

## Curriculum Vitae

Daniel M. Birk, M.D.

### *EXPERIENCE*

#### **Neurological Surgery, PC**

Long Island, New York

12/2019 - Present

*Board-Certified Neurosurgeon*

#### **New York Spine and Brain Surgery, UFPC**

Stony Brook, New York

07/2017 – 12/2019

*Neurosurgeon*

*Director of the Spine Center*

### *ACADEMIC APPOINTMENTS*

#### **Stony Brook University - SUNY**

#### **College of Engineering and Applied Sciences**

#### **Department of Mechanical Engineering**

Stony Brook, New York

12/2019 – 12/2022

*Research Professor*

#### **Stony Brook University - SUNY**

#### **Renaissance School of Medicine**

#### **Department of Neurological Surgery**

Stony Brook, New York

07/2017 – 12/2019

*Clinical Assistant Professor of Neurosurgery*

### *EDUCATION*

**University of Illinois at Chicago (UIC) College of Medicine (Chicago, IL) — Neurological Surgery Resident and Chief Resident**

06/2010 – 06/2017

**Columbia University Vagelos College of Physicians and Surgeons (New York, NY) — M.D.**

08/2006 – 05/2010

**Columbia University School of General Studies (New York, NY) — Graduate certificate in  
Premedical Sciences**

09/2003 – 05/2006

**St. John's College (Annapolis, MD & Santa Fe, NM) — B.A.**

Classics, Philosophy, History of Math and Science, Literature, Ancient Greek

09/1996 – 05/2000

*HOSPITAL AFFILIATIONS*

**Mather Hospital, Northwell Health — Port Jefferson, NY**

**Plainview Hospital, Northwell Health — Plainview, NY**

**Syosset Hospital, Northwell Health — Syosset, NY**

**Huntington Hospital, Northwell Health — Huntington, NY**

**Peconic Bay Medical Center, Northwell Health — Riverhead, NY**

**North Shore University Hospital, Northwell Health — Manhasset, NY**

**St. Charles Hospital, Catholic Health Services of Long Island — Port Jefferson, NY**

**St. Catherine of Sienna Hospital, Catholic Health Services of Long Island — Smithtown, NY**

**St. Joseph's Hospital, Catholic Health Services of Long Island — Bethpage, NY**

**Good Samaritan Hospital, Catholic Health Services of Long Island — West Islip, NY**

*LICENSURE*

New York medical license #287264 — Registration Expires May 31st, 2024

Illinois medical license #036.132880 — Expired July 31, 2017

Federal DEA license, schedules II – V #FB6755764 — Expires July 31, 2023

NPI #1578880274

*BOARD CERTIFICATION*

Board-Certified — November 5, 2022 to December 31, 2032

Diplomate of the American Board of Neurological Surgery (ABNS)

*PROFESSIONAL SOCIETIES*

American Association of Neurological Surgeons

Congress of Neurological Surgeons

Medical Society of the State of New York

Suffolk County Medical Society

*AWARDS & HONORS*

**Invited to hood Dr. Matthew Morris, Renaissance School of Medicine**

**Convocation, Stony Brook University — 2019**

**Dean's Award for Authorship**, UIC College of Medicine — 2015 & 2016  
**Excellence in Teaching Award**, UIC Medical Student Mentor Program — 2014  
**Recognizing Excellence Award**, UIC Surgical Services — 2013  
**Preceptor & Mentor Award**, UIC College of Medicine — 2013  
**Class Act Award**, UIC Hospital and Health Sciences System's highest award — 2012  
**Seymour L. Kaplan Columbia Medical School Academic Scholarship** — 2007 & 2008  
**Medical Student Research Fellowship**, American Brain Tumor Association — 2007  
**Volunteerism Award**, United Hospital Fund of New York— 2005 & 2006

*COMMITTEE ASSIGNMENTS*

**Surgical services OR turnover time committee** — UIC —2016  
**Surgical services OR first start accuracy committee** — UIC — 2015  
Improved UIC Hospital first case on-time accuracy from 16% to 73%  
**Residency curriculum committee** — UIC — 2014 to 2017  
**Neurosurgery ICU EMR committee** — UIC — 2013

