

## CURRICULUM VITAE

NAME: **Tobias A. Mattei, M.D**

Current Position Assistant Professor  
Division of Neurosurgery - St. Louis University



[https://physicians.slucare.edu/details/1153/tobias\\_-mattei-neurosurgery-spine\\_surgery-st\\_louis](https://physicians.slucare.edu/details/1153/tobias_-mattei-neurosurgery-spine_surgery-st_louis)

Research Interests Complex and Reconstructive Spine Surgery, Minimally Invasive Spine Surgery, Adult Degenerative Scoliosis, Patient-Reported Outcome Measures

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**EDUCATION:**

1995 – 1998	Colegio Positivo Curitiba, Parana/Brazil		High School (with Honors)
1998 - 2000	Colegio Positivo Curitiba, Parana/Brazil		Bachelor in Science (with Honors)
2000 - 2006	Faculdade de Medicina da Universidade Estadual de São Paulo Graduated ‘Cum Laude’ – Best Curriculum of Medical School São Paulo, Brazil		M.D.
2004 - 2006	Faculdade de Medicina da Universidade Estadual de São Paulo São Paulo, Brazil		Intern General Surgery/Medicine
2006 - 2011	Instituto de Neurologia de Curitiba Curitiba, Parana - Brazil		Resident Neurological Surgery
2009-2010	Instituto de Neurologia de Curitiba Curitiba, Parana – Brazil		Enfolded fellow Endovascular Neurosurgery
2010 - 2011	Instituto de Neurologia de Curitiba Curitiba, Parana – Brazil (Ricardo Ramina, Chairman)		Chief-resident and Enfolded fellow Cerebrovascular and Skull Base Neurosurgery
2011 –2012	University of Illinois at Peoria Peoria, IL	Clinical Fellow	Clinical Neurosurgery
2011 –2012	University of Illinois at Peoria Peoria, IL - Umbilical Cord Stem Cell Laboratory	Research Fellow	Stem Cell Research in Gliomas
2012 –2013	University of Illinois at Peoria	Clinical	Complex Spine

	Peoria, IL	Fellow	Surgery and Deformity
2013 –2014	Ohio State University Columbus, OH	Clinical Instructor	Surgical Spinal Oncology
2014 - 2016	Brain & Spine Center InvisionHealth Buffalo/NY	Associate Neurosurgeon	
2017 - 2018	Neurosurgery & Spine Specialists Eastern Maine Medical Center Bangor/ME	Associate Neurosurgeon	
2018 - present	Neurosurgery Department St. Louis University St. Louis/MO	Assistant Professor	

### **Scientific Societies (Membership):**

North American Spine Society (NASS)  
 American Academy of Neurological Surgeons (AANS)  
 Congress of Neurological Surgeons (CNS)  
 Brazilian Academy of Neurosurgery  
 Brazilian Society of Neurosurgery  
 American Academy of Neurological and Orthopedic Surgeons (AANOS)

### **External Funding Reviewer:**

- National Institute of Health (NIH) - Center for Scientific Review  
Clinical Neurophysiology, Devices, Neuroprosthetics and Biosensors Panel
- Innovation and Technology Commission/ Hong Kong SAR Government
- The Brain Tumor Charity - New Ideas Award/UK

### **Editorial Board Membership:**

The Spine Journal (official journal of North American Spine Society) - **Elite Reviewer**  
 North American Spine Society Journal (NASSJ) - **Deputy Editor**  
 World Neurosurgery  
 Clinical Neurology & Neurosurger  
 Osteoarthritis and Cartilage (official journal of **Osteoarthritis** Research Society International)  
 Journal of Engineering in Medicine: Part H (Proceedings of the Institution of Mechanical Engineers)  
 Neurological Sciences (official journal of Italian Neurosurgical Society)

British Journal of Neurosurgery (official journal of British Neurosurgical Society)  
Injury Prevention  
Yonsei Medical Journal

**Ad-hoc Reviewer:**

- ‘ Neurosurgery’
- ‘ The European Spine Journal’
- ‘ Royal Society Open Science’
- ‘ International Journal of Nanomedicine’
- ‘ Pain Medicine’
- ‘ Neurological Research’
- ‘ Journal of Neurosurgical Sciences’
- ‘ Computer Methods and Programs in Biomedicine’
- ‘ Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization’
- ‘ BMC Musculoskeletal Disorders’
- ‘ Surgical Neurology International’
- ‘ Medical Devices: Evidence and Research’
- ‘ Arquivos Brasileiros de Neuro-Psiquiatria’
- ‘ OncoTargets and Therapy’

**Medical Licenses:**

**State Of Maine**– Licensing Number: 218009352 Issuance Date: 03/16/2018

**State Of Maine**– Licensing Number: MD21243 Issuance Date: 08/02/2016

**State Of New York/US** – Licensing Number: 273218 Issuance Date: 12/16/2013

**The Ohio State/US** - Licensing Number: 57.022362 Issuance Date:10/11/2013

**State of Illinois/US** - Licensing Number: 125060667 Issuance Date:07/06/2011

**State of Parana/Brazil:** CRM: 23.552

**DEA number:** FM4305315

**Current Hospital Privileges:**

*St. Louis University Hospital - St. Louis/MO*

*Cardinal Glennon Hospital - St. Louis/MO*

*St. Mary’s Hospital - St. Louis/MO*

**Past hospital privileges (07.2014- 12,2016) at Catholic Health System - Buffalo/NY**

<http://www.chsbuffalo.org/Facilities/Hospitals>

- Kenmore Mercy Hospital - Buffalo/NY
- South Buffalo Mercy Hospital - Buffalo/NY
- Sister’s of Charity Hospital - Buffalo/NY
- Mount St. Mary Hospital - Lewinston/NY

