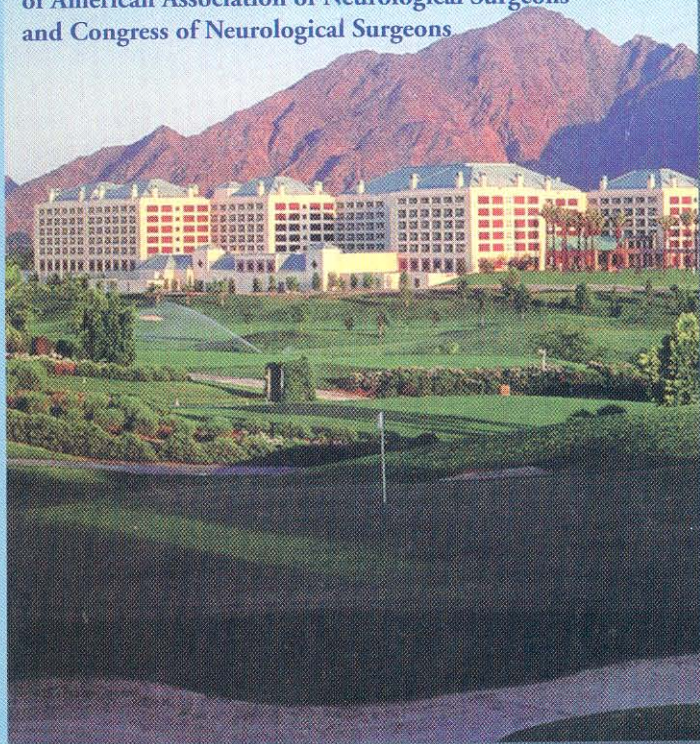


Challenges in the Spine Specialty

16th Annual Meeting Section on Disorders of the Spine and Peripheral Nerves

of American Association of Neurological Surgeons
and Congress of Neurological Surgeons



Program Book

February 23-26, 2000

Renaissance Esmeralda Resort

Indian Wells (Palm Springs), CA



*The AANS/CNS Section on Disorders of the Spine and
Peripheral Nerves is jointly sponsored by
American Association of Neurological Surgeons*



MEDTRONIC SOFAMOR DANEK
WELCOMES YOU TO
THE
16TH ANNUAL MEETING
OF THE AANS AND CNS
SECTION ON DISORDERS
OF THE SPINE
AND PERIPHERAL NERVES

*Please stop by Booth #46
in the Crystal Ballroom
of the
Renaissance Esmeralda Resort*

For more information call
MEDTRONIC Sofamor Danek,
USA, at 800-933-2635, or visit
our web site at:
<http://www.sofamordanek.com>.

Table of Contents

Continuing Medical Education	2
Officers	3
2000 Annual Meeting Committee	3
Past Officers	4
Previous Meetings	8
Future Meetings	8
Past Program Committees	9
Mayfield Award Winners	11
AANS/CNS Section Fellowship Award Winners	12
Meritorious Service Award Recipients	12
2000 Meritorious Service Award Recipient	13
Exhibitors	14
Acknowledgements	18
Floor Plan of the Exhibit Hall	19
Disclosure Information	20
Meeting Agenda/ Course Evaluations	25
Poster Session Listing	47
Scientific Program Oral Abstracts	57
Scientific Program Posters	
Poster Session 1 (posters 1-55)	91
Poster Session 2 (posters 56-110)	132
2000 Membership Roster	173



CONTINUING MEDICAL EDUCATION CREDIT



This activity has been planned and implemented in accordance with the Essentials and Standards of the Accreditation Council for Continuing Medical Education through the joint sponsorship of American Association of Neurological Surgeons and the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves. The Accreditation Council for Continuing Medical Education (ACCME) accredits the American Association of Neurological Surgeons to sponsor continuing medical education for physicians.

The American Association of Neurological Surgeons designates this educational activity for a maximum of 16 hours in category 1 credit toward the AMA Physician's Recognition Award with additional credit hours available for attending the Special Courses. Each physician should claim only those hours that he/she actually spent in the educational activity.

OFFICERS

Chairman:	Vincent C. Traynelis, MD
Chairman Elect:	Curtis A. Dickman, MD
Secretary:	Nevan G. Baldwin, MD
Treasurer:	Curtis A. Dickman, MD
Immediate Past Chairman:	Stephen M. Papadopoulos, MD
Members-at-Large:	Charles L. Branch, Jr. MD Srinath Samudrala, MD Lloyd Zucker, MD

2000 Annual Meeting Committee

Annual Meeting Chairman:	Gerald E. Rodts, Jr., MD
Scientific Program Chairman:	Timothy C. Ryken, MD
Exhibit Chairman:	Regis Haid, Jr., MD
CME Sponsorship Chairman:	Robert Heary, MD

2000 Scientific Abstract Review Committee:

Nevan Baldwin, MD	Robert Heary, MD
Andrea Halliday, MD	John Hurlbert, MD, PhD
Joseph Alexander, MD	Seth Zeidman, MD
Chris Wolfla, MD	

2000 Scientific Advisory Committee:

Joseph Alexander, MD	Paul Arnold, MD
Nevan Baldwin, MD	Perry Ball, MD
Christopher Comey, MD	Brian Cuddy, MD
Michael Fehlings, MD	Allan Friedman, MD
Mitchell Gropper, MD	Regis Haid, MD
Andrea Halliday, MD	Louis H. Harkey, MD
Robert Heary, MD	John Hurlbert, MD
John Knightly, MD	Carl Laurysen, MD
Allan Levi, MD	Christopher Paramore, MD
Gerald Rodts, MD	William Rosenberg, MD
Timothy Ryken, MD	Robert Tiel, MD
Vicent Traynelis, MD	Christopher Wolfla, MD
Eric Woodard, MD	Seth Zeidman, MD

PAST OFFICERS

1998

Chairman: Stephen M. Papadopoulos, MD
Chairman Elect: Vincent C. Traynelis, MD
Secretary: Vincent C. Traynelis, MD
Treasurer: Curtis A. Dickman, MD
Immediate Past Chairman: Richard G. Fessler, MD
Members-at-Large: Charles L. Branch, Jr. MD
Mark N. Hadley, MD
John E. McGillicuddy, MD

1997

Chairman: Richard G. Fessler, MD
Chairman Elect: Stephen M. Papadopoulos, MD
Secretary: Vincent C. Traynelis, MD
Treasurer: Curtis A. Dickman, MD
Immediate Past Chairman: Edward C. Benzel, MD
Members-at-Large: Charles L. Branch, Jr. MD
Mark N. Hadley, MD
John E. McGillicuddy, MD

1996

Chairman: Edward C. Benzel, MD
Chairman-Elect: Richard G. Fessler, MD
Secretary: Stephen Papadopoulos, MD
Treasurer: Peter Klara, MD, PhD
Immediate Past Chairman: Arnold H. Menezes, MD
Members-at-Large: Gary L. Rea, MD
Nancy Epstein, MD
John McGillicuddy, MD
Kevin T. Foley, MD
Mark Hadley, MD

Ex-Officio Members:

1995

Chairman: Arnold H. Menezes, MD
Chairman-Elect: Edward C. Benzel, MD
Secretary: Stephen M. Papadopoulos, MD
Treasurer: Peter Klara, MD
Immediate Past Chairman: Russell Travis, MD
Members-at-Large: Gary L. Rea, MD
Nancy Epstein, MD
John McGillicuddy, MD
Kevin T. Foley, MD
Mark Hadley, MD

Ex-Officio Members:

PAST OFFICERS

1994

Chairman: Russell Travis, MD
Chairman-Elect: Arnold H. Menezes, MD
Secretary: Stephen Papadopoulos, MD
Treasurer: Peter Klara, MD
Immediate Past Chairman: Edward C. Tarlov, MD
Members-at-Large: Edward C. Benzel, MD
Gary L. Rea, MD
Nancy Epstein, MD

