

# HAND SURGERY

Q U A R T E R L Y



## FROM THE PROGRAM CHAIR

### Comprehensive Program Set for Meeting in Arizona

**T**he 2006 annual meeting of the American Association for Hand Surgery will be held at the beautiful Loews Ventana Canyon Resort in Tucson, Arizona on January 11 to 14, 2006. The theme of this year's meeting is Challenges in Hand Surgery and promises to be an exciting, educational and fun meeting.

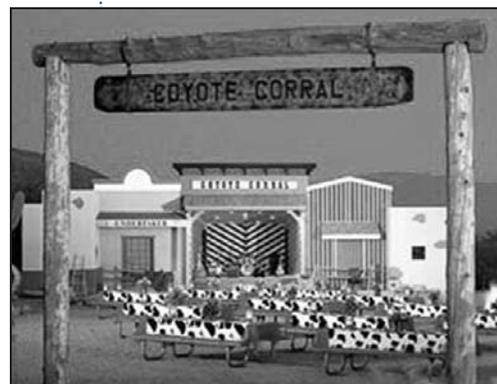
The program will begin early on Wednesday, January 11, 2006 with a Special Topics Day, which will consist of a comprehensive

program beginning in the morning with a course on the Challenges of Nerve Compression and in the afternoon, the Bioskills Workshops will be presented on a variety of operative procedures on trauma and reconstructive techniques. The Challenges of Nerve Compression will consist of didactic presentations and panels from a diverse group of surgeons and therapists with expertise in nerve compression and related work,

reimbursement and legal issues. The Bioskills courses will include cadaver dissections and these exceptional courses will offer participants the opportunity for hands-on experience with expert surgeons. Registration will be limited for the Bioskills courses to facilitate small group interaction and therefore early registration is recommended.

Following the Special Topics Day, we will have an exciting program with instructional courses, panels, invited speakers, computerized instructional courses and again, we will be presenting a Comprehensive Review Course. Peter Murray, MD, has organized an outstanding faculty for the Review Course to update your knowledge on a variety of important hand surgery topics. Hand Therapy Day will be held on Saturday afternoon and Julianne Howell PT, MS, has organized a fantastic program on The Challenge – Hand Surgeons & Therapists – What evidence do you have to do that? More on the hand therapy program is in the Affiliate and Hand Therapists' Corner on page 17.

In keeping with our tradition of collaboration with the American Society



The Coyote Corral at Loews Ventana Canyon Resort

for Reconstructive Microsurgery and the American Society for Peripheral Nerve, our combined program on Saturday morning will include five instructional courses, a panel on Composite Tissue Allograft, selected outstanding nerve papers and the Presidents' Invited Lecture.

There will be ample time to enjoy the beautiful venue in Arizona and we will also have several social events including a silent auction to support the Hand Surgery Endowment. I hope that you will plan to attend the AAHS annual meeting for four days of education and enjoyment and I look forward to seeing you in Tucson.

*Christine B. Novak, PT, MS  
AAHS 2006 Program Chair*



**The 2006 Annual Meeting Program at a Glance starts on page 6.**



CHRISTINE NOVAK, PT, MS

## Thanksgiving

**A**t this time of year, it is customary to take stock of one's blessings. Of these I have had more than my fair share. Let me tell you about one, which is especially important to me this year. Almost exactly a year ago, I got a call from my dad. He said he was not feeling well, and wondered if he should come to see me at Mayo Clinic for a visit and a checkup. While he and my mom were frequent visitors, to say he was not feeling well was unusual; he rarely complained. Indeed, he had only reluctantly retired from the practice of medicine a few years before, at age 75. Yet,



PETER C. AMADIO MD

exactly one month later, my father was dead, from complications of metastatic cancer. I still think about my dad, a lot. I could hardly suspect, then, in my sorrow, that this year he would help me to find the strength and proper frame of mind to cope with my own recent bout with cancer.

