

Marcella Madera, M.D.
Austin Integrative Spine
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Education

M.D., University of Oklahoma College of Medicine, Oklahoma City, OK	2004
B.A., Biochemistry/Molecular Biology, <i>Summa Cum Laude</i> , Washington University, St. Louis, MO	1999

Postdoctoral Training

Spine Fellowship and Faculty Instructorship, Johns Hopkins College of Medicine Department of Neurosurgery, Baltimore, MD	2010-11
Residency, University of Cincinnati College of Medicine Neurosurgery Residency Training Program, Cincinnati, OH	2004-10

Academic and Leadership Appointments

Assistant Professor Neurosurgery, University of Texas Dell Medical School, Austin, TX	2016-present
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Other Relevant Employment and Clinical Activities

Board-certified (2015) Neurosurgeon, Austin Brain and Spine, Austin, TX	2011-present
Board-certified (2015) Neurosurgeon, Austin Integrative Spine, Austin, TX	2018-present
Board-certified (2015) Neurosurgeon, Docere Clinics, Park City, UT	2019-present
Board-certified (2015) Neurosurgeon, NovoClinicCayman, Cayman Islands	2019-present
St. David's Hospital Spine Program Co-director	2017-2019
Co-chair of "Women's Future Spine Leaders" Medtronic Educational Program, Denver, CO	Dec. 2019

Honors and Awards

Graduated medical school with Special Distinction	2004
American Medical Women's Association Glasgow-Rubin Achievement Citation	2004
Alpha Omega Alpha, inducted as a medical school junior	2003
Robert I. Dubin, M.D. Memorial Award, Tulsa County Medical Society	2002
W.A. Showman, M.D. Award, Tulsa County Medical Society	2001
Mark R. Everett Award, Oklahoma City Community Foundation	2001

Dr. Fred S. Clinton Scholar (academic award for 4.00 GPA during both non-clinical years)	2000-2001
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Professional Memberships and Activities with Leadership Positions

2018 AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves Planning Committee Member	2017
2017 AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves Breakout Session Moderator	2017
2017 AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves Planning Committee Member	2016-17
Strategy for Value-Based Health Care Delivery with Harvard Business School Professor Michael Porter. Texas Executive Education, McCombs School of Business, The University of Texas at Austin, Participant	September 2015
Texas Medical Association Leadership College Member	2014-15
2015 CNS Scientific Planning Committee Member	2014
North American Spine Society (NASS)	2012-present
American Association of Neurological Surgeons (AANS) Member	2010-present
Congress of Neurological Surgeons (CNS) Member	2010-present
AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves (DSPN)	2010-present
AO Spine	2010-present

Educational Activities

Educational Administration and Leadership

Medical School Surgery and Perioperative Care Departmental Council Neurosurgery Representative	2016-18
Medical School Associate Chair of Education Search Committee Member	2015-16
Medical School Student Interviewer for 2016 Inaugural Incoming Class	2015

Development of Curricula and Educational Materials

Dell Medical School Neuroscience: Disorders of the Spine Clinical Conference Director	2015-17
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Advising and Mentoring

Dell Medical School Surgery Interest Group Sponsor	2017-2019
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Mentored Students

KL, female surgeon mentor University of Texas at Austin pre-med student, Austin Integrative Spine intern	2018-present
KB, female surgeon mentor University of Texas at Austin pre-med student, UTSA medical student	2016-present
SK, female surgeon mentor	2019-present

University of Texas at Austin pre-med student NM, female surgeon mentor University of Texas at Austin pre-med student	2019-present
NR, female surgeon mentor Dell Medical School student MS-3	2018-present
MM, female surgeon mentor University of Texas at Austin pre-med student, UTSA medical student	2018-2019
CM, female surgeon mentor University of Texas at Austin pre-med student	2018
HS, female surgeon mentor University of Texas Medical Branch third-year MD/PhD student	2017-2018
NG, female surgeon mentor University of Colorado at Boulder pre-med student	2016-2017
VA, female surgeon mentor St. Edward's University pre-med student	2015-2016
LM, female surgeon mentor Texas State University pre-med student, UTMB med student	2015-2019

