

# STEVEN E. GAEDE, MD, FAANS

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**Steven E. Gaede, MD, PLC**  
1423 Terrace Dr. #4646  
Tulsa, Oklahoma 74159

## **PROFILE SUMMARY**

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I possess broadly based, patient centered, clinical neurosurgical skills, enhanced by experience with clinical research, medical entrepreneurship, hospital creation, hospital administration and governmental affairs. My clinical emphasis has focused upon both functional neurosurgery and complex spine surgery, including adult deformity; spinal MIS, when appropriate; stereotactic radiosurgery; and cranial neurosurgery. My neurosurgical skills have been complemented by medical staff leadership and clinical research, including serving as a principal investigator in four FDA device trials. My administrative experience has included leading the creation of a new hospital and long-term managerial and financial leadership of the hospital, including the introduction of novel, hospital wide, cost containment strategies, while maintaining highest levels of patient care quality and wide physician acceptance. I have also had valuable experience with government-medicine interactions.

## **PROFESSIONAL EDUCATION**

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<b>Doctor of Medicine</b> <i>University of Oklahoma, College of Medicine</i>	<b>1975 – 1979</b>
<b>Bachelor of Arts,</b> <i>University of Oklahoma: Psychology</i>	<b>1971 – 1975</b>

## **POSTGRADUATE PROFESSIONAL TRAINING**

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<b>Neurological Surgery</b> <i>University of Missouri-Columbia</i>	<b>1981 – 1986</b>
<b>Neurology and General Surgery</b> <i>University of Oklahoma Health Science Center</i>	<b>1980 – 1981</b>
<b>Internal Medicine</b> <i>University of Oklahoma Health Science Center</i>	<b>1979 – 1980</b>

**BOARD CERTIFICATION and STATE LICENSURE**

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**Board Certification**

*American Board of Neurological Surgery* **1991**

**State Licensure**

*Oklahoma* **1980 - present**

*Missouri* **1981 - present**

*Texas* **1986 - present**

**MEDICAL PROFESSIONAL EMPLOYMENT**

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**Tulsa Bone and Joint Associates, Tulsa, Oklahoma:** **2021-2021**

*Spinal surgery focus; part-time.*

**Attending:** Tulsa Spine and Specialty Hospital **2002 - present**

Hillcrest Medical Center **1995 - present**

**Oklahoma Spine and Brain Institute, Tulsa, Oklahoma:** **1995 - 2020**

*Partner, seven-physician, general neurosurgery group;  
performed first DBS for movement disorder in the region;  
led the creation of a physician-owned hospital (TSSH).*

**Attending:** Tulsa Spine and Specialty Hospital **2002 - present**

*Chief of Medical Staff* 2002 - 2003

*Governing Board President* 2002 - 2018

Hillcrest Medical Center **1995 - present**

**Tyler Neurosurgical Associates, Tyler, Texas:** **1986 - 1995**

*Partner, five-physician, general neurosurgery practice;  
performed the first frame-based, stereotactic, cranial  
neurosurgery in the region.*

**Attending:** East Texas Medical Center Hospital

*Director, Pain Unit* 1994 -1995

*Med Exec Committee* 1992 -1995

*Chairman, Neurology Sect.* 1988 - 1991

Mother Frances Hospital

**PROFESSIONAL SOCIETY MEMBERSHIPS**

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American Association of Neurological Surgeons

Oklahoma State Medical Association

Tulsa County Medical Society

*Member, Board of Censors, 2003 – 2005*

## RESEARCH EXPERIENCE

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**Principal Investigator:** FDA Multi-center trial. The Clinical and Radiographic Outcomes of Anterior Cervical Inter-body Fusion Using a Novel Stand Alone, Interbody Fusion Device. Sponsored by LDR Spine. 2010-2011. IDE# 1117417

**Principal Investigator:** FDA Multi-center trial: A Multi-Center, Prospective, Randomized, Controlled Clinical Trial Comparing the Safety and Effectiveness of the Mobi-C Prosthesis to Conventional Anterior Cervical Discectomy and Fusion in Treatment of Symptomatic Degenerative Disc Disease (DDD) in the Cervical Spine. Sponsored by LDR Spine. 2007–2015. IDE# G050212 NCT00389597

**Principal Investigator:** FDA Multi-center trial: Amended to include Bilateral VIM DBS: Clinical Investigation of the Deep Brain Stimulation for Treatment of Tremor Using the Model 3382 DBS™ Lead and Itrel® II System. Sponsored by Medtronic. 1997. IDE# G920245.

