



Orthopedics
UNIVERSITY OF COLORADO

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Vikas V. Patel, MA, MD, BSME, FAAOS

***Professor and Executive Vice Chair,
Endowed Chair of Spine Innovation***
Department of Orthopaedic Surgery
University of Colorado, School of Medicine

Academic Appointments

Professor, Executive Vice Chair, Department of Orthopedic Surgery, CU SOM
May 2019- Present

Professor, Chief of Orthopaedic Spine Surgery, Department of Orthopaedic Surgery, CU SOM
July 2014 - April 2019

Associate Professor, Chief of Orthopaedic Spine Surgery, Department of Orthopaedic Surgery, CU SOM
June 2009 to July 2014

Assistant Professor, Orthopaedic Spine Surgery, Department of Orthopaedic Surgery, CU SOM
September 2004 to May 2009

Graduate Faculty, University of Colorado Denver, Bioengineering
March 2014 to Present

Faculty: AO North America
2008 to Present

Education

Spine Surgery Fellowship
Aug.2003-July 2004

The Spine Institute at St. John's Hospital, Santa Monica, California
Rick Delamarter, Hyun Bae, Ed Dawson

Internship, General Surgery
June 1997- June 1998

University of California, San Francisco
Department of General Surgery

Residency, Orthopaedic Surgery
July 1997- June 2003

University of California, San Francisco
Department of Orthopaedic Surgery

Masters in Biomedical Sciences
1997

Washington University School of Medicine, St. Louis Missouri

Doctor of Medicine 1997	Washington University, St. Louis Missouri School of Medicine
Bachelor of Science 1991	University of Illinois, Champaign-Urbana, Illinois Mechanical Engineering
Engineering Study Abroad Year 1990	Technical University of Munich, Munich, Germany

Licensure and Board Certification

Medical License:

Colorado, active: 2004-Present
California, active: 1998-2004, retired 2004

Board Certification:

American Board of Orthopedic Surgeons 2006-present

Hospital Privileges

University of Colorado Hospital – Aurora, CO
Broomfield Hospital – Broomfield, CO
Longs Peak Hospital – Longmont, CO
Highlands Ranch Hospital – Denver, CO
Boulder Community Hospital – Boulder, CO

Previous Employment

Engineer – Baxter Healthcare Renal Division, Chicago Illinois
1991-1992

Other Professional Positions

Clinical Co-Chair – Advancing Standards Transforming Markets
ASTM - F04.25, Sub-Committee on Spinal Cords 2023-Present

Professional Memberships

- American Academy of Orthopaedic Surgery - 2004-present
- Colorado Medical Society 2004-present
- Scoliosis Research Society 2004-present
- Western Orthopaedic Association 2004-present
- AO North America 2004-present
- American Association of Neurologic Surgeons 2004-present
- Society International of Orthopaedic Surgery and Traumatology 2004-present

- American Orthopaedic Association 2004-present
- Sacroiliac Medical Expert Group e.V. 2004-present
- American Society for Testing and Materials 2004-present

Honors/Awards

2018	SICOT Hull Deformity Award: Patient Specific Spine Rods (PSSR) Decrease Rate of Mechanical Complications (MC) after Correction of Adult Spine Deformity (ASD)
2014	University of Colorado Hospital Pioneer Award
2014	Becker's Spine Review: 28 Spine Leaders at Academic Medical Centers
2012	America's Top Orthopedists
2012	Colorado Biz, Best Doctors
2011	Scoliosis Research Society Travelling Fellowship
2011	University of Colorado Hospital Inspired Kindness Award
2011	America's Top Orthopedists
2011	Best Doctors in America
2010	Best Poster Presentations, North American Spine Society Annual Meeting
2010	America's Top Orthopedists
2010	Nominated: Best Paper SICOT
2010	WhiteCloud Award for Best Basic Science Paper: SRS International Meeting of Advanced Spine Techniques
2009	America's Top Orthopedists
2008	Russell A. Hibbs Award for Best Basic Science Paper 43rd Annual SRS
2008	Cervical Spine Research Society Top 10 Poster Award
2004	John H. Moe - Best Basic Science Award, Scoliosis Research Society
2002	AAOS Basic Educator's Course Scholarship
1996	The Dames Prize for Cell Biology, WashU School of Medicine
1993	Master's in Biomedical Science Scholarship and Stipend, Washington University
2006	Bone and Joint Decade Young Investigator's Recipient

Consulting

Current -

- Synthes: Cervical spine fusion product development.
- Biomet Spine: Lumbar spine fusion product development.
- Cerapedics: Biologic spine fusion product development.
- Aesculap: Pedicle screw system development
- Lanx: Spine surgical practice teaching and medical
- AlloSource: Clinical trial design, New Product Development, Robotic Production Equipment Design
- Zygofix
- SpineWelding AG
- Shukla
- Medical Metrics

- Mainstay Medical
- Globus Medical
- Orthobond Corporation
- SIBone
- Stryker Spine

Prior Consulting –

- Stryker Spine
- Medtronic
- J&J/Depuy
- Pfizer
- Vertiflex
- AlloSource
- Medicea
- Sail LLC
- Zelos
- Zimmer
- Mirus Medical
- AO Biologics
- Healix Spine
- Ecential
- 3Spine
- DSM Medical
- Bio2 Technologies
- Spineart
- Vita Solutions

Committees and Service Responsibilities

UNIVERSITY/INSTITUTIONAL

- UCHealth New Products committee 2023- present
- Member Orthopedic Department Faculty Research Committee
- Member Orthopedic Department Marketing Committee
- Member Spine Center Leadership
- Spine Fellowship Co-Director
- Director – Orthopedic Department Governance Committee 2019
- Resident Spine Surgery Rotation Co-Director
- Resident Spine Core Curriculum Educational Director
- Research Advisory Committee
- Clinical Leadership Committee Task Force for Quality, Safety and Process Improvement
- Physical Therapy Scholarship Advisory Board Member
- Development Committee for Office of Clinical Research

NATIONAL/INTERNATIONAL

- American Academy of Orthopedic Surgery: Adult Spine Evaluation Committee - 2024-2030
- American Academy of Orthopedic Surgery: Annual Meeting Committee 2019 – Present
- American Academy of Orthopedic Surgery: Marketing Committee – 2025
- American Academy of Orthopedic Surgery: Education Committee – Present
- Scoliosis Research Society: Research Grant Committee 2010 – 2021
- Scoliosis Research Society: IMAST Program Committee 2014 - 2021
- AO Biologics Committee 2010-2019
- The American Board of Orthopaedic Surgery: Oral Examination Examiner, 2018
- The American Board of Orthopaedic Surgery: Oral Examination Examiner, 2017
- American Pain Association: Board Member 2016 – 2025
- North American Spine Society: Research Committee 2011 – 2015
- North American Spine Society: Biologics Committee 2010 - 2015
- North American Spine Society: Public Relations Committee 2009 - 2015

CLINICAL SERVICE

- Spine Center, University of Colorado Hospital
- Orthopedic Call Coverage, University of Colorado Hospital
- Spine Team Surgical Medical Director
- University of Colorado Hospital in-patient Spine Service
- Denver Health Spine Trauma and Spine Clinic
- Denver Veteran's Hospital Call Coverage

VOLUNTEER ACTIVITY

- Orthopaedics Overseas: Umtata South Africa, Oct 2001
- Rotary International, India Polio Follow Up and Gujarat Earthquake, Jan 2001
- Operation Rainbow, Huehuetenango, Guatemala, 2003
- University of Colorado Biomedical Engineering Society, Medical Advisor 2011, 2012, 2013
- Indo-American Spine Alliance (IASA) 2014 – 2025

Inventions, Intellectual Property and Patents Held or Pending

Patel, VV et al. *System and Method For Fastening Of Two Or More Interacting Elements*. US Patent Application 17/002,372: Filed 8-25-2020. Patent No: US 11,832,858 B2. Issued 12/05/2023

Noshchenko, AG. Burger-(Van Der Walt), E. **Patel, VV**. Kleck, CJ. Mai, J. Pub 10-14-2021. ID- US 2021031506 A1. *Patient -Specific Spinal Implants*. US Patent Application 17/266535; Filed 8-8-2019.

Patel, VV. Kleck, C. Bowman, B. John, T. Paganelli, J. Pub 10-22-2020. ID – US 20200330660 A1. *Post-Operative Surgical Site Wound Treatment and Method for Device Removal*. US Patent Application 16/796826; Filed 2-20-2020. Provisional application US 62549357 20170823.

Patel, V. Nanninga, J. Pub 2-20-2020. ID – US 20200054373 A1. *System and Methods for Fastening of Two or More Interacting Elements*. US Patent Application 16/654691; Filed October 16, 2019. Provisional application US 62025163 20140716.

Arnold, B. Bowman, B. Pena, K. **Patel, V.** Pub 1-18-2018. ID – US 20180014939 A1. *Implant and Method for Posterior Sacroiliac Fusion*. US Patent Application 15/653284; Filed July 18, 2017. Provisional application US 62363752 20160718 and US 622448848 20170120.

Park, D. Bartot, M. **Patel, V.** Pub 6-19-2018. ID US 9999224 B2. *Antimicrobial Reverse Thermal Gel and Methods of Forming and Using Same*.

Patel, V. Nanninga, J. Pub 06-15-2017. ID – US 20170164988 A1. *System and Methods for Positioning of two or more Interacting Elements*. US Patent Application 15/325822; Filed January 1, 2013. Provisional application US 62025163 20140716.

Yakacki, C. Carpenter, D. **Patel, V.** Noshchenko, A. Pub 2014. Porous, *Patient-Specific Interbody Fusion Cages with Enhanced Loading Characteristics to Reduce Subsidence*. US Patent Application 62/026,678; Filed July 31, 2014. Provisional patent filed.

Mauldin, RG. **Patel, VV.** Yerby, SA. Sand, P. Pub 10-10-2013. *Impactor*. US Patent ID 20130267961 A1.

Editor, Reviewer and Referee Work

Editor Present:

Associate Editor: Orthopedics

Editor Past:

Reviewer: Spine
Reviewer: Orthopedics
Reviewer: Clinical Orthopedics and Related Research
Reviewer: Medical Engineering and Physics
Reviewer: Current Orthopaedic Practice
Reviewer: BMC Musculoskeletal Disorders

Grant Reviewer Present:

Expert Peer Reviewer: U.S. FDA Office of Women's Health Intramural Grant Program 2022 – present (by invitation)

Past -

Grant Reviewer: Food and Drug Administration, Office of Women's Health

Grant Reviewer: National Medical Research Council, Singapore 2009-2011, 2014, 2015

Journal Review Board Present:

Editorial Board: Orthopedics
Editorial Board: Orthopedics Today
Editorial Board: Spine Surgery Today
Editorial Board: Healio

Journal Review Board Past:

Reviewer: Journal of Comparative Effectiveness Research 2012

Program Reviewer: Medical Education Resources 2011

NASS Abstract Reviewer: Annual Meetings 2010 and 2011, 2012, 2015, 2025

SRS Abstract Reviewer: Annual Meeting 2014, 2015

IMAST Abstract Reviewer: Annual Meeting 2014, 2015

Reviewer: Journal of Orthopaedic Research 2017

Referee:

AAOS Meeting 2025

AAOS Meeting 2024

Invited Extramural Lectures, Presentations and Visiting Professorships

LOCAL

1. Physical Therapy Core Curriculum Lecture - October 2004
2. Physical Medicine and Rehabilitation Core Curriculum Lecture - December 2004
3. Neurosurgery Core Curriculum Lecture: Biologics October 2006
4. University of Colorado Grand Rounds: Artificial Disc Replacement 2005
5. Geriatric Medicine Grand Rounds October 2006: The Aging Spine
6. Resident Course March 2007: Treating the Aging Spine
7. Physical Medicine and Rehabilitation Department Core Curriculum May 2008: Spine Surgery Indications and Treatments
8. Department of Rheumatology Fellow Lecture Series February 2007 - 2008: Spine Surgery Review
9. Resident's Spine Course, Degenerative Lumbar Spine, May 2008: Lumbar Spine Case Discussion Leader
10. University of Colorado OR Personnel April 2009: Spine Surgical Approaches
11. University of Colorado, Dept. of Mechanical Engineering, Medical Device Design Course Lecture February 23, 2010
12. Orthopedic Resident Core Curriculum January 2011: Primary and Metastatic Spine Tumors
13. Department of Rheumatology, Rheumatology and Spine Surgery Lecture March 29, 2011
14. Department of Bioengineering Spine Section Course BIOE 5011 - Lectures and Practical Workshop, March 29-March 31, 2011
15. Low Back Pain's Missing Piece – Diagnosing the Sacroiliac Joint, January 24, 2011
16. Orthopaedic Surgery and Regenerative Medicine, Yesterday and Today, Gates Center, March 22, 2012.
17. Bioengineering PhD Program, BIOE 5041 Lecturer, April 2012: Spine Surgery
18. Grand Rounds for the Department of Neurosurgery, University of Colorado, August 13, 2013
19. Department of Rheumatology, Rheumatology and Spine Surgery Lecture, University of Colorado, May 6, 2015
20. Rocky Mountain Society for Integrative Medicine's Back Pain panel discussion, Knoebel Institute for Healthy Aging, Denver University, June 13, 2017
21. Orthopedic Resident Core Curriculum Anatomy Lab, August 9, 2017
22. Physician Assistants in Orthopaedic Surgery, Lecture: Motion Preservation in Spine Surgery, Denver, CO, July 26, 2022
23. Bioengineers class, Lecture: Engineering and Spine Surgery, University of Colorado, SOM, Division of Cardiology, February 21, 2023
24. University of Colorado – SOM Leadership Onboarding Seminar: Expanding into the Community, Aurora, CO November 16, 2025

REGIONAL

1. Colorado State University, Dept. Mechanical Engineering November 2005: Spine Biomechanics
2. Colorado Spine Symposium, 16th Annual: Biomechanical Evaluation of Floating and Fixed Center of Rotation Total Disc Replacements: Facet Joint Loads November 2005
3. 16th Annual Colorado Spine Symposium November 4, 2005: Biomechanics of Artificial Disc Replacement
4. Radiology Technologist's Review 2005: Spinal Disorders Review
5. Colorado State University, Dept. Mechanical Engineering November 2006, 2007, 2008, 2009 - Spine Biomechanics
6. Colorado Spine Symposium, 18th Annual: Sept 2007 - Trans-1 Screw Fixation
7. Channel 7 Colorado and Company, Denver CO, 2005 - Anterior Spinal Fusion
8. Channel 7 News, Denver CO, 2007 - Interspinous Spacer Minimally Invasive Surgery
9. Channel 7 News, Denver CO, 2008 - Minimally Invasive Anterior Fusion and Physician Education
10. Channel 7 News, Denver CO, 2008 - Lumbar Spinal Disc Replacement
11. Rocky Mountain Resident's Forum May, 2009: Hemostasis in Spine Surgery, TLIF/PLIF demonstration, Cases
12. Rocky Mountain Resident Forum: Treatments in Thoracolumbar Trauma
13. Biomechanics of Thoracolumbar Fixation. Cadaver Demonstration, Lab Instructor
14. Colorado State University, Dept. Mechanical Engineering Nov. 2010: Spine Biomechanics
15. Fox News, January 2012, Intraoperative Computer Assisted Surgical Navigation
16. Channel 9 News, Denver CO, July 3, 2013: Back Pain Procedure Offers Less Pain Shorter Recovery time
17. Fox 31 News, Denver, CO, January 17, 2014: Community Rallies Around Colorado Crossfit Athlete Paralyzed During Competition
18. Fox 31 News, Denver, CO, January 18, 2014: Community Bands Together to be "Ogar Strong" for Paralyzed Crossfit Athlete
19. Associated Press, January 28, 2014: Super Bowl Marks Milestone for Manning
20. Channel 7 News, Denver, CO, June 9, 2014: Colorado's Olympic Swimmer Amy Van Dyken-Rouen Severed Spine in ATV Crash
21. Denver Post, Denver, CO, June 9, 2014: Amy Van Dyken-Rouen, 6-Time Olympic Gold Medalist, Severs Spinal Cord in ATV Crash
22. Fox 31 News, Denver, CO, June 10, 2014: A Closer Look at Amy Van Dyken's Spinal Cord Injury
23. Vail Symposium, Vail CO, January 28, 2016: Stem Cells: Exploring the Research Perspective

NATIONAL

2024

- NASS Annual Meeting, Chicago, IL – September 25-25
 - Understanding the Impact of Low-Density Lipoprotein Levels and Lipid-Lowering Agents on Rates of Pseudarthrosis After Anterior Cervical Discectomy and Fusion. Ankit Hirpara, BA, Cheryl Ackert-Bicknell, PhD, Vikas Patel, MD.

2022

- Annual Meeting of the Cannabis Research Conference, Virtual – August

- Preliminary Data Comparing the Efficacy of Acute Vaporized Cannabis to Oral Oxycodone and Placebo for Chronic Spine Pain. Morris AWJ, Netsanet R, Bainbridge J, **Patel VV**, Rzasa Lynn R, Lindley EM.

2021

- American Association of Orthopedic Surgery, Annual Meeting, San Diego, CA - September
 - Economics of Lumbar Disc Replacement
 - Lumbar Disc Replacement Outcomes
 - Paper 481 - Minimally Invasive Proximal Screw Stabilization in Long Posterior Instrumented Spinal Fusion for Prevention of Proximal Junctional Kyphosis and Failure
 - P0376 | Sacroiliac (SI) Joint-Specific Disability Questionnaire: The Denver SI Joint Questionnaire Initial Validation

2018

- VuMedi/LSRS Webinar - January
 - Diagnostic Workup/Selecting Patients for SIJ Fusion
- 3rd International Conference on Sacroiliac Joint Surgery, Tampa, FL, February 21-24
 - A Review of the Literature and Current Treatments
 - A New SIJ Questionnaire
 - Technical Considerations and Pitfalls – Lateral Approach
 - Lateral vs. Posterior Approach
 - Review of the Literature and Current Treatments, USF Health CAMLS
 - A New SIJ Questionnaire, USF Health CAMLS,
- AAOS Annual Meeting, New Orleans, LA, March 6-10
 - Looking Beyond the Curve: Classification and Treatment of Spinal Deformity in the Orthopaedic Clinic
 - Pragmatic Learning for New Techniques and Technologies in Spine Surgery,
 - What is the Role of Anterior, Oblique, Posterior, and Laterally Based Surgery: How Can They Help?

2017

- Merc Research Annual Musculoskeletal Education and Research Center Symposium August 25-26
 - The Future of Robotics

2016

- Stryker Spine MedED Cervical and Lumbar Resident and Fellow Education – March
 - Cervical Surgical Techniques
 - Cervical Case Presentations
 - Lumbar Indications for Surgery
 - Lumbar Case Presentations
- Stryker Spine MedED Great Debate: Advanced Techniques and Training – May

- Diagnosis and Treatment Options for Juxtafusion Disease in a Patient with Flat Back Syndrome, Presentation 1 & 2
- Miller Orthopedic Surgery Board Review Part II – May
 - Spine Surgery Sub-Specialty Highlight Lecture and Mock Presentations
- American Association of Orthopedic Surgery, Maintenance of Certification Preparation and Review Courses (Nov & Dec)
 - Degenerative Conditions Lumbo - Spine
 - Degenerative Diseases Cervical Spine
 - Spinal Trauma
 - Spine Deformity, Infections Involving the Spine
 - Spine Infections
 - Thoracic and Lumbar Trauma

2015

- American Association of Orthopedic Surgery, Maintenance of Certification Course – December
 - Lumbar Degenerative Diseases
 - Cervical Degenerative Diseases
 - Spinal Cord Trauma and Spinal Cord Injury
 - Spine Deformity and Special Considerations
 - Bacterial Spine Infections

2014

- Cutting Edge MD TV Series – Herniated Disc, Fox Sports Network, 2014
- SI Bone National Training Course – February
 - Minimally-Invasive Sacroiliac Fusion with the iFuse Implant System, lecture and live surgery
- Winter Clinics for Cranial and Spinal Surgery - February
 - Experience with the Minimally Invasive Sacroiliac Fusion from a Lateral Approach
- Washington Post Blogs – Washington, DC – June
 - Olympic Swimmer Amy Van Dyken Severs Spine in ATV Accident
- USA Today Feature, Englewood Colorado – October
 - Injury to Nervous System Doesn't Mean End of an NFL Career
- American Association of Orthopedic Surgery, Maintenance of Certification Course – December
 - Lumbar Degenerative Diseases
 - Cervical Degenerative Diseases
 - Spinal Cord Trauma and Spinal Cord Injury
 - Spine Deformity and Special Considerations
 - Bacterial Spine Infections

2012

- Sacroiliac Joint Surgery Society Annual Meeting - February
- Sacroiliac Joint Surgery Intraoperative Navigation (2 sessions) - February & May
- American Association of Orthopedic Surgery, Maintenance of Certification Course (Section Director & Spine Trauma Lectures)

2011

- Visiting Professor Lecture: Lumbar Pseudarthrosis - February

2010

- Colorado Family Medicine Review Course (June & October): Low Back Pain
 - Low Back Pain
- American Association of Orthopedic Surgery, Maintenance of Certification Course - November
 - Trauma: Cervical, Thoracic, Lumbar
 - Spinal Cord Injury and Rehabilitation
 - Spinal Infection

2009

- Society of Air Force Clinical Surgeons - April
 - Hemostasis in Spine Surgery: State of the Art
 - Disc Replacement and Motion Preservation Update
- 1st Annual Operating Room Spine Course - April
 - Course Chairman. Course for operating room personnel
- American Association of Orthopedic Surgery, Maintenance of Certification Course - November
 - Trauma: Cervical, Thoracic, Lumbar
 - Spinal Cord Injury and Rehabilitation
 - Spinal Infection

2008

- ProDisc-L National Physician Training (2 sessions) – January
 - Design Rationale
 - Table Instructor
 - DePuy National Spine Fellows Course
 - Complications
 - Table Instructor
- American Association of Orthopedic Surgery, Maintenance of Certification Course - November
 - Pain Management
 - Trauma: Cervical, Thoracic, Lumbar
 - Spinal Cord Injury and Rehabilitation
 - Spinal Infection
- AO North America National OR Personnel Course
 - Course Co-Chairman, Spine Section
 - Cervical Surgical Anatomy
 - Lumbar Degenerative Disease

2007

- AO North America National Resident's Spine Course - November
 - Spinal Biomechanics
 - History and Physical, Imaging and Diagnostics
 - Case Discussion Leader
 - Table Instructor
- American Association of Orthopedic Surgery, Maintenance of Certification Course
 - Pain Management

- Trauma: Cervical, Thoracic, Lumbar
- Spinal Cord Injury and Rehabilitation
- Spinal Infection

2005

- AO OR Personnel Course – Spine Surgery: Anterior Lumbar Plating - May 21-22
- Synthes Resident and Fellows Course – Cervical Spine Trauma - Oct 15-16
 - Biomechanics of Cervical Spine Trauma
 - Case Discussion Leader
 - Table Instructor
- Synthes Resident and Fellows Course – Degenerative Lumbar Spine - May 15-16
 - Biomechanics of Lumbar Spine
 - Lumbar Spine Degeneration
 - Case Discussion Leader
 - Table Instructor
- Colorado Family Medicine Review Course: Minimally Invasive Spine Surgery - November 4
 - Minimally Invasive Spine Surgery
- Fall Orthopaedic Summit – Minimally Invasive Spine Surgery – September 15-17
 - Minimally Invasive Spine Surgery
- Colorado Family Practice Review (May & Nov): New Spine Technology for Primary Care

INTERNATIONAL

1. North American Spine Society: PreCourse Spine Biologics and Research: Biologics for the Treatment of Spinal Disorders, Oct 2007
2. Tissue Engineering and Regenerative Medicine Annual Meeting: Porto, Portugal, 2008. Clinical and Basic Science Interactions of Fibrin Glue and Bone Morphogenetic Protein.
3. North American Spine Society: PreCourse Spine Pain Management: Discogenic and Psychologic Pain, Oct 2008
4. Wooridul Hospital Group, Seoul Korea, Feb 2009. Hemostasis in Spine Surgery
5. AO Spine TK Users Group Meeting 2009. Case Presentations
6. North American Spine Society Annual Meeting, 2009. Spine and Sports Symposium: Implications for the Senior Athlete, How does competitive sport affect surgical decision making in multilevel cervical disease
7. American College of Spine Surgeons, Annual Meeting June 2010. Lumbar Pseudarthrosis
8. Indian Medical Association, Mehsana, India Oct 12, 2010. Low Back Pain
9. Asia Pacific Orthopedic Association: Taipei, Taiwan, Nov 4-6, 2010. Symposium, Hemostasis in Spine Surgery
10. Advanced Techniques for Complex Spinal Resection and Reconstruction: A Hands-on Human Anatomic Specimen Course: August 3-4, 2012 (AO)
11. North American Spine Society 2012 Annual Meeting: Biologics Pre-Course Chairman
12. North American Spine Society 2012 Annual Meeting: Thoracolumbar Complications of rhBMP-2 Use
13. North American Spine Society 2012 Annual Meeting: Growth Factors in Spine Surgery
14. North American Spine Society 2012 Annual Meeting: Breaking Developments in Surgical Biology
15. North American Spine Society 9th Spine Summit, Feb 28-March 2, New Technology Symposium
Presenter/Chair: SI joint fusion