Grants

Completed

1. Mayfield Educational Research Foundation, Medtronic Inc. Neuromodulation 2007-2009
Marcella Madera, MD, Co-PI, George Mandybur, MD, PI,
Henry A. Nasrallah, MD, Co-PI, D. Michael Beal, MD, Co-I
Epidural Cortical Stimulation for Auditory Hallucinations Refractory to Antipsychotic
Therapy: A Placebo-Controlled, Randomized Crossover Study in Patients with
Schizophrenia
This study aimed to prove that transcranial magnetic stimulation-screened patients
would improve with auditory hallucination symptoms after epidural cortical stimulation
surgery.
Mayfield Educational Research Foundation, \$50,000 granted.
Medtronic, Inc. Neuromodulation Research, devices granted.
Role: Residency research project

Other Active Research Activities and Clinical and Quality Improvement Projects

1. Dell Medical School Pain After Lumbar Fusion Clinical Care Pathway Physician 2017-2019
Champion; this program aims to reduce narcotic use after lumbar fusion by
incorporating ERAS and integrative modalities across the lumbar fusion care episode.
2. Title: A Phase 2b, randomized, double-blind, placebo-controlled study to 2017-2018
evaluate the safety and efficacy of staphylococcus aureus 4-antigen vaccine
(sa4ag) in adults undergoing elective open posterior spinal fusion procedures
with multilevel instrumentation

Description: A Phase 2b study to evaluate safety and efficacy of a *S. aureus* vaccine for the prevention of surgical-site infections (SSIs) following open posterior spinal fusion procedures with multilevel instrumentation.

Sponsor: Pfizer

Role: Co-Investigator

3. Effects of Physical Therapy on Patients Undergoing Anterior and/or Posterior 1-2 Level Lumbar Fusions for Degenerative Lumbar Instability. Principal Investigator: Eeric Truumees 2016-2018

Role: Co-Investigator

4. United States (US) Investigational New Drug (IND) Number: BB-IND #14705 2015-2017

Principal Investigator (PI): Dr. Eeric Truumees (Site PI)

Title: A Phase 2b, Randomized, Double-Blind, Placebo-Controlled Study to Evaluate the Safety and Efficacy of Staphylococcus aureus 4-Antigen Vaccine (SA4Ag) in Adults Undergoing Elective Posterior Instrumented Lumbar Spinal Fusion Procedures

Description: To assess the efficacy of SA4Ag in the prevention of postoperative *S. aureus* BSI and/or deep incisional or organ/space surgical-site infection (SSI) occurring within 90 days of elective posterior instrumented lumbar spinal fusion procedures, in adults aged 18 to <86 years.

Sponsor: Pfizer

Role: Co-Investigator

5. Seton Hospital Network Spine Committee Co-chairperson; this committee works to develop and maintain spine care quality measures and metrics for the Seton Hospital Network 2012-2016

6. Brackenridge Hospital Spine Committee Co-chairperson; this committee works to develop and maintain spine care quality measures and metrics for Brackenridge Hospital 2012-2016

Technology Development

Patents

Regenerative Medicine Applications in Neurosurgery; provisional filed 3/2019

Devices/Software Applications

ient IO, Advisory Board Member; acquired by Athena 2013-2016
 althy Life Enterprises, Medical Director 2017-present

Publications

Peer-reviewed publications

1. **Madera M**, Brady J, Deily S, McGinty T, Moroz L, Singh D, Tipton G, Truumees E. The Role of Physical Therapy and Rehabilitation after Lumbar Fusion Surgery for Degenerative Disease: A Systematic Review. *J Neurosurg Spine*. 2017 Jun;26(6):694-704
2. Laufer I, Sciubba DM, **Madera M**, Bydon A, Witham TJ, Gokaslan ZL, Wolinsky JP. Surgical management of metastatic spinal tumors. *Cancer Control*. 2012 Apr;19(2):122-8.

3. **Madera M**, Crawford F, Mangano FT. Management of the cervical spine in a patient with Larsen Syndrome. *J Neurosurg Pediatrics*. 2008 Apr;1(4):320-4.
4. Parikh S, **Koch M***, Narayan R. Traumatic Brain Injury. *Int Anesthesiol Clin*. 2007 Summer; 45(3):119-35.
5. Ma R, Rundle D, Jacks J, **Koch M***, Downs T, Tsiokas L. Inhibitor of myogenic family, a novel suppressor of store-operated currents through an interaction with TRPC1. *J Biol Chem*. 2003 Dec 26;278(52):52763-72.

