BOYLE C. CHENG, PhD

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BIOGRAPHICAL INFORMATION

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EDUCATION AND TRAINING

Undergraduate

1987-1991	Colorado State University Ft. Collins, Colorado	B.S. Mechanical Engineering

Graduate

1991-1993	Colorado State University Ft. Collins, Colorado	M.S. Mechanical Engineering
1995-1999	University of Wisconsin Madison, Wisconsin	Ph.D. Mechanical Engineering

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APPOINTMENTS AND POSITIONS

Academic Appointments

2005-2009	University of Pittsburgh Department of Neurological Surgery Pittsburgh, PA	Faculty Assistant Professor (Primary Appointment)
2006-2009	University of Pittsburgh Department of Biomedical Engineering Pittsburgh, PA	Faculty Assistant Professor (Secondary Appointment)

2009-2012	Drexel University School of Medicine Allegheny Campus Department of Neurosurgery Pittsburgh, PA	Temporary Assistant Professor
2011-Present	Carnegie Mellon University Department of Bioengineering Pittsburgh, PA	Adjunct Professor
2012-2016	Drexel University School of Medicine Allegheny Campus Department of Neurosurgery Pittsburgh, PA	Associate Professor
2016-Present	Drexel University School of Medicine Allegheny Campus Department of Neurosurgery Pittsburgh, PA	Professor

Positions

1998-1999	University of Wisconsin Hospitals and Clinics, Madison WI	Special Project Consultant
2000-2001	Stryker Spine, Allendale, NJ	Product Manager
2001-2001	Stryker Spine, Allendale, NJ	Global Cervical Product Manager
2001-2004	Stryker Howmedica Osteonics Mahwah, NJ	Program Manager for Tissue-Based Products
2004-2005	Blackstone Medical, Inc. Wayne, NJ	Director of Biologics and Motion Preservation
2005-2009	University of Pittsburgh Pittsburgh, PA	Co-Director of the Welch Neurosurgical Research Library
2007-2008	Altiva Corporation Charlotte, NC	*locum* Vice President of Research and Development
2009-Present	Allegheny Health Network Pittsburgh, PA	Director of the Neurosurgery Spine and Biomechanics Research Laboratory
2012-2015	Allegheny Health Network Pittsburgh, PA	Director of Research, Division of Research, Department of Neurosurgery
2015-Present	Allegheny Health Network	Director of Research

Neuroscience Institute
Pittsburgh, PA

HONORS AND AWARDS

1987	Winograd Foundation Scholarship
1990-1991	Colorado State University – Dean's List
1991-1993	NASA Fellowship
1999	NASS Nordby-Smith Award for Minimally Invasive Surgery
2009	Who's Who in America
2014	ISASS Recipient of the 2014 ISASS Best Basic Science Paper Award
2018	Difusion Technologies, Orthopedics This week, Best New Technology Platform Finalist

MEMBERSHIPS IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

American Association of Neurological Surgeons – Associate Member
American Society of Mechanical Engineers
American Society for Testing and Materials
AO Spine
Congress of Neurological Surgeons – Associate Member
Lumbar Spine Research Society
North American Spine Society
Orthopaedic Research Society
Spine Arthroplasty Society
International Chinese Spine Society – Director

NATIONAL ACTIVITIES – POSITIONS HELD

2007-Present	ASTM Committee on spinal device test standards – Neurosurgical Delegate
2007-Present	ASTM F04.25 Lumbar Nucleus Devices – Committee Member, Task Group
2007-Present	ASTM F04.25 Occipitocervical Testing – Committee Member, Task Group
2007-2008	ASTM F04.25 Facet Replacements – Committee Member, Task Group
2007-2008	ASTM F04.25 Extradiscal Motion Preserving Implants – Committee Member, Task Group
2008-Present	ASTM F04.25 Annular Repair Devices – Committee Member, Task Chair
	ASME Summer Bioengineering Conference – Review Committee
2009	Spine Arthroplasty Society 9 – Basic Science Review Committee
	NASS Spring Break – Basic Science Review Committee
2009	ASME Summer Bioengineering Conference – Review Committee
	Spine Arthroplasty Society 9 – Session Moderator
2010	Orthopedic Research Society – Review Committee
	SAS – Program Committee

2010	6th World Congress of Biomechanics – Session Moderator
2010	Pittsburgh Spine Summit – Course Director
2011	ASME Summer Bioengineering Conference – Session Moderator
	Pittsburgh Spine Symposium – Course Co-Chairman
2012	International Chinese Spine Society – Executive Member
2012	ISASS 2012 – Program Committee
2012	ISASS 2012 – Session Moderator
2012	ASME Summer Bioengineering Conference – Reviewer
2012	NASS 2012 – Reviewer
2012	NASS 2012 – Special Interest Group Moderator: Biomechanics
2012	NASS 2012 – Session Moderator: Understanding and Treating the Disc at Risk
2015	ISASS 2015 – Scientific Program Co-Chair
2015	Lumbar Spine Research Society (LSRS) – Research Committee
2015	Chinese Journal of Traumatology – Editorial Board
2016	ISASS 2016 – Program Committee
2021	Lumbar Spine Research Society (LSRS) – Program Committee
2021	Journal of Xiangya Medicine – Editorial Board
2022	Orthopaedic Surgery Journal – Reviewer

LOCAL ACTIVITIES – POSITIONS HELD

2007-2009	University of Pittsburgh, Department of Neurological Surgery Research Committee on Scientific Merit
2007-2009	University of Pittsburgh, Department of Neurological Surgery IRB Scientific Review Committee
2008-2009	University of Pittsburgh – CTO Risk Management Review Committee
2011-2013	Allegheny Singer Research Institute – Institutional Biosafety Committee
2012-present	Allegheny Singer Research Institute – Institutional Review Board (IRB)
2013-2014	Allegheny Singer Research Institute – Vice- Chairman Institutional Biosafety Committee
2014-present	Allegheny Singer Research Institute – Chairman Institutional Biosafety Committee
2016-present	Vice Chairman, Institutional Review Board, Allegheny Health Network
2021-present	Carnegie Mellon University, Institutional Review Board – External Consultant

ACADEMIC/TEACHING/LECTURES

1. Clinically Relevant Biomechanics: Spine Perspective. Surgery for Engineers Graduate Course, Carnegie Mellon University, March 21, 2007.

2. Clinically Relevant Biomechanics: New Paradigm with Motion Preservation Technologies. Spine Conference, Department of Neurosurgery and Department of Orthopedic Surgery, University of Utah, May 15, 2007.

3. Biomechanics of Spinal Cord Injury. Grand Rounds, Department of Neurosurgery, University of Utah, May 16, 2007.

4. Biomechanical Evaluation of Total Disc Replacements. Surgery for Engineers Graduate Course, Carnegie Mellon University, September 19, 2007.

5. Evaluation Parameters for Biomechanical Spine Testing. Technical Forum, North Carolina State University, December 7, 2007.

6. Biomechanical Spine Testing. Department of Neurosurgery, Allegheny General Hospital, December 12, 2007.

7. Imaging and Spine Biomechanics. Computational Biomodeling Graduate Course, Carnegie Mellon University, January 31, 2008.

8. Clinically Relevant Biomechanical Evaluations of Spinal Implants. Surgery for Engineers Graduate Course, Carnegie Mellon University February 20, 2008.

9. Biomechanical Parameters for Spinal Implants. Surgery for Engineers Graduate Course, Carnegie Mellon University, October 1, 2008.

10. Understanding the Role of Bone within the Functional Spinal Unit. Introduction to Biomechanics Undergraduate Course, Carnegie Mellon University, October 7, 2008.

11. Characterizing Spinal Devices. Surgery for Engineers Graduate Course, Carnegie Mellon University, April 8, 2009.

12. Clinically Relevant Biomechanical Parameters for the Spine. Grand Rounds, Department of Orthopedic Surgery, University of Southern Florida, August 27, 2010.

ACADEMIC/TEACHING/MENTORING NEUROSURGERY RESIDENT REVIEW OF NEW SPINE TECHNOLOGIES

1. Cheng BC. Polymer on Metal Anterior Cervical Motion Preservation Device: Bryan Cervical Disc. September 16, 2005.Cheng BC, Vaccaro AR, Welch WC. Polymer Anterior Cervical Motion Preservation Device: Pro-Disc C Cervical Disc. October 26, 2005.

2. Cheng BC, Welch WC. Metal on Metal Anterior Cervical Motion Preservation Device: CerviCore Cervical Disc. February 22, 2006.

3. Cheng BC, Welch WC. Complications Following Implant of the Charite Lumbar Motion Preservation Device. September 14, 2006.

4. Cheng BC, Tribus C, Welch WC. Biomechanical Aspects of the X-Stop Interspinous Process Device. December 6, 2007.

5. Cheng BC, Welch WC. SPORT Study: Outcomes for Operative vs Non-Operative Care. January 17, 2007.

ACADEMIC/TEACHING/MENTORING STUDENTS

1. Real Time Integration of Load and Kinematic Data from an Automated Follower Spine Testing Apparatus. Post Doctoral student, University of Pittsburgh, 2007.

2. Analysis of the Affect of Formalin Fixation on *in vitro* Lumbar Intervertebral Discs. Undergraduate Independent Mentor, Carnegie Mellon University 2006-2007.

3. Design of an Anatomical Polyaxial Sublaminar Vertebral Hook. Undergraduate senior design class group, stipend applicant winners of the 2008 BMEIdea competition sponsored by the National Collegiate Inventors and Innovators Alliance, University of Pittsburgh, 2007-2008.

4. Kinematic Response of the Treated Spine. Masters Candidate, University of Pittsburgh, 2009-2009.

5. Neurologic Deficits Due to Biomechanical Positioning of a FSU. Undergraduate Student Research Project, University of Pittsburgh, 2008-2009.