*Niagara Falls Memorial Medical Center - Niagara Falls/NY*

<http://nfmcc.org>

*Eastern Maine Medical Center (2017-2018)*

<https://emmc.org>

**ECFMG Certification:** 0-671-683-1 issued at March 7<sup>th</sup>, 2011

**Oral Boards:** Approved in April 2012 - ‘Brazilian Society of Neurosurgery’

**World Federation Neurosurgical Society Certification:** Approved June 2013

STEP 1: “Approved” – Score: 213/87 - Date: 03/01/2005

STEP 2 CK: “Approved” – Score: 198/81 Date: 07/10/2010

STEP 2 CS: “Approved” - Date: 01/24/2011

STEP 3: “Approved” – Score: 207/86 Date 06/01/2011

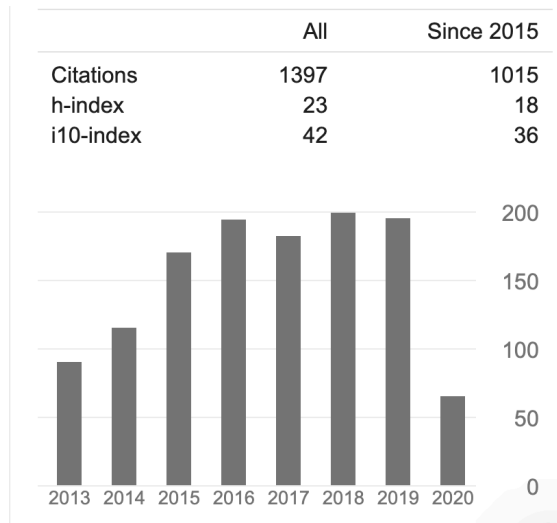
ATLS Certification – 07/22/2011

ACLS Certification – 06/22/2011

## Personal Impact Factor/Academic Indices

*Google Scholar*

<https://scholar.google.com/citations?user=qYteHBIAAAAJ&hl=en>



<https://www.ncbi.nlm.nih.gov/pubmed/?term=mattei+ta>

## Publons

<https://publons.com/author/1178893/tobias-a-mattei#profile>

VERIFIED REVIEWS

160 Median: 3  
99th percentile

VERIFIED REVIEWS (LAST 12 MONTHS)

56 Median: 1  
99th percentile

REVIEW TO PUBLICATION RATIO

1:1 Median: 0.3:1

Publication metrics

PUBLICATIONS IN  
WEB OF SCIENCE

134

SUM OF TIMES  
CITED

757

H-INDEX

18<sup>Ⓢ</sup>

AVERAGE CITATIONS  
PER ITEM

5.7

AVERAGE CITATIONS  
PER YEAR

24.4

## Books Edited:

Editor: **Tobias A. Mattei, M.D.**

1. Nonlinear Analysis in Neuroscience and Behavioral Research. Topic Editor: Tobias A. Mattei. Frontiers in Computational Neuroscience: 2016  
ISSN 1664-8714. ISBN 978-2-88919-996-9 DOI 10.3389/978-2-88919-996-9”  
<http://journal.frontiersin.org/researchtopic/1939/application-of-nonlinear-analysis-to-the-study-of-complex-systems-in-neuroscience-and-behavioral-res>

2. 1. Multidisciplinary Approaches to Cognition, Neuroscience and Epistemology. Novapublisher. (New York: Expected publication September 2012)  
[http://www.amazon.com/Interdisciplinary-Approaches-Neuroscience-Epistemology-Cognition/dp/1619422735/ref=sr\\_1\\_1?ie=UTF8&qid=1337353767&sr=8-1](http://www.amazon.com/Interdisciplinary-Approaches-Neuroscience-Epistemology-Cognition/dp/1619422735/ref=sr_1_1?ie=UTF8&qid=1337353767&sr=8-1)

## **Board Certification**

World Federation of Neurosurgical Societies - 09.2013

American Board of Clinical Neurological Surgery / AANOS - 12.19.2014

Brazilian Society of Neurosurgery - 03.2012

Brazilian Academy of Neurosurgery

## **Clinical Grants & Clinical Trials:**

### As Principal Investigator:

*'The hemostatic efficacy of Gelatin Hemostatic Matrix (Surgiflo) in complex oncological spine surgery: a prospective, double-blind, randomized clinical trial - Grant Research \$ 50.000 - Ethicon®/ - Jan 2013*

## **Peer Reviewed Publications:**

1. **Mattei TA**. S3 Sacral-Alar Iliac Screw: A Salvage Technique for Pelvic Fixation in Complex Deformity Surgery. *World Neurosurg.* 2020 Mar 16;139:23-30. doi: 10.1016/j.wneu.2020.03.025. [Epub ahead of print]
2. **Mattei TA**, Perret CM. Should kyphoplasty cures be used in nonosteoporotic patients? A cautionary tale. *Clin Case Rep.* 2020 Jan 30;8(3):453-460. doi: 10.1002/ccr3.2670. eCollection 2020 Mar.
3. **Mattei TA**, Teasdale GM. The Story of the Development and Adoption of the Glasgow Coma Scale: Part I, The Early years. *World Neurosurg.* 2019 Nov 8. pii: S1878-8750(19)32831-1. doi: 10.1016/j.wneu.2019.10.193. [Epub ahead of print]
4. **Mattei TA**. Nonstatistically Significant but Still Different? Perils of Affirming the Alternative (H1) Hypothesis in the Absence of Statistical Significance. *World Neurosurg.* 2019 Nov;131:288. doi: 10.1016/j.wneu.2019.06.061.
5. Lyons FG, **Mattei TA**. Sources, Identification, and Clinical Implications of Heterogeneity in Human Umbilical Cord Stem Cells. *Adv Exp Med Biol.* 2019;1169:243-256. doi: 10.1007/978-3-030-24108-7\_13.
6. Kluzek S, **Mattei TA**. Osteoarthritis Cartilage. 2019 Jul;27(7):977-978. doi: 10.1016/j.joca.2019.04.005. Epub 2019 Apr 17.
7. **Mattei TA**, Perret CM, Nunes JC. Development of a New Coupled Cobb-Suction Instrument for Posterior Spinal Approaches: Technical Note. *World Neurosurg.* 2019