16. North American Spine Society Webinar: Potential Risks of rh-BMP-2 Use in Spine Surgery, August 21, 2013
17. SRS Traveling Fellowship: Pitfalls and Prevention of Complications in Adult Deformity Surgery, Istanbul Turkey, Nizhniy Novgorod, Bristol United Kingdom, Lyon France, August 30 to September 17, 2013
18. North American Spine Society: Section on Biologics and Basic Research Webinar Series: BMP: Risk Management Strategies, August 21, 2013
19. SRS Traveling Fellowship: Spinal Fusion: Optimizing the Mechanical Fixation to Meet the Biology of the Patient, Istanbul Turkey, August 30, 2013
20. SRS Traveling Fellowship: Modern 3-D Imaging and Computer Navigation in Spine Surgery, Zurich Switzerland, September 13, 2013
21. North American Spine Society 2013 Annual Meeting: Section on Biologics and Research: Stem Cell Procedures, Cell Enhanced Allografts (Osteocell, Trinity) Are as Good as BMP and Cheaper: Con, October 9, 2013
22. North American Spine Society 2013 Annual Meeting: Section on Biologics and Basic Science: Update on rhBMP-2: Current Usage, YODA Findings and Risk Management, October 11, 2013
23. AO Spine Latin America Symposium – Bone Biomaterial: BMP the Good and the Bad, Mexico City, Mexico, June 14, 2014
24. AO Spine Latin America Symposium – Bone Biomaterial: BMP or DBM? A New Step In-between: Cellular Allografts, Mexico City, Mexico, June 14, 2014
25. Association of Spine Surgeons of India Visiting Professor Bharati Didyapeeth University Medical College, Department of Orthopedic Surgery, January 20 – 21, 2015
26. Association of Spine Surgeons of India: Cervical, Thoracic and Lumbar Spine Trauma, Bharati Didyapeeth University Medical College, Department of Orthopedic Surgery, January 21, 2015
27. Pune Spine Society: Lumbar Pseudoarthrosis, Pune India, January 22, 2015
28. Association of Spine Surgeons of India Annual Meeting (ASSICON): Dynamic Stabilization for Multilevel Degenerative Disc Disease, Pune India, January 24, 2015
29. The International Society for the Advancement of Spine Surgery 2015 Annual Meeting: TDR vs. Fusion Panel, San Diego, California, April 16, 2015
30. The International Society for the Advancement of Spine Surgery 2015 Annual Meeting: Spine Talk – Treatment of L4-5 Degenerative Spondylolisthesis (Moderator), San Diego, California, April 16, 2015
31. Essentials In Spine: Spinal Osteotomies, An Advanced Level BioSkills Experience: Thoracolumbar Osteotomies – Principles of Different Types of Osteotomies with Decision Making, Bangalore, India, September 19, 2015
32. Essentials In Spine: Spinal Osteotomies, An Advanced Level BioSkills Experience: Cadaveric Demonstration: Thoraco-Lumbar PSO and SPO (Ponte's) – Surgical Technique (Positioning to Closure), Tips and Pearls, Bangalore, India, September 19, 2015
33. 2nd International Extreme Sports Medicine Congress, Spine Injuries in the Extreme Sports Athlete: Treating the tingling, June 10, 2016
34. 2nd International Conference on Sacroiliac Joint Surgery and annual meeting: Statistical shape modelling of the SIJ, Hamburg, Germany, September 16, 2016
35. 2nd International Conference on Sacroiliac Joint Surgery and annual meeting: Different revision techniques after a failed SIJ fusion - How do we accomplish fusion in case of a pseudoarthrosis and when do we switch one method for another? Hamburg, Germany, September 17, 2016
36. 2nd International Conference on Sacroiliac Joint Surgery and annual meeting: Lateral based system, iFuse, Hamburg, Germany, September 17, 2016

37. Annual Meeting of EUROSPINE, Quality of life and sagittal alignment after surgical correction of adult spinal deformity with posterior instrumentation, Dublin, Ireland, October 11-13, 2017.
38. Annual Meeting of the International Society for the Advancement of Spine Surgery (ISASS): Quality of Life and Sagittal Alignment after Surgical Correction of Adult Spinal Deformity with Posterior Instrumentation and Simultaneous Translation on Two Rods technique, Orlando, Florida, October 25-28, 2017.
39. 38th Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT): Blockade of Osteoclast-Mediated Bone Resorption with a RANKL Inhibitor Enhances Spinal Fusion, Cape Town, South Africa, November 30-December 2, 2017.
40. 38th Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT): Spine Fusion and rhBMP in a Vitamin D deficient rat model, Cape Town, South Africa, November 30-December 2, 2017.
41. 38th Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT): Surgical Planning And Patient-Specific Rods (PSR) Improve Correction Of Sagittal Imbalance In Adult Spinal Deformity (ASD), Cape Town, South Africa, November 30-December 2, 2017.
42. 38th Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT): Quality of life and sagittal alignment after surgical correction of adult spinal deformity (ASD) with posterior instrumentation, Cape Town, South Africa, November 30-December 2, 2017.
43. 39th Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT), Cauda Equina Syndrome, Montreal, CA October 10-13, 2018.
44. 39th Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT), Safety in Spine Surgery and Trauma, Montreal, CA October 10-13, 2018.
45. 40th Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT): Motion Preservation Successes and Failures, December 4-7, 2019.
46. AAOS 2021 Annual Meeting, International Instructional Course Lecture: Current State of Total Disc Replacement: Economics of Lumbar Disc Replacement, San Diego, CA August 31 – September 3, 2021.
47. AAOS 2021 Annual Meeting, International Instructional Course Lecture: Lumbar Disc Replacement Outcomes, San Diego, CA August 31 – September 3, 2021.
48. International Society for the Advancement of Spine Surgery. June 1- 3, 2023. Adjunctive Use of Bone Growth Stimulation in Cervical Spine Fusion in Patients at Risk for Pseudarthrosis
49. International Society for the Advancement of Spine Surgery. Clay Hoffman, BS, Zohaib Sherwani, MD, Vikas V. Patel, Shahbaaz Sabri, MD, David Ou-Yang, MD, Christopher J. Kleck, MD. Range of Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across the Cervicothoracic Junction. ISASS Annual Meeting 2023. San Francisco, CA, June 3, 2023.
50. Global Spine Congress. Andres Bonilla; Kim Lebsock; James Johnson; Kevin Labus; Benjamin Gadowski; Holly Stewart; Howard Seim; Celeste Abjornson; Vikas Patel; Jeremiah Easley: “Safety and Functionality assessment of Antimicrobial Surface Modified Spinal Stabilization Devices”. Oral Presentation GSC Annual Meeting, May 16, 2024. Bangkok, Thailand.
51. 11th Interdisciplinary World Congress on Low Back & Pelvic Girdle Pain. Peter G. Whang, Vikas Patel, Bradley Duhon, Bengt Sturesson, Daniel Cher, W. Carlton Reckling, Robyn Capobianco and David Polly. Oral abstract presentation of “Minimally Invasive SI Joint Fusion Procedures for Chronic SI Joint Pain: Systematic Review and Meta-Analysis of Safety and Efficacy”. Melbourne, Australia; November 2nd, 2023
52. Vikas Patel, Todd Lansford, Marc Weinstein, Peter Campbell, Amir Vokshoor, Joshua Wind, Andrew Beaumont, Hamid Hassanzadeh, Kristen Radcliff, Ilyas Aleem, Domagoj Coric. Adjunctive Use of Bone Growth Stimulation in Cervical Spine Fusion in Patients at Risk for Nonunion. CSRS 2023. Las Vegas, NV, Nov. 30, 2023.

53. Clay Hoffman, MD, Michael Nocek, BA, Zohaib Sherwani, MD, Vikas V. Patel, MD, Shahbaaz Sabri, MD, David Ou-Yang, MD, Christopher J. Kleck, MD. Range of Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across the Cervicothoracic Junction. IMAST 2024. San Diego, CA, Apr. 10-14, 2024.
54. Evalina Burger, MD, Vikas Patel, MD, Michael Steinmetz, MD, William C. Welch, MD, Ahmad Nassr, MD, Domagoj Coric, MD. Lumbar Facet Arthroplasty for Spondylolisthesis and Stenosis: Three Year Outcomes from a Prospective FDA Randomized Clinical Trial. ISASS 2024. Miami, FL, Apr. 26-28, 2024.
55. Ankit Hirpara, BA, Cheryl Ackert-Bicknell, PhD, Brandon Bennett, MD, Vikas Patel, MD. Understanding the Impact of Low-Density Lipoprotein Levels and Lipid-Lowering Agents on Rates of Pseudarthrosis After Anterior Cervical Discectomy and Fusion. ISASS 2024. Miami, FL, Apr. 26-28, 2024.
56. CSRS meeting 12/2024

Teaching Record

1. BIOE 5041 - Clinical Experiences for Bioengineers 2017-2022
2. Orthopedic Resident Core Curriculum Spine Section Director 2004 - 2016
3. Orthopedic Resident Spine Surgery Clinical Education Section Director: 2004-2016: Supervision, bedside teaching, outpatient clinic teaching, and surgical teaching 24 hours/week.
4. Fellowship Director for Spine Surgery Fellowship 2008 - 2018. Co-developed the fellowship starting in 2007 and obtained ACGME accreditation in 2010.
5. Orthopedic Resident Spine Trauma Course Director and Lecturer for weekly lectures: August-November 2005
6. Monthly Spine Journal Club, co-organizer and frequent moderator, 2004-2019
7. Physical Medicine and Rehabilitation Resident Elective Clinical Instructor: 2-week blocks of clinical and surgical teaching twice / year 2006-2012
8. Physical Medicine and Rehabilitation Spine Fellow Elective Clinical Instructor: 6-week block 2007
9. Rheumatology Fellow Elective Clinical Instructor: 6-week block 2006.
10. Primary Care Physician CME Accredited Evening Lecture Series: Developed, directed, and administered monthly lecture series for the 12 months of 2005.
11. Primary Care Physician CME Accredited Webcast Lecture Series: Developed, directed, and administered monthly lecture series via interactive web-based format allowing access from anywhere in world. January 2006 – 2012
12. Developed Spine Surgery Resident Rotation Guideline Packet 2006
13. Posterior Cervical Fixation, Director, cadaver workshop March 2005
14. Compiled and Developed patient education packets for pre-surgery education 2009
15. Medical School Orthopedics 6620 class lecturer, 2005, 2006, 2007, 2008, 2009
16. Medical Student Clinical Education in Spine Center: Regular students rotating in clinic 2004 - Present
17. Developed National Teaching Program for physician education for minimally invasive anterior spinal fusion surgery technique, Trans-1 2010
18. Mentored Scholarly Activity mentor for medical school students, Engineering students and residents: Dale Cassidy, Laura Brown, Aris Sophocles, Scott Golembeski, Alex Yaszemski, Blake Sherman, Matt McCullough, Whitney Strom, Liz Robinson, Grant Armour, Sami Jaafar, Brianna Patti, Ryan Farmer,

Patrick Obrien, Doug Kasow, Mike Zimkowski, Morgan Hill, Alireza Hemmati, Yalda Nazeri, Brett Matoian, Damian Illing, Cameron Barton, Kenneth Milligan, Chris Johnson, Ben Saccamano, Ryan Martyn, Zach Wuthrich, Brandi Krieg

19. Mentored Indo-American Spine Alliance Fellow, Shakti Goel, 2017

Thesis Committees

1. Mike Zimkowski: MA and PhD (CU) 2009-2011
2. Nina Vollmer: PhD (Mines) 2010-2013
3. Lillian Chatham: MA (CU Bioengineering) 2014
4. Maria Bortot: MA (CU Bioengineering) 2014
5. Anna Laura Nelson: MA (CU Bioengineering) 2014
6. Ryan Arce: MA (CU Bioengineering) 2015
7. James R. Bardill: MA (CU Bioengineering) 2015
8. Madia Stein: MA (CU Bioengineering) 2016
9. Songyuan Gu: MA (CU Biomedical Science and Biotechnology) 2017
10. Trevor Pier: 2018
11. Zach Wuthrich: MA (CU Biomechanical Science) 2019
12. Lana Bowers, MS (Bioengineering) 2020

Academic Activities

- Judge for University of Colorado, Denver Research and Creative Activities Symposium, 2010
- Developed National Teaching Program for Operating Room Personnel education in spine surgery. Presented 11/2009, 6/2010, 7/2010,
- Bioengineering PhD Program, BIOE 5041 Lecturer 2010-2018
- Bioengineering PhD Program, BIOE 5041 Lecturer -Operating room experience facilitator 2010-present
- North American Spine Society 2012 Annual Meeting: Biologics Pre-Course Chairman
- NASS 9th Spine Summit, Feb 28-March 2, 2013, New Technology Symposium Presenter/Chair: SI joint fusion
- Cervical Spine Anatomy, Feb 20, 2013
- Cervical Spine Anatomic Dissection and Surgical Procedure Lab, Feb 20, 2013
- Rocky Mountain Medical Technology Conference, Feb 25, 2012, Medical Advisory Board, University of Colorado, Boulder, School of Engineering
- AAOS Maintenance of Certification Course 2008-2013
- CU Biomedical Engineering Society, medical advisor, 2011-2016
- Co-Chair AAOS Maintenance of Certification Course 2013-2016
- ABOS Board Examiner 2018
- ABOS Board Examiner 2019
- ABOS Board Examiner 2020
- ABOS Board Examiner 2021
- ABOS Board Examiner 2022, August
- ABOS Board Examiner 2024, July
- ABOS Board Examiner 2026, July

Grants

PEER REVIEWED GRANTS

1. Colorado Office of Economic Development and International Trade SPARK, Novelty Cages Accommodating Individual Endplate Architecture, State, \$150,000, (PI: Dr. Vikas V. Patel), 7/1/23-4/30/25
2. Surgalign Spine Technologies, A 2- and 5-Year Evaluation of Clinical Outcomes in the Treatment of Degenerative Spinal Stenosis with Concomitant Low Back Pain by Decompression With and Without Additional Stabilization Using the coflex(R) Interlaminar Technology for FDA Actual Conditions of Use Study, \$235,421.00, 5/10/23-5/9/28
3. Spark Project Grant, “Novelty Cages Accommodating Individual Endplate Architecture”, \$100,000.00, 5/2023 (PI: Dr. Vikas V. Patel), 5/10/23-5/9/28
4. Orthofix, Inc., M6-C™ Artificial Cervical Disc Two-Level IDE Pivotal Study: A Prospective, Concurrently Controlled, Multi-Center Study to Evaluate the Safety and Effectiveness of the Spinal Kinetics M6-C™ Artificial Cervical Disc Compared to Anterior Cervical Discectomy and Fusion (ACDF) for the Treatment of Contiguous Two-Level Symptomatic Cervical Radiculopathy, \$309,738.79, (PI: Dr. Vikas V. Patel), 2/8/23 - 2/7/28
5. A Multi-Center Post-Market Retrospective Data Collection Protocol to Evaluate the Real World Performance of Orthofix Spine Stim Devices Compared to Control (RWE Spine Study), \$133,147 (PI: Dr. Vikas V. Patel), 10/14/22-10/13/27
6. Pfizer, A PHASE 3, PLACEBO-CONTROLLED, RANDOMIZED, OBSERVER-BLINDED STUDY TO EVALUATE THE EFFICACY, SAFETY, AND TOLERABILITY OF A CLOSTRIDIUM DIFFICILE VACCINE IN ADULTS 50 YEARS OF AGE AND OLDER, \$15,440 (PI: Dr. Vikas V. Patel)
7. SI Bone, SALLY: Study of bone growth in the Sacroiliac Joint after minimally invasive surgery with titanium implants ceding to Aspire IRB, \$22,451 (PI: Dr. Vikas V. Patel) 7/31/17-7/30/2024
8. Spinal Kinetics, Inc., M6-C Artificial Cervical Disc IDE Post-Approval Study, \$19,200 (PI: Dr. Vikas V. Patel) 5/14/20 - 5/13/25
9. ReActiv8 Stimulation Therapy vs Optimal Medical Management: A Randomized Evaluation (RESTORE), \$355,756 (PI: Dr. Vikas V. Patel) 1/14/22-1/13/26
10. Mitsubishi Tanabe, A Phase 2a, Randomized, Double-blind, Placebo-controlled Study to Assess the Efficacy and Safety of MT-3921 in Subjects with Acute Traumatic Cervical Spinal Cord Injury, \$4,352 (PI, Kleck; CO-PI Dr. Vikas V. Patel) 2022
11. UCD/COLOSEM Lower-Extremity Bony Alignment and Body Habitus Using EOS, \$24,798 (PI: Dr. Christopher J. Kleck; CO-PI Dr. Vikas V. Patel) March 2021-February 2027
12. NuVasive Prediction of Postoperative Global Sagittal Alignment Using Musculoskeletal Modeling – Validation Study, \$45,800 (PI Witt-Jens; CO-PI Dr. Vikas V. Patel), July 2019-July 2024
13. Lower-Extremity Bony Alignment and Body Habitus Using EOS, \$24,798 (PI: Dr. Christopher J. Kleck; CO-PI Dr. Vikas V. Patel)
14. A Double Blind, Placebo-Controlled Crossover Study Comparing the Analgesic Efficacy of Cannabis versus Oxycodone, PI Emily Lindley, Investigator, Colorado Department of Public Health and Environment (CDPHE) Medical Marijuana Research Grant 2016-2019 \$743,122
15. Bioscience Discovery and Evaluation Grant, PI DaeWon Park, CI, Colorado Office of Economic Development and International Trade, 2014-2015
16. Porous, Patient Specific Interbody Fusion Cages with Enhanced Loading Characteristics, CI, National Institute for Arthritis and Musculoskeletal and Skin Diseases for 2014-2016, 3% effort, \$176,125
17. Revitalization of Bone Allograft with Induced Pluripotent Stem Cells to Enhance Spinal Fusion, CI Musculoskeletal Transplant Foundation, 2/1/2014 to 1/31/2015, 3% effort, \$100,000

18. Fellowship Grant in Spine Care for 2015-2016, PI, Globus Medical, Industry, 8/1/2015 to 7/31/2016, 1% effort, \$67,022
19. Fellowship Grant in Spine Care for 2014-2015, PI, OMeGA, Industry, 8/1/2014 to 7/31/2015, 1% effort, \$15,000
20. Fellowship Grant in Spine Care for 2013-2014, PI, OREF, Industry, 8/1/2013 to 7/31/2014, 1% effort, \$31,290
21. Fellowship Grant in Spine Care for 2012-2013, PI, OREF, Industry, 8/1/2012 to 7/31/2013, 1% effort, \$34,324
22. Fellowship Grant in Spine Care for 2011-2012, PI, OREF, Industry, 8/1/2011 to 7/31/2012, 1% effort, \$54,250
23. Fellowship Grant in Spine Care for 2011-2012, PI, Synthes, Industry, 8/1/2011 to 7/31/2012, 1% effort, \$32,500
24. Fellowship Grant in Spine Care for 2010-2011, PI, OREF, Industry, 8/1/2010 to 7/31/2011, 1% effort, \$69,500
25. American Association of Hip and Knee Surgeons, 2002, Three Dimensional Morphologic and Kinematic MRI Analysis of the Knee. \$25,000
<http://www.aahks.org/member/research/AAHKSResearchGrantsandAwardRecipients.asp>

NON-PEER REVIEWED GRANTS

1. 3Spine clinical trial titled “An Interventional, Multi-Center Investigation of Single-Level Transforaminal Lumbar Interbody Fusion (TLIF) Stabilized with Pedicle Screws”. PI, Vikas Patel, Grant 2021-2026, \$353,835
2. Patel, Synthes, Biomechanical Evaluation of Anterior Cage-Plate Fixation (ALIF cage and ATB Plate or Synfix) Versus Iliac Screws with TLIF, \$53,063, 5/1/12 – 5/1/15
3. Patel, CU Innovations/Pilot, Novel Cages Accommodating Individual Endplate Architecture, \$100,000, 7/11/18 – 7/11/20
4. Patel, Lanx, Inc., A Multi-Center Prospective Randomized Study Comparing Supplemental Posterior Instrumentation, ASPEN Spinour Process System versus Pedicle Screw Fixation, in Lateral Interbody Fusion (LLIF) or Anterior Lumbar Interbody Fusion (ALIF), \$7,370, 9/21/12 – 9/20/15
5. Patel, Medtronic, Prospective Study of Pedicle Screw Placement Using the O-arm and Navigated Instrumentation, \$63,504, 12/29/11 – 1/17/16
6. Patel, Globus Medical, 2015 Fellowship, \$67,022, 3/24/15 – 7/31/16
7. Patel, SI-BONE, INSITE: Investigation of Sacroiliac Fusion Treatment, \$74,003, 12/4/12 – 12/3/16
8. Patel, Aesculap Implant Systems, Clinical Study to Evaluate the Safety and Effectiveness of the Aesculap Activ-L Artificial Disc in the Treatment of Degenerative Disc Disease, \$1,457,517, 11/28/07 – 3/1/17
9. Patel, Stryker, AAOS 2017 Annual Meeting, \$1,000, 3/1/17 – 3/31/17
10. Patel, Vertiflex, A Prospective, Multicenter, Randomized Study Comparing VertiFlex Superion Interspinous Spacer (ISS) to the X-STOP Interspinous Process Decompression (IPD) System in Patients with Moderate Lumbar Spinal Stenosis, \$668,904, 3/2/09 – 7/21/17
11. Patel, Globus, 16-17 Fellowship, \$40,556.96, 8/1/16 – 7/31/17
12. Patel, Orthofix, A Retrospective Study Evaluating the Efficacy of the Orthofix Cervical-Stim Bone Growth Stimulator in Patients that Have Undergone Cervical Fusion Surgery and are at High-risk for Non-fusion, \$58,229, 9/2/14 – 9/1/17
13. Patel, Integra LifeSciences Corporation, DuraSeal Exact Spine Sealant, \$39,012, 9/29/14 – 9/28/17

14. Patel, Orthofix, Safety and Efficacy of Pulsed Electromagnetic Fields (Cervical-Stim) as an Adjunct to Enhance Union in Conservatively Treated Type II Fractures of the Odontoid Process, \$16,307, 3/12/15 – 3/11/18
15. Patel, Globus, 17-18 Fellowship, \$75,000, 8/1/17 – 7/31/18
16. Patel, Orthofix, Retrospective Study evaluating the efficacy of the Orthofix Spinal-Stim bone growth stimulator in patients who have undergone lumbar fusion surgery with adjunctive use of the Spinal-Stim device, \$26,566, 9/15/15 – 9/14/18
17. Patel, Medtronic, 17-18 Fellowship, \$81,384, 2/1/18 – 1/31/19
18. Patel, OMeGA, 17-18 Fellowship, \$16,000, 8/1/18 – 7/31/19
19. Patel, Globus, 17-18 Fellowship, \$75,000, 8/1/18 – 7/31/19
20. Patel, Mainstay Medical, ReActiv8 Implantable Neurostimulation System for Chronic Low Back Pain, \$206,202, 3/29/17 – 3/28/20
21. Patel, Colorado Office of Economic Development and International Trade, Cervical Plate Design Finalization, Validation, and Regulatory Approval, \$115,762, 7/2/17 – 4/30/20
22. Patel, Pfizer Pharmaceuticals, A Phase 3, Placebo-controlled, randomized, observer-blinded study to evaluate the efficacy, safety, and tolerability of a Clostridium Difficile Vaccine in adults 50 years or age and older, \$24,974, 5/23/17 – 5/22/20
23. Patel, Spinal Kinetics, Prospective, Concurrently Controlled, Multi-Center Study to Evaluate the Safety and Effectiveness of the Spinal Kinetics M6-C Artificial Cervical Disc Compared to Anterior Cervical Discectomy and Fusion (ACDF) for the Treatment of Symptomatic Cervical Radiculopathy, \$163,661, 2/16/15 – 2/15/21
24. Patel, Orthofix, A Multi-Center, Open-Label, Prospective Study of SpinalStim (MOP-SS) as Adjunctive Care following Lumbar Fusion Surgery, \$11,840, 4/9/18 – 4/8/21
25. Patel, Pfizer Pharmaceuticals, 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, \$529,490, 5/5/15 – 5/4/21
26. Patel, Premia, Clinical Study Protocol to Assess the Safety and Effectiveness of the Premia Spine TOPS System, \$7,205, 7/14/17 – 7/14/22
27. Patel, SI-BONE, SALLY, \$19,778, 7/31/17 – 7/30/22
28. Patel, Orthofix, A Multi-Center, Open-Label, Prospective Study of CervicalStim device as Adjunctive Care following Cervical Fusion, \$10,688
29. DuraSeal TM Exact Spine Sealant System Post Approval Study, PI, Integra Life Sciences Corporation, Industry, 9/29/2014 to 9/28/2017, 5% effort, \$36,393
30. Cervical Stim Retrospective (CDA – Orthofix Cervical Stim Retrospective Protocol), PI, Orthofix, Inc., Industry, 9/2/2014 to 9/1/2017, 5% effort, \$83,457
31. Odontoid: Safety and Efficacy of Pulsed Electromagnetic Fields (Cervical Stim) as an Adjunct to Enhanced Union, PI, Orthofix, Inc., Industry, 3/2/2015 to 2/15/2018, 5% effort, \$10,433
32. Retrospective Study Evaluating the Efficacy of the Orthofix Spinal-Stim Bone Growth Stimulator in Patients Who Have Undergone Lumbar Fusion Surgery with Adjunctive Use of the Spinal-Stim Device, PI, Orthofix, Inc., Industry, 9/5/2015 to 9/14/2018, 5% effort, \$18,900
33. A Phase 2b Randomized, Double-blind, Placebo Study to Evaluate the Safety and Efficacy of Staphylococcus, PI, Pfizer, Inc., Industry, 5/5/2015 to 5/1/2018, 5% effort, \$10,099
34. Prospective, Concurrently Controlled, Multi-Center Study to Evaluate the Safety and Effectiveness of the Spinal Kinetics M6-C Artificial Cervical Disc Compared to ACDF for the Treatment of Symptomatic Cervical Radiculopathy, PI, Spine Kinetics, Inc., Industry 2/15/2015 to 2/15/2018, 5% effort, \$16,099

