

CURRICULUM VITAE

ROBERT S. BISCUP, M.S., D.O., F.A.O.A.O.

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FORMAL EDUCATION

- | | |
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| 1970-1974 | Hiram College
Hiram, Ohio
Bachelor of Arts |
| 1974-1976 | Case Western Reserve University
Cleveland, Ohio
Master's of Science, Health Sciences Education |
| 1976-1980 | Ohio University College of Osteopathic Medicine
Athens, Ohio
Doctorate of Osteopathic Medicine |

HONORS

- | | |
|------|---|
| 1974 | <u>Cum Laude</u>
Hiram College
Hiram, Ohio |
| 1974 | <u>Departmental Honors</u> , Chemistry
Hiram College
Hiram, Ohio |
| 1975 | <u>Graduate Assistantship</u> , Medical Education
Case Western Reserve University
School of Medicine
Cleveland, Ohio |

LICENSURE, CREDENTIALS, AND CERTIFICATION

Medical Licensure: Doctor of Osteopathic Medicine, Florida, USA
 Active – Current, OS 8812
 October, 2002

 Doctor of Osteopathic Medicine, Ohio, USA
 Active - Current, # 34-00-3139
 July, 1981

 Practice of Medicine, Colorado, USA
 Inactive - Current, #35888
 March, 1997

Board Certification: American Osteopathic Board of Orthopedic Surgery
 Certificate #: 137
 March, 1989

Fellowship: Fellow, American Osteopathic Academy of Orthopedics (FAOAO)
 September, 1995

Awards: Patient Advocacy Award, American Academy of Pain Management
 March, 2002

 Outstanding Educator Award, Orthopaedic Residency Training Program,
 Cleveland Clinic Foundation, Cleveland, OH
 June, 2002

 Medal of Merit Award, Ohio University College of Osteopathic Medicine
 October, 2005

 Medal of Merit Award, Ohio University Alumni Association
 October, 2007

PROFESSIONAL EXPERIENCE

July, 1985 - June, 1987 Kolczun & Kolczun Orthopedic Associates
5800 Cooper Foster Park
Lorain, OH 44152

July, 1985 - June, 1991 Active staff
Orthopedic Surgery
Lorain Community Hospital
3700 Kolbe Rd
Lorain, Ohio 44152

July, 1991 - June, 1997 Courtesy Staff
Orthopedic Surgery
Lorain Community Hospital
3700 Kolbe Rd
Lorain, Ohio 44152

July, 1987 - May, 1990 Temporary Active Staff
St. Vincent Charity Hospital
2351 East 22nd Street
Cleveland, Ohio 44115

May, 1990 - June, 1997 Courtesy
Orthopedic Surgery
St. Vincent Charity Hospital
2351 East 22nd Street
Cleveland, Ohio 44115

July, 1987 - June, 1997 Horizon Orthopedic, Inc.
2709 Franklin Blvd
Cleveland, OH 44113

March, 1988 - June, 1997 Active Staff
Orthopedic Surgery
Lutheran Medical Center
2609 Franklin Blvd
Cleveland, Ohio 44113

July, 1996 - June, 1997 Active Staff
Department of Surgery
Southwest General Hospital
18697 Bagly Rd
Middleburg Hts, Ohio 44130

July, 1997 – August, 1997 Western Orthopedics & Sports Medicine
2020 North 12th Street

Grand Junction, CO 81501

July, 1997 – August, 1997	Active Staff (provisional) Community Hospital 2021 North 12th Street Grand Junction, CO 81501
September, 1997 – Present	Active Staff Cleveland Clinic Foundation Department of Orthopaedic Surgery, A-41 9500 Euclid Avenue Cleveland, OH 44195
January, 2003 – June, 2007	Active Staff Cleveland Clinic Florida Weston & Naples, FL 2950 Cleveland Clinic Blvd. Weston, Florida 33331
July, 2007 – Present	Active Staff Holy Cross Hospital & Medical Center Fort Lauderdale, FL 33301

ACADEMIC EXPERIENCE

1989 - June, 1997	Director, Medical Education Horizon Orthopedic 2709 Franklin Blvd. Cleveland, Ohio 44113
1989 - June, 1997	Director, Fellowship Training Program in Spinal Surgery Horizon Orthopedic / Lutheran Medical Center 2709 Franklin Blvd. Cleveland, Ohio 44113
1991 - 1995	President, American Osteopathic Academy of Orthopedics Section on Spinal Surgery
1993 - present	Senior Examiner, American Osteopathic Board of Orthopedic Surgery
1991 - June, 1997	Orthopedic Consultant Cleveland Indians Professional Baseball Club
1995 - 2002	Clinical Professor in Orthopedic Surgery Ohio University College of Osteopathic Medicine

