**Curriculum Vitae**

**Matthew C. Loftspring, M.D., Ph.D.**

Neurologist

Neurohospitalist

Brain Injury Medicine

CommonSpirit Health

Neuroscience and Spine

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Lakewood, CO 80228

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Cellular: 513-313-1910

**Citizenship: United States**

**Hometown: Cincinnati, OH**

**Languages Spoken: English**

**Education and Training**

12/2004 **B.A.** Biology, *cum laude,* DePauw University, Greencastle, IN

1/2005 to 1/2005 Research Assistant at VAMC/University of Cincinnati College of Medicine.

 Mentor: Kenneth Wagner, Ph.D.

7/2005 to 6/2013 Medical-Scientist Training Program (MSTP), University of Cincinnati College of Medicine

12/2011 **Ph.D.**, Neuroscience/Neuroimmunology, Graduate Program in Neuroscience and Medical-Scientist Training Program (MSTP), University of Cincinnati College of Medicine. Dissertation Title: “Brain injury mechanisms in hemorrhagic stroke”

 Mentor: Joseph Clark, Ph.D.

12/2011 to 7/2011 **Post-Doctoral Training**. Gender differences in response to neuroendocrine function in animals with hypothalamic glucocorticoid receptor deletion.

 Mentors: Matia Solomon, Ph.D and James P. Herman, Ph.D.

6/2013 **M.D.**, Medical-Scientist Training Program (MSTP), University of Cincinnati College of Medicine

6/2013 to 6/2014 **Internship**, Internal Medicine, Washington University School of Medicine/Barnes-Jewish Hospital, St. Louis, MO

6/2014 to 6/2017 **Residency**, Neurology, Washington University School of Medicine/Barnes-Jewish Hospital, St. Louis, MO

2017 to Present **Neurology, Board Certified**, American Board of Psychiatry and Neurology

2022 to Present **Brain Injury Medicine, Subspecialty, Board Certified**, American Board of Psychiatry and Neurology/American Board of Physical Medicine and Rehabilitation.

2023 to Present MHA (Masters of Healthcare Administration) Candidate. University of Cincinnati Graduate School.

**Work Experience**

7/2017 to 5/2020 **Assistant Professor of Neurology**, Washington University School of Medicine/Barnes-Jewish Hospital, St. Louis, MO

 Primary Duties: Outpatient General Neurology (Mentor: Sylvia Awadalla, M.D.; Attending, Stroke and General Neurology Inpatient Services; Attending, Inpatient Consult Service; Attending ED Acute Stroke Service (evaluating and treatment patients with acute ischemic stroke and intracerebral hemorrhage; Traumatic Brain Injury Clinic (Mentor: David L. Brody, M.D., Ph.D.); Resident/Medical Student Education.

 Other Roles and Frequently Treated Conditions: Headache/Facial Pain, Parkinson Disease, epilepsy/status epilepticus, neuropathy, multiple sclerosis, adult patients with established NF-1 (Mentor: David Guttman, M.D., Ph.D.), neurosarcoidosis (Mentor: David Clifford, M.D.), Telestroke, **Chair** of Resident Morning Report.

 (90% FTE towards direct patient care; 5% teaching; 5% clinical research)

 Periodic weekend attending at The Rehabilitation Institute of St. Louis.

5/2020 to 8/2021 **Neurologist**, Colorado Permanente Medical Group/Kaiser Permanente

 Frequently Treated Conditions: General Neurologic Diseases; multiple sclerosis, myasthenia gravis, neuropathy, myelopathy, arterial dissection, subacute stroke care.

 (100% FTE direct patient care; 65% outpatient telemedicine, 25% outpatient face-to-face visits, 10% inpatient consults)

10/2021 to Present **Neurologist**, St. Anthony Hospital. CMG Neuroscience and Spine, CommonSpirit Health.

 Primary Duties: Evaluating patients with emergent and urgent neurologic disease in the hospital setting; Outpatient General Neurology; Traumatic Brain Injury Clinic.

 Other Roles and Frequently Treated Conditions: Vascular Neurology, TBI, encephalopathy, status epilepticus, acute neuromuscular disease exacerbations. Also, significant time spent on: Assessment of patient disability, rehabilitation, reasonable accommodations, FMLA, return to work and documentation of these on employer and/or government forms. Finally, collaborations between our Level 1 Trauma Center Physicians, Neuropsychologists, Social Workers, Neurosurgeons, Intensivists on direct patient care, protocol development and quality improvement.