1993

Chairman: Edward C. Tarlov, MD
Chairman-Elect: Russell Travis, MD
Secretary: Arnold H. Menezes, MD
Treasurer: Russell Travis, MD
Immediate Past Chairman: Volker K.H. Sonntag, MD
Members-at-Large: Edward C. Benzel, MD
Gary L. Rea, MD

1992

Chairman: Volker K.H. Sonntag, MD
Chairman-Elect: Edward C. Tarlov, MD
Secretary: Arnold H. Menezes, MD
Treasurer: Russell Travis, MD
Members-at-Large: Donald J. Prolo, MD
Melville P. Roberts, MD

1991

Chairman: Carole A. Miller, MD
Chairman-Elect: Volker K.H. Sonntage, MD
Secretary: Arnold H. Menezes, MD
Treasurer: Russell Travis, MD
Members-at-Large: Donald J. Prolo, MD
Melville P. Roberts, MD

1990

Chairman: Edward S. Connolly, MD
Chairman-Elect: Carole A. Miller, MD
Secretary: Volker K.H. Sonntag, MD
Treasurer: Russell Travis, MD
Members-at-Large: Arnold H. Menezes, MD
Donald J. Polo, MD

PAST OFFICERS

1989

Chairman: Edward S. Connolly, MD
Chairman-Elect: Carole A. Miller, MD
Secretary: Volker K.H. Sonntag, MD
Treasurer: Russell Travis, MD
Members-at-Large: Arnold H. Menezes, MD
Donald J. Prolo, MD

1988

Chairman: Stewart B. Dunsker, MD
Secretary: Carole A. Miller, MD
Treasurer: Edward C. Tarlov, MD
Members-at-Large: Phanor L. Perot, Jr., MD
Volker K.H. Sonntag, MD

1987

Chairman: Stewart B. Dunsker, MD
Secretary: Carole A. Miller, MD
Treasurer: Edward C. Tarlov, MD
Members-at-Large: Phanor L. Perot, Jr., MD
Volker K.H. Sonntag, MD

1986

Chairman: George W. Sybert, MD
Secretary: Henry H. Schmidek, MD
Treasurer: Edward S. Connolly, MD
Members-at-Large: Carole A. Miller, MD

1985

Chairman: Russell W. Hardy, MD
Secretary: Henry H. Schmidek, MD
Treasurer: Edward S. Connolly, MD
Members-at-Large: George W. Sybert, MD

1984

Chairman: Russell W. Hardey, MD
Secretary: Stewart Dunsker, MD
Treasurer: Edward S. Connolly, MD
Members-at-Large: Henry H. Schmidek, MD

PAST OFFICERS

1983

Chairman: Sanford J. Larson, MD, PhD
Secretary: Stewart Dunsker, MD
Treasurer: Edward S. Connolly, MD
Members-at-Large: Henry H. Schmidek, MD

1982

Chairman: Sanford J. Larson, MD, PhD
Secretary: Stewart Dunsker, MD
Treasurer: Edward S. Connolly, MD
Members-at-Large: Henry H. Schmidek, MD

1981

Chairman: Sanford J. Larson, MD, PhD
Secretary: Stewart Dunsker, MD
Treasurer: Edward S. Connolly, MD
Members-at-Large: Henry H. Schmidek, MD

1980

Chairman: Sanford J. Larson, MD, PhD
Secretary: Stewart Dunsker, MD
Treasurer: Edward S. Connolly, MD
Members-at-Large: K. Smith, MD

PREVIOUS MEETINGS

1985 - Greenleaf, Florida	1993 - Tucson, Arizona
1986 - Dan Diego, California	1994 - Fort Lauderdale, Florida
1987 - Boca Raton, Florida	1995 - Phoenix, Arizona
1988 - Phoenix, Arizona	1996 - Lake Buena Vista, Florida
1989 - Cancun, Mexico	1997 - Newport Beach, California
1990 - Captiva Island, Florida	1998 - Rancho Mirage, California
1991 - Rancho Mirage, California	1999 - Lake Buena Vista, Florida
1992 - Miami, Florida	

FUTURE MEETINGS

2001 Phoenix, Arizona - February 14-17

PAST PROGRAM COMMITTEES

1985

Barth A. Green, MD
George W. Sybert, MD

1986

Randall W. Smith, MD
Philip R. Weinstein, MD
John F. Howe, MD
Stanley J. Goodman, MD
Barth A. Green, MD
Volker K. H. Sonntag, MD
Hector E. James, MD

1987

Volker K.H. Sonntag, MD
Robert S. Hood, MD
Joel N. Abromovitz, MD
Timothy Harrington, MD

1988

Melville P. Roberts, MD
Volker K.H. Sonntag, MD
Russell Travis, MD
Harold A. Wilkinson, MD
Richard Saunders, MD

1989

Arnold H. Menezes, MD
Carole A. Miller, MD
Russell Travis, MD
John C. Godersky, MD
Patrick W. Hitchon, MD

1990

Edward Tarlov, MD
Bennett Blumenkopf, MD
Paul D. Dernbach, MD
Nancy Epstein, MD

1991

Nancy Epstein, MD
Joy Aprin, MD
Lawerence Borges, MD
Emily Friedman, MD
Ben Benner, MD

1992

Gary Rea, MD
Bennett Blumenkopf, MD
Charles Branch, Jr., MD
David Cahill, MD
Richard Fessler, MD, PhD
Stephen Papadopoulos, MD

1993

Stephen Papadopoulos, MD
Charles Branch, Jr., MD
David Cahill, MD
Curtis Dickman, MD
Richard Fessler, MD, PhD
Regis Haid, Jr. MD
Robert J. Martin, MD
Gary Rea, MD
Moris Senegor, MD
John McGillicuddy, MD
Noel Perin, MD

1994

Richard Fessler, MD, PhD
David Cahill, MD
Curtis Dickman, MD
Peter Gianaris, MD
H. Louis Harkey III, MD
Paul McCormick, MD
Russ Nockels, MD
Moris Senegor, MD
Vincent C. Traynelis, MD

PAST PROGRAM COMMITTEES

1995

Curtis Dickman, MD
David Cahill, MD
Charles Branch, Jr., MD
Paul Cooper, MD
Michael Fehlings, MD
Regis Haid, Jr., MD
H. Louis Harkey III, MD
James Hollowell, MD
Peter Klara, MD
John Knightly, MD
John McGillicuddy, MD
Eugene Rossitch, Jr., MD
Charles Stillerman, MD
Vincent C. Traynelis, MD

1996

H. Louis Harkey III, MD
Nevan G. Baldwin, MD
Kevin T. Foley, MD
Noel I. Perin, MD
James Hollowell, MD
Richard K. Osenbach, MD
Patrick W. Hitchon, MD
Regis W. Haid, Jr., MD
Richard H. Tippetts, MD
Dennis G. Vollmer, MD
Robert B. Snow, MD
Allan H. Friedman, MD
Brian G. Cuddy, MD

1997

Nevan G. Baldwin, MD
Noel I. Perin, MD
Brian G. Cuddy, MD
H. Louis Harkey, MD
Paul M. Arnold, MD
Allan J. Belzberg, MD
Perry A. Ball, MD
Paul C. McCormick, MD
Curtis A. Dickman, MD
Christopher G. Paramore, MD
Kevin T. Foley, MD
James P. Hollowell, MD
David G. Kline, MD
Ronald I. Apfelbaum, MD
Charles B. Stillerman, MD

1998

Nevan G. Baldwin, MD
H. Louis Harkey, MD
Charles L. Branch, Jr., MD
Richard G. Fessler, MD
Gerald E. Rodts, MD
Brian G. Cuddy, Jr., MD

1999

Stephen M. Papadopoulos, MD
H. Louis Harkey, MD
Gerald E. Rodts, Jr., MD
Regis Haid, Jr., MD
Joseph T. Alexander, MD
Allan J. Belzberg, MD
Brian G. Cuddy, MD
Robert L. Tiel, MD
Nevan G. Baldwin, MD
Charles L. Branch, MD
Richard G. Fessler, MD, PhD
Michael G. Fehlings, MD
Noel I. Perrin, MD
Kevin T. Foley, MD
Andrea L. Halliday, MD