6. The Role of Spinal Unit Facet Joints. Deans Grant Project. Medical Student, University of Pittsburgh, 2009-Present.

7. Vertebral Body Strain under Physiologic Loading. Undergraduate Student Research Project, Vanderbilt, Summer 2010.

8. Pure Moment Loading of the Spine in Biomechanical Testing. Undergraduate Student Research Project, Carnegie Mellon University, Summer 2010.

9. External Soft Bracing and the Effects on the Lumbar Spine. Undergraduate Student Research Project, Duquesne University, Summer 2010.

10. Analysis of Intra and Inter Operator Segementation Variability. Undergraduate Student Research Project, MIT, Summer 2010.

11. Standardizing Flexion and Extension Radiographic Exams. Graduate Student. Semester Project, Carnegie Mellon University 2011.

12. Spine Segment Analog for Biomechanical Testing. Undergraduate Student. Year Project, Carnegie Mellon University 2012.

PUBLICATIONS

1. Radford DW, Cheng BC. Ultra-Lightweight Composite Materials for EMI Shielding. SAMPE Quarterly 24:54-61, 1993.

2. Radford DW, Cheng BC. Metallized Microballoon Filled Composite EMI Shielding Materials. ASTM Journal of Testing and Evaluation 21:396-401, 1993

3. Whitson BA, Cheng BC, Kokini K, Badylak SF, Patel U, Morff R, O'Keefe CR. Multilaminate resorbable biomedical device under biaxial loading. Journal of Biomedical Materials Research 43:277-281, 1998

4. Deguchi M, Cheng BC, Sato K, Matsuyama Y, Zdeblick TA. Biomechanical evaluation of translaminar facet joint fixation. A comparative study of poly-L-lactide pins, screws, and pedicle fixation. Spine 23**:**1307-12; discussion 1313, 1998.

5. Mihara H, Cheng BC, David SM, Ohnari K, Zdeblick TA. Biomechanical comparison of posterior cervical fixation. Spine 26:1662-7, 2001.

6. Mihara H, Onari K, Cheng BC, David SM, Zdeblick TA. The biomechanical effects of spondylolysis and its treatment. Spine 28:235-8, 2003.

7. Welch WC, Cheng BC, Awad TE, Davis R, Maxwell JH, Delamarter R, Wingate JK, Sherman J, Macenski MM. Clinical Outcomes of the Dynesys Dynamic Neutralization System: One-Year Preliminary Results from a Food and Drug Administration Investigational Device Exemption Clinical Trial. Neurosurgical Focus 22 (1):E8, 2007.

8. Welch WC, Ong JG, Gerszten PC, Nestler AP, Burke JP, Cheng BC. *In Vivo* Evaluation of Biomechanical Anterior Cervical Plate Failure. Advances in Therapies 24 (2):415-26, 2007.

9. Cheng BC, Gordan JD, Cheng JS, Welch WC. Immediate Biomechanical Effects of Lumbar Posterior Dynamic Stabilization above a Circumferential Fusion. Spine 32 (23):2551-7, 2007.

10. Cheng BC, Hafez Cunningham B, Serhan H, Welch WC. Biomechanical Evaluation of Occipitocervicothoracic Fusion: Impact of Partial or Sequential Fixation. The Spine Journal 8 (5):821-5, 2008. Epub: Jul 19, 2007. (Electronic publication ahead of print)

11. Zhang Y, Cheng BC, Oh C, Spehar JL, Burgess J. Dynamic Neural Foramina Cross Section Measurement and Kinematic Analysis of Lumbar Spine Undergoing Extension. Computer Modeling in Engineering & Sciences 29 (2):55-62, 2008

12. Jankowitz BT, Atteberry DS, Gerszten PC, Karausky P, Cheng BC, Faught RF, Welch WC. Effect of Fibrin Glue on the Prevention of Persistent Cerebral Spinal Fluid Leakage after Incidental Durotomy During Lumbar Spinal Surgery. European Spine Journal 18 (8):1169- 74, 2009

13. Cheng BC, Burns P, Pirris S, Welch WC. Load Sharing and Stabilization Effects of Anterior Cervical Devices. Journal of Spinal Disorders and Techniques 22 (8):571-7, 2009

14. Cook DJ and Cheng BC. Development of a Model Based Method for Investigating Facet Articulation. Journal of Biomechanical Engineering 132 (6):064504-1-6, 2010

15. Chough CK, Cheng BC, Welch WC, Park CK. Bow Hunter's Stroke Caused by a Severe Facet Hypertrophy of C1-2. Journal of the Korean Neurosurgical Society 47 (2):134-6, 2010.

16. Cheng BC, Bellotte JB, Yue A, Whiting DM. Historical and Rationale Overview for Dynamic Fusion. ArgoSpine Journal 22 (2):53-6, 2010.

17. Cuchanski M, Cook DJ, Whiting DM, Cheng BC. Measurement of Occlusion of the Spinal Canal and Intervertebral Foramen by Intervertebral Disc Bulge. ArgoSpine Journal 22 (2):73- 80, 2010

18. Alcindor D, Oh MY, Baser S, Angle C, Cheng BC, Whiting D. Stimulation of the Globus Pallidus Internus in a Patient with DYT-1 Positive Primary Generalized Dystonia: A 10-year Follow-up. Neurosurgical Focus 29 (2):E16, 2010.

19. Cuchanski M, Cook DJ, Whiting DM, Cheng BC. Measurement of Disc Bulge of the Intervertebral Disc: an in vitro Study Using Human Cadaver Lumbar Spine Segments. SAS Journal 5(2):9-15, 2011.

20. Jegapragasan M, Cook DJ, Gladowski D, Kanter A, Cheng BC. Characterization of Articulation of the Lumbar Facets in the Human Cadaveric Spine using a Facet-Based Coordinate System. The Spine Journal 11 (4):340-6, 2011.

21. Cheng BC, Cook DJ, Cuchanski M, Pirris SM, Welch WC. Biomechanical Cyclical Loading on Cervical Spines without Anterior Column Support. Journal of ASTM International 8 (7):JAI103408 DOI: 10.1520/JAI103408, 2011.

22. Sanborn MR, Balzer J, Gerszten PC, Karausky P, Cheng BC, Welch WC. Laboratory Investigation: Safety and Efficacy of a Novel Ultrasonic Osteotome Device in an Ovine Model. Journal of Clinical Neuroscience 18 (11): 1528-33, 2011.

23. Cook DJ, Yeager MS, Cheng BC. Interpedicular Travel in the Evaluation of Spinal Implants: An Application in Posterior Dynamic Stabilization. Spine 37 (11): 923-31, 2011.

24. Tomycz ND, Cheng BC, Cantella D, Angle C, Oh MY, Whiting DM. Pursuing New Targets and Indications for Deep Brain Stimulation: A Primer on Device-Related Clinical Research in the United States. Neuromodulation 14 (4): 389-92, 2011.

25. Fuller AM, Chui JM, Cook DJ, Yeager MS, Gladowski DA, Cheng BC. Verification of Pure Moment Testing in a Multi-Degree of Freedom Spine Testing Apparatus. Int J Spine Surg. 2012 Dec 1;6:1-7. doi: 10.1016/j.ijsp.2011.12.001. eCollection 2012.PMID: 25694863.

26. Cook DJ, Gladowski DA, Acuff HN, Yeager BS, Cheng BC. Variability of manual lumbar spine segmentation. The International Journal of Spine Surgery 6(1): pp.167-173, Dec 2012.

27. Whiting DM, Tomycz ND, Bailes J, Levitan L, Lecoultre VM, Ravussin E, Wilent B, Alcindor

D, Wilberger J., Prostko ER, Cheng BC, Angle C, Cantella D, Whiting BB, Oh MY. Lateral hypothalamic area deep brain stimulation for refractory obesity: a pilot study with preliminary data on safety, body weight, and energy metabolism. Journal of Neurosurgery 119(1): pp56-63, Jul 2013.

28. Yeager MS, Cook DJ, Cheng BC. Precision of Computer-Assisted Lumbar Intervertebral Measurements Using Videofluoroscopy: Reliability of a New Vertebral Motion Analysis System. Spine Journal 14(2): pp274-281, Feb 2014.

29. Cook DJ, Yeager MS, Cheng BC. Response to "Letter to the Editor regarding the article 'Interpedicular Travel in the Evaluation of Spinal Implants: An Application in Posterior Dynamic Stabilization' by D.J. Cook, M.S. Yeager, and B.C. Cheng: Spine 2012; 37(11): 923-931." Spine, April 2014.

30. Hanlon AD, Cook DJ, Yeager MS, Cheng BC. Quantitative Analysis of the nonlinear displacement-load behavior of thelumbar spine. J Biomech Eng. 2014 Aug;136(8). doi: 10.1115/1.4027754.PMID: 24870396.

31. Cook DJ, Yeager MJ, Oh MY, Cheng BC. Lumbar Intrafacet Bone Dowel Fixation. Neurosurgery. 2015 Apr;76(4):470-8; discussion 478. doi: 10.1227/NEU.0000000000000652.PMID: 25621985.

32. Cook DJ, Yeager MJ, Cheng BC. Range of Motion of the Intact Lumbar Segment: A Multivariate Study of 42 Lumbar Spines. Int J Spine Surg. 2015 Mar 5;9:5. doi: 10.14444/2005. eCollection 2015.PMID: 25785241 .