1999 – 2002	Director, Regional Spine Care Program Cleveland Clinic Foundation
1999 – 2002	Director, National Center for Revision Spine Surgery Cleveland Clinic Foundation
2003 – June, 2007	Program Director, Spine Clinical Fellowship Program Cleveland Clinic Florida
2003 – June, 2007	Chairman, Cleveland Clinic Florida Spine Institute Cleveland Clinic Florida
July 1, 2007 – Present	President and Executive Director Biscup Spine Institute

INTERNSHIP, RESIDENCY, AND SPECIALTY TRAINING

7/1/80 - 6/30/81	<u>Internship - Rotating Service</u> 4110 Warrensville Center Road Meridia South Pointe Hospital (Formerly Brentwood Hospital) Warrensville Heights, Ohio 44122
7/1/81 - 6/30/85	<u>Orthopaedic Surgery Residency</u> Edward L. Andrews, D.O., Director 4110 Warrensville Center Road Meridia South Pointe Hospital (Formerly Brentwood Hospital) Cleveland, Ohio 44122
7/1/83 - 10/30/83	<u>Basic Science & Orthopaedic Oncology</u> John Makely, M.D. University Hospitals of Cleveland Cleveland, Ohio 44195
1/1/84 - 4/30/84	<u>Adult Reconstructive Spinal Surgery</u> Arthur D. Steffee, M.D. St. Vincent Charity Hospital Cleveland, Ohio 44115

7/1/85 - 12/31/87

Preceptorship Spinal Surgery

Arthur D. Steffee, M.D.
St. Vincent Charity Hospital
Cleveland, Ohio 44115

PUBLICATIONS

1. A.D. Steffee, M.D., R. S. Biscup, D.O., and D. J. Sitkowski, P.A.-C., "Segmental Spine Plates with Pedicle Screw Fixation." *Clinical Orthopaedics and Related Research* 203: 45, 1986.
2. N. Ani, M.D., L. Keppler, M.D., R.S. Biscup, D.O., and A.D. Steffee, M.D., "Reduction of High-Grade Slips (Grades III-V) with VSP Instrumentation. Report of a Series of 41 Cases." *Spine*:16 (6), S302, 1991.
3. J.W. Brantigan, M.D., A.D. Steffee, M.D., L. Keppler, M.D., R.S. Biscup, D.O., and P. Enker, M.D., "Posterior Lumbar Interbody Fusion Technique Using the Variable Screw Placement Spinal Fixation System." *Spine - State of the Art Reviews*: 6 (1), 175, 1992.
4. P. Enker, M.D., A.D. Steffee, M.D., C. McMillin, Ph.D., L. Keppler, M.D., R. Biscup, D.O., S. Miller, D.O. "Artificial Disc Replacement: Preliminary Report with a 3 year minimum follow-up" *Spine*: 18 (8), 1061, 1993.
5. S.M. Lehmer, M.D., A.D. Steffee, M.D., L. Keppler, M.D., R.S. Biscup, D.O., P. Enker, M.D., S.D. Miller, D.O., R.W. Gaines, Jr., M.D., "Treatment of L5-S1 Spondyloptosis by Staged L5 Resection with Reduction and Fusion of L4 onto S1 (Gaines Procedure)." *Spine*: 19 (17), 1916, 1994.
7. S.M. Lehmer, M.D., L. Keppler, M.D., R.S. Biscup, D.O., P. Enker, M.D., S.D. Miller, D.O., A.D. Steffee, M.D., "Posterior Transvertebral Osteotomy for Adult Thoracolumbar Kyphosis." *Spine*:19 (18), 2060, 1994.
8. D.R. Sybert, D.O., A.D. Steffee, M.D., L. Keppler, M.D., R.S. Biscup, D.O., P. Enker, M.D., "Seven-Year Follow-up of Vertebral Excision and Reconstruction for Malignant Hemangioendothelioma of Bone: *Spine*: 20 (7), 841, 1995.
9. A.D. Steffee, M.D. & R.S. Biscup, D.O., "Metastatic Tumor Resection and Vertebrectomy: A Posterior Lateral Approach in the Thoracic and Lumbar Spine" *Spine-State of the Art Review*: 10 (1), 113, 1996.
10. L. Keppler, M.D., A.D. Steffee, M.D., & R.S. Biscup, D.O., "Posterior Lumbar Interbody Fusion with Variable Screw Placement and Isola Instrumentation". In Bridwell K, DeWald R (eds). The Textbook of Spinal Surgery, Philadelphia, Lippincott-Raven, 1997.
11. Podichetty V, Biscup RS. e-health: A New Approach in Healthcare practices. *The Internet Journal of Allied Health Sciences and Practice*. July 2003; Vol 1. (2)

