Kamal R. Woods, MD, MBA, FAANS

Vertrae, Inc.
4501 Lyons Road
Miamisburg, Ohio 45342

www.vertrae.com
kwoods@vertrae.com
Cell: 937-717-3073
Office: 844-ALL-BACK
(844-255-2225)

EDUCATION

MBA	Johns Hopkins Carey School of Business	May 2020
MD	Loma Linda University School of Medicine	May 2005
BS	Andrews University, Biology *Summa Cum Laude* Minored in Chemistry	May 2001

POSTGRADUATE EDUCATION

Fellowship July 2009- June 2010
Combined Orthopedic and Neurosurgery Spine Fellowship
Cedars-Sinai Medical Center
Program Director: J. Patrick Johnson, MD

Residency July 2006- June 2011
Neurosurgery
Loma Linda University Medical Center
Program Director: Austin Colohan, MD

Internship July 2005- June 2006
General Surgery
Loma Linda University Medical Center
Program Director: Arnold Tabuenca, MD

BOARD CERTIFICATION

Neurosurgery	American Board of Neurological Surgeons	Nov 2015- Present

STATE MEDICAL LICENSURE

Ohio	Physician and Surgeon	2016- Present

PROFESSIONAL WORK HISTORY

President	Vertrae®, Inc. Comprehensive Spine Practice Miamisburg, Ohio	Dec 2020- Present
President	Vertrae® Surgery Center, LLC Ambulatory Surgery Center Miamisburg, Ohio	Feb 2024- Present
Medical Director	Kettering Brain & Spine Kettering Health Network Kettering, Ohio	Nov 2016- Nov 2020
Chief Financial Officer	Advanced Neurosurgery Associates Neurosurgery Private Practice Murrieta, California	May 2015- Oct 2016
Assistant Professor	Loma Linda University Medical Center Department of Neurosurgery Loma Linda, California	Aug 2011- Mar 2015

HOSPITAL MEDICAL STAFF APPOINTMENTS

Kettering Health	Neurosurgeon Dayton, Ohio	Nov 2016- Present

INTELLECTUAL PROPERTY

US Patent	Pedicle screw device and method of use. Patent # US 11,871,967 B1	Jan 16, 2024

PROFESSIONAL AWARDS

America's Most Honored Doctors	American Registry Top 1% of US doctors	July 2022
America's Most Honored Professionals	American Registry "Best of the Best"	Aug 2018
Pinnacle Professional- Healthcare	Continental Who's Who	April 2016
Distinguished Doctor	Expert Network	Sept 2015
"Top Doctor"	Inland Empire Magazine California	Sept 2014
Patients' Choice Award	Vitals.com Top 5% of US doctors	Oct 2014
Top 10 Doctor	Vitals.com Top 1% of US doctors	Aug 2014
Best Poster	16th Annual International Conference of Cerebral Edema and Cellular Injury Huntington Beach, California	Sept 2014

PROFESSIONAL MEMBERSHIPS

Ohio State Medical Association (OSMA)	2020- Present
Ohio State Neurosurgical Society (OHSNS)	2017- Present
North American Spine Society (NASS)	2013- Present
American Association of Neurological Surgeons (AANS)	2006- Present
Congress of Neurological Surgeons (CNS)	2006- Present

PROFESSIONAL APPOINTMENTS AND COMMITTEES

Reviewer	The Spine Journal (TSJ)	2018-2020
Medical Director	Kettering Brain & Spine	Nov 2016-Apr 2020
Medical Director	Spine Center Loma Linda- Murrieta	Apr 2015- Oct 2016
Physician Advisory Board	Doximity	2014-2016
Reviewer	Journal of Scientific Medicine	2013-2016
Patient Education Committee	North American Spine Society (NASS)	2013-2016
Member	Patient Safety Committee Loma Linda U Med Ctr	Aug 2011- Mar 2015
Editor-in-Chief	*Plus Ultra* Journal of *Epsilon Phi Epsilon* Honor Society Caribbean Union College (CUC)	2000-2001

RESEARCH EXPERIENCE

Principal Investigator	Retrospect Chart Review OLIF technique and complications Funded by Medtronic	Apr 2015- Feb 2016
Principal Investigator	Multi-Center Prospective Study Clinical outcomes from OLIF Funded by Medtronic Protocol no P15-05	Nov 2015- Jul 2017
Research Assistant	Basic Science Research Iron metabolism in Alzheimer's PI: Wolff M. Kirsch, MD	Jul 2004- Aug 2004
Research Assistant	Basic Science Research Limb regeneration in chick embryo PI: Kerby C. Oberg, MD, PhD	Jun 2002- Aug 2002
Research Assistant	Ornithology Field Study Wing-flashing in Mockingbirds Vocalization in Tanagers PI: Floyd Hayes, PhD	1997-2001

PUBLISHED TEXT BOOK CHAPTERS

1. Drazin D, **Woods KRM**, Baron E, Anand N, Vacarro AR. Transforaminal Lumbar Interbody Fusion. Operative Techniques: Spine Surgery. 3rd ed. Edited by Alexander R. Vacarro and Eli Baron. Elsevier. Nov 2016.