*ACADEMIC, VOLUNTEER & EDUCATIONAL ACTIVITIES*

**Senior Design Project Mentor** — Stony Brook University, College of Engineering and Applied Sciences, undergraduate Vincent DeStefano, Winner of “Wolfie-Tank”  
**Ad hoc reviewer** — World Neurosurgery  
**Premedical Society Mentor** — Stony Brook University  
**Medical Student Mentor Program** — Mentored 20 UIC M.D. candidates  
**Neuroanatomy Instructor** — UIC College of Medicine  
**Society for Prospective Surgeons Mentor** — UIC College of Medicine  
**Career Day Exhibitor** — Museum of Science and Industry — Chicago, IL  
**Columbia College of Physicians & Surgeons Fundraiser** — Office of Development — NY, NY

*GRANTS*

**Towards a Bionic Spine: Kinodynamic Holistic Spine Modeling and Development of Novel Implants for Spinal Restoration.** Stony Brook University Office of the Vice President of Research Seed Grant. Co-principle investigator. Awarded \$50,000 seed grant, 2019-2020.

**Engineering Research Center (ERC) for Advanced Dynamic and Adaptable Personalized Spine Technologies (ADAPT) for Bionic Spine.** \$45 million National Science Foundation grant finalist. Co-principal investigator and Co-director of the ERC. 2019.

## **BIBLIOGRAPHY**

### Original Report

Tobin MK, Gragnaniello C, Sun F, Rangwala SD, **Birk DM**, Neckrysh S. Safety and efficacy of skipping C7 instrumentation in posterior cervicothoracic fusion. *World Neurosurgery*. 2019 May. PMID 31154099.

Esfahani DR, Alaraj A, **Birk DM**, Thulborn K, Charbel FT. Stenosis Before Thrombosis Intracranial Hypertension from Jugular Foramen Stenosis Secondary to Renal Osteodystrophy: Case Report. *World Neurosurgery*. 2018 Jan;109:129-133. PMID 28951273

Rangwala SD, Tobin MK, **Birk DM**, Butts JT, Nikas DC, Hahn YS. Pica in a child with Anterior Cingulate Gyrus Oligodendroglioma: Case Report. *Pediatr Neurosurg*. 2017;52:279-283. PMID 28704833

Tobin MK, **Birk DM**, Rangwala SD, Siemionow K, Neckrysh S, Schizas C. T1 pedicle subtraction osteotomy for the treatment of rigid cervical kyphotic deformity: clinical series of four patients and review of the literature. *J Neurosurg Spine*. 2017 Nov;27(5):487-493. PMID 28841105

Rangwala S, **Birk DM**, Tobin MK, Hahn YS, Nikas D. Spontaneous resolution of spinal epidural hematoma resulting from domestic child abuse: Case report. *Pediatric Neurosurgery*. 2016 Sep. PMID: 27644085

**Birk DM**, Behbahani M. Journal Club: Real-Time Magnetic Resonance-Guided Stereotactic Laser Amygdalohippocampotomy for Mesial Temporal Lobe Epilepsy. Congress of Neurological Surgeons Journal Club. Selected as finalist, published in *Neurosurgery* online. 2015.

**Birk DM**, Tobin MK, Moss HE, Feinstein E, Charbel FT, Alaraj A. Improvement in venous outflow following superior sagittal sinus decompression after a gunshot wound to the head: Case report. *J Neurosurg*. 2015, 123(1):81-85. PMID: 25839927.

Alaraj A, Tobin M, **Birk DM**, Aletich V. Role of argatroban during neurointerventional procedures in patients with heparin-induced thrombocytopenia. *J Neurointerv Surg*. 2014, 6(8):630-632. PMID: 24062254.

Alaraj, A, Charbel FT, **Birk DM**, Tobin M, Luciano C, Banerjee PP, Rizzi S, Sorenson J, Foley K, Slaviv K, Roitberg B. Role of cranial and spinal virtual reality simulation using ImmersiveTouch modules in neurosurgical training. *Neurosurgery*. 2013, 72(Suppl 1): A115-A123. PMID: PMC3676942.

**Birk DM**, Barbato J, Mureebe L, Chaer RA. Current insights on the biology and clinical aspects of VEGF regulation. *Vascular and Endovascular Surgery*. 2008 Dec;42(6):517-30. PMID: 18799497.

Chaer RA, Derubertis BG, Lin SC, Bush HL, Karwowski JK, **Birk DM**, Morissey NJ, Faries PL, McKinsey JF, Kent KC. Simulation Improves Resident Performance in Catheter-Based Intervention. *Annals of Surgery*. 2006 Sep;244(3):343-52. PMID: 16926560.