MAYFIELD AWARD WINNERS

1984

Mark N. Hadley, MD
Phoenix, AZ

1985

Ab Guha, MD
Toronto, Ontario

1987

John A. Feldenzer, MD
Ann Arbor, MI

1989

Richard K. Simpson, Jr., MD
Houston, TX

1990

John Hurlbert, MD, PhD
Toronto, Ontario

1991

Peter Gianaris, MD
Eau Claire, WI

1992

Rajiv Midha, MD
Toronto, Ontario

1993

Clinical Science
Gerald F. Tuite, MD
Ann Arbor, MI

Basic Science

Allan D.O. Levi, MD, PhD
Miami, FL

1994

Timothy C. Ryken, MD
Iowa City, IA

1995

Simcha J. Weller, MD
Boston, MA

1996

Clinical Science
Paul D. Sawin, MD
Iowa City, IA

Basic Science

Paul C. Francel, MD
Troy, VA

1997

Manny A. Marone, MD
Atlanta, Georgia

1998

Tord D. Alden, MD
Charlottesville, VA

1999

Basic Science
Steven Casha, MD
Toronto, Ontario

Clinical Science

Nicholas Theodore, MD
Phoenix, Arizona

2000

Basic Science
Neill M. Wright, MD
St. Louis, MO

Clinical Science

Viswanathan Rajaraman, MD, FRCS
Newark, NJ

AANS/CNS SECTION ON DISORDERS OF THE SPINE AND PERIPHERAL NERVES FELLOWSHIP AWARD WINNERS

1993

Ziya L. Gokasian, MD
Houston, TX

1994

Christopher Shaffery, MD
Charlottesville, VA

1995

R. John Hurlbert, MD, PhD
Toronto, Ontario

1996

Simcha J. Weller, MD
Boston, MA

1999

Edie Tsai, MD, PhD
Toronto, Ontario

2000

TBD

MERITORIOUS SERVICE AWARD RECIPIENTS

(previously Lifetime Achievement Award)

1990

Ralph B. Cloward, MD

1991

Frank H. Mayfield, MD

1992

Charles Fager, MD

1993

Joseph A. Epstein, MD

1994

Stanford J. Larson, MD, PhD

1997

David G. Kline, MD

1998

Russell Travis, MD

1999

Volker K.H. Sonntag, MD

2000

Arnold H. Menezes, MD

2000 MERITORIOUS SERVICE AWARD RECIPIENT



Arnold H. Menezes,
MD, FACS

It is with great pleasure that we announce that Arnold H. Menezes, MD, FACS has been chosen as the Meritorious Service Award recipient for the American Association of Neurological Surgeons and Congress of Neurological Surgeons Joint Section on Disorders of the Spine and Peripheral Nerves for the 2000 Annual Meeting.

Dr. Menezes is a Professor and Vice Chairman of the Division of Neurosurgery, Department of Surgery at the University of Iowa College of Medicine in Iowa City, Iowa where he has been in practice for over twenty-five years. He completed his neurosurgical training at the University of Iowa in 1973, adding fellowship training in Pediatric Neurology and joining the faculty the following year.

Dr. Menezes is a member of the AANS and the CNS and is active in the Pediatric Section, advancing the field of pediatric neurosurgery, in addition to his major commitments to the Joint Section on Disorders of the Spine and Peripheral Nerves. His numerous contributions to the Section include Section Chairman (1995-1996), Secretary (1990-1993) and Scientific Program Chair (1988-1989). His twenty professional affiliations encompass national and international neurosurgical groups, including the Neurosurgical Society of America, the Society of Neurological Surgeons, the American Society for Pediatric Neurosurgery, the American Academy of Pediatrics, the American Association of South Asian Neurosurgeons, the International Society for Pediatric Neurosurgery and the Canadian Neurosurgical Society. He is a founding member of the North American Skull Base Society.

Blending his clinical expertise in pediatric neurosurgery and disorders of the spine and skull base has resulted in a truly unique clinical practice, with a major emphasis on congenital and acquired disorders of the craniocervical junction. Through his work, the University of Iowa has become a national and international site for referrals of craniocervical and skull base pathology. He has authored over 130 peer-reviewed publications, over 75 book chapters and serves on six editorial boards. His major textbooks include the first text on *Craniocervical Junction Abnormalities and Principles of Spinal Surgery*, in addition to numerous monographs including "Spinal Neurosurgical Issues in the Pediatric Patient" and "The Craniocervical Junction". He has made over 500 scientific presentations, including 40 visiting professorships throughout the United States and abroad and is active in educational forums and advanced neurosurgical training courses. Dr. Menezes was involved in developing the first "hands-on" practical courses in spinal surgery in the country and has been active in setting up spinal neurosurgical programs in Asia, Africa, and South America.

Complementing his numerous national and international successes, Dr. Menezes' true expertise lies in his tremendous ability as a teacher and a mentor. He has had a major influence in the success of his residents, providing an excellent role model for dedication and enthusiasm for academic neurosurgery and has had a major impact in supporting both his residents and co-faculty members in pursuing their areas of interest. On behalf of the Section, it is a privilege to honor his many achievements and contributions as the 2000 Meritorious Award Recipient.

EXHIBITORS

The AANS/CNS Section on Disorders of the Spine and Peripheral Nerves gratefully acknowledges the support of the following exhibitors for the 2000 Annual Meeting:

- Aesculap** 27
1000 Gateway Blvd
South San Francisco, CA 94080
(650) 876-7000
- American Surgical Sponges, Div.** 35
82 Sanderson Avenue
Lynn, MA 01902
(781) 592-7200
- Anspach Companies** 53
4500 Riverside Drive
Palm Beach Gardens, FL 33401
(561) 627-1080
- Blackstone Medical, Inc.** ... 52
90 Brookdale Drive
Springfield, MA 01104
(413) 731-8711
- BrainLAB, Inc.** 39
100 Marine Parkway, Ste. 305
Redwood City, CA 94065
(650) 494-7240
- Buxton BioMedical**..... 34
15A Melanie Lane, Unit #9A
East Hanover, NJ 07936
(973) 560-4848
- Carl Zeiss**..... 56
One Zeiss Drive
Thornwood, NY 10594
(914) 681-7771
- Codman, a Johnson & Johnson Co.** 26
325 Paramount Drive
Raynham, MA 02757
(508) 828-3253
- Davol, Inc.** 19
100 Sockonossette Crossroad
Cranston, RI 02920
(401) 463-7000
- DePuy AcroMed, a Johnson & Johnson Co.** 12
325 Paramount Drive
Raynham, MA 02767
(508) 828-3253
- EBI L.P.** 4
100 Interpace Parkway
Parsippany, NJ 07054-1079
(800) 526-2579
- Encore Medical Corporation** 55
9800 Metric Blvd.
Austin, TX 78758
(512) 832-9500
- Endius, Inc.** 51
23 West Bacon Street
Plainville, MA 02762
(508) 643-0983
- Gliatech, Inc.** 40
23420 Commerce Park Road
Cleveland, OH 44122
(888) 454-2832