12. Issacs RE, Podichetty V, Biscup RS. Microendoscopic discectomy for recurrent disc herniations. Neurosurgery Focus. Sept 2003;15 (3):11
13. Podichetty V, Mazanec DJ, Biscup RS. Chronic Non-Malignant Musculoskeletal Pain in Older Adult: Clinical Issues and Opioid Intervention. Postgrad Med J. Nov' 2003; 79: 627-633
14. Isaacs R, Podichetty VK, Santiago P, Sandhu FA, Spears J, Biscup RS. Minimally Invasive microendoscopy-assisted transforaminal lumbar Interbody fusion with instrumentation. J Neurosurgery: Spine. August 2005;3:98-105
15. Podichetty VK, Booher J, Whitfield M, Biscup RS. Assessment of Internet use and effects among healthcare professionals: a cross sectional survey. Postgrad Med J. April 2006;82:274-279
16. Podichetty VK, Spears J, Isaacs R , Booher J, Biscup RS. Complications Associated with Minimally Invasive Decompression for Lumbar Spinal Stenosis. Jour of Spinal Disor & Tech. May 2006;19(3):161-166
17. Spears J, Podichetty V, Isaacs RE, Biscup RS. Pedicle subtraction osteotomy with the use of an interbody device for the correction of sagittal imbalance. The Spine Journal, Vol 4, Issue 5, Suppl 10 Sep' 2004, pp S79
18. Podichetty VK, Secic M, Whitfield M, Booher J, Biscup RS. Prescription Medication Use and Health Outcomes in Patients with Back Pain. Journal of Healthcare Quality. 2007 (In press)

ABSTRACTS

1. Spears J, Podichetty V, Isaacs RE, Biscup RS. Complications Associated with Open Versus Minimally Invasive Spinal Decompression. 2004 AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting. San Diego, March 17-20, 2004
2. Podichetty V, Spears J, Isaacs RE, Biscup RS. Age-Based Comparative Outcomes of Elderly Patients Receiving Lumbar Decompression Surgery. 2004 AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting in San Diego, March 17-20, 2004
3. Isaacs RE, Podichetty V, Spears J, Nair S, Biscup RS. Complications Associated with Open Versus Minimally Invasive Spinal Decompression. 2004 AANS Annual Meeting Orlando, Florida. May 1- 6, 2004
4. Spears J, Podichetty V, Isaacs RE, Biscup RS. Pedicle subtraction osteotomy with the use of an Interbody device for the correction of sagittal imbalance. 2004 NASS 19th Annual Meeting. Chicago, IL. Oct' 26 - 30, 2004
5. Podichetty V, Nematbakhsh A, Toumbis C, Isaacs RE, Biscup RS. A Novel Technique for Pedicle Subtraction Osteotomy using an Interbody Device. 2005 AANS/CNS Section on Disorders of the Spine and Peripheral Nerves Annual Meeting. Phoenix, Arizona. March 9-12, 2005

6. Podichetty V, Nematbakhsh A, Toumbis C, Biscup RS, Isaacs RE. ASA Class, Not Age, Predicts Complications after Minimally Invasive Spine Surgery. 2005 AANS Annual Meeting. New Orleans, Louisiana, April 16 - 21, 2005
7. Podichetty VK, Booher J, Whitfield M, Biscup RS. Assessment of Internet use and effects among healthcare professionals. 2006 11th World Congress on Internet in Medicine (MEDNET' 06). Toronto, Canada, Oct 16-18,2006
8. Biscup RS, Isaza J, Anagnost S, Podichetty VK. Disc Stabilization Arthroplasty with a Spherical Metal Implant: Indications, Technique, and Analysis of 100 patients. 2007 Global Symposium on Motion Preservation Technology. Spine Arthroplasty Society, (SAS) 7th Annual Meeting. Berlin, Germany, May 1-4, 2007
9. Isaza J, Biscup RS, Anagnost S, Podichetty VK. Intradiscal Spherical Stabilization Device to Restore Normal Spinal Kinematics: Indications, Technique, and Early Results. 14th International Meeting on Advanced Spine Techniques (IMAST), Paradise Island, Bahamas, July 11-14, 2007.

