

Curriculum Vitae
Peter Cummings, M.Sc., M.D.

Academic Training:

6/2004 M.D. Royal College of Surgeons, Dublin Ireland; Honors degree
6/1999 M.Sc. Dalhousie University, Halifax Nova Scotia; Pathology
5/1997 B.A. University of Maine, Orono ME; Zoology

Additional Training:

7/2008-6/2009 Fellow in Forensic Pathology, Office of the Chief Medical Examiner, Boston, MA
7/2004-6/2008 Pathology residency and Neuropathology fellowship University of Virginia, Charlottesville, VA

Current Employment:

07/2018-present CEO Veritas Sports Injury Research Network (501c3)
10/2009-present CMO Northeast Neuropathology & Autopsy Services, Beverly, MA

Hospital Appointments or Other Employment:

10/2015-08/2019 Assistant Professor, Boston University School of Medicine Dept of Anatomy and Neurobiology and Director of Clinical Anatomy, Physicians Assistant Program
07/2008-6/2015 Medical Examiner, Office of the Chief Medical Examiner, Boston, MA
3/2010-2013 Lecturer, Department of Neuropathology, Brigham & Women's Hospital, Boston, MA
1/2010-10/2015 Adjunct Faculty Dept. Neurobiology and Neuroanatomy, Boston University, Boston, MA
2006-2008 District Medical Examiner, Commonwealth of Virginia
1997-1999 Death Scene Investigator, Office of the Chief Medical Examiner, Halifax, Nova Scotia, Canada

Honors:

2018 Didactic Teaching Award, Physician Assistant Program BU School of Medicine
2005, 06, 07 Outstanding Contribution to Teaching, University of Virginia, Charlottesville, VA
2001 Professor Max Ryan Radiology Medal, Royal College of Surgeons, Dublin, Ireland
2000 Letter of Commendation for research, Dept. of Psychology Royal College of Surgeons, Dublin, Ireland

Licenses and Certification:

7/2008-present Massachusetts License #235452
10/2010 American Board of Pathology, Forensic Pathology
10/2009 American Board of Pathology, Neuropathology
9/2008 American Board of Pathology, Anatomic Pathology
7/2004-2008 Virginia Medical License

Teaching Experience and Responsibilities:

1/2013-08/2019 Lecturer Forensic Pathology course, Boston University School of Medicine, Dept of Neuroanatomy and Neurobiology Forensic Anthropology Program
1/2017-08/2019 Lecturer Experimental Design and Statistics, Boston University School of Medicine Dept of Neuroanatomy and Neurobiology Forensic Anthropology Program
2008-08/2015 Lecture/instruct pathology residents in forensic pathology, Office of the Chief Medical Examiner, Boston, MA
2004-2008 Department of Pathology Laboratory Instructor, University of Virginia, Charlottesville VA

- 2004-2006 Academic tutor biochemistry, neuroscience, anatomy, physiology for medical students in academic distress, University of Virginia, Charlottesville, VA
- 2004-2006 Medical Academic Advancement Program assisting minority students prepare for the MCAT
- 2000-2004 Pathology Tutor, Royal College of Surgeons, Dublin, Ireland
- 1992-1995 Organic Chemistry Laboratory Instructor, University of Maine, Orono, ME
- 1993-1994 Study Skill course instructor for students in academic distress, University of Maine, Orono, ME

Major Mentoring Activities:

- 2017-2019 Faculty Ombuds Advisor, Boston University School of Medicine, Department of Anatomy & Neurobiology.
- 2018-2019 Faculty Advisor Clinical Neuroscience Society, Boston University School of Medicine.
- 2018-2019 Kyle Frank, PA Candidate Boston University School of Medicine, Chronic Traumatic Encephalopathy in non-athletes— tile TBA.
- 2017-2019 Katherine Babcock, MS Candidate, Anatomy. ‘Histopathological Assessment of Astroglial Aquaporin-4 Expression in Chronic Traumatic Encephalopathy’.
- 2017-2019 Breana Peace, MS Candidate, Forensic Anthropology. ‘Examination of Hacking and Blunt Force Skeletal Trauma’.
- 2017-2019 Aubrie Sanchez, MS Candidate, Forensic Anthropology. ‘Prevalence of Knee Osteoarthritis in Southeast Asian and African American Individuals’.
- 2017-2019 Skye Lavigne, MS Candidate Forensic Anthropology. ‘Comparison of Volatile Organic Compound Profiles of Various Sources of Decomposition’.
- 2017-2018 Micael Sage, thesis advisor, PA Candidate Boston University School of Medicine, ‘Neurocognitive Findings in Adults Who Played Youth Football’.
- 2017-2018 Caitlin Losi, thesis advisor, PA Candidate Boston University School of Medicine, ‘Epidemiology of Neurodegenerative Disorders in Deceased NFL Players’.
- 2017-2018 Arlett Carmona, thesis advisor, MS Candidate Forensic Anthropology Boston University, ‘Identifying Primary, Secondary, and Tertiary Blast Skeletal Trauma Patterns for Forensic Recovery Applications’.
- 2017-2018 Jamie Gilligan, thesis advisor, MS Candidate Forensic Anthropology Boston University, ‘Experimental Clandestine Grave: Analysis of Postmortem Fracture and Remains Distribution of an Intentional Backhoe Reinterment’.
- 2017-2018 Jasmine Mansz, thesis advisor MS Candidate Forensic Anthropology Boston University, ‘Determining Tool Class Morphology on Bone from Varying Levels of Force of Hacking Trauma.’
- 2017-2018 Jennifer Kroll, thesis advisor, MS Candidate Forensic Anthropology Boston University ‘Progressive Vertebral Osteoporosis: the Correlation Between Vertebral Pathologies and Sociodemographic Risk Factors’.
- 2016-2017 George Farah, thesis advisor, MS Anatomy, Boston University ‘Neuropathology of Woodpeckers’.
- 2016-2017 Erin McGowan, thesis reader, MS Anatomy Boston University, ‘Circadian Regulation of Adult Neurogenesis in Zebrafish and the Modulation by Changes in Aging and Metabolism’.
- 2016-2017 Andrew Goss, thesis reader, MS Anatomy Boston University, ‘Effects of Exercise on Resting State Brain Networks’.
- 7/204-2015 Elizabeth Lednicky, thesis advisor, MS Forensic Anthropology Boston University. ‘Fly activity in decomposition’.

- 7/2014-2015 Richard Atkinson, MD, forensic pathology fellow, Office of the Chief Medical Examiner, Boston, MA
- 7/2014-2015 Robert Welton, MD, forensic pathology fellow, Office of the Chief Medical Examiner, Boston, MA.
- 7/2013-7/2015 Anna McDonald Greene, MD, Forensic Pathology Fellow, Office of the Chief Medical Examiner, Boston MA; now attending forensic pathologist for the State of North Carolina.

Grants Submitted

One Mind Rising Star Award

Title: Neurocognitive effects of exposure to youth football in the adult population. Submitted May 2018. Awaiting decision.

NASA Ground-based Studies in Radiation Biology

Title: The Role of High-charge High-energy Radiation in the Development of Inflammatory Central Nervous System Injury. Successful Step-1, Invited Step-2 Feb 2007.

NASA Ground-based Studies in Radiation Biology

Title: The Role of High-charge High-energy Radiation in the Development of Inflammatory Central Nervous System Injury. Successful Step-1, Invited Step-2 June 2006.

Current Research Activities

Chronic traumatic encephalopathy-like injury in the woodpecker
Pediatric Head Injury and Concussion
Astrocytic Response to Injury
Molecular and Morphologic Timing of Hypoxic/Ischemic Changes in the Brain
The Effects of Cosmic Radiation on Astrocyte Activation (NASA Funded)
Characterization of the Retinal Glial Response to Spaceflight
(NASA Biospecimen Exchange Program)

Major Administrative Responsibilities:

- 04/2019-present Chief Medical Officer, Massachusetts Youth Football Alliance
- 06/2019-present Chair, Medical Advisory Committee, California Youth Football Alliance
- 04/2018-present Board of Directors, California Youth Football Alliance
- 7/2016-08/2019 Director of Clinical Anatomy, Physician Assistant Program, Boston University School of Medicine
- 7/2010-6/2015 Director of Forensic Neuropathology, Office of the Chief Medical Examiner, Boston, MA

Other Professional Activities:

Professional Societies:

- 2019-present American College of Sports Medicine
- 2017-Present National Neurotrauma Society
- 2014-2016 American Academy of Forensic Sciences
- 2008-2010 American Association of Neuropathologists

2008-2010 National Association of Medical Examiners

Bibliography:

Original, Peer Reviewed Articles

1. Brett BL, Wilmoth K, **Cummings P**, Solomon GS, McCrea MA, Zuckerman SL. The neuropathological and clinical diagnostic criteria of chronic traumatic encephalopathy: a critical examination in relation to other neurodegenerative diseases. *J Alzheimers Dis.*2019;68(2):591-608.
2. **Cummings P**, Harbaugh GA, Farah G. Homicidal violence among NFL Players. Accepted June,2018, *Academic Forensic Pathology.*September 2018.
3. Studebaker-Reed M, **Cummings P**, Reinecke G. The impact of training and experience on the recovery of evidence in outdoor forensic scenes: Implications for human remains recovery'. Submitted June 2018.
4. Farah G, Siwek D, **Cummings P**. *Tau accumulations in the brains of woodpeckers.* PLoSOne. 2018;13(2):e0191526.
5. Muehlenbachs A, **Cummings PM**, et al. Cardiac tropism of *Borrelia burgdorferi*: an autopsy study of sudden cardiac death associated with Lyme carditis. *Am J Pathol.* Accepted Dec. 2015.
6. Edlow BL, Haynes RL, Takashashi E, Klein JP, **Cummings P**, Benner T, Greer DM, Greenberg SM, Wu O, Kinney HC, Folkerth RD. Disconnection of the ascending arousal system in traumatic coma. *J Neuropathol Exp Neurol.*2013;72(6):505-23.
7. Huang L, Smith A, **Cummings PM**, Kendall EJ, Obenaus A. Neuroimaging assessment of memory-related brain structures in a rat model of acute space-like radiation. *J Magn Reson Imaging.* 2009;29(4): 785-92.
8. **Cummings PM**, Obenaus A, Heffron D, Nelson G, Mandell JW. High-energy (HZE) Radiation Exposure Causes Delayed Axonal Degeneration and Astrogliosis in the Central Nervous System of Mice. *J of Grav Space Biol.* 2007;20(20):89-91.
9. Cummings PM, Le BH, Lopes, MBS. Postmortem findings in morbidly obese individuals dying after gastric bypass procedures. *Human Pathology.* 2007;38:593-97.
10. Title LM, **Cummings PM**, Giddens K, Nassar BA. Oral Glucose Loading Acutely Attenuates Endothelium-dependent Vasodilation in Healthy Non-Diabetic Adults: An Effect Prevented by Vitamins C and E. *J Am Coll Cardiol.* 2000 Dec;36(7):2185-91.
11. Title LM, **Cummings PM**, Giddens K, Genest JJ Jr., Nassar BA. Effect of Folic Acid and Antioxidant Vitamins on Endothelial Dysfunction in Patients with Coronary Artery Disease. *J Am Coll Cardiol.* 2000 Sep;36(3):758-65.

12. **Cummings PM.** Oxidative Stress and Endothelial Dysfunction in the Development of Coronary Artery Disease. Master's Thesis. Dalhousie University, Halifax, Nova Scotia, Canada. September 1999.

Textbooks, Case Reports, Editorials:

Textbooks

1. The Neuro anatomy, physiology, and pathology of sports-related injury: prevention, treatment and recovery. In production, prospectus submitted to Cambridge University Press 2018.
2. Trelka D, **Cummings P.**, Pearls and Pitfalls of Infant and Child Death Investigation. Cambridge University Press, Cambridge England, December, 2016.
3. **Cummings P,** Trelka D, Springer K. Atlas of Forensic Histopathology. Cambridge University Press, Cambridge England 2010.

Case Reports

1. Sutton JT, **Cummings PM,** Ross WG, Lopes MB. Sudden death of 7-year-old-boy due to undiagnosed glioblastoma.. Am J Forensic Med Pathol. 2010;31(3):278-80.

Abstracts

Obenaus A, Huang L, Smith A, Lalas S, Nelson G, **Cummings P,** Kendall E. *Magnetic resonance imaging can identify regional central nervous system abnormalities following 56Fe radiation exposure.* NASA Human Research Program Investigators' Workshop, League City, TX, February, 2008.

Huang L, Smith A, **Cummings PM,** Kendall EJ, Obenaus A. *Magnetic Resonance Imaging of Acute Alterations in the Rat Brain Following Simulated Space Radiation.* International Society for Magnetic Resonance Medicine, Toronto, Canada, May 2008.

Cummings PM, Obenaus A. *Dementia Astronautica- A Possible Outcome of Long Duration Space Missions?* American Society of Gravitational and Space Biology 23rd Annual Scientific Sessions, Ames Research Center, CA October 2007.

Obenaus A, **Cummings PM.** *Delayed Axonal Degeneration and Astrogliosis in the Central Nervous System of Rats After 56Fe Radiation Exposure.* 18th Annual NASA Space Radiation Investigators' Workshop, July 13-15, 2007, Rohnert Park CA.

Cummings PM, Obenaus A, Heffron D, Nelson G, Mandell JW. *High-energy High-charge (HZE) Exposure Stimulates Progressive Astrogliosis in the CA1 Region of the Hippocampus in Rats.* Experimental Biology Scientific Sessions, April 2007.

Cummings PM, Obenaus A, Heffron D, Nelson G, Mandell JW. *High-energy (HZE) Radiation Exposure Causes Delayed Axonal Degeneration and Astrogliosis in the Central Nervous System of Mice*. American Society of Gravitational and Space Biology 2006 22nd Annual Scientific Sessions, Washington D.C., November 2006.

Cummings PM, Mains R. *Research Needed to Reduce Medical Barriers to Long-duration Space Flight and Colonization*. Space Technology and Applications International Forum 2007 annual meeting Albuquerque, NM February 2007. Accepted.