My father was an extraordinarily consistent and straightforward man, who said what he meant, meant what he said, and was always more concerned about the people around him than he was about himself. While he loved his patients, his residents, and teaching medicine, for which he won many academic accolades and awards, his greatest joy was practicing medicine for free, among the poorest of our fellow humans, whether that be on dusty reservations in the American west, in the jungles of South America, in refugee camps in the Middle East, or in AIDS stricken communities in Africa. He would return from those trips energized, already planning the next foray.

Of course, as a child, I didn't really pay much attention to my dad's career. Growing up, first and foremost, my dad was my pal. I mean that, literally. That was my name for him until I was 12 or so, Pal. A name with origins shrouded in mystery, creating a relationship unique among all my friends- they had dads, or fathers, or poppas; I had my Pal. And a pal he was. Whether hiking, fishing, or visiting the local zoo, I could count on his focused attention and love. Of course, it wasn't all play. My friends have often remarked on how I would help my children with their homework, even if that meant by phone or fax when on a trip. But that was something I learned from my dad. Of course, he also gave me extra homework to do. I spared my own children that. I hope it was not a mistake!

I learned about decency one summer day on a family trip to Canada. I was maybe 10 or 11. It was hot and we were enjoying a swim in the motel pool. But then it was time for dinner, and we kids reluctantly climbed out of the water. Suddenly, just as we had finished toweling off, my dad announced that we were all to go back in to the pool; dinner could wait. We were confused, but happily complied (those who know me will recognize that cluelessness is an attribute I have possessed for a long time!). I found out later what had caused the sudden change of heart. A black family had arrived to swim, just as we were leaving. My dad had noticed that as the black kids entered the pool, all the white people had rapidly exited, unwilling to share the pool with black people. My dad had taken one look at the stricken visage of that black father, who had done no one any harm, and ordered our family to join his in the pool. I am proud today that my children, like my father, choose their friends by their character, and not by their appearance.

Loyalty was an everyday lesson. If he wasn't working, Sundays were for visiting family and friends. We had many uncles and aunts who were not blood relatives, but who were part of the family and we visited regularly just the same. To my dad, friends were friends for life, and though his children may have noted that many of these friends were far often on the receiving than giving end, it never made any difference to my dad. There was no equation to balance in his mind; no account to settle. If it was good and right, it got done.

It was truly a blessing to have had such a person as a father. Someone whose willingness to lift up, to help, to share, and to love, was unconditional and without limits. Even if much was unappreciated or not taken to heart, there was still so much that did connect. that its remembrance, and his spirit

## HAND SURGERY QUARTERLY

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*Hand Surgery Quarterly* is a publication of The American Association for Hand Surgery and is published strictly for the members of AAHS. This publication is designed as a forum for open discussion and debate among the AAHS membership. Opinions discussed are those of the authors or speakers and are not necessarily the position, posture or stance of the Association.

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remain as living forces, and do good works, even now. And that, finally, is the greatest lesson I learned from my father- never stop giving, never stop helping, never stop striving for the good. The focus on others is good for the soul, and keeps away morbid musings on one's own inevitable mortality. And, perhaps surprisingly, offers just the sort of strength and focus needed to recuperate from a major illness, or, indeed, any major personal setback.

So this Thanksgiving I'm giving special thanks to my dad. He isn't physically around anymore, but I really haven't lost him. He's right here, with me every day, just as he always has been, helping me become a better man. And, because of him, I realize that the things to be most thankful for, in this Thanksgiving season, and every day, are not the things you have, but those you give; and of those things the most valuable is the one anyone can give in unlimited quantities: love. Nothing else really matters.

I wish each of you the best of Thanksgivings. May each of you love deeply, and widely, and long. Happy Thanksgiving. And thanks, Pal.