35. Three dimensional accuracy of Stealth Surgical Navigation with O-Arm Imaging, PI, Medtronic Sofamor-Danek, Industry, 12/29/2011 to 1/17/2015, 3% effort, \$63,504
36. Activ-L Artificial Disc. CT, PI, Aesculap, Inc., Industry, 11/28/2007 to 7/31/2015, 5% effort, \$1,180,140
37. Biomechanical Cervical Disc Replacement Facet Force, PI, Synthes, Industry, 6/1/2011 to 9/30/2013, 3% effort, \$47,397
38. Investigation of Sacroiliac Fusion Treatment – INSITE - CT, PI, SI Bone, Industry, 12/4/2012 to 12/3/2016, 3% effort, \$54,904
39. ISIS Clinical Trial, PI, Vertiflex, Industry, 3/2/2009 to 7/31/2016, 5% effort, \$524,219
40. The Relationship between Sagittal Plane Correction and Quality of Life in Adult Deformity Patients Treated with Posterior Instrumentation-CT, CO-I, Medtronic, Industry, 7/31/2012 to 7/31/2016, 3% effort, \$49,107
41. Biomechanical Evaluation of Anterior Cage-Plate Fixation (ALIF cage and ATB Plate or Synfix) Versus Iliac Screws with TLIF., CO-I, Synthes, Industry, 5/1/2012 to 5/01/2015, 3% effort, \$53,063
42. Effects of vitamin D deficiency on lumbar spine fusion and the role of rhBMP-2, CO-PI, Medtronic, Industry, 11/15/2012 to 11/14/2014, 1% effort, \$28,932
43. Validation of a New Sacroiliac-Joint Specific Disability Questionnaire, CO-I, SI Bone, Industry, 3/4/2012 to 3/3/2015, 1% effort, \$48,834
44. Rabbit Study Protocol CR-055: P-15 ABM Formulations in a Rabbit Femur Drill Hole Healing Study, PI, Cerapedics, Industry, 4/1/2009 to 12/31/2009, 3% effort, \$23,048
45. Evaluation of Blood Platelet Concentrate Methodology with ABM/P-15., PI, Snoasis Medical, Industry, 2/1/2010 to 5/31/2010, 3% effort, \$10,240
46. In vitro biomechanical evaluation of adjacent level facet joint forces relative to pedicle screw head size, PI, Aesculap, Industry, 1/1/2005 to 12/31/2005, 3% effort, \$19,841
47. Inflammatory effects of BMP with protective and bone limiting effects of Fibrin Glue, PI, Medtronic, Industry, 2/3/2006 to 4/30/2009, 3% effort, \$21,055
48. Post market Surveillance of Clinical and Functional Outcomes with Post-Operative Adjunctive use of Cervical-Stim aor Spinal Stim, PI, Orthofix, Industry, 6/1/2008 to 5/31/2011, 3% effort, \$18,849
49. A Clinical evaluation of cervical STIM and Spinal-STIM, PI, Orthofix, Industry, 1/27/2006 to 1/26/2009, 3% effort, \$2,050
50. BMP Diffusion from a Novel Bone Graft Substitute, PI, Globus Medical Inc., Industry, 7/5/2007 to 7/4/2008, 3% effort, \$9,435
51. EBI'S Lumbar Anterior Plate System, PI, Biomet, Industry, 4/16/2007 to 4/15/2008, 3% effort, \$15,873
52. Facet force relative to disc degeneration and disc replacement, PI, Synthes, Industry, 5/31/2007 to 8/31/2008, 3% effort, \$31,577
53. The effect of auto claving on metal memory, PI, DePuy, Industry, 8/1/2007 to 12/31/2008, 3% effort, \$6,000
54. Fellowship Grant in Spine Care for 2011-2012, PI, OREF, Industry, 8/1/2011 to 7/31/2012, 1% effort, \$54,250
55. Fellowship Grant in Spine Care for 2008-2010, PI, Synthes, Industry, 9/1/2008 to 8/31/2010, 1% effort, \$121,837
56. Fellowship Grant in Spine Care for 2010-2011, PI, Synthes, Industry, 9/1/2010 to 8/31/2011, 1% effort, \$65,000
57. EPhysical Capacity Outcomes Study PD-L and ALIF, PI, Synthes, Industry, 11/20/2009 to 10/31/2011, 3% effort, \$15,407

58. Synthes ED Support, PI, Synthes, Industry, 1/1/2011 to 1/31/2011, 1% effort, \$2,600.
59. Retrospective Multicenter Clinical Evaluation of Fusion and Complications for Single Lvl AxiaLIF and ALIF Subjects, PI, Trans 1, Industry, 4/27/11 to 12/31/2012, 3% effort, \$31,561
60. Synthes AO Spine, PI, Synthes, Industry, 8/1/2012 to 8/30/2012, 1% effort, \$1,500
61. Lanx Aspen Spinous Process Clamp CT, PI, Lanx, Industry, 09/21/2012 to 9/20/2015, 3% effort, \$7,240
62. Skull to sacrum course, PI, Medtronic, Industry, 4/1/2013 to 4/8/2013, 1% effort, \$2,000
63. Nubac Disc Arthroplasty, CO-I, Pioneer Surgical Company, Industry, 7/1/2009 to 6/30/2012, 3% effort, \$26,678
64. Facet Force Disc Degen/Metal Memory, Co-PI, Showa Ika Kohgyo Co. LTD, Industry, 10/1/2007 to 12/1/2008, 3% effort, \$70,453

Clinical Trials

1. **An Interventional, Multi-Center Investigation of Single-Level Transforaminal Lumbar Interbody Fusion (TLIF) Stabilized with Pedicle Screws**
Principal Investigator (PI), 3Spine
Starting July 29, 2026
2. **Investigation of Sacroiliac Fusion Treatment (INSITE) - CT**
Principal Investigator (PI), SI-BONE
December 4, 2012 – December 3, 2015
3. **Lanx Aspen Spinous Process Clamp - CT**
Principal Investigator (PI), Lanx
September 21, 2012 – September 20, 2015
4. **Validation of a New Sacroiliac Joint Specific Disability Questionnaire**
Co-Investigator (Co-I), SI-BONE
March 4, 2012 – March 3, 2015
5. **Retrospective Multicenter Clinical Evaluation of Fusion and Complications for Single-Lvl AxiaLIF and ALIF Subjects**
Principal Investigator (PI), Trans 1
April 27, 2011 – December 31, 2012
6. **EPhysical Capacity Outcomes Study: Posterior Lumbar (PD-L) and ALIF**
Principal Investigator (PI), Synthes
November 20, 2009 – October 31, 2011
7. **Nubac Disc Arthroplasty**
Co-Investigator (Co-I), Pioneer Surgical Company
July 1, 2009 – June 30, 2012
8. **ISSIS Clinical Trial**
Principal Investigator (PI), Vertiflex
March 2, 2009 – July 31, 2016

9. Post-Market Surveillance of Clinical and Functional Outcomes with Post-Operative Adjunctive use of Cervical-Stim aor Spinal-Stim Devices

Principal Investigator (PI), Orthofix

June 1, 2008 – May 31, 2011

10. Activ-L Artificial Disc. - CT

Principal Investigator (PI), Aesculap, Inc.

November 28, 2007 – July 31, 2015

11. A Clinical Evaluation of Cervical-STIM and Spinal-STIM Devices

Principal Investigator (PI), Orthofix

January 27, 2006 – January 26, 2009

Bibliography

Peer Reviewed Journal Articles

1. McDermott RM, Glover K, **Patel V**. Removal of spinopelvic S2 alar-iliac osseointegrative screws: a case report and surgical technique guide. *J Spine Surg* 2026;12(4):58. doi: 10.21037/jss-2025-aw-198. PMID: 42158070
2. Hassanzadeh H, Weinstein MA, Lansford T, Beaumont A, Campbell P, **Patel V**, Vokshoor A, Wind JJ, Radcliff K, Aleem I, Matheus V, Cowgill I, Ryaby J, Coric D. A retrospective, controlled trial evaluation of pulsed electromagnetic field stimulation for fusion success following lumbar spinal surgery. *J Spine Surg* 2026;12(1):2. doi: 10.21037/jss-25-106
3. Garg, S. BS1,2,a; Jamar, K. BS3; Gill, A.K.1,2; Keeter, C. MS3; Young, P.G. MD1,2; **Patel, V. MD3**; Gallizzi, M.A. MS, MD1,2; Gill, S.S. MD1,2. Exploring the Orthopaedic Surgery Match: An Analysis of Trends in Applicant Characteristics After the Introduction of a Pass/Fail USMLE Step 1 Examination. *JBJS Open Access* 11(2):e25.00289, April-June 2026. | DOI: 10.2106/JBJS.OA.25.00289
4. Hoffman, Clayton MD*; Sabri, Shahbaaz A. MD†; Nocek, Michael BA‡; Noshchenko, Andriy PhD‡; Ou-Yang, David MD*; Kleck, Christopher J. MD*; **Patel, Vikas V. MD***. Range of Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across the Cervicothoracic Junction. *Clinical Spine Surgery* 39(4):p 204-212, May 2026. | DOI: 10.1097/BSD.0000000000002056
5. Hassanzadeh H, Weinstein MA, Lansford T, Beaumont A, Campbell P, **Patel V**, Vokshoor A, Wind JJ, Radcliff K, Aleem I, Matheus V, Cowgill I, Ryaby J, Coric D. *A retrospective, controlled trial evaluation of pulsed electromagnetic field stimulation for fusion success following lumbar spinal surgery. J Spine Surg*. Published online January 15, 2026; 12(1):2. doi:10.21037/jss-25-106. [7554-PB4-5765-R2 | PDF]
6. Fontan FR, Thomas SM, Keeter CL, Patel VV, Payne KA. Profiling the cellular response to allogeneic mesenchymal stromal cells implantation in acute and non-union calvarial defects in mice. *Journal of Orthopaedic Reports*. Dec 2025, <https://doi.org/10.1016/j.jorep.2025.100854>.
7. Hipp JA, Mikhael MM, Reitman CA, **Patel VV**, Chaput CD, DeVine J, Berven S, Nunley P, Grieco TF. Diagnosis of lumbar spine pseudoarthrosis: a strain-based approach. *Spine J*. 2026 Jan 2:S1529-9430(25)00950-7. doi: 10.1016/j.spinee.2025.12.012. Epub ahead of print. PMID: 41485490.
8. Bonilla AF, Seim HB 3rd, Gadowski B, **Patel VV**, Easley JT. Ovine models of intervertebral disc degeneration. *Ann Transl Med*. 2025;13(6):79. doi:10.21037/atm-25-136. PMCID: [PMC12771051](https://pubmed.ncbi.nlm.nih.gov/PMC12771051/)

9. Coomer SC, Merkle AN, Patel VV, Nunley PD, Hipp JA, Grieco TF. Investigating the Effects of Image Scaling Techniques in Radiographic Measurements of Spinal Alignment and Motion: A Comparative Analysis. *J Imaging Inform Med*. Published online September 29, 2025. doi:10.1007/s10278-025-01680-7
10. Sabri SA, Laynes RA, Hoffman CJ, Chavarria JC, Prusick PJ, Weesner RE, Stringer N, Farrell JP, Gimarc D, Lowry MK, **Patel V**, Ou-Yang D, Burger-Van Der Walt E, Kleck CJ. Implications of lumbosacral transitional anatomy on vertebral numbering: evaluation of 3147 adult full-length spine radiographs. *Neurosurg Focus*. 2025 Jun 1;58(6):E13. doi: 10.3171/2025.3.FOCUS2555. PMID: 40450886.
11. **Patel, Vikas MDa**; Meyer, S. Craig MD_b; Kovalsky, Don MD_c; Lockstadt, Harry MD_d; Farris, Jim PA_d; Limoni, Robert MD_e; Chowdhary, Abhineet MD_f; Yuan, Philip MD_g; Langel, Casey PA-Ch; Kranenburg, Andy MD_i; Tender, Gabriel MD_j. Prospective Trial of Sacroiliac Joint Fusion Using 3D-Printed Triangular Titanium Implants: Five-Year Follow-Up. *Spine* 50(9):p 620-627, May 1, 2025. [Spine 50\(9\):p 620-627, May 1, 2025.](#) DOI: 10.1097/BRS.00000000000005170
12. Drexelius K, Kuris EO, Sater A, Burger EL, Ou-Yang DC, Patel VV, Kleck CJ. The impact of patient-specific spine rods on spinopelvic parameters after short segment degenerative lumbar fusions. *J Spine Surg*. 2025 Mar 24;11(1):65-73. doi: 10.21037/jss-24-75. Epub 2025 Feb 27. PMID: 40242816; PMCID: PMC11998052.
13. Schwab F, Mekhail N, Patel KV, Langhorst M, Heros RD, Gentile J, Costandi S, Moore G, Gilmore C, Manion S, Chakravarthy K, Meyer SC, Bundy JV, Tate JL, Sanders R, Vaid S, Szentirmai O, Goree J, **Patel VV**, Lehmen J, Desai MJ, Pope JE, Giuffrida A, Hayek S, Virk SS, Paicius R, Klemme WR, Levy R, Gilligan C; RESTORE investigators. Restorative Neurostimulation Therapy Compared to Optimal Medical Management: A Randomized Evaluation (RESTORE) for the Treatment of Chronic Mechanical Low Back Pain due to Multifidus Dysfunction. *Pain Ther*. 2025 Feb;14(1):401-423. DOI: [10.1007/s40122-024-00689-0](#). Epub 2025 Jan 15. PMID: 39812968; PMCID: PMC11751280.
14. Hirpara A, Ackert-Bicknell CL, **Patel VV**. Impact of Low-density Lipoprotein Levels on Rates of Pseudarthrosis After Anterior Cervical Discectomy and Fusion. *Spine (Phila Pa 1976)*. 2025 Mar 1;50(5):294-303. DOI: [10.1097/BRS.00000000000005217](#). Epub 2024 Nov 18. PMID: 39928296.
15. Laynes RA, Aravindan S, Wharton B, Layne JE, Kleck CJ, **Patel VV**. Injury to the Superior Gluteal Artery During Minimally Invasive Sacroiliac Joint Fusion: A Case Series. *JBJS Case Connect*. 2024 Sep 13;14(3). DOI: [10.2106/JBJS.CC.24.00202](#). PMID: 39270041.
16. **Patel V**, Meyer SC, Kovalsky D, Lockstadt H, Farris J, Limoni R, Chowdhary A, Yuan P, Langel C, Kranenburg A, Tender G. Prospective Trial of Sacroiliac Joint Fusion Using 3D-Printed Triangular Titanium Implants: Five-Year Follow-Up. *Spine (Phila Pa 1976)*. 2025 May 1;50(9):620-627. DOI: [10.1097/BRS.00000000000005170](#). Epub 2024 Sep 30. PMID: 39344079; PMCID: PMC11970590.
17. Hipp JA, Mikhael MM, Reitman CA, Buser Z, **Patel VV**, Chaput CD, Ghiselli G, DeVine J, Berven S, Nunley P, Grieco TF. Diagnosis of spine pseudoarthrosis based on the biomechanical properties of bone. *Spine J*. 2024 Dec;24(12):2407-2416. DOI: [10.1016/j.spinee.2024.08.007](#). Epub 2024 Aug 21. PMID: 39154949.
18. **Patel V**, Wind JJ, Aleem I, Lansford T, Weinstein MA, Vokshoor A, Campbell PG, Beaumont A, Hassanzadeh H, Radcliff K, Matheus V, Coric D. Adjunctive Use of Bone Growth Stimulation Increases Cervical Spine Fusion Rates in Patients at Risk for Pseudarthrosis. *Clin Spine Surg*. 2024 May 1;37(4):124-130. DOI: [10.1097/BRS.00000000000005170](#). Epub 2024 Apr 11. PMID: 38650075;

19. Hipp J, Grieco T, Newman P, **Patel V**, Reitman C. Reference Data for Diagnosis of Spondylolisthesis and Disc Space Narrowing Based on NHANES-II X-rays. *Bioengineering* (Basel). 2024 Apr 8;11(4):360. doi: [10.3390/bioengineering11040360](https://doi.org/10.3390/bioengineering11040360). PMID: 38671782; PMCID: PMC11048070.
20. Whang PG, **Patel V**, Duhon B, Stureson B, Cher D, Reckling WC, Capobianco RV and Polly D. Minimally Invasive SI Joint Fusion Procedures for Chronic SI Joint Pain: Systematic Review and Meta-Analysis of Safety and Efficacy. *International Journal of Spine Surgery* October 2023, 8543; DOI: <https://doi.org/10.14444/8543>
21. Weinstein MA, Beaumont A, Campbell P, Hassanzadeh H, **Patel V**, Vokshoor A, Wind K, Radcliff K, Aleem I, and Coric D. Pulsed Electromagnetic Field Stimulation in Lumbar Spine Fusion for Patients With Risk Factors for Pseudarthrosis. *International Journal of Spine Surgery* October 2023, 8549; DOI: <https://doi.org/10.14444/8549>
22. Abjornson C, Gadomski B, Katz J, **Patel V**. P4. Evaluating a novel antimicrobial pedicle screw surface in an ovine model. *The Spine Journal* September 2023, Volume 23, Issue 9, Pages S110-S111; <https://doi.org/10.1016/j.spinee.2023.06.229>
23. Hassanzadeh H, Baber J, Begier E, Noriega DC, Konishi H, Yato Y, Wang MY, Le Huec JC, Patel V, Varga P, Liljenqvist U, Conly J, Sabharwal C, Munjal I, Cooper D, Radley D, Jaques A, Patton M, Gruber WC, Jansen KU, Anderson AS, Gurtman A; STaphylococcus aureus surgical Inpatient Vaccine Efficacy Investigator Team. Efficacy of a 4-Antigen Staphylococcus aureus Vaccine in Spinal Surgery: The STaphylococcus aureus surgical Inpatient Vaccine Efficacy (STRIVE) Randomized Clinical Trial. *Clin Infect Dis*. 2023 Jul 26;77(2):312-320. doi: 10.1093/cid/ciad218. PMID: 37125490; PMCID: PMC10371312.
24. Gilligan C, Volschenk W, Russo M, Green M, Gilmore C, Mehta V, Deckers K, De Smedt K, Latif U, Sayed D, Georgius P, Gentile J, Mitchell B, Langhorst M, Huygen F, Baranidharan G, **Patel V**, Mironer E, Ross E, Carayannopoulos A, Hayek S, Gulve A, Van Buyten JP, Tohmeh A, Fischgrund J, Lad S, Ahadian F, Deer T, Klemme W, Rauck R, Rathmell J, Schwab F, Maislin G, Heemels JP, Eldabe S. Three-Year Durability of Restorative Neurostimulation Effectiveness in Patients With Chronic Low Back Pain and Multifidus Muscle Dysfunction. *Neuromodulation*. 2023 Jan;26(1):98-108. PubMed PMID: 36175320
25. Page MI, Easley JT, Bonilla AF, **Patel VV** and Puttlitz CM. Biomechanical evaluation of a novel repair strategy for intervertebral disc herniation in an ovine lumbar spine model. *Front Bioeng Biotechnol*. 2022;10:1018257. PubMed PMID: 36394049
26. Patel VV, Sawyer EE, Mintken PE, Michener LA, Cofer CL, Lindley EM. Initial Validation of a Sacroiliac Joint-Specific Disability Questionnaire. *Orthopedics*. 2023 Nov-Dec;46(6):345-351. PubMed PMID: 37126835
27. Page MI, Easley JT, Bonilla AF, **Patel VV**, Puttlitz CM. Biomechanical evaluation of a novel repair strategy for intervertebral disc herniation in an ovine lumbar spine model. *Front. Bioeng. Biotechnol., Sec. Tissue Engineering and Regenerative Medicine* 2022 October 25; <https://doi.org/10.3389/fbioe.2022.1018257>. PubMed PMID: 36394049
28. Martin CT, Holton KJ, Elder BD, Fogelson JL, Mikula AL, Kleck CJ, Calabrese D, Burger EL, Ou-Yang D, **Patel VV**, Kim HJ, Lovecchio F, Hu SS, Wood KB, Harper R, Yoon ST, Ananthakrishnan D, Michael KW, Schell AJ, Lieberman H, Kisinde S, DeWald CJ, Nolte MT, Colman MW, Phillips FM, Gelb DE, Bruckner J, Ross LB, Johnson JP, Kim TT, Anand N, Cheng JS, Plummer Z, Park P, Oppenlander ME, Sembrano JN, Jones KE, and Polly DW. Catastrophic acute failure of pelvic fixation in adult spinal deformity requiring revision surgery: a multicenter review of incidence, failure mechanisms, and risk factors. *J Neurosurg Spine*. 2023 Jan 1;38(1):98-106. PubMed PMID: 36057123

29. Kleck CJ, Burger E, Ou-Yang D, **Patel V**, et al. Catastrophic acute failure of pelvic fixation in adult spinal deformity requiring revision surgery: a multicenter review of incidence, failure mechanisms, and risk factors. *J Neurosurg Spine*. 2022;38(1):98-106. Published 2022 Sep 2. doi:10.3171/2022.6.SPINE211559
30. Payne KA, Shaw NM, Erickson CB, Yarger P, Yu Y, Baldini T, Kleck CJ, **Patel VV**, Burger EL. Blockade of Osteoclast-Mediated Bone Resorption With a RANKL-Inhibitor Enhances Bone Formation in a Rat Spinal Fusion Model. *Spine (Phila Pa 1976)*. 2022 Aug 15;47(16):1165-1171. PubMed PMID: 35797625
31. Netsanet R, Look N, Koshak C, **Patel V**. Decompression without Fusion for Lumbar Spinal Stenosis at a Single Mobile Segment in Adults with Ankylosing Spondylitis. *Journal of Bone and Joint Surgery* 2022 July; DOI: [10.2106/JBJS.CC.21.00800](https://doi.org/10.2106/JBJS.CC.21.00800). PubMed PMID: 35962733
32. Le AX, **Patel VV**, Campos JC. Minor Trauma Caused High-Grade Lumbosacral Spondylolisthesis After Short-Segment Lumbar Fusion: A Case Report. *JBJS Case Connect*. 2022 Jul 1;12(3). PubMed PMID: 35852169
33. Delcont MR, Ou-Yang DC, Burger EL, **Patel VV**, Wessell NM, Kleck CJ. Alternative Uses of O-Arm and Stealth Navigation Technology Over 10 Years: The University of Colorado Experience. *Orthopedics*. 2022 Jul 25;1-9. [Epub ahead of print] PubMed PMID: 35876781
34. Wessell NM, Wolverton E, Ross P, Akiyama M, Lindley E, **Patel V**. Opioid Prescription Monitoring in Preoperative and Postoperative Sacroiliac Joint Fusion Patients. *Int J Spine Surg*. 2022 Jun;16(3):498-504. PubMed PMID: 35772975
35. Chakravarthy K, Lee D, Tram J, Sheth S, Heros R, Manion S, **Patel V**, Kiesel K, Ghandour Y, Gilligan C. Restorative Neurostimulation: A Clinical Guide for Therapy Adoption. *J Pain Res*. 2022 Jun 20;15:1759-1774. doi: 10.2147/JPR.S364081. eCollection 2022. PMCID: PMC9231548
36. Ayers R, Noschenko A, Ou-Yang D, Burger IE, **Patel V**, Kleck CJ. Laser Marking of Spine Rods Is Strongly Associated With Risk of Clinical Rod Failure. *J Am Academy Orthopedic Surg*. 2022 Jan 15;30(2):e252-e263. PubMed PMID: 34715690
37. Spinal Stenosis at a Single Mobile C, Volschenk W, Russo M, Green M, Gilmore C, Mehta V, Deckers K, De Smedt K, Latif U, Georgius P, Gentile J, Mitchell B, Langhorst M, Huygen F, Baranidhara G, **Patel VV**, Mironer E, Ross E, Carayannopoulos A, Hayek S, Gulve A, Van Buyten JP, Tohmeh A, Fischgrund J, Lad S, Ahadian F, Deer T, Klemme W, Rauck R, Rathmell J, Maislin G, Heemels JP, Eldabe S. Long-Term Outcomes of Restorative Neurostimulation in Patients With Refractory Chronic Low Back Pain Secondary to Multifidus Dysfunction: Two-Year Results of the ReActiv8-B Pivotal Trial. 2022 January. www.neuromodulationjournal.org ISSN 1094-7159, <https://doi.org/10.1016/j.neurom.2021.10.011>. (<https://www.sciencedirect.com/science/article/pii/S1094715921063868>).
38. Wessell NM, Kleck C, Ou-Yang ID, Goldstein CL, Burger E, **Patel V**. The University of Colorado Virtual Physical Examination for Spine Surgeons: A Preliminary Study. *Orthopedics*. 2021 Dec 2; 1-4. [Epub ahead of print] PubMed PMID: 34846242
39. Gilligan C, Volschenk W, Russo M, Green M, Gilmore C, Mehta V, Deckers K, De Smedt K, Latif U, Georgius P, Gentile J, Mitchell B, Langhorst M, Huygen F, Baranidhara
40. G, **Patel V**, Mironer E, Ross E, Carayannopoulos A, Hayek S, Gulve A, Van Buyten JP, Tohmeh A, Fischgrund J, Lad S, Ahadian IF, Deer T, Klemme W, Rauck R, Rathmell J, Levy R, Heemels JP, Eldabe S. An implantable restorative-neurostimulator for refractory mechanical chronic low back pain: a randomized sham-controlled clinical trial. *Pain*. 162 (10):2486-2498. PubMed PMID: 34534176. 2021 Oct 1