Feb 15. pii: S1878-8750(19)30353-5. doi: 10.1016/j.wneu.2019.01.240. [Epub ahead of print]

8. **Mattei TA**, Goulart CR, Rai SS, Rehman AA, Williams M, Mendel E. Rapid Development of Spinal Epidural Lipomatosis after Treatment of Metastatic Castration-resistant Prostate Cancer with Second-Generation Androgen Receptor Antagonists. *World Neurosurg.* 2019 Feb 11. pii: S1878-8750(19)30334-1. doi: 10.1016/j.wneu.2019.01.222. [Epub ahead of print]
9. Nunes JC, Perret C, Ordookhanian C, Kaloostian PE, Abdulrauf SI, **Mattei TA**. "Crimes against the Nervous System": Neurological References During the Nuremberg Doctors' Trials. *World Neurosurg.* 2018 Oct 24. pii: S1878-8750(18)32390-8. doi: 10.1016/j.wneu.2018.10.092. [Epub ahead of print]
10. Ordookhanian C, Kaloostian PE, **Mattei TA**. Taming the Opioid Epidemic: The NIH HEAL Initiative. *World Neurosurg.* 2018 Oct 3. pii: S1878-8750(18)32260-5. doi: 10.1016/j.wneu.2018.09.205. [Epub ahead of print]
11. **Mattei TA**. "Reinventing the wheel": reflections on a recurrent phenomenon in the history of neurosurgery. *J Neurosurg.* 2018 Sep 14;1-8. doi: 10.3171/2018.4.JNS18652. [Epub ahead of print]
12. **Mattei TA**. The CRISPR-Cas9 Genome Editing System: Not as Precise as Previously Believed. *World Neurosurg.* 2018 Aug 14. pii: S1878-8750(18)31825-4. doi: 10.1016/j.wneu.2018.08.042. [Epub ahead of print]
13. **Mattei TA**. Practical Effects of Lowering the P Value in Neurosurgery: Restricting Evidence-Based Medicine to Big Business. *World Neurosurg.* 2018 Sep;117:460-462. doi: 10.1016/j.wneu.2018.07.112. Epub 2018 Jul 18.
14. **Mattei TA**. Memory Transplantation and Learning by Proxy? A Sober Assessment of the Popularly Acclaimed "Snails Experiment". *World Neurosurg.* 2018 Aug;116:387-389. doi: 10.1016/j.wneu.2018.06.129. Epub 2018 Jun 21.
15. **Mattei TA**. Letter to the Editor. S-1 alar-iliac screw technique: nothing new under the sun. *J Neurosurg Spine.* 2018 Sep;29(3):346-347. doi: 10.3171/2018.2.SPINE18173. Epub 2018
16. **Mattei TA**, Ordookhanian C, Kaloostian PE.. "Dear Anesthesiologist, Please Don't Abandon Us": Excessive Anesthesia Handovers and Adverse Perioperative Outcomes in Neurosurgery. *World Neurosurg.* 2018 Jul;115:254-256. doi: 10.1016/j.wneu.2018.05.029. Epub 2018 May 19.



17. **Mattei TA.** Rope Jumping-Induced Traumatic Compression Fractures: the Underestimated Danger of Repetitive Axial Load Forces. *World Neurosurg.* 2018 May;113:96-97. doi: 10.1016/j.wneu.2018.02.037. Epub 2018 Feb 14.
18. **Mattei TA.** A game theory appraisal of the insurance hypothesis: Specific polymorphisms in the energy homeostasis network as imprints of a successful minimax strategy. *Behav Brain Sci.* 2017 Jan;40:e123. doi: 10.1017/S0140525X16001485.
19. **Mattei TA.** Privacy, Confidentiality, and Security of Health Care Information: Lessons from the Recent WannaCry Cyberattack. *World Neurosurg.* 2017 Aug;104:972-974. doi: 10.1016/j.wneu.2017.06.104. Epub 2017 Jun 21.
20. **Mattei TA.** The specificity of SPECT-CT for the diagnosis of discogenic pain: implications for the future of the lumbar fusion outcome score (LUFOS). *Spine J.* 2018 Sep;18(9):1722-1724. doi: 10.1016/j.spinee.2018.04.020. No abstract available.
21. **Mattei TA** Academia's Reproach of Trump's Travel Ban: The Magnitude of the Response. *World Neurosurg.* 2017 Jul;103:896-898. doi: 10.1016/j.wneu.2017.04.168. Epub 2017 May 3.
22. **Mattei TA,** Beer J, Teles AR, Rehman AA, Aldag J, Dinh D.Clinical Outcomes of Total Disc Replacement Versus Anterior Lumbar Interbody Fusion for Surgical Treatment of Lumbar Degenerative Disc Disease. *Global Spine J.* 2017 Aug;7(5):452-459. doi: 10.1177/2192568217712714. Epub 2017 Jul 7.
23. **Mattei TA.** Privacy, Confidentiality, and Security of Health Care Information: Lessons from the Recent WannaCry Cyberattack. *World Neurosurg.* 2017 Aug;104:972-974. doi: 10.1016/j.wneu.2017.06.104. Epub 2017 Jun 21.
24. **Mattei TA.** Cavitation kyphoplasty: a new technique for reducing the rates of cement extravasation through targeted low-pressure cement injection. *Acta Neurochir (Wien).* 2017 Jun;159(6):1153-1157. doi: 10.1007/s00701-017-3167-3. Epub 2017 Apr 5.
25. **Mattei TA.** Teles AR. Letter to the Editor: The ancient "apples and oranges" conundrum: a call for methodological precision. *J Neurosurg Spine.* 2017 Mar 24:1-3. doi: 10.3171/2016.10.SPINE161185. [Epub ahead of print]
26. **Mattei TA.** The Fractal Geometry of the Brain: Book Review. *World Neurosurgery* 100:271-272 · April 2017 DOI: 10.1016/j.wneu.2017.01.018

