

Nitin Khanna, MD
730-45th Street
Munster, IN-46321
(219) 217-4600 • www.spinecarespecialists.com

Professional Experience:

2015-present Associate Editorial Board for SPINE journal

2015-present Reviewer for International Journal of Spine Surgery

2015-present Physician Advisory Board – Community Hospital Spine Program – Achieved Joint Commission Accreditation

2014-present Founding Member - *Center for Minimally Invasive Surgery*
Center focused on moving higher complexity Spinal Surgery to the outpatient setting utilizing Minimally Invasive Spine techniques to deliver cost savings across the health care continuum.
www.cmisurgery.net

2010–present Clinical Assistant Professor of Orthopedic Surgery
Indiana University School of Medicine

2005-present Founder, Spine Care Specialists,
www.spinecarespecialist.com

- Vertically Integrated, dedicated Spine surgery practice with 400 cases per year
- Largest Orthopedic and Spine Surgery in Northwest Indiana
- Perform the full spectrum of spinal procedures including minimally invasive surgery, spine fusion, disc replacement, scoliosis, tumor, navigation assisted, spinal instrumentation, injection therapy

2007 Physician Member – Franciscan Health
“Objects left in Surgery” Initiative

- Multi-disciplinary team created to determine best practices for eliminating errors in surgery by implementing new technology.
- Recommendations and Implementation performed across hospital system

2005-2007 Director, Physical Therapy and Occupational Medicine
Community Hospital System

- Focused on increasing efficiency and providing education to incorporate state-of-the-art health practices for multiple service lines.

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2004-Present Director and Founder, Franciscan Spine Clinic

- Developed to deliver spine care to the underprivileged patient population in Hammond, Indiana using a cost-effective advanced minimally invasive techniques with an evidence-based model.

2003-present Partner, Orthopedic Specialists of Northwest Indiana, Spine Surgeon, Board-certified, Fellow of American Academy of Orthopedic Surgery

Awards and Recognitions

- Spine surgeons to know 2014 -2019– Becker’ Spine review
- Compassionate Doctor Award
- On Time Doctor Award
- Patients Choice Award
- America’s Top Orthopedists
- Most Honored Professionals Top 1% Award
- Best of the Region 2011-present

Professional Memberships:

- North American Spine Society
- American Academy of Orthopedics
- Indiana State Medical Association
- Indian Medical Association
- Society of Lateral Access Surgeons
- Society for Minimally Invasive Spine Surgery
- International Society for the Advancement of Spine Surgery

Professional Training:

2002-2003 **Fellow, Spine Surgery**
Rush Presbyterian St. Luke’s Hospital, Chicago, IL
Fellowship Directors- Howard An, Ronald Dewald, Frank Phillips

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- Orthopedic Spine Fellowship focused on both conservative and surgical treatment of spinal disorders including Spinal Tumors, failed back syndrome, trauma, scoliosis, revision spine surgery, degenerative spine, and minimally invasive spine surgery.

2001-2002 Chief Resident, Orthopedic Surgery
Washington University, St. Louis, MO
Chairman – Richard Gelberman

- Orthopedic Spine training with Keith Bridwell, Lawrence Lenke, and Dan Riew.

1998-2002 Resident, Orthopedic Surgery
Barnes-Jewish Hospital, Washington University, St. Louis, MO
Chairman – Richard Gelberman

- Training in Pediatric, Trauma, Oncology, Joint Replacement, Arthroscopy, Hand Surgery, Shoulder and Elbow Reconstruction, Foot and Ankle, and Sports Medicine

1997-1998 Surgical Internship
Washington University, St. Louis, MO
Chairman – Samuel Wells

- Training in Colorectal, Surgical Intensive Care, Plastic Surgery, Transplant Surgery, Vascular Surgery, Ear Nose and Throat Surgery, Trauma, and Pediatric Surgery.

Educational Background:

1993-1997 Doctor of Medicine
The Mount Sinai School of Medicine, New York, NY

Clinical Rotations in Orthopedics St. Luke's Roosevelt Hospital, New York.

Clinical Rotation in Orthopedics Washington University, St. Louis

International Health Care Rotation in New Delhi, India.

