

## Mukund I. Gundanna, M.D.

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College Station, TX 77845

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Website: [www.brazosspine.com](http://www.brazosspine.com)

### **Appointments**

**Brazos Spine, P.A.**

*Attending spinal and orthopaedic surgeon*

**College Station, TX**

**Texas A&M Health Science Center / College of Medicine**

**College Station, TX**

### **Hospital Affiliations**

The Physicians Centre, Bryan, Texas

Active Staff

St. Joseph College Station Hospital, College Station, Texas

Active Staff

St. Joseph Regional Health Center, Bryan, Texas

Active Staff

### **License and Board Certification**

Texas Medical License: L8709

American Board of Orthopaedic Surgery

Effective: 7/28/2006

Expiration: 12/31/2026

### **Professional Organizations**

Fellow, North American Spine Society

Fellow, American Academy of Orthopaedic Surgeons

Diplomate, American Board of Orthopaedic Surgery

Member, Aircraft Owners and Pilots Association

### **Technique Certifications**

#### **Artificial Disc Replacement:**

DePuy Charite (lumbar), Medtronic Prestige (cervical), Centinel Prodisc (cervical and lumbar), LDR (cervical),

Nuvasive (cervical), Orthofix (cervical)

#### **Dynamic Stabilization:**

Zimmer Dynesys, Globus Transition

#### **Minimally Invasive Arthrodesis:**

MIS TLIF, MIS ALIF, XLIF/LLIF, AxiaLIF, SI Fusion, DTRAX, OLIF, MIS Facet screw, ISP

#### **Other Techniques:**

Kyphoplasty, Medtronic X-Stop, Arthrocare SpineWand

## **Education**

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<b>University of California, Los Angeles</b> Spinal Surgery Fellowship	<b>Los Angeles, CA</b> completed July 2004
<b>NYU/Hospital for Joint Diseases</b> Orthopaedic Surgery	<b>New York, NY</b> completed June 2003
<b>Harborview Medical Center</b> Orthopaedic trauma externship	<b>Seattle, WA</b> completed May 2002
<b>Bellevue Hospital Center</b> Surgical Internship	<b>New York, NY</b> completed June 1999
<b>UMDNJ-Robert Wood Johnson Medical School</b> Doctor of Medicine	<b>Piscataway, NJ</b> completed June 1998
<b>Duke University</b> BSE Biomedical Engineering BSE Electrical Engineering	<b>Durham, NC</b> completed Dec 1993 completed Dec 1993
<b>Christian Brothers Academy</b> Secondary School Degree	<b>Lincroft, NJ</b> completed May 1990

## **Training and Experience**

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<b>University of California, Los Angeles</b> <i>Fellow in Surgery of the Spine</i> Subspecialty surgical training with orthopaedic spine surgeons and neurosurgeons.	<b>Los Angeles, CA</b> Aug 2003-July 2004
<b>NYU-Hospital for Joint Diseases</b> <i>Resident in Orthopaedic Surgery</i> Specialty surgical training in orthopaedic surgery.	<b>New York, NY</b> June 1998-June 2003
<b>Harborview Medical Center</b> <i>Orthopaedic Trauma Externship</i> Specialty training in orthopaedic trauma surgery	<b>Seattle, WA</b> Jan-May 2002
<b>NYU-Hospital for Joint Diseases</b> <i>Delegate, Committee of Interns and Residents</i> Advocate for residents' union. Was involved in contract negotiations between housestaff and Health and Hospitals Corporation of New York.	<b>New York, NY</b> June 2000-June 2004
<b>UMDNJ-Robert Wood Johnson Medical School</b> <i>Curriculum Committee Member, Student Representative</i> Participated in planning and decision-making regarding curricular and academic affairs at Robert Wood Johnson Medical School.	<b>Piscataway, NJ</b> Oct 1994-June 1998
<b>UMDNJ-Robert Wood Johnson Medical School</b> <i>Homeless and Indigent Population Health Outreach Project (HIP-HOP)</i> Provided health care in clinic and health fair settings for the underserved in the downtown New Brunswick area. Taught clinical skills to junior medical students.	<b>New Brunswick, NJ</b> 1995-1999
<b>The Princeton Review</b> <i>MCAT Physics and Chemistry Instructor/Tutor/Trainer</i>	<b>Princeton, NJ</b> Feb 1996-May 1999
<b>Los Alamos National Laboratory</b> <i>Research Internship, Chemical Science and Technology Division</i> Designed and improved on techniques for welding of bone fractures through use of Nd-YAG lasers and various hydroxyapatite and gelatin "solders". Included evaluation of welds using scanning electron microscopy.	<b>Los Alamos, NM</b> Jan-May 1994