27. **Mattei TA.** A game theory appraisal of the insurance hypothesis: Specific polymorphisms in the energy homeostasis network as imprints of a successful minimax strategy. *Behavioral and Brain Sciences* 40 · January 2017. DOI: 10.1017/S0140525X16001485
28. Teles AR, **Mattei TA**, Righesso O, Falavigna A. Effectiveness of Operative and Nonoperative Care for Adult Spinal Deformity: Systematic Review of the Literature. *Global Spine J.* 2017 Apr;7(2):170-178. doi: 10.1177/2192568217699182. Epub 2017 May 1.
29. **Mattei TA.** Proposition 64, Cannabis Legalization, and the California Secession Movement: Why Should Neurosurgeons Care? *World Neurosurg.* 2017 Mar; 99:770-772. doi: 10.1016/j.wneu.2017.01.066.
30. **Mattei TA.** Talking to Others' Selves: Why a valuationial paradigm of agency fails to provide an adequate theoretical framework for moral Responsibility, social accountability and legal liability. *Behav Brain Sci.* BBS-D-17-00130\_ Doris\_ Mattei. (Jan 2017 - in press)
31. **Mattei TA.** Trump, Obamacare and the Market for 'Lemons' Paradigm: Current Perspectives on the Future of U.S. Health Care. *World Neurosurg.* 2017 Feb; 98:829-832. doi: 10.1016/j.wneu.2016.12.082.
32. **Mattei TA**, Rehman AA, Goulart CR, Sória MG, Rizelio V, Meneses MS. Successful outcome after endovascular thrombolysis for acute ischemic stroke with basis on perfusion-diffusion mismatch after 24 h of symptoms onset. *Surg Neurol Int.* 2016 Jun 3;7(Suppl 14):S421-6. doi: 10.4103/2152-7806.183522.
33. **Mattei TA**, Rehman AA, Teles AR, Aldag JC, Dinh DH, McCall TD. The 'Lumbar Fusion Outcome Score' (LUFOS): a new practical and surgically oriented grading system for preoperative prediction of surgical outcomes after lumbar spinal fusion in patients with degenerative disc disease and refractory chronic axial low back pain. *Neurosurg Rev.* 2016 Jun 11. [Epub ahead of print]
34. **Mattei TA**, Teles AR, Dinh DH. Vertebral body fracture after anterior cervical discectomy and fusion with zero-profile anchored cages in adjacent levels: a cautionary tale. *Eur Spine J.* 2016 Jan 5. [Epub ahead of print]
35. **Mattei TA.** Right L4/L5 Extreme-Lateral Interbody Fusion (XLIF) for Adult Degenerative Scoliosis: When the Black Swan is too real.... *World Neurosurg.* 2015 Oct 16. pii: S1878-8750(15)01372-8. doi: 10.1016/j.wneu.2015.10.029. [Epub ahead of print]

36. **Mattei TA**, Rehman AA, Dinh DH. Acute Spinal Subdural Hematoma after Vertebroplasty: A Case Report Emphasizing the Possible Etiologic Role of Venous Congestion. *Global Spine J.* 2015 Oct;5(5):e52-8. doi: 10.1055/s-0035-1544155. Epub 2015 Feb 2.
37. Goulart CR, **Mattei TA**, Fiore ME, Thoman WJ, Mendel E. Retropharyngeal abscess with secondary osteomyelitis and epidural abscess: proposed pathophysiological mechanism of an underrecognized complication of unstable craniocervical injuries: case report. *J Neurosurg Spine.* 2015 Sep 25:1-9. [Epub ahead of print]
38. **Mattei TA**, Rehman AA, Issawi A, Fassett DR. Surgical challenges in the management of cervical kyphotic deformity in patients with severe osteoporosis: an illustrative case of a patient with Hajdu-Cheney syndrome. *Eur Spine J.* 2015 Jul 22. [Epub ahead of print]
39. **Mattei TA**. Alternating Electric Fields and Carcinogenesis: A New Paradigm to Avoid Missing the Elephant in the Room. *World Neurosurg.* 2015 Mar 10. pii: S1878-8750(15)00197-7. doi: 10.1016/j.wneu.2015.03.003. [Epub ahead of print]
40. Rehman AA, Elmore KB, **Mattei TA**. The effects of alternating electric fields in glioblastoma: current evidence on therapeutic mechanisms and clinical outcomes. *Neurosurg Focus.* 2015 Mar;38(3):E14. doi: 10.3171/2015.1.FOCUS14742.
41. **Mattei TA**. Author's reply to "how to use the load-sharing classification of spine fractures?" Avoiding misleading randomization of apples, oranges and other citrus: the necessity of proper evaluation of comminution in classification systems of thoracolumbar fractures. *Eur Spine J.* 2015 Feb;24(2):408-11. doi: 10.1007/s00586-014-3714-z. Epub 2014 Dec 17.
42. **Mattei TA**. Speech as a breakthrough signaling resource in the cognitive evolution of biological complex adaptive systems. *Behav Brain Sci.* 2014 Dec;37(6):563-4; discussion 577-604. doi: 10.1017/S0140525X13004111.
43. **Mattei TA**, Teles AR, Mendel E. Modern surgical techniques for management of soft tissue sarcomas involving the spine: Outcomes and complications. *J Surg Oncol.* 2015 Apr;111(5):580-6. doi: 10.1002/jso.23805. Epub 2014 Nov 20.
44. **Mattei TA**. Insights of complex system analysis to spinal biomechanics: stability as a dynamic non-equilibrium state. *World Neurosurg.* 2014 Nov;82(5):545-8.
45. **Mattei TA**. Biomimetic nanopores: a new age of DNA sequencing? *World Neurosurg.* 2014 Sep-Oct;82(3-4):252-4. doi: 10.1016/j.wneu.2014.06.049. Epub 2014 Jul 1.