Book chapter

**Birk DM**, Yin D, Slavin KV: Regulation of Peripheral Nerve Stimulation Technology. *Peripheral Nerve Stimulation, Volume II*. Karger, 2015:29:225-37. PMID: 26394389.

**Birk DM**, Slavin KV: Spinal cord stimulation, in Jandial R, Chen M, Aizenberg M, (eds): *100 Case Reviews in Neurosurgery, First Edition*. Elsevier, 2016:81:429-34.

Alaraj A, **Birk DM**, Tobin MK, Charbel FT: Simulation for neurosurgery and neurosurgical procedures, in Levine AI, DeMaria S, Schwartz AD, Sim AJ (eds): *The Comprehensive Textbook of Healthcare Simulation*. Springer, 2013:415-23.

**Birk DM**, Tobin MK, Slavin KV: Neurosurgical Options for Control of Chronic and Malignant Abdominal Pain, in Kapural L, Griffin M (eds): *Visceral Abdominal pain: An Evidence-Based, Comprehensive Guide to Clinical Management*. Springer-Verlag, 2013:29:239-44.

**PRESENTATIONS**

Oral

**Birk DM**. The Neuropsychiatric Institute and the History of Neurosurgery in Chicago. Grand Rounds, Stony Brook University, Departments of Neurosurgery and Neurology; 2017 September; Stony Brook, New York.

**Birk DM**, Stone J, Amin-Hanjani S, Charbel F. Inspired by Harvey Cushing: The Illinois Neuropsychiatric Institute. [abstract]. Podium presentation at the 84<sup>th</sup> AANS meeting, Young Neurosurgeon's Forum; 2016 May; Chicago, IL.

Tobin M, **Birk DM**, Rangwala S, Neckrysh S. Safety and efficacy of skipping C7 instrumentation in posterior cervicothoracic fusion. [abstract]. Oral presentation at the Global Spine Congress; 2015 May; Buenos Aires, Argentina.

**Birk DM**, Neckrysh S, Nagrebetsky A, Siemionow K. Modified vertebral column resection for calcified thoracic disk herniations. Abstract. Podium presentation at Global Spine Congress 2013, Hong Kong. April 4-6 2013.

Poster

Banchs R, Garrett R, Sundararajan N, Saavedra R, Bukorovic D, **Birk D**, Pygon B. Using Connected Redesign™ to Achieve Significant Improvement in First-case On-time Start Accuracy Rate. Institute for Healthcare Improvement National Forum on Quality Improvement in Health Care. Orlando, FL. December 2017.

Burokus L, **Birk DM**, Nikas D. Case series: Intracranial complications from sinusitis. [abstract]. Advocate Children Hospital Research Symposium and the Advocate Nursing Research Symposium. Oak Lawn, IL. January 2016.

Rangwala S, Tobin MK, **Birk D**, Neckrysh S. Safety and efficacy of skipping C7 instrumentation in posterior cervicothoracic fusion. [abstract]. 84<sup>th</sup> AANS meeting, Chicago, IL. May 2016.

Tobin M, **Birk DM**, Siemienow K, Neckrysh S, Schizas C. T1 pedicle subtraction osteotomy for the treatment of rigid cervical kyphotic deformity. [abstract]. In: 82<sup>nd</sup> Annual Meeting of the American Association of Neurological Surgeons; 2014 April 5-9; San Francisco. Rolling Meadows: American Association of Neurological Surgeons.

Neckrysh S, Siemienow K, **Birk DM**, Tobin M, Schizas C. T1 pedicle subtraction osteotomy for the treatment of rigid cervical kyphotic deformity. [abstract]. In: 29<sup>th</sup> Annual Meeting of the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves; 2013 March 6-9; Phoenix. Rolling Meadows: American Association of Neurological Surgeons; Schaumburg: Congress of Neurological Surgeons.

Chaer RA, Derubertis BG, Lin SC, Bush HL, Karwowski JK, **Birk DM**, Morissey NJ, Faries PL, McKinsey JF, Kent KC. Simulation Improves Resident Performance in Catheter-Based Intervention. [abstract]. 130<sup>th</sup> Annual Meeting of the American Surgical Association: Boston, MA, April 2006.

**Birk DM**, Tolchin BD, Chang SS, Shrivastana N, Lee HJ, Blaine TA, Lee FY. The Effect of Mechanical Loading on Osteoclastogenesis in RAW 264.7 Cells *in Vitro*. 51<sup>st</sup> [abstract]. Annual Meeting of the Orthopedic Research Society: Washington, DC, March 2005.