 (97.5% FTE Neurohospitalist; 2.5% outpatient TBI clinic; Clinical Research Projects).

5/2023 to Present **Consultant Neurologist**, Craig Rehabilitation Hospital, Denver, CO.

5/2023 to Present **Volunteer Instructor of Neurology**, University of Colorado School of Medicine, Anschutz Campus, Aurora, CO.

**Clinical interests with additional experience:** Acute and chronic stroke management, traumatic brain injury, telemedicine, headache, assessment of disability.

**Procedures:** Routine EEGs, Botox for Migraine, Lumbar Puncture.

**Professional Licenses and Certifications**

2013 to Present Missouri State Medical License, valid until 2/31/2025

2020 to Present Ohio State Medical License, valid until 2/10/2024

2020 to Present Colorado State Medical License, valid until 4/30/2024

2022 to Present Kansas State Medical License, valid until 7/31/2024

2015 to Present Drug Enforcement Agency, Office of Diversion Control, Physician Registration, valid until 3/31/2024; originated in Missouri. Other DEA licenses include Colorado and Kansas. Applicable state-controlled substances license is MO BNDD.

2021 to Present American Heart Association, BLS Certified, valid until 9/31/2023

2022 to Present American Stroke Association, NIH Stroke Scale Certified, valid until 3/29/2024

**EMR/EHR Experience**

 (Using five stages: “Novice, Advanced Beginner, Competent, Proficient, Expert”).

 Epic®: Proficient to Expert.

 AllScripts®: Competent.

 Cerner®: Competent.

 MEDHOST®: Advanced Beginner.

 Meditech®: Advanced Beginner.

**Current Research and Education Interests**

Music based therapies in neuroscience.

Education/Collaboration, medical first responders and RNs; Development of clinical practice guidelines, St. Anthony Hospital/CommonSpirit Health.

Drug development for the treatment of neurologic disease. Effect of social determinants of health on recovery from TBI.

Pharmacovigilance.

**Selected Research Funding**

2023 to Present PI, Multiple Sites within CommonSpirit Health. Optimizing Neurological Outcomes in Stroke Patients Based on Transport Times From the Field and Receiving Hospital Capabilities. Sponsored by University of Colorado, Anschutz Medical Campus.

2023 to Present Sub-PI. Comparing Outcomes of the Occlutech Flex II PFO Occluder to Standard of Care PFO (patent foramen ovale) Occlusion (OCCLUFLEX). Supported by Occlutech International AB. Clinical Trials Identifier NCT05069558. St. Anthony Hospital, Lakewood, CO.

2021 to 2023 Safety Study of Post Intravenous tPA Monitoring in Ischemic Stroke (OPTIMIST); Identification of eligible patients at our site. Initially funded by Johns Hopkins University. St. Anthony Hospital, Lakewood, CO.

2018 to 2020 Co-PI: Changing the trajectory of mild cognitive impairment with CPAP treatment of obstructive sleep apnea. Site PI: Dr. Luqi Chi. NIH 5R01AG054435-02. Washington University School of Medicine in St. Louis.

2016 to 2019 Using retrospective data from the PROACT II and Interventional Management of Stroke Trials I, II and III, we tested the hypothesis that small amounts of hemorrhagic transformation were markers of successful reperfusion. Washington University School of Medicine in St. Louis.

 Practice patterns of evaluation for secondary stroke prevention in the Greater Cincinnati/Northern Kentucky Region. Supported by NIH R01NS30678.

Mentor: Pooja Khatri, M.D., Collaborations with University of Cincinnati College of Medicine Department of Neurology.

2015 to 2020 Identification of acute stroke patients eligible for the POINT and Tenecteplase Trials. Washington University School of Medicine in St. Louis.

2010 University Research Council (URC) Summer Fellowship, University of

 Cincinnati.

2005 to 2007 Trainee, Neuroscience Graduate Program Training Grant (NIH T32NS007453), University of Cincinnati.

**Teaching Experience**

2022 to Present Clinical training of Advanced Practice Providers and Medical First Responders, *ad hoc* formal didactics (interactive lectures), St. Anthony Hospital, Lakewood, CO.

2019 Chair, CME course in Neurology, Washington University School of Medicine in St. Louis.

2018 to 2020 Chair, Neurology Resident Morning Report. Washington University School of Medicine in St. Louis.

2015 to 2020 Preclinical Medical Student Education in Neurology. Office of Medical Student Education. Washington University School of Medicine in St. Louis.