1990-1992 Bachelor of Science in Bioengineering Cum Laude
The School of Engineering and Applied Science
The University of Pennsylvania, Philadelphia, PA

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- Active Alumni – participate in interview process for incoming students
- Senior Thesis : Developed a mobile chair for a paraplegic patient with a collapsing scoliosis. Goals were a pneumatic based system with alternating pressure supports to avoid areas of high stress to the patient skin.
- Research at the Hospital of Special Surgery, New York: Focused on polyethylene wear using in-vitro models to simulate wear characteristics of hip and knee joints replacement. Developed mathematical models to predict the wear characteristics of the polythethylene.

1989-1990 ***Bachelor of Science, Deans List***
The School of Arts and Science
Lehigh University, Bethlehem, PA

Consulting Engagements:

■ ***Council Member, GLG Group***

Participated as a key opinion leader in numerous projects led by the Group. Examples include a study of the potential of emerging technologies in Spine Surgery, and competitive market analysis of minimally invasive fusion technologies.

■ ***Opinion Leader, Medical Advisory Group***

- Contributed to key Spine industry Market Analysis published by the Group. Examples include studies of the concerns and attitudes of orthopedic surgeons towards Hospital Systems and recommendations for hospitals to develop win-win relationships with orthopedic surgeons.

■ ***Consultant, Globus Medical***

- Co-developer of first minimally invasive disc replacement device.
- This motion sparing device – Triumph - has completed the design state as well as biomechanical testing. It is in international clinical trials and US IDE trial.

■ ***Consultant, Nuvasive***

- Co-developer of minimally invasive PEEK interspinous device.

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- Co-developer Minimally Invasive Posterior Spinal Fusion System, launch 2012, MAS PLIF
- Contributed to alpha testing on pps pedicle screw release
- Contributed to alpha testing Cervical Retractor System for MIS Cervical Spinal Surgery
- Reline Midline Screw System Development

■ ***Consultant, Baxter***

- ***Course Chairman – Advanced Hemostasis – Japan Peer to Peer 2017,2018, 2019***
- Spine Advisory Board, Floseal and Actifuse. Chicago 2010, 2017,2018, 2019
- Developed and Pilot Speaker for topical hemostatic agent North American Spine Society , San Francisco 2009.
- Participated in a focus group on use of hemostatic agent during North American Spine Society 2008.
- Contributor and co-author of study and manuscript on topical hemostatic agents that aims to gauge the impact of using these agents on key healthcare outcome measures the resulting cost benefits of using the product. Published Health Economic Journal
- Ongoing Discussions to create a global MIS platform for the Biosurgery group
- Spine Advisory Board, Actifuse, Miami, FL 2011
- Worked on creating design team to create MIS delivery system for Actifuse
- Floseal presentation- Physician Roundtable in Milwaukee, WI
- Floseal presentation-Physician Roundtable in Indianapolis, IN

Consultant Nuvasive

- Developed Minimally Invasive Lumbar Fusion Procedure (ILIF and MAS PLIF)
- Presented at North American Spine Society launch of MAS PLIF 2012
- Course Instructor to US and International surgeons in New York and San Diego for Minimally Invasive Spine Surgery 2012- 2019
- Hosted Multiple Surgeons from the United States and International Surgeons in the Operating room to learn MAS PLIF 2009-present
- National Sales Meeting – 2010-present
- Clinical Professional Development – Midline Course Chair

Edge Surgical

- Strategic Advisor

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- Design surgeon for current digital device

Becker Spine Meeting 2015

- *The Future of Spine Surgery – the next 5 years* - Panel Discussion with Dr Robert Bray – Founder DISC, Los Angeles and Dr Christopher Bono – Chief of Spine, Brigham Women’s and Children, Boston

Course Faculty

- ***IGA – Disruptive Thoughts in Global Alignment***
- ***MAS Posterior Course 2013,2014,2015, 2016, 2017, 2018, 2019 US and International Surgeons training***
- ***SPINE journal roundtable for Minimally Invasive SPINE journal publication 2015***
- ***Baxter – Course Director – Advanced Hemostasis in Spine Surgery – International Spine Surgeons***
- ***Resident and Fellow Course - SI Bone***

Spokesperson American Academy of Orthopedic Surgery – Tips for traveling with heavy luggage campaign - 2015

Presentations:

- Safety and Reproducibility of Total Disc Replacement in an Ambulatory Surgery Center –North American Spine Society Hawaii 2019, Society for Minimally Invasive Spine Surgery, Las Vegas 2019
- Safety and Reproducibility of Sacroiliac Joint Fusion in an Ambulatory Surgery Center–NASS Hawaii 2019, Las Vegas 2019
- The Effect of Exparel on Length of Stay after Outpatient Medialized Fusion – North American Spine Society Hawaii 2019, Society for Minimally Invasive Spine Surgery, Las Vegas 2019
- A Multicenter Evaluation of the Incidence of Preoperative and Postoperative Malalignment in Degenerative Spinal Fusions – North American Spine Society 2017

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- A Prospective Multicenter Evaluation of the Relationship between Standing and Recumbent Surgical Lumbar Lordosis- North American Spine Society 2018
- Preoperative Lumbosacral alignment and its correlation to lordosis change in one and two level degenerative fusions – North American Spine Society 2017
- Early clinical results of a novel medialized muscle splitting posterior spinal fusion - in the outpatient setting. – presented International Society for the Advancement of Spine Surgery 2017
- Pilot Evaluation of the incidence of preoperative Spino-Pelvic Malalignment in One and Two level non-deformity Fusion patients and its correction following Medialized Approach for Posterior Lumbar Interbody Fusion(MAS PLIF) - presented Society for Minimally Invasive Spine Surgery 2016, International Society for the Advancement of Spine Surgery 2017
- MAS PLIF for degenerative spodylolisthesis, presented SOLAS 2016, New York
- A Multi-Center Retrospective Evaluation Validating a novel Less Invasive Medialized Approach for Posterior Lumbar Interbody Fusion (MAS PLIF) – Presented International Society for the Advancement of Spine Surgery 2015, Presented Society for Minimally Invasive Spine Surgery 2015
- Medial to Lateral Trajectory Pedicle Screws(Cortical/Pars Screws) – A Biomechanical Analysis Using a novel Screw Design, Presented 2013 International Society for the Advancement of Spine Surgery, ORS 2013, IMAST 2013
- Intramedullary Nailing of Femur Fractures in Children Through the Greater Trochanter Using Humeral or Tibial Nails, Washington University, St. Louis, MO. *Presented American Academy of Orthopedics Meeting 2001, San Francisco.*

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- Post irradiation aging of UHMWPE, The Hospital for Special Surgery. New York, NY. *Presented Hospital for Special Surgery Summer Intern 1992.*
- Fractures Of The Proximal One Third of the Tibia Shaft Treated With Intramedullary Nails and Blocking Screws, Washington University, St. Louis, MO. *Presented Mid America Orthopaedic Society 1998.*
- Migration of an Artificial Posterolateral Lumbar Disc replacement(PDLR) Pre-fatigue and Post-fatigue:An in vitro Cadaver Model – Baldertson R, Anand N, Khanna N, et al presented April27-30 ,SAS 2010, New Orleans
- Update on Bone Morphogenic Proteins and their applications in Spinal Surgery , Rush-Presbyterian Hospital, Chicago IL. *Presented Norhwest Indiana Spine Symposium 2007.*
- The reliability and diagnostic value of radiographic criteria in sagittal spine deformities: comparison of the vertebral wedge ratio to the segmental cobb angle, Chicago Shriner’s Hospital, Chicago, IL. *Accepted for presentation, North American Spine Society October, 2007, Presented International Meeting on Advanced Spine Techniques 2007.*
- Characterization of graft subsidence in Anterior Cervical Discectomy and Fusion with rigid anterior plate fixation– Rush-Presbyterian Hospital, Chicago IL. *Presented North American Spine Society 2004.*
- Comparison of Combined Anterior and Posterior Spinal Fusion versus Posterior alone in Congenital Scoliosis – Chicago Shriner’s Hospital, Chicago, IL. *Presented Pediatric Orthopedic Society 2004, Presented Scoliosis Research Society 2004.*
- Comparison of clinical and radiographic outcomes in instrumented anterior cervical discectomy and fusion with and without direct uncovertebral joint decompression, Rush-Presbyterian Hospital, Chicago IL. *Presented Cervical Spine Research Society 2003.*
- TRIUMPH Posterolateral Artificial Disc Biomechanics: The Effect of Posterior Tethering. Author(s): P. McAfee, D. Sengupta, N. Anand, G.