46. **Mattei TA**, Mendel E. The First Shot is Your Best Shot!: Detrimental Biomechanical Effects of Revising Suboptimally Placed Pedicle Screws. *World Neurosurg.* 2014 Jun 21. pii: S1878-8750(14)00576-2. doi: 10.1016/j.wneu.2014.06.030.
47. **Mattei TA**. The Validity of Dawkins' Selfish Gene Theory and the Role of the Unconscious in Decision-Making: Critical Remarks regarding the Proposed Selfish Goal Theory. *Behav Brain Sci.* 2014 Apr;37(2):148-9. doi: 10.1017/S0140525X13002070.
48. **Mattei TA**. Interdisciplinary benefits of a theory of cultural evolution centered at the group-level: The emergence of macro-neuroeconomics and social evolutionary game theory. *Behav Brain Sci.* 2014 Jun;37(3):264-5. doi: 10.1017/S0140525X13002914.
49. **Mattei TA**. Pediatric Arachnoid Cysts and Subdural Hygromas in the Early Infancy: Challenging the Direction of the Causality Paradigm. *Neurosurgery.* 2014 Jan; 74(1):E150-3. doi: 10.1227/NEU.0000000000000181.
50. **Mattei TA**. Assymetric patterns of CSF flow in the spinal subarachnoid cisterns in patients with syringomyelia: insights from syrinx development and resolution in the setting of cervical degenerative spondylosis. *J Neurosurg Spine.* 2014 May 23:1-3. [Epub ahead of print]
51. **Mattei TA**. How graphene is expected to impact neurotherapeutics in the near future. *Expert Rev Neurother.* 2014 May 30:1-3. [Epub ahead of print]
52. **Mattei TA**, Ramos E, Rehman AA, Shaw A, Patel SR, Mendel E. Sustained long-term complete regression of a giant cell tumor of the spine after treatment with denosumab. *Spine J.* 2014 Feb 15. pii: S1529-9430(14)00215-0. doi: 10.1016/j.spinee.2014.02.019. [Epub ahead of print]
53. **Mattei TA**, Rehman AA. Technological developments and future perspectives on graphene-based metamaterials: a primer for neurosurgeons. *Neurosurgery.* 2014 May; 74(5):499-516.
54. **Mattei TA**. Unveiling complexity: non-linear and fractal analysis in neuroscience and cognitive psychology. *Front Comput Neurosci.* 2014 Feb 21;8:17. doi: 10.3389/fncom.2014.00017. eCollection 2014. No abstract available.
55. **Mattei TA**, Mendel E, Bourekas EC. Post-operative Cement Augmentation after 360-degree Fusion for Highly Unstable Vertebral Fractures in patients with Multiple Myeloma: A Technical Note on Delayed Trans-Instrumentation Vertebroplasty. *World Neurosurg.* 2014 Apr 2. pii: S1878-8750(14)00372-6. doi: 10.1016/j.wneu.

2014.03.044. [Epub ahead of print]

56. **Mattei TA**, Rodriguez AH, Sambhara D, Mendel E. Current state-of-the-art and future perspectives of robotic technology in neurosurgery. *Neurosurg Rev.* 2014 Apr 13. [Epub ahead of print]
57. **Mattei TA**. Letters to the Editor: Degenerative disc disease and osteoporosis. *J Neurosurg Spine.* 2014 Apr;20(4):471-2. doi: 10.3171/2013.11.SPINE13958. Epub 2014 Jan 24.
58. **Mattei TA**. Non-Homeomorphic Topological Transformations and the Challenge of Collision Detection in Virtual Reality Simulation in Neurosurgery. *World Neurosurg.* 2013 Dec 16. pii: S1878-8750(13)01606-9. doi: 10.1016/j.wneu.2013.12.004. [Epub ahead of print]
59. **Mattei TA**, Mendel E, Bourekas EC. Vertebral compression fractures in patients under treatment with denosumab: A Contra-indication for percutaneous vertebroplasty? *Spine J.* 2013 Dec 5. pii: S1529-9430(13)01961-X. doi: 10.1016/j.spinee.2013.11.046. [Epub ahead of print]
60. **Mattei TA**, Mendel E. Redundans Nervi Radix Cauda Equina: Critical Remarks on the Pathophysiology and Clinical Significance of an Intriguing Radiological Sign. *World Neurosurg.* 2013 Oct 22. pii: S1878-8750(13)01379-X. doi: 10.1016/j.wneu.2013.10.048. [Epub ahead of print] No abstract available.
61. **Mattei TA**, 'Ex Nihilo Nihil Fit': Massive Funding promises a Golden Decade of Functional Brain Research. *World Neurosurg.* 2013 Nov 26. pii: S1878-8750(13)01563-5. doi: 10.1016/j.wneu.2013.11.017. [Epub ahead of print]
62. **Mattei TA, Abdounur OJ**. Letter to the Editor: Intraarticular spacers. *J Neurosurg Spine.* 2013 Dec;19(6):785-93. doi: 10.3171/2012.8.SPINE12689b. Epub 2013 Oct 11.
63. **Mattei TA**, Rodriguez AH, Bassuner J. Selective impairment of emotion recognition through music in Parkinson's disease: does it suggest the existence of different networks for music and speech prosody processing? *Front Neurosci.* 2013 Sep 12;7:161. doi: 10.3389/fnins.2013.00161.