BOOK CHAPTERS

1. Biscup R, Podichetty V. Satellite:Spherical Disc Replacement. In Yue J, Bertagnoli R, McAfee P, & An H, ed. Motion Preservation Surgery of the Spine. Saunders, Philadelphia, 2008. pp 445-461
2. Podichetty V, Biscup RS. History of Spinal Fusion Surgery. Chapter 3. In (eds). Vaccaro AR, Papadopoulos S, Traynelis VC, Haid RW, Sasso RC: Spinal Arthroplasty: The Preservation of Motion. Philadelphia, Saunders Elsevier. 2007;21-35
3. Biscup RS, Podichetty V. Outpatient Microsurgical Lumbar discectomy and Microdecompression Laminoplasty. Chapter 39 H.M Mayer: Minimally Invasive Spine Surgery. 2nd edition New York: Springer-Verlag. 2006;356-363
4. R.S. Biscup, D.O., "Etiology, Evaluation, and Treatment of Patients Who Underwent Failed Lumbar Spine Surgery". In Gunzburg, R., Szpalski, M. (eds). Lumbar Spinal Stenosis, Philadelphia, Lippincott-Williams & Wilkins, 2000
5. I.P. Enker, M.D., A.D. Steffee, M.D., L. Keppler, M.D., R.S. Biscup, D.O., "Treatment of Multilevel Anterior and Retrolisthesis of the Lumbosacral Spine (Cascading Spine)." Lumbar Fusion and Stabilization, Tokyo, Springer Verlag, 1993.

PROFESSIONAL PRESENTATIONS

1. October, 1985, Honolulu, Hawaii. Annual Clinical Assembly of Osteopathic Specialists,: "Segmental Spine Plate & Pedicle Screw Fixation for Spinal Disorders - A New Approach to Spinal Stabilization"
2. November, 1986, St. Louis, MO. Annual Clinical Assembly of Osteopathic Specialists: "Interbody Fusion with Internal Fixation for Disorders of the Lumbosacral Spine"
3. November, 1988, San Antonio, Texas. Challenge of the Lumbar Spine: "Posterior Lumbar Interbody Fusion & Internal Stabilization"
4. February, 1989, . Lutheran Medical Center, Cleveland, Ohio. First Annual International Spine Seminar and Workshop: "Basic Pedicle Screw Technique"; "Interbody Fusion & Internal Stabilization"
5. August, 1989, Lutheran Medical Center, Cleveland, Ohio. Automated Percutaneous Discectomy: Program Chairman & Presenter
6. February, 1990, Lutheran Medical Center, Cleveland, Ohio. Second Annual International Spine Seminar and Workshop: "Basic Pedicle Screw Technique"; "Interbody Fusion & Internal Stabilization."; Program Director
7. October, 1990, Los Angeles, California. Annual Clinical Assembly of Osteopathic Specialists: Program and Workshop Chairman; "Basic Pedicle Screw Technique and Interbody Fusion and Internal Stabilization"
8. August, 1990, Fifth Annual Meeting of the North American Spine Society: Scientific Exhibit: "An Artificial Disc" A.D. Steffee, L. Keppler, M.D., R.S. Biscup, D.O.
9. August, 1990, Fifth Annual Meeting of the North American Spine Society: Scientific Exhibit: "Vertebral Body Replacement for Tumor Resection" A.D. Steffee, M.D., L. Keppler, M.D., R.S. Biscup, D.O.
10. August, 1990, Fifth Annual Meeting of the North American Spine Society: Scientific Exhibit: "Closing Wedge Osteotomy for the Reduction of Thoracolumbar Kyphosis" A.D. Steffee, M.D., L. Keppler, M.D., R.S. Biscup, D.O.
11. February, 1991, Lutheran Medical Center, Cleveland, Ohio. Third Annual International Spine Seminar and Workshop: Program Director; "Basic Pedicle Screw Technique and Interbody Fusion and Internal Stabilization"
12. April, 1991, Vienna, Austria. Annual Austrian Orthopedic Society Meeting: "Reconstructive Spinal Surgery of the Lumbar Spine using VSP and ISOLA Instrumentation"; Workshop Director, Lumbar Reconstructive Spinal Surgery