41. Milligan K, Wuthrich Z, Carpenter RD, Ayers, R, Jessy M, Kleck C, **Patel VV**. Morphometric analysis of the sacrum using statistical shape modelling. *J Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization* (TCIV). 2021 Sept 26; Article ID: TCIV 1977716
<https://doi.org/10.1080/21681163.2021.1977716>
42. **Patel V**, Kovalsky D, Meyer SC, Chowdhary A, Lacombe J, Lockstadt H, Techy F, Langel C, Limoni R, Yuan P, Kranenburg A, Cher D, Tender G. Prospective Trial of Sacroiliac Joint Fusion Using 3D-Printed Triangular Titanium Implants: 24-Month Follow-Up. *Med Devices* (Auckl). June 2021; 14:211-216. PubMed PMID: 34234582 <https://doi.org/10.2147/MDER.S314828>
43. Kleck, CJ, Noshchenko A, Burger EL, Cain CMJ, **Patel VV**. Postoperative pelvic incidence (PI) change may impact sagittal spinopelvic alignment (SSA) after instrumented correction of adult spine deformity (ASD). *Spine Deform*. 2021 Apr 19 online ahead of print. doi: 10.1007/s43390-020-00283-2.
44. **Patel, VV**, Billys, J, Okonkwo D, He, D, Ryaby J, Radcliff K, Three and 4-level lumbar arthrodesis using adjunctive pulsed electromagnetic field stimulation: A Multicenter retrospective evaluation of fusion rates and a review of the literature. *International Journal of Spine Surgery*. March 2021
45. Clavijo CF, Oliva AM, Dingmann C, Kaizer A, Christians U, Burger E, **Patel V**, Kleck CJ, Vogel SA, Scott BK, Janik DJ, Jameson LC, Ginde AA. Toxicology screening testing in patients undergoing spine surgery: a prospective observational pilot study. *Ther Drug Monit*. 2021 Feb;43(1):136-138. Epub 2021 Feb.
46. Welton L, Krieg B, Trivedi I), Netsanet R, Wessell N, Noshchenko A, **Patel V**. Comparison of Adverse Outcomes Following Placement of Superior Interspinous Spacer Device Versus Laminectomy and Laminotomy. *Int J Spine Surg*.; (1):153-160. PubMed PMID: 33900969. 2021 Feb 15
47. Branche K, Netsanet R, Noshchenko A, Burger E, **Patel V**, Ou-Yang D, Kleck CJ. Radius of curvature in patient-specific short rod constructs versus standard pre-bent rods. *Int J Spine Surg*. 2020 Dec;14(6):944-948. Epub 2020 Dec 29.
48. **Patel VV**, Wuthrich Z, Ortega A, Ferguson V, Lindley E, Recombinant Human Bone Morphogenetic Protein-2 Improves Spine Fusion in a Vitamin D-Deficient Rat Model. *Int J Spine Surg*. October 2020.
49. **Patel VV**, Wuthrich ZR, Ortega A, Ferguson VL, Lindley EM, “Recombinant Human Bone Morphogenetic Protein-2 Improves Spine Fusion in a Vitamin D-Deficient Rat Model”. *Int J Spine Surg*, October 2020 <http://ijssurgery.com/content/early/2020/10/14/7101>
50. Rodriguez-Fontan F, Reeves BJ, Noshchenko A, Ou-Yang D, Kleck CJ, Burger-Van der Walt E, **Patel VV**, “Strap Stabilization for Proximal Junctional Kyphosis Prevention in Instrumented Posterior Spinal Fusion”, *Eur Spine J*, 2020 Jan 14. doi: 10.1007/s00586-020-06291-0
51. Ayers R, **Patel V**, Burger E, Cain C, Ou-Yang D, Wessell N, Kleck C, “Corrosion of Titanium Spinal Explants is Similar to That Observed in Oil Field Line Pipe Steel: Evidence of Microbial-Influenced Corrosion in Vivo”, *Orthopedics*, 2020 Jan 1;43(1):62-67.
52. Hodges PW, Cholewicki J, Popovich JM Jr, Lee AS, Aminpour P, Gray SA, Cibulka MT, Cusi M, Degenhardt BF, Fryer G, Gutke A, Kennedy DJ, Laslett M, Lee D, Mens J, **Patel V**, Prather H, Sturesson B, Stuge B, Vleeming A, “Building a collaborative model of sacro-iliac joint dysfunction and pelvic girdle pain to understand the diverse perspectives of experts.”, *Journal: PM&R*, June 2019
<https://doi.org/10.1002/pmjr.12199>

53. Lindley EM, Perry J, Patel M, Noshchenko A, Bond A, Burger E, Cain C, **Patel VV**, “Vitamin D Hypovitaminosis and Efficacy of Supplementation in Spine Surgery Patients”, *Current Orthopaedic Practice*, 2019 May/June Volume 30, Number 3.
54. **Patel V**, Kovalsky D, Meyer SC, Chowdhary A, Lockstadt H, Techy F, Billys J, Limoni R, Yuan PS, Kranenburg A, Cher D, Tender G, “Minimally invasive lateral transiliac sacroiliac joint fusion using 3D-printed triangular titanium implants”, *Medical Devices: Evidence and Research*, May 2019, Volume 2019:12 Pages 203—214 <https://doi.org/10.2147/MDER.S205812>
55. Cleveland AW 3rd, Nhan DT, Akiyama M, Kleck CJ, Noshchenko A, **Patel VV**, “Mini-open Sacroiliac Joint Fusion With Direct Bone Grafting And Minimally Invasive Fixation Using Intraoperative Navigation”, *J Spine Surg*, 2019. Doi:10.21037/jss.2019.01.04.
56. Patel RR, Noshchenko A, Carpenter D, Baldini T, Frick CP, **Patel VV**, Yakacki CM, “Evaluation and Prediction of Human Lumbar Vertebrae Endplate Mechanical Properties Using Indentation and Computed Tomography”, *J Biomech Eng*, Oct 2018;140(10).
57. **Vikas V. Patel**, "Interspinous Process Decompression Improves Quality of Life in Patients with Lumbar Spinal Stenosis," *Minimally Invasive Surgery*, vol. 2018, Article ID 1035954, 4 pages, Jul 2018. <https://doi.org/10.1155/2018/1035954>
58. Bortot M, Laughter MR, Stein M, Rocker A, **Patel VV**, Park D, “Quaternized Q-PEIPPAm-Based Antimicrobial Reverse Thermal Gel: A Potential for Surgical Incision Drapes” *ACS Appl. Mater. Interfaces*, 2018 May;10(21), pp 1766-17671. <https://pubs.acs.org/action/showCitFormats?doi=10.1021/acsami.8b04020>
59. Ayers R, Miller M, Schowinsky J, Burger E, **Patel VV**, Kleck CJ, “Three Cases of Metallosis Associated with Spine Instrumentation”, *J Mater Sci: Mater Med*, 2018, 29:3.
60. Kleck CJ, Johnson C, Akiyama M, Burger E, Cain C, **Patel VV**, “One-step Minimally Invasive Pedicle Screw Instrumentation Using O-Arm and Stealth Navigation” *Clinical Spine Surgery*, 2018
61. Coric D, Bullard EE, **Patel VV**, Ryaby JT, Atkinson BL, He D, Guyer RD “Pulsed electromagnetic field stimulation may improve fusion rates in cervical arthrodesis in high-risk populations” *Bone Joint Res* 2018;7:124–130. 2018 February. <https://doi.org/10.1302/2046-3758.72.BJR-2017-0221.R1>
62. Nunley PD, **Patel VV**, Orndorff DG, Lavelle WF, Block JE, Geisler FH, “Superior Interspinous Spacer Treatment of Moderate Spinal Stenosis: 4-Year Results”, *World Neurosurg*, 2017 Aug;104:279-283.
63. Ou-Yang DC, York PJ, Kleck CJ, **Patel VV**, “Diagnosis and Management of Sacroiliac Joint Dysfunction” *J Bone Joint Surg Am*, 2017 Dec 6;99(23):2027-2036.
64. Nunley PD, **Patel VV**, Orndorff DG, Lavelle WF, Block JE, Geisler FH, “Five-year Durability of Stand-Alone Interspinous Process Decompression for Lumbar Spinal Stenosis” *Clinical Interventions in Aging*, 2017;12, pp 1409-1417. https://www.dovepress.com/articles.php?article_id=34591
65. Wang MY, Dayan G, Hassanzadeh H, Le Huec JC, **Patel VV**, Baber J, Jaques A, Gruber W, Eiden J, Gurtman A, “A Randomized, Double-Blind, Placebo-Controlled Safety and Efficacy Study of a Four-Antigen Vaccine for Staphylococcus Aureus in Adults Prior to Open Posterior Spinal Fusion Surgery” *The Spine Journal*, 2017 Oct;17(10):S206-S207.
66. Jesse MK, Kleck CJ, Williams A, Petersen B, Glueck D, Lind K, **Patel VV**, “3D Morphometric Analysis of Normal Sacroiliac Joints: A New Classification of Surface Shape Variation and the Potential Implications in Pain Syndromes” *Pain Physician*, 2017;20:E701-E709. <http://www.painphysicianjournal.com/current/pdf?article=NDUxNw%3D%3D&journal=106>

67. Prendergast JM, Perry AC, Lindley EM, Rentschler ME, **Patel VV**, “Positioning Performance of Power and Manual drivers in Posterior Spinal Fusion Procedures” *Applied Bionics and Biomechanics*. 2017. doi:10.1155/2017/726284. <http://doi.org/10.1155/2017/726284>
68. Nunley P, **Patel VV**, Orndorff D, Lavelle W, Block J, Geisler F, “Superion® InterSpinous Spacer Treatment of Moderate Spinal Stenosis: 4-year Results” *World Neurosurgery*, 2017 May. DOI: <http://dx.doi.org/10.1016/j.wneu.2017.04.163>
69. **Patel VV**, Wuthrich Z, McGilvray K, Lafleur M, Lindley E, Sun D, Puttlitz C, “Cervical facet force analysis after disc replacement versus fusion” *Clinical Biomechanics*. Vol. 44, 2017 May, pp 52-58, <https://doi.org/10.1016/j.clinbiomech.2017.03.007>
70. Chatham L, **Patel VV**, Yakacki, C, Carpenter R D, “Interbody Spacer Material Properties and Design Conformity for Reducing Subsidence During Lumbar Interbody Fusion” *Journal of Biomechanical Engineering*. 2017 May: 139 (5) BIO-16-1396; doi: 10.1115/1.4036312, <http://biomechanical.asmedigitalcollection.asme.org/article.aspx?articleid=2613838>
71. D Makhija, M Rock, S Ikeme, E Kuntze, J Epstein, G Nicholson, JS Price & **V Patel**, “Cost-Consequence analysis of two different active flowable hemostatic matrices in spine surgery patients”, *Journal of Medical Economics*, 2017 Feb. <http://dx.doi.org/10.1080/13696998.2017.1292916>.
72. **Patel VV**; Andersson G, Garfin S; Resnick D; Block J, “Utilization of CT Scanning Associated with Complex Spine Surgery”, *BMC Musculoskeletal Disorders*. 2017 Jan 31;18(1):52. doi: 10.1186/s12891-017-1420-9. <http://rdeu.be/oVhV>
73. Lindley EM, Barton C, Blount T, Burger EL, Cain CMJ, Seim HB, Turner AS, **Patel VV**. Literature Review and Analysis of Control Group Outcomes in Sheep Fusion Models. *Eur Spine J*. 2017, Jan;26(1):228-239. doi: 10.1007/s00586-016-4544-y.
74. Kleck CJ, Illing D, Lindley EM, Noshchenko A, **Patel VV**, Barton C, Baldini T, Cain CMJ, Burger EL, “Strain in Posterior Instrumentation Resulted by Different Combinations of Posterior and Anterior Devices for Long Spine Fusion Constructs” *SPINE DEFORMITY*, Vol. 5, No. 1, Jan 2017, pp 27-36.
75. Bae HW, **Patel VV**, Sardar ZM, Badura JM, Pradhan BB, Seim III HB, Turner AS, Toth JM, “Transient Local Bone Remodeling Effects of rhBMP-2 in an Ovine Interbody Spine Fusion Model,” *THE JOURNAL OF BONE & JOINT SURGERY*, Vol. 98, No. 24, Dec 2016, pp 2061-2070. <https://doi.org/10.2106/JBJS.16.00345>
76. Lindley EM, Barton C, Blount T, Burger EL, Cain CM, Seim HB 3rd, Turner AS, **Patel VV**. An analysis of spine fusion outcomes in sheep pre-clinical models. *Eur Spine J*. 2016 May 10. [Epub ahead of print] Review. PubMed PMID: 27165183.
77. Zaghoul KM, Matoian BJ, Denardin NB, **Patel VV**. Preventing Proximal Adjacent Level Kyphosis With Strap Stabilization. *Orthopedics*. 2016 May 6:1-6. [Epub ahead of print] PubMed PMID: 27158827.
78. **Patel VV**, Payne K. Cellular Grafts for Bone Formation. *Spine (Phila Pa 1976)*. 2016 Apr;41 Suppl 7:S13. PubMed PMID: 27015059.
79. Fattor JA, Hollenbeck JF, Laz PJ, Rullkoetter PJ, Burger EL, **Patel VV**, Cain CM. Patient-Specific Templating of Lumbar Total Disk Replacement to Restore Normal Anatomy and Function. *Orthopedics*. 2016 Mar 1;39(2):97-102. PubMed PMID: 27023417.
80. Kleck CJ, Perry JM, Burger EL, Cain CM, Milligan K, **Patel VV**. Sacroiliac Joint Treatment Personalized to Individual Patient Anatomy Using 3-Dimensional Navigation. *Orthopedics*. 2016 Mar 1;39(2):89-94. PubMed PMID: 27023416.

81. Barton C, Noshchenko A, **Patel V**, Kleck C, Burger E. Early Experience and Initial Outcomes With Patient-Specific Spine Rods for Adult Spinal Deformity. *Orthopedics*. 2016 Mar 1;39(2):79-86. PubMed PMID: 27023415.
82. Rashbaum RF, Ohnmeiss DD, Lindley EM, Kitchel SH, **Patel VV**. Sacroiliac Joint Pain and Its Treatment. *Clin Spine Surg*. 2016 Mar;29(2):42-8. PubMed PMID: 26889985.
83. Garcia R Jr, Yue JJ, Blumenthal S, Cordic D, **Patel VV**, Leary Sp, Dihl DH, Buttermann GR, Deutsch H, Girardi F, Billys J, Miller LE. Lumbar Total Disc Replacement for Discogenic Low Back Pain: Two-year Outcomes of the activL Multicenter Randomized Controlled IDE Clinic Trial. *Spine (Phila Pa 1976)*. 2015 Dec;40(24):1873-81. PubMed PMID: 26630435.
84. Burger E, Lindley E, **Patel VV**, Sun D, Weyant M, “Pulmonary cement embolism after navigated pedicle screw placement: a report of two cases and review of the literature,” *CURRENT ORTHOPAEDIC PRACTICE*, Vol. 26, No. 5, Sep-Oct 2015, pp 553-558. Published
85. Barton C, Noshchenko A, **Patel VV**, Cain C, Kleck CJ, Burger EL. Risk Factors for Rod Fracture after Posterior Correction of Adult Spinal Deformity with Osteotomy: A Retrospective Case-Series. *Scoliosis*. 2015, 10:30.
86. **Patel VV**, Nunley PD, Whang PG, Haley TR, Bradley WD, Davis RP, Block JE, Geisler FH. Superion® InterSpinous Spacer for Treatment of Moderate Degenerative Lumbar Spinal Stenosis: Durable Three-Year Results of Randomized Controlled Trial. *Journal of Pain Research*. 2015, 8:657-662.
87. Polly DW, Cher DJ, Wine KD, Whang PG, Frank CJ, Harvey CF, Lockstadt H, Glaser JA, Limoni RP, Sembrano JN; **Patel VV** (INSITE Study Group). Randomized Controlled Trial of Minimally Invasive Sacroiliac Joint Fusion Using Triangular Titanium Implants vs Nonsurgical Management for Sacroiliac Joint Dysfunction: 12-Month Outcomes. *Neurosurgery*. 2015 Nov;77(5):674-90; discussion 690-1. PubMed PMID: 26291338; PubMed Central PMCID: PMC4605280.
88. Storm K, Coughlin R, Nobhohit R, **Patel VV**. The Capacity to Manage Orthopaedic Trauma: Systems, Training, Technology in Low-Resource Settings. *The Journal of Orthopedic Trauma*. 2015 October JOT7115
89. Coughlin RR, Roy N, **Patel V**. Wrong Place, Wrong Time: Coincidental Involvement in the Gujarat Earthquake, India (2001). *J Orthop Trauma*. 2015 Oct;29 Suppl 10:S11-3. PubMed PMID: 26356205.
90. Kleck CJ, Cullimore I, LaFleur M, Lindley E, Rentschler ME, Burger EL, Cain CM, **Patel VV**. A New 3-Dimensional Method for Measuring Precision in Surgical Navigation and Methods to Optimize Navigation Accuracy. *Eur Spine J*. 2015 Sep 22. [Epub ahead of print]
91. Lindley EM, Milligan K, Farmer R, Burger EL, **Patel VV**. Patient-Controlled Transdermal Fentanyl Versus Intravenous Morphine Pump After Spine Surgery. *Orthopedics*. 2015 Sep 1; 38(9):e819-24.
92. Noshchenko A, Hoffercker L, Lindley EM, Burger EL, Cain CM, **Patel VV**, Bradford AP. Predictors of Spine Deformity Progression in Adolescent Idiopathic Scoliosis; A Systematic Review with Meta-Analysis. *World J Orthopedics*. 2015 Aug 18;6(7): 537-58.
93. Noshchenko A, Lindley EM, Burger EL, Cain CM, **Patel VV**. What is the Clinical Relevance of Radiographic Nonunion after Single-level Lumbar Interbody Arthrodesis in Degenerative Disc Disease? A Meta-Analysis of the YODA Project Database. *Spine*. 2015 Aug 13 [Epub ahead of print]
94. Parker SL, Anderson LH, Nelson T, **Patel VV**. Cost-Effectiveness of Three Treatment Strategies for Lumbar Stenosis: Conservative Care, Laminectomy, and the Superior Interspinous Spacer. *International Journal of Spine Surgery*. 2015 July 9; <http://dx.doi.org/10.14444/2028>

95. Price JS, Tackett S, **Patel VV**. Observational Evaluation of Outcomes and Resource Utilization from Hemostatic Matrices in Spine Surgery. *Journal of Medical Economics*. 2015 May 1 [Epub ahead of print]
96. Sun D, Burger EL, Weyant MJ, Lindley EM, **Patel VV**. Pulmonary cement embolism after navigated pedicle screw placement: A report of two cases and review of the literature. *Curr Orth Prac*. In Press (Accepted January 2015)
97. **Patel VV**, Whang PG, Haley TR, Bradley WD, Nunley PD, Davis, RP, Miller LE, Block JE, Geisler FH. Superior Interspinous Process Spacer for Intermittent Neurogenic Claudication Secondary to Moderate Lumbar Spinal Stenosis: Two-Year Results From a Randomized Controlled FDA-IDE Pivotal Trial. *Spine*. 2014 December 9; 40:5:275-282.
98. **Patel VV**, Whang PG, Haley TR, Bradley WD, Nunley PD, Miller LE, Block JE, Geisler FH. Two-year clinical outcomes of a multicenter randomized controlled trial comparing two interspinous spacers for treatment of moderate lumbar spinal stenosis. *BMC Musculoskelet Disord*. 2014 July 5; 15:221.
99. Noshchenko A; Hoffecker L, Lindley EM, Burger EL, Cain CM, **Patel VV**. Long Term Treatment Effects of Lumbar Arthrodeses in Degenerative Disc Disease: A Systematic Review with Meta Analysis. *J Spinal Disord Tech*. 2014 June 6.
100. Price JS, Tackett S, **Patel VV**. Observational Evaluation of Outcomes and Resource Utilization from Hemostatic Matrices in Spine Surgery. *Journal of Medical Economics*: 1-10. 2015 June 1
101. Burger EL, Noshchenko A, **Patel VV**, Lindley E, Bradford AP. Ultrastructure of Intervertebral Disc and Vertebra-Disc Junctions as a Link in Etiopathogenesis of Idiopathic Scoliosis (IS). *Advances in Orthopedic Surgery*. Vol. 2014. Article ID 850594
102. Noshchenko A, Hoffecker L, Lindley EM, Burger EL, Cain CM, **Patel VV**. Perioperative and Long Term Clinical Outcomes for Bone Morphogenetic Protein versus Iliac Crest Bone Graft for Lumbar Fusion in Degenerative Disc Disease. Systematic Review with Meta-analysis. *J Spinal Discord Tech*. 2014 May 27; 3:117-35.
103. Lindley EM, Levy BJ, Burger EL, Cain CMJ, **Patel VV**. Failure of the Fernstrom ball in contemporary spine surgery: A case of history repeating itself. *Curr Orth Prac*. June 2013
104. Whang PG, Sasso RC, **Patel VV**, Ali RM, Fischgrund JS. "Comparison of Axial and Anterior Interbody Fusions of the L5-S1 Segment: A Retrospective Cohort Analysis", *Journal of Spinal Disorders and Techniques*, 2013
105. Noshchenko A, Plasied A, **Patel VV**, Burger EL, Baldini T, Lu Y. Correlation of Vertebral Strength Topography with 3-Dimensional Computed Tomography Structure. *Spine*. 2013 Feb 15;38(4):339-49
106. Golembeski S, Lindley EM, McBeth ZL, Sophacles A, Burger EL, Cain CMJ, **Patel VV**. Translating versus non-translating cervical plates. *Curr Orth Prac*. In Press. Accepted November 11, 2012
107. Puttlitz C, **Patel VV**, Ayturk U, Schuldt D, Gadowski B. Modeling Degenerative Disc Disease In The Lumbar Spine: A Combined Experimental, Constitutive, And Computational Approach. *J Biomech Eng*. 2012, 134(10):101003.
108. Ayturk UM, Gadowski B, Schuldt D, **Patel VV**, Puttlitz CM: "Modeling degenerative disk disease in the lumbar spine: a combined experimental, constitutive, and computational approach", *J Biomech Eng*. 2012 Oct;134(10)
109. Lindley EM, Patti BN, Taylor MRG, Burger EL, Patel VV. Lumbar Artificial disc replacement in Ehlers-Danlos syndrome: A case report and discussion of clinical management. *International Journal of Spine Surgery* (In Press). Accepted February 17, 2012