## New Journal Preparing for Launch

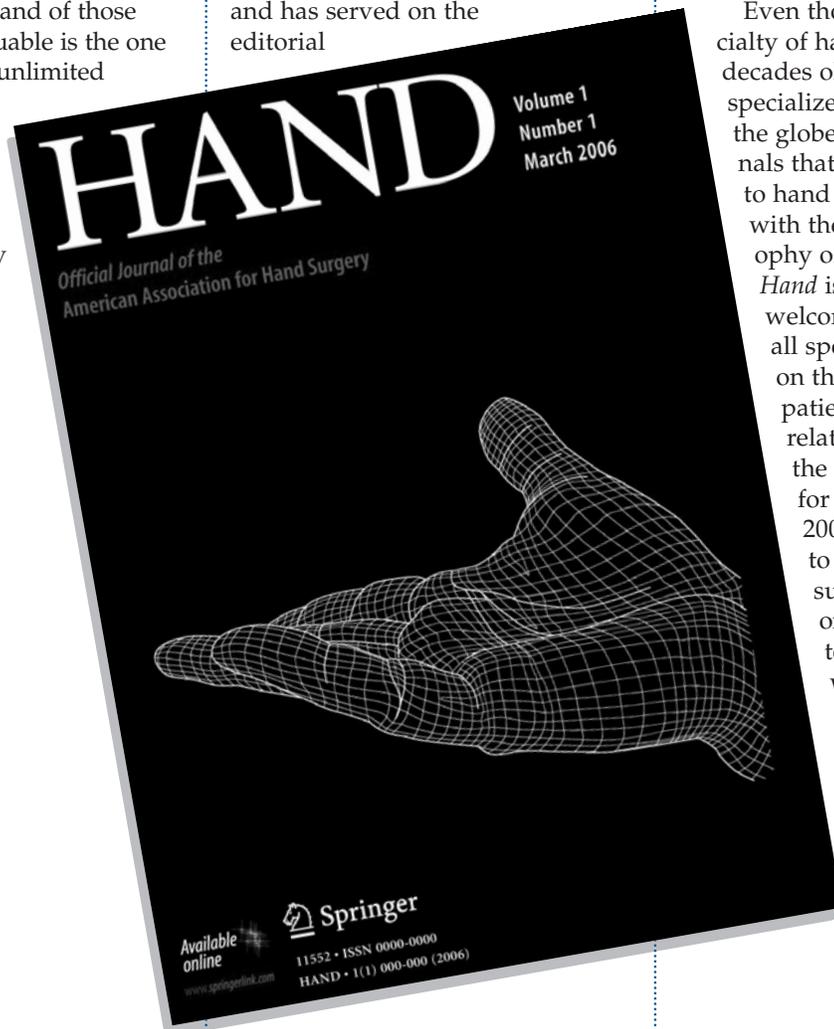
The Board of Directors of the American Association of Hand Surgery is proud to announce our AAHS journal, *Hand*. The journal has been over two years in the planning and is set for its first publication in June of 2006. Elvin G. Zook, MD will be Editor and Chief and he is now in the process of defining the editorial board. We are fortunate to have someone with Dr. Zook's credentials to serve as editor. He was the associate editor for the *Journal of Plastic & Reconstructive Surgery* for six years and has served on the editorial

board of numerous scientific journals. Dr. Zook is a Past President of the American Society of Plastic and Reconstructive Surgeons, Association of Academic Chairman of Plastic Surgery, and Plastic Surgery Research Council and Past Chairman of the American Board of Plastic Surgery. Dr. Zook has authored over a hundred articles and contributed to more than forty books as well as authored or co-authored five books. Clinically, he is renowned for his approach and treatment of fingertip injuries. With these skills and an international reputation in hand surgery, Dr. Zook is the ideal individual to serve as Editor of *Hand*. Christine B. Novak, MS, PT, will serve as Associate Editor. She has published over 100 peer reviewed papers and book chapters.