13. May, 1991, SRS/NASS Pedicle Fixation Course: Scientific Exhibit: "Treatment of Multilevel Anterior and Retrolisthesis of the Lumbosacral Spine (Cascading Spine)" I.P. Enker, M.D., A.D. Steffee, M.D., L. Keppler, M.D., R.S. Biscup, D.O., J.W. Brantigan, M.D.
14. August, 1991, Keystone, Colorado. Sixth Annual Meeting of the North American Spine Society: "Treatment of Multilevel Anterior and Retrolisthesis of the Lumbosacral Spine (Cascading Spine)" I.P. Enker, M.D., A.D. Steffee, M.D., L. Keppler, M.D., R.S. Biscup, D.O., J.W. Brantigan, M.D.
15. August, 1991, Keystone, Colorado. Sixth Annual Meeting of the North American Spine Society: "Total Posterior Vertebrectomy and Vertebral Body Replacement" J.M. Cochran, D.O., L. Keppler, M.D., R.S. Biscup, D.O., J.W. Brantigan, M.D., I.P. Enker, M.D.
16. August, 1991, Keystone, Colorado. Sixth Annual Meeting of the North American Spine Society: "Hypersensitivity Reactions to Stainless Steel Spinal Implants" B.T. Vest, M.D., L. Keppler, M.D., R.S. Biscup, D.O., J.W. Brantigan, M.D., I.P. Enker, M.D.
17. September, 1991, Montreal, Canada. Sixth International Symposium on Limb Salvage: Scientific Exhibit, "Reconstruction of Post-Traumatic Bone Defects of the Upper and Lower Extremities" I.P. Enker, M.D., A.D. Steffee, M.D., L. Keppler, M.D., R.S. Biscup, D.O., J.W. Brantigan, M.D.
18. November, 1991, Paris, France. Annual Nexus Spine Symposium: Workshop Director on Lumbar Spinal Reconstructive Surgery
19. February, 1992, Lutheran Medical Center, Cleveland, Ohio. Fourth Annual International Spine Seminar and Workshop: Program Director & Presenter
20. April, 1992, Athens, Ohio. Annual Continuing Medical Education Conference, Ohio University College of Osteopathic Medicine: "Current Concepts Review - Biomechanical and Biochemical Aspects of Lumbar Spine Disorders"
21. April, 1992, Saalfelden, Austria. Annual Austrian Comesa Orthopedic Meeting: "Reconstructive Spinal Surgery using Carbon Cage Prosthesis"; Workshop Director, Reconstructive Spinal Surgery with Carbon Cage Prosthesis
22. April, 1992, Bern, Switzerland. Department of Orthopedic Surgery, Inselspital Hospital, University of Bern: "Treatment of Lumbar Spinal Disorders with VSP Spinal Instrumentation and Carbon Implants"
23. April, 1992, Marseille, France: "Indications, Technique, and Complications Associated with Lumbar Spinal Reconstructive Surgery"
24. June, 1992, Cincinnati, Ohio. Ohio Osteopathic Association Annual Meeting: "Current Approaches to Lumbar Spine Disorders - Diagnostic Imaging, and Surgical Treatment"
25. June, 1992, Lutheran Medical Center, Cleveland, Ohio. The Sports and Industrial Athlete, Part I. Upper Extremities: Program Director; "Cervical and Thoracic Spine Injuries"

26. July, 1992, , Boston, Massachusetts. Seventh Annual Meeting of the North American Spine Society: "Posterior Transvertebral Osteotomy for Adult Thoracolumbar Kyphosis" S.M. Lehmer, M.D., L. Keppler, M.D., R.S. Biscup, D.O., P. Enker, M.D., S.D. Miller, D.O., A.D. Steffee, M.D.
27. July, 1992, Boston, Massachusetts. Seventh Annual Meeting of the North American Spine Society: "Artificial Disc Replacement: Preliminary Report with a Two-Year Minimum Follow-up. P. Enker, M.D., L. Keppler, M.D., R.S. Biscup, D.O., S.D. Miller, D.O., A.D. Steffee, M.D., C. McMillin, Ph.D.
28. July, 1992, Boston, Massachusetts. Seventh Annual Meeting of the North American Spine Society: "Fibrin Adhesive as an Adjunct to Dural Repair" J. Cochran, D.O., D. Sitkowski, PA-C, L. Keppler, M.D., R.S. Biscup, D.O., P. Enker, M.D., S.D. Miller, D.O., A.D. Steffee, M.D.
29. July, 1992, Boston, Massachusetts. Seventh Annual Meeting of the North American Spine Society: "Treatment of Spondyloptosis by Staged Resection and Fusion (Gaines Procedure)" S. Lehmer, M.D., L. Keppler, M.D., R.S. Biscup, D.O., P. Enker, M.D., S.D. Miller, D.O., A.D. Steffee, M.D., R.W. Gaines, Jr., M.D.
30. August, 1992, Lutheran Medical Center, Cleveland, Ohio. , Sports and Industrial Injuries, Part II: "Advances in Operative Treatment of Lumbar Spine Injuries - The Uses and Abuses of Technology"
31. February, 1993, Annual Meeting of the American Academy of Orthopaedic Surgeons. Paper presentation: "Vertebral Body Replacement", P. Enker, M.D., L. Keppler, M.D., R.S. Biscup, D.O., J. Cochran, D.O., S.D. Miller, D.O., A.D. Steffee, M.D.
32. February, 1993, Annual Meeting of the American Academy of Orthopaedic Surgeons. Paper presentation: "Artificial Disc Replacement: Preliminary Report with a Minimum Two-Year Follow-up", P. Enker, M.D., L. Keppler, M.D., R.S. Biscup, D.O., S.D. Miller, D.O., A.D. Steffee, M.D.
33. February, 1993, Lutheran Medical Center, Cleveland, Ohio. Fifth Annual International Advanced Spine Seminar and Workshop: Program Director & Presenter
34. April, 1993, Saalfelden, Austria. Annual Austrian Comesa Orthopedic Meeting: "Preoperative Assessment and Planning, Techniques, and Complications of Lumbar Spinal Reconstructive Surgery: Update with Clinical Case Presentations"
35. May, 1993, Kansas City, Missouri. Surgical Management of Spinal Deformity and Mechanical Insufficiency: "Surgical Management of Degenerative Spinal Disorders"
36. May, 1993, Kansas City, Missouri. Surgical Management of Spinal Deformity and Mechanical Insufficiency: "Spondylolisthesis: Preoperative planning, surgical techniques, and postoperative management"
37. May, 1993, Kansas City, Missouri. Surgical Management of Spinal Deformity and Mechanical Insufficiency: "Surgical Management of Fractures, Tumors, and Infections of the Thoracolumbar Spine."