**New Jersey Institute of Technology**  
*Physics and Laboratory Instructor, Upward Bound*

**Newark, NJ**  
1992-1994

**New Jersey Institute of Technology**  
*Laboratory Assistant, Department of Physics*  
Evaluated oxide deposition techniques on silicon wafers using scanning electron microscopy and computer simulation.

**Newark, NJ**  
1992-1994

**Duke University**  
*Department of Biomedical Engineering*  
Computer modeled the left ventricular septal action potential at a specified patch using the Luo-Rudy model of membrane characteristics and ionic currents.

**Durham, NC**  
Jan-Nov 1993

**Durham Education Volunteers**  
*Durham City Public School District*  
Assistant teacher of elementary school classes (second to fourth grade).

**Durham, NC**  
1991-1993

**Matawan Volunteer First Aid & Rescue Squad**  
*Emergency Medical Technician*  
Provided emergency medical services and transport in the Matawan area.

**Matawan, NJ**  
1989-1992

## **Honors/Awards/Firsts**

First surgeon to implant the SeaSpine facet screw (2016)  
First surgeon to implant the SeaSpine ISP (2016)  
First surgeon to implant the Trans1 AxiaLIF 2L+ minimally invasive trans-sacral arthrodesis system (2010)  
First surgeon to implant Trans1 Vectre percutaneous facet screws (2009)  
First surgeon to perform the Trans1 AxiaLIF in India (2009)  
First surgeon to implant the Theken (Integra) Vu aPOD ALIF device (2008)  
Surgeon Advisory Board, SeaSpine  
Surgeon Advisory Board, Spinal Elements

Developed and currently direct the SpineSmith International Spine Fellowship (2009-present)

Distinguished Clinical Preceptor, Brazos Family Medicine Residency Program (2008)  
Alpha Omega Alpha (Fall 1997)  
Champion Scholar (UMDNJ) (1997-1998)  
UMDNJ-RWJMS Nominee for AAMC seat on Liaison Committee for Medical Education (LCME)  
UMDNJ Alumni Association Scholarship (1996-1997)  
Department of Energy Scholar (1994)  
Golden Key National Honor Society (1992)  
Dean's List (Fall 1990-Fall 1993)  
National Honor Society (1993)

## **Activities/Interests**

Private Pilot/VFR-Airplane (1991-present)  
Instrument Pilot/IFR-Airplane (1994-present)  
Commercial Pilot Training (2000)

## **Patents, Technique Inventions, and Trademarks**

9,161,841 Anterior Lumbar Plate "Challenging Access Plate". Published Oct, 2015

20090299479 Suture guided implant. Published December 3, 2009.

8,388,659 Spondylolisthesis Screw and Instrument for Implantation. Published March, 2013

77/191,086. "Spine. That's all we do." Registered mark of Brazos Spine. Published March 19, 2008.

78683043. "Brazos Spine" Registered mark of Center for Orthopaedic Specialties. Published June 6, 2006.

Catheter Placement Technique: Minimally Invasive Posterior Lumbar Surgery. On-Q. I-Flow. 2008.

## **Publications and Presentations**

Mourant J, Lacey J, Gundanna MI, Johnson T, Boyer J, Bigio I. Improvements in Laser "Welding" of Chicken Bone Tibias *in vitro*. Proceedings of SPIE: Lasers in Surgery. 2395:478-485, May 1995.

Gundanna MI, Dhupar S, Urs W. Heterotopic Ossification After Total Knee Arthroplasty: Incidence and Consequences. Eastern Orthopaedic Association Meeting. Fall 1999.

Gundanna MI, Eskenazi M, Bendo J, Spivak J, Moskovich R. Somatosensory Evoked Potential Monitoring of Lumbar Pedicle Screw Placement. Paper presentation at NASS 2001.

Madan S, Gundanna MI, Harley JM, Boeree NR, Sampson M. Does Provocative Discography Screening of Discogenic Back Pain Improve Surgical Outcome? Journal of Spinal Disorders and Techniques. 15:245-51, June 2002.