Le BH, **Cummings PM**, Lopes MB. *CD10 (CALLA) Expression in Meningioma*. International Congress of Neuropathology, San Francisco Sept. 2006 Poster Presentation.

Le BH, **Cummings PM**, Lopes MB. *Expression of CD34 in Epilepsy-Related Lesions*. International Congress of Neuropathology, San Francisco Sept. 2006 Poster Presentation.

Cathro HP, **Cummings PM**, Cramer JD, Isaacs RD. *CD20+ Lymphocytic Aggregates in Biopsies for Acute Rejection Are Not Associated with Increased Renal Allograft Loss in Adults*. *Modern Pathology*; 2005(18):265-66. Poster presentation at the 94th United States and Canadian Academy of Pathology session, March 2005.

Title LM, **Cummings PM**, Giddens K, Nassar BA. *Effect of Folic Acid on Plasma Asymmetric Dimethylarginine, an Endogenous Inhibitor of Nitric Oxide Synthase*. *Circulation*. 2000;102 (suppl). Presented at the American Heart Association 72nd Scientific Session, Nov. 13, 2000 (poster presentation).

Title LM, **Cummings PM**, Giddens K, Nassar BA. *Effect of Folic Acid on Plasma Asymmetric Dimethylarginine, an Endogenous Inhibitor of Nitric Oxide Synthase*. Presented at the 53rd Canadian Cardiovascular congress meeting, Oct. 30, 2000.

Title LM, **Cummings PM**, Giddens K, Nassar BA. *Vitamins C and E Prevent Acute Endothelial Dysfunction After Oral Glucose Loading in Healthy Non-diabetic Adults*. *Circulation*. 1999;100 (suppl):I-127. Presentation at the American Heart Association 72nd Scientific Sessions. November 1999.

Title LM, **Cummings PM**, Giddens K, Genest JJ Jr., Nassar BA. *Folic Acid Supplementation Improves Endothelial Dysfunction In Patients With Coronary Artery Disease*. *Can J Cardiol*. 1999;15 (suppl. D): 125D. Presentation at the Canadian Cardiovascular Society 52nd Annual Meeting. November 1999.

Title LM, **Cummings PM**, Giddens K, Nassar BA. *Vitamins C and E Prevent Acute Endothelial Dysfunction After Oral Glucose Loading in Healthy Non-diabetic Adults*. *Can J Cardiol*. 1999;15 (suppl. D) 125D. Presentation at the Canadian Cardiovascular Society 52nd Annual Meeting. November, 1999.

Title, **Cummings PM**, Giddens K, Genest JJ Jr., Nassar BA. *Folic Acid Supplementation Improves Endothelial Dysfunction In Patients With Coronary Artery Disease*. *Circulation*. 1999;100 (suppl.): I-827. Presentation at the American Heart Association 72nd Scientific Sessions. November, 1999.

Title LM, **Cummings PM**, Dunn J, Zayed E, Dempsey G, O’Neil BJ, Johnstone DE, Bata IR, Nassar BA. *Relation Between Homocysteine, A Mutation in Methylenetetrahydrofolate Reductase And Extent of Coronary Artery Disease*. *Circulation* 1998; 98 (suppl): I-439. Presented at the 71st American Heart Association Scientific Sessions, Nov. 10, 1998.

Title LM, **Cummings PM**, Dunn J, Zayed E, Dempsey G, O’Neil BJ, Johnstone DE, Bata IR, Nassar IR. *Relation Between Homocysteine, A Mutation in Methylenetetrahydrofolate Reductase And Extent of Coronary Artery Disease*. *Can J Cardiol* 1998 (suppl). Presented at the 51st Canadian Cardiovascular Society Annual Meeting, Oct. 21, 1998.

Media

Letter to the Editor, New York Times, ‘Tom Savage’s Return Raises Concussion Protocol Concerns’ 12/16/17
‘Does CTE call for an end to youth tackle football?’ Op-ed Minneapolis Star-Tribune 2/10/2018
Yahoo! Sports ‘I’m a Brain Scientist and I Let My Son Play Football’ 9/18/2017
People Magazine ‘A Cold Case Comes to Life’ 4/2009
Voice of America interview ‘Was Yasser Arafat Poisoned?’ 7/17/2012
PBS NOVA ScienceNOW ‘Can Science Stop Crime?’ Aired 10/17/2012
PBS NOVA ‘Cold Case JFK’ Aired 11/13/2013
Huffington Post ‘Why the Assassination of JFK Matters 50 Years Later’ 11/20/2013

Novels (fiction/Non-Fiction)

Brainwashed: the bad science behind CTE and the plot to destroy football (co-author), 2018
The Neuropathology of Zombies, Sinister Press, 2012
The Seven Stars, Sinister Press, 2012