38. October, 1993, Chicago, Il. Annual Clinical Assembly of Osteopathic Specialists: "Spinal Fractures: Classification, Surgical Treatment, and Outcome"
39. February, 1994, Vienna, Austria. International SICOT Trainees Meeting: "Segmental Spine Reconstruction of the Lumbar Spine The Importance of Segmenatl Spinal Balance"
40. February, 1994, Lutheran Medical Center, Cleveland, Ohio. Sixth Annual International Advanced Spine Seminar and Workshop: Program Director & Presenter
41. May, 1994, Cleveland, Ohio. 13th District Osteopathic Academy of Medicine Seminar: "New Developments in the Surgical Management of Spinal Disorders."

September, 1994, San Francisco, California. Third Annual Current Issues of Magnetic Resonance Imaging in Orthopedics and Sports Medicine: "Surgical Treatment of Lumbar and Cervical Spine Injuries"
42. September, 1994, Washington, D.C. Annual Clinical Assembly of Osteopathic Specialists: "Application and Use of Carbon Fiber Implants in Orthopedic Surgery."
43. October, 1994, Athens, Greece. 20th Annual Symposium on Spinal Surgery of the Greek Orthopedic Society: "Spinal Reconstructive Surgery of the Anterior Column Posterior and Anterior Approaches and Applications."
44. February, 1995, Lutheran Medical Center, Cleveland, Ohio. Seventh Annual Advanced International Spine Seminar and Workshop: Program Director & Presenter
45. April, 1995, Saalfelden, Austria - "Carbon Ramp Fixation in Lumbar Spinal Deformities - A new Implant for use in Anterior Column Reconstruction"
46. October, 1995, Lutheran Medical Center, Cleveland, Ohio. Eight International Advanced Spine Seminar and Workshop: Program Director & Presenter .
47. November, 1995, Lutheran Medical Center, Cleveland, Ohio. The Nurse in Spinal Surgery: "Diagnostic Imaging for Spinal Disorders"
48. February, 1996, Lutheran Medical Center, Cleveland, Ohio. Ninth International Advanced Spine Seminar and Workshop: Program Director & Presentor
49. May, 1996, La Jolla, California. The Nurse & Spinal Surgery: "Imaging for Lumbar Spinal Disorders"
50. June, 1996, Galveston, Texas. 2nd Annual Current Concepts on Surgery of the Spine: "Experience with Brantigan Carbon Cages for Interbody Fusion"
51. June, 1996, Galveston, Texas. 2nd Annual Current Concepts on Surgery of the Spine: "Experience with VSP Spinal Instrumentation - Current Techniques & Pitfalls"
52. June, 1996, Galveston, Texas. 2nd Annual Current Concepts on Surgery of the Spine: "Experience with ISOLA Spinal Instrumentation - Current Techniques & Pitfalls"