SUSAN MACKINNON, MD

Even though the specialty of hand surgery is decades old and practiced by specialized surgeons around the globe, there are few journals that are dedicated solely to hand surgery. In keeping with the all-inclusive philosophy of the Association, *Hand* is generically titled to welcome submissions from all specialties that impact on the management of patients with problems relating to the hand. With the first issue scheduled for circulation in June of 2006, Dr. Zook is ready to receive manuscript submissions. The online web-based system editorial manager will be implemented by early 2006. In the interim, Yvonne Chan, Editor of Medical Journals at Springer, is available to receive



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## FROM THE PRESIDENT

*continued from page 3*

your manuscripts (Yvonne.chan@springer.com). We are still working through some of the specifics of our new journal including the format and cover. In this edition of *Hand Surgery Quarterly*, we have one version to show you and we would appreciate your comments.

The Educational Committee has been very busy developing the new mentoring program. This program will provide the opportunity for surgeons to spend time with other surgeons who have expertise in a particular area or operative procedure. The AAHS Board is very appreciative of these mentors who have offered to teach and acknowledges their expertise in these specific areas. Please take advantage of their academic generosity (Table 1). This is a new program and many of you may not yet have heard about it. It is designed to let our members con-

tinue to learn the way we were taught, as residents and fellows, in the clinic and operating room with a surgical mentor. For more information, including to register as a mentor, please contact the AAHS central office. The Board would welcome your comments on the mentoring program. I would like to see it expand to include organized opportunities at the annual meeting to discuss difficult cases with the 'experts' and possibly a web based format to offer similar opportunity for discussion throughout the year.

Our Annual Meeting program chair, Christine Novak, has summarized the upcoming AAHS annual meeting in this issue of *Hand Surgery Quarterly*. Something new this year is the all-day Special Topics Day on Wednesday January 11, 2006, which will include a course on nerve compression and the bio-skills workshops. Please make your travel plans accordingly and plan to arrive on Tuesday. The program chairs of the AAHS, ASPN

and ASRM have worked to develop an exciting joint program on Saturday morning. There will be a panel on composite tissue allotransplantation and an invited lecture on war and disaster injuries by Colonel Mark Bagg, MD. Several instructional courses will be offered including Reinnervation of Muscle, Interpretation of Electrophysiological Data, Management of Pain, Nerve Transfers, and Quality of Life Outcome Measurements. The theme of evidence-based management will continue Saturday afternoon in the Hand Therapy Program.

I am extraordinarily excited about our new journal, *Hand* and hope that you will support it with enthusiasm. We have received outstanding abstracts for our annual meeting and I hope that the presenters will prepare manuscripts for consideration of publication and submit them to Dr. Zook at the meeting in January. You will be receiving more information about the *Hand* shortly from our editor.

Travel safely to Tucson and have a wonderful holiday season. **H**

**TABLE 1: AAHS Mentor Volunteers**

NAME	EMAIL	PROCEDURE
Michael G. Raab, MD	Mikeraab1@earthlink.net	Corrective osteotomy (volar or dorsal) of distal radius malunion with iliac crest bone grafting
Scott H. Kozin, MD	SKOZIN@shrinenet.org	Pediatrics
W.P. Andrew Lee, MD	leewp@upmc.edu	Post traumatic hand reconstruction Mini incision carpal tunnel release
Jorge Orbay, MD	jlorbay@aoElcom	Wrist fractures
Susan Mackinnon, MD	mackinnons@wustl.edu	Ulnar nerve surgery
Nash Naam, MD	drnaam@handdocs.com	SLAC wrist reconstruction Vascularized bone graft in treating scaphoid nonunions Ulnar shortening and radial shortening PIP and MP joint arthroplasty LRTI Arthroscopy of the CMC joint of the thumb
Thomas H. Tung, MD	tungt@wustl.edu	Brachial plexus reconstruction/nerve transfers



## President-Elect Ronald E. Palmer, MD

Ronald E. Palmer, MD will assume the Presidency of the American Association for Hand Surgery at the annual meeting in January 2006. Ron first presented a paper at the American Association for Hand Surgery in New York City in October of 1981. His practice, papers, and presentations are primarily clinically oriented. The AAHS seemed a perfect fit to focus his educational and teaching pursuits with what seemed to him a clinically oriented educational experience in a relaxed and friendly atmosphere. Since 1981, Ron has not missed a meeting of the AAHS and has essentially always been accompanied by his wife and part of his family.