64. **Mattei TA.** Pediatric Arachnoid Cysts and Subdural Hygromas in the Early Infancy: Challenging the Direction of the Causality Paradigm. *Neurosurgery*. 2013 Nov 4. [Epub ahead of print]
65. **Mattei TA,** Fassett DR. Letter to the editor: The O-arm revolution in spine surgery. *J Neurosurg Spine*. 2013 Nov;19(5):644-7. doi: 10.3171/2013.5.SPINE13474. Epub 2013 Sep 20.
66. **Mattei TA.** Do not Miss it: Paraspinal Muscles Atrophy in the Concave side of the Curve in Adult Degenerative Scoliosis. *Spine J*. 2013 May 16. doi:pii: S1529-9430(13)00407-5. 10.1016/j.spinee.2013.03.052. [Epub ahead of print]
67. **Mattei TA.** The secret is at the crossways: Non-linear dynamics of neural networks underlying new memories encoding during dreams. *Behav Brain Sci*. 2013 Dec;36(6): 623-4. doi: 10.1017/S0140525X13001386.
68. **Mattei TA,** Sambhara D, Bond BJ, Goulart CR, Lin JJ. Benign Extracerebral Fluid Collection of Infancy as a Risk Factor for Development of 'de novo' Intracranial Arachnoid Cysts *J Neurosurg Pediatr*. 2013 Dec;12(6):555-64. doi: 10.3171/2013.8.PEDS1399. Epub 2013 Oct 4.
69. **Mattei TA,** Sambhara D, Bond BJ, Lee W, Lin J. Clinical outcomes of temporary shunting for infants with cerebral pseudomeningocele. *Childs Nerv Syst*. 2013 Jul 24. [Epub ahead of print]
70. **Mattei TA,** Lin JJ. Response: A New Era of Surgical Training: The Advent of Patient-specific Simulation. *J Neurosurg Pediatr*. 2013 Oct;12(4):414-7
71. **Mattei TA.** Does 'age' really matter? Important considerations regarding clinical outcomes in spine surgery with special attention to traumatic spine injuries in the elderly population. *Spine J*. 2013 Aug;13(8):992. doi: 10.1016/j.spinee.2013.03.004.
72. **Mattei TA,** Rehman AA. Schmorl's nodes: current pathophysiological, diagnostic, and therapeutic paradigms. *Neurosurg Rev*. 2013 Aug 18. [Epub ahead of print]
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### **Book Chapters:**

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3. Alison. R Teles, **Tobias A. Mattei,** *Robotic Technology in Neurosurgery: Past, Present, and Future Perspectives Perioperative Management in Robotic Surgery.* In: *Perioperative Management in Robotic Surgery*, Edition: 1, Chapter: 14, Publisher: Cambridge University Press, Editors: Alan Kaye, Richard Urman, pp.160-174

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***Awards:***

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## **Oral Lectures/Presentations:**

- 1. Tobias Mattei.** Surgical Treatment of Complex Cervical Deformities: Surgical Strategies and Complications Avoidance. 2017 World Federation of Neurosurgical Societies Meeting. Istanbul/Turkey - Oct 2017.
- 2. Tobias Mattei.** Surgical Treatment of Adult Degenerative Scoliosis: Indications and Techniques. 2017 World Federation of Neurosurgical Societies Meeting. Istanbul/Turkey - Oct 2017.
- 3. Tobias Mattei.** Surgical treatment of adult degenerative scoliosis: minimally invasive, hybrid and open technique options? Joint Meeting AANS/Sociedade Brasileira de Cirurgia Espinhal - Sao Paulo, March 2017 - (Plenary Speaker).
- 4. Tobias Mattei.** Strategies for the Surgical Treatment of Thoracolumbar Burst Fractures. Joint Meeting AANS/Sociedade Brasileira de Cirurgia Espinhal - Sao Paulo, March 2017 - (Plenary Speaker).
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- 6. Tobias Mattei.** Kyphotic cervical deformities: therapeutic algorithms, pitfalls and complications avoidance. Joint Meeting AANS/Sociedade Brasileira de Cirurgia Espinhal - Sao Paulo, March 2017 (Plenary Speaker).
- 7. Tobias Mattei.** Minimally Invasive Surgery for Adult Degenerative Deformity. Congressos Brasileiro de Neurocirurgia. Atibaia/SP - Brazil. 2015 (Plenary Speaker).
- 8. Tobias Mattei.** Lumbar Fusion Outcome Score (LUFOS): A new surgical-oriented grading system for pre-operative prediction of long-term clinical outcomes after lumbar spinal fusion for degenerative disk disease. Latin-American Congress Neurosurg/ Congresso Cono Sur Neurocir /Santiago Chil 2013 (Plenary Speaker)
- 9. Tobias Mattei.** En Bloc' Resection of Extensive Iliosacral Sarcomas extending to the

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15. Vanessa Rizelio, **Tobias A. Mattei**, Pedro Kowacs. ‘Endovenous Verapamil in Treatment of Status Migranosus. XXII Brazilian Congress of Neurology - Aug 16-21<sup>th</sup> 2008.
16. Vanessa Rizelio, **Tobias A. Mattei**, Pedro Kowacs. ‘Time is not the limit: Aggressive Management of Ischemic Stroke with basis on Diffusion/Perfusion Mismatch. XXII Brazilian Congress of Neurology - Aug 16-21<sup>th</sup> 2008.
17. Luis Fernando Moura Junior, **Tobias A. Mattei**, Ricardo Ramina – Clinical Evolution in Muscular Strength In patients with Glioma of Supplementary Motor Area operated under Intra-operative Cortical Stimulation - XIV Congress of Brazilian Academy of Neurosurgery - Natal/RN – Brazil - Apr 19 – 23<sup>th</sup> 2011”

18. **Tobias A. Mattei** – ‘Intra-operative electrophysiological monitoring during surgery of gliomas in eloquent areas’ - I Congress of Residents of the State of Parana – May 15 – 16th 2008”
19. **Tobias A. Mattei** – Outside iMRI: A practical and safe alternative for implementing intra-operative MRI at the neurosurgical routine of therapeutics of cerebral gliomas - I Congress of Residents of the State of Parana – May 15 – 16th 2008”