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Deol, N. Khanna, D. Tyndall, R. Balderston, A. Ingalhalikar. Presented Spine Arthroplasty Society 2008, Miami.

- ILIF Complications, Early complications associated with Minimally Invasive Spine Fusion. Khanna N. (Submitted for publication)
- Current Concepts in Spine Surgery, Resident lecture 2004, AIIMS, New Delhi, India

Research/ Publications:

- Medialized muscle splitting approach for posterior lumbar interbody: Technique and Multicenter peroperative results – *SPINE* 2016 Apr 41 Suppl 8: S90-6
- Intramedullary Nailing of Femur Fractures in Children Through the Greater Trochanter Using Humeral or Tibial Nails, Washington University, St. Louis, MO. *Published Journal of Orthopaedic Trauma* 2004 Aug: 18(7): 416-22).
- Post irradiation aging of UHMWPE, The Hospital for Special Surgery. New York, NY. *Transactions of the Society of Biomaterials* 16: 328, 1993.
- Exertional Myelopathy in type 2 congenital kyphosis, Washington University, St. Louis, MO. *SPINE*, 2002 Nov 15: 27(22): E488.
- Update on Bone Morphogenic Proteins and their applications in Spinal Surgery, Rush-Presbyterian Hospital, Chicago IL. *J Am College of Surgeons*, 2005 Feb: 200(2): 236-48.
- The reliability and diagnostic value of radiographic criteria in sagittal spine deformities: comparison of the vertebral wedge ratio to the segmental Cobb angle, Chicago Shriners' Hospital, Chicago, IL. *SPINE* 2007 Jul 15: 32(16): E451-9.

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- *Book Chapter - Treatment of CSF Fluid Leaks, PRINCIPLES AND PRACTICE OF SPINE SURGERY – Vaccaro, Betz, Zeidman.*
- Characterization of graft subsidence in Anterior Cervical Discectomy and Fusion with rigid anterior plate fixation– Rush-Presbyterian Hospital, Chicago IL. *Am J Orthopedics 2007 Aug;36(8):421-7.*
- Comparison of Combined Anterior and Posterior Spinal Fusion versus Posterior alone in Congenital Scoliosis – Chicago Shriner’s Hospital, Chicago, IL. *Submitted to SPINE*
- Comparison of clinical and radiographic outcomes in instrumented anterior cervical discectomy and fusion with and without direct uncovertebral joint decompression, Rush-Presbyterian Hospital, Chicago IL. *Spine J 2004:629-635.*
- Local anesthetic at the iliac crest donor-site for postoperative pain management in spine surgery patients. *Cochrane Review Protocol 2007.*
- TRIUMPH Posterolateral Artificial Disc Biomechanics: The Effect of Posterior Tethering. Author(s): P. McAfee, D. Sengupta, N. Anand, G. Deol, N. Khanna, D. Tyndall, R. Balderston, A. Ingalhalikar. *Submitted for publication.*
- Complications associated with Minimally Invasive Interspinous Fusion. Submitted SMISS Las Vegas 2011

Meetings attended:

- North American Spine Society 2003
- North American Spine Society 2004
- North American Spine Society 2007
- North American Spine Society 2008
- Globus Consultants Symposium 2008
- North American Spine Society 2009
- North American Spine Society 2010

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- North American Spine Society 2011
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- North American Spine Society 2014
- North American Spine Society 2015
- Society for Minimally Invasive Spine Surgery 2015
- International Society for the Advancement of Spine Surgery 2015,2017
- American Academy of Orthopedics 2001
- American Academy of Orthopedic 2002
- Midwest Orthopedic Society 1998

Courses attended:

- PCM Cervical Disc Replacement Training 2013
- Bryan Cervical Disc Replacement Training 2013
- O-arm training course Medtronic 2008
- XLIF training course Nuvasive 2008
- Prodisc C training course 2008
- Human Motion Institute 2008
- AAPMR intermediate Spinal Injection Course 2008
- Medtronic spine course 2003
- Synthes Spine training course for residents 2001
- Zimmer training course joint replacement 2001