

CURRICULUM VITAE

Stephen H. Hochschuler, M.D.

EDUCATION AND TRAINING

MD	Harvard Medical School Boston, Massachusetts	1968
BA	Columbia College New York, New York	1964
Internship, Boston City Hospital	Harvard Surgical Service Boston, Massachusetts	1968-69
Resident, Surgery, Boston City Hospital	Harvard Surgical Service Boston, Massachusetts	1969-71
Resident, Orthopedic Surgery, University of Texas	Southwestern Medical School Dallas, Texas	1973-77
Orthopedic Surgeon in Private Practice	Texas Back Institute Plano, Texas	1977
	TBI - Phoenix, Arizona	2001

CERTIFICATION

American Board of Orthopedic Surgery 1978

LICENSURE/BOARDS

State of Arizona (Inactive) State of Texas
State of Colorado (Inactive) State of Florida (Retired)
State of Georgia (Inactive)

EXPERIENCE

Clinical Instructor - University of Texas 1977
Health and Science Center
Southwestern Medical School
Department of Orthopedics
Dallas, Texas

Co-Founder of Texas Back Institute 1978
Plano, Texas

Founder, Back Systems, Inc. (a risk management company) 1983
Dallas, Texas

Chairman of the Board, Texas Back Institute 1986
Plano, Texas

Clinical Researcher/Course Dir. on Percutaneous Discectomy 1986

Founding Member of CompTain, Inc. (a Work Comp PPO) 1987

Fellowship Co-Director, Four Fellows per year 1987
at Texas Back Institute; Plano, Texas

Co-Founder, Texas Back Institute Research Foundation 1985
Plano, Texas

Member, Advisory Board - CeDaR Surgical, Inc. 1988

Scientific Advisory Board, Advanced Medical 1989
Technologies, Inc.

Trustee, Picower Institute for Medical Research 1992

Founding Chairman, Innovative Spinal Technologies 2002
Mansfield, Massachusetts

Chairman of the Board, SpineMark Corporation 2004

Chairman, Scientific Advisory Board of Physicians
Alphatec Spine, Carlsbad, California 2005

Board of Directors, BioTech Transfer, Arizona State University 2005
Tempe, Arizona

Advisory Council, Picower Center for Learning and Memory, 2005
Massachusetts Institute of Technology,
Cambridge, Massachusetts

Business Advisory Board, DePuy Spine	2005
Advisory Board, The Biodesign Institute at Arizona State University, Tempe, Arizona	2006
Board of Directors, Alphatec Spine, Inc.	2007
Commercial Advisory Board, BioAssets Development Corporation	2007
Scientific Advisory Board, Relievent MedSystems, Inc.	2007
Board of Directors, Arizona Technology Enterprises (AzTE)	2007
Clinical Advisor, HealthpointCapital, LLC	2008
Clinical Advisory Board, SpineWelding AG	2009

HOSPITAL APPOINTMENTS

Active Staff, HCA Medical Center of Plano Orthopedic Surgery Service, Plano, Texas	1977
Courtesy Staff, Presbyterian Hospital Dallas, Texas	1977
Courtesy Staff, Medical City Dallas Hospital Dallas, Texas	1977
Courtesy Staff, Dedman Medical Center Dallas, Texas	1984
Courtesy Staff, St. Joseph Hospital Houston, Texas	1990
Courtesy Staff, Presbyterian Hospital of Plano Plano, Texas	1992
Courtesy Staff, John C. Lincoln – North Mountain Phoenix, Arizona	2002
Courtesy Staff, Surgical Specialty Hospital (previously Arizona Surgical Hospital), Phoenix, Arizona	2002
Courtesy Staff, Scottsdale Healthcare – Osborn Phoenix, Arizona	2003
Courtesy Staff, John C. Lincoln – Deer Valley Phoenix, Arizona	2003
Courtesy Staff, Banner Desert Medical Center Mesa, Arizona	2005
Presbyterian Plano Center for Diagnostics and Surgery Plano, Texas	2005

PROFESSIONAL ACTIVITIES

Member, American Academy of Orthopedic Surgeons	
Member, Texas Medical Association	
Member, International Intradiscal Therapy Society	
Member, North American Spine Society	
Committee Member, North American Spine Society Spinal Implant Task Force	1987

Committee Member, North American Spine Society Diagnostic and Therapeutics Ad Hoc	1987
Committee Member, Harvard for the Third Century	1988
Member, Southwest Chapter - Society of International Business Fellows	1988
Committee Member, American Academy of Orthopaedic Surgeons, Global Fee Project	1989
Co-Chairman, Keystone Spine Meeting Keystone, Colorado	1990
Member, International Society for Minimal Intervention in Spinal Surgery	1992
Member, International Society for the Study of the Lumbar Spine	1992
Chairman, North American Spine Society Public Relations Committee	1992-93
Chairman, North American Spine Society Electronic Media Committee	
Founding Board Member, Spine Arthroplasty Society	2001
Course Chairman, Spinal Practice Management Forum	2003
President, Spine Arthroplasty Society	2006-07
Member, AOSpine	2006
Chairman, Spine Arthroplasty Society Public Policy Review Committee	2007-08
Past Presidents' Long Range Planning Committee Spine Arthroplasty Society	2008-09