110. Puttlitz CM, Patel VV, Ayturk U, Schuldt D, Gadowski B: “Modeling Degenerative Disc Disease In The Lumbar Spine: A Combined Experimental, Constitutive, And Computational Approach”: Journal of Biomechanical Engineering, 2012
111. Myers KD, Lindley EM, Burger EL, Patel VV. “C1-C2 fusion: postoperative C2 nerve impingement—is it a problem?” Evidence Based Spine Journal, V 3, No 1. Pp53-56, 2012.
112. Patel VV. “Sacroiliac joint injuries” Orthopedics. 2012 May;35(5):398
113. Lindley EM, McBeth ZL, Henry SE, Cooley R, Burger EL, Cain CMJ, Patel VV. Retrograde ejaculation following anterior lumbar spine surgery. Spine (Phila Pa 1976). 2012 Sep 15;37(20):1785-9.
114. Lindley EM, Zimkowski M, Patel VV, Rentschler M. Pain sensitivity testing using a novel computer-controlled pressure algometer that simultaneously records sympathetic nervous system responses to pain stimuli. The Journal of Pain 13(4): S9 April 2012
115. Womack W, Leahy PD, Patel VV, Puttlitz CM. “Finite element modeling of kinematic and load transmission alterations due to cervical intervertebral disc replacement” Spine (Phila Pa 1976). 2011 Aug 1;36(17):E1126-33.
116. Patil S, Lindley EM, Burger EL, Yoshihara H, Patel VV. Pedicle Screw Placement With O-arm and Stealth Navigation. Orthopedics. 2012 Jan 16;35(1).
117. Yao X, Blount TJ, Suzuki N, Brown LK, van der Walt CJ, Baldini T, Lindley EM, **Patel VV**, Burger, EL. A Biomechanical Study on the Effects of Rib Head Release on Thoracic Spinal Motion. Eur Spine J. v21 n4, pp606-612, 2012
118. Lindley EM, Botolin S, Burger EL, **Patel VV**. Unusual spine anatomy contributing to wrong level spine surgery: a case report and recommendations for decreasing the risk of preventable never events. Patient Safety in Surgery. V5, #33, 2011
119. Lyons AS, Sherman BP, Puttlitz CM, **Patel VV**, Abjornson C, Turner AS, Seim HB, Burger EL, Lindley EM. Failure of Resorbable Plates and Screws in an Ovine Model of Anterior Cervical
120. Zimkowski MM, Lindley EM, **Patel VV**, Rentschler ME. Design and Evaluation of a Computer-Controlled Pressure Algometer: ASME Journal of Medical Devices Vol.5, Iss.3, 2011
121. Lindley EM, McCullough MA, Burger EL, Brown CW, **Patel VV**. Complications of axial lumbar interbody fusion. J Neurosurg Spine. 2011 May 20.
122. Noshchenko A, Xianfeng Y, Armour GA, Baldini T, **Patel VV**, Ayers R, Burger E. Evaluation of spinal instrumentation rod bending characteristics for in-situ contouring. J Biomed Mater Res B Appl Biomater. 2011 Jul;98(1):192-200.
123. Patil SS, Lindley EM, **Patel VV**, Burger EL, Clinical and radiological outcomes of axial lumbar interbody fusion, Orthopedics. 2010 Dec 1;33(12):883. doi: 10.3928/01477447-20101021-05
124. Robinson ES, Lindley EM, Gonzalez P, Estes S, Cooley R, Burger EL, **Patel VV** Piriformis Syndrome versus Radiculopathy Following Lumbar Artificial Disc Replacement. Spine. 2011 Feb 15;36(4):E282-7
125. Sherman BP, Lindley EM, Turner AS, Seim HB, Benedict J, Burger EL, **Patel VV**. Evaluation of ABM/P-15 vs. Autogenous Bone in an Ovine Lumbar Interbody Fusion Model. Eur Spine J. 2010 Dec;19(12):2156-63. Epub 2010 Aug 9
126. Noshchenko A, **Patel VV**, Baldini T, Yun L, Lindley EM, Burger EL. Thermomechanical Effects of Spine Surgery Rods Composed of Different Metals and Alloys. Spine (Phila Pa 1976). 2011 May 15;36(11):870-8

127. Botolin S, Puttlitz C, Baldini T, Petrella A, Burger E, Abjornson C, **Patel V.**, Facet joint biomechanics at the treated and adjacent levels after total disc replacement, *Spine (Phila Pa 1976)*. 2011 Jan 1;36(1):E27-32
128. Lindley EM, Jaafar S, Noshchenko A, Baldini T, Nair DP, Shandas R, Burger EL, **Patel VV.** Nucleus replacement device failure: A case report and biomechanical study. *Spine (Phila Pa 1976)*. 2010 Oct 15;35(22):E1241-7
129. Lindley EM, Guerra FA, Krauser JT, Matos SM, Burger EL, **Patel VV.** Small peptide (P-15) bone substitute efficacy in a rabbit cancellous bone model. *J Biomed Mater Res B Appl Biomater*. 2010 Aug;94(2):463-8
130. Botolin S, Agudelo J, Dwyer A, **Patel VV**, Burger E. High rectal injury during trans-1 axial L5-S1 fixation: A case report. *Spine*. 2010, 35(4):E144-8
131. Sloan TB, Myers G, Janik DJ, Burger EM, **Patel VV**, Jameson LC. Intraoperative autologous transfusion of hemolyzed blood. *ANESTHESIA AND ANALGESIA*. 2009, 109(1): 38-42.
132. Ben-Masaud A, Solomonow D, Davidson B, Zhou BH, Lu Y, **Patel VV**, Solomonow M. Motor control of lumbar instability following exposure to various cyclic load magnitudes. *EUR SPINE J*. 2009, 18(7):1022-34. Published.
133. Freudenberger C, Lindley EM, Beard DW, Reckling WC, Williams A, Burger EL, **Patel VV.** Posterior versus anterior lumbar interbody fusion with anterior tension band plating: retrospective analysis. *ORTHOPEDICS*. 2009, 32(7):492. Published.
134. **Patel VV**, Estes S, Naar E, Lindley EM, Burger EL: "Histologic Evaluation of High Speed Burr Shavings Collected During Spinal Decompression Surgery" *ORTHOPEDICS*, Jan. 2009, V32 No1 p p23.
135. Le B, Davidson B, Solomonow D, Zhou BH, Lu Y, **Patel VV**, Moshe Solomonow: "Neuromuscular Control of Lumbar Instability Following Static Work of Various Loads", *MUSCLE NERVE* 39:71-82, 2009. Published.
136. Solomonow D, Davidson B, Zhou BH, Lu Y, **Patel VV**, Solomonow M: "Neuromuscular neutral zones response to cyclic lumbar flexion" *J. OF BIOMECHANICS*, 2008. Published.
137. Weiss HR, Bess S, Wong MS, **Patel VV**, Goodall D, Burger EL: "Adolescent Idiopathic Scoliosis- to Operate or Not? A Debate Article", *PATIENT SAFETY IN SURGERY*, 2008 2:25. Published.
138. **Patel VV**, Estes S, Lindley EM, Burger E. "Lumbar spinal fusion versus anterior lumbar disc replacement: the financial implications" *J SPINAL DISORD TECH*, 2008 Oct, 21(7):473-6. Published.
139. Szentirmai O, Seinfeld J, Beauchamp K, **Patel VV.** "Traumatic unilateral lumbosacral jumped facet without fracture in a child-presentation of a safe treatment strategy for a rare injury" *PATIENT SAFETY IN SURGERY*, 2008, 2(29). Published.
140. Lu D, Le P, Davidson B, Zhou BH, Lu Y, **Patel VV**, Somonow M, "Frequency of Cyclic Lumbar Loading is a Risk Factor for Cumulative Trauma Disorder" *MUSCLE & NERVE*, 2008 July, 38: 867-874. Published.
141. Youssef J, Davidson B, Zhou BN, Lu Y, **Patel VV**, Somonow M, "Neuromuscular Neutral Zones Response to Static Lumbar Flexion: Muscular Stability Compensator" *CLINICAL BIOMECHANICS*, 2008, 23:870-880. Published.
142. Deviren V, **Patel VV**, Metz LN, Berven SH, Hu SH, Bradford DS, "Anterior arthrodesis with instrumentation for thoracolumbar scoliosis: comparison of efficacy in adults and adolescents." *Spine (Phila Pa 1976)*. 2008 May 15;33(11):1219-23.

143. **Patel VV**, Dwyer A, Estes S, Burger EL: "Use of Intraoperative Multiplanar Imaging and Myelography for Immediate Evaluation of Lumbar Spinal Decompression" JOURNAL OF SPINAL DISORDERS AND TECHNIQUES, 2008, May 21(3): 209-212. Published.
144. Burger EL, **Patel VV**. Calcium phosphates as bone graft extenders ORTHOPEDICS. 2007 Nov;30(11):939-42. Published
145. Le P, Solomonow M, Zhou BH, Lu Y, **Patel VV**. "Cyclic Load Magnitude is a Risk Factor for a Cumulative Lower Back Disorder" JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE V49, N4, April 2007 pp375-87. Published.
146. Hoops H, Zhou BH, Lu Y, Solomonow M, **Patel VV**. "Short rest between cyclic flexion periods is a risk factor for a lumbar disorder" CLINICAL BIOMECHANICS 2007, 22, 745-757. Published.
147. Rabb C, **Patel VV**, and Burger EL. Ethical issues related to training future spine care physicians. SPINELINE. 2007, 8(5):34-35. Published
148. **Patel VV**, Zhao L, Wong P, Bae H, Pradhan B, Delamarter R, "Controlling BMP Diffusion and BMP-Stimulated Bone Growth Using Fibrin Glue" SPINE. 2006 May 15;31(11):1201-6. Published
149. **Patel VV**, Zhao L, Wong P, Bae H, Pradhan B, Delamarter R: "An In-Vitro and In-Vivo Analysis of Fibrin Glue Used to Control BMP Diffusion and BMP-Stimulated Bone Growth" THE SPINE JOURNAL 2006 V6397-404. Published.
150. **Patel VV**, Andrews C, Pradhan BB, Bae HW, Kanim LE, Kropf MA, Delamarter RB." Computed tomography assessment of the accuracy of in vivo placement of artificial discs in the lumbar spine including radiographic and clinical consequences" SPINE. 2006 Apr 15;31(8):948-53. Published.
151. Pradhan BB, Bae HW, Dawson EG, **Patel VV**, Delamarter RB. "Graft resorption with the use of bone morphogenetic protein: lessons from anterior lumbar interbody fusion using femoral ring allografts and recombinant human bone morphogenetic protein-2" SPINE. 2006 May 1;31(10):E277-84. Published.
152. Pradhan BB, Bae HW, **Patel VV**, Delamarter RB: "Graft Resorption with rhBMP-2: in Anterior Cervical Discectomy and Fusion: A Radiographic Characterization of the Effect of rhBMP-2 on Structural Allografts" SPINELINE V 7 N2 P25 March/April 2006. Published.
153. Pradhan BB, Bae HW, Kropf MA, **Patel VV**, Delamarter RB "Graft resorption with rhBMP-2 in anterior cervical discectomy and fusion: a radiographic characterization of the effect of rhBMP-2 on structural allografts" THE SPINE JOURNAL July 2005 (Vol. 5, Issue 4 (Supplement), Pages S42-S43). Published.
154. Pradhan BB, Bae HW, Kropf MA, **Patel VV**, Zhao L, Wong P, Delamarter RB "Leakage of rhBMP-2 from absorbable collagen sponges during use in anterior cervical discectomy and fusion quantification and follow-up of clinical and radiographic consequences" THE SPINE JOURNAL July 2005 (Vol. 5, Issue 4 (Supplement), Page S55). Published
155. Pradhan BB, Bae HW, Kropf MA, **Patel VV**, Delamarter RB. "Kyphoplasty reduction of osteoporotic vertebral compression fractures: correction of local kyphosis versus overall sagittal alignment" SPINE. 2006 Feb 15;31(4):435-41. Published.
156. Roy N, Shah H, **Patel VV**, Bagalkote H: "Surgical and psychosocial outcomes in the rural injured—a follow-up study of the 2001 earthquake victims" Injury, INTERNATIONAL JOURNAL OF THE CARE OF THE INJURED, 2005. Published.
157. **Patel VV**, Hall K, Ries M, Lotz J, Ozhinsky E, Lindsey C, Lu Y, Majumdar S. "A three-dimensional MRI analysis of knee kinematics" J ORTHOP RES. 2004 Mar;22(2):283-92. Published

158. **Patel VV**, Hall K, Ries M, Lindsey C, Ozhinsky E, Lu Y, Majumdar S., “Magnetic resonance imaging of patellofemoral kinematics with weight-bearing” J BONE JOINT SURG AM. 2003 Dec;85-A(12):2419-24. Published.
159. Roy N, Shah H, **Patel VV**, Coughlin R: “The Gujarat Earthquake (2001) Experience in a Seismically Unprepared Area: Community Hospital Medical Response” PREHOSPITAL AND DISASTER MEDICINE, 2003 Oct-Dec; 17(4), 186-195. Published.
160. **Patel VV**, Issever AS, Burghardt A, Laib A, Ries M, Majumdar S: “MicroCT evaluation of normal and osteoarthritic bone structure in human knee specimens. J ORTHOP RES. 2003 Jan;21(1):6-13. Published.
161. Burghardt IA, **Patel VV**, Laib A, Lu Y, Ries M, Majumdar S: “A microcomputed tomography study of the trabecular bone structure in the femoral head” J MUSCULOSKELET NEURON INTERACT 2003; 3(2):176-184. Published.
162. Tay BK, **Patel VV**, Bradford D, “Calcium Sulfate – and Calcium Phosphate – Based Bone Substitutes: Mimicry of the Mineral Phase of Bone: ORTHOPAEDIC CLINICS OF NORTH AMERICA, Vol. 30, No. 4, Oct. 1999, pp615-623. Published.
163. **Patel VV**, Heidenreich F, Bindra R, Yamaguchi K, Gelberman R: “Morphologic changes in the ulnar nerve at the elbow with flexion and extension: a magnetic resonance imaging study with 3-dimensional reconstruction.” JOURNAL OF SHOULDER AND ELBOW SURGERY, Vol. 7, No. 4, Jul-Aug 1998, pp368-74. Published
164. **Patel VV**, Vannier M, Marsh J, Lo L: “Assessing Craniofacial Surgical Simulation,” IEEE COMPUTER GRAPHICS AND APPLICATIONS, Vol. 16, No. 1, Feb. 1996, pp46-54. Published
165. Lo L, Marsh J, Vannier M, **Patel VV**, “Craniofacial Computer Assisted Surgical Planning and Simulation,” CLINICS IN PLASTIC SURGERY, Vol. 21, No. 4, Oct 1994. pp501- 516. Published

BOOKS

1. **Patel VV**, Kleck CJ, Thompson, Stephen: “Complications in Orthopaedics Spine Surgery”, Elsevier, 2024, ISBN: 978-0-323-88066-4, eBook ISBN: 9780323880671
2. **Patel, VV**, Brown, C, Burger, E: “Spine Trauma Surgical Techniques”, Springer Verlag, 2010, ISBN: 978-3-642-03693-4, eISBN: 978-3-642-03694-4.
3. **Patel, VV**, Patel, A, Harrop, J, Burger, E: “Spine Surgery Basics”, Springer Verlag, 2012, ISBN: 978-3-642-34125-0, eISBN: 978-3-642-34126-7

BOOK CHAPTERS

1. **Patel V**, Adult Spine Scored and Recorded Self-Assessment Examination, (2026) Online AAOS.org
2. Chavarria J; Look N, **Patel VV**, “Bracing” In Comprehensive Guide to Adult Spinal Deformity, Cambridge, 2024, ISBN: 978-1-036-0855-8, ISBN13: 978-1-0364-0855-8
3. York PJ, Ou-Yang D, **Patel VV** (2020) “Disorders of the Sacroiliac Joint” in Spine Secrets (3rd Ed.)
4. Mongan P, **Patel VV**: “Posterior Cervical Spine Surgery” in Monitoring the Nervous System for Anesthesiologists and Other Health Care Professionals, Springer Publishing, 2017.
5. Burger EL, **Patel VV**: “Spine Injuries in Mass Casualties” in Orthopedics in Disasters, Springer Publishing, 2016
6. Ayers RA, Burger EL, Kleck CJ, **Patel VV**: “Metallurgy of Spinal Instrumentation” in Advances in Metallic Biomaterials Technology Mitsuo Niinomi, Takayuki Narushima, Masaki nakai (eds.).

Springer Series in Biomaterials Science and Engineering, Springer-Verlag Gmbh Heidelberg (in press 2015).

7. **Patel, VV**, Henry, S, Burger, E: “Diagnosis and Treatment of Iatrogenic Durotomy” in Surgical Anatomy & Techniques to the Spine (2nd Edition Elsevier), 2012
8. **Patel, VV**, Lafleur, M, Burger, E, Cain, A: “Trans-1 Lumbar Fusion” in Surgical Anatomy & Techniques to the Spine (2nd Edition Elsevier), 2012
9. Mongen P, **Patel VV**: “Posterior Cervical Spine Surgery” in Monitoring the Nervous System for Anesthesiologists and Other Health Care Professionals. 2012
10. **Patel VV**, Botolin S, Burger EL: “Anterior Lumbar Interbody Fusion” in *-Sacral and Pelvic Procedures*, edited by Drs. Daniel Kim, Alexander Vaccaro, Peter Whang, See Hoon Kim, and Sang Don Kim, Quality Medical Publishing, 2011
11. **Patel VV**, Botolin S, Burger EL: “Anterior Lumbar Fusion” in Mastering Orthopaedic Techniques, edited by Rajesh Malhotra, Jaypee Brothers Medical Publishers, 2010
12. **Patel VV**, Botolin S: “Bone Morphogenetic Protein in the Cervical Spine” in The Cervical Spine, The Cervical Spine Research Society, 2010.
13. Bravman J, Mejia H, **Patel VV**: “Lumbar Radiculopathy” Nerve and Vascular Injuries in Sports Medicine, edited by Venu Akuthota and Stan Herring, Springer Verlag 2008
14. Dwyer A, Freudenberger C, **Patel VV**: “Clinical Evaluation of Low Back Pain” Chpt 2 in Pain Management in Interventional Radiology ed. By Charles E. Ray, Cambridge University Press. 2008.
15. Dwyer A, Freudenberger C, **Patel VV**, Fleisher M, and Ray CE: “Functional Lumbar Spine Anatomy: A Review” Chapter 4 in Pain Management in Interventional Radiology edited By Charles E. Ray, Cambridge University Press. 2008.
16. Faro F, Dwyer A, **Patel VV**: “Kyphoplasty” Chapter 6 in Pain Management in Interventional Radiology ed. By Charles E. Ray, Cambridge University Press. 2008.
17. Delamarter RB, Pradhan BB, **Patel VV**: “Cervical Pseudarthrosis” In Complications Of Spine Surgery: Treatment And Prevention edited by Howard S. An, Louis G. Jenis, Philadelphia: Lippincott Williams & Wilkins, c2006

INVITED ARTICLES

1. **Patel VV** “P-15: A Biomimetic Bone Graft Substitute” InSpine V3 Issue 2, Feb 2007 pp8-11.
2. **Patel VV**, Vannier M, Book Review: A Guide to Radiological Procedures by S. Chapman and R. Nakielnny, 3rd ed., Bailliere Tindall Press, London 1993. In Dentomaxillofacial Radiology, Vol. 24, No. 1, Feb. 1995, p.12.
3. **Patel VV**, Sacroiliac Joint Injuries, ORTHOPEDICS, v.35, N 5, p 398, May 2012

EDITORIALS

1. **Patel VV**: “Interpreting Research” in Orthopedics, V 30, No 10, Oct 2007, p 813
2. Rabb C, **Patel VV**, Burger EL: “Spine Surgical Fellowship Education”, SpineLine.
3. **Patel VV**: “University of Colorado Implements Virtual Spine Physical Exam During COVID-19 Pandemic”, Orthopedics Today, April 24, 2020.

LETTERS TO THE EDITOR

1. **Patel VV:** Response to Commentary: The Spine Journal Volume 7, Issue 2, March-April 2007, Page 259.

SCIENTIFIC ABSTRACTS, COMPETITIVE

1. **Vikas V. Patel, MD;** Evalina L. Burger, MD; Ahmad Nassr, MD; William C. Welch, MD. Three-Year Outcomes from a Prospective FDA Randomized Clinical Trial Comparing Lumbar Facet Arthroplasty to Transforaminal Interbody Fusion. Western Orthopedic Association 2026 – 90th Annual Meeting. Colorado Springs, CO, July 29- August 1, 2026 - podium
2. Eric Marty, David Ou-Yang, Renzo Laynes, Jingdian Huang, Anna Sater, Laura Noe, Gabrielle Dudek, Cheryl Ackert-Bicknell, Parker Prusick, MD; **Vikas Patel,** Evalina Burger, Christopher Kleck. Use of Biplanar X-Ray Imaging to Identify Relationship of Spinopelvic Parameters to Patient Anthropometric Variables. Western Orthopedic Association 2026 – 90th Annual Meeting. Colorado Springs, CO, July 29- August 1, 2026 - podium
3. Renzo A. Laynes, MD; Eric Piatt, BS; Laura Noe, BS; Evan Kikla, MD; David C. Ou-Yang, MD; Carson Keeter, MS; Parker Prusick, MD; Evalina L. Burger, MD; Christopher J. Kleck, MD; **Vikas V. Patel, MD;** Preoperative Patient-Reported Outcomes Predict Postoperative Function and Clinically Meaningful Improvement Following Adult Spinal Deformity Correction. Western Orthopedic Association 2026 – 90th Annual Meeting. Colorado Springs, CO, July 29- August 1, 2026 - podium
4. Kyle Jamar, BS; Seth Coomer, PhD; John A. Hipp, PhD; Avinash G. Patwardhan, PhD; Parker Prusick, MD; **Vikas V. Patel, MD.** AI-Driven Radiographic and Biomechanical Analysis for Cervical Total Disc Replacement: A Preliminary Multi-Cohort Investigation. Western Orthopedic Association 2026 – 90th Annual Meeting. Colorado Springs, CO, July 29- August 1, 2026 - podium
5. Christopher J. Kleck, MD; **Vikas Patel, MD;** Clayton Hoffman, MD; Shahbaaz Sabri, MD; David Ou-Yang, MD; Michael Nocek, BS; Zohaib Sherwani, MD; Andriy Noshchenko, PhD. Range of Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across the Cervicothoracic Junction. VOS 2026 Annual Meeting. Roanoke, VA, May 1-3, 2026. – poster
6. **Vikas Patel, MD;** Michael Steinmetz, MD; Bill Welch, MD; Ahmad Nassr, MD, Stephen Robbins, MD, Roland Kent, MD, Dom Coric, MD, Evalina, Burger, MD. Three-Year Outcomes from a Prospective FDA Randomized Clinical Trial Comparing Lumbar Facet Arthroplasty to Transforaminal Interbody Fusion. ISASS 2026 – 26th Annual Conference. Miami, FL, April 9-11, 2026. - podium
7. Whitney Adair, PA-C, Micol Rothman, MD, Arwa Elsheik, MD, Christopher Kleck, MD, **Vikas Patel, MD,** David Ou-Yang, MD, Evalina Burger, MD. Implementation of a Bone Health Provider in the Spine Clinic for Preoperative Osteoporosis Medical Optimization: Single Academic Center Experience. ISASS 2026 – 26th Annual Conference. Miami, FL, April 9-11, 2026. - podium
8. Kyle Jamar, BS; Seth Coomer, PhD; John A. Hipp, PhD; Avinash G. Patwardhan, PhD; **Vikas V. Patel, MD;** Evalina L. Burger, MD. AI-Driven Radiographic and Biomechanical Analysis for Cervical Total Disc Replacement: A Preliminary Multi-Cohort Investigation. ISASS 2026 – 26th Annual Conference. Miami, FL, April 9-11, 2026. – poster

9. Renzo A. Laynes, MD; David C. Ou-Yang, MD; Christopher J. Kleck, MD; Eric Piatt, BS; Carson Keeter, MS; Evalina L. Burger, MD; **Vikas V. Patel, MD**; Laura Noe, BS; Evan Kikla, MD. Preoperative Patient-Reported Outcomes Predict Postoperative Function and Clinically Meaningful Improvement Following Adult Spinal Deformity Correction. ISASS 2026 – 26th Annual Conference. Miami, FL, April 9-11, 2026. - poster
10. Eric Marty, David Ou-Yang, Renzo Laynes, Jingdian Huang, Anna Sater, Laura Noe, Gabrielle Dudek, Cheryl Ackert-Bicknell, **Vikas Patel**, Evalina Burger, Christopher Kleck. Use of Biplanar X-Ray Imaging to Identify Relationship of Spinopelvic Parameters to Patient Anthropometric Variables. ISASS 2026 – 26th Annual Conference. Miami, FL, April 9-11, 2026. – poster
11. **Vikas V. Patel, MD**; Evalina L. Burger, MD; Ahmad Nassr, MD; William C. Welch, MD. Three-Year Outcomes from a Prospective FDA Randomized Clinical Trial Comparing Lumbar Facet Arthroplasty to Transforaminal Interbody Fusion. ABJS 2026 Annual Meeting. Napa Valley, CA, April 8–12, 2026.- podium
12. Charles Paul Nolte Jr., BS; Arjun Singh, BS; Aaron Ishmael, BS; Caleb Wipf, BS; Jingdian Huang, BA; Andriy Noshchenko, PhD; **Vikas V. Patel MD**. Outcomes Following Lumbar Interbody Fusion with a Novel Cellular Bone Allograft: A Matched-Cohort Analysis. ORS 2026 Annual Meeting. Charlotte, NC, March 27–31, 2026. - podium
13. Evalina Burger, MD, **Vikas Patel, MD**, Michael Steinmetz, MD, William C. Welch, MD, Ahmad Nassr, MD, Domagoj Coric, MD. Lumbar Facet Arthroplasty for Spondylolisthesis and Stenosis: Three Year Outcomes from a Prospective FDA Randomized Clinical Trial. American Academy of Orthopaedic Surgeons 2025 Annual Meeting. San Diego, CA, March 10-14, 2025. - poster
14. Max Ray Fisher; Oluwatobi Onafowokan; David C. Ou-Yang, MD; Christopher J. Kleck, MD; **Vikas V. Patel, MD**; Evalina L. Burger, MD; Peter G. Passias, MD. Rethinking Spinal Reconstruction: The Impact of Patient-Specific Implants on Thoracolumbar Deformity Surgery. AAOS 2026 Annual Meeting. New Orleans, LA, March 2–6, 2026. – poster
15. Evalina L. Burger, MD; **Vikas V. Patel, MD**; William C. Welch, MD; Ahmad Nassr, MD; Roland S. Kent, MD; Stephen E. Robbins, MD. Lumbar Facet Arthroplasty for Spondylolisthesis and Stenosis: Three-Year Outcomes from a Prospective FDA Randomized Clinical Trial. AAOS 2026 Annual Meeting. New Orleans, LA, March 2–6, 2026 - podium
16. Kyle Jamar, BS, **Vikas Patel, MD**; Evalina Burger, MD; Michael Steinmetz, MD; Ahmad Nassr, MD; Domagoj Coric, MD; William Welch, MD; Christopher J. Kleck, MD. Lumbar Facet Arthroplasty: An Analysis Comparing Two-Year Outcomes from a Prospective Randomized Clinical Trial Among Patients with Unstable vs Stable Spondylolisthesis. Spine Summit 2025, Tampa, FL, Feb. 20–23, 2025. – podium
17. Kyle Jamar, BS, Christopher J. Kleck, MD; **Vikas Patel, MD**; Clayton Hoffman, MD; Shahbaaz Sabri, MD; David Ou-Yang, MD; Michael Nocek, BS; Zohaib Sherwani, MD; Andriy Noshchenko, PhD. C7–T1 Flexion/Extension Range of Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across the Cervicothoracic Junction. Spine Summit 2025, Tampa, FL, Feb. 20–23, 2025. - podium