53. June, 1996, Galveston, Texas. 2nd Annual Current Concepts on Surgery of the Spine: "Degenerative Spondylolisthesis & Cascading Spine: Etiology and Surgical Treatment"
54. October 1996, Vancouver, British Columbia, Canada. Annual Meeting of the North American Spine Society: Scientific Exhibit: "Problems with the the Topping-Off Spinal Stabilization Procedure for Transition Zone Surgery"
55. October 1996, Vancouver, British Columbia, Canada. Annual Meeting of the North American Spine Society: Scientific Exhibit: "Deep Spinal Wound Infections Treated with Sugar Packing"
56. February 1997, Lutheran Medical Center, Cleveland, Ohio. Tenth International Advanced Spine Seminar and Workshop: Program Director & Presentor
57. April 1997, Saalfelden, Austria. 10th COMESA Orthopedic Seminar and Workshop: "Spinal Surgery in the Future"
58. May 1997, Baltimore, MD. 37th Annual Scientific Seminar, American Osteopathic Academy of Orthopedics: "Minimally Invasive Spinal Surgery-Microscopic Approaches Using the Holmium Laser".
59. May 1997, Baltimore, MD. 37th Annual Scientific Seminar, American Osteopathic Academy of Orthopedics: "Laparoscopic Anterior Spinal Surgery and Fusion Techniques"
60. February 1998, Cleveland, OH. Eleventh International Advanced Spine Seminar and Workshop: "Surgical Management of Low Grade Spondylolisthesis", "Spinal Instrumentation in Osteoporosis Patients".
61. May 1998, Cleveland Clinic, Cleveland, OH. First Endoscopic Spine Symposium and Workshop: "Anterior Endoscopic Discectomy and Interbody Fusion with Manual Instruments and Square Cages/Bone Graft", Workshop Faculty Member.
62. September 1998, Chicago, IL. Annual Clinical Assembly of Osteopathic Specialists: "Evaluation and Management of Recurrent Disc Herniations in the Lumbar Spine."
63. November 1998, Barcelona, Spain. 2nd International Meeting on Carbon Composite Spine Implants: "Carbon Composite Spine Implants used in Posterior Interbody Fusion Surgery: Technique, Complications and their Management."
64. November 1998, Brussels, Belgium. Symposium on Spinal Stenosis: "Evaluation and Treatment of Patients with Spine Surgery that has Failed – a New Multidisciplinary Approach."
65. January 1999, Whistler, BC. Annual Meeting, Ski With the Spine Center: "Case For - Spine Fusion Cages.", Workshop coordinator – PLIF Technique with Carbon Fiber I/F Cage Implants."
66. February 1999, Cleveland, OH. 12th International Advanced Symposium on Spine Surgery and Workshop: Program Co-Chairman, "Surgical Treatment of Spondylolisthesis using PLIF Techniques and Fusion Cage Implants."

67. April 1999, Vienna, Austria. Symposium on Spine Surgery in the Elderly Patient: "Minimally Invasive Spine Surgery in the Elderly Patient."
68. April 1999, Groningen, Netherlands. Symposium – The Lumbar Spine in the Next Millenium: "Evaluation and Treatment of Patients who have Failed Spine Surgery – A New Multidisciplinary Program at the Cleveland Clinic."
69. May 1999, San Antonio, TX. Spine Workshop for Carbon Composite Interbody Fusion Cages: "Indications, Complications and their Management in PLIF Surgery."
70. June 1999, White Sulfer Springs, WV. 2nd Cleveland Clinic Orthopaedic Symposium: "Rehabilitation for Spine Surgery Patients"
71. June 1999, White Sulfer Springs, WV. 2nd Cleveland Clinic Orthopaedic Symposium: "Degenerative Spondylolisthesis and Minimally Invasive Spine Surgery"
72. November, 1999, Cleveland, OH. Workshop on Posterior Lumbar Interbody Fusion Surgery: Program Chairman, "Indications and Complications for PLIF Surgery with Cage Implants and Posterior Instrumentation"
73. May, 2000, Cleveland, OH. Cleveland Clinic 1st International Symposium on Spine Surgery that has Failed: Program Chairman
74. August, 2000, Cleveland, OH. Spine Review 2000: "PLIF sugery: Techniques & Complications", "Lumbosacral fixation techniques"
75. Oct, 2000, Columbus, OH. Visiting Professor, OSU: "Spine Surgery that has Failed: Evaluation and Treatment Options", Director, PLIF cadaver workshop
76. March, 2001, Hong Kong, PRC. 7th International Conference on Intradiscal Surgery: "Revision strategies for failed PLIF cages", Director workshop, Panel member artificial disc strategies
77. March, 2001, Seoul, South Korea. Visiting Professor, University Severance Hospital, Wooridul Spine Hospital
78. May, 2001, Key Largo, FL. Management of Spinal Pathologies: "Interbody fusion techniques with pitfalls, complications, and their management", "Spine surgery that has failed: evaluation and treatment options"
79. May, 2001, Cleveland, OH. Spine Review 2001: "Lumbar Spondylosis", "PLIF surgery: approaches & techniques", workshop instructor, leader case presentations
80. August, 2001, Cleveland, OH. Spine Review 2001: "Lumbar Spondylosis"
81. August, 2001, Cleveland, OH. Spine Review 2001: "PLIF surgery with pedicle anatomy and sacral fixation"
82. October, 2001, Sioux Falls, SD. Challenges in Spinal Surgery: "Revision of Interbody Fusion Cages", "Spine Surgery that has Failed: a Multidisciplinary Approach"