PUBLICATIONS

1. Hochschuler SH: Diagnostic Studies in Clinical Practice. *Orthop Clin N Amer* 14(3):517-526, 1983.
2. Sachs BL, Vanharanta H, Spivey MA, Guyer RD, Videman T, Rashbaum RF, Johnson RG, Hochschuler SH, Mooney V: Dallas Discogram Description: A New Classification of CT/Discography in Low-Back Disorders. *Spine* 12(3):287-294, 1987.
3. Vanharanta H, Sachs BL, Spivey MA, Guyer RD, Hochschuler SH, Rashbaum RF, Johnson RG, Ohnmeiss DD, Mooney V: The Relationship of Pain Provocation to Lumbar Disc Deterioration as Seen by CT/Discography. *Spine* 12(3):295-298, 1987.
4. Vanharanta H, Sachs BL, Spivey MA, Hochschuler SH, Guyer RD, Rashbaum RF, Ohnmeiss DD, Mooney V: A Comparison of CT/Discography, Pain Provocation and Radiographic Disc Height. *Spine* 13(3):321-324, 1988.
5. Loguidice VA, Guyer RD, Stith WJ, Ohnmeiss DD, Hochschuler SH, Rashbaum RF: Anterior Lumbar Interbody Fusion. *Spine* 13:366-369, 1988.
6. Hochschuler SH, Guyer RD, Stith WJ, Ohnmeiss DD, Rashbaum RF, Johnson RG: Proplast Reconstruction of Iliac Crest Defects. *Spine* 13:379-379, 1988.
7. Guyer RD, Collier RR, Ohnmeiss DD, Stith WJ, Hochschuler SH, Rashbaum RF, Vanharanta H, Loguidice VA: Extraosseous Spinal Lesions Mimicking Disc Disease. *Spine* 13:328-331; 1988.
8. Vanharanta H, Guyer RD, Ohnmeiss DD, Stith WJ, Sachs BL, Aprill C, Spivey M, Rashbaum RF, Hochschuler SH, Videman T, Selby DK, Terry A, Mooney V: Disc Deterioration in Low Back Syndromes: A Prospective, Multi-Center CT/Discography Study. *Spine* 13:1349-1351, 1988.
9. Guyer RD, Collier R, Stith WJ, Ohnmeiss DD, Hochschuler SH, Rashbaum RF, Regan JJ: Discitis After Discography. *Spine* 13:1352-1354, 1988.
10. Vanharanta H, Sachs BL, Ohnmeiss DD, Spivey M, Guyer RD, Rashbaum RF, Hochschuler SH, Stith WJ, Mooney V: Pain Provocation and Disc Deterioration by Age: A CT/Discography Study in Low Back Pain Population. *Spine* 14:420-423, 1989.
11. Sachs BL, Spivey MA, Vanharanta H, Guyer RD, Rashbaum RF, Hochschuler SH, Smith GV, Scala A: Techniques for Lumbar Discography and CT/Discography in Clinical Practice. *Orthop Rev* 19(9):775-778, 1990.
12. Hochschuler SH: The Patient of Low Back Pain. *Hospital Medicine* Nov:54-68, 1989.
13. Stith WJ, Judy MM, Hochschuler SH, Guyer RD: Choice of Lasers for Minimally Invasive Spinal Surgery. *Orthop Rev* 20(2):137-142, 1991.
14. Shea DD, Ohnmeiss DD, Stith WJ, Guyer RD, Hochschuler SH, Rashbaum RF: The Effect of Sensory Deprivation on the Reduction of Pain in Chronic Low Back Patients. *Spine* 16(5):560-561, 1991.

15. Hochschuler SH: Posterior-Lateral Arthroscopic Microdiscectomy. *Seminars in Orthopaedics* 6(2): 1991.
16. Guyer RD, Hochschuler SH, Spivey MA, Ohnmeiss DD, Castleman C: Case Report: The Use of Dynamic MRI to Identify Cervical Spine Disc Herniation and Cord Compression. *Spine* 17(5):596-597, 1992.
17. Beard VV, Hochschuler SH: Reflex Sympathetic Dystrophy Following Spinal Surgery. *Semin Spinal Surg* 5(2):153-156, 1993.
18. Vanharanta H, Floyd T, Ohnmeiss DD, Hochschuler SH, Guyer RD: The Relationship Between Facet Tropism and Degenerative Disc Disease. *Spine* 18(8):1000-1005, 1993.
19. Kain C, Geisler B, Hochschuler SH: Anterior Lumbar Interbody Fusion: Approach, Complications, and Their Prevention. *Operative Orthop* 1993.
20. Moneta GB, Videman T, Kaivanto K, Aprill C, Spivey M, Vanharanta H, Sachs BL, Guyer RD, Hochschuler SH, Rashbaum RF, Mooney V: Reported Pain during Lumbar Discography as a Function of Annular Ruptures and Disc Degeneration. *Spine* 18(17):1968-1974, 1994.
21. Guyer RD, Hochschuler SH: Minimally Invasive Surgical Techniques for the Treatment of the Herniated Lumbar Disc. *Seminars Spine Surg* 6(4):256-261, 1994.
22. Ohnmeiss DD, Guyer RD, Hochschuler SH: Laser Disc Decompression: The Importance of Proper Patient Selection. *Spine* 18(19):2054-2059, 1994.
23. Block AR, Ohnmeiss DD, Guyer RD, Rashbaum RF, Hochschuler SH: The Use of Presurgical Psychological Screening to Predict the Outcome of Spine Surgery. *The Spine Journal* 1(4):274-282, 2001.
24. Hochschuler SH, Ohnmeiss DD, Guyer RD, Blumenthal SL: Artificial Disc: Preliminary Results of a Prospective Study in the United States. *European Spine J* 11(Suppl 2):S106-110, 2002.
25. Blumenthal SL, Ohnmeiss DD, Guyer R, Hochschuler S, McAfee P, Garcia R, Salib R, Yuan H, Lee C, Bertagnoli R, Bryan V: Artificial Discs and Beyond: A North American Spine Society Annual Meeting Symposium. *Spine J* 2(6):460-463, 2003.
26. Blumenthal SL, Ohnmeiss DD, Guyer RD, Hochschuler SH: Prospective Study Evaluating Total Disc Replacement: Preliminary Results. *J Spinal Disord Tech* 16(5):450-454, 2003.
27. Guyer RD, McAfee PC, Hochschuler SH, Blumenthal SL, Fedder IL, Ohnmeiss DD, Cunningham BW: Prospective Randomized Study of the Charité Artificial Disc: Data from Two Investigational Centers. *Spine J* 4(6 Suppl):252S-259S, 2004.
28. Blumenthal SL, McAfee PC, Guyer RD, Hochschuler SH, Geisler FH, Holt RT, Garcia R Jr, Regan JJ, Ohnmeiss DD: A Prospective, Randomized, Multi-Center FDA IDE Study of Lumbar Total Disc Replacement with the CHARITÉ™ Artificial Disc vs. Lumbar Fusion: Part I – Evaluation of Clinical Outcomes. *Spine* 30(14):1565-1575, 2005.
29. Holt R, Majd M, Isaza J, Blumenthal S, McAfee P, Guyer R, Hochschuler S, Geisler F, Garcia R, Regan J: Complications of Lumbar Artificial Disc Replacement vs. Fusion:

Results from the Randomized, Multicenter FDA IDE Study of the CHARITÉ Artificial Disc. SAS J 1(1):20-27, 2007.