EXHIBITORS

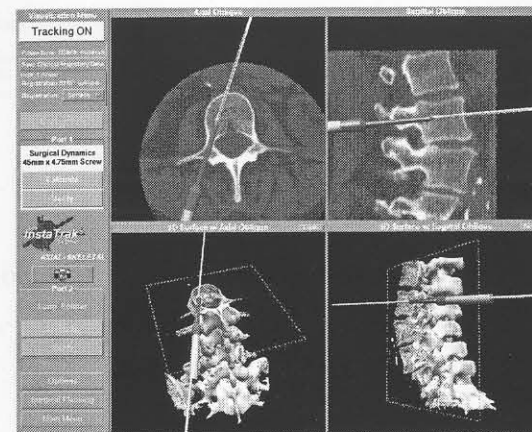
- Haemacure Corporation** 57
2 North Tamiami Trail, Suite 802
Sarasota, FL 34236
(941) 364-3700
- Interpore Cross International** 37
181 Technology Drive
Irvine, CA 92618
(949) 453-3200
- Journal of Neurosurgery** 73
1224 West Main St., Suite 450
Charlottesville, VA 22903
(804) 924-5503
- Komet Medical** 6
1 Brasserel Blvd.
Savannah, GA 31419
(912) 925-8525
- Kyphon, Inc.** 54
3110 Coronado Drive
Santa Clara, CA 95054
(408) 727-9622
- Leica Microsystems Inc.** 41
110 Commerce Drive
Allendale, NJ 07401
(800) 526-0355
- Life Instrument Corp.** 3
14 Wood Road
Braintree, MA 02184
(781) 849-0109
- LifeNet** 22
5809 Ward Court
Virginia Beach, VA 23455
(800) 847-7831
- Lippincott Williams & Wilkins** 64
4750 Matty Court
La Mesa, CA 91941
(619) 465-6365
- Medtronic Midas Rex** 42
3000 Race Street
Ft. Worth, TX 76111
(817) 509-3094
- Medtronic Neurologic Technologies** 44
1800 Pyramis Place
Memphis, TN 38132
(901) 344-1103
- Medtronic Sofamor Danek**..... 46
1800 Pyramid Place
Memphis, TN 38132
(901) 344-1103
- MTF** 65
125 May St., Suite 300
Edison, NJ 08837
(732) 661-0202
- OMI Surgical Products**..... 58
4900 Charlemar Drive
Cincinnati, OH 45227
(513) 561-2241

EXHIBITORS

- Oratec Interventions, Inc.** 23
3700 Haven Court
Menlo Park, CA 94025
(888) 996-1996
- Osteotech, Inc.** 31
51 James Way
Eatontown, NJ 07724
(732) 542-2800
- Quality Medical Publishing, Inc.** 68
11970 Borman Drive, Suite 222
St. Louis, MO 63146
(314) 878-7808
- Radionics** 70
22 Terry Ave.
Burlington, MA 01803
(781) 272-1233
- Spinal Concepts, Inc.** 36
12012 Technology Blvd., Suite 100
Austin, TX 78727
(512) 918-2700
- Stryker Biotech** 59
35 South Street
Hopkinton, MA 01748
(508) 416-5200
- Stryker Spine** 60
59 Route 17, Bldg 6
Allendale, NJ 07401
(800) 934-2463
- Sulzer Spine-Tech** 28
7375 Bush Lake Road
Minneapolis, MN 55439
(612) 832-5600
- Surgical Dynamics** 67
150 Glover Avenue
Norwalk, CT 06856
(203) 845-1000
- Surgical Enterprise Corporation** 8
360 Industrial Rd., Unit H
San Carlos, CA 94070
(800) 810-6610
- Synthes** 21
1690 Russell Road
Paoli, PA 19301
(610) 647-9700
- Visualization Technology, Inc.** 17
200 Research Drive
Wilmington, MA 01887
(978) 933-1103
- W.L. Gore & Associates, Inc.** 24
3750 West Kiltie Lane
Flagstaff, AZ 86001
(520) 779-2771

What you'd like to see from

Dynamic Electromagnetic Tracking Technology for Spinal Image Guided Surgery



Accuracy

- submillimeter tracking of instrument and pedicle screws

Guaranteed Reliability

- no line-of-sight interference with continuous signal transmission

Ease of Use

- CT and Fluoroscope applications with set-up in less than five minutes

Proven Clinical Success

- 2nd largest provider of IGS systems with over 60,000 procedures, over 600 surgeons, and over 200 installed systems

**Come see us at the "What's New Presentations"
and at Booth # 17**

Visualization
Technology

What You'd Like to See

www.vitech.com

ACKNOWLEDGEMENTS

The AANS/CNS Section on disorders of the Spine and Peripheral Nerves wishes to thank the following companies for educational grants and sponsorships in support of the 16th Annual Meeting

Aesculap
Booth #27

Codman, a Johnson & Johnson Co.
Booth #26

DePuy AcroMed, a Johnson & Johnson Co.
Booth #12

EBI Medical Systems
Booth #4

Interpore Cross International
Booth #37

LifeNet
Booth #22

Medtronic Neurologic Technologies
Booth #44

Medtronic Sofamor Danek
Booth #46

Osteotech, Inc.
Booth #31

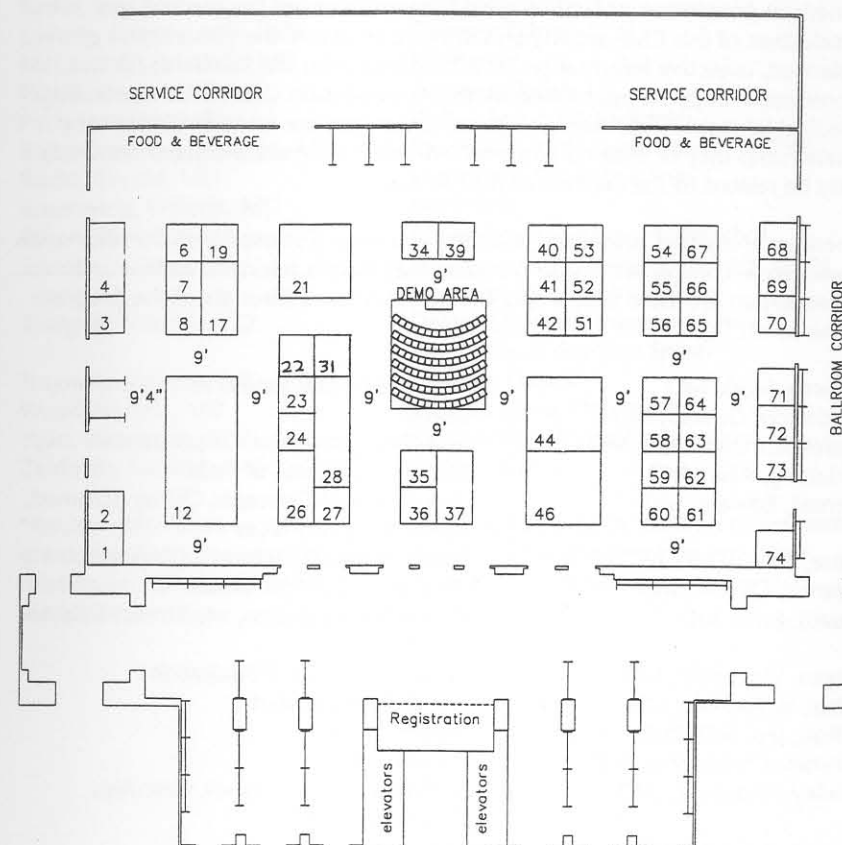
Sulzer Spine-Tech
Booth #28

Visualization Technology, Inc.
Booth #17

Thank you for your support!

FLOOR PLAN

TERRACE LEVEL CRYSTAL BALLROOM



DISCLOSURE INFORMATION

The AANS/CNS Section on Disorders of the Spine and Peripheral Nerves and American Association of Neurological Surgeons control the content and production of this CME activity and attempt to assure the presentation of balanced, objective information. In accordance with the Standards for Commercial Support established by the Accreditation Council for Continuing Medical Education, speakers and paper presenters are asked to disclose any relationship they or their co-authors have with commercial companies which may be related to the content of their lecture.

Speakers and paper presenters/authors who have disclosed a relationship* with commercial companies whose products may have a relevance to their presentation are listed below and will be designated throughout the program book by an "**".