**Principal Investigator:** FDA Multi-center trial: Clinical Investigation of the Deep Brain Stimulation for Treatment of Tremor Using the Model 3382 DBS™ Lead and Itrel® II System. Sponsored by Medtronic. 1996. IDE# G920245

**Other:** Gaede SE, Boxell CM, Watts CC: Osmotic Blood-Brain Barrier Disruption for Brain Tumor Chemotherapy. Unpublished. 1984-5.

Gaede SE: Vitamin D levels in a community-based spine surgery practice, 2015-2019. Unpublished.

## INVITED PRESENTATIONS

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**Speaker:** Oklahoma State Medical Association CME meeting. Functional Neurosurgery and Pain Management. *Oklahoma City, Oklahoma.* 2006.

**Speaker:** AANS Practical Clinic – Contemporary Management of Movement Disorders: Anatomical Targeting Techniques for DBS. *San Francisco, California.* April 2000.

**Speaker:** Neuromuscular Seminar: Surgery of Movement Disorders. St. John Medical Center, *Tulsa, Oklahoma.* 1998

**Visiting Professor:** Deep Brain Stimulation for Tremor. University of Missouri-Columbia, *Columbia, Missouri.* 1997.

**Grand Rounds Presenter:** Deep Brain Stimulation. St. Joseph Hospital, *Albuquerque, New Mexico.* 1997.

**Tutorials:** On-site, Medtronic-sponsored, individual neurosurgeon tutorials: Deep

**MEDICAL ADMINISTRATIVE and ENTREPRENEURIAL EXPERIENCE**

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**Tulsa Spine and Specialty Hospital (TSSH) and related entities:**

<i>Chief of Staff</i>	TSSH Medical Staff	2002 - 2003
<i>President</i>	TSSH Governing Board	2002 - 2018
<i>President</i>	TSSH Building Corp (Shadow, LLC)	2001 - present
<i>President</i>	Olympia Land Development, LLC	2001 - 2018
<i>President</i>	Olympia Medical Office Building	2017 - present

**TSSH Synopsis:**

- *TSSH is a 38 bed, 11 OR, physician owned and physician managed hospital, offering Spinal, Gynecologic, Robotic, Orthopedic, General, ENT, Ophthalmologic, Podiatric and Pain surgeries, GI procedures and Interventional Radiology procedures.*
- *TSSH has more than 60 individual physician owners*
- *TSSH's creation was driven by physician desire to improve hospital care quality.*
- *TSSH metrics have demonstrated outstanding hospital quality, including frequent HCAHPS, JCAHO, Care Chex and HealthGrades quality awards.*
- *TSSH has consistently scored the region's highest HCAHPS scores since HCAHPS inception (in 2008) to the present.*
- *In 2014, TSSH entered partnership with Ardent Health, expanding its scope and influence.*

**Medical and Hospital Leadership Synopsis:**

- *Directed TSSH as the hands-on president of the various physician shareholder boards from inception, through design and construction, hospital opening, JACHO accreditation and subsequent growth (2001 to 2018).*
- *Supervised and led the TSSH administrative and financial team, supervised hiring and firing, from inception to 2018; cash flow positive 90 days after opening.*
- *Managed and co-created financial innovations, including winning surgeon support for a radical restructuring and reduction of spine implant costs, while maintaining patient care quality.*
- *Negotiated the 2006 merger-acquisition of a competing, physician ASC and successfully integrated the former ASC members into TSSH.*
- *Initiated and led the post-merger physical expansion of TSSH, including design and construction supervision.*
- *Continuously recruited new physicians, resulting in more than a five-fold increase from inception to present.*
- *Responded to regulatory threats by driving a successful 2014 merger with Ardent Health Systems and managed successful, post-merger management transition.*
- *Led physicians through successful, hospital wide EMR adoption.*

## **GOVERNMENTAL AFFAIRS EXPERIENCE**

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**Federal Lobbying:** In-person lobbying, US Congress and Senate: Presentations to Congresspersons, Senators and staffers on behalf of Tulsa Spine and Specialty Hospital, 2008 and 2009.