Ron became involved in the organization of the AAHS on the committee level at the encouragement of Dr. Bob Beckenbaugh. He has served on and chaired most all committees of the AAHS, including the Poster Committee, Finance Committee, Educational Committee, Nominating Committee and Family Practice Liaison Committee. He has held various board positions over the last number of years.

Ron is a native of Peoria, Illinois. He graduated from Westminster College in Fulton, Missouri in 1969. Following graduation from college he returned to Peoria, Illinois to the high school he attended and taught chemistry and biology for two years. In 1970 he married Kathleen Jamieson, his high school sweetheart, who was then teaching primary education. In 1971, while his wife continued to teach, he entered medical school and attended Chicago Medical School from which he graduated in 1975. Following medical school, he returned to Peoria, Illinois and did his internship and orthopedic residency at St. Francis Medical Center. Following his residency, he did a Fellowship in Sports Medicine at Westpoint Military Academy under the guidance of Dr. John Feagin. He was then asked to do a hand Fellowship and return to Peoria to join the faculty for the orthopedic residency program as his hand surgeon. He did his Hand Fellowship at the University of Virginia in Charlottesville with Dr. Frank McCue.

Dr. Palmer returned to Peoria, Illinois where he has remained, practicing orthopedic surgery with his practice being limited to the hand and upper extremity. He is on the faculty of the University of Illinois College of Medicine at Peoria, and is an active instructor to the residency training programs. He is also a consultant with the University of Illinois Division of Services for Crippled Children for hand and upper extremity defects.

Dr. Palmer has retained a special interest in sports related hand and wrist injuries. He has authored many articles in textbooks and journals on sports injuries of the hand. He has given various presentations both nationally and internationally including France, Spain, Bulgaria, Finland, Japan, Hong Kong, Hungary, and Romania.

Ron and Kathleen are blessed with three children, Jeff, Brad, and Bridget. Jeff is a financial consultant in Peoria with Smith Barney and a number of years ago was selected by the Board of the American Association for Hand Surgery to be its financial consultant. Since that time Jeff has taken the organization through some very difficult financial times and has volunteered his time to be on the Finance Committee and to attend the annual meeting of the AAHS to present the financial status of the organization to the Board. Brad is in his last year of Medical School in Chicago and is pursuing an orthopedic residency at this time. Surprisingly, his father is encouraging him to start thinking of a Hand Fellowship. Bridget is finishing her final year at the University of Missouri in Columbia as a business major. She has accepted a position in Chicago, Illinois with the Target Stores management program.

Ron has various interests including hunting, fishing, golf, horseback riding, snow skiing, and flying. His family looks forward to his culinary skills, especially during the holidays.

Dr. Palmer's goal is to continue to promote and improve the educational excellence of the American Association for Hand Surgery, particularly in relationship to its clinical relevance. He hopes to encourage all medical professionals interested in hand surgery and hand related injuries to come to the meetings of the American Association for Hand Surgery and participate and learn. He also wishes to continue to make this a rewarding experience for the family in a warm and comfortable environment with ample free time to spend with family and Association friends. **H**