### **Abstracts and Posters:**

1. **Mattei TA.** Rehman A. The Decisive Impact of Intracranial Hemorrhage on the Geopolitical History of the Middle East: Critical Historical Turning Points involving Neurological Events in Key Contemporaneous Figures. 84th American Association of Neurological Surgeons (AANS) Annual Scientific Meeting, At Chicago/IL. April 2016.
2. **Mattei TA.** Rehman A. The Use of a New Cavity Creation Instrument for Low-Pressure Cement Augmentation in Vertebral Compression Fractures. 84th American Association of Neurological Surgeons (AANS) Annual Scientific Meeting, At Chicago/IL. April 2016.
3. **Mattei TA.** Rehman A, Hyperacute Complex Regional Pain Syndrome in the Immediate Post-operative Period of a Non-complicated 1-level Microdiscectomy and Arthroplasty. 84th American Association of Neurological Surgeons (AANS) Annual Scientific Meeting, At Chicago/IL. April 2016.
4. **Mattei TA.** Preventing Positioning-related Brachial Plexus Compression in Posterior Thoracolumbar Instrumentations: The Role of Upper Limbs SSEPs Monitoring 84th American Association of Neurological Surgeons (AANS) Annual Scientific Meeting, At Chicago/IL. April 2016.
5. **Mattei TA** Percutaneous Vertebroplasty for Treatment of Multilevel Acute Edematous Schmorl’s Nodes Causing Refractory Axial Back Pain. Conference Paper · May 2015 Conference: Poster, 2015 Annual Meeting of American Association of Neurological Surgeons (AANS) - May 2015.
6. **Mattei TA.** Goulart CR. Massive Symptomatic Epidural Lipomatosis after Multimodal Therapy with Androgen Receptor Antagonists for Metastatic Castration-Resistant Prostate Cancer. Poster, 2015 Annual Meeting of American Association of Neurological Surgeons (AANS) - May 2015.
7. **Mattei TA.** Goulart CR. Mendel, E. Spinal Osteomyelitis after Unstable Traumatic

Craniocervical Injuries: Proposal of a New Pathophysiological Mechanism of an Underrecognized Complication. Poster, 2015 Annual Meeting of American Association of Neurological Surgeons (AANS) - May 2015.

8. **Mattei TA.** Incidence of Median Nerve Schwannomas Among Patients Submitted to Carpal Tunnel Surgery. · September 2015 Conference: Congress of Neurological Surgeons - 2015 Annual Meeting, At New Orleans. Poster
9. **Mattei TA.** Rehman A. Development of a New Coupled Elevator/Suction Tool (the Mattei's Instrument®) for Dissection of the Paraspinal Muscles in Posterior Spinal Approaches. 84th American Association of Neurological Surgeons (AANS) Annual Scientific Meeting, At Chicago/IL. April 2016.
10. **Mattei TA,** Mendel E. Shaw A. Radiographic Regression of a Giant Cell Tumor of the Mobile Spine with Treatment with a new RANK-ligand Monoclonal Antibody (Denosumab). AANS Annual Scientific Meeting – San Francisco 2014 (poster)
11. **Mattei TA,** Dinh D Vertebral Body Fracture after ACDF employing cages with blades in adjacent levels: a cautionary tale. AANS Annual Scientific Meeting – San Francisco 2014 (poster)
12. **Mattei TA,** Mendel E, Bourekas E. Post-operative Cement Augmentation after 360-degree Fusion for Highly Unstable Vertebral Fractures in patients with Multiple Myeloma: A Technical Note on Extra-pedicular Trans-Instrumentation Vertebroplasty. AANS Annual Scientific Meeting – San Francisco 2014 (poster)
13. **Mattei TA,** Dinh D. Progressive kyphotic deformity in comminuted burst fractures treated non-operatively: the Achilles tendon of the Thoracolumbar Injury Classification and Severity Score (TLICS). AANS Annual Scientific Meeting – San Francisco 2014 (poster)
14. **Mattei TA,** Mendel E. Tracing the origins of organized Neurological Surgery in Central Ohio and the development at The Ohio State University. AANS Annual Scientific Meeting – San Francisco 2014 (poster)
15. **Mattei TA,** Mendel E, Bourekas E. Pathological Vertebral Compression Fractures in Patients with Metastatic Cancer under Treatment with Denosumab (XGeva): A contraindication for Vertebroplasty? AANS Annual Scientific Meeting – San Francisco 2014 (poster)
16. **Mattei TA.** The 'Lumbar Fusion Outcome Score (LUFOS): A new surgical-oriented grading system for pre-operative prediction of long-term clinical outcomes after lumbar spinal fusion for degenerative disk disease. Congress of Neurological Surgeons (CNS)

Annual Meeting - San Francisco 2013 (poster)