18. Kyle Jamar, BS; **Vikas Patel, MD**; Cheryl Ackert-Bicknell, PhD; Ankit Hirpara, MD. Understanding the Impact of Low-Density Lipoprotein Levels and Lipid-Lowering Agents on Rates of Pseudarthrosis After Anterior Cervical Discectomy and Fusion. Spine Summit 2025, Tampa, FL, Feb. 20–23, 2025. – poster
19. **Vikas Patel, MD**; Kyle Jamar, BS; Seth Coomer, MS; John Hipp, PhD. Impact of Navigated Radiofrequency Ablation (RFA) on Spinal Tumors. Spine Summit 2025, Tampa, FL, Feb. 20–23, 2025. – poster
20. **Vikas Patel, MD**; Kyle Jamar, BS; Seth Coomer, MS; John Hipp, PhD. Lumbar Facet Arthroplasty: An Analysis Comparing Two-Year Outcomes from a Prospective Randomized Clinical Trial Among Patients with Unstable vs Stable Spondylolisthesis. Spine Summit 2025, Tampa, FL, Feb. 20–23, 2025. – poster
21. **Vikas Patel, MD**; Kyle Jamar, BS; Seth Coomer, MS; John Hipp, PhD. C7–T1 Flexion/Extension Range of Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across the Cervicothoracic Junction. Spine Summit 2025, Tampa, FL, Feb. 20–23, 2025. - poster
22. Kyle Jamar, BS; Seth Coomer, PhD; John A. Hipp, PhD; Avinash G. Patwardhan, PhD; **Vikas V. Patel, MD**. AI-Driven Radiographic and Biomechanical Analysis for Cervical Total Disc Replacement: A Preliminary Multi-Cohort Investigation. NASS 2026 41ST Annual Meeting. San Antonio, TX, October 14-17, 2026. - podium
23. Christopher J. Kleck, MD; Evalina Burger, MD; **Vikas Patel, MD**; David Ou-Yang, MD; Eren Kuris, MD; Anna Sater, BS; Carson Keeter, MS; Katherine Drexelius, BS; Hunter Lindsay, BS. The Impact Of Patient-Specific Short Rods On Spinopelvic Alignment And Clinical Outcomes After Degenerative Lumbar Fusion. SICOT 2025 45th Annual Meeting. Madrid, Spain, September 3–5, 2025. – podium
24. Evalina Burger, MD; **Vikas Patel, MD**; Cheryl Ackert-Bicknell, PhD; Ankit Hirpara, MD. Understanding The Impact Of Low-Density Lipoprotein Levels And Lipid-Lowering Agents On Rates Of Pseudarthrosis After Anterior Cervical Discectomy And Fusion. SICOT 2025 45th Annual Meeting. Madrid, Spain, September 3–5, 2025. – podium
25. **Vikas Patel, MD**; Charles Nolte, BS; Aaron Ishmael, MD; Arjun Singh, BS; Jingdian Huang, MD; Evalina Burger, MD; Andriy Noshchenko, PhD; Caleb Wipf, BS. Allogenic Stem Cells In Lumbar Interbody Spinal Fusion: A Retrospective, Matched-Cohort Study. SICOT 2025 45th Annual Meeting. Madrid, Spain, September 3–5, 2025. – podium
26. Evalina Burger, MD; **Vikas Patel, MD**; Andriy Noshchenko, PhD; Christopher J. Kleck, MD; David Ou-Yang, MD; Clayton Hoffman, MD; Shahbaaz Sabri, MD. Range Of Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across The Cervicothoracic Junction. SICOT 2025 45th Annual Meeting. Madrid, Spain, September 3–5, 2025. - podium
27. Evalina Burger, MD; **Vikas Patel, MD**; Michael Steinmetz, MD; William Welch, MD; Ahmad Nassr, MD; Domagoj Coric, MD. Lumbar Facet Arthroplasty: An Uncensored Analysis From A Prospective Randomized Clinical Trial Of Three-Year Patient Reported Outcomes. SICOT 2025 45th Annual Meeting. Madrid, Spain, September 3–5, 2025. – poster

28. Evalina Burger, MD; **Vikas Patel, MD**; Kyle Jamar, MS; Seth Coomer, MS; John Hipp, PhD. Limited Postoperative Range Of Motion May Indicate Poorer Outcomes In Patients Treated With Cervical Disc Arthroplasty. SICOT 2025 45th Annual Meeting. Madrid, Spain, September 3–5, 2025. – poster
29. Evalina Burger, MD; **Vikas Patel, MD**; Kyle Jamar, MS; Seth Coomer, MS; John Hipp, PhD. Utilizing AI To Enhance Patient Selection And Treatment Response In Cervical Total Disc Arthroplasty Patients. SICOT 2025 45th Annual Meeting. Madrid, Spain, September 3–5, 2025. – poster
30. Evalina Burger, MD; **Vikas Patel, MD**; Kyle Jamar, MS; Seth Coomer, MS; John Hipp, PhD. Objectively Measured Spondylolisthesis May Result In Below-Average Outcomes In Patients Treated Using Disc Arthroplasty. SICOT 2025 45th Annual Meeting. Madrid, Spain, September 3–5, 2025. – poster
31. Evalina Burger, MD; Aubrie Nuccio, MS; Evan Kikla, MS; Gregory Ottenberg, MS; Jiandong Hao, PhD; James Carollo, PhD; **Vikas Patel, MD**; Davide De Gregorio, PhD. Evaluation Of Healthy Spine Movement And Lower Body Gait Using Magneto-Inertial Measurement Units (MIMUs) To Begin Normative Spine Joint Movement Database. SICOT 2025 45th Annual Meeting. Madrid, Spain, September 3–5, 2025. – poster
32. Evalina Burger, MD; Clayton Hoffman, MD; Renzo Laynes, MS; David Ou-Yang, MD; **Vikas Patel, MD**; Christopher J. Kleck, MD; Shahbaaz Sabri, MD; Mary Lowry, MS; Rachael Weesner, BS; Joseph Chavarria, MD; Parker Prusick, MD; Nathaniel Stringer, MD; David Gimarc, MD; James P. Farrel, MD. Implications Of Lumbosacral Transitional Anatomy On Vertebral Numbering: Evaluation Of 3147 Adult Full-Length Spine X-Rays. SICOT 2025 45th Annual Meeting. Madrid, Spain, September 3–5, 2025. - poster
33. Kyle Jamar, Seth Coomer, John Hipp, Avinash Patwardhan, **Vikas Patel, MD**. Radiographic Comparison of IDE Trial and Real-World Cohorts in cTDR. Orthopedic Research Symposium & D'Ambrosia Diversity Lectureship. Aurora, CO, Oct. 22, 2025. – poster
34. Kyle Jamar, Seth Coomer, John Hipp, **Vikas Patel, MD**. Limited Postoperative Range of Motion May Indicate Poorer Outcomes in Patients Treated with Cervical Disc Arthroplasty. Orthopedic Research Symposium & D'Ambrosia Diversity Lectureship. Aurora, CO, Oct. 22, 2025. – poster
35. Kyle Jamar, Seth Coomer, John Hipp, Avinash Patwardhan, **Vikas Patel, MD**. 6-DOF vs 5-DOF Cervical Total Disc Replacements. Orthopedic Research Symposium & D'Ambrosia Diversity Lectureship. Aurora, CO, Oct. 22, 2025. – poster
36. Kyle Jamar, Seth Coomer, John Hipp, **Vikas Patel, MD**. Objectively Measured Spondylolisthesis May Result in Below-Average Outcomes in Patients Treated Using Disc Arthroplasty. Orthopedic Research Symposium & D'Ambrosia Diversity Lectureship. Aurora, CO, Oct. 22, 2025. – poster
37. Kyle Jamar, Seth Coomer, John Hipp, **Vikas Patel, MD**. Utilizing AI to Enhance Patient Selection and Treatment Response in Cervical Total Disc Arthroplasty Patients. Orthopedic Research Symposium & D'Ambrosia Diversity Lectureship. Aurora, CO, Oct. 22, 2025. – poster
38. Ali Zarezadeh, Anna Sater, BS, Laura Noe, BS, Alexander Ho, MD, Jonathan Layne, MD, Carson Keeter, MS, Evalina Burger, MD, **Vikas Patel, MD**, David Ou-Yang, MD, Christopher J. Kleck, MD.

Two-Level Pedicle Subtraction Osteotomy for Adult Spinal Deformity – Evaluation of Safety, Efficacy, and Complications. Orthopedic Research Symposium & D'Ambrosia Diversity Lectureship. Aurora, CO, Oct. 22, 2025. – poster

39. Charles Paul Nolte Jr., BS, Arjun Singh, BS, Aaron Ishmael, BS, Caleb Wipf, BS, Jingdian Huang, BA, Andriy Noshchenko, PhD, **Vikas Patel, MD**. Allogenic Stem Cells in Lumbar Interbody Spinal Fusion: A Retrospective, Matched-Cohort Study. Orthopedic Research Symposium & D'Ambrosia Diversity Lectureship. Aurora, CO, Oct. 22, 2025. - poster
40. **Vikas Patel, MD**; Evalina Burger, MD; Michael Steinmetz, MD; Ahmad Nassr, MD; Domagoj Coric, MD; William Welch, MD; Christopher J. Kleck, MD. Lumbar Facet Arthroplasty for Spondylolisthesis and Stenosis: Three-Year Outcomes from a Prospective FDA Randomized Clinical Trial. EUROSPINE Annual Meeting 2025. Copenhagen, Denmark, October 22–24, 2025. – podium
41. Christopher J. Kleck, MD; **Vikas Patel, MD**; Clayton Hoffman, MD; Shahbaaz Sabri, MD; David Ou-Yang, MD; Michael Nocek, BS; Zohaib Sherwani, MD; Andriy Noshchenko, PhD. Range of Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across the Cervicothoracic Junction. EUROSPINE Annual Meeting 2025. Copenhagen, Denmark, October 22–24, 2025. - podium
42. **Vikas Patel, MD**; Jingdian Huang, MD; Caleb Wipf, BS; Arjun Singh, BS; Charles Nolte, MD; Aaron Ishmael, MD; Christopher J. Kleck, MD. Allogenic Stem Cells in Lumbar Interbody Spinal Fusion: A Retrospective, Matched-Cohort Study. EUROSPINE Annual Meeting 2025. Copenhagen, Denmark, October 22–24, 2025. - poster
43. **Vikas Patel, MD**; Clayton Hoffman; Shahbaaz A. Sabri, MD; Michael Nocek, BA; Andriy Noshchenko, PhD; David Ou-Yang, MD; Christopher Kleck, MD. Range of Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across the Cervicothoracic Junction. CSRS 2025 53rd Annual Meeting. Washington, DC, December 3–6, 2025. – podium
44. **Vikas Patel, MD**; RM Havey; TF Grieco; Seth Coomer; MG Muriuki; AG Patwardhan. Comparison of Radiographic Results of Two Patient Cohorts Supports External Validity of the IDE Study of Cervical Disc Arthroplasty Utilizing a Six-Degrees-of-Freedom Prosthesis. CSRS 2025 53rd Annual Meeting. Washington, DC, December 3–6, 2025. - podium
45. Evalina Burger, MD, **Vikas Patel, MD**, Michael Steinmetz, MD, William C. Welch, MD, Ahmad Nassr, MD, Domagoj Coric, MD. Lumbar Facet Arthroplasty for Spondylolisthesis and Stenosis: Three Year Outcomes from a Prospective FDA Randomized Clinical Trial. American Academy of Orthopaedic Surgeons 2025 Annual Meeting. San Diego, CA, March 10-14, 2025 - poster
46. Evalina Burger, MD, **Vikas Patel, MD**, Michael Steinmetz, MD, William C. Welch, MD, Ahmad Nassr, MD, Domagoj Coric, MD. Lumbar Facet Arthroplasty for Spondylolisthesis and Stenosis: Three Year Outcomes from a Prospective FDA Randomized Clinical Trial. NASS 2024. Chicago, IL, Sept. 25-28, 2024. - podium
47. Clay Hoffman, MD, Michael Nocek, BA, Zohaib Sherwani, MD, **Vikas V. Patel, MD**, Shahbaaz Sabri, MD, David Ou-Yang, MD, Christopher J. Kleck, MD. *Range of Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across the Cervicothoracic Junction*. NASS 2024. Chicago, IL, Sept. 25-28, 2024. - podium
48. Evalina Burger, MD, Renzo Laynes, MD, Shreyaas Aravindan, BA, Jonathan Layne, MD, Benjamin Wharton, BA, Bradley Duhon, MD, Christopher J. Kleck, MD, **Vikas Patel, MD**. Superior Gluteal

Artery Injury During Open Sacroiliac Joint Fusion: A Case Series. ISASS 2024. Miami, FL, Apr. 26-28, 2024.

49. **Patel V**, Lansford T, Weinstein M, Campbell P, Vokshoor A, Wind J, Beaumont A, Hassanzadeh H, Radcliff K, Aleem I, Coric D: “Electrical Stimulation Used as an Adjunct to Cervical Spine Fusion in Patients at Risk for Pseudarthrosis” Podium Presentation, CSRS 2023. Las Vegas, NV, Nov. 30, 2023.
50. **Patel V**, Lansford V, Weinstein M, Campbell P, Vokshoor A, Wind J, Beaumont A, Hassanzadeh H, Radcliff K, Aleem I, Coric D: “Adjunctive Use of Bone Growth Stimulation in Cervical Spine Fusion in Patients at Risk for Nonunion” Podium Presentation, CSRS 2023. Las Vegas, NV, Nov. 30, 2023.
51. Clay Hoffman, BS, Zohaib Sherwani, MD, **Vikas V. Patel, MD**, Shahbaaz Sabri, MD, David Ou-Yang, MD, Christopher J. Kleck, MD. “Range of Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across the Cervicothoracic Junction” Poster Presentation, CSRS 2023. Las Vegas, NV, Nov. 30, 2023.
52. Peter G. Whang, **Vikas Patel**, Bradley Duhon, Bengt Stureson, Daniel Cher, W. Carlton Reckling, Robyn Capobianco and David Polly. “Minimally Invasive SI Joint Fusion Procedures for Chronic SI Joint Pain: Systematic Review and Meta-Analysis of Safety and Efficacy” Podium Presentation, 11th Interdisciplinary World Congress on Low Back & Pelvic Girdle Pain. Melbourne, Australia, Nov. 3, 2023
53. Renzo Laynes, MD, Shreyaas Aravindan, BA, Jonathan Layne, MD, Benjamin Wharton, BA, Bradley Duhon, MD, Christopher J. Kleck, MD, **Vikas Patel, MD**. “Superior Gluteal Artery Injury During Open Sacroiliac Joint Fusion: A Case Series” Poster Presentation, Orthopedic Research Symposium & D’Ambrosia Diversity Lectureship. Aurora, CO, Oct. 25, 2023.
54. Mitchell Hutchings, Michael Rodgers, Jackson Albright, Christopher Kleck, David Ou-Yang, Evalina Burger, Nolan Wessell, **Vikas Patel**, Cheryl Ackert-Bicknell, Reed Ayers. “Structured Light Scanning and Colorimetric Characterization to Differentiate Wear and Corrosion on Spinal Explants” Poster Presentation, Orthopedic Research Symposium & D’Ambrosia Diversity Lectureship. Aurora, CO, Oct. 25, 2023
55. Clay Hoffman, MD, Michael Nocek, BA, Zohaib Sherwani, MD, **Vikas V. Patel**, Shahbaaz Sabri, MD, David Ou-Yang, MD, Christopher J. Kleck, MD. “Range of Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across the Cervicothoracic Junction”, Podium Presentation, ISASS 2023. San Francisco, CA, June 3, 2023.
56. Todd Lansford, Marc Weinstein, Joshua Wind, MD, Hamid Hassanzadeh, MD, Kris Radcliff, Ilyas Aleem, MD, Domagoj Coric, MD, **Vikas V. Patel, MD**. “Adjunctive Use of Bone Growth Stimulation In Cervical Spine Fusion In Patients At Risk For Pseudarthrosis”, Poster Presentation, ISASS 2023. San Francisco, CA, June 3, 2023.
57. Todd Lansford, Marc Weinstein, Joshua Wind, Hamid Hassanzadeh, MD, Kris Radcliff, Ilyas Aleem, MD, Domagoj Coric, MD, **Vikas V. Patel, MD**. “Electrical Stimulation Used As An Adjunct To Cervical Spine Fusion In Patients At Risk For Pseudoarthrosis”, Podium Presentation, ISASS 2023. San Francisco, CA, June 3, 2023.
58. Hoffman C, Sherwani Z, Patel V: “Change in Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across the Cervicothoracic Junction”, ISASS – June 2023
59. Andres Bonilla; Kim Lebsock; James Johnson; Kevin Labus; Benjamin Gadowski; Holly Stewart; Howard Seim; Celeste Abjornson; **Vikas Patel**; Jeremiah Easley: “Safety and Functionality assessment of Antimicrobial Surface Modified Spinal Stabilization Devices” Poster Presentation, ORS Annual Meeting 2023. Long Beach, CA, Feb. 3rd, 2023.

60. Hoffman C, Sherwani Z, Patel V: "Change in Horizontal Gaze Following Multilevel Posterior Cervical Fusion Across the Cervicothoracic Junction", 4th Annual Research Symposium & D'Ambrosia Diversity Lectureship, Aurora, Colorado, October 5th, 2022.
61. Pott M, Ayers R, Akiyama M, Baldini T, Wuthrich Z, McClellan W, Cain C, **Patel VV**, Burger E, Ou-Yang D, Wessell N: "A Comparative Analysis of Bone Strain in Pullout vs Toggle Pedicle Screw Testing", 16th Annual Meeting of The International Society for the Advancement of Spine Surgery (ISASS). San Juan, Puerto Rico, February 26-28, 2020.
62. Wessell N, Ross P, Akiyama M, Lindley E, **Patel VV**: "Opioid Prescription Monitoring in Pre- and Post-operative Sacroiliac Joint Fusion Patients", 16th Annual Meeting of The International Society for the Advancement of Spine Surgery (ISASS). San Juan, Puerto Rico, February 26-28, 2020.
63. Lindley E, Cofer C, Mintken P, Sawyer E, Michener L, **Patel VV**: "Validation of a New SI Joint-specific Disability Questionnaire: The Denver SI Joint Questionnaire", 16th Annual Meeting of The International Society for the Advancement of Spine Surgery (ISASS). San Juan, Puerto Rico, February 26-28, 2020.
64. Calabrese D, Noshchenko A, Burger E, Patel VV, Ou-Yang D, Cain C, Wessell N: "Life is Not Necessarily a Kyphosing Event: Evaluation of Sagittal Parameters of Standing Full Body Radiographs in Asymptomatic Volunteers over Decades of Life", 16th Annual Meeting of The International Society for the Advancement of Spine Surgery (ISASS). San Juan, Puerto Rico, February 26-28, 2020.
65. Rodriguez-Fontan F, Bilousova G, Kogut I, Erickson C, Baldini T, **Patel VV**, Payne K: "Human Bone Grafts Seeded with Induces Pluripotent Stem Cells-Mesenchymal Progenitors for Spine Fusion in a Rat Model," Poster Presentation, *ORS 2018 Annual Meeting*, Austin Texas, February 2-5, 2019.
66. Fontan FR, Reeves B, Noshchenko A, Ou-Yang D, Kleck C, Cain C, Burger EL, **Patel VV**: "Strap Stabilization Use in Posterior Instrumented Spinal Fusion for Proximal Junctional Kyphosis Prevention: A Retrospective Cohort Study," Poster Presentation, *ORS 2018 Annual Meeting*, New Orleans, Louisiana, March 10-13, 2018.
67. Patel VV: "Diagnostic Workup/Selecting Patients for SIJ Fusion. Primary SIJ Fusion: Tips, Tricks, Pearls," VuMedi/LSRS Webinar, Denver, Colorado, January 18, 2018.
68. **Patel VV**: "Spine Fusion and rhBMP in a Vitamin D Deficient Rat Model," 38th *Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT)*, Cape Town, South Africa, November 29-December 2, 2017.
69. **Patel VV**: "One Step Techniques for MIS Pedicle Screw Placement," 38th *Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT)*, Cape Town, South Africa, November 29-December 2, 2017.
70. **Patel VV**: "Cervical Spine, Spinal Stenosis & the SI Joint," 38th *Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT)*, Cape Town, South Africa, November 29-December 2, 2017.
71. Kurra S, **Patel VV**, Sandhu F, Daffner S, Khan S, Davis R, Milam A, Whang P, Yuan P, Nunley P, Araghi A, Metkar U, Tallarico R, Lavelle W: "Effects of Crooked Anterior Cervical Plates on Clinical Outcomes," Poster Presentation, *CNS 2017 Annual Meeting*, Boston, Massachusetts, October 7-11, 2017.
72. Patel R, Noshchenko A, Carpenter RD, Baldini T, Frick CP, **Patel VV**, Yakacki CM: "Evaluation and Prediction of Human Lumbar Vertebra Endplate Mechanical Properties Using Indentation and Computed Tomography," *ORS 2017 Annual Meeting*, San Diego, California, March, 19-22, 2017

73. Payne KA, Sauque M, Shaw N, Erickson C, Yarger P, Baldini T, Kleck CJ, **Patel VV**, Burger EL,: “Spine Pathogenesis and Therapeutics,” *ORS 2017 Annual Meeting*, San Diego, California, March, 19-22, 2017
74. **Patel VV**, Ou-Yang D, Moldavsky M, Mariano T, Matheis EA, Bucklen BS. A Biomechanical Evaluation of a Potential PJK Treatment Option Utilizing a Reduction Band Tether of the Spinous Process at the Proximal Adjacent Level. *EuroSpine 2016*. Berlin, Germany, October 5-7, 2016.
75. Bozzio AE, Johnson CR, Fattor JA, Kleck CJ, **Patel VV**, Burger EL, Noshchenko A, Cain CMJ. Clinical and Radiographic Outcomes of Stand-Alone Anterior Lumbar Interbody Fusion Versus Transforaminal Lumbar Interbody Fusions and 360-Degree Fusions. *Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT)*. Rome, Italy, September 8-10, 2016.
76. Noshchenko A, Hoffecker L, Kleck CJ, Cain CMJ, **Patel VV**, Burger EL. Defining Of Optimal Spinopelvic Parameters In Adults: A Systematic Review With Meta-Analysis. *Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT)*. Rome, Italy, September 8-10, 2016.
77. **Patel VV**, Payne K. Cellular Grafts for Bone Formation. 2016 Annual MERC Symposium, Audubon, Pennsylvania, August 5-6, 2016.
78. Barton C, Noshchenko A, Kleck CJ, **Patel VV**, Burger EL. Early Experience and Initial Outcomes with Patient Specific Rods for Adult Spine Surgery. 13th Annual Meeting of the Combined Orthopedics Associations (COMOC). Cape Town, South Africa, April 11-15, 2016.
79. Kleck CJ, Perry JM, Burger EL, Cain CMJ, **Patel VV**. Minimally Invasive Technique for Placement of Sacroiliac (SI) Arthrodesis Implants using O-Arm and Stealth Navigation. 13th Annual Meeting of the Combined Orthopedics Associations (COMOC). Cape Town, South Africa, April 11-15, 2016.
80. Kleck CJ, Burger EL, **Patel VV**. OneStep Technique for Minimally Invasive Placement of Pedicle Screws with O-Arm and Stealth Navigation. 13th Annual Meeting of the Combined Orthopedics Associations (COMOC). Cape Town, South Africa, April 11-15, 2016.
81. Barton C, Noshchenko A, **Patel VV**, Cain CMJ, Kleck CJ, Burger EL. Factors Associated with Mechanical Complications Including Proximal Junctional Failure after Osteotomy for Adult Spinal Deformity. 13th Annual Meeting of the Combined Orthopedics Associations (COMOC). Cape Town, South Africa, April 11-15, 2016.
82. Kleck CJ, Glueck D, Lind K, Petersen B, Williams A, **Patel VV**. 3D Morphologic Assessment Of Normal And Abnormal Si Joints And The Potential Implications In The Development Of Pain Syndromes. 13th Annual Meeting of the Combined Orthopedics Associations (COMOC). Cape Town, South Africa, April 11-15, 2016.
83. Barton C, Noshchenko A, **Patel VV**, Cain CMJ, Kleck CJ, Burger EL. Risk Factors Associated with Rod Fracture After Osteotomy for Adult Spinal Deformity. 13th Annual Meeting of the Combined Orthopedics Associations (COMOC). Cape Town, South Africa, April 11-15, 2016.
84. Noshchenko A, Lindley EM, Burger EL, Cain CM, **Patel VV**. Long Term Patient-Centered Clinical Outcomes of Lumbar Arthrodeses in Degenerative Disc Disease: A Systematic Review with Meta Analysis. 13th Annual Meeting of the Combined Orthopedics Associations (COMOC). Cape Town, South Africa, April 11-15, 2016.
85. Noshchenko A, Lindley EM, Burger EL, Cain CMJ, **Patel VV**. Rates of Complications and Required Additional Surgical Interventions after Surgical and Nonsurgical Treatment in Lumbar Spondylosis: A Systematic Review with Meta Analysis. 13th Annual Meeting of the Combined Orthopedics Associations (COMOC). Cape Town, South Africa, April 11-15, 2016.