83. January, 2002, Vienna, Austria. Annual Austrian Spine Society: "Microdiscectomy and Microdecompression Surgery"
84. January, 2002, Brussels, Belgium: University of Ghent Visiting Professor, surgery demonstration and workshop, "PLIF and Posterior Instrumentation", "Spine Surgery that has Failed-Evaluation and Treatment"
85. February, 2002, Key West, FL. CCF Pain Management Symposium: "Surgical options for chronic back pain", "Failed Spine Surgery: Evaluation and Treatment"
86. October, 2003, Weston, FL. Program Chairman, 1st Cleveland Clinic Florida Spine Review for Primary Care Physicians: "Minimally Invasive Spine Surgery for Lumbar Spinal Stenosis"; "Surgical Treatment of Spondylolisthesis"; "Revision Spine Surgery – A Team Approach"
87. March, 2004, Naples, FL. CCF Current Climates in Medicine: "Innovations in Spinal Medicine and Surgery."
88. April, 2004, Cleveland, OH. AOA Annual Postgraduate Seminar: "Disc Stabilization Arthroplasty – Early Experience with a New Partial Disc Replacement Implant."
89. May, 2004, Washington, DC. AOA Annual Postgraduate Seminar: "A New Classification of Degenerative Spondylolisthesis."
90. February, 2005. Vienna, Austria. Annual Austrian Spine Society: "Disc Stabilization Arthroplasty with Carbon Fiber Implants – Technique and Clinical Results".
91. October, 2005, Weston, FL. Program Chairman, 2nd Cleveland Clinic Florida Spine Review or Primary Care Physicians: "The Degenerative Spine Cascade"; "Minimally Invasive Surgery Options in Spinal Surgery"; Failed Spine Surgery – A Team Approach".
92. May, 2006, Montreal, Canada. Spine Arthroplasty Society: "Disc Stabilization Arthroplasty using Metal Sphere Implant – Historical Review, Technique, and Early Results".
93. May, 2008, Boca Raton, FL. AOA Annual Postgraduate Seminar: "Minimally Invasive Surgery Options in the Aging Spine".

MEMBERSHIP IN GOOD STANDING IN PROFESSIONAL ORGANIZATIONS (Past & Present)

Member, American Osteopathic Association

Member, American Medical Association

Member, Ohio Osteopathic Association

Member, Ohio State Medical Association

Member, Cleveland Academy of Osteopathic Medicine

Member, Cleveland Academy of Medicine

Member & Past President, Lorain Academy Osteopathic Medicine

Member, American Osteopathic Academy of Orthopaedic Surgeons

Member & Past-President, Section on Spinal Surgery,

American Osteopathic Academy of Orthopedic Surgeons

Member and Fellow, North American Spine Society

Broward County Medical Association

PROFESSIONAL/RESEARCH INTERESTS

Minimally Invasive and Microscopic Spine Surgery

Minimally Invasive Spine Surgery for Spinal Stenosis

Microdiscectomy & Outpatient Spine Surgery

Laser Spine Surgery (Open & Percutaneous)

Motion Preservation Surgery of the Spine

"Transition Zone" Surgery

Functional Reconstruction of the Spinal Motion Segment

Partial Disc Replacement

Major Reconstructive & Deformity Spine Surgery

Spinal Instrumentation (Posterior & Anterior)

Anterior Column Reconstruction (PLIF & ALIF)

Spinal Osteotomy

Spinal Trauma and Tumor Surgery

Carbon, Titanium, and Composite Spinal Implants

Adult & Adolescent Scoliosis Surgery
Cervical Spine
Revision Spine Surgery

INDUSTRY CONSULTING & INTELLECTUAL PROPERTY RELATIONSHIPS

June 1987 - 1997 AcroMed Corporation
Cleveland, OH 44124
Consulting, Member of the Medical Advisory Panel
Stock Options - Exercised

Oct 1998 - Present DePuy Spine, a Subsidiary of Johnson & Johnson
Rahynam, MA
Consulting, Licensing of IP
Royalties

Sept 2002 - Present Medtronic Sofomor Danek
1800 Pyramid Place
Memphis, TN 38132
800-876-3133
Consulting, Advisory Panel, Licensing of IP
Royalties

REFERENCES

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