33. Cook DJ, Yeager MS, Thampi SS, Whiting DM, Cheng BC. Stability and Load Sharing Characteristics of a Posterior Dynamic Stabilization Device. Int J Spine Surg. 2015 Mar 30;9:9. PMID: 26131403. PMCID: PMC4382751. DOI: 10.14444/2009

34. Yeager MS, Dupre DA, Cook DJ, Oh MY, Altman DT, Cheng BC. Anterior Lumbar Interbody Fusion with Integrated Fixation and Adjunctive Posterior Stabilization: a Comparative Biomechanical Analysis. Clin Biomech (Bristol, Avon). 2015 Oct;30(8):769-74. doi: 10.1016/j.clinbiomech.2015.06.015. Epub 2015 Jun 27.

35. Yeager MS, Cook DJ, Cheng BC. In Vitro Comparison of Dynesys, PEEK, and Titanium Constructs in the Lumbar Spine. Adv Orthop. 2015;2015:895931. doi: 10.1155/2015/895931. Epub 2015 Aug 17.

36. Castellvi AD, Thampi SK, Yao Y, Zou Q, Cook DJ, Yeager MS, Whiting DM, Oh MY, Prostko ER, Cheng BC. Effect of TLIF Cage Placement on In Vivo Kinematics. International Journal of Spine Surgery 9:38, Jul 17, 2015.

37. Santoni B, Cabezas AF, Cook DJ, Yeager MS, Billys JB, Whiting B, Cheng BC. Comparison of Intervertebral ROM in Multi-Level Cadaveric Lumbar Spines Using Distinct Pure Moment Loading Approaches. Int J Spine Surg. 2015 Jul 17;9:32. doi: 10.14444/2032. eCollection 2015.PMID: 26273550 .

38. Davis RJ, Lee DC, Wade C, Cheng B. Measurement Performance of a Computer Assisted Vertebral Motion Analysis System. Int J Spine Surg. 2015 Jul 17;9:36. doi: 10.14444/2036. eCollection 2015.PMID: 26273554.

39. Cheng B, Goel V. Foreword, the Relevance of Clinical Biomechanics, Biomechanics Special Issue. International Journal of Spine Surgery 9:31, July 17, 2015.

40. Dupre D, Cook DJ, Yeager M, Cheng BC. Disc Nucleus Fortification for Lumbar Degenerative Disc Disease: A Biomechanical Study. J Neurosurg Spine. 2016 May;24(5):708-14. doi: 10.3171/2015.8.SPINE141043. Epub 2016 Jan 15.PMID: 26771371.

41. Yu A, Siegfried CM, Chew B, Hobbs J, Sabersky A, Jho DJ, Cook DJ, Bellotte JB, Whiting DM, Cheng BC. Biomechanics of Posterior Dynamic Fusion Systems in the Lumbar Spine: Implications for Stabilization with Improved Arthrodesis. Clinical Spine Surgery 29(7): p E325–E330, Aug 2016. doi: 10.1097/BSD.0b013e31827588b1.

42. Adhikari S., Richter B, Mace ZS, Sclabassi RJ, Cheng B, Whiting DW, Averick S, Nelson TL. Organic Conductive Fibers as Nonmetallic Electrodes and Neural Interconnects. Ind. Eng. Chem. Res. 2018, 57, 23, 7866-7871. https://doi.org/10.1021/acs.iecr.8b00786.

43. Mao G, Aldahak N, Kusyk D, Yeager M, Cook D, Cameron J, Cheng B, Oh M. A Consideration for the Utility of the Post-operative Oswestry Disability Index for Measuring Outcomes after Sacroiliac Joint Fusion. Orthop Rev (Pavia). 2018 Jun 14;10(2):7549. doi: 10.4081/or.2018.7549. eCollection 2018 Jun 14.

44. Wu YY, Acharya D, Xu C, Cheng B, Rana S, Shimada K. Custom-Fit Three-Dimensional-Printed BiPAP Mask to Improve Compliance in Patients Requiring Long-Term Noninvasive Ventilatory Support. Journal of Medical Devices 12(3):031003, July 2018. DOI: 10.1115/1.4040187.

45. Kovaliov M, Cheng C, Cheng B. Averick S. Grafting-from Lipase: Utilization of a Common Amino Acid Residue as a New Grafting Site. Polym. Chem., 2018,9, 4651-4659. DOI:10.1039/C8PY01026A.

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47. Cheng BC, Koduri S, Wing CA, Woolery N, Cook DJ, Spiro RC. Porous Titanium-coated Polyetheretherketone Implants Exhibit an Improved Bone-implant Interface: an *In Vitro* and *In Vivo* Biochemical, Biomechanical, and Histological Study. Med Devices (Auckl). 2018 Oct 29;11:391-402. doi: 10.2147/MDER.S180482. eCollection 2018.

48. Fu L, Omi M, Sun M, Cheng B, Mao G, Liu T, Mendonça G, Averick S, Mishina Y, Matyjaszewski K. Covalent Attachment of P15 Peptide to Ti Alloy Surface Modified with Polymer to Enhance Osseointegration of Implants. ACS Appl Mater Interfaces. 2019 Oct 23;11(42):38531-38536. doi: 10.1021/acsami.9b14651. Epub 2019 Oct 10.

49. Hao J, Nangunoori R, Wu YY, Rajaraman M, Cook D, Yu A, Cheng B, Shimada K. Material characterization and selection for 3D-printed spine models. 3D Print Med. 2018 Oct 19;4(1):8. doi: 10.1186/s41205-018-0032-9. PMID: 30649649; PMCID: PMC6195498.

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51. Cheng BC, Swink I, Altman D. The immune response of two separate polymer spinal interbody device materials. Spine J 2019 Aug 19(9):S4-S5. doi: 10.1016/j.spinee.2019.05.021.

52. Zheng J, Yang Y, Cheng B, Cook D. Exploring the Pathological Role of Intervertebral Disc and Facet Joint in the Development of Degenerative Scoliosis by Biomechanical Methods. Clin Biomech (Bristol, Avon). 2019 Dec;70:83-88. doi: 10.1016/j.clinbiomech.2019.08.006. Epub 2019 Aug 16.

53. Cheng BC, Jaffee S, Averick S, Swink I, Horvath S, Zhukauskas R. A Comparative Study of Three Biomaterials in an Ovine Bone Defect Model. Spine J 2020 Mar;20(3):457-464. doi: 10.1016/j.spinee.2019.10.003. Epub 2019 Oct 15.

54. Tomycz ND, Payne C, Cheng BC, Hiller L, Eutsey R, Whiting DM, Averick S. Prevention of Implant-Associated Infection in Neuromodulation: Review of the Literature and Prototype of a Novel Protective Implant Coating. Surg Infect (Larchmt). 2020 May;21(4):378-383. doi: 10.1089/sur.2019.075. Epub 2019 Dec 9. PMID: 31816270.

55. Zha X, Wehbe L, Sclabassi RJ, Mace Z, Liang YV, Todd A, Chen DA, Yu A, Leonardo J, Cheng BC, Riviere CN. Toward automated interpretation of electromyography for intraoperative neurophysiological monitoring using machine learning. Carnegie Mellon Robotics Institute Technical Report CMU-RI-TR-20-02. Pittsburgh, Pa.; 2020.

56. Carbone J, Swink I, Muzzonigro T, Diehl D, Oh M, Lindsey DP, Yerby S, Cheng BC. Biomechanical Stability of Primary and Revision Sacroiliac Joint Fusion Devices: A Cadaveric Study. Global Spine J. 2020 Sep 16:2192568220948028. doi: 10.1177/2192568220948028. Epub ahead of print. PMID: 32935574.

57. Payne C, Jaffee S, Swink I, Cook D, Yeager M, Oh M, Schmidt G, Lindsey DP, Yerby SA, Cheng B. Comparative analysis of the lateral and posterolateral trajectories for fixation of the sacroiliac joint-a cadaveric study. J Orthop Surg Res. 2020 Oct 22;15(1):489. doi: 10.1186/s13018-020-02013-w. PMID: 33092604; PMCID: PMC7579994.

58. Coric D, Roybal RR, Grubb M, Rossi V, Yu AK, Swink IR, Long J, Cheng BC, Inzana JA. Bidirectional Expandable Technology for Transforaminal or Posterior Lumbar Interbody Fusion: A Retrospective Analysis of Safety and Performance. Int J Spine Surg. 2020 Dec;14(s3):S22-S30. doi: 10.14444/7123. Epub 2020 Oct 29. PMID: 33122186; PMCID: PMC7735440.

59. Lewandrowski KU, Ferrara L, Cheng B. Expandable Interbody Fusion Cages: An Editorial on

the Surgeon's Perspective on Recent Technological Advances and Their Biomechanical Implications. Int J Spine Surg. 2020 Dec;14(s3):S56-S62. doi: 10.14444/7127. Epub 2020 Oct 29. PMID: 33122184; PMCID: PMC7735473.

60. Cheng BC, Swink I, Yusufbekov R, Birgelen M, Ferrara L, Lewandrowski KU, Coric D. Current Concepts of Contemporary Expandable Lumbar Interbody Fusion Cage Designs, Part 1: An Editorial on Their Biomechanical Characteristics. Int J Spine Surg. 2020 Dec;14(s3):S63-S67. doi: 10.14444/7128. Epub 2020 Oct 29. PMID: 33122179; PMCID: PMC7735463.

61. Cheng BC, Swink I, Yusufbekov R, Birgelen M, Ferrara L, Coric D. Current Concepts of Contemporary Expandable Lumbar Interbody Fusion Cage Designs, Part 2: Feasibility Assessment of an Endplate Conforming Bidirectional Expandable Interbody Cage. Int J Spine Surg. 2020 Dec;14(s3):S68-S74. doi: 10.14444/7129. Epub 2020 Oct 29. PMID: 33122178; PMCID: PMC7735472.