# AAHS 36th Annual Meeting

## Program at a Glance

January 11-14, 2006

Loews Ventana Canyon Resort, Tucson, AZ

### AAHS

Wednesday, January 11, 2006

- 7:00–8:00am Continental Breakfast
- 7:30am–2:30pm **Special Topics Day - Challenges in Nerve Compression**
- 7:30–7:45am **President/Program Chair Welcome**  
Susan Mackinnon, MD, AAHS President  
Christine Novak, PT, MS, AAHS Program Chair
- 7:45–8:00am **Histopathology of Nerve Compression**  
Susan Mackinnon, MD
- 8:00–8:20am **Patient Examination**  
Susan Mackinnon, MD  
Christine Novak, PT, MS
- 8:20–8:40am **Electrodiagnostic Studies for Nerve Compression**  
Allen Van Beek, MD
- 8:40–9:00am **Non-operative Treatment of the Patient with Nerve Compression**  
Christine Novak, PT, MS
- 9:00–9:20am **Carpal Tunnel Syndrome**  
Steven McCabe, MD
- 9:20–9:40am **Operative Treatment for Carpal Tunnel Syndrome**  
Daniel Nagle, MD
- 9:40–10:00am **Outcomes of Carpal Tunnel Syndrome, What Do We Know?**  
Kevin Chung, MD, MS
- 10:00–10:20am **Break**
- 10:20–10:40am **Operative Treatment of Recurrent Carpal Tunnel Syndrome**  
Mark Baratz, MD
- 10:40–11:00am **Cubital Tunnel Syndrome**  
Peter Amadio, MD
- 11:00–11:20am **Operative Treatment of Recurrent Cubital Tunnel Syndrome**  
Susan Mackinnon, MD
- 11:20am–12:00pm **Panel – Is It Work-Related?**  
Steven McCabe, MD, Moderator  
Kevin Chung, MD  
Peter Amadio, MD  
Ronald Palmer, MD  
Sandra Robinson, OTR CHT
- 12:00–12:20pm **Break**

- 12:20–12:40pm **The Aging Workforce**  
James Creighton, MD
- 12:40–1:30pm **Panel – Challenging Controversies in Medical Legal Issues for the Hand Surgeon**  
Ronald Palmer, MD, Moderator  
James Creighton, Jr, MD  
N. Bradley Meland, MD  
Robert Russell, MD  
William Swartz, MD
- 1:30–2:30pm **Panel – Opting Out of Medicare: Pros & Cons**  
Daniel Nagle, MD, Moderator  
Brian Adams, MD  
Michael Beatty, MD  
William Brender, MD  
M. Felix Freshwater, MD  
Richard Uhl, MD  
Nicholas Vedder, MD
- 3:00–5:00pm **Cadaver Demonstration Courses/Bioskills Workshop**  
Additional registration required. Participation is limited to 50 registrants per course/workshop.
- CD 1 **Technical Advances in Radial Head Fracture Repair and Reconstruction**  
Faculty: Mark Baratz, MD and Mark Cohen, MD  
Sponsored by KMI
- CD 2 **Entubulation – Concepts and Techniques for Peripheral Nerve Repair**  
Randip Bindra, MD  
Sponsored by Integra
- CD 3 **Current Techniques for Pyrolytic Carbon MCP/PIP/CMC Arthroplasty**  
Robert Beckenbaugh, MD  
Sponsored by Ascension Orthopedics
- CD 4 **Fixed Angle Fixation of Distal Radius Fractures**  
Faculty: TBA  
Sponsored by Hand Innovations
- CD 5 **Total Wrist Replacement Arthroplasty Using a Surface Replacement Prosthesis/uHead Arthroplasty**  
William Cooney, MD  
Sponsored by Small Bone Innovations

BW 1 **Hand and Wrist Trauma Utilizing the Wrist F.I.T. Plating System and the New Modular Universal Hand System**