**State Delegate:** State of Oklahoma, Trauma Advisory Board, 2003.

**Professional Society Liaison:** represented AANS at the CPT Committee and RUC Committee, regarding Deep Brain Stimulation and Vagal Nerve Stimulation, 1999.

## **BIBLIOGRAPHY**

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### **Peer Reviewed, Print Journals**

Jackson RJ, Davis RJ, Hoffman GA, Bae H, Hisey MS, Kim KD, **Gaede SE**, Nunley PD: Subsequent surgery rates after cervical total disc replacement using a Mobi-C Cervical Disc Prosthesis versus anterior cervical discectomy and fusion: a prospective randomized clinical trial with 5-year follow-up. Journal of Neurosurgery: Spine; January 2016. DOI: 10.3171/2015.8.SPINE15219

Bae HW, Kim KD, Nunley, PD, Jackson RJ, Hisey MS, Davis RJ, Hoffman GA, **Gaede SE**, Danielson GO, Peterson DL, Stokes JM Araghi A: Comparison of Clinical Outcomes of 1- and 2-Level Total Disc Replacement, Four-Year Results From a Prospective, Randomized, Controlled, Multicenter IDE Clinical Trial. Spine; 40(11): 759-766, 2015.

Davis RJ, Nunley PD, Kim KD, Hisey MS, Jackson RJ, Bae HW, Hoffman GA, **Gaede SE**, Danielson GO, Gordon C, Stone MB: Two-level Total Disc Replacement with Mobi-C Cervical Artificial Disc versus Anterior Discectomy and Fusion: A Prospective, Randomized, Controlled Multicenter Clinical Trial with 4-year Follow-up Results. Journal of Neurosurgery: Spine; Jan; 22(1): 15-25, 2015. Published online November 7, 2014; DOI: 10.3171/2014.7.SPINE13953.

Hisey MS, Bae HW, Davis R, **Gaede S**, Hoffman G, Kim K, Nunley PD, Peterson D, Rashbaum RF, Stokes J, Ohnmeiss DD: Prospective, Randomized Comparison of Cervical Total Disc Replacement versus Anterior Cervical Fusion: Results at 48 Months Follow-up. Journal of Spinal Disorders and Techniques; 2014 Oct 10. [Epub October 10, 2014] DOI: 10.1097/BSD.000000000000185.

Davis RJ, Nunley PD, Kim KD, Hisey MS, Bae HW, Hoffman GA, **Gaede SE**: Two- Level Total Disc Replacement with Mobi-C Over 3-Years. Coluna/Columna. 13(2): 97- 103, 2014.

Davis RJ, Kim KD, Hisey MS, Hoffman GA, Bae HW, **Gaede SE**, Rashbaum RF, Nunley PD, Peterson DL, Stokes JK: Cervical Total Disc Replacement with the Mobi-C Cervical

Artificial Disc Compared with Anterior Discectomy and Fusion for Treatment of 2-Level Symptomatic Degenerative Disc Disease: A Prospective, Randomized, Controlled Multicenter Clinical Trial: Clinical Article. *Journal of Neurosurgery: Spine*; 19(5): 532-45, Nov 2013; DOI: 10.3171/2013.6.SPINE12527. [Epub, 2013 Sep 6].

Holloway KL, **Gaede SE**, Starr PA, Rosenow JM, Ramakrishnan V, Henderson JM: Frameless Stereotaxy using Bone Fiducial Markers for Deep Brain Stimulation. *Journal of Neurosurgery*; 2005 Sep; 103(3): 404-13.

Henderson JM, Holloway KL, **Gaede SE**, Rosenow JM: The Application Accuracy of a Skull-mounted Trajectory Guide System for Image-guided Functional Neurosurgery, Computer Aided Surgery; 2004; 9(4): 155-60.

Malone DG, Baldwin NG, Tomecek FJ, Boxell CM, **Gaede SE**, Covington CG, Kugler KK: Complications of Cervical Spine Manipulation Therapy: 5-year Retrospective Study in a Single-group Practice. *Neurosurgical Focus*; 2002 Dec 15; 13(6): ecp1

Levy WJ, Gardner D, Moseley J, Dix J, **Gaede SE**: Unusual Problems for the Physician in Managing a Hospital Patient Who received Malicious Insulin Overdose. *Neurosurgery*; 1985 Dec; 17(6): 992-6.

