

Curriculum Vitae

Daniel M. Birk, M.D.

353 Veteran's Memorial Hwy
Commack, NY 11725
(631) 864-3900

1500-8A Route 112
Port Jefferson Station,
New York 11776
(631) 828-3001

EXPERIENCE

Neurological Surgery, PC

Long Island, New York

12/2019 - Present

Complex and Minimally Invasive Spine Neurosurgeon

New York Spine and Brain Surgery, UFPC

Stony Brook, New York

07/2017 – 12/2019

Director, Neurosciences Spine Center

ACADEMIC APPOINTMENTS

Stony Brook University - SUNY

College of Engineering and Applied Sciences

Department of Mechanical Engineering

Stony Brook, New York

12/2019 - Present

Adjunct Professor of Mechanical Engineering

Stony Brook University - SUNY

Renaissance School of Medicine

Department of Neurological Surgery

Stony Brook, New York

07/2017 – 12/2019

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

Huntington Hospital, Northwell Health — Huntington, NY

St. Charles Hospital, Catholic Health Services — Port Jefferson, NY

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

Good Samaritan Hospital, Catholic Health Services — West Islip, NY

BOARDS

American Board of Neurological Surgeons board eligible

American Board of Neurological Surgeons primary examination — 2014

CERTIFICATIONS

Basic and advanced cardiac life support — Expires February 2020

PROFESSIONAL SOCIETIES

American Association of Neurological Surgeons

Congress of Neurological Surgeons

AWARDS & HONORS

Hooded 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. Full proposal submitted July 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, Slavin 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 84th 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]. 84th 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: 82nd 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: 29th 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]. 130th 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*. 51st [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*. 51st [abstract]. Annual Meeting of the Orthopedic Research Society: Washington, DC, March 2005.

TECHNOLOGY TRANSFER

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.

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

CONSULTING

Previous educational consultant for Johnson & Johnson
Medicolegal consultant

COURSES & CONFERENCES

Faculty for 35th Annual AANS/CNS Spine Summit, Miami, Florida — 2018

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

11th 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

8th Annual Skull Base Course, University of Wisconsin-Madison School of Medicine and Public Health — 2016

American Association of Neurological Surgeons 84th 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 Kluver 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.