Books & Chapters

1. Laufer I, **Madera M**, Sciubba D, Gokaslan Z. Treatment of Spinal Metastatic Tumors. In: *Principles of Neurosurgery, Third Edition*, Ellenbogen, RG and Abdulrauf, S, eds. Elsevier, USA 2010: 437-444.
2. **Madera MA** and Tobler WD. Miniframe Stereotactic Apparatus. In: *Textbook of Stereotactic and Functional Neurosurgery, 2nd Edition*, Lozano AM et al, eds. Springer-Verlag, Germany. 2009: 521-531.
3. Narayan R, Timmons S, **Koch M***. Traumatic Brain Injury. In: *The Merck Manual, 18th Edition*, Beers MH ed. Merck Research Laboratories, Whitehouse Station, NJ. 2006: 2572-2579.3

Non-print / Online materials

1. Interviewed for NASS "Paths to Leadership" video. 2015 online.
https://www.youtube.com/watch?v=SfGXoU_ESwA
2. **Koch M***, Narayan RK, Timmons S. Traumatic Brain Injury. In: *The Merck Manual Professional Edition*, Porter RS ed. Merck Research Laboratories, Whitehouse Station, NJ. 2008 online.
<http://www.merck.com/mmpe/sec21/ch310/ch310a.html>

Editorial Responsibilities

North American Spine Society Annual Meeting Abstract Reviewer	2015, 2017
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Invited Presentations

International

Madera M , Laufer I, Bydon A, Sciubba D, Witham T, Gokaslan Z, Wolinsky JP. "Complications and Oncologic Outcomes After Multilevel En Bloc Spondylectomy in 11 Patients." AOSpine North America Fellows Forum, Banff Springs, Canada, March 31- (Poster, Top 10 Poster Winner, Oral Presentation).	April 2011
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National

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| 1. Madera M . "Radical Regeneration: Exosomes and Integrative Neurosurgery," Kimera Labs Educational Conference, Park City, UT, Oral Presentation. | November 2019 |
| 2. Adelson H, Killen A, Madera M . "Upgrade U: Cell Medicine with Docere Clinics," Upgrade 2019 Conference, Beverly Hills, CA, Oral Presentation. | April 2019 |
| 3. Singh D, Truumees E, McGinty T, Deily S, Brady J, Madera M . "Should Physical Therapy be Incorporated in Patient Care Post 1-2 Level Lumbar Fusions for Degenerative Lumbar Instability? -A Comparative Outcome Analysis." North American Spine Society, Orlando, FL, (Oral Podium Abstract Presentation 2017); AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves, Orlando, FL, (Oral Podium Abstract Presentation 2018) | October 2017,
March 2018 |

- 4. **Madera M**, Brady J, Deily S, McGinty T, Moroz L, Singh D, Tipton G, Truumees E. "The Role of Physical Therapy and Rehabilitation after Lumbar Fusion Surgery for Degenerative Disease: A Systematic Review." Academy of Orthopaedic Surgeons, Orlando, FL, Oral Podium Presentation, presented by Truumees, E. March 2016
- 5. **Madera M, Tobler W**. "Outpatient Fusion at L5-S1 with the AxiaLIF Procedure." Society for Minimally Invasive Spine Surgery Annual Meeting, San Diego, CA, Poster. November 2007

Regional

- 1. **Madera M**. "Thoracic Spine Pathology and Surgical Management." Brackenridge Hospital Nursing Education Conference, Austin, TX, Oral Presentation. September 2014
- 2. **Madera M**. "Update on Bone Extenders and Biologics for Lumbar Fusion." Seton Brain and Spine Institute "Current Concepts in Spine Management: Best Practices and New Technologies" conference, Austin, TX, Oral Presentation. November 2013
- 3. **Madera M**. "Spine Oncology: A Surgical Perspective." Seton Brain and Spine Institute "Neuro-oncology: Redefining What is Possible" conference, Austin, TX, Oral presentation. June 2012
- 4. **Madera M**, Steinberg T. "Divergent trafficking of cx43 and cx46 does not depend on the carboxyl terminus of the proteins in COS-7 cells" and "COS-7 cells provide a useful model for studying differential trafficking of connexins." WU HHMI Annual Summer Research Conferences. Posters. 1997-98

Community Service

Ballet Austin, Board Member	2012-present
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*"Koch" is a former last name.