**Gaede SE**, Parsons OA: Aphasia After Left Hemisphere Injury (letter to the editor). *Neurosurgery*; 1984 Sep; 15(3): 456-7.

**Gaede SE**, Parsons OA, Bertera JH: Hemispheric Differences in Music Perception: Aptitude versus Experience. *Neuropsychologia*; 1978; 16(3): 369-73.

### **Web-Based Journals**

Hisey MS, Bae HW, Davis R, **Gaede S**, Hoffman G, Kim K, Nunley PD, Peterson D, Rashbaum R, Stokes J: Multi-center, Prospective, Randomized, Controlled Investigational Device Exemption Trial Comparing Mobi-C Cervical Artificial Disc to Anterior Discectomy and Fusion in the Treatment of Symptomatic Degenerative Disc Disease in the Cervical Spine. *International Journal of Spine Surgery* [online journal]. 2014, Volume 8, Article 7; DOI: 10.14444/1007.

### **Book Chapter**

Watts CC, **Gaede SE**, Pulliam MW: Problems Associated with Multiple Trauma, in Youmans, J (ed), *Neurological Surgery*, 3<sup>rd</sup> edition, 1990, Volume 4, Chapter 86: 2543-2602.

### **Abstracts and Poster Presentations**

Davis R, Hoffman G, Bae HW, Hisey M, Kim KD, **Gaede SE**, Nunley P: Maintenance of Overall Success in Patients Treated with Cervical Disc Arthroplasty and ACDF at One or Two Levels: Five-Year Results from an Investigational Device Exemption Trial [abstract]. Proceedings of the 42nd Annual Meeting of the Cervical Spine Research Society, December 4-6, 2014, Orlando, FL.

Bae HW, Davis R, Hoffman G, Hisey M, Kim KD, **Gaede SE**, Nunley P: One-Level versus Two-Level Cervical Disc Arthroplasty: Comparative Results from a FDA IDE Clinical Trial with Four-Year Follow-up [abstract]. Proceedings of the 14th Annual International Society for the Advancement of Spine Surgery. April 30 – May 1, 2014. Miami Beach, FL.

Davis R, Hoffman G, Bae HW, Hisey M, Kim KD, **Gaede SE**, Nunley P: Two-Level Cervical Total Disc Replacement versus ACDF: Results of a Prospective, Randomized, Clinical Trial with 48 Months Follow-up [abstract]. Proceedings of the 14th Annual International Society for the Advancement of Spine Surgery. April 30 – May 1, 2014. Miami Beach, FL.

Hisey M, Davis R, Hoffman G, Bae HW, Kim KD, **Gaede SE**, Nunley P: Cervical Total Disc Replacement versus ACDF: Results from a FDA IDE Clinical Trial through 48 Months [abstract]. Proceedings of the 14th Annual International Society for the Advancement of Spine Surgery. April 30 - May 1, 2014. Miami Beach, FL.

Hisey MS, Davis RJ, Hoffman GA, Bae HW, Kim KD, **Gaede SE**, Nunley PD, Ohnmeiss DD: Sagittal Alignment of One-Level TDR and ACDF Patients: An Analysis of Patient Outcomes from a Randomized, Prospective, Clinical Trial [abstract]. Proceedings of the 14th Annual International Society for the Advancement of Spine Surgery. April 30 - May 1, 2014. Miami Beach, FL.

Davis RJ, Bae H, Hisey MS, Kim K, Nunley PD, **Gaede S**: Cervical Total Disc Replacement Results in Lower Incidence of Radiographic Degeneration than ACDF at Two Levels [abstract]. Proceedings of the 41st Annual Meeting of the Cervical Spine Research Society, December 5 - 7, 2013, Los Angeles, CA.

Davis RJ, Bae H, Hisey MS, Kim K, Nunley PD, **Gaede S**: Cervical Disc Arthroplasty and ACDF at Two Levels: Four-Year Results from an Investigational Device Exemption Trial [abstract]. Proceedings of the 41st Annual Meeting of the Cervical Spine Research Society. December 5 - 7, 2013. Los Angeles, CA.