Gundanna MI, Eskenazi M, Bendo J, Spivak J, Moskovich R. Somatosensory Evoked Potential Monitoring of Lumbar Pedicle Screw Placement. The Spine Journal. 3(5):370-6, Sep-Oct 2003.

Gundanna MI, Wang J, Wieser E. Luque Rod and Rectangle with Wire Fixation. Surgical Techniques of Spinal Instrumentation. Kim et al, ed. Thieme. NY, NY, 2005.

Wieser E., Gundanna MI, Wang J. VERTE-SPAN Vertebral Body Replacement Device. Surgical Techniques of Spinal Instrumentation. Kim et al, ed. Thieme. NY, NY, 2005.

Gundanna MI, Wang J. Neurologic Injury in the Lumbar Spine. Complications of Spine Surgery. Jenis et al, ed. Lippincott, Philadelphia, 2005.

Gundanna MI. Occipital Fixation Techniques - Keel Plate versus Screws through Connectors versus Wire versus Bolt. The Cervical Spine. Benzel ed. Lippincott. NY, NY, 2012.

Gundanna MI, Miller LE, Block JE. Perioperative Complications With Axial Presacral Lumbar Interbody Fusion: A Five-Year Postmarket Surveillance Experience. SAS Journal. 5(3):90-94, Sep 2011.

Gundanna MI, Moldavsky M. *In vitro* Biomechanical Study to Determine the Range of Motion of a Dynamic Stabilization System with Straight In and Converging Pedicle Screw Insertion Techniques, ISASS 2013, Vancouver.

Gundanna MI, Kathare AK. Traumatic Dislodgement of a Synthes ProDisc-C cervical artificial disc replacement. (submitted to The Journal of Spinal Disorders and Techniques)

Gundanna MI, Moldavsky M. *In vitro* Biomechanical Study to Determine the Range of Motion of a Dynamic Stabilization System with Straight In and Converging Pedicle Screw Insertion Techniques. ISASS Vancouver, 2013.

Smith AG, Capobianco R, Cher D, Rudolf L, Sachs D, Gundanna M, Kleiner J, Mody MG, Shamie AN. Open versus minimally invasive sacroiliac joint fusion: a multi-center comparison of perioperative measures and clinical outcomes. *Ann Surg Innov Res*. 2013 Oct 30;7(1):14.

Sachs D, Capobianco R, Cher D, Holt T, Gundanna M, Graven T, Shamie AN, Cummings J Jr. *Med Devices (Auckl)*. 2014 Aug 28;7:299-304. One-year outcomes after minimally invasive sacroiliac joint fusion with a series of triangular implants: a multicenter, patient-level analysis. *Med Devices (Auckl)*. 2014 Aug 28;7:299-304.

Regina F MacBarb, Ph.D., Derek P Lindsey, M.S., Shane A Woods, M.S., Peggy A Lalor, Ph.D., Mukund I Gundanna, M.D., Scott A Yerby, Ph.D. Fortifying the Bone-Implant Interface: An In Vivo Evaluation of 3D-Printed and TPS- Coated Triangular Implants. Submitted to JBJS-A, 2016

Gundanna MI, Moldavsky M. *In vitro* Biomechanical Study to Determine the Range of Motion of a Dynamic Stabilization System with Straight In and Converging Pedicle Screw Insertion Techniques. Submitted to The Spine Journal, 2016.

MacBarb RF, Lindsey DP, Woods SA, Lalor PA, Gundanna MI, Yerby SA. Fortifying the Bone-Implant Interface Part 2: An In Vivo Evaluation of 3D-Printed and TPS-Coated Triangular Implants. *Int J Spine Surg*. 2017

Lindsey DP, Parrish R, Gundanna M, Leasure J, Yerby SA, Kondrashov D. Biomechanics of unilateral and bilateral sacroiliac joint stabilization: laboratory investigation. *J Neurosurg Spine*. 2018 Jan 5:1-7

Siemionow KB, Glowka P, Blok RJ, Gillespy MC, Gundanna MI, Smith WD, Hyder Z, McCormack BM. Perioperative Complications in Patients Treated with Posterior Cervical Fusion and Bilateral Facet Cages. *J Craniovertebr Junction Spine*. 2017 Oct-Dec;8(4):342-349.