Adams, Mark, MD	Medtronic-Sofamor Danek
Anderson, Gunnar, MD	Oratec
Apfelbaum, Ronald I, MD	Aesculap Instrument Corporation
Belzberg, Allan, MD	National Institutes of Health
Benzel, Edward, MD	Danek, Spinal Concepts, DePuy Acromed, Advanced Biosurfaces
Bose, Bikash, MD	Wright Medical, Acromed Corporation
Branch, Charles, MD	Medtronic Sofamor Danek
Buatti, John, MD	Whitaker Foundation, Medtronic, Sofamor Danek
Bryan, Vincent E., MD	Spinal Dynamics, Corporation
Choi, William W., MD	Z-KAT, Incorporated
Chun, Jap, MD, PhD	Sofamor Danek
Comey, Christopher, MD	Sofamor Danek
Dailey, Andrew T., MD	Synthes, Sofamor-Danek, Aesculap, Depuy-Acromed
Dickman, Curtis, MD	Medtronics
Erulkar, Jonathan S., MD	Stryker Biotech
Fehlings, Michael, MD	Synthes Spine, Johnson & Johnson, Ohio Medical Instruments
Fessler, Richard, MD	Sofamor Danek
Foley, Kevin, MD	Medtronic Sofamor Danek
Gropper, Mitchell, MD	Sofamor Danek, Biomatrix, Osteotech, Acromed, AONA Synthes
Hacker, Robert, MD	Sulzer Spine-Tech
Hadley, Mark, MD	Stryker Spine, Synthes Spine
Haid, Regis, Jr, MD	Medtronic
Haninec, Paul, MD	Grants- 5024-3 IGA MZdCR, MU 11 2801
Harkey, H. Louis, MD	DePuy Acromed
Heth, Jason A., MD	Surgical Dynamics
Hurlbert, John, MD	Spinal Concepts, Inc.

DISCLOSURE INFORMATION

Johnson, J. P., MD	DePuy Acromed, Radionics
Kalfas, Ian, MD	DePuy Acromed
Lowery, Gary L., MD, PhD	Sofamor Danek
McLaughlin, Mark R., MD	Medtronic
Pait, T. Glen, MD	Sofamor Danek
Park, Jongsoo, MD	DePuy Acromed, Radionics
Rajaraman, Viswanathan, MD, FRC	Medical Records Department, UMDNJ
Rodts, Gerald, MD	Medtronic, Sofamor Danek
Rosenberg, William, MD	Medtronic
Ryken, Timothy, MD	Rhone-Poulenc Rorer, Pharmadica
Sonntag, Volker, MD	Sofamor Danek, Spinal Concepts, Elekta, Codman, Johnson & Johnson
Thalgott, John S., MD	DePuy Acromed, Interpore Cross International, Synthes Spine
Traynelis, Vincent, MD	Sofamor Danek
Woodard, Eric, MD	Synthes Spine, Osteotech
Yuan, Hansen A., MD	Kyphon Inc, Stryker Corporation
Zeidman, Seth M., MD	Synthes Spine

*Relationship refers to receipt of royalties, consultantship, funding by research grant, receiving honoraria for educational services elsewhere, or any other relationship to a commercial company that provides sufficient reason for disclosure.

NON-DISCLOSURE INFORMATION

The AANS/CNS Section on Disorders of the Spine and Peripheral Nerves and American Association of Neurological Surgeons control the content and production of this CME activity and attempt to assure the presentation of balanced, objective information. In accordance with the Standards for Commercial Support established by the Accreditation Council for Continuing Medical Education, speakers and paper presenters are asked to disclose any relationship they or their co-authors have with commercial companies which may be related to the content of their lecture.

Speakers and paper presenters/authors who have reported they do not have any relationship* with commercial companies are listed below.

Charles B. Agbi, MB, BS, FRCSEd(SN), FRCS(C)	Mitchell R. Gropper, MD
Alexander, Joseph, MD	Robert J. Hacker, MD
Ronald I. Apfelbaum, MD	Andrea Halliday, MD
Paul M. Arnold, MD	Patrick P. Han, MD
Deepak Awasthi, MD	James S. Harrop, MD
Nevan Baldwin, MD	Robert F. Heary, MD
Perry Ball, MD	John G. Heller, MD
John D. Barr, MD	Jason A. Heth, MD
Ulrich Batzdorf, MD	Patrick Hitchon, MD
Eric Belanger, MD	James Hollowell, MD
Barry D. Birch, MD	Jay U. Howington, MD
Charles L. Branch, Jr., MD	Guest D. James, MD, PhD, FRCS
James J. Brennan, MD	Omar F. Jimenez, MD
David W. Cahill, MD	David S. Jones, MD
Kyoung-Suok Cho, MD, PhD	Agha S. Khan, MD, FACS
Todd S. Crawford, MD	Se Hoon Kim, MD
Brian Cuddy, MD	Young-Soo Kim, MD
Simon A. Cudlip, BSc, FRCS	John W. Kim, MD
Vinay Deshmukh, MD	Daniel H. Kim, MD
Paul W. Detwiler, MS, MD	John Knightly, MD
David A. Ditsworth, MD	John Laurant, MD
Quentin J. Durward, MD	Carl Lauryssen, MD
Michael G. Fehlings, MD, PhD	Thomas T. Lee, MD
Lisa A. Ferrara, MD	Peter J. Lennarson, MD
Aaron Filler, MD	Steven P. Leon, MD
Lawrence H. Fink, MD	Allan Levi, MD, PhD
Kevin T. Foley, MD	Kenneth I. Light, MD
Allan Friedman, MD	Gary L. Lowery, MD, PhD
Fred H. Geisler, MD, PhD	Marone Manny, MD
John W. German, MD	Peter L. Mayer, MD
Ziya J. Gokaslan, MD	Arnold Menezes, MD
	Rajiv Midha, MD, MSc

NON-DISCLOSURE INFORMATION

Douglas B. Moreland, MD	Nitin Tandon, MD
Neal J. Naff, MD	Gordon Tang, MD
Hiroshi Nakagawa, MD	John S. Thalgott, MD
Biodun Ogungbo, MD	Nicholas Theodore, MD
Conor O'Neill, MD	Robert Tiel, MD
T. Glenn Pait, MD	Elizabeth C. Tyler-Kabara, MD, PhD
Christopher Paramore, MD	W. Michael Vise, MD
Chun-Kun Park, MD, PhD	Todd W. Vitaz, MD
Jongsoo Park, MD	Jean-Marc Voyadzis, BSc
Glen J. Poffenbarger, MD	Frank D. Vrionis, MD, PhD
Gregory J. Przybylski, MD	Gregory C. Wiggins, MD
Viswanathan Rajaraman, MD	Harold A. Wilkinson, MD
Yoga R. Rampsaud, MD	Christopher Wolfa, MD
Nizam Razack, MD	Caspar Wolfhard, MD, PhD
John Sarzier, MD	Charles L. Wolff, MD
Leslie A. Sebring, MD	Eric Woodard, MD
Scott A. Shapiro, MD	Neill M. Wright, MD
Ashwini D. Sharan, MD	Andrew S. Youkilis, MD
Christopher B. Shields, MD	Kemal Yucesoy, MD
John K. Stokes, MD	Seth Zeidman, MD
Jung Keun Suh, MD	John L. Zinkel, MD, PhD
Derek A. Taggard, MD	Martin Zonenshayn, MD
Norihiko Tamaki, MD	

*Relationship refers to receipt of royalties, consultantship, funding by research grant, receiving honoraria for educational services elsewhere, or any other relationship to a commercial company that provides sufficient reason for disclosure.

MEETING AGENDA

Wednesday February 23, 2000

7:00 AM–9:00 AM &
12:00 NOON–9:00 PM

Registration — Crystal Prefunction

7:00 AM–5:00 PM

Speaker Preview Room — San Remo

7:00 AM–5:00 PM

Special Course I: Lumbar Instability and Fusion: Diagnosis, Patient Selection, Treatment Options and Outcomes — Valencia Ballroom

Learning Objective: the purpose of this course is to provide a multi-disciplinary overview of the surgical treatment of lumbar instability.

At the conclusion of this session, the participants should be able to:
1. Discuss diagnosis techniques, patient selection, treatment options, and outcomes.

1:00 PM–5:00 PM

Special Course II: Practical Approaches to Selected Peripheral Nerve Injuries — Naples

Learning Objectives: this is a didactic course in which some very practical aspects of peripheral nerve surgery will be addressed.