86. Kleck CJ, Illing D, Lindley EM, **Patel VV**, Barton C, Baldini T, Cain CMJ, Burger EL. A Comparative Analysis of Lumbo-sacral Fixation Strengths: What is Best in a Long Fusion? 13th Annual Meeting of the Combined Orthopedics Associations (COMOC). Cape Town, South Africa, April 11-15, 2016.
87. Noshchenko A, Lindley EM, Burger EL, Cain CMJ, **Patel VV**. What is the Clinical Relevance of Nonunion after Lumbar Arthrodesis? A Meta-Analysis of the YODA Project Database. 13th Annual Meeting of the Combined Orthopedics Associations (COMOC). Cape Town, South Africa, April 11-15, 2016.
88. Martyn R, Zaghloul K, Lindley EM, Kleck CJ, Cain CMJ, Burger EL, **Patel VV**. Pedicle Screw Placement in Spine Surgery: A retrospective review of O-arm/Stealth vs Non-Computerized Navigation Techniques. 13th Annual Meeting of the Combined Orthopedics Associations (COMOC). Cape Town, South Africa, April 11-15, 2016.
89. Davis B, Sauque M, Sweeney K, Baldini, T, Kogut I, Bilousova G, **Patel VV**, Payne, K. Revitalization of Bone Allograft with Human Induced Pluripotent Stem Cells for Improved Bone Formation. 16th Annual Meeting of The International Society for the Advancement of Spine Surgery (ISASS). Las Vegas, Nevada, April 6-9, 2016.
90. Noshchenko A, Lindley EM, Burger EL, Cain CMJ, **Patel VV**. What is the Clinical Relevance of Nonunion after Lumbar Arthrodesis? A Meta-Analysis of the YODA Project Database. Annual Meeting of the International Society for the Advancement of Spine Surgery (ISASS). Las Vegas, Nevada, April 6-8, 2016.
91. Kleck CJ, Illing D, Lindley EM, **Patel VV**, Barton C, Baldini T, Cain CMJ, Burger EL. A Comparative Analysis of Lumbo-sacral Fixation Strengths: What is Best in a Long Fusion? Annual Meeting of the International Society for the Advancement of Spine Surgery (ISASS). Las Vegas, Nevada, April 6-8, 2016.
92. Barton C, Noshchenko A, **Patel VV**, Cain CMJ, Kleck CJ, Burger EL. Risk Factors Associated with Rod Fracture After Osteotomy for Adult Spinal Deformity. Annual Meeting of the International Society for the Advancement of Spine Surgery (ISASS). Las Vegas, Nevada, April 6-8, 2016.
93. Cain C, Hollenbeck JFM, Fattor JA, **Patel VV**, Burger EL, Rullkoetter PJ. Patient-specific ROM Predicted by Pre-operative Templating after Total Disc Replacement Surgery. Annual Meeting of the International Society for the Advancement of Spine Surgery (ISASS). Las Vegas, Nevada, April 6-8, 2016.
94. Hollenbeck JFM, Cain C, Fattor JA, **Patel VV**, Burger EL, Rullkoetter PJ. Pre-operative Templating for TDR Predicts Post-operative ROM and Could Improve Clinical Outcomes. Annual Meeting of the Orthopaedic Research Society (ORS). Orlando, Florida, March 5-8, 2016.
95. Barton C, Noshchenko A, **Patel VV**, Cain CMJ, Kleck CJ, Burger E. Risk Factors Associated with Rod Fracture After Osteotomy for Adult Spinal Deformity. Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT). Guangzhou, China, September 17-19, 2015.
96. Kleck CJ, Jesse MK, Illing D, Williams A, Petersen B, Milligan K, Glueck D, Lind K, **Patel VV**. 3D Morphometric Analysis Of Normal Sacroiliac Joints: A New Classification Of Surface Shape Variation. Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT). Guangzhou, China, September 17-19, 2015.
97. Noshchenko N, Lindley EM, Burger EL, Cain CMJ, **Patel VV**. What is the Clinical Relevance of Nonunion after Lumbar Arthrodesis? A Meta-Analysis of the YODA Project Database. Annual Meeting of the International Society of Orthopaedic Surgery and Traumatology (SICOT). Guangzhou, China, September 17-19, 2015.

98. Burger EL, Barton C, Noshchenko A, **Patel VV**, Cain CMJ, Kleck CJ. Risk Factors Associated with Rod Fracture After Osteotomy for Adult Spinal Deformity. Annual Meeting of Eurospine. Copenhagen, Denmark, September 2-4, 2015.
99. Burger EL, Barton C, Noshchenko A, **Patel VV**, Cain CMJ, Kleck CJ. Risk Factors Associated with Mechanical Complications Including Proximal Junctional Failure after Osteotomy for Adult Spinal Deformity. Annual Meeting of Eurospine. Copenhagen, Denmark, September 2-4, 2015.
100. Burger EL, Illing D, Razavi-Shearer D, Weitzel NS, Lindley EM, Kleck CJ, Cain CMJ, Jameson LC, **Patel VV**. Preoperative Coagulation Profile Testing to Predict Blood Loss in Complex Spine Surgery: Identifying the Patient at Risk. 15th Annual Meeting of The International Society for the Advancement of Spine Surgery (ISASS). San Diego, California, April 15-17, 2015.
101. Kleck CJ, Perry J, Burger EL, Cain C, **Patel VV**. Minimally Invasive Technique for Placement of Sacroiliac Arthrodesis Implants using O-Arm and Stealth Navigation. 15th Annual Meeting of The International Society for the Advancement of Spine Surgery (ISASS). San Diego, California, April 15-17, 2015.
102. Lindley EM, Razavi-Shearer D, **Patel VV**, Burger EL, Cain CMJ, Finn MA. Medical Marijuana Use Characteristics in Patients With Chronic Spine Pain Disorders. 15th Annual Meeting of The International Society for the Advancement of Spine Surgery (ISASS). San Diego, California, April 15-17, 2015.
103. Noshchenko A, Lindley EM, Burger EL, Cain CMJ, **Patel VV**. Rates of Complications and Required Additional Surgical Interventions after Spinal Arthrodesis versus Alternative Treatment in Lumbar Spondylosis: A Systematic Review with Meta Analysis. 15th Annual Meeting of The International Society for the Advancement of Spine Surgery (ISASS). San Diego, California, April 15-17, 2015.
104. Noshchenko A, Lindley EM, Burger EL, Cain CMJ, **Patel VV**. Long Term Patient-Centered Clinical Outcomes of Lumbar Arthrodeses in Degenerative Disc Disease: A Systematic Review with Meta Analysis. 15th Annual Meeting of The International Society for the Advancement of Spine Surgery (ISASS). San Diego, California, April 15-17, 2015.
105. Cain C, Hollenbeck JFM, Fattor JA, **Patel VV**, Burger EL, Laz PJ, Rullkoetter PJ. Patient-specific templating for ADR identifies factors that influence clinical outcomes. 15th Annual Meeting of The International Society for the Advancement of Spine Surgery (ISASS). San Diego, California, April 15-17, 2015.
106. Noshchenko A, Lindley EM, Burger EL, Cain CMJ, **Patel VV**. Rates of Complications and Required Additional Surgical Interventions after Surgical and Nonsurgical Treatment in Lumbar Spondylosis; A Systematic Review with Meta Analysis. Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)*. Rio de Janeiro, Brazil, November 19-22, 2014.
107. Kleck CJ, Illing D, Lindley EM, Cain CMJ, Burger EL, **Patel VV**. Post-Market Analysis of Pulsed Electromagnetic Field (PEMF) Stimulation Use for Cervical Fusion. Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)*. Rio de Janeiro, Brazil, November 19-22, 2014.
108. Illing D, Perry J, Lindley EM, **Patel VV**, Cain CMJ, Kleck CJ, Burger EL. The Effect of Electronic Medical Record System Implementation on Complication Rate in Adult Spine Deformity Surgery. Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)*. Rio de Janeiro, Brazil, November 19-22, 2014.
109. Kleck CJ, Illing D, Lindley EM, **Patel VV**, Barton C, Baldini T, Razavi-Shearer D, Cain CMJ, Burger EL. A Comparative Analysis of Lumbo-Sacral Fixation Strengths: What is Best in a Long Fusion? Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)*. Rio De Janeiro, Brazil, November 19-22, 2014.

110. Noshchenko A, Lindley EM, Burger EL, Cain CMJ, **Patel VV**. Long Term Patient-Centered Clinical Outcomes of Lumbar Arthrodeses in Degenerative Disc Disease: A Systematic Review with Meta Analysis. Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)*. Rio De Janeiro, Brazil, November 19-22, 2014.
111. Noshchenko A, Lindley EM, Burger EL, Cain CMJ, **Patel VV**. Long Term Patient-Centered Clinical Outcomes of Lumbar Arthrodeses in Degenerative Disc Disease: A Systematic Review with Meta Analysis. 29th Annual Meeting of the *North American Spine Society (NASS)*. San Francisco, California, November 12-15 2014.
112. Burger EL, Illing D, Razavi-Shearer D, Weitzel N, Lindley EM, Kleck CJ, Cain CMJ, Jamison L, **Patel VV**. Preoperative Coagulation Profile Testing to Predict Blood Loss in Complex Spine Surgery: Identifying the Patient at Risk. 29th Annual Meeting of the *North American Spine Society (NASS)*. San Francisco, California, November 12-15 2014.
113. Kleck CJ, Illing D, Lindley EM, **Patel VV**, Barton C, Baldini T, Razavi-Shearer D, Cain CMJ, Burger EL. A Comparative Analysis of Lumbo-sacral Fixation Strengths: What is Best in a Long Fusion? 29th Annual Meeting of the *North American Spine Society (NASS)*. San Francisco, California, November 12-15 2014.
114. Lindley EM, Barton C, Blount T, Burger EL, Cain CMJ, Seim H, Turner AS, **Patel VV**. A Review of Control Group Outcomes in Sheep Fusion Models and Recommendations for Future Studies. 2014 Annual Meeting of the *American Academy of Orthopaedic Surgeons (AAOS)*. New Orleans, Louisiana, March 11-15 2014.
115. Lindley EM, Spiegel B, Zimkowski M, Rentschler M, Blount T, Milligan K, Burger EL, **Patel VV**. A New Method For Clinically Assessing Pain. 2014 Annual Meeting of the *American Academy of Orthopaedic Surgeons (AAOS)*. New Orleans, Louisiana, March 11-15 2014.
116. Lindley EM, Spiegel B, Milligan K, Zimkowski M, Rentschler M, Burger EL, **Patel VV**. A New Method For Clinically Assessing Pain. 34th Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)* and *Orthopaedic World Congress*. Hyderabad, India, October 17-19 2013.
117. Burger EL, Weitzel N, Razavi-Shearer D, Lindley EM, Henry SE, Kleck CJ, Cain CMJ, Noshchenko A, Jamison L, McBeth Z, **Patel VV**. Prospective analysis of coagulation profile testing to predict coagulopathy and morbidity in major spine surgery: Identifying the patient at risk. 34th Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)* and *Orthopaedic World Congress*. Hyderabad, India, October 17-19 2013.
118. Lindley EM, Burger EL, Cain CMJ, **Patel VV**. Fentanyl Iontophoretic Transdermal System and Morphine Intravenous Patient-Controlled Analgesia for Pain Management Following Spinal Surgery. 34th Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)* and *Orthopaedic World Congress*. Hyderabad, India, October 17-19 2013.
119. Lindley EM, Razavi-Shearer D, **Patel VV**, Henry SE, McBeth Z, Burger EL, Cain CMJ, Finn MA. Medical Marijuana Use Characteristics In Patients With Chronic Spine Pain Disorders. 34th Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)* and *Orthopaedic World Congress*. Hyderabad, India, October 17-19 2013.
120. Kleck CJ, LaFleur M, Lindley EM, Clark M, Burger EL, Cain CMJ, Rentschler ME, Razavi-Shearer D, **Patel VV**. Pedicle Screw Precision with 3-Dimensional Imaging, Navigation, and Measurement. 34th Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)* and *Orthopaedic World Congress*. Hyderabad, India, October 17-19 2013.
121. Lindley EM, Barton C, Blount T, Burger EL, Cain CMJ, Seim H, Turner AS, **Patel VV**. A Review of Control Group Outcomes in Sheep Fusion Models and Recommendations for Future Studies. 34th

Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)* and *Orthopaedic World Congress*. Hyderabad, India, October 17-19 2013.

122. **Patel VV**, Lindley EM, Cain CMJ, Burger EL. Cervical Fusion Outcomes with the Use an External Bone Stimulator. 34th Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)* and *Orthopaedic World Congress*. Hyderabad, India, October 17-19 2013.
123. **Patel VV**, Lindley EM, Cain CMJ, Burger EL. Efficacy of an External Bone Stimulator in Promoting Lumbar Fusion. 34th Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)* and *Orthopaedic World Congress*. Hyderabad, India, October 17-19 2013.
124. Lindley EM, Bond A, Razavi-Shearer D, Noshchenko A, Henry SE, Burger EL, Cain CMJ, **Patel VV**. Vitamin D Deficiency in Spine Surgery Patients. 34th Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)* and *Orthopaedic World Congress*. Hyderabad, India, October 17-19 2013.
125. Lindley EM, Razavi-Shearer D, **Patel VV**, Henry SE, McBeth Z, Burger EL, Cain CMJ, Finn MA. Medical marijuana use characteristics in patients with chronic spine pain disorders. 28th Annual Meeting of the *North American Spine Society (NASS)*. New Orleans, Louisiana, October 9-12 2013.
126. Lindley EM, Kleck CJ, **Patel VV**. Clinical and Functional Outcomes with Postoperative Adjunctive use of Pulsed Electromagnetic Field Stimulation in Cervical Fusion. Inagrual Summer Spine Meeting of the *North American Spine Society (NASS)*. Naples, Florida, July 31-August 3 2013.
127. Finn MA, Razavi-Shearer D, Henry SE, **Patel VV**, Burger EL, Cain CMJ, Lindley EM. Medical Marijuana use characteristics in the spinal surgery patient. 6th Annual meeting of the *Lumbar Spine Research Society (LSRS)*. Chicago, Illinois, April 11-12 2013.
128. Chatham L, **Patel VV**, Carpenter D: "Subject-specific Differences in Strain Levels in the Lumbar Spine Following Interbody Fusion" ORS 2013 Annual Meeting in San Antonio, Texas, January 26-29, 2013
129. Farmer R, Paietta R, Ferguson V, **Patel VV**, Burger-Van Der walt EL: "Histological Characterization of the Cartilaginous Endplate in the Human Spine" ORS 2013 Annual Meeting in San Antonio, Texas, January 26-29, 2013
130. Lindley EM, McBeth ZL, Henry SE, Burger EL, Cain CMJ, **Patel VV**. Retrograde ejaculation following anterior lumbar spine surgery. 33rd annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)* & 17th annual meeting of the *Pan Arab Orthopaedic Association (PAOA) Orthopaedic World Conference*. Dubai, United Arab Emirates, November 28-30 2012.
131. Burger EL, **Patel VV**, Noshchenko A. Modeling of vertebral strength topography by quantitative computed tomography (CT) imaging. 33rd annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)* & 17th annual meeting of the *Pan Arab Orthopaedic Association (PAOA) Orthopaedic World Conference*. Dubai, United Arab Emirates, November 28-30 2012.
132. Lindley EM, McBeth ZL, Henry SE, Burger EL, Cain CMJ, **Patel VV**. Retrograde ejaculation following anterior lumbar spine surgery. 27th Annual Meeting of the *North American Spine Society (NASS)*. Dallas, Texas, October 24-27 2012.
133. Chatham L, **Patel VV**, Carpenter D: "Effects of Age-related Cortical Thinning and Trabecular Bone Loss on the Strain Distribution in the Lumbar Spine Following Interbody Fusion" American Society of Bone and Mineral Research Annual Meeting, Oct 12-15, 2012, Abstract #SU0054

134. Farmer RP, Paietta RC, Ferguson VL, Burger E, **Patel VV**. Histological characterization of the cartilaginous endplate in the infant spine. 19th *International Meeting on Advanced Spine Techniques (IMAST)*. Istanbul, Turkey, Toronto, Canada, July 18-21, 2012.
135. Cain CM, Lafleur M, Rao M, Hollenbeck J, Rullkoetter PJ. Pre-operative anatomical FEA templating for patient selection and optimizing range of motion in TDR. 19th *International Meeting on Advanced Spine Techniques (IMAST)*. Istanbul, Turkey, Toronto Canada, July 18-21, 2012.
136. Noshchenko, A; Burger, EL; Cain, CM; Lindley, EM; Patel, **VV**. Two Year Bone Morphogenetic Protein Clinical Effects after Lumbar Fusion in Degenerative Disc Disease. 19th *International Meeting on Advanced Spine Techniques (IMAST)*. Istanbul, Turkey, Toronto, Canada, July 18-21, 2012.
137. Noshchenko A, Burger EL, **Patel VV**. Clinical Outcomes of Lumbar Arthrodeses in Patients with Spondylosis. 125th *Annual Meeting of the American Orthopaedic Association (AOA)*. Washington, DC, June 27-30, 2012.
138. Lindley EM, Zimkowski M, **Patel VV**, Rentschler M. Pain sensitivity testing using a novel computer-controlled pressure algometer that simultaneously records sympathetic nervous system responses to pain stimuli. Annual Meeting of the *American Pain Society (APS)*. Honolulu, Hawaii, May 16-19, 2012.
139. Cain C, Rao M, Rullkoetter P. Pre-op templating for TDR alignment: Is it clinically relevant? 12th Annual Meeting of *The International Society for the Advancement of Spine Surgery (ISASS)*. Barcelona, Spain, March 20-23, 2012.
140. Noschenko A, Burger EL, Cain CMJ, Lindley EM, **Patel VV**; Two Year Bone Morphogenetic Protein Clinical Effects After Lumbar Fusion in Degenerative Disc Disease. 12th Annual Meeting of *The International Society for the Advancement of Spine Surgery (ISASS)*. Barcelona, Spain March 20-23, 2012.
141. Botolin S, Puttlitz C, Petrella A, Baldini T, Burger E, Abjornson C, **Patel VV**. Facet joint biomechanics at the treated and adjacent levels after total disc replacement. Annual Meeting of *The American Academy of Orthopaedic Surgeons (AAOS)*. San Diego, California, February 15-19, 2011.
142. Burger EL, **Patel VV**, Noshchenko A. Two Year Bone Morphogenetic Protein (BMP) Clinical effects after lumbar fusion in degenerative disc disease. Annual Meeting of *The American Academy of Orthopaedic Surgeons (AAOS)*. San Francisco, California, February 7-11, 2012.
143. Rao M, Cain CMJ, Rullkoetter, PJ. The influence of prodisc-I positioning on mechanics of the lumbar spine. Annual meeting of the *Orthopaedic Research Society (ORS)*. February 4-7, 2012.
144. Leahy P, McGilvray K, Sherman J, Traynelis V, Nottmeier E, Singh V, Murrell B, **Patel VV**, Puttlitz C: "Analysis of Anterior Cervical Discectomy and Fusion Kinematics when Supplemented with Facet Screw Instrumentation" Annual Meeting of the *Orthopaedic Research Society (ORS)*. 2012 Annual Meeting in San Francisco, California, February 4-7, 2012
145. Patil S, Lindley EM, Burger EL, **Patel VV**. O-arm and stealth system navigation for pedicle screw placement in thoracolumbar spine surgery. Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)*. Prague, Czech Republic, September 6-9, 2011.
146. Botolin S, Puttlitz C, Petrella A, Baldini T, Burger E, Abjornson C, **Patel VV**. Facet joint biomechanics at the treated and adjacent levels after total disc replacement. 124th Annual Meeting of *The American Orthopaedic Association (AOA)*. Boston, Massachusetts, June 22-25, 2011.
147. Patil S, Lindley EM, Burger EL, **Patel VV**. O-arm and stealth system navigation for pedicle screw placement in thoracolumbar spine surgery. 11th Annual Meeting of *The International Society for the Advancement of Spine Surgery (ISASS)*. Las Vegas, Nevada, April 26 - 29, 2011.

148. Golembeski S, Lindley EM, Sophacles A, Burger EL, **Patel VV**. Dynamic translating versus variable angle plates in anterior cervical discectomy and fusion. 11th Annual Meeting of The *International Society for the Advancement of Spine Surgery (ISASS)*. Las Vegas, Nevada, April 26 - 29, 2011.
149. Botolin S, Puttlitz C, Petrella A, Baldini T, Burger E, Abjornson C, **Patel VV**. Facet joint biomechanics at the treated and adjacent levels after total disc replacement. Annual Meeting of The *American Academy of Orthopaedic Surgeons (AAOS)*. San Diego, California, February 15-19, 2011.
150. Ayturk U; Schuldt D; **Patel VV**; Puttlitz C: "Orthotropic Continuum Model Development for Healthy and Degenerated Annulus Fibrosus Based on a Biaxial Testing Protocol": Annual Meeting of the *Orthopaedic Research Society (ORS)*. 2011 Annual Meeting in Long Beach, California, January 13-16, 2011
151. Ayturk U; **Patel VV**; Puttlitz C:" Finite Element Modeling of Degeneration-Related Biomechanical Changes of the Lumbar Spine": *Orthopaedic Research Society (ORS)*. Annual Meeting in Long Beach, California, January 13-16, 2011
152. Noshchenko A, Burger EL, **Patel VV**. Correlation of vertebral strength topography with 3-dimensional computed tomography structure. 25th Annual Meeting of the *North American Spine Society (NASS)*. Orlando, Florida, October 5-9, 2010.
153. Botolin S, Puttlitz C, Petrella A, Baldini T, Burger E, Abjornson C, **Patel VV**. Facet joint biomechanics at the treated and adjacent levels after total disc replacement. 25th Annual Meeting of the *North American Spine Society (NASS)*. Orlando, Florida, October 5-9, 2010.
154. Lindley EM, Sherman BP, Ohnmeiss D, Zigler J, Kasow DB, Janssen ME, Burger EL, **Patel VV**. The positive predictive value of provocative discography in artificial disc replacement. 25th Annual Meeting of the *North American Spine Society (NASS)*. Orlando, Florida, October 5-9, 2010.
155. Lindley, EM, McCullough M, Brown C, Burger EL, **Patel VV**. Complications associated with axial lumbar interbody fusion. 25th Annual Meeting of the *North American Spine Society (NASS)*. Orlando, Florida, October 5-9, 2010.
156. Botolin S, Puttlitz C, Petrella A, Baldini T, Burger E, Abjornson C, **Patel VV**. Facet joint biomechanics at the treated and adjacent levels after total disc replacement. 7th Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)*. Gothenburg, Sweden, August 31-September 3, 2010.
157. Lindley EM, McCullough M, Brown C; Burger EL; **Patel VV**. Complications associated with axial lumbar interbody fusion. 7th Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)*. Gothenburg, Sweden, August 31 – September 3, 2010.
158. Lindley EM, Robinson ES, Gonzalez P, Estes S, Cooley R, Burger EL, **Patel VV**. Piriformis syndrome versus radiculopathy following lumbar artificial disc replacement. 7th Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)*. Gothenburg, Sweden, August 31 – September 3, 2010.
159. Noshchenko A, Burger EL, **Patel VV**. Correlation of vertebral strength topography with 3-dimensional computed tomography structure. 7th Annual Meeting of the *International Society of Orthopaedic Surgery and Traumatology (SICOT)*. Gothenburg, Sweden, August 31 – September 3, 2010.
160. Botolin S, Puttlitz C, Petrella A, Baldini T, Burger E, Abjornson C, **Patel VV**. Facet joint biomechanics at the treated and adjacent levels after total disc replacement. 12th Meeting of the *Combined Orthopaedic Associations (COMOC)*. Glasgow, Scotland, September 12-17, 2010.