62. Hall, H, Prostko E, Haring K, Fischer M, Cheng B. (2021). A Successful, Cost-Effective Low Back Pain Triage System: A Pilot Study. February 2021. North American Spine Society Journal (NASSJ) 5(3):100051. DOI:10.1016/j.xnsj.2021.100051.

63. FU, Liye, Hossein JAFARI, Michael GIESSL, Saigopalakrishna S. YERNENI, Mingkang SUN, Zongyu WANG, Tong LIU, Kriti KAPIL, Boyle C. CHENG, Krzysztof MATYJASZEWSKI, 2021. *Grafting polymer brushes by ATRP from functionalized poly(ether ether ketone) microparticles*. In: Polymers for Advanced Technologies. Wiley-Blackwell - STM. ISSN 1042-7147. eISSN 1099-1581. Available under: doi: 10.1002/pat.5405.

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65. Fu L, Omi M, Sun M, Cheng B, Mao G, Liu T, Mendonça G, Averick SE, Mishina Y, Matyjaszewski K. Covalent Attachment of P15 Peptide to Ti Alloy Surface Modified with Polymer to Enhance Osseointegration of Implants. ACS Appl Mater Interfaces. 2019 Oct 23;11(42):38531-38536. doi: 10.1021/acsami.9b14651. Epub 2019 Oct 10. PMID: 31599570; PMCID: PMC6993989.

66. Ashkezari S, Mut F, Slawski M, Cheng B, Yu A, White T, Woo H, Koch M, Amin-Hanjani S, Charbel F, Jahromi B, Niemelä M, Koivisto T, Frosen J, Tobe Y , Maiti S, Robertson A, Cebral J. Prediction of bleb formation in intracranial aneurysms using machine learning models based on aneurysm hemodynamics, geometry, location, and patient population *Journal of NeuroInterventional Surgery* Published Online First: 22 October 2021. doi: 10.1136/neurintsurg-2021-017976

1. Welch WC, Gerszten PC, Cheng BC, Maxwell J. Dynesys Spinal Instrumentation System. *Spine Reconstruction: Clinical Examples of Applied Basic Science, Biomechanics and Engineering*, Lewandrowski K-U, Park P, Trantolo DJ, Yaszemski MJ, McLain RF (eds). Taylor and Francis, New York, 2006.

2. Cheng BC, Welch WC. Biomechanical Assessment of Spinal Instability and Stabilization. *Spine Radiosurgery*. Gerszten PC, Ryu S (eds). Thieme, New York, 2007.

3. Cheng BC, Welch WC. Biomechanics of Non-fusion Devices. *Motion Preservation Surgery of the Spine: Advanced Techniques and Controversies*. Yue J, Bertagnoli R, McAfee P, An H (eds). Elsevier, Philadelphia, 2008.

4. Cheng BC. Biomechanics of Normal and Aging Spine. *The Comprehensive Treatment of the Aging Spine: Minimally Invasive and Advanced Techniques*. Yue J, Guyer D, Johnson, Khoo L, and Hochschuler (eds). Elsevier, Philadelphia, 2010.

5. Bauman J, Cheng BC, Welch WC. Nucleoplasty and Posterior Dynamic Motion Preservation Systems. *Youman's Neurological Surgery*. 6th ed. Winn HR and Shaffery C (eds). Elsevier, Philadelphia, 2011.

6. Cook DJ, Yeager MS, Chakraborty S, Whiting DM, Cheng BC. The Performance Envelope of Spinal Implants Utilizing Thermoplastic Materials. Thermoplastic Elastomers, Thermoplastic Elastomers, Prof. Adel El-Sonbati (ed.), InTech, ISBN: 978-953-51-0346-2, 2012.

7. Welch WC, Cheng BC, Awad TE, Macenski MM. Dynamic Stabilization of the Lumbar Spine. *Operative Neurosurgical Techniques*. 6th ed. Schmidek and Sweet (eds). Elsevier, Philadelphia, 2012.

8. Jaffee, S., Swink, I., Phillips, B., Birgelen, M., Yu, A., Giannoukakis, N., Cheng, B., Webb, S., Davis, R., Welch, W., Castellvi, A; Mechanobiology of the Intervertebral Disc and Treatments Working in Conjunction with the Human Anatomy; Chapter 22; in *Handbook of Spine Technology*; Springer; New York, NY; 2021; Cheng, BC, ed.; 1st edition; ISBN: 978-3-319-44423-9; 10.1007/978-3-319-33037-2_22-1.

9. Erbulut, D., Matsumoto, K., Shah, A., Agarwal, A., Cheng, B., Kiapour, A., Zavatsky, J., Goel, V; Lessons Learned from Positive Biomechanics and Poor Clinical Outcomes; Chapter 27; in *Handbook of Spine Technology*; Springer; New York, NY; 2021; Cheng, BC, ed.; 1st edition; ISBN: 978-3-319-44423-9; 10.1007/978-3-319-33037-2_27-1.

10. Cheng, B., Yu, A., Swink, I., Whiting, D., Averick, S.; Recent Advances in PolyArylEtherKetones and Their InVitro Evaluation for Hard Tissue Applications; Chapter 99; in *Handbook of Spine Technology*; Springer; New York, NY; 2021; Cheng, BC, ed.; 1st edition; ISBN: 978-3-319-44423-9. 10.1007/978-3-319-33037-2_99-

11. Swink, I., Jaffee, S., Diehl, D., Xu, C., Carbone, J., Yu, A., Cheng, B; Cyclical Loading to Evaluate the Bone Implant Interface; Chapter 121; in *Handbook of Spine Technology*; Springer; New York, NY; 2021; Cheng, BC, ed.; 1st edition; ISBN: 978-3-319-44423-9; 10.1007/978-3-

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12. Holmberg, K., Altman, D., Cheng, B., Sauber, T; Robotic Technology; Chapter 138; in *Handbook of Spine Technology*; Springer; New York, NY; 2021; Cheng, BC, ed.; 1st edition; ISBN: 978-3-319-44423-9; 10.1007/978-3-319-33037-2_138-1.

13. Tomycz, N., Leichliter, T., Averick, S., Cheng, B., Whiting, D; Spinal Cord Stimulation: Effect on Motor Function in Parkinson's Disease; Chapter 142; in *Handbook of Spine Technology*; Springer; New York, NY; 2021; Cheng, BC, ed.; 1st edition; ISBN: 978-3-319-44423-9; 10.1007/978-3-319-33037-2_142-1;

BOOK EDITOR

1. Cheng BC, ed; *Handbook of Spine Technology*; Springer; New York, NY; 2021; 1st edition; ISBN: 978-3-319-44423-9

BOOK SECTIONS

1. Cheng BC, Cook DJ; Jegapragasan M; Gladowski D; Whiting DM. Facet Joint Complex Considerations for Biomechanics of the Lumbar Functional Spinal Unit: An Improved Model Based Method for Investigating Facet Articulation. In Magjarevic R, Nagel JH, eds. Lim CT, Goh JCH, section eds. *6th World Congress of Biomechanics (WCB 2010). August 1-6, 2010 Singapore:* Springer Berlin Heidelberg:358-61.

2. Cheng BC; Considerations and Guidelines for New Technologies; in *Handbook of Spine Technology*; Springer; New York, NY; 2021; Cheng, BC, ed.; 1st edition; ISBN: 978-3-319-44423-9.

ACADEMIC EDITORIAL RESPONSIBILITIES

1. Peer reviewer for Journal of Biomechanical Engineering
2. Peer reviewer for Journal of Medical Devices
3. Peer reviewer for Annals of Biomedical Engineering
4. Editorial Board for SAS Journal
5. Peer reviewer for International Journal of Biomedical Science
6. Peer reviewer for Clinical Neurology and Neurosurgery
7. Editorial Board for NASS SpineLine
8. Peer reviewer for Medical Engineering & Physics
9. Associate Editor for The Spine Journal
10. Peer reviewer for Neurosurgery
11. Associate Editor for International Journal of Spine Surgery
12. Peer reviewer for Journal of Medical Devices
13. Peer reviewer for Clinical Biomechanics

14. Peer reviewer for Chinese Journal of Traumatology
15. Editorial Board for Medical Research Archives
16. Biomechanics Section Editor for the International Journal of Spine Surgery
17. Peer reviewer for Osteoarthritis and Cartilage
18. Peer reviewer for Journal of Engineering in Medicine
19. Ad hoc reviewer for Computer Methods in Biomechanics and Biomedical Engineering

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ACADEMIC PRESENTATIONS

1. Cheng BC. Metallized Microballoon EMI Shielding Materials. Third International Conference on Engineering, Construction, and Operations in Space III, American Society of Civil Engineers, May 31-June 4, 1992.

2. Radford DW, Sadeh WZ, Cheng BC. Composite Materials for Structures on Planetary Surfaces. Third International Conference on Engineering, Construction, and Operations in Space III, American Society of Civil Engineers, May 31-June 4, 1992.

3. Cheng BC, Moore DK, Tribus CB, Zdeblick TA. Radiographic Analysis of Laparoscopic BAK Anterior Spinal Fusion. Twelfth Annual Meeting of the North American Spine Society, North American Spine Society, October 22-25, 1997.

4. Cheng BC, Moore DK, Zdeblick TA. Load Sharing Characteristics of Two Anterior Cervical Plate Systems (Poster). Twenty-Fifth Annual Meeting, Cervical Spine Research Society, December 4-6, 1997.

5. Cheng BC, Moore DK, Deguchi M, Swain C, Zdeblick TA. Enhanced Healing of Interbody Cages by a Synthetic 15-Residue Peptide (Poster). Third Combined Meeting of the Orthopaedic Research Societies, September 28-30, 1998.