At the conclusion of this session, the participants should be able to:
1. Clinically assess a patient with a peripheral nerve injury to determine the site of injury.
2. Understand the indications and limitations for electrophysiologic diagnostic studies in patients with peripheral nerve injuries.
3. Understand the methods of diagnosing some of the common peripheral nerve entrapment syndromes and the controversies associated with their treatment.
4. Understand the methods and limitations of the endoscopic approach to the carpal tunnel.
5. The participant will know practical surgical approaches to the peripheral nerves in the lower extremity and the outcomes from such surgeries.

6:30 PM–9:00 PM

Opening Reception at the Renaissance Esmeralda Resort — Rose Lawn

Thursday February 24, 2000

6:30 AM–5:30 PM

Registration — Crystal Prefunction

6:30 AM–5:30 PM

Speaker Preview Room — San Remo

6:30 AM–7:00 AM

Continental Breakfast — Valencia Prefunction

6:30 AM–6:30 PM

Poster Session 1 — Crystal Ballroom

8:00 AM–11:00 AM

Guest Hospitality — Las Estrellas

8:30 AM–6:30 PM

Exhibit Hall Open — Crystal Ballroom

**Disclosure Information*

MEETING AGENDA

Thursday February 24, 2000 (continued)

- 7:00 AM Welcome and Meeting Overview — Valencia Ballroom
*Timothy C. Ryken**
- 7:05 AM Chairman's Welcome and Opening Remarks — Valencia Ballroom
*Vincent C. Traynelis**
- 7:15 AM–9:00 AM **General Scientific Session I — Valencia Ballroom**
Indications for Spinal Fusion: Absolute, Relative, Contraindicated
Moderators: *Vincent C. Traynelis*, Robert Heary*
Learning Objectives: to examine the indications for spinal fusion procedures, the absolute and relative indications, as well as the contraindications for fusions involving the craniovertebral junction and the cervical, thoracic, and lumbar spines.
- At the conclusion of this session, the participants should be able to:
1. Discuss the proper indications for fusions at any level of the spine.
 2. Recognize the situations where spinal fusions are contraindicated.
 3. Identify the potential advantages and disadvantages of fusion procedures at any level from the craniovertebral junction to the sacrum.
- 7:15 AM Indications for Fusion of the Craniovertebral Junction
Arnold H. Menezes
- 7:30 AM Indications for Fusion of the Cervical Spine
*Volker K. H. Sonntag**
- 7:45 AM Indications for Fusion of the Thoracic Spine
*Richard G. Fessler**
- 8:00 AM The Art of Patient Selection in Fusion of the Lumbar Spine
*Edward C. Benzel**
- 8:15 AM **Meritorious Service Award**
Inroads into Craniovertebral Pathology
Arnold H. Menezes, MD
Presented by *Vincent C. Traynelis**
- 8:45 AM History of the AANS/CNS Section on Disorders of the Spine and Peripheral Nerves
Glenn Pait

*Disclosure Information

MEETING AGENDA

Thursday February 24, 2000 (continued)

- 9:00 AM **Beverage Break and Exhibit Hall Session 1**
"What's New?" — Crystal Ballroom
Moderators: *Joseph Alexander, Paul Arnold, Nevan G. Baldwin, Perry Ball*
- 10:00 AM Contributed Papers — Valencia Ballroom
Moderators: *Nevan G. Baldwin, Joseph Alexander*
- 10:00 AM–10:10 AM **Paper 1**
Blinded Outcome Assessment Versus Operating Surgeon's Evaluation of Chronic Iliac Donor Site Pain
Robert F. Heary, MD, Richard P. Schlenk, MD, Theresa Sacchieri, BS, Dean Barone, PAC
- 10:10 AM–10:20 AM **Paper 2**
Radiation Exposure During Fluoroscopically-Assisted Pedicle Screw Insertion
Yoga R. Rampersaud, MD, Kevin T. Foley, MD (Memphis, TN), Alfred C. Shen, MD (San Bernardino, CA), Scott Williams, MD, PhD, Milo Solomito, PhD (Memphis, TN)
- 10:20 AM–10:30 AM **Paper 3**
Minimally Invasive 360 Degree Instrumented Lumbar Fusion
John S. Thalgott, MD, Albert Chin, MD (Irvine, CA), John Ameriks, MD, Frank Jordan, MD, Michael Daubs, MD, James Giuffre, BA, Kay Fritts, CRNFA (Las Vegas, NV)
- 10:30 AM–10:40 AM **Paper 4**
Cervical Pedicle Screws: Comparative Accuracy of Two Insertion Techniques
John G. Heller, MD, Steven C. Ludwig, MD (Hershey, PA), Joseph M. Kowalski, DC, MD (Buffalo, NY), Charles C. Edwards II, MD (Atlanta, GA)
- 10:40 AM–10:50 AM **Paper 5**
Increased Pedicle Screw Pullout Strength with Vertebroplasty Pedicle Augmentation
John Sarzier, MD, Avery Evans, MD, Mark Allen, MD, David W. Cahill, MD (Tampa, FL)
- 10:50 AM–11:00 AM **Paper 6**
Prospective Randomized Multi-Center Clinical Trial of Cervical Fusion Cages
Robert Hacker, MD, Joseph Cauthen, MD, Thomas Gilbert, MD (Eugene, OR)*
- 11:00 AM–11:10 AM **Paper 7**
Application-Specific Accuracy Requirements For Image-Guided Spinal Surgery
Yoga R. Rampersaud, MD, David A. Simon, PhD (Broomfield, CO), Kevin T. Foley, MD (Memphis, TN)

*Disclosure Information

MEETING AGENDA

Thursday February 24, 2000 (continued)

11:10 AM–11:20 AM **Paper 8**

Molecular Mechanisms of Programmed Cell Death in Human Cervical Spondylotic Myelopathy

Michael G. Fehlings, MD, PhD, Wenru Yu MD, Patrick Shannon, MD (Toronto, ON)

11:20 AM–11:30 AM **Paper 9**

Aspiration and Reduced Cough Strength in Cervical Surgery Patients

John W. Kim, MD, Carol Smith Hammond, PhD (Durham, NC), Don Bolser, PhD (Gainesville, FL), Delila Chilampath, BA, Dennis Turner, MD (Durham, NC)

11:30 AM–11:40 AM **Paper 10**

Sensory Ganglionectomy versus Rhizotomy: Theory, Technical Aspects, and Clinical Experience

Harold A. Wilkinson, MD, Andy S. Chan, MD

11:40 AM–11:50 AM **Paper 11**

Early Clinical Outcomes with Kyphoplasty, the Minimally-Invasive Reduction and Fixation of Painful Osteoporotic Vertebral Body Compression Fracture (VCF)

Hansen A. Yuan, MD*, Steven R. Garfin, MD (San Diego, CA), Isador H. Lieberman (Cleveland, Ohio), Mark A. Reiley, MD (Berkeley, CA), Kenneth Yonemura, MD (Syracuse, NY)

11:50 AM–12:00 PM **Paper 12**

Virtual Fluoroscopy for Cervical Spine Surgery

Kevin T. Foley, MD*, Y. Raja Rampersaud, MD (Toronto, Ontario, CA), David A. Simon, PhD (Broomfield, CO), Thomas H. Jansen, MSc (Memphis, TN)

12:00 NOON

Lunch with Exhibitors — Crystal Ballroom

1:00 PM–3:00 PM

General Scientific Session II

Peripheral Nerve Disorders — Valencia Ballroom

Moderators: Allan Friedman, Alan Belzberg,*
Robert Tiel

Learning Objective: to examine current diagnostic and treatment modalities available for peripheral nerve disorders. Experimental and traditional treatment methods for peripheral nerve injuries will be discussed. Peripheral nerve injuries from the proximal plexuses to the distal nerves will be addressed and the state-of-the-art neuroimaging studies available to evaluate these injuries will be reviewed.

At the conclusion of this session, the participants should be able to:

1. Discuss the mechanisms of injury for peripheral nerve disorders.
2. Identify the optimal imaging studies, which can be used to accurately identify peripheral nerve disorders.
3. Recognize which methods are best suited to the treatment of a variety of peripheral nerve disorders.