161. Lindley EM, McCullough M, Brown C; Burger EL; **Patel VV**. Complications associated with axial lumbar interbody fusion. 17th *International Meeting on Advanced Spine Techniques (IMAST)*. Toronto, Canada, July 21-24, 2010.
162. Lindley EM, Robinson ES, Gonzalez P, Estes S, Cooley R, Burger EL, **Patel VV**. Piriformis syndrome versus radiculopathy following lumbar artificial disc replacement. 17th *International Meeting on Advanced Spine Techniques (IMAST)*. Toronto, Canada, July 21-24, 2010.
163. Lindley EM, Sherman BP, Ohnmeiss D, Zigler J, Kasow DB, Jansses, ME, Burger EL, **Patel VV**. The positive predictive value of provocative discography in artificial disc replacement. 17th *International Meeting on Advanced Spine Techniques (IMAST)*. Toronto, Canada, July 21-24, 2010.
164. Noshchenko A, Burger EL, **Patel VV**. Correlation of vertebral strength topography with 3-dimensional computed tomography structure. 17th *International Meeting on Advanced Spine Techniques (IMAST)*. Toronto, Canada, July 21-24, 2010.
165. Botolin S, Puttlitz C, Petrella A, Baldini T, Burger E, Abjornson C, **Patel VV**. Facet joint biomechanics at the treated and adjacent levels after total disc replacement. 17th *International Meeting on Advanced Spine Techniques (IMAST)*. Toronto, Canada, July 21-24, 2010. ****Winner of the Whitecloud Award for Best Basic Science Paper****
166. Lindley EM, McCullough M, Brown C; Burger EL; **Patel VV**. Complications associated with axial lumbar interbody fusion. *American College of Spine Surgery Annual Meeting (ACSS)*. Newport Beach, CA, June 10-12, 2010.
167. Lindley EM, Robinson ES, Gonzalez P, Estes S, Cooley R, Burger EL, **Patel VV**. Piriformis syndrome versus radiculopathy following lumbar artificial disc replacement. *American College of Spine Surgery Annual Meeting (ACSS)*. Newport Beach, CA, June 10-12, 2010.
168. Lindley EM, Sherman BP, Ohnmeiss D, Zigler J, Kasow DB, Jansses, ME, Burger EL, **Patel VV**. The positive predictive value of provocative discography in artificial disc replacement. *American College of Spine Surgery Annual Meeting (ACSS)*. Newport Beach, CA, June 10-12, 2010.
169. Botolin S, Puttlitz C, Petrella A, Baldini T, Burger E, Abjornson C, **Patel VV**. Facet joint biomechanics at the treated and adjacent levels after total disc replacement. *American College of Spine Surgery Annual Meeting (ACSS)*. Newport Beach, CA, June 10-12, 2010.
170. Noshchenko A, Burger EL, **Patel VV**. Correlation of vertebral strength topography with 3-dimensional computed tomography structure. *American College of Spine Surgery Annual Meeting (ACSS)*. Newport Beach, CA June 10-12, 2010.
171. Botolin S, Puttlitz C, Petrella A, Baldini T, Burger E, Abjornson C, **Patel VV**. Facet joint biomechanics at the treated and adjacent levels after total disc replacement. 10th Annual Meeting of the *Spine Arthroplasty Society (SAS)*. New Orleans, LA, April 27-30, 2010.
172. Lindley EM, McCullough M, Brown C; Burger EL; **Patel VV**. Complications Associated with Axial Lumbar Interbody Fusion. 10th Annual Meeting of the *Spine Arthroplasty Society (SAS)*. New Orleans, LA, April 27-30, 2010.
173. Lindley EM, Sherman BP, Ohnmeiss D; Zigler J; Kasow DB; Janssen ME; **Patel VV**. "The Positive Predictive Value of Provocative Discography in Artificial Disc Replacement." 10th Annual Meeting of the *Spine Arthroplasty Society(SAS)*. New Orleans, LA, April 27-30, 2010.
174. McCullough M, Lindley EM, Brown C; Burger EL; **Patel VV**. "Complications Associated with Axial Lumbar Interbody Fusion". 10th Annual Meeting of the *Spine Arthroplasty Society (SAS)*. New Orleans, LA, April 27-30, 2010.

175. Botolin S, Puttlitz C, Petrella A, Baldini T, Burger E, Abjornson C, **Patel VV**. "Facet joint biomechanics at the treated and adjacent levels after total disc replacement." 26th Annual Meeting of the *American Association of Neurological Surgeons/Congress of Neurological Surgeons: Disorders of the Spine and Peripheral Nerves*. Orlando, FL, February 17-20, 2010.
176. Robinson ES, Gonzalez P, Lindley EM, Estes S, Cooley R, Burger EL, **Patel VV**. "Piriformis Syndrome versus Radiculopathy Following Lumbar Artificial Disc Replacement". 26th Annual Meeting of the *American Association of Neurological Surgeons/Congress of Neurological Surgeons: Disorders of the Spine and Peripheral Nerves*. Orlando, FL, February 17-20, 2010.
177. Lindley EM; Sherman BP; Ohnmeiss D; Zigler J; Kasow DB; Janssen ME; **Patel VV**. "The Positive Predictive Value of Provocative Discography in Artificial Disc Replacement". 26th Annual Meeting of the *American Association of Neurological Surgeons/Congress of Neurological Surgeons: Disorders of the Spine and Peripheral Nerves*. Orlando, FL, February 17-20, 2010.
178. McCullough M; Lindley EM; Brown C; Burger EL; **Patel VV**. "Complications Associated with Axial Lumbar Interbody Fusion". 26th Annual Meeting of the *American Association of Neurological Surgeons/Congress of Neurological Surgeons: Disorders of the Spine and Peripheral Nerves*. Orlando, FL, February 17-20, 2010.
179. Botolin S, Baldini T, Burger EL, Puttlitz C, Abjornson C, Petrella A, Noshchenko A, Lindley E, **Patel VV**. "Lumbar Facet Joint Biomechanics after Nucleotomy, Nucleus Replacement, and Total Disc Replacement". 24th Annual Meeting of the *North American Spine Society (NASS)*. San Francisco, California, November 10-14, 2009.
180. Patil S, Zhang J, **Patel VV**, Burger EL. "AxiaLIF Surgical Outcomes." 24th Annual Meeting of the *North American Spine Society (NASS)*. San Francisco, California, November 10-14, 2009.
181. Lindley EM, Estes S, Burger E, **Patel VV**. "Evaluation of rh-BMP2/fibrin glue-associated edema in rabbit muscle tissue". 44th Annual Meeting of the *Scoliosis Research Society (SRS)*. San Antonio, Texas, September 23-26, 2009.
182. Burger EL, Yao X, **Patel VV**, Brown L, van der Walt C, Suzuki N, Baldini T. "A biomechanical model for evaluating the effects of rib head release on spinal motion". 44th Annual Meeting of the *Scoliosis Research Society (SRS)*. San Antonio, Texas, September 23-26, 2009.
183. Lindley EM, Estes S, Burger E, **Patel VV**. "Evaluation of rh-BMP2/fibrin glue-associated edema in rabbit muscle tissue". 16th Annual *International Meeting on Advanced Spine Techniques (IMAST)*. Vienna, Austria. July 15-18, 2009.
184. Burger EL, Yao X, **Patel VV**, Brown L, van der Walt C, Suzuki N, Baldini T. "A biomechanical model for evaluating the effects of rib head release on spinal motion". 16th Annual *International Meeting on Advanced Spine Techniques (IMAST)*. Vienna, Austria. July 15-18, 2009.
185. **Patel VV**, Abjornson C, Turner S, Seim HB, Lyons A, Puttlitz CM. "Failure Analysis of Absorbable Cervical Plates". 25th Annual Meeting of the *American Association of Neurological Surgeons/Congress of Neurological Surgeons. Section on Disorders of the Spine and Peripheral Nerves*. Phoenix, Arizona, March 11 - 14, 2009.
186. Lindley EM, Estes S, Burger EL, **Patel VV**. "Evaluation of rhBMP-2/Fibrin Glue-Associated Edema in Rabbit Muscle Tissue". 37th Annual Meeting of the *Cervical Spine Research Society*. Austin, Texas, December 4-6, 2008. *2008 Annual Meeting's Top 10 scoring Posters*
187. **Patel VV**, Abjornson C, Turner S, Seim HB, Lyons A, Puttlitz CM. "Histological Evaluation of Bioresorbable Plates in a Sheep Model". 37th Annual Meeting of the *Cervical Spine Research Society*. Austin, Texas, December 4-6, 2008.

188. Lindley EM, Estes S, Burger E, **Patel VV**. "Evaluation of rh-BMP2/fibrin glue-associated edema in rabbit muscle tissue". 23rd Annual Meeting of the *North American Spine Society (NASS)*. Toronto, Ontario, Canada, October 14-18, 2008.
189. **Patel VV**, Abjornson C, Turner S, Seim HB, Lyons A, Puttlitz CM. "Failure Analysis of Absorbable Cervical Plates". 23rd Annual Meeting of the *North American Spine Society(NASS)*. Toronto, Ontario, Canada, October 14-18, 2008.
190. **Patel VV**, Burger EL, Lindley EM, Zhao L, Wong P, Pradhan BB, Bae HW, Kanim L, Delamarter RB. "Tisseel fibrin glue use in spinal surgery: Effects on bone morphogenetic protein diffusion, bone morphogenetic protein-stimulated bone growth, and soft tissue swelling". *Tissue Engineering and Regenerative Medicine International Society*. Portugal, June 23, 2008.
191. **Patel VV**, Lyons A, Abjornson C, Turner AS, Puttlitz C: "P69 Histological Evaluation Of Bioresorbable Plates In A Sheep Model"; *SpineWeek International Spinal Conference*, Geneva, Switzerland, June 2008.
192. Puttlitz C, **Patel VV**, Santoni B: "P104 A Biomechanical Investigation Of Two-Level Cervical Disc Replacement And Associated Salvage Procedure"; *SpineWeek International Spinal Conference*, Geneva, Switzerland, June 2008.
193. Solomonow M, Lu Y, Zhou B, **Patel VV**, Solomonow D, Youssef J; "P273 Spine Stability Is Compromised After Cyclic Flexion"; *SpineWeek International Spinal Conference*, Geneva, Switzerland, June 2008.
194. **Patel VV**, Freudenberger C, Burger EL, Beard D, Reckling WC, Williams A: "P398 Clinical Outcomes Of Posterior Lumbar Interbody Fusion Versus Anterior Lumbar Interbody Fusion With Anterior Tension Band Plating"; *SpineWeek International Spinal Conference*, Geneva, Switzerland, June 2008.
195. **Patel VV**, Bae H, Pradhan B, Toth J, Badura J, Seim III, H, Turner AS: "Ab121 Transient Short Term Local Bone Remodeling Effects Of High-Doses Of Rhbmp-2 In A Novel Preclinical Interbody Spine Fusion Model"; *SpineWeek International Spinal Conference*, Geneva, Switzerland, June 2008.
196. Puttlitz CM, McGilvray K, Lyons AS, Santoni BG, **Patel VV**, Turner AS: "Kinetic implications of replacement of a cervical intervertebral disc at adjacent levels and associated salvage procedure." 54th Annual Meeting of the *Orthopaedic Research Society (ORS)*, San Francisco, CA, March 2-5, 2008
197. **Patel VV**, Sasso R, Benedict J: "Novel Cell-Binding Peptide As A Bone Graft Substitute" *North American Spine Society(NASS)* Annual Meeting, Oct. 2007
198. **Patel VV**, Benedict J, Turner S, Seim W: "Lumbar Spine Fusion In An Ovine Model Comparing P-15/Bgs To Autogenous Bone" *North American Spine Society Annual Meeting (NASS)*, Oct. 2007
199. **Patel VV**, Estes S, Burger EL: "The Financial Implications of Lumbar Disc Replacement vs. Fusion" *North American Spine Society(NASS)* Annual Meeting Oct. 2007
200. Burger EL, **Patel VV**: "Metal Memory" *North American Spine Society (NASS)* Annual Meeting, Oct. 2007
201. **Patel VV**, Sasso R, Benedict J: "Novel Cell-Binding Peptide As A Bone Graft Substitute" *Scoliosis Research Society (SRS)* International Meeting on Advanced Spinal Techniques Oct. 2007
202. Puttlitz CM, McGilvray K, Lyons A, Ayturk U, Turner AS, **Patel VV**. "Biomechanical implications of adjacent level cervical disc replacement and associated salvage procedures." 14th *International Meeting on Advanced Spine Techniques (IMAST)*, July 11-14, 2007.

203. **Patel VV**, Benedict J, Turner S, Seim W: "Lumbar Spine Fusion In An Ovine Model Comparing P-15/Bgs To Autogenous Bone" *Scoliosis Research Society (SRR) International Meeting on Advanced Spinal Techniques (IMAST)*, July, 2007
204. **Patel VV**, Estes S, Burger EL: "The Financial Implications of Lumbar Disc Replacement vs. Fusion" *Scoliosis Research Society (SRS) International Meeting on Advanced Spinal Techniques (IMAST)*, July 2007
205. McGilvray, Lyons A, Turner AS, **Patel VV**, Puttlitz CM. "Kinetic and biomechanical testing of two-level cervical disc replacement." 2007 *ASME Summer Bioengineering Conference*, Keystone, CO, June 20-24, 2007
206. Puttlitz CM, McGilvray K, Lyons A, Ayturk U, Turner AS, **Patel VV**. "Acute biomechanical implications of two-level cervical disc replacement and associated salvage procedure." 7th Annual Meeting of the *Spine Arthroplasty Society (SAS)*, Berlin, May 1-4, 2007.
207. **Patel VV**: "Novel Cell-Binding Peptide As A Bone Graft Substitute" Annual Meeting *Orthopaedic Research Society (ORS)*, San Diego, CA, February 2007
208. **Patel VV**, Benedict J, Turner S, Seim W: "Lumbar Spine Fusion In An Ovine Model Comparing P-15/Bgs To Autogenous Bone" Annual Meeting *Orthopaedic Research Society (ORS)*, San Diego, CA, February 2007
209. **Patel VV**: "Novel Cell-Binding Peptide As A Bone Graft Substitute" Annual Meeting *American Academy of Orthopaedic Surgeons (AAOS)*, San Diego, CA, February 2007
210. Puttlitz C. M., McGilvray, K., Lyons, A., Ayturk, U. Turner, S., **Patel, VV**. "Acute Biomechanical Implications of Two-Level Cervical Disc Replacement and Associated Salvage Procedure. *Spine Arthroplasty Society Annual Meeting* 2007
211. **Patel VV**, Freudenberger C, Reckling CC, Beard D: "Lumbar Fusion: Anterior Plating vs Posterior Instrumentation" *Western Orthopaedic Association Annual Meeting*, Santa Fe, NM, Oct 11-15 2006.
212. **Patel VV**, Estes S: "Intraoperative C-Arm Based Multiplanar Myelography" *Western Orthopaedic Association Annual Meeting*, Santa Fe, NM, Oct 11-15 2006.
213. **Patel VV**, Estes S: "Use of Intraoperative Multiplanar Imaging and Myelography for Immediate Evaluation of Lumbar Spinal Decompression" International Meeting of *Advanced Spinal Concepts*, Athens Greece, July 2006
214. **Patel VV**, Pradhan BB, Zhao L, Wong P, Bae HW, Delamarter RB,: "Controlling Bone Morphogenetic Protein Stimulated Bone Growth with Fibrin Glue (A Biologic Sealant)" Proceedings of the *World Spine Society Annual Meeting Rio de Janiero Brazil*, Aug. 2005
215. **Patel VV**, Hsu S, Bae H, Pradhan B, Hedman T, Delamarter R,: "Biomechanical Evaluation of Floating and Fixed Center of Rotation Total Disc Replacements" Proceedings of the *World Spine Society Annual Meeting Rio de Janiero Brazil*, Aug. 2005
216. **Patel VV**, Pradhan B, Bae HW, Andrews C, Kanim LEA, Delamarter RB,: "Computed Tomography Evaluation of Positioning of Artificial Discs, Along with Its Radiographic and Clinical Relevance" Proceedings of the *World Spine Society Annual Meeting Rio de Janiero Brazil*, Aug. 2005
217. Pradhan BB, Bae HW, Kropf MA, **Patel VV**, Zhao L, Wong P, Delamarter RB: "Leakage of BMP from Absorbable Collagen Sponges during ACDF: Quantification and Radiographic Analysis for Ectopic Bone Formation in Canal" Proceedings of the *World Spine Society Annual Meeting Rio de Janiero Brazil*, Aug. 2005

218. Pradhan BB, Rudin B, Bae HW, Kanim LEA, Kamrava W, **Patel VV**, Delamarter RB: "Artificial Disc Replacement as a Salvage Treatment for Failed Back Syndrome" Proceedings of the *World Spine Society* Annual Meeting Rio de Janeiro Brazil, Aug. 2005
219. BB Pradhan, Bae HW, **Patel VV**, Dawson EG, Delamarter RB,: "Graft Resorption with Recombinant Human Bone Morphogenetic Protein-2: Lessons from Anterior Lumbar Interbody Fusion Using Stand-Alone Femoral Ring Allografts" Proceedings of the *World Spine Society* Annual Meeting Rio de Janeiro Brazil, Aug. 2005
220. **Patel VV**, Hsu S, Bae HW, Pradhan BB, Hedman T, Delamarter RB,: "Biomechanical Evaluation of Floating and Fixed Center of Rotation Total Disc Replacements" *International Meeting on Advanced Spinal Techniques (IMAST)*, Banff Canada 2005
221. **Patel VV**, Baldini T, Pradhan BB, Bach J: "Size Does Matter: Facet Joint Loads Relative to Pedicle Screw Head Size" *International Meeting on Advanced Spinal Techniques (IMAST)*, Banff Canada 2005.
222. **Patel VV**, Pradhan BB, Zhao L, Wong P, Bae HW, Delamarter RB,: "Controlling Bone Morphogenetic Protein Stimulated Bone Growth with Fibrin Glue" Proceedings of the *International Society of Study of the Lumbar Spine* Annual Meeting, New York, NY, Feb. 2005
223. **Patel VV**, Pradhan BB, Zhao L, Wong P, Bae HW, Delamarter RB,: "Controlling Bone Morphogenetic Protein Stimulated Bone Growth with Fibrin Glue" *North American Spine Society (NASS)* Annual Meeting, Chicago, IL, Nov 2004
224. Pradhan BB, Delamarter RB, **Patel VV**, Kropf MA, Bae HW, Dawson ED,: "Can rhBMP-2 Enhance Fusion in Anterior Lumbar Interbody Fusion with Stand-Alone Femoral Ring Allografts?" *North American Spine Society (NASS)* Annual Meeting, Chicago, IL, Nov 2004
225. **Patel VV**, Pradhan BB, Zhao L, Wong P, Bae HW, Delamarter RB,: "Controlling Bone Morphogenetic Protein Stimulated Bone Growth with Fibrin Glue" *Scoliosis Research Society (SRS)* Annual Meeting, Buenos Aires, Argentina, Sept 2004
226. Pradhan BB, Delamarter RB, **Patel VV**, Kropf MA, Bae HW, Dawson EG': "Can rhBMP-2 Enhance Fusion in Anterior Lumbar Interbody Fusion with Stand-Alone Femoral Ring Allografts?" *Scoliosis Research Society (SRS)* Annual Meeting, Buenos Aires, Argentina, Sept 2004
227. Pradhan BB, Delamarter RB, **Patel VV**, Kropf MA, Bae HW,: "Kyphoplasty for Osteoporotic Vertebral Compression Fractures -- Correction of Local Kyphotic Deformity versus Overall Sagittal Alignment." *Scoliosis Research Society (SRS)* Annual Meeting, Buenos Aires, Argentina, Sept 2004.
228. **Patel VV**, Pradhan BB, Bae HW, Delamarter RB,: "Cervical Spine Motion After Disc Replacement", Proceedings of The 11th *International Meeting on Advanced Spine Techniques(IMAST)* July 1-3, 2004 Southampton, Bermuda
229. **Patel VV**, Zhao L, Pradhan BB, Bae HW, Delamarter RB,: "Controlling BMP-stimulated Bone Growth using Fibrin Glue, Proceedings of The 11th *International Meeting on Advanced Spine Techniques (IMAST)*. July 1-3, 2004 Southampton, Bermuda
230. **Patel VV**, Andrews C, Kanim L, Pradhan BB, Kropf M., Bae HW, Delamarter RB,: "Computed Tomography Evaluation of Intervertebral Prosthesis " Proceedings of The 11th *International Meeting on Advanced Spine Techniques (IMAST)* July 1-3, 2004 Southampton, Bermuda
231. Pradhan BB, Delamarter RB, **Patel VV**, Kropf MA, Bae HW,: "Kyphoplasty for Osteoporotic Vertebral Compression Fractures -- Correction of Local Kyphotic Deformity versus Overall Sagittal Alignment." *International Meeting for Advanced Spinal Techniques (IMAST)*, Bermuda, Jun 2004.

232. Pradhan BB, Delamarter RB, **Patel VV**, Kropf MA, Bae HW, Dawson EG,: Can rhBMP-2 Enhance Fusion in Anterior Lumbar Interbody Fusion with Stand-Alone Femoral Ring Allografts? *International Meeting for Advanced Spinal Techniques (IMAST)*, Bermuda, Jun 2004.
233. Pradhan BB, Delamarter RB, **Patel VV**, Kropf MA, Bae HW,: Kyphoplasty for Osteoporotic Vertebral Compression Fractures -- Correction of Local Kyphotic Deformity versus Overall Sagittal Alignment. *International Society for Surgery of the Lumbar Spine*, Porto, Portugal, Jun 2004.
234. **Patel VV**, Andrews C, Delamarter RB, Kanim L, Pradhan BB, Kropf M, Bae HW,: “Intervertebral Prosthesis Position Evaluated by Computed Tomography: Relevance to Clinical Outcome” Proceedings of the *Spine Arthroplasty Society Summit 4*, Vienna Austria, May 2004.
235. **Patel VV**, Welcher J, Bae HW, Delamarter RB, Pradhan BB, Hedman T,: “Floating and Fixed Center of Rotation Intervertebral Prostheses: Biomechanical Comparison” Proceedings of the *Spine Arthroplasty Society Summit 4*, Vienna Austria, May 2004.
236. Pradhan BB, **Patel VV**, Bae HW, Delamarter R,: “The Effect of Kyphoplasty on Lumbar Spinal Alignment” *International Society for Study of the Lumbar Spine*, 31ST Annual Meeting, Porto Portugal, May 2004
237. **Patel VV**, Hall K, Ries M, Colman W, Ozhinsky E, Majumdar S,: Non-invasive, weight bearing MRI analysis of tibio-femoral biomechanis. At: *International Society for Magnetic Resonance in Medicine*, Paper #1804, p.275; Honolulu, June 2002.
238. Hall K, **Patel VV**, Colman W, Lindsey C, Ozhinsky E, Ries M, Majumdar S. In-Vivo Quantitative Kinematic Magnetic Resonance Imaging of the Patellofemoral Joint. At: *International Society for Magnetic Resonance in Medicine*, Paper #96 p.17; Honolulu, June 2002.
239. Roy N, **Patel VV**, Coughlin R,: “Buffer Zone Hospital Experience After the Gujarat, India Earthquake” Proceedings of the 1st *Mediterranean Emergency Medicine* Conference, Sept 2-5 2001, Stresa, Italy.
240. **Patel VV**, Issever A, Ries M, Burghardt A, Majumdar S,: “Micro-CT Evaluation of Arthritic and Normal Knee Trabecular Bone Structure” Proceeding of the *American Society of Bone and Mineral Research* Annual Meeting, Phoenix, AZ. Oct. 16, 2001.
241. **Patel VV**, Ries M, Burghardt A, Ghosh S, Majumdar S,: “Micro-CT Evaluation of Normal and Arthritic Knee Trabecular Bone Structure” Proceedings of the 4th *Combined Meeting of the Orthopaedic Research Society*, Rhodes, Greece, June 2001.
242. **Patel VV**, Hall K, Ries M, Majumdar S,: “MRI Evaluation of Knee Biomechanics” Proceeding of the *Western Orthopaedic Association* 65th Annual Meeting, San Francisco CA. Sept.22-26, 2001, p.49.
243. **Patel VV**, Issever A, Ries M, Burghardt A, Majumdar S,: “Use of Micro-CT for Comparison of Normal with Arthritic Knee Bone Structure” Proceeding of the *Western Orthopaedic Association* 65th Annual Meeting, San Francisco CA. Sept. 2001, p.141.
244. **Patel VV**, Vannier M, Marsh J, Lo L,: “Evaluation of Digital Surgical Simulation,” Computer Assisted Radiology – Proceedings of the *International Symposium on Computer and Communication Systems for Image Guided Diagnosis and Therapy*, June, 1995, pp 783-788.
245. Lo L, Marsh J, **Patel VV**, Vannier M,: “Craniofacial Surgical Simulation and Outcome Validation,” Computer Assisted Radiology – Proceedings of the *International Symposium on Computer and Communication Systems for Image Guided Diagnosis and Therapy*, June, 1995, pp 789-794.
246. Lo L, **Patel VV**, Vannier M, Marsh J,: “Craniofacial Surgical Planning and Simulation,” Proceedings of the 6th *International Society of Craniofacial Surgery*, San Tropez, France, Oct. 23-25, 1995.

A handwritten signature in black ink, appearing to read "Vikas V. Patel". The signature is fluid and cursive, with a long horizontal stroke extending from the end of the name.

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