6. Orr RD, Cheng BC, Mihara H, Zdeblick TA. Spinal Stability After Thoracic Discectomy: A Biomechanical Study. Thirteenth Annual Meeting of the North American Spine Society, October 28-31, 1998.

7. Cheng BC, Rapoff AJ, Deguchi M, O'Brien TJ, Swain C, Zdeblick TA. Corraline Hydroxyapatite in Anterior Cervical Discectomy and Fusion: Effect of Pore Size. Thirteenth Annual Meeting of the North American Spine Society, North American Spine Society, October 28-31, 1998.

8. Cheng BC, Moore DK, Zdeblick TA. Stress Shielding Characteristics of Three Anterior Cervical Plate Systems. Thirteenth Annual Meeting of the North American Spine Society, October 28-31, 1998.

9. Cheng BC, Deguchi M, Moore DK, Swain C, Zdeblick TA. Peptides as Fusion Assist Coatings for Intervertebral Cages. Thirteenth Annual Meeting of the North American Spine Society, October 28-31, 1998.

10. Cheng BC, Moore DK, Zdeblick TA. Stress Shielding Characteristics of Three Anterior Cervical Plate Systems. Thirteenth Annual Meeting of the North American Spine Society, October 28-31, 1998.

11. Cheng BC, Mihara H, Deguchi M, Moore D, Zdeblick TA. Arthrodesis from Synergistic Combinations of Bone Substitutes and Interbody Fusion Cages. Twenty-Sixth Annual Meeting of the Cervical Spine Research Society, December 3-5, 1998.

12. Cheng BC, Mihara H, Ulibarrri J, Leverson G, Zdeblick TA. Biomechanical Comparison of Oblique Intervertebral Cages (Poster). Forty-Fifth Annual Meeting of the Orthopaedic Research Society, February 1-4, 1999.

13. Cheng BC, Escarcega AJ, Oza A, Green S, Resnick DK, Vanderby R. Biomechanical Performance of a Duo-Polymer Motion-Preservation Device (Poster). Thirty-Second Annual Meeting of the Cervical Spine Research Society, December 9-12, 2004.

14. Welch WC, Gerszten P, Cheng BC. Lumbar Biomechanics: Non-Fusion Devices. 2006 Winter Neuroscience Symposium, Snowmass Village, Colorado, February 26-March 4, 2006.

15. Welch WC, Gerszten P, Cheng BC. Dynesys Non-Fusion Stabilization Device. 2006 Winter Neuroscience Symposium, Snowmass Village, Colorado, February 26-March 4, 2006.

16. Cheng BC, Gordon JD, Cheng JS, Welch WC. Contributions of a Non-Rigid Fixation System to Adjacent-Level Lumbar Motion above Circumferential Fusion: An in vitro Kinematic Study.Global Symposium on Motion Preservation Technology (SAS6), Montreal, Canada, May 9 - 13, 2006.

17. Cheng BC, Sharts M, Chough CK, Karausky P, Oza A, Vanderby R, Welch WC. Biomechanical Performance of a Duo-Polymer Cervical Artificial Disc: Flexion Extension Bending.Global Symposium on Motion Preservation Technology (SAS6), Montreal, Canada, May 9 - 13, 2006.

18. Cheng BC, Gordon JD, Cheng JS, Welch WC. Biomechanics of a Lumbar Motion Segment Above a Circumferentially Instrumented Motion Segment (abstract). Fifty-Ninth Annual Meeting of the Neurosurgical Society of America, Ojai, California, June 4 - 7, 2006.

19. Cheng BC, Vanderby R, Welch WC. Design and Biomechanical Performance of a Duo-Polymer Motion Preservation Device for the Cervical Spine. 2006 Summer Bioengineering Conference, Amelia Island, Florida, June 21 - 25, 2006.

20. Cheng BC, Welch WC. Biomimetic Design of Lumbar Posterior Dynamic Systems. Second Annual Meeting of the Sisyphean Spinal Society, Elbow Beach, Bermuda, July 13 - 16, 2006.
21. Cheng BC, Welch WC. Biomechanic Assessment of Lumbar Motion Preservation Devices. Pennsylvania Neurosurgical Society Meeting, Hershey, PA, July 11 - 15, 2006.

22. Cheng BC, Gerszten PC, Welch WC. Biomechanic Assessment of Cervical Motion Preservation Devices (poster). Pennsylvania Neurosurgical Society Meeting, Hershey, PA, July 11 - 15, 2006.

23. Cheng BC, Chough CK, Sharts M, Karausky P, Oza A, Vanderby R, Welch WC. Biomechanical Performance of a Duo-Polymer Cervical Disc (poster). Spine across the Sea Meeting, Maui, HI, July 23 - 27, 2006.

24. Cheng BC, Welch WC. Biomimetic Design. Emerging Technologies in Spine II Meeting, Las Vegas, NV, August 11 - 12, 2006.

25. Cheng BC, Chough CK, Sharts M, Karausky P, Oza A, Vanderby R, Welch WC. Preliminary Results of a Duo-Polymer Cervical Motion Preservation Device in Axial Rotation (poster). Congress of Neurological Surgeons 56th Annual Meeting, Chicago, IL, October 7 - 12, 2006.

26. Cheng BC, Vanderby R, Welch WC. Biomimetic Design of an Anterior Cervical Disc (poster). Orthopaedic Research Society 53rd Annual Meeting, San Diego, CA, February 11 – 14, 2007.

27. Faught RW, Pirris S, Welch WC, Cheng BC. Comparison Between In Vivo and In Vitro Sheep Lumbar Spine (digital poster). Twenty-third Annual Meeting of the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Phoenix, AZ, March 7 - 10, 2007.

28. Cheng BC, Welch WC. Biomechanics of Cervical Discs. Preservation of Motion in the Spine, Duck Key, FL, March 28 – 31, 2007.

29. Cheng BC, Welch WC. Industry Standards for Implant Testing. Preservation of Motion in the Spine, Duck Key, FL, March 28 – 31, 2007.

30. Cheng BC, Vanderby R, Welch WC. Biomimetic Design and Evaluation of Total Disc Replacements. Preservation of Motion in the Spine, Duck Key, FL, March 28 – 31, 2007.

31. Spehar JL, Hamilton RL, Karausky PL, Gerszten PC, Welch, WC, Cheng BC. Preliminary Histological Evaluation of the Chronic Tissue Response to a Cervical Disc (poster). Spine Anthroplasty Society Meeting 7, Berlin, Germany, May 1-4, 2007.

32. Cheng BC, Vanderby R, Blumenthal S, Welch WC. Design and Characterization of a Cervical Motion Preservation Device (poster). Spine Anthroplasty Society Meeting 7, Berlin, Germany, May 1-4, 2007.

33. Cheng BC. Biomechanical Evaluation of Total Disc Replacements. Pracitcal Course PC32 Lumbar Arthroplasty of the 2007 Congress of Neurological Surgeons Annual Meeting, San Diego, CA, September 16-23, 2007.

34. Jankowitz BT, Faught R, Cheng BC, Welch WC, Atteberry DS, Gerszten PC. Incidence and Repair of Durotomy During Lumbar Spinal Surgery. Twenty-fourth Annual Meeting of the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves, Orlando, FL, February 27 – March 1, 2008.

35. Cheng BC, Burns P, Spehar J, Welch WC. Direct Measurement of Load Sharing Capacity in a Cervical Functional Spinal Unit with Three Different Methods of Fixation (poster). Fifty-fourth Annual Meeting of the Orthopedic Research Society, San Francisco, CA, March 2-5,

2008.

36. Zhang Y, Cheng BC, Oh C, Spehar JL, Burgess J. Kinematic Analysis of Lumbar Spine Undergoing Extension and Dynamic Neural Foramina Cross Section Measurement. Fifteenth ICCES Conference, Honolulu, HI, March 16-22, 2008.

37. Cheng BC. Clinically Relevant Biomechanical Measures. Preservation of Motion Meeting 2008, Hawks Cay, FL, April 2-5, 2008.

38. Cheng BC. Matching Instantaneous Axis of Rotation through Concurrent Design. Preservation of Motion Meeting 2008, Hawks Cay, FL, April 2-5, 2008.

39. Cheng BC, Burns P, Spehar J, Welch WC. Biomechanical Stability Characteristics of Cervical Fixation Devices (poster). 2008 AANS Annual Meeting, Chicago, IL, April 28– May 1, 2008.

40. Cheng BC, Zhang Y, Oh C, Spehar JL, Burgess J. New Method of Dynamic Neural Foraminal Cross Section Measurement (poster). Global Symposium on Motion Preservation Technology 8th Annual Meeting, Spine Arthroplasty Society, Miami, FL, May 6-9, 2008.

41. Cheng BC, Welch WC. Initial Observations in the Validation of a Hybrid Test Protocol for Motion Preservation Devices on a Biomechanical Spine Tester. ASME Summer Bioengineering Conference 2008, Marco Island, Florida, June 25-29, 2008.

42. Cheng BC, Pirris SM, Cook D, Kanter AS, Welch WC. Comparison of Test Methods for Posterior Cervical Implant Characterization: Bench Top and Biomechanical Human Cadaveric Flexibility Protocols (poster). CNS 2008 Annual Meeting, Orlando, FL, September 20-25, 2008.

43. Welch WC, Delamarter RB, Maxwell JH, Wingate JK, Davis RJ, Cheng BC, Sherman JE. Quantitative Radiographic Analysis of a Posterior Dynamic Stabilization System: Dynamic Parameters and Maintenance of Segmental Disc Height and Lordosis at 24-Months (poster). CNS 2008 Annual Meeting, Orlando, FL, September 20-25, 2008.

