. Chard, S. Narayanan, 09/2015-06/2016, $50,000

G4. **Publications**

See Appendix G4.

G5. Patents and Intellectual Property rights

1. US Patent: "*Systems and Methods of Classification Utilizing Intensity and Spatial Data*".
   Inventors: D. L. Collins & Simon Duchesne
   Filed: Nov. 18, 2004, No 10/990396 (UA2006/0104494A1)
   Issued: July 6, 2010 (US7751602)
   The patent describes the method to classify medical images into states (ie, normal, MCI and AD) as an aid to diagnosis.
2. US Patent: "*Systems and Methods of Clinical State Prediction utilizing Medical Image Data*."
   Inventors: D. L. Collins & Simon Duchesne
   Filed: Oct. 24, 2006. (UA2008/0101665A1)
   Issued: May 1, 2011 (US7899225)
   This describes the method to predict future clinical state using a medical image. For example, predicting progression of MCI to AD as an aid for prognosis.
3. US Provisional Patent application: "*Simultaneous segmentation and grading of structures for state determination*."
   Inventors: D. L. Collins & Pierrick Coupé
   Filed: September 16, 2011. (US 61/535,720 / P1310USPR)
   This describes a method that uses a patch-based strategy to segment anatomical structures from medical images (like MRI) and to score them with a likehood as being from one group or another, predicting membership for either MCI to AD as an aid for diagnosis.
4. Canadian Patent application: "*Simultaneous segmentation and grading of structures for state determination*."
   Inventors: D. L. Collins & Pierrick Coupé
   Filed: September 16, 2011. (CA 2,752,370)
   This is similar to Patent #3.

Appendix G4 – Publications

a) Papers in peer-reviewed journals (in chronological order)

Note 1: An '*' indicates that the first author was my graduate student, post-doctoral fellow or resident; a † indicates that I was on the thesis committee of the student.

Note 2: The number of authors in these papers reflects the multi-disciplinary nature of biomedical imaging research. Position in the author list may be interpreted as follows. When a new methodology is developed, tested or validated, one of my students takes first authorship while I take the senior (last) position. When one of the techniques developed in my lab is used in a medical application by a collaborating group, one of my students and I are often included as middle authors to recognize the work done to implement the technique in a new study in a collaborating laboratory.

As of January 27, 2016, my H-index=78, i10-index=220 (GoogleScholar); My 5 most popular papers have been cited 2561 [12], 1386 [22], 1113 [11], 1108 [25] and 1061 [31] times (Google scholar) [see http://goo.gl/lCqeA] for up to date tracking.

1989

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d) Refereed Conference Papers

Note: These are full papers (5-10 pages long) in reviewed conference proceedings. Conferences like Medical Image Analysis and Computer Aided Intervention (MICCAI) and Information Processing in Medical Imaging (IPMI) are very competitive and have an acceptance ratio between 1:3 and 1:4, similar to many peer-reviewed journals. Conference papers such as these are a standard (and often necessary) step towards publication of a peer-reviewed manuscript in the field of medical image analysis.

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