2. **Woods KRM**, Baron E, Anand N. Transforaminal Lumbar Interbody Fusion. Operative Techniques: Spine Surgery. 2nd ed. Edited by Alexander R. Vacarro and Eli Baron. Elsevier. May 2012.

3. Anand, N, **Woods, KRM**, Baron E. Video chapter on Transforaminal Lumbar Interbody Fusion. Operative Techniques: Spine Surgery. 2nd ed. Edited by Alexander R. Vacarro and Eli Baron. Elsevier. May 2012.

4. **Woods, KRM**, Tim K, Ghostine S, Johnson JP. Infection of the Cervical Spine. The Comprehensive Treatment of the Aging Spine: Minimally Invasive and Advanced Techniques. pp 178-80. Yue J, Guyer RD, Johnson JP, Khoo LT, Hochschuler SH (eds). Elsevier Saunders, Philadelphia PA, 2011.

5. Ghostine S, **Woods KRM**, Shoshanna V, Shirzadi A, Scibelli S, Samudrala S, Johnson JP. Treatment of Thoracic Vertebral Fractures. The Comprehensive Treatment of the Aging Spine: Minimally Invasive and Advanced Techniques. pp 283-87. Yue J, Guyer RD, Johnson JP, Khoo LT, Hochschuler SH (eds). Elsevier Saunders, Philadelphia PA, 2011.

6. **Woods, KRM**, Colohan ART. Therapeutic strategies for cerebral vasospasm from aneurysmal subarachnoid hemorrhage. Advances in Neurological Research. Research Signpost. 2007.

PEER-REVIEWED PAPER PUBLICATIONS

1. Cohen, JD, Ravinski RA, Khan M, Sossamon J, Kim TT, **Woods K**, Naruse R, Baltzdorf U, and Johnson P. A Novel Untethering and Duraplasty Technique for Postsurgical Tethered Spinal Cord. Cureus. January 2023.
2. **Woods K**, Fonseca A, Miller L. Two-year Outcomes from a Single Surgeon's Learning Curve Experience of Oblique Lateral Interbody Fusion without Intraoperative Neuromonitoring. Cureus 9(12): e1980.

3. **Woods KRM**, Billys JB, Hynes RA. Technical description of oblique lateral interbody fusion at L1-L5 (OLIF25) and L5-S1 (OLIF51) and evaluation of complication and fusion rates. The Spine Journal. 17(4): 545-553.

4. Bouz P, Woods ROJ, **Woods KRM**. The pathophysiological basis for hypertrophic olivary degeneration (HOD) following brainstem insult. Journal of Scientific Medicine. 1(1): 1004, 2013.

5. **Woods KRM**, Colohan ART, Yamada S, Yamada SM, Won, DJ. Intrathecal endoscopy to enhance the diagnosis of tethered cord syndrome. Journal of Neurosurgery: Spine. 13(4): 477- 483. 2010.

6. **Woods KRM**. Comparative study of the vocalizations of the Blue-grey Tanager (Thraupis episcopus) and the Palm Tanager (Thraupis Palmarum). *Plus Ultra*. 1(1): 7-14. 2007.

PEER-REVIEWED ABSTRACT PUBLICATIONS

1. Magaki S, Kelln W, Mueller, C, Raghavan R, Jeong, J, **Woods KRM**, Oberg K, Tourtellotte W, Vinters H, Kirsch W. Immuno-histochemical localization of iron regulatory protein-2 in Alzhemier's Disease hippocampus. The Journal of the Alzheimer's Association. 2(3): S430. 2006.

2. **Woods KRM**, Pira CU, Oberg K. The role of Fgf10, Cux2 and Dhand in Fgf2-induced limb bud regeneration. The FASEB Journal. 17(5): A780. 2003.

3. **Woods KRM**, Pira CU, Oberg KC. The role of Fgf10 and Cux2 in Fgf2-induced limb bud regeneration. Journal of Investigative Medicine. 51(1): S94-95. 2003.

POSTER PRESENTATIONS AT SCIENTIFIC MEETINGS

1. **Woods K**, Woods R, Gorman R. Pilot assessment of OLIF/ATP in the treatment of Adult Degenerative Scoliosis. AANS/CNS Spine Section Meeting. Miami, FL. March 17, 2019.

2. Fonseca A, **Woods KRM**. Two-year clinical outcomes after oblique lateral inter body fusion (OLIF25 and OLIF51) in a retrospective cohort. Society of Minimally Invasive Spine Surgery (SMISS) Annual Forum. Las Vegas, Nevada. October 13-16, 2016.