2010 to 2013 Instructor, USMLE Step 1 Board Review Course, University of Cincinnati

2010 to 2013 Instructor, The Princeton Review® of Ohio, General Chemistry for the MCAT, Cincinnati, OH College of Medicine

2008 to 2013 Tutor, University of Cincinnati College of Medicine. Courses tutored: Brain and Behavior I and II; Molecular Biology of the Cell II; Medical Biochemistry and Human Genetics; Medical Physiology; Principles of Pathology; Medical Pharmacology; Medical Microbiology and Immunology

2008 and 2009 Teaching Assistant, Health Careers Exploration Program, University of Cincinnati College of Medicine

2008 Teaching Assistant, Medical Student Brain and Behavior I Laboratory, University of Cincinnati College of Medicine

2006-7; 2010 Teaching Assistant, Howard Hughes Excellence in Science Education and Learning Program, University of Cincinnati College of Medicine

**Volunteer Work (Recent)**

2022 to Present Volunteer Medical School Admissions Interviewer. University of Cincinnati College of Medicine.

2022 to 2024 AristaMD. Neurology E-Consultations for Underserved Patients in California.

2023 to Present Volunteer time and support to several public radio stations and programs across the country (WGUC, Cincinnati; Colorado Public Radio, Classical; *Sunday Baroque*, WSHU, Fairfield CT).

2023 to Present Volunteer Clinical Faculty, University of Colorado School of Medicine, Anschutz Campus, Aurora, CO.

**Awards/Honors**

2023 LIP (licensed independent practitioner) of the quarter, Neuroscience, St. Anthony Hospital, Lakewood, CO.

2019 Medical Student Recognition for Faculty Teaching. Washington University School of Medicine in St. Louis.

2017 Medical Student Recognition for Faculty Teaching. Washington University School of Medicine in St. Louis.

2016 Sponsored Attendee, “Neurology Residents Scholar Program” in Epilepsy.

 Dallas, TX.

2011 Sponsored Attendee, “How to Combine Research and Clinical Careers in Neuroscience” Symposium, Sponsored by NINDS, AUPN and ANA. Washington, DC.

2010 Finalist, Excellence in Teaching Award (a university-wide award for graduate students)

2008 Medical Student Summer Research Program Fellowship and Third Place Poster, University of Cincinnati College of Medicine

2007 Third place, Cincinnati Translational Neuroscience Symposium poster competition

2007 to 2013 Medical Student Scholars Program (MSSP), University of Cincinnati College of Medicine

2007 to 2009 University Graduate Scholarship, University of Cincinnati

2001 to 2004 Merit Award, DePauw University, Greencastle, IN.

**Invited Oral Presentations**

*The Nuts and Bolts of the Brain: Anatomy and Physiology and Neurologic Emergencies​.* Emergency Medical Services Association of Colorado Annual Meeting, Keystone, CO, 2023.

*Mechanisms of Inflammation after Intracerebral Hemorrhage: The Role of Immune Cells in Early Brain Injury.* Neurocritical Care Society Annual Meeting, Montreal, Quebec, Canada, 2011.

*The immune response to intracerebral hemorrhage: a flow cytometric analysis of infiltrating leukocytes and the effects of bilirubin oxidation products*. Society for Neuroscience, Program No. 708.8, Washington DC, 2008.

**Peer-Reviewed Publications**

Shah AS, Yahanda MS, **Loftspring MC**, Osbun J. Acute Disseminated Encephalomyelitis Associated With a Novel Paraneoplastic Process in Hepatic Epithelial Hemangioendothelioma: a Case Report, *Clin Neurol Neurosurg*, 2020 Jul;194:105903.

**Loftspring MC**, Lee JM. Rapid diagnosis, triage, and treatment of a 59-year-old man with sudden onset right-sided weakness and difficulty speaking, *J Appl Lab Med*, 2019 Dec 6*.* Includes associated podcast.

**Loftspring MC,** KisselaBM, Flaherty ML, Khoury JC, Alwell K, MoomawCJ, KleindorferDO, WooD, Adeoye O, FerioliS, BroderickJP, KhatriP. Practice Patterns for Acute Ischemic Stroke Workup:

A Longitudinal Population Based Study, *J Am Heart Assoc,* 2017 Jun 23;6(6).

**Loftspring MC,** Landsness E, Wooliscroft L, Rudock R, Jo S, Patel KR. GABAB Encephalitis: A fifty-two-year-old man with seizures, dysautonomia and acute heart failure. *Case Rep Neurol Med*, 2015:812035.