44. Jegapragasan M, Cook D, Cuchanski M, Kanter AS, Cheng BC. Creation of an in vivo Method to Measure Lumbar Facet Orientation in Human Spines: an Assessment of the Three Dimensional Anatomy (poster). Science 2008 Annual Meeting, Pittsburgh, PA, October 3-7, 2008.

45. Welch WC, Sherman JE, Delamarter RB, Wingate JK, Maxwell JH, Cheng BC, Davis RJ. Quantitative Radiographic Analysis of a Posterior Dynamic Stabilization System: Dynamic Parameters and Maintenance of Segmental Disc Height and Lordosis at 24 Months (poster). Twenty-third Annual Meeting of the North American Spine Society, Toronto, Canada, October 14-18, 2008.

46. Cheng BC. The Biomechanical Evaluation of an Anterior Cervical Disc Under a Hybrid Test Protocol. Podium presentation at the Third International Congress of the Chinese Orthopedic Association (COA2008), Suzhou, China, November 13-16, 2008.

47. Cook DJ, Cheng BC. Investigation of Facet Articulation During Lateral Bending in the Human Lumbar Spine Using a Model-Based Kinematic Simulation. Seventeenth Annual Symposium on Computational Methods in Orthopaedic Biomechanics, Las Vegas, NV, February 21, 2009.

48. Cheng BC, Cook DJ Pirris SM,Welch WC. A Hybrid Test Protocol for the Evaluation of Single and Adjacent Level Effects from an Anterior Cervical Disc (poster). Orthopedic Research Society Fifty-fifth Annual Meeting, Las Vegas, NV, February 22-25, 2009.

49. Jegapragasan M, Cook D, Cuchanski M, Kanter AS, Cheng BC. The Relationship between Lordosis and Flexion/Extension in the Intact Cadaveric Lumbar Spine (poster) AANS/ CNS Section on Disorders of the Spine and Peripheral Nerves 2009 Annual Meeting, Phoenix, AZ, March 11-14, 2008.

50. Cheng BC, Cook DJ, Rosler D, Webb S. Spinal Kinematics and Instantaneous Axis of Rotation. Preservation of Motion 2009 Conference, Duck Key, FL, April 1- 4, 2009.

51. Cheng BC, Cook DJ. Clinically Relevant Biomechanical Measures for Cervical Total Disc Replacement. Preservation of Motion 2009 Conference, Duck Key, FL, April 1- 4, 2009.

52. Cheng BC, Cook DJ, Webb S. Development of a Non-Invasive Model Based Technique for Characterizing Facet Articulation in the Human Cadaveric Lumbar Spine (oral poster). Ninth Annual Global Symposium on Motion Preservation Technology (SAS9), London, England, April 28 - May 1, 2009.

53. Cheng BC, Cook DJ, Castellvi AC. Investigation of Pedicle Excursion during Flexion Extension Bending in the Human Cadaveric Lumbar Spine (poster). Ninth Annual Global Symposium on Motion Preservation Technology (SAS9), London, England, April 28-May 1, 2009.

54. Cook DJ, Jegapragasan M, Cuchanski M, Cheng BC. Development of a Solid Model Based Method for Investigating Facet Articulation (poster). ASME Summer Bioengineering Conference 2009, Reno, NV, June 17 - 21, 2009.

55. Cheng BC, Cook DJ, Jegapragasan M, Cuchanski M, Patwardhan A. Techniques Beyond Range of Motion for Analyzing Spinal Instrumentations Utilizing a CT Based Specimen Specific Solid Model. ASME Summer Bioengineering Conference 2009, Reno, NV, June 17-21, 2009.

56. Cheng BC, Cook DJ, Whiting DM. A Non-Invasive Model Based Technique for Characterizing Facet Articulation in the Human Cadaveric Lumbar Spine (digital poster). Congress of Neurological Surgeons 2009 Annual Meeting, New Orleans, LA, October 24-29, 2009.

57. Cheng BC, Cook DJ, Bellotte JB, Whiting DM. Direct Measurement of Load Sharing Capacity in a Lumbar Functional Spinal Unit with Different Fusion Constructs (poster). 13th International Argos Symposium, Paris, France, January 23-24, 2009.

58. Cuchanski M, Cook DJ, Whiting DM, Cheng BC. Measurement of Occlusion of the Spinal

Canal and Intervertebral Foramen by Interverebral Disc Bulge (poster). Orthopaedic Research Society Fifty-Sixth Annual Meeting, New Orleans, Louisiana, March 6-9, 2010.

59. Cheng BC, Cuchanski M, Cook DJ, Whiting DM. Intervertebral Disc Bulge under Three Different Loading Conditions (poster). Tenth Annual Global Symposium on Motion Preservation Technology (SAS10), New Orleans, LA, April 27-30, 2010.

60. Cheng BC, Whiting DM, Welch WC. Design Considerations for Anterior Load Sharing Capacity in a Functional Spinal Unit Utilizing Posterior Dynamic Constructs (poster). Tenth Annual Global Symposium on Motion Preservation Technology (SAS10), New Orleans, LA, April 27-30, 2010.

61. Cheng BC, Cook DJ, Jegapragasan M, Gladowski DA, Whiting DM. Facet Joint Complex Considerations for Biomechanics of the Lumbar Functional Spinal Unit. 6th World Congress of Biomechanics 2010, Singapore, August 1-6, 2010.

62. Cheng BC. Biomechanics of Cervical Total Disc Replacements. Podium Presentation. 1st International Artificial Cervical Disc Replacement Forum. Suzhou, China, November 15, 2010.

63. Cheng BC. Quantity and Quality of FSU Motion. Current Solutions in Spine Surgery, Duck Key, FL, March 30 - April 2, 2011.

64. Cheng BC. Posterior Dynamic Fusion. Current Solutions in Spine Surgery, Duck Key, FL, March 30 - April 2, 2011.

65. Cheng BC, Cook DJ, Bellotte JB, Whiting DM. Characterizing Disc Bulge in Three Different Regions of the Outer Annulus Subjected to Biomechanical Testing Including Pure Moment Protocols (poster). 11th Annual Global Symposium on Motion Preservation Technology (SAS 11), Las Vegas, NV, April 26-29, 2011.

66. Cheng BC, Cook DJ, Gladowski D, Bellotte JB, Whiting DM. Biomechanical Effects of Nucleus Augmentation with an Injectable in situ Cured Hydrogel (poster) . 11th Annual Global Symposium on Motion Preservation Technology (SAS11), Las Vegas, NV, April 26- 29, 2011.

67. Cook DJ, Yeager MS, Gladowski DA, Lu B, Bellotte JB, Whiting DM, Cheng BC. In vitro Comparison of One and Two Level Posterior Dynamic Stabilization Device: Inferences from Kinematic Tracking of Device Components Based on Interpedicular Travel and Spherical Joint Rotation. 11th Annual Global Symposium on Motion Preservation Technology (SAS11), Las Vegas, NV, April 26-29, 2011.

68. Cook DJ, Cheng BC, Yeager MS, Gladowski DA, Lu B, Bellotte JB, Whiting DM,. In vitro Comparison of One and Two Level Posterior Dynamic Stabilization Device. 11th Annual Global Symposium on Motion Preservation Technology (SAS11), Las Vegas, NV, April 26-29, 2011.

69. Cheng BC, Cook DJ, Whiting DM. Predicting Clinical Failure of a Posterior Dynamic Stabilization Device through Specific Biomechanical Parameters (poster). 4th Annual Lumbar Spine Research Society, Chicago, IL, May 5-6, 2011.

70. Cheng BC. Biomechanics of the Senescent Spine. Current Solutions in Spine Surgery, Duck Key, FL, April 19 - 21, 2012.

71. Cheng BC. Biomechanics of Proximal Junctional Kyphosis. Current Solutions in Spine Surgery, Duck Key, FL, April 19 - 21, 2012.

72. Cheng BC, Cook DJ, Whiting DM. A Posterior Dynamic Stabilization System Construct Allowing Rotation about a Spherical Seat under Biomechanical Testing. International Society for the Advancement of Spinal Surgery (ISASS12), Barcelona, Spain, March 20-23, 2012.

73. Cook DJ, Hanlon A, Whiting DM, Cheng BC. Biomechanical Evaluation of Nucleus Augmentation with an Injectable in situ Cured Hydrogel. International Society for the Advancement of Spinal Surgery (ISASS12), Barcelona, Spain, March 20-23, 2012.

74. Anand N, Castellvi T, Yonemura K, Kitchel S, Cheng BC, Robie B. 24 Month Functional Outcomes from a US IDE Trial Evaluating a Lumbar Posterior Dynamic Stabilization (PDS) System with Interpedicular Travel (IPT) (oral poster). International Society for the Advancement of Spinal Surgery (ISASS12), Barcelona, Spain, March 20-23, 2012.

75. Cheng BC, Kitchel S, Castellvi T, Yonemura K, Anand N, Robie B. 24 Month Functional Outcomes from a US IDE Trial Evaluating a Lumbar Posterior Dynamic Stabilization (PDS) System with Interpedicular Travel (IPT) (poster). International Society for the Advancement of Spinal Surgery (ISASS12), Barcelona, Spain, March 20-23, 2012.

76. Cheng BC, Cook DJ, Yeager M, Whiting DM. Flexibility Testing to Determine Damage Created by Cyclical Loading of the Bone Implant Interface (poster). International Society for the Advancement of Spinal Surgery (ISASS12), Barcelona, Spain, March 20-23, 2012.

77. Cheng BC, Cook DJ, Yeager M, Whiting DM. Flexibility Testing to Determine Damage Created by Cyclical Loading of the Bone Implant Interface (poster). International Society for the Advancement of Spinal Surgery (ISASS12), Barcelona, Spain, March 20-23, 2012.