Tolchin BD, **Birk DM**, Chang SS, Chung W, Cho SK, Kwon A, Lee FY. Mechanical Loading Alters the Expression of Osteogenic and Osteoclastogenic Regulators *in Vitro*. 51<sup>st</sup> [abstract]. Annual Meeting of the Orthopedic Research Society: Washington, DC, March 2005.

*TECHNOLOGY TRANSFER*

**Birk D**, Destefano V, Hershkowitz. *Surgical retractor adaptor*. US provisional patent application submitted February 2020.

**Birk D**, Rubinstein D, Ge Qiaode, Ramkrishnan IV, Venkatesh TA, Chakraborty N. *System and method for spinal restoration*. US provisional patent application submitted October 23, 2019.

**Birk D**, Buy U, Paul K, Wellman C, Amin-Hanjani S, Charbel F. *Systems and methods for the treatment and management of one or more patients*. US provisional patent application submitted 2014 and rejected 2016.

#### *COURSES & CONFERENCES*

**American Association of Neurosurgeons Annual Scientific Meeting** — 2021

**Congress of Neurological Surgeons Oral Board Review Course**, Boston, MA — 2021

**Goodman Oral Board Review course, American Association of Neurosurgeons**, Phoenix, Arizona — 2021

**35<sup>th</sup> Annual AANS/CNS Spine Summit**, Miami, Florida — 2020

**Goodman Oral Board Review course, American Association of Neurosurgeons**, Phoenix, Arizona — 2018

**Endoscopic Spine Surgery Preceptorship, Prima Vista Richard Wolf Academy**, Vernon Hills, Illinois — 2018

**11<sup>th</sup> New York City Minimally Invasive Spine, Spinal Endoscopy, Robotics & 3D Navigation Symposium at Weill Cornell Medical College**, New York, NY — 2017

**Stryker Cervical Spine Symposium**, New York, NY — 2017

**Congress of Neurological Surgeons Oral Board Review Course**, Boston, MA — 2017

**Congress of Neurological Surgeons Annual Meeting**, San Diego, CA — 2016

**Quality & Performance Improvement Course**, UIC Hospital and Health Sciences System, Department of Anesthesiology — 2016

**8<sup>th</sup> Annual Skull Base Course**, University of Wisconsin-Madison School of Medicine and Public Health — 2016

**American Association of Neurological Surgeons 84<sup>th</sup> Annual Scientific Meeting**, Chicago, IL — 2016

**Advanced Spinal Deformity Symposium & Product Training**, K2M Meeting of Minds, Chicago — 2016

**Value-Based Spine Surgery**, Heinrich Kluver Memorial Symposium, University of Chicago — 2016

**Stereotactic and Functional Neurosurgery Hands-On Workshop**, American Association of Neurological Surgeons, University of Colorado (Aurora, CO) — 2015

**Cerebral Aneurysms: Novel Concepts and Management Strategies**, Heinrich Kluver Memorial Symposium, University of Chicago — 2015

**Skull Base Techniques for Senior Residents**, American Association of Neurological Surgeons, (Memphis, TN) — 2015  
**Endoscopic Endonasal skull base course**, Loyola University Stritch School of Medicine (Maywood, IL) — 2014

**Functional Neurosurgery Without Borders: From movement disorders to psychiatric disease**, Heinrich Kliver Memorial Symposium, University of Chicago — 2014

**Surgical Treatment of the Craniocervical Junction course**, Case Western Reserve University, Department of Neurological Surgery (Cleveland, OH) — 2014

**Summer Program in Clinical and Translational Research Methods**, UIC Center for Clinical and Translational Science — 2014

**Spinal Cord Stimulation Workshop for Fellows and Residents**, North American Neuromodulation Society (Las Vegas, NV) — 2013

**Fundamentals in Spine Surgery Resident Course**, American Association of Neurological Surgeons (Houston, TX) — 2013

**Global Spine Congress annual meeting** (Hong Kong) — 2013

**Management of the Neurotrauma Patient**, Synthes resident course (Pittsburgh, PA) — 2012

**Exponential Medicine**, Singularity University (NASA Ames, CA) — 2011

#### *OTHER EXPERIENCE*

Former *Associate Director of Marketing and Sales* for CEB, now Gartner: For-profit business management best-practices research firm, Washington, DC, 2000-2003.