Solomon MB\*, **Loftspring M**\*, de Kloet A\*, Ghosal S, Carvallho-Netto E, Jankord R, Flak J, Wulsin AC, Krause EG, Zhang R, Rice T, McKlveen JM, Myers B, Dolgas C, Packard B, Tasker JG, Herman JP. Neuroendocrine Function Following Hypothalamic Depletion of Glucocorticoid Receptors in Male and Female Mice. *Endocrinology*, 156:2843-53, 2015. \*Contributed equally.

**Loftspring MC,** Johnson HL, Johnson AJ, Clark JF. Depletion of GR-1-positive cells is associated with reduced neutrophil inflammation and astrocyte reactivity after experimental intracerebral hemorrhage. *Transl Stroke Res*, 3(Suppl 1):S147–S154, 2012.

**Loftspring MC,** Johnson HL, Feng R, Johnson AJ, Clark JF. Unconjugated bilirubin contributes to early inflammation and edema after intracerebral hemorrhage. *J Cereb Blood Flow Metab,* 31: 1133-42, 2011.

**Loftspring MC.** Iron and early brain injury after subarachnoid hemorrhage. *J Cereb Blood Flow Metab,* 30: 1791-2, 2010*.*

**Loftspring MC**, Hansen C, Clark JF. A novel brain injury mechanism after intracerebral hemorrhage: the interaction between heme products and the immune system. *Med Hypotheses,* 74: 63-6, 2010.

Clark JF, **Loftspring M**, Wurster WL, Beiler S, Beiler C, Wagner KR, Pyne-Geithman GJ. Bilirubin oxidation products, oxidative stress and intracerebral hemorrhage. *Acta Neurochir suppl,* 105: 7-12, 2009.

**Loftspring MC**, Smanik J, Gardner C, Pixley SK. Selective gray matter staining of human brain slices: optimized use of cadaver materials with long post-mortem intervals. *Biotech Histochem,* 83: 173-7, 2008.

**Loftspring MC**, McDole J, Lu A, Clark JF, Johnson AJ. Intracerebral hemorrhage leads to infiltration of several leukocyte populations with concomitant pathophysiological changes. *J Cereb Blood Flow Metab,* 29:137-143, 2009*.*

Clark JF, **Loftspring M,** Wurster WL, Pyne-Geithman GJ. Chemical and biochemical oxidations in hemorrhagic spinal fluid after subarachnoid hemorrhage. *Front Biosci,* 13: 1806-1812, 2008*.*

**Loftspring MC**, Clark JF, and Wagner KR. A novel duplex ELISA to quantitate plasma proteins in areas of brain edema. *Brain Res,* 1162: 130-132, 2007.

**Loftspring MC**, Wurster WL, Pyne-Geithman GJ, Clark, JF. An *in vitro* model of aneurysmal subarachnoid hemorrhage: oxidation of unconjugated bilirubin by cytochrome oxidase. *J Neurochem*, 102: 1990-1995, 2007.

**Loftspring MC**, Beiler S, Beiler C, Wagner KR. Plasma proteins in edematous white matter following intracerebral hemorrhage confound immunoblots: an ELISA to quantify contamination. *J Neurotrauma*, 23: 1904-1911, 2006.

Goldenberg N, Glueck CJ, **Loftspring M**, Sherman A, Wang P. Metformin-diet benefits in women with polycystic ovary syndrome in the bottom and top quintiles for insulin resistance. *Metabolism*, 54: 113-121, 2005.

Glueck CJ, Goldenberg N, Pranikoff J, **Loftspring M**, Sieve L, Wang P. Height, weight, and motor-social development during the first 18 months of life in 126 infants born to 109 mothers with polycystic ovary syndrome who conceived on and continued metformin through pregnancy. *Hum Reprod*, 19: 1323-1330, 2004.

Glueck CJ, Goldenberg N, Wang P, **Loftspring M**, Sherman A. Metformin during pregnancy reduces insulin, insulin resistance, insulin secretion, weight, testosterone and development of gestational diabetes: prospective longitudinal assessment of women with polycystic ovary syndrome from preconception throughout pregnancy. *Hum Reprod*, 19: 510-521, 2004.

**Book Chapters**

Loftspring MC, Bucelli RC. Cranial Neuropathies. *In The Washington Manual of Emergency Medicine*. Levine M, ed. Philadelphia: Lippincott Williams & Wilkins, 2016.