3. McClure M, Hanna G, Grigsby P, Yoon N, Grube M, Jacobson JP, **Woods KRM**. The Association of Cerebral Venous Stenosis or Hypoplasia with Delayed Ischemic Neurological Deficit in Aneurysmal Subarachnoid Hemorrhage. The 16th International Conference on Cerebral Edema and Cellular Injury. Huntington Beach, California. September 27-30, 2014.

4. Woods ROJ, Raghavan R, **Woods KRM**. Is Cytotoxic Brain Edema the Underlying Cellular Pathology in Hypertrophic Olivary De-generation (HOD) Following Brainstem Insult? The 16th International Conference on Cerebral Edema and Cellular Injury. Huntington Beach, California. September 27-30, 2014.

5. Drazin D, **Woods KRM**, Mamalek A. Expanded Endonasal Transsphenoidal (EETS) versus Supraorbital Keyhole (SOK) Approaches for Suprasellar Tumors. AANS Annual Meeting. 2011. Submitted.

6. Johnson PJ, Kim TT,Vaynman S, Ghostine, S, Turner MS, **Woods KRM**, Grode M, Samadrala S, Pashman RS. Computerized Image Guided Spine Surgery: The State-of-the-Art. 2011 AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting, Phoenix, Arizona Mar 9-12, 2011

7. Woods ROJ, **Woods KRM**, Ghostine S, Dammers R, Krisht AF, Hsu FPK. Intermittent Brain Retraction and Blunt Arachnoid Dissection Using the Neuro Balloon. CNS Annual Meeting. San Francisco, California. October 16 –21, 2010.

8. Ghostine S, **Woods KRM**, Johnson JP. Correlation of C2 Fractures and Vertebral Artery Injury. San Francisco, California. February 19, 2010.

9. Ghostine S, **Woods KRM**, Johnson JP. Intra-articular C1-C2 Joint Arthrodesis- Description of an Alternative Safe Technique to Establish Successful C1-C2 Fusion. ANS/CNS Section on Disorders of the Spine and Peripheral Nerves. Orlando, Florida, February 17–20, 2010.

10. Ghostine S, **Woods KRM**, Scibelli S, Johnson JP. Pedicle Substraction Osteotomy- A Safe Alternative Surgical Technique to Treat Patients With Myelopathy Secondary to an Old Post-Traumatic Upper Thoracic Kyphotic Deformity. ANS/CNS Section on Disorders of the Spine and Peripheral Nerves. Orlando, Florida. February 17–20, 2010.

11. Scibelli S, **Woods KRM**, Johnson JP. Cervical Kyphotic Deformity: Novel Classification System and Operative Treatment Algorithm. 61st Southern Neurosurgical Society Annual Meeting, Boca Raton, Florida, February 24-27, 2010.

12. **Woods KRM**, Wong B, Colohan ART, Yamada . How to Determine the Location of the Conus- filum Junction. AANS/CNS Joint Section for Pediatric Neurosurgery Meeting. Boston, Massachusetts. December 1-4, 2009.

13. **Woods KRM**, Perry A, Hsu FPK, Colohan ART, Raghavan R. A novel brain neoplasm with combined gliosarcoma and primitive neuroectodermal tumor (PNET) components. Joint Meeting of the Society for Neuro-Oncology (SNO) and AANS/CNS Section on Tumors. New Orleans, Louisiana. October 22-24, 2009.

14. **Woods KRM**, Pira CU, Oberg K. The role of Fgf10, Cux2 and Dhand in Fgf2-induced limb bud regeneration. Experimental Biology Meeting. American Association of Anatomists. San Diego, California. March 17, 2003.

15. **Woods KRM**, Pira CU, Oberg K. The role of Fgf10, Cux2 and Dhand in Fgf2-induced limb bud regeneration. Medical Student Basic Science. Scientific Poster Session. Annual Postgraduate Convention. Loma Linda University School of Medicine. March 9, 2003.

ORAL PRESENTATIONS AT SCIENTIFIC MEETINGS

1. **Woods K**, Woods R, Gorman R. Pilot assessment of OLIF/ATP in the treatment of Adult Degenerative Scoliosis. AANS/CNS Spine Section Meeting. Miami, FL. March 17, 2019.

2. **Woods KRM**, CU Pira, KC Oberg. The role of Fgf10 and Cux2 in Fgf2-induced limb bud regeneration. Western Student Medical Research Forum. Student Scientific Session II. Carmel, California. January 29, 2003.