30. Dickerman RD, Reynolds A, Bennett M, Rashbaum R, Hochschuler S: Posterior Lumbar Interbody Fusion [letter to the Editor]. J Neurosurg Spine 6(1):194-195, 2007.
31. Guyer RD, Siddiqui S, Zigler JE, Ohnmeiss DD, Blumenthal SL, Sachs BL, Hochschuler SH, Rashbaum RF: Lumbar Spinal Arthroplasty: Analysis of One Center's 20 Best and 20 Worst Clinical Outcomes. Spine 33(23):2566-2569, 2008.
32. Dickerman RD, Reynolds AS, Rashbaum R, Hochschuler S: [Letter] Adjacent Segment Degeneration: Time is not as Important as Facet Preservation! Acta Orthop 79(3):452, 2008.
33. Guyer RD, McAfee PC, Banco RJ, Bitan FD, Cappuccino A, Geisler FH, Hochschuler SH, Holt RT, Jenis Lg, Majd M, Regan JJ, Tromanhauser SG, Wong DC, Blumenthal SL: Prospective, Randomized, Multicenter Food and Drug Administration Investigational Device Exemption Study of Lumbar Total Disc Replacement with the CHARITE Artificial Disc Versus Lumbar Fusion: Five-Year Follow-up. Spine J 9(5):374-386, 2009.
34. Rohan MX Jr, Ohnmeiss DD, Guyer RD, Zigler JE, Blumenthal SL, Hochschuler SH, Sachs BL, Rashbaum RF: Relationship between the Length of Time Off Work Pre-operatively and Clinical Outcome at 24-month Follow-up in Patients Undergoing Total Disc Replacement or Fusion. Spine J 9(5):360-365, 2009.

BOOKS AND BOOK CHAPTERS

1. Lonstein MB, Hochschuler SH: *Differential Diagnosis of Lumbar Disc Disease*. In: Guyer RD (ed): SPINE - State of the Art Review: Lumbar Disc Disease. Hanley & Belfus; Philadelphia, January 1989; pp 57-68.
2. Hochschuler SH (Editor): SPINE - State of the Art Review: Spinal Injuries in Sports. Hanley & Belfus, Philadelphia, May, 1990.
3. Hochschuler SH (Editor): The Spine in Sports. Hanley & Belfus, Philadelphia, PA, 1990.
4. Hochschuler SH (Author and Editor): Back in Shape. Houghton-Mifflin. 1990.
5. Hochschuler SH: *Percutaneous Discectomy*. In: Hochschuler SH (ed): SPINE - State of the Art Review: Spinal Injuries in Sports. Hanley & Belfus, Philadelphia, May 1990; pp 467-474.
6. Glisan B, Hochschuler SH: *Fitness in the Treatment and Prevention of Athletic Low Back Injuries*. In: Hochschuler SH (ed): SPINE - State of the Art Review: Spinal Injuries in Sports. Hanley & Belfus, Philadelphia, May 1990; pp 287-298.
7. Sheets C, Hochschuler SH: *Considerations in Cycling for Persons with Low Back Pain*. In: Hochschuler SH (ed): SPINE - State of the Art Review: Spinal Injuries in Sports. Hanley & Belfus, Philadelphia, May 1990; pp 359-365.
8. Hochschuler SH: *Percutaneous Discectomy*. In: Hochschuler SH (ed): The Spine in Sports. Hanley & Belfus, Philadelphia, 1990, pp 267-274.

9. Rodriguez J, Hochschuler SH: *Case Report: 17 Year Old Gymnast*. In: Hochschuler SH (ed): The Spine in Sports. Hanley & Belfus, Philadelphia, 1990, pp 330-336.
10. Glisan B, Hochschuler SH: *Fitness in the Treatment and Prevention of Athletic Low Back Injuries*. In: Hochschuler SH (ed): The Spine in Sports. Hanley & Belfus, Philadelphia, 1990, pp 31-42.
11. Sheets C, Hochschuler SH: *Considerations in Cycling for Persons with Low Back Pain*. In: Hochschuler SH (ed): The Spine in Sports. Hanley & Belfus, Philadelphia, 1990, pp 125-131.
12. Hochschuler, RD Guyer, HB Cotler (Editors): Rehabilitation of the Spine: Science and Practice. Mosby Year Book, Chicago, 1993.
13. Hochschuler SH: *General Consideration: Stability, Flexibility, Strength, Cardiac Fitness, and Aerobic Capacity*. In: Hochschuler SH, Guyer RD, Cotler HB (eds): Rehabilitation of the Spine: Science and Practice. Mosby Year Book, Chicago, 1993; pp 11-18.
14. Hochschuler SH, Guyer RD: *Arthroscopic Microdiscectomy*. In: Hochschuler SH, Guyer RD, Cotler HB (eds): Rehabilitation of the Spine: Science and Practice. Mosby Year Book, Chicago, 1993. pp 601-608.
15. Hochschuler SH: *Development of a Spine Rehabilitation Institute: General Considerations*. In: Hochschuler SH, Guyer RD, Cotler HB (eds): Rehabilitation of the Spine: Science and Practice. Mosby Year Book, Chicago, 1993. pp 721-724.
16. Hochschuler SH, Reznik R (Authors and Editors): How to Treat Your Back Without Surgery. Hunter House; Alameda, CA, 1998.
17. Hochschuler SH, Reznik R (Authors and Editors): Treat Your Back Without Surgery. Hunter House; Alameda, CA, 2002.
18. Büttner-Janz K, Hochschuler SH, McAfee PC (Editors): The Artificial Disc. Springer-Verlag, Berlin, Germany, 2003.
19. Guyer RD Burd TA, Hochschuler SH, McAfee PC: *Total Disc Replacement*. In: Guyer RD, Zigler JE (eds): Spinal Arthroplasty: A New Era in Spine Care. Quality Medical Publishers, St. Louis, MO. 2005; pp 181-224.
20. Hochschuler SH, Ohnmeiss DD: *Artificial Disc: Clinical Results of Motion Segment Replacement*. In: Corbin TP, Connolly PJ, Yuan H, Bao Q-B, Boden SD (eds): Emerging Spine Surgery Technologies: Evidence and Framework for Evaluating New Technology. Quality Medical Publishing, St. Louis, Missouri; 2005; pp 519-526.
21. Whitaker MC, Hochschuler SH: Pocket Spine. Quality Medical Publishing. St. Louis, MO; 2006.
22. Hochschuler SH, Ohnmeiss DD: *The Future of Motion Preservation*. In Yue, Bertagnoli R, McAfee PC, An H (eds): Motion Preservation Surgery of the Spine: Advanced Techniques and Controversies. Saunders Elsevier, Philadelphia, Pennsylvania; 2008; pp 760-769.

23. Pereira M, Hochschuler SH, Ohnmeiss DD: *Inter-spinous Devices*. In: Phillips FM, Lauryssen C (eds): The Lumbar Intervertebral Disc. Thieme Medical; New York, New York; 2010; pp 191-197.
24. Yue JJ, Guyer RD, Johnson JP, Khoo LT, Hochschuler SH (eds): The Comprehensive Treatment of the Aging Spine: Minimally Invasive and Advanced Techniques. Elsevier, in press.
25. Hochschuler SH, Ohnmeiss DD: *The Economic Impact for the Individual and Society*. In: Yue JJ, Guyer RD, Johnson JP, Khoo LT, Hochschuler SH (eds): The Comprehensive Treatment of the Aging Spine: Minimally Invasive and Advanced Techniques. Elsevier, in press.

PRESENTATIONS

1. Hochschuler SH: Back School: Analysis of a Four Hour Program as Compared to a Twelve Hour Program. International Society for the Study of the Lumbar Spine. England, April 1983.
2. Sachs BL, Spivey MA, Guyer RD, Johnson RG, Rashbaum RF, Hochschuler SH, Vanharanta H, Aprill C, Terry A, Selby D, Mooney V: Dallas Discogram Description: A New Classification of CT/Discography. International Society for the Study of Lumbar Spine. June, 1986; Dallas, Texas.
3. Sachs BL, Spivey MA, Guyer RD, Johnson RG, Rashbaum RF, Hochschuler SH, Vanharanta H, Aprill C, Terry A, Selby D, Mooney V: A Clinical Grading System of CT/Discography for Diagnostic Value in Low Back Problems. International Society for the Study of Lumbar Spine. June, 1986; Dallas, Texas.
4. Vanharanta H, Sachs BL, Spivey MA, Hochschuler SH, Guyer RD, Rashbaum RF, Johnson R: Disc Degeneration and Leaking of Annulus in Reproduction of Back Pain During Discography, a CT/Discographic Study. International Society for the Study of Lumbar Spine. June, 1986; Dallas, Texas.
5. Sachs BL, Spivey MA, Guyer RD, Johnson RG, Rashbaum RF, Hochschuler SH, Vanharanta H, Aprill C, Terry A, Selby D, Mooney V: Dallas Discogram Description: A New Classification of CT/Discography. North American Spine Society. July, 1986; Bolton Landing, New York.
6. Vanharanta H, Sachs BL, Spivey MA, Hochschuler SH, Guyer RD, Rashbaum RF, Johnson R: Disc Degeneration and Leaking of Annulus in Reproduction of Back Pain During Discography, a CT/Discography Study. North American Spine Society. July, 1986; Bolton Landing, New York.
7. Sachs BL, Spivey MA, Guyer RD, Johnson RG, Rashbaum RF, Hochschuler SH, Vanharanta H, Aprill C, Terry A, Selby D, Mooney V: A Clinical Grading System of CT/Discography for Diagnostic Values in Low Back Problems. Federation of Spine Associations, January 1987, San Francisco, California.
8. Loguidice VA, Guyer RD, Johnson RG, Rashbaum RF, Hochschuler SH: Anterior Lumbar Interbody Fusions. Texas Medical Association. May, 1987; Houston, Texas.

9. Sachs BL, Vanharanta H, Spivey MA, Guyer RD, Hochschuler SH, Rashbaum RF: Technique of CT/Discography. International Society for the Study of the Lumbar Spine. May, 1987; Rome, Italy.
10. Loguidice VA, Guyer RD, Johnson RG, Rashbaum RF, Hochschuler SH, Stith WJ, Ohnmeiss DD: Anterior Lumbar Interbody Fusions. North American Spine Society. June, 1987; Banff, Canada.
11. Guyer RD, Collier R, Rashbaum RF, Hochschuler SH, Stith WJ, Ohnmeiss DD, Loguidice VA: Extraosseous Spinal Lesions Mimicking Disc Disease. North American Spine Society. June, 1987; Banff, Canada.
12. Vanharanta H, Sachs BL, Spivey M, Rashbaum RF, Guyer RD, Hochschuler SH, Ohnmeiss DD, Johnson RG, Mooney V: Comparison of Disc Narrowing with Discographic Degenerative Changes and Pain Provocation. North American Spine Society. June, 1987; Banff, Canada.
13. Hochschuler SH, Rashbaum RF, Guyer RD, Stith WJ, Ohnmeiss DD: Proplast Reconstruction of Iliac Crest Defects. North American Spine Society. June, 1987; Banff, Canada.
14. Hochschuler SH: Graft Donor Site. Challenge of the Lumbar Spine. October, 1988; San Antonio, Texas.
15. Hochschuler SH: Percutaneous Discectomy. Challenge of the Lumbar Spine. October, 1988; San Antonio, Texas.
16. Guyer RD, Collier R, Hochschuler SH, Rashbaum RF, Regan JJ, Stith WJ, Ohnmeiss DD: Post-discography Discitis. International Society for the Study of the Lumbar Spine. April, 1988; Bal Harbour, Florida.
17. Vanharanta H, Sachs BL, Spivey M, Aprill C, Ohnmeiss DD, Guyer RD, Rashbaum RF, Hochschuler SH, Stith WJ, Mooney V: Disc Deterioration in Low Back Syndromes: A Prospective, Multi-center CT/Discography Study. International Society for the Study of the Lumbar Spine. April, 1988; Bal Harbour, Florida.
18. Vanharanta H, Sachs BL, Spivey M, Aprill C, Ohnmeiss DD, Guyer RD, Rashbaum RF, Hochschuler SH, Stith WJ, Mooney V: Disc Deterioration in Low Back Syndromes: A Prospective Multi-center CT/Discography Study. North American Spine Society. July, 1988; Colorado Springs, Colorado.
19. Vanharanta H, Ohnmeiss DD, Stith WJ, Regan JJ, Hochschuler SH, Guyer RD, Mooney V: The Effect of Repeated Trunk Extension and Flexion Movements As Seen By CT/Discography. North American Spine Society. July, 1988; Colorado Springs, Colorado.
20. Guyer RD, Collier R, Hochschuler SH, Rashbaum RF, Regan JJ, Stith WJ, Ohnmeiss DD: Post-discography Discitis. North American Spine Society. July, 1988; Colorado Springs, Colorado.
21. Shea D, Stith WJ, Ohnmeiss DD, Hochschuler SH, Guyer RD, Rashbaum RF: The Effect of Sensory Deprivation on the Reduction of Pain in Chronic Low Back Patients. North American Spine Society. July, 1988; Colorado Springs, Colorado.

22. Vanharanta H, Ohnmeiss DD, Stith WJ, Regan JJ, Hochschuler SH, Guyer RD, Mooney V: Effect of Repeated Trunk Extension and Flexion Movements as Seen by CT/Discography. Federation of Spine Associations. February, 1989; Las Vegas, Nevada.
23. Hochschuler SH: Percutaneous Discectomy. American Operating Room Nurses Congress, February, 1989.
24. Vanharanta H, Ohnmeiss DD, Stith WJ, Guyer RD, Hochschuler SH, Rashbaum RF, Sachs BL: The Effect of Lumbar Level in Painful Disc Deterioration. International Society for the Study of the Lumbar Spine. May, 1989; Kyoto, Japan.
25. Hochschuler SH: Lumbar Disc Disease and Spinal Injury. Lido International Seminars Series. Orlando, Florida, July, 1989.
26. Hochschuler SH: Lumbar Disc Disease and Spinal Injury. Lido International Seminars Series. Chicago, Illinois, August, 1989.
27. Hochschuler SH: "PERC" (Percutaneous Discectomy). Keystone Spine Meeting. March, 1990; Keystone, Colorado.
28. Hochschuler SH: Diagnosing Low Back Pain. Keystone Spine Meeting. March, 1990; Keystone, Colorado.
29. Guyer RD, Ohnmeiss DD, Hochschuler SH, Stith WJ, Rashbaum RF, Regan JJ: The Use of CT/Discography to Identify Recurrent Disc Herniation Not Visualized by Gadolinium Enhanced MRI. North American Spine Society. August, 1990; Monterey, California.
30. Hochschuler SH: The Spine in Sports. North American Spine Society Instructional Course lecture. August, 1990; Monterey, California.
31. Hochschuler SH: Posterior-Lateral Arthroscopic Microdiscectomy. Arthroscopic Microdiscectomy Course. Philadelphia, Pennsylvania; November 1990.
32. Hochschuler SH, Guyer RD, Ohnmeiss DD, Stith WJ, Rashbaum RF, Regan JJ: The Use of Donor Femur Grafts in Anterior Lumbar Interbody Fusion. American Academy of Orthopaedic Surgeons. March, 1991; Anaheim, California.
33. Guyer RD, Ohnmeiss DD, Hochschuler SH, Stith WJ, Rashbaum RF, Regan JJ: The Use of CT/Discography to Identify Recurrent Disc Herniation Not Visualized by Gadolinium Enhanced MRI. Federation of Spine Associations. March, 1991; Anaheim, California.
34. Hochschuler SH: The Future of Medical Devices: A Spine Surgeon's Perspective. Biomedical Businessmen's International. Anaheim, California; March 1991.
35. Guyer RD, Ohnmeiss DD, Hochschuler SH, Stith WJ, Rashbaum RF, Regan JJ: The Use of CT/Discography to Identify Recurrent Disc Herniation Not Visualized by Gadolinium Enhanced MRI. Mid-American Orthopaedic Association. April, 1991; Palm Springs, California.
36. Guyer RD, Ohnmeiss DD, Stith WJ, Hochschuler SH, Rashbaum RF, Regan JJ: Comparison of Single Level Arthroscopic Microdiscectomy to Laminectomy and Discectomy. International Intradiscal Therapy Society. April, 1991; Houston, Texas.

37. Guyer RD, Hochschuler SH, Ohnmeiss DD, Stith WJ, Spivey MA, Castleman C, Rashbaum RF, Regan JJ: Cine MRI to Visualize Functional Pathology in the Spine. North American Spine Society. August, 1991; Keystone, Colorado.
38. Guyer RD, Ohnmeiss DD, Stith WJ, Bonnick SL, Hochschuler SH, Rashbaum RF, Regan JJ: Changes in Vertebral Bone Density Following Lumbar Spine Fusion and Post-operative Bracing. North American Spine Society. August, 1991; Keystone, Colorado.
39. Hochschuler SH, Guyer RD, Ohnmeiss DD, Stith WJ, Rashbaum RF, Regan JJ: Comparison of Single Level Arthroscopic Microdiscectomy to Laminectomy and Discectomy. North American Spine Society. August, 1991; Keystone, Colorado.
40. Rashbaum RF, Ohnmeiss DD, Stith WJ, Guyer RD, Hochschuler SH, Regan JJ: Initial Results of Spinal Cord Stimulation in Chronic Pain Patients. North American Spine Society. August, 1991; Keystone, Colorado.
41. Hochschuler SH, Guyer RD, Ohnmeiss DD, Rashbaum RF, Regan JJ: Single-level Stabilization with Femur Grafts. North American Spine Society. August, 1991; Keystone, Colorado.
42. Regan JJ, Shelokov AP, Guyer RD, Hochschuler SH, Rashbaum RF: Use of the Texas Scottish Rite Hospital System Anteriorly in Adult Scoliosis. North American Spine Society. August, 1991; Keystone Colorado.
43. Regan JJ, Mack M, Shelokov AP, Guyer RD, Hochschuler SH, Rashbaum RF: Thoroscopy in the Diagnosis and Treatment of Lesions in the Dorsal Spine. North American Spine Society. August, 1991; Keystone Colorado.
44. Hochschuler SH: Current Results of Arthroscopic Microdiscectomy. International Society for Minimally Invasive Spine Surgery. November 1991; Philadelphia, Pennsylvania.
45. Guyer RD, Hochschuler SH, Ohnmeiss DD, Stith WJ, Spivey MA, Castleman C, Rashbaum RF, Regan JJ: Dynamic MRI: A New Technique to Identify Functional Pathology in the Spine. Federation of Spine Associations. February, 1992; Washington, D.C.
46. Regan JJ, Shelokov AP, Guyer RD, Hochschuler SH, Rashbaum RF: Use of the Texas Scottish Rite Hospital System Anteriorly in Adult Scoliosis. American Academy of Orthopaedic Surgeons. February, 1992; Washington, D.C.
47. Regan JJ, Shelokov AP, Alfano S, Guyer RD, Hochschuler SH, Rashbaum RF: Use of the Texas Scottish Rite Hospital System Anteriorly in Adult Scoliosis. Scoliosis Research Society/North American Spine Society joint conference on Pedicle Fixation of the Lumbar Spine. April, 1992; Phoenix, Arizona.
48. Floyd T, Hochschuler SH, Vanharanta H, Ohnmeiss DD, Guyer RD: The Relationship of Facet Tropism to Degenerative Disc Disease. North American Spine Society. July, 1992; Boston, Massachusetts.
49. Floyd T, Vanharanta H, Ohnmeiss DD, Guyer RD, Hochschuler SH: The Relationship of Facet Tropism to Degenerative Disc Disease. Schriners Residents and Fellows Conference. November, 1992; New Orleans, Louisiana.

50. Floyd T, Hochschuler SH, Ohnmeiss DD, Vanharanta H: The Relationship of Facet Tropism to Degenerative Disc Disease. American Academy of Orthopaedic Surgeons. February, 1993; San Francisco, California.
51. Block A, Guyer RD, Hochschuler SH, Ohnmeiss DD, Vanharanta H: Discographic Pain Report: Influence of Psychological Factors. American Academy of Orthopaedic Surgeons. February, 1993; San Francisco, California.
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82. Hochschuler SH: Diagnostic Evaluation: Imaging, Discography, Injections. Spine Care of the Injured Worker conference. November, 2002; Phoenix, Arizona.
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89. Hochschuler SH: Arizona Workplace Back Injuries: Who and How. Solutions for Workplace Spine Injuries. September, 2003; Phoenix, Arizona.
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94. Hochschuler SH: The Future of New Product Development and Growth in the Spine Market. Dynamic Spine Stabilization. November, 2003; Plano, Texas.
95. Hochschuler SH: Complications and potential Problems in Current Total Disc Replacement Devices. Non-Fusion Technology "A State of The Art Debate". December, 2003; New York, New York/Zurich, Switzerland.
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103. Hochschuler SH: Front & Back Lumbar Fusion – The 360. Curso Internacional Chileno Norteamericano de Columna Vertebral. August, 2004; Santiago, Chile.
104. Hochschuler SH: Can Threaded Fusion Cages be Used Effectively as Stand Alone Devices? Curso Internacional Chileno Norteamericano de Columna Vertebral. August, 2004; Santiago, Chile.

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109. Hochschuler SH: Robotics and Image Guidance in Spine S. 2nd Trans Atlantic Spine Congress "Innovations in Spine Surgery". November, 2004; Dallas, Texas/Basel, Switzerland.
110. Hochschuler SH: Experience with Spine Arthroplasty. Preservation of Motion in the Lumbar Spine Meeting. March, 2005; Duck Key, Florida.
111. Hochschuler SH: Overall Disc Experience. Preservation of Motion in the Lumbar Spine Meeting. March, 2005; Duck Key, Florida.
112. Hochschuler SH: Current Techniques in Spine Surgery: Total Disc Arthroplasty. (HealthStream)
113. Holt R, Majd M, Isaza J, Blumenthal S, McAfee P, Guyer R, Hochschuler S, Geisler F, Garcia R, Regan J: Complications of Lumbar Artificial Disc Replacement vs. Fusion: Results from the Randomized, Multicenter FDA IDE Study of the CHARITÉ Artificial Disc. Spinal Arthroplasty Society. May, 2005; New York, New York.
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119. Hochschuler SH: The Future of Motion Preservation. International Meeting on Advanced Spine Techniques (IMAST). July, 2005; Banff, Canada.
120. Hochschuler SH: Long-term Retrospective Study of the First-generation Wallis Implant. (Instructional Course Lecture) International Meeting on Advanced Spine Techniques (IMAST). July, 2005; Banff, Canada.
121. Hochschuler SH: Archus Facet Technology. International Meeting on Advanced Spine Techniques (IMAST). July, 2005; Banff, Canada.
122. Guyer RD, Blumenthal SL, Hochschuler SH, McAfee PC, Regan JJ, Ohnmeiss DD: Prospective Randomized Comparison of Total Disc Replacement to Fusion: A 24-month Follow-up FDA regulated study. World Spine. August, 2005; Rio de Janeiro, Brazil.
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124. Triano J, Rogers C, Diedrich J, Gonzalez C, Hochschuler S: An RTC of Orthotrac Vest Unloading vs. EZ Brace – One-year Outcomes. North America Spine Society. Sept-Oct, 2005; Philadelphia, Pennsylvania.
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128. Hochschuler SH: Revision Strategies for Spinal Arthroplasty. Disorders of the Spine. January, 2006; Whistler, Canada.

129. Hochschuler SH: Spine Centers of Excellence. Current Concepts in Spinal Disorders. January, 2006; Las Vegas, Nevada.
130. Hochschuler SH: Disc Repair Options (Annular Repair). The Lumbar Intervertebral Disc: Current Concepts in Non Fusion Technology. April, 2006; Denver. Colorado.
131. Hochschuler SH: Interspinous Stabilization: Rational, Technique & Results. The Lumbar Intervertebral Disc: Current Concepts in Non Fusion Technology. April, 2006; Denver. Colorado.
132. Hochschuler SH: Horizons of New Technology: How This All Fits Together. The Lumbar Intervertebral Disc: Current Concepts in Non Fusion Technology. April, 2006; Denver. Colorado.
133. Hochschuler SH: Economics of Motion Preservation Surgery - The Future. Innovative Techniques in Spine Surgery. June, 2006; Los Cabos, Mexico.
134. Hochschuler SH: Wallis. Innovative Techniques in Spine Surgery. June, 2006; Los Cabos, Mexico.
135. Hochschuler SH: Experience with an Interspinous Process System: Wallis. Guiding Panel for Spine. July 2006. Orlando, Florida.
136. Hochschuler SH: Clinical data on DS: Where is the proof? Guiding Panel for Spine. December, 2006. Jackson Hole, Wyoming.
137. Hochschuler SH: Wallis Interspinous Based Dynamic Stabilization System (hands on course). 19th Annual Disorders of the Spine. Whistler, Canada.
138. Siddiqui S, Guyer R, Zigler J, Ohnmeiss D, Blumenthal S, Sachs B, Hochschuler S: Factors Related to the 20 Best and 20 Worst 24-months Outcomes of Total Disc Replacement in Prospective FDA-regulated Trials. Spine Across the Sea. July, 2006; Maui, Hawaii.
139. Siddiqui S, Hochschuler SH, Guyer RD, Zigler JE, Ohnmeiss DD, Blumenthal SL, Sachs BL, Rashbaum RF, Craig L: Factors Related to the 20 Best and 20 Worst 24-month Outcomes of Total Disc Replacement in Prospective FDA-regulated Trials. International Meeting on Advanced Spine Techniques (IMAST). July, 2006; Athens, Greece.
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144. Hochschuler SH: Clinical data on DS: Where is the Proof? Guiding Panel for Spine. December 2006; Jackson Hole, Wyoming.
145. Hochschuler SH: Medical/Legal/Economic Issues (panel presentation). North American Spine Society Spring Break. March, 2007; Phoenix, Arizona.
146. Hochschuler SH: Posterior Lumbar Arthroplasty (panel presentation). North American Spine Society Spring Break. March, 2007; Phoenix, Arizona.
147. Hochschuler SH: Charite Lumbar Artificial Disc. Current Concepts in Spinal Disorders. March, 2007; Las Vegas, Nevada.
148. Hochschuler SH: Facet Arthroplasty. Current Concepts in Spinal Disorders. March, 2007. Las Vegas, Nevada.
149. Hochschuler SH: Wallis. Current Concepts in Spinal Disorders. March, 2007; Las Vegas, Nevada.
150. Guyer RD, McAfee PC, Banco RJ, Bitan FD, Cappuccino A, Geisler FH, Hochschuler SH, Holt RT, Jenis LG, Majd ME, Mullin BB, Regan JJ, Stadian NY, Tromanhauser SG, Wong DC, Blumenthal SL: Lumbar arthroplasty vs. anterior interbody fusion at one-level clinical results at 5-year follow-up from the IDE study of Charite artificial disc. Spine Arthroplasty Society. May, 2007; Berlin, Germany.
151. Hochschuler SH: Establishing a Spine Center of Excellence. Michigan Association of Neurological Surgeons. June, 2007; Mackinac Island, Michigan.
152. Hochschuler SH: Tips and Tricks to Anterior Lumbar Surgery: Choosing the Implant, Patient Positioning, and Special Techniques. Desert Spine Conference. June, 2007; Las Vegas, Nevada.
153. Hochschuler SH: Debate - Economics of Motion Preservation Surgery –The Future. Innovative Techniques in Spine Surgery. June, 2007; Los Cabos, Mexico.
154. Guyer RD, Blumenthal SL, Hochschuler SH, Ohnmeiss DD: A Prospective Randomized Study Comparing Two Lumbar Total Disc Replacement Devices. International Meeting on Advanced Spinal Techniques (IMAST). July, 2007; Paradise, Bahamas.
155. Blumenthal SL, Guyer RD, Ohnmeiss DD, Sachs BL, Hochschuler SH, Rashbaum RF: Comparison of Charite vs. ProDisc for the Treatment of Single-level Symptomatic Disc Degeneration: Prospective Data from One Center. Spine Society of Europe. October, 2007; Brussels, Belgium.

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157. Hochschuler SH: The Developmental Status of Annular Repair in Spine Arthroplasty. Asian Pacific Spine Arthroplasty Society. January, 2008; Seoul, South Korea.
158. Hochschuler SH: Lumbar ADR Clinical Data: Indications – Patient Selection – Contraindications. Seventh Annual Symposium on Current Concepts in Spinal Disorders. February, 2008; Las Vegas, Nevada.
159. Hochschuler SH: MobiDisc. Seventh Annual Symposium on Current Concepts in Spinal Disorders. February, 2008; Las Vegas, Nevada.
160. Hochschuler SH: Lumbar ADR Debate: Counterpoint – L5-S1 TDR Better Than Fusion. Seventh Annual Symposium on Current Concepts in Spinal Disorders. February, 2008; Las Vegas, Nevada.
161. Hochschuler SH: Lumbar Arthroplasty. World Congress on Minimally Invasive Spine Surgery Techniques. June, 2008; Honolulu, Hawaii.
162. Hochschuler SH: Annular Repair. World Congress on Minimally Invasive Spine Surgery Techniques. June, 2008; Honolulu, Hawaii.
163. Hochschuler SH: Wallis. Innovative Techniques in Spine Surgery. June, 2008; Los Cabos, Mexico.
164. Hochschuler SH: Anatomic Design Facet Arthroplasty Device. Innovative Techniques in Spine Surgery. June, 2008; Los Cabos, Mexico.
165. Hochschuler SH: Debate - Economics of Motion Preservation Surgery –The Future. Innovative Techniques in Spine Surgery. June, 2008; Los Cabos, Mexico.
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167. Blumenthal SL, Ohnmeiss DD, Guyer RD, Hochschuler SH: Analysis of Total Disc Replacement Outcomes When Applying MCID (Minimal Clinically Important Difference) Criteria. International Meeting on Advanced Spinal Techniques (IMAST). July, 2008; Hong Kong, China.
168. Hochschuler SH: Interspinous Devices. 2008, Beijing, China.
169. Hochschuler SH: Overview and Indications for Facet Replacement Devices. Current Concepts in Spinal Disorders. February, 2009; Las Vegas, Nevada.

170. Hochschuler SH: Counterpoint – L5-S1 TDR is Better Than Fusion. Current Concepts in Spinal Disorders. February, 2009; Las Vegas, Nevada.
171. Hochschuler SH: Nucleus Repair. Current Concepts in Spinal Disorders. February, 2009; Las Vegas, Nevada.
172. Hochschuler SH: Lumbar Provocative Discography. Relevance and Controversy. Preservation of Motion in the Spine. April, 2009; Duck Key, Florida.
173. Hochschuler SH: Interspinous Devices. Preservation of Motion in the Spine. April, 2009; Duck Key, Florida.
174. Hochschuler SH: MIS, Innovation, and the Spine Business. International Intradiscal Therapy Society. May, 2009; Scottsdale, Arizona.
175. Hochschuler S: Anulex Anular Repair. Innovative Techniques in Spine Surgery. October, 2009; Scottsdale, Arizona.
176. Hochschuler SH: Facet Joint Replacement: Does it Make Sense? Design, Indications, Goals. Innovative Techniques in Spine Surgery. October, 2009; Scottsdale, Arizona.
177. Hochschuler SH: Posterior Dynamic Stabilization. Asia Pacific Spine Arthroplasty Society. January, 2010; Sanya, China.
178. Hochschuler SH: Interspinous Spacers: Wallis. Current Concepts in Spinal Disorders. February, 2010; Las Vegas, Nevada.
179. Hochschuler SH: Total Facet Joint Replacements: TFAS. Current Concepts in Spinal Disorders. February, 2010; Las Vegas, Nevada.
180. Hochschuler SH: Facet Replacement Devices: Overview and Indications for Facet Replacement Devices. Current Concepts in Spinal Disorders. February, 2010; Las Vegas, Nevada.
181. Hochschuler SH: Facet Replacement Devices: Total Facet Arthroplasty System. Current Concepts in Spinal Disorders. February, 2010; Las Vegas, Nevada.
182. Hochschuler SH: TOPS - Clinical Results. Preservation of Motion of the Spine. April, 2010; Duck Key, Florida.
183. Hochschuler SH: Spine Surgery: A failure of messaging? Innovative Techniques in Spine Surgery. June, 2010; Los Cabos, Mexico.
184. Hochschuler SH: Stand-alone ALIF. Innovative Techniques in Spine Surgery. June, 2010; Los Cabos, Mexico.

POSTERS

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2. Hochschuler SH, Guyer RD, Rashbaum RF: Proplast Reconstruction of the Iliac Crest for Anterior Lumbar Interbody Fusions and Anterior Cervical Fusions. International Society for the Study of Lumbar Spine. June, 1986; Dallas, Texas.
3. Vanharanta H, Sachs BL, Spivey M, Guyer RD, Rashbaum RF, Hochschuler SH, Ohnmeiss DD: Comparison of Disc Narrowing with Discographic Degenerative Changes and Pain Provocation. International Society for the Study of the Lumbar Spine. May, 1987; Rome, Italy.
4. Sachs BL, Vanharanta H, Rashbaum RF, Guyer RD, Hochschuler SH, Ohnmeiss DD, Schwartz P, Gilbert PJ: Comparison of Effect of Epidural Steroids and Physical Therapy on Root Tension Signs in Lumbar Radicular Syndrome. North American Spine Society. June, 1987; Banff, Canada.
5. Vanharanta H, Mooney V, Jarvis GL, Hochschuler SH, Guyer RD, Johnson RG, Gilbert PJ, Ritz S, Ohnmeiss DD, Stith WJ: Effect of Repeated Trunk Extension and Flexion Movements on CT/Discogram. North American Spine Society. June, 1987; Banff, Canada.
6. Hochschuler SH, Rashbaum RF, Guyer RD, Stith WJ, Ohnmeiss DD: Proplast Reconstruction of Iliac Crest Defects. North American Spine Society. June, 1987; Banff, Canada.
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