17. **Mattei TA**, Dinh D. Pathophysiology of Spinal Subdural Hematomas: the Role of Venous Congestion. Congress of Neurological Surgeons (CNS) Annual Meeting - San Francisco 2013 (poster)
18. **Mattei TA**, Fassett DR. Surgical Management of Cervical Kyphotic Deformity in the setting of Severe Osteoporosis. Congress of Neurological Surgeons (CNS) Annual Meeting - San Francisco 2013 (poster)
19. **Mattei TA**, Beer J, Dinh D. Clinical Outcomes of Lumbar Total Disc Replacement versus Anterior Lumbar Interbody Fusion. Congress of Neurological Surgeons- Chicago 2012 (poster)
20. **Mattei TA**, Lin J. Design of a New Concept of Anti-siphon Device for Pressure-Activated Shunts: The 'Paddle Wheel Valve'. Congress of Neurological Surgeons- Chicago 2012 (accepted – poster)
21. **Mattei TA**, Lin J. Design and Validation of a Synthetic Pediatric Spinal Simulator for Tethered Cord Syndrome. Congress of Neurological Surgeons- Chicago 2012 (accepted – oral presentation/Section Pediatrics)
22. **Mattei TA**, Lin J. Performance Analysis of the Protective Effects of Bicycle-Helmets under Impact and Crushing Testings in Pediatric Skull Models. Congress of Neurological Surgeons- Chicago 2012 (accepted – oral presentation/Section Pediatrics)
23. **Mattei TA**, Milano JB. "Free-hand technique for thoracolumbar instrumentation: a cadaveric model for neurosurgical training. Congress of Neurological Surgeons (CNS) – New Orleans – Oct 24-29<sup>th</sup>, 2009"
24. Aguiar PH, Petitto CE, Valiengo LC, Ziorelli C, Hischer R, Fontes RB, **Mattei TA**. Indications of Surgical Decompression for Treatment of Ischemic Vascular Accident in Territory of Middle Cerebral Artery. Brazilian Congress of Neurosurgery – Vascular Session Posters – Campos do Jordao (Brazil) 2005.
25. **Mattei TA**, Ramina R, Aguiar PH, Tatagiba M. Surgical Approaches to Treatment of Optic Nerve Trauma. Poster Session – X Congress of São Paulo State Neurosurgical Society, Mar 2005, São Paulo – Brazil.
26. **Mattei TA**, Ramina R, Aguiar PH, Tatagiba M. Falx and Parasagittal Meningiomas. Poster Session – X Congress of São Paulo State Neurosurgical Society, Mar 2005, São Paulo – Brazil.

27. **Mattei TA**, Ramina R, Aguiar PH, Tatagiba M. Edema and Malignancy in Meningiomas. Poster Session – X Congress of São Paulo State Neurosurgical Society, Mar 2005, São Paulo – Brazil.
28. **Mattei TA**, Ramina R, Aguiar PH, Tatagiba M. Cerebral Melanoma Metastasis: the role of surgery and adjuvant treatments. Poster Session – X Congress of São Paulo State Neurosurgical Society, Mar 2005, São Paulo – Brazil.
29. Miura FK, **Mattei TA**, Marrie SKN, Aguiar PH. Experimental Gliosarcoma genetic therapy: use of a silicon formulation with ganciclovir. 55<sup>th</sup> German Congress of Neurosurgery – Poster Session, Apr 2004; Köln – Germany.
30. Aguiar PH, **Mattei TA**, Bello TH, Pereira CU, Andrade F, Mandel M, Teixeira J, Panagopoulos F, Rosemberg S, Teixeira MJ. Cell Kinetics in Gliomas. . Poster Session. XLVI Congresso Chileno Neurocirugia, Dez – 2003.
31. **Mattei TA**, Marino R. The sense of physical space: a Theoretical Model of Perception. – Basic Research Poster Session - XXII University Medical Congress – São Paulo University Medical School, Oct – 2003, São Paulo, Brazil.
32. **Mattei TA**, Marino R. Proposal of a Mathematical-Conceptual analysis of Episodic Memory. Basic Research Poster Session - XXII University Medical Congress – São Paulo University Medical School, Oct – 2003, São Paulo, Brazil.

## **Lay Media Appearances:**

### **Becker's Spine Review:**

Big advancements and opportunities for growth in complex spine surgery: Q&A with Dr. Tobias Mattei

<https://www.beckersspine.com/spine/item/43101-big-advancements-and-opportunities-for-growth-in-complex-spine-surgery-q-a-with-dr-tobias-mattei.html>

### **STL Dispatch - Two STL doctors lauded by spinal-care magazine**

[https://www.stltoday.com/news/local/columns/joe-holleman/two-stl-doctors-lauded-by-spinal-care-magazine/article\\_7c0bdda0-5ac8-568c-9899-478132e684e2.html](https://www.stltoday.com/news/local/columns/joe-holleman/two-stl-doctors-lauded-by-spinal-care-magazine/article_7c0bdda0-5ac8-568c-9899-478132e684e2.html)

### Research on Pediatric Traumatic Brain Injuries

Washington Post

<http://www.washingtonpost.com/news/to-your-health/wp/2014/06/03/no-you-cant-crush-a-mans-skull-with-your-bare-hands/>

AANS Neurosurgeon

<http://www.aansneurosurgeon.org/2012/10/03/childrens-bicycle-helmets-proven-effective-in-impact-and-crush-tests/>

Science Daily

<http://www.sciencedaily.com/releases/2012/10/121002101532.htm>

Breaking Health News

<http://www.alegentcreighton.com/body.cfm?id=4794&action=detail&ref=57996>

Athens Daily Review

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<http://www.consumeraffairs.com/news04/2012/10/parents-urged-to-make-sure-young-bicyclists-wear-helmets.html>

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<http://health.usnews.com/health-news/news/articles/2012/10/02/impact-tests-show-bike-helmets-protect-kids-in-crashes>

Brimigan and Women Hospital News.

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<http://cordeledispatch.com/onlineextras/x371807034/Parents-urged-to-make-sure-young-bicyclists-wear-helmets>

The Scarlet Law Group

<http://braininjuryresource.scarlettlawgroup.com/2012/10/22/the-performance-of-bicycle-helmets-in-traumatic-brain-injury/>

Care New England

<http://www.carenewengland.org/healthLibrary/details.cfm?chunkid=NRCN669139&db=nrcn>

Research on the Bi-corporal Pump for Normal Pressure Hydrocephalus

The Journal of Neurosurgery Podcast – Dec 7, 2012

<https://itunes.apple.com/us/podcast/journal-neurosurgery-podcast/id324174993>

Research on the Paddle-Wheel valve for addressing the Anti-siphoning effect

The Journal of Neurosurgery Podcast – Dec 7, 2012

<https://itunes.apple.com/us/podcast/journal-neurosurgery-podcast/id324174993>

**Spoken Languages:**

English, German, Italian, Portuguese and Spanish.