78. Cheng BC, Bin L. The Senescent Spine: Biomechanical Considerations. The 3rd TriRiver Forum on International Orthopedics, Ningbo University, Ningbo, China, July 13-15, 2012.

79. Cheng BC. Clinically Relevant Spine Biomechanics for New Spinal Technologies. International Chinese Spine Society (ICSS2012), Suzhou, China, September 27-29, 2012.

80. Cook DJ, Yeager MS, Oh MY, Cheng BC. Lumbar Intrafacet Bone Dowel Migration (poster). International Society for the Advancement of Spinal Surgery (ISASS13), Vancouver, Canada, April 20-23, 2013 (accepted).

81. Yeager MS, Cook DJ, Whiting DM, Cheng BC. ALIF Graft Load and Kinematic Response in a Dynamic Stabilization Construct (poster). International Society for the Advancement of Spinal Surgery (ISASS13), Vancouver, Canada, April 20-23, 2013.

82. Cook DJ, Yeager MS, Oh MY, Cheng BC. Lumbar Intrafacet Bone Dowel Fixation.

International Society for the Advancement of Spinal Surgery (ISASS13), Vancouver, Canada, April 20-23, 2013.

83. Cheng BC. Flexural Rigidity of the Vertebrae under Loading. Current Solutions in Spine Surgery, Duck Key, FL, May 1-4, 2013.

84. Cheng BC. Biomechanical Challenges with Intrafacet Fixation. Current Solutions in Spine Surgery, Duck Key, FL, May 1-4, 2013.

85. Cheng BC. Lumbar Instability and Post-Fusion Pseudarthrosis: Diagnostic Misclassification in Standard Bending Radiographs. 28th Annual Meeting of the North American Spine Society, New Orleans, LA, October 9-12, 2013.

86. Cheng BC. Anterior Lumbar Cage Fixation: Impact of the Bone Implant Interface. Current Solutions in Spine Surgery, Duck Key, FL, April 2-5, 2014.

87. Cheng BC, Flintrop A, Lemesh D, Winiarski C, Aberman H, Wing C, Spiro B. Axial Pullout Strength of Plasmapore XP Coated PEEK Implants in Sheep: A Comparative Biomechanical 12 Week Survival Study. International Society for the Advancement of Spinal Surgery (ISASS2014), Miami, FL, April 30-May 2, 2014.

88. Cheng BC, Cook DJ, Yeager MS, Oh MY, Whiting DM. A Biomechanical Study of ALIF Cages in Combination with a Spinous Process Clamp. International Society for the Advancement of Spinal Surgery (ISASS2014), Miami, FL, April 30-May 2, 2014.

89. Cook DJ, Yeager MS, Cheng BC. Range of Motion of the Intact Lumbar Segment: A Multivariate Study of 42 Lumbar Spines. International Society for the Advancement of Spinal Surgery (ISASS2014), Miami, FL, April 30-May 2, 2014.

90. Cook DJ, Yeager MS, Cheng BC, Prostko ER. The Effect of TLIF Cage Placement on Intervertebral Range-of-Motion. International Society for the Advancement of Spinal Surgery (ISASS2014), Miami, FL, April 30-May 2, 2014.

91. Yeager MS, Lee K, Cook DJ, Cheng BC. Use of Petrolatum for Maintenance of Cadaveric Tissue Hydration (poster). International Society for the Advancement of Spinal Surgery (ISASS2014), Miami, FL, April 30-May 2, 2014.

92. Cheng BC. A New Technology in Interbody Implant Devices: Biomechanical Study. Hangzhou Orthopedic Conference 2014, Hangzhou, China, June 21, 2014.

93. Cheng BC. Potential Biomechanical Factors Affecting Clinical Outcomes: Sheep and Biomechanical Study. Hangzhou Orthopedic Conference 2014, Hangzhou, China, June 21, 2014.

94. Cheng BC. Axial Pullout Strength of PlasmaporeXP Coated Peek Implants in Sheep: a Comparative Biomechanical Survival Study. Spine Days, Berlin. Germany, March 2, 2015.

95. Cheng BC. Biomechanical Considerations for Anterior Lumbar Surgery. Aesculap Lunch

Symposium, ISASS 2015 Annual Conference. April 13-17, 2015.

96. Cheng BC. Surface Treatment Considerations for the Bone Implant Interface. Castellvi Spine 2015, Duck Key, FL, May 7, 2015.

97. Cheng BC. Measurement of Spine Kinematics in Patients. North American Spine Society 2015, Chicago, IL, October 14-17, 2015.

98. Cheng BC. Vertebral Motion Analysis. Castellvi Spine 2016. Hawks Kay, FL. May 19-21, 2016.

99. Cheng BC, Kreft R. Project Proposal Presentations: Basic Science Evaluation of orthopedic implant materials on bacterial biofilm formation in mouse models. CDMI Fall Symposium. University of California San Francisco, San Francisco, CA, September 28-30, 2016.

100. Cheng BC. Metal Versus PEEK. Calusa Ambulatory Spine Conference. Streamsong Resort, Streamsong, Florida. November 10-13, 2016.

101. Clinically Relevant Biomechanics, Boyle Cheng, PhD, Castellvi Spine Conference, Duck Key, Florida. May 10-13, 2017.

102. High Tech Imaging Session: Navigation and Robotics Our New Future. Biomechanical VMA, Boyle Cheng, PhD, Castellvi Spine Conference. Duck Key, Florida, May 10-13, 2017.

103. What Happens to Sacroiliac Joints After Lumbar Fusion, Boyle Cheng, PhD, Castellvi Spine Conference, Duck Key, Florida. May 10-13, 2017.

104. Lumbar Fusion: Single vs. Multiple Level, Boyle Cheng, PhD. Castellvi Spine Conference, Duck Key, Florida. May 10-13, 2017.

105. What Happens to L5-S1 After SI Fusion, Boyle Cheng, PhD. Castellvi Spine Conference, Duck Key, Florida. May 10-13, 2017.

106. Session VII: Posterior Instrumentation – Moderator: Boyle Cheng, PhD. Castellvi Spine Conference, Duck Key, Florida. May 10-13, 2017.

107. Back to the Future, Boyle Cheng, PhD. Castellvi Spine Conference, Duck Key, Florida. May 10-13, 2017.

108. Femto-Surface Treatments, Castellvi Spine Conference, Duck Key, Florida. May 10-13, 2017.

109. Innovative Technology Presentation, Diffusion, Inc.: Evaluation of the Biomechanical, In Vitro Cellular Properties and In Vivo Fusion Potential of a New PEEK-Zeolite Interbody Device. North American Spine Society Annual Meeting. Orlando, Florida. October 24-28, 2017.

110. Difusion Technologies, PEEK Panel Discussion. North American Spine Society Annual Meeting. Orlando, Florida. October 24-28, 2017.

111. The Science of Interbody Bone Growth. Calusa Interbody Spine Conference. St. Pete Beach, Florida. November 9-11, 2017.

112. Lightening Podium Presentation: Fixation of the Sacroiliac Joint: A Comparative Anatomical Analysis of the Lateral and Posterolateral Trajectories. ISASS Annual Meeting, Toronto, Ontario. April 11, 2018.

113. Spine Biomechanics & Technology. Moderator. Annual Castellvi Spine Conference, Key West, Florida. May 11, 2018.

114. Advances in Spinal Technology: 3D Printing, Annual Castellvi Spine Conference, Key West, Florida. May 11, 2018.

115. Key Evolutions in the Medical Device Arena. Becker's 16th Annual Future of Spine + The Spine, Ortopaedic and Pain Management-Driven ASC Conference. Chicago, Illinois. June 13-16, 2018.

116. Basic Science Session Moderator, Lumbar Spine Research Society Annual Meeting. Chicago, Illinois. April 5, 2019.

117. Session I: Spine Biomechanics and Technology. Moderator. Annual Castellvi Spine Conference. Key West, Florida. April 23-27, 2019.

118. Resident/Fellow Session, Spine Biomechanics. Moderator. Annual Castellvi Spine Conference. Key West, Florida. April 23-17, 2019.

119. Biomechanics and Basic Science. The immune response of two separate polymer spinal interbody device materials. Abstract Presentation. North American Spine Society Annual Meeting. Chicago, Illinois. September 4-29, 2019.

120. Basic Science Session Moderator. Annual Castellvi Spine Conference, Ft. Lauderdale, Florida. May 6, 2021.

121. Technology. Annual Castellvi Spine Conference, Ft. Lauderdale, Florida. May 6, 2021.

122. Integrating Research Into Clinical/Academic Practice. Spine Session of the 12th Annual Nuts and Bolts of General Orthopaedics, Naples, Florida, October 8, 2021.