William Seitz, MD

Sponsored by Small Bone Innovations

6:00–7:00pm **Welcome Reception**

### AAHS

Thursday, January 12, 2006

- 6:30–8:30am Continental Breakfast
- 7:00–8:00am **Instructional Courses**
- 101 **Flexor Tendon Injuries**  
Michael Neumeister, MD, Moderator  
James Creighton, Jr, MD  
Rebecca von der Heyde, MS, OTR/L, CHT
- 102 **Hand Fractures**  
Matt Tomaino, MD, Moderator  
Robert J. Goitz, MD  
Sue Micholovitz, PhD, PT
- 103 **Stages and Treatment of Thumb Basal Joint Arthritis**  
Miguel Saldana, MD, Moderator  
Alejandro Badia, MD  
Paul Brach, MS, PT, CHT  
Nash Naam, MD
- 104 **Pediatric Hand Injuries**  
Scott Kozin, MD, Moderator  
Benjamin Chang, MD  
Christine J. Cheng, MD
- 105 **Surgical Management of Dupuytren's**  
Michael Jabaley, MD, Moderator
- 8:00–9:00am **Panel – Challenging Wrist Pain**  
Mark Baratz, MD, Moderator  
Brian Adams, MD  
Mark Cohen, MD  
Steven Moran, MD  
Thomas Trumble, MD
- 9:00–10:00am **Panel – Challenging Nerve Cases**  
Allen Van Beek, Moderator  
Neil Ford Jones, MD  
Susan Mackinnon, MD  
Dean Sotereanos, MD  
Julia Terzis, MD
- 10:00–10:15am **Break**
- 10:15–11:00am **Keynote Speaker: Jeff Lichtman, MD, PhD**  
“Studying Axon Growth and Regeneration in Fluorescent Mice”

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**11:00am – 12:00pm** **Distal Radius Fractures – Defend Your Plate**  
*Alan Freeland, Co-Moderator*  
*Jaiyoung Ryu, MD FACS, Co-Moderator*  
*Randy Bindra, MD*  
*William Geissler, MD*  
*Thomas R. Hunt, III, MD*  
*Jorge Orbay, MD*  
*Matthew Putnam, MD*