INVITED LECTURES

Feb 7, 2019	**18th Annual Vegas Spine Conference**. Las Vegas, NV. "Pre-psoas Lateral Approach."
Feb 27, 2016	**2nd Annual Advanced Lateral Approaches to the Spine**. Seattle Science Foundation. Seattle, WA. "Oblique Complications and Avoidance Technique: A Case Review"
Mar 19, 2014	**Orthopedic Grand Rounds**. Loma Linda University Medical Center. "Minimally Invasive Spine Surgery"
Oct 3, 2012	**Ophthalmology Grand Rounds**. Loma Linda University Medical Center. "Idiopathic Intracranial Hypertension"
Apr 4, 2012	**Orthopedic Grand Rounds**. Loma Linda University Medical Center. "Intrathecal endoscopy to enhance the diagnosis of tethered cord syndrome"
May 1, 2009	**Annual Koma Skool**. Speech and Language Pathology graduate students lecture. "Coma: A Clinical Perspective"
Nov 26, 2008	**Neurosurgery Grand Rounds**. Loma Linda University Medical Center. "Management of Malignant Peripheral Nerve Sheath Tumors (MPNSTs)"
Oct 31, 2007	**Neurosurgery Grand Rounds**. Loma Linda University Medical Center. "What is the role of intraoperative neurophysiology in brain surgery?"
Nov 29, 2006	**Neurosurgery Grand Rounds**. Loma Linda University Medical Center. "The Tethered Cord"

PROFESSIONAL EDUCATION FACULTY

May-Aug 2021	UNLEASH Coaching Program **DePuy Synthes**, virtual
May 22, 2021	Hands-On Lab **DePuy Synthes**, Columbus, OH
May 20, 2021	Spine Case Time Consult **DePuy Synthes**, virtual
May 10, 2021	Content Development- MIS Spine **DePuy Synthes**, virtual
May 8, 2021	Preparing & Planning for your First UNLEASH Lateral & ATP Case **DePuy Synthes**, virtual
April 15, 2021	Spine Case Time Consult **DePuy Synthes**, virtual
April 5, 2021	Global Orthopedic & MedTech Summit 2021 **DePuy Synthes Spine**, virtual
Mar 13, 2021	UNLEASH ATP Hands-On Lab **DePuy Synthes**, Cincinnati, OH
Mar 12, 2021	UNLEASH ATP Lateral- Supporting the Creation of Promo Material **DePuy Synthes**, virtual
Mar 11, 2021	Case Time Consult **DePuy Synthes**, virtual
Mar 10, 2021	Voice of Consumer Session **BRITSPINE 2021**, virtual
Mar 6, 2021	Spine Hands-On Lab **DePuy Synthes**, Lexington, KY
Feb 20, 2021	UNLEASH Hands-On Lab **DePuy Synthes**, Columbus, OH
Feb 6, 2021	UNEASH ATP Hands-On Lab **DePuy Synthes**, Erlanger, KY
Dec 16, 2020	"ATP Technique with Insight L, Viper Prime & CONDUIT" **DePuy Synthes INDIA**, virtual

Dec 15, 2020	Case Time Consult **DePuy Synthes**, virtual
Dec 14, 2020	"ATP Tricks of the Trade" **DePuy Synthes CHINA**, virtual
Nov 12, 2020	UNLEASH ATP/Lateral Hands-On Lab **DePuy Synthes Spine**, Lexington, KY
Nov 5, 2020	Case Time Consult **DePuy Synthes**, virtual
Sept 28, 2020	Case Time Consult **DePuy Synthes**, virtual
Sept 15, 2020	Case Time Consult **DePuy Synthes**, virtual
Sept 3, 2020	Case Time Consult **DePuy Synthes**, virtual
Jul-Sept, 2020	Spine Coaching Program **DePuy Synthes**, virtual
July 28, 2020	Evolve Your Techniques for the Lumbar Spine Webinar **DePuy Synthes**, virtual
Apr 22, 2020	Digital Education at Home: Lateral/ATP/Sentio MMG **DePuy Synthes**, virtual
Apr 4, 2020	Online Content Development **DePuy Synthes**, virtual
Feb 27, 2020	National Sales Meeting- ATP Lateral Breakout **DePuy Synthes**, Dallas, TX
Jan 9-11, 2020	Novel Techniques and Technologies for the Lumbar Spine Summit **DePuy Synthes**, Miami, FL
Nov 4, 2019	Visiting Surgeon Spine Preceptorship **DePuy Synthes,** Kettering, OH
Sept 25, 2019	Surgical Innovation Lab- NASS **DePuy Synthes Spine**. Chicago, IL
Sept 25, 2019	NASS Lunch Symposium **DePuy Synthes**, Chicago, IL

Aug 1, 2019	Evolve Your Techniques for the Lumbar Spine **DePuy Synthes,** San Diego, CA
July 13, 2019	ATP Smart Lab **DePuy Synthes**, Chicago, IL
May 20, 2019	Lateral Lift Lab **DePuy Synthes**, Raynham, MA