**Other Publications (Editorially Reviewed)**

Loftspring MC. Reader Response: NIH Music-Based Intervention Toolkit. *Neurology.* Published online, June 7, 2023.

**Recent Professional Activities and Memberships**

2015 to present Member, American Academy of Neurology

2018 to 2020 Member, American Neurological Association

2019 to present Member, American Heart/Stroke Association

2023 to present Member, Emergency Medical Services Association of Colorado

2009 to present *Ad hoc* reviewer: *Neurology Clinical Practice; Scientific Reports; Journal of Cerebral Blood Flow and Metabolism.*

**Selected Abstracts and Poster Presentations**

**LoftspringMC**, EldenizC, LinW, FordAL, AnH and LeeJ-M. Dynamic Changes in MR-Defined Collateral Flow After Acute Ischemic Stroke Is Associated With Larger Penumbral Signature and Improved Clinical Outcomes. AHA/ASA International Stroke Conference, Los Angeles, CA, 2016, accepted.

**Loftspring MC**, Khoury JC, Alwell KA, Moomaw CJ, Kleinforfer DO, Flaherty ML, Woo D, Adeoye O, Ferioli S, Kissela BM, Broderick JP, Khatri P. Temporal Trends in Practice Patterns for Acute Ischemic Stroke Workup: A Population-Based Study. AHA/ASA International Stroke Conference, Honolulu, HI, 2013.

**Loftspring MC**, Johnson HL, Johnson AJ, Clark JF. Depletion of GR-1-positive cells is associated with reduced neutrophil inflammation and astrocyte reactivity after experimental intracerebral hemorrhage. National MD/PhD Student Conference, Keystone, CO, 2012.

Solomon MB, **Loftspring M**, de Kloet A, Rice T, Carvallho-Netto E, Wulsin AC, Myers B, McKlveen JM, Herman JP. The role of central glucocorticoid receptors in HPA axis regulation in males and females. Elizabeth Young New Investigator Symposium, Organization for the Study of Sex Differences, Baltimore, MD, 2012.

**Loftspring MC**, Hansen C, Clark JF. Heme products and inflammation after intracerebral hemorrhage. Society for Neuroscience, Ohio Miami Valley Chapter, Cincinnati, OH, 2010.

**Loftspring MC**, Hansen C, Clark JF. A model for the role of heme products in the pathogenesis of brain injury following intracerebral hemorrhage. Society for Neuroscience, Program No. 744.3, Chicago, IL, 2009.

**Loftspring MC**, McDole J, Lu A, Johnson AJ, Clark JF. The immune response to intracerebral hemorrhage: a flow cytometric analysis of infiltrating leukocytes and the effects of bilirubin oxidation products. Society for Neuroscience, Program No. 708.8, Washington DC, 2008.

Wurster WL, **Loftspring MC**, Clark JF. Bilirubin oxidation products (BOXes) are produced by biochemical oxidation involving free peroxynitrite. Experimental Biology, San Diego, CA, 2008.

**Loftspring MC**, Clark JF, Wagner KR. A novel duplex ELISA method for the quantitation of plasma proteins in areas of brain edema. Society for Neuroscience, Program No. 593.14, San Diego, CA, 2007.

Pyne-Geithman GJ, Caudell DN, **Loftspring M**, Clark JF. Glutathione peroxidase activity in cerebral vasospasm after subarachnoid hemorrhage. *Atheroscl Thromb and Vasc Biol*, 27: e112, 2007. Chicago, IL, 2007.

**Loftspring MC**, Wurster WL, Pyne-Geithman GJ, Clark, JF. Oxidation of unconjugated bilirubin by cytochrome oxidase: implications for treatment of cerebral vasospasm after subarachnoid hemorrhage. Cincinnati Translational Neuroscience Symposium, 2007.

**Loftspring MC**, Wurster WL, Pyne-Geithman GJ, Clark, JF. Molecular oxygen is required for the oxidation of bilirubin in vitro. Society for Neuroscience, Program No. 180.5, Atlanta, GA, 2006.

**Loftspring MC**, Wurster WL, Clark, JF. Oxidation of bilirubin by the hemoglobin/Fenton reaction. Midwest Enzyme Chemistry Conference, Evanston, IL, 2006.

**Loftspring MC**, Beiler S, Beiler C, Wagner KR. Quantitation of contaminating plasma proteins in brain injury models with interstitial or vasogenic edema development. Society for Neuroscience, Program No. 100.2, Washington, DC, 2005.