**12:00–12:15pm** **Box Lunch**

**12:15–1:45pm** **Concurrent Scientific Paper Session**

**12:15–1:45pm** **Concurrent Scientific Paper Session**

**12:15–6:05pm** **Comprehensive Review Course**  
 Course is complimentary, but pre-registration is required.

**12:15–12:30pm** **Tendonopathies and Dupuytren's Contracture**  
*Peter M. Murray, MD*

**12:30–12:50pm** **Compression Neuropathies**  
*Daniel Nagle, MD*

**12:50–1:00pm** **RSD**  
*Daniel Nagle, MD*

**1:00–1:15pm** **Degenerative Arthritis of the Hand and Wrist**  
*Matt Tomaino, MD*

**1:15–1:25pm** **Kienbocks**  
*Matt Tomaino, MD*

**1:25–1:45pm** **Inflammatory Arthritis of the Hand and Wrist**  
*Brian Adams, MD*

**1:45–1:50pm** **Questions**

**1:50–2:10pm** **Distal Radius Fractures**  
*Peter J. L. Jebson, MD*

**2:10–2:25pm** **The Distal Radio-Ulnar Joint**  
*Brian Adams, MD*

**2:25–2:35pm** **Scaphoid Fractures and Non-unions**  
*Peter J. L. Jebson, MD*

**2:35–2:55pm** **Wrist Dislocations and Instabilities**  
*Richard Berger, MD, PhD*

**2:55–3:10pm** **Metacarpal and Phalangeal Fractures**  
*Stephen D. Trigg, MD*

**3:10–3:15pm** **Questions**

**3:15–3:30pm** **Extensor Tendon Injuries**  
*Kevin Renfree, MD*

**3:30–3:50pm** **Flexor Tendon Injuries**  
*Kevin Renfree, MD*

**3:50–4:05pm** **Infections of the Hand**  
*Kevin Planchar, MD*

**4:05–4:25pm** **Congenital Hand Anomalies**  
*Scott Kozin, MD*

**4:25–4:45pm** **Tumors of the Hand and Wrist**  
*Edward A. Athanasian, MD*

**4:45–4:50pm** **Questions**

**4:50–5:10pm** **Peripheral Nerve Injury and Reconstruction**  
*Michael B. Wood, MD*

**5:10–5:25pm** **Tendon Transfers**  
*Michael B. Wood, MD*

**5:25–5:45pm** **Soft Tissue Coverage of the Hand**  
*William C. Pederson, MD*

**5:45–6:00pm** **Vascular Disorders of the Hand/ Reimplantation**  
*Peter M. Murray, MD*

**6:00–6:05pm** **Questions/Adjourn**

## AAHS Friday, January 13, 2006

**7:00–8:00am** **Annual Business Meeting Breakfast**

**7:00–8:00am** **Concurrent Instructional Course for Residents, Fellows & Non-members**

**106** **Getting Your Practice Started**  
*Jeffrey King, MD*  
*Steven Meletiou, MD*  
*Jose Ortiz, Jr., MD*

**107** **Money Management**  
*Jeff Palmer, Smith Barney*

**8:00am – 4:00pm** **Computerized Instructional Courses**

**8:00–9:00am** **Board of Directors Meeting**

**8:00–9:00am** **Instructional Courses**

**108** **Nerve Gap**  
*Dimitri Anastakis, MD, Moderator*  
*Linda Dvali, MD*  
*Terry Myckatyn, MD*

**109** **Adult and Pediatric Elbow Trauma**  
*Mark Baratz, MD, Moderator*  
*Mark Cohen, MD*  
*Judy Glas, OT*  
*Scott Kozin, MD*

**110** **Recognition and Management of Carpal Instabilities**  
*Steven Moran, MD, Moderator*  
*Marco Rizzo, MD*

**111** **Extensor Tendon Repair & Management – Immediate Active Motion**  
*Wyndell Merritt MD, Moderator*  
*Julianne Howell, PT, MS, CHT*

**112** **Hand Surgery and Therapy Missions in Developing Countries – Pearls & Pitfalls**  
*Warren Schubert, MD, Moderator*  
*Lynn Bassini, OTR, CHT*  
*Miguel Pirela-Cruz, MD*

**9:00–10:00am** **Panel - Challenges of Hand Trauma**  
*Nicholas Vedder, MD, FACS, Moderator*  
*Allen Bishop, MD*  
*Richard Brown, MD*  
*A. Lee Osterman, MD, FACS*  
*Thomas Trumble, MD*

**10:00–10:45am** **Break with Exhibitors**

**10:45–10:55am** **ASSH Presidential Welcome**  
*David M. Lichtman, MD*

**10:55–11:15am** **AAHS Presidential Address**  
*Susan Mackinnon, MD*

**11:15am – 12:00pm** **Joseph Danyo Presidential Invited Lecturer: Peter Amadio, MD**

“Three Decades of Tendon Research: The Search for the Perfect Slide”

**12:00–12:15pm** **Break**

**12:15–2:00pm** **Concurrent Scientific Paper Sessions**

**2:00–3:30pm** **Panel - Operative Pearls from My Surgical Practice**  
*Susan Mackinnon, MD, Moderator*  
*Peter Amadio, MD*  
*Richard A. Berger, MD, PhD*  
*A. Lee Osterman, MD, FACS*  
*Robert Russell, MD*  
*Nicholas Vedder, MD, FACS*

**5:30–7:00pm** **AAHS Silent Auction and Reception Benefiting HSE**

Hand Surgery Endowment (HSE)  
*Alan Freeland, MD*  
 Presentation of Awards  
 Posch Award for Resident/Fellow Research Paper  
 Research Grant Award  
 Vargas International Hand Therapy Teaching Award

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## AAHS/ASRM/ASPN Saturday, January 14, 2006

6:00–8:00am Continental Breakfast

6:30–7:30am Instructional Courses

201 Indications, Timing and Interpretation of Electrophysiology  
*Harvey Goodman, MD*  
*Allen Van Beek, MD*

202 Interdisciplinary Management of Pain  
*A. Lee Dellon, MD*  
*Randall Prust, MD*

203 Nerve Transfers  
*Susan Mackinnon, MD*  
*Christine Novak, PT/MS*  
*Renata Weber, MD*

204 Outcome Measures: Quality of Life  
*Kevin Chung, MD*  
*Brent Graham, MD*  
*Steven McCabe, MD*  
*Achilleas Thoma, MD, FRCSC*

205 Reinnervating Muscle  
*Paul Cederna, MD, FACS*  
*Nancy McKee, MD, FRCSC*

7:45–7:55am **Presidents' Welcome**  
*Susan