RESEARCH AND DEVELOPMENT

2005-2007 Evaluation of Anterior Cervical Disc Replacement in a Sheep Model
Sponsor: Blackstone Medical, Inc.
Role: Principal Investigator
Grant Budget: $360,000

2006-2008 Biomechanical Study of a Biased Angle Posterior Cervical System
Sponsor: Stryker Spine
Role: Principal Investigator
Grant Budget: $77,000

2007-2009 Biomechanical Study of an Anterior Cervical Disc
Sponsor: DePuy Spine
Role: Principal Investigator
Grant Budget: $73,000

2007-2009 Biomechanical Study of a Facet Joint Fixation
Sponsor: DePuy Spine, Inc.
Role: Principal Investigator
Grant Budget: $66,000

2007-2008 Biomechanical Study of a Resorbable Polymer Graft Containment System
Sponsor: Synthes Spine
Role: Principal Investigator
Grant Budget: $67,000

2009-2009 Parameters for Biomechanical Characterization of Motion Preservation Devices
Sponsor: Archus Orthopedics
Role: Principal Investigator
Grant Budget: $15,000

2009-2010 Techniques for the Characterization of Posterior Dynamic Fusion Systems
Sponsor: Scient'X
Role: Principal Investigator
Grant Budget: $150,000

2009-2010 Biomechanical Study and Treatment of the Intervertebral Disc
Sponsor: Medtronic
Role: Principal Investigator
Grant Budget: $102,000

2010-2012 Characterization of the Stabilimax Motion Preservation System (Phase I & II)
Sponsor: Applied Spine
Role: Principal Investigator
Grant Budget: $153,000

2010-2012 Biomechanical Characterization of Posterior Dynamic and Osteoporotic Fusion Systems
Sponsor: Alphatec Spine
Role: Principal Investigator
Grant Budget: $160,000

2010-2012 Biomechanical Characterization of Posterior Dynamic Systems

Sponsor: Medtronic
Role: Principal Investigator
Grant Budget: $80,000

2011-2013 Comparative Fatigue Analysis of Two Anterior Lumbar Interbody Fusion Devices
Sponsor: Alphatec Spine
Role: Principal Investigator
Grant Budget: $180,000

2011-2013 Fatigue Analysis of Two Anterior Lumbar Interbody Fusion Devices:
Anterior Only
Sponsor: imds
Role: Principal Investigator
Grant Budget: $90,000

2011-2013 Facet Fixation: Biomechanical Characterization Study
Sponsor: Olympus Biotech
Role: Principal Investigator
Grant Budget: $158,000

2011-2013 *In vivo* Measurement of Anterior Column Loading on
Multiple Axes During Flexibility
Sponsor: Globus
Role: Principal Investigator
Grant Budget: $48,000

2012-2014 Solus Bridgepoint Biomechanical Comparison Study
Sponsor: Alphatec
Role: Principal Investigator
Grant Budget: $75,000

2014-2015 Bone Implant Interface Comparing Different Endplate Designs for
Total Disc Replacements
Sponsor: Aesculap
Role: Principal Investigator
Grant Budget: $78,000

2014-2016 Cyclical Loading of an Anterior Lumbar Interbody Device w/ Integrated Supplemental Fixation Part I
Sponsor: IMDS
Role: Principal Investigator
Grant Budget: $50,000

2014-2016 Cyclical Loading of an Anterior Lumbar Interbody Device w/ Integrated Supplemental Fixation Part II
Sponsor: IMDS
Role: Principal Investigator
Grant Budget: $41,000

2014-2016 Cyclical Loading of a Lateral Lumbar Interbody Device w/ Integrated Supplemental Fixation
Sponsor: Stryker
Role: Principal Investigator
Grant Budget: $90,000

2015-2017 Factors in Screw Pull-out Comparisons between Cadaveric Tissue and Synthetic Bone Foams
Sponsor: K2M
Role: Principal Investigator
Grant Budget: $40,000

2015-2018 Minimally Invasive Approaches for Stabilizing the Sacroiliac Joint
Sponsor: SI-Bone
Role: Principal Investigator
Grant Budget: $53,000

2015-2017 Stability of Functional Spinal Units from Interbody Implants via Lateral and Anterior Approaches
Sponsor: Medtronic
Role: Principal Investigator
Grant Budget: $105,000

2015-2017 Cyclical Loading of an Anterior Cervical Interbody Device with Integrated Supplemental Fixation
Sponsor: Stryker
Role: Principal Investigator Grant
Budget: $85,000

2015-2019 Anti-Inflammatory Small Drug as Adjunctive Therapy to Improve Glucometabolic Variables in Obese, Insulin-Resistant Type 2 Diabetic Patients
Sponsor: National Institutes of Health
Role: Consultant
Grant Budget: $2.3 million

2016-2021 Improving Cerebral Aneurysm Risk Assessment Through Understanding Wall Vulnerability and Failure Modes
Sponsor: National Institutes of Health
Role: Co-Investigator
Grant Budget: $29,000

2017-2018 Functional Cervical Ovine Model Study Comparing Two Different Polymer Spinal Interbody Fusion Devices
Sponsor: Difusion Technologies
Role: Principal Investigator
Grant Budget: $360,000

2017-2019 In Vitro Implant Bone Fatigue Study
Sponsor: Institute for Musculoskeletal Science and Education Ltd.
Role: Principal Investigator
Grant Budget: $80,000

2018-2019 Biomechanics Study of Unilateral Pedicle Screw Fixation in Double-Level Lumbar
Sponsor: Jizhong Energy Xingtal Mine Group General Hospital
Role: Principal Investigator
Grant Budget: $20,000

2019-2019 Characterization of Rebossis Biosynthetic Bone Scaffold Performance with Respect to Competitive Materials
Sponsor: OrthoReBirth, USA
Role: Principal Investigator
Grant Budget: $38,000

2020-2022 Deep Brain Stimulation as a Treatment for Addiction
Sponsor: Abbott
Role: Co-Investigator
Grant Budget: $86,000

2020-2022 Deep Brain Stimulation as a Treatment for Obesity
Sponsor: Boston Scientific
Role: Co-Investigator
Grant Budget: $81,000

2020-2022 A Prospective, Randomized, Controlled Study Assessing Vagus Nerve Stimulation in CoViD-19 Respiratory Symptoms (SAVIOR II)
Sponsor: ElectroCore
Role: Co-Investigator
Grant Budget: $27,000

2020-2022 Enhancing Osseointegration of Peek with Straightforward Chemical Derivation Strategy
Sponsor: National Institutes of Health
Role: Co-Investigator
Grant Budget: $186,000

2020-2022 Potential for the Use of CTM Boost to Slow Degenerative Processes of the Intervertebral Disc
Sponsor: CTM Biomedical, LLC
Role: Principal Investigator
Grant Budget: $50,000

2020-2022 Potential for the Immunomodulation of Peek Constructs with P15 Putty
Sponsor: Cerapedics, Inc.
Role: Principal Investigator

Grant Budget: $72,000

2021-2023 Enza SI Fixation System Biomechanical Characterization
Sponsor: Camber Spine Technologies
Role: Principal Investigator
Grant Budget: $61,000

2021-2023 Non-Invasive Vagal Neurostimulation to Mitigate Traumatic Brain Injury- Induced Acute Respiratory Distress and Acute Lung Injury
Sponsor: Chuck Noll Foundation for Brain Injury Research
Role: Principal Investigator
Grant Budget: $150,000

2021-2023 Influence of Next Science Antibiofilm Products on Osteogenesis
Sponsor: Next Science Limited
Role: Principal Investigator
Grant Budget: $36,700

ISSUED PATENTS

1. Umesh H. Patel, Michael C. Hiles, Bryan Whitson, Boyle Cheng, Stephen F. Badylak, Klod Kokini. Large Area Submucosal Tissue Graft Constructs. U.S. Patent No. 5,711,969.

2. Bryan Whitson, Boyle Cheng, Stephen F Badylak. Perforated Submucosal Tissue Graft Constructs. U.S. Patent No. 5,755,791.

3. Umesh H. Patel, Michael C. Hiles, Bryan Whitson, Boyle Cheng, Stephen F. Badylak, Klod Kokini. Large Area Submucosal Tissue Graft Constructs and Method for Making the Same. U.S. Patent No. 5,885,619.

4. Bryan Whitson, Boyle Cheng, Stephen F. Badylak. Method of Repairing Perforated Submucosal Tissue Graft Constructs. U.S. Patent 5,968,096.

5. Bryan Whitson, Boyle Cheng, Stephen F. Badylak. Perforated Submucosal Tissue Graft Constructs. U.S. Patent 5,997,575.

6. Bryan Whitson, Boyle Cheng, Klod Kokini, Stephen F Badylak. Multilayered Submucosal Graft Constructs and Method for Making the Same. U.S. Patent No. 5,955

PRIOR TESTIMONY

1. Synthes, Inc. v. Spinal Kinetics, Inc.

United States District Court, Northern District of California
Case No. C-09-01201 RMW
Expertise Role: Consultant

2. Pittsburgh Standard Spine Co. v. Lanx, LLC
United States District Court, District of Colorado
Case No. 09-cv-01062-REB-MJW
Role: Plaintiff
Testimony: Deposition (non-expert witness)

3. William F. Shea, LLC v. Bonutti Research, Inc.
United States District Court, S.D. Ohio, Eastern Division
Case No. 2:10-cv-615
Expertise Role: Expert Opinion Testimony in Engineering
Testimony: Deposition

4. Lanx, Inc. v. Life Spine, Inc. and Donald B. Freeman
District Court, Broomfield County, Colorado
Case No. 2011CV45
Expertise Role: Expert Opinion Testimony in Engineering

5. Sabatino Bianco MD v. Globus Medical, Inc.
United States District Court, Eastern District of Texas
Civil Action No. 2:12-CV-146-JRG
Expertise Role: Expert Opinion Testimony in Engineering

6. St. Jude Medical, Inc. v. Peter Chen, ABC Company, XYZ Corporation, John Doe, Mary Roe
District Court Ramsey County, Minnesota
Case No. 62-CV-16-6223
Expertise Role: Expert Opinion Testimony in Engineering
Testimony: Deposition

7 Brandee Kozminski, as the parent and legal guardian of Brynlee Kozminski, a minor, vs. Alphatec Spine, Inc.; Alphatec Holdings, Inc.; Global Orthopedic LLC; Nuvasive, Inc.; Precision Spine, Inc.; MPA Consulting LLC; DOES I through X, inclusive; and ROE Corporations I through X, inclusive,
District Court Clark County, Nevada
CASE NO. A-20-813537-C
Expertise Role: Expert Opinion Testimony in Engineering
Testimony: Deposition