*Disclosure Information

MEETING AGENDA

Thursday February 24, 2000 (continued)

1:00 PM

Alternatives to Autologous Nerve Grafts
Rajiv Midha

1:15 PM

Experimental Treatment of Peripheral Nerve Neuromas
Allan Belzberg*

1:30 PM

Nerve Imaging
Aaron Filler

1:45 PM

Treatment of Birth Injuries to the Brachial Plexus
John Laurent

Spinal Cord Conditions

Moderators: Gerald Rodts*, John Hurlbert*

2:00 PM

Spinal Cord Injury – Update on Management and Future Directions
Allan Levi

2:15 PM

Adult Tethered Cord
Shokei Yamada

2:30 PM

Syringomyelia
Ulrich Batzdorf

2:45 PM

Intradural Tumors
Patrick Hitchon

3:00 PM

Beverage Break and Exhibit Hall Session II
"What's New?" — Crystal Ballroom

Moderators: Christopher Comey*, Brian Cuddy,
Michael Fehlings*, Mitchell Gropper*

4:00 PM

Contributed Papers — Crystal Ballroom
Moderators: Brian Cuddy, John Knightly

4:00 PM–4:10 PM

Paper 13
Discography in Failed Back Syndrome

Gordon Tang, MD, Andrew Silverstein, MD, Regis Haid, MD, Gerald Rodts, MD (Atlanta, GA)

4:10 PM–4:20 PM

Paper 14
Cervical Spinal Motion during Intubation: Efficacy of Stabilization Maneuvers in the Setting of Complete Segmental Instability

Peter J. Lennarson, MD, Darin Smith, MD, Paul Sawin, MD, Vincent C. Traynelis, MD, Micheal Todd, MD (Iowa City, IA)

*Disclosure Information

MEETING AGENDA

Thursday February 24, 2000 (continued)

4:20 PM–4:30 PM

Paper 15

Clinical Experience with a New Load Sharing Dynamic Anterior Cervical Plate
Ronald I. Apfelbaum, MD, Andrew T. Dailey, MD (Salt Lake City, UT), Jose Barbera (Valencia, Spain)*

4:30 PM–4:40 PM

Paper 16

Comparison of Clinical Outcome: Posterolateral Fusion with Transpedicular Screw Fixation and Cage Interbody Fusion with Transpedicular Screw Fixation in Adult Spondylolithesis

Kyoung-Suok Cho, MD, PhD, Chun-Kun Park, MD, PhD, Choon-Keun Park, MD, PhD, Sung-Chan Park, MD, PhD, Chul Ji, MD, PhD, Do-Sung Yoo, MD, PhD, Pil-Woo Huh, MD, PhD, Dal-Soo Kim, MD, PhD, Joon-Ki Kang, MD, PhD, (Seoul, Korea)

4:40 PM–4:50 PM

Paper 17

A Comparison of Microdiscectomy to Microendoscopic Discectomy

Mitchell R. Gropper, MD, Joseph Sramek, MD (Chicago, IL), Mark A. White, DO, Larry Armstrong, DO (Columbus, OH)

4:50 PM–5:00 PM

Paper 18

Fluoroscopic Guided Targeting System with a Robotic Arm for Pedicle Screw Insertion

William W. Choi, MD, Barth Green, MD, Allan Levi, MD, PhD (Miami, FL)*

5:00 PM–5:10 PM

Paper 19

Surgical Treatment of Metastatic Renal Cell Carcinoma of the Spine
Ziya J. Gokaslan, MD, Robert Jackson, MD (Houston, Texas)

5:10 PM–5:20 PM

Paper 20

Biomechanical Comparison of Anterior versus Transverse Threaded Fusion Cages

Jason A. Heth, MD, Patrick W. Hitchon, MD, Vijay K. Goel, PhD, Thomas N. Rogge, MS (Iowa City, IA)*

5:20 PM–5:30 PM

Paper 21

Magnetic Resonance Neurography of Sciatic Nerve Following Crush Injury, and Correlation with Functional Deficit.

Simon A. Cudlip, BSc FRCS, Franklyn A. Howe, DPhil, John R. Griffiths, DPhil, B. Anthony Bell, MD FRCS.

5:30 PM–5:45 PM

Annual Business Meeting — Valencia Ballroom

5:45 PM–7:00 PM

Wine and Cheese Reception with Exhibitors — Crystal Ballroom

Friday February 25, 2000

6:30 AM–12:00 NOON	Speaker Preview Room — San Remo
6:30 AM–7:00 AM	Continental Breakfast — Valencia Prefunction
6:30 AM–12:00 NOON	Poster Session 2 — Crystal Ballroom
6:30 AM–12:00 NOON	Registration — Crystal Ballroom
8:00 AM–11:00 AM	Guest Hospitality — Las Estrellas
8:30 AM–12:00 NOON	Exhibit Hall Hours — Crystal Ballroom
7:00 AM	Challenging Cases Session I — Valencia Ballroom Moderators: <i>Nevan Baldwin, Mitchell Gropper*</i> Discussants: <i>Paul Arnold, Christopher Comey*, Joseph Alexander, Christopher Paramore, William Rosenberg*</i> <i>Learning Objective: to examine the use of new technologies to treat disorders of the spine. Specific attention will be directed toward identifying methods in which newly developed procedures may be utilized to treat a variety of spinal disorders.</i> <i>At the conclusion of this session, the participants should be able to:</i> 1. Discuss the indications for utilizing image guidance in spinal surgery. 2. Recognize which spinal disorders are most amenable to treatment with minimally invasive techniques. 3. Identify new methods to supplement fusion procedures.
7:45 AM–9:15 AM	General Scientific Session III — Valencia Ballroom Innovations in Spinal Surgery Moderators: <i>Carl Lauryssen*, Gerald Rodts, Jr.*</i>
7:45 AM	Optic Guided Spinal Radiotherapy <i>John Buatti*</i>
8:00 AM	Advances in Image Guided Spinal Navigation <i>Iain Kalfas*</i>
8:15 AM	Advances in Spinal Endoscopy and Thoroscopy <i>Curtis A. Dickman*</i>
8:30 AM	Development of the Artifical Disc <i>Regis Haid, Jr.*</i>
8:45 AM	Aids to Bony Fusion <i>Manny Marone</i>
9:00 AM	Spinal Surgery and Intraoperative MRI <i>Eric Woodard*</i>

**Disclosure Information*

MEETING AGENDA

Friday February 25, 2000 (continued)

9:15 AM Beverage Break and Exhibit Hall Session III
"What's New?" — Crystal Ballroom
Moderators: Andrea Halliday, Robert Heary, John Hurlbert*, John Knightly

10:15 AM Presentation of Mayfield Award- Clinical
James Hollowell

Mayfield Clinical Science Award Scientific Presentation
10:20 AM–10:35 AM Paper 22
Use of Intensive Care Units for Patients with Spinal Disorders
Viswanathan Rajaraman, MD, FRCS*, Richard Schlenk, MD, Robert F. Heary, MD (Newark, NJ)

10:35 AM Presentation of Mayfield Award- Basic Science
James Hollowell

Mayfield Basic Science Award Presentation
10:40 AM–10:55 AM Paper 23
Bone Marrow Derived Mesenchymal Stem Cells Transduced with an Adenoviral Vector Carrying the Gene for Human BMP-2 Can Induce Anterior Spinal Fusion
Neill M. Wright, MD, Jeuren Lou, MD, Su-Li Cheng, PhD, K. Daniel Riew, MD, Louis Avioli, MD (St. Louis, MO)

10:55 AM Contributed Papers
Moderators: Carl Lauryssen, William Rosenberg*

10:55 AM–11:05 AM Paper 24
Dynamic Cervical Plates: Do They Load Share at the Expense of Stability?
Andrew T. Dailey, MD*, Sohrab Gollogly, MD, Alexander Mohr, BS, Kent N. Bachus, PhD, Darrel Brodke, MD (Salt Lake City)

11:05 AM–11:15 AM Paper 25
Midline T-Saw Laminoplasty for the Management of Cervical Spondylotic Myelopathy
John G. Heller, MD, Charles C. Edwards II, MD, D. Hal Silcox, MD

11:15 AM–11:25 AM Paper 26
Tarlov Cysts: A 12 Case Retrospective Series with Review of the Literature
Jean-Marc Voyadzis, BSc, Fraser C. Henderson, MD (Washington, D.C.)

*Disclosure Information

MEETING AGENDA

Friday February 25, 2000 (continued)

11:25 AM–11:35 AM Paper 27
The Role of Topically Applied Hypothermia in Spinal Cord Injury
Christopher B. Shields, MD, John R. Dimar, MD, Y. Ping Zhang, MD, George H. Raque, MD, Steven D. Glassman, MD (Louisville, KY)

11:35 AM–11:45 AM Paper 28
Fluoroscopic Evaluation of the Cervical Spine in the Polytrauma Patient
Deepak Awasthi, MD, Mitchel Harris, Steven Krongle, MD, Phylliss Carboni, RN, Kearny Robert, MD, Norman Chutkan, MD (New Orleans, LA)

11:45 AM–11:55 AM Paper 29
Mechanisms of Leg Pain in Patients with Intervertebral Disc Disorders: Referred Pain Patterns Resulting from Intradiscal Thermal Stimulation
Conor O'Neill, MD, Richard Derby, MD, Conor W. O'Neill, MD (Daly City, CA) Joel A. Berquam, MAPT, DIP MDT (Chapel Hill, NC), Deaglan Ryan, BS (Daly City, CA)

11:55 AM–12:05 PM Paper 30
Surgical Outcome and Management of Median Nerve Lesions
Daniel H. Kim, MD, Robert Tiel, MD, David Kline, MD (New Orleans, LA)

12:05 PM Free Afternoon

12:30 PM Shot Gun Golf Challenge — Indian Wells Golf Resort

1:00 PM Tennis Challenge — Esmeralda Tennis Courts

MEETING AGENDA

Saturday, February 26, 2000

6:30 AM–12:00 NOON	Poster Session 2 (continued) — Crystal Ballroom
6:30 AM–5:00 PM	Speaker Preview Room — San Remo
6:30 AM–1:00 PM	Registration — Crystal Prefunction
6:30 AM–7:00 AM	Continental Breakfast — Valencia Prefunction
8:00 AM–11:00 AM	Guest Hospitality — Las Estrellas
8:30 AM–12:00 NOON	Exhibit Hall Hours — Crystal Ballroom
7:00 AM–7:45 AM	Challenging Cases Session II — Valencia Ballroom Moderators: <i>H. Louis Harkey*</i> , <i>Eric Woodard</i> Discussants: <i>Christopher Wolfla</i> , <i>Allan Levi</i> , <i>Andrea Halliday</i> , <i>Perry Ball</i> , <i>John Hurlbert*</i> <i>Learning Objective: to review specific areas of treatment of spinal disorders where controversy currently exists.</i> <i>At the conclusion of this session, the participants should be able to:</i> <i>1. Appreciate the variation and rationale behind the management options presented for each specific topic.</i> <i>2. Discuss the implications of the techniques of management presented.</i>
7:45–9:45 AM	General Scientific Session IV – Controversies in Spinal Surgery Moderators: <i>Charles Branch*</i> , <i>H. Louis Harkey*</i>
7:45 AM	Discussion
7:45 AM	Controversy I: Discography Discography: A Useful Diagnostic Procedure <i>Allan Belzberg*</i>
7:55 AM	Discography: A Painful Waste of Time <i>Edward Benzel*</i>
8:05 AM	Discussion
8:15 AM	Controversy II – Fusion Following Posterior Cervical Decompression All Cases Should be Fused <i>Mitchell Gropper*</i>
8:25 AM	Fusion is Not Always Indicated <i>Regis Haid, Jr.*</i>
8:35 AM	Discussion
	Controversy III – Surgery For Acute Spinal Cord Injury

**Disclosure Information*

MEETING AGENDA

Saturday, February 26, 2000

- 8:45 AM The Case for Early Surgery
Michael Fehlings
- 8:55 AM The Case for Delayed Surgery
Christopher Paramore
- 9:05 AM Discussion
- Controversy IV – Intradiscal Electrothermy**
- 9:25 AM The case For
*Gunnar Andersson**
- 9:35 AM The Case Against
Robert Heary
- 9:45 AM Discussion
- 10:00 AM **Beverage Break and Exhibit Hall Session IV**
"What's New?" — Crystal Ballroom
Moderators: *Carl Laurysen, Allan Levi, Christopher Paramore*
- 11:00 AM Contributed Papers — Valencia Ballroom
Moderators: *Michael Fehlings, Robert Heary*
- 11:00 AM–11:10 AM **Paper 31**
Thoracoscopic Surgical Resection of Thoracic Neurogenic Tumors
Patrick P. Han, MD, Curtis A. Dickman, MD
- 11:10 AM–11:20 AM **Paper 32**
Lumbar Decompression, Fusion & Stabilization For Spinal Stenosis In Octogenarians
Quentin J. Durward, MD, Stephen H. Noel, MD, Ralph F. Reeder, MD (Sioux City, IA)
- 11:20 AM–11:30 AM **Paper 33**
The New Zealand White Rabbit as a Kinematic Model of the Human Lumbar Spine
Jonathan S. Erulkar, BA, Jonathan N. Grauer, MD, Tushar Ch. Patel, MD, Manohar M. Panjabi, PhD (New Haven, CT)*
- 11:30 AM–11:40 AM **Paper 34**
Sensory and Motor Axonal Response to Immunosuppression Withdrawal in Long Peripheral Nerve Allografts
Rajiv Midha, MD, MSc, Shudeshna Nag, Catherine A. Munro, MSc, Lee C. Ang, MD (Toronto, ON Canada)

*Disclosure Information

MEETING AGENDA

Saturday, February 26, 2000

- 11:40 AM–11:50 AM **Paper 35**
Instability of the Craniovertebral Junction and Treatment Outcomes in Patients with Down's Syndrome
Derek A. Taggard, MD, Arnold H. Menezes, MD, Timothy C. Ryken, MD (Iowa City, IA)
- 11:50 AM–12:00 PM **Paper 36**
Segmental Stability and Compressive Strength of Posterior Lumbar Interbody Fusion Implants
Seth M. Zeidman, MD, Anthony Tsantrizos MSc, Hani G. Baramki, MD, PhD, Thomas Steffen, MD, PhD (Montreal, PQ)*
- 12:00 PM–12:10 PM **Paper 37**
Virtual Fluoroscopy: Multiplanar X-ray Guidance with Minimal Radiation Exposure
Kevin T. Foley, MD, Y. Raja Rampersaud, MD (Toronto, Ontario), David A. Simon, PhD (Broomfield, CO)*
- 12:10 PM–12:20 PM **Paper 38**
Effect of Timing of Decompression on Neurological Outcome Following Spinal Cord Injury (SCI)
Christopher B. Shields, MD, John R. Dimar, MD, George H. Raque, MD, Y. Ping Zhang, MD, Steven D. Glassman, MD (Louisville, KY)
- 12:20 PM–12:30 PM **Paper 39**
Kinematic Comparison of Normal, Fused and Disc Replacement Cervical Spines in the Chimpanzee
Vincent E. Bryan, Robert Conta (Mercer Island, WA), Richard Kornistek (Denver, CO), John Heller (Decatur, GA), Jeffrey Rouleau (Mercer Island, WA)*
- 12:30 PM Closing Remarks – Meeting Adjourned

1:00 PM–5:00 PM

Special Course III — Valencia Ballroom **Basic Principles of Spine and Peripheral Nerve Surgery**

Learning Objectives: to allow a thorough overview of the basic principles behind the more detailed scientific principles and techniques presented in the scientific sessions.

At the conclusion of this session, the participants should be able to:

1. Discuss the basic indications for common spine and peripheral nerve surgical procedures.
2. Discuss the rationale leading to the basic surgical approaches and the potential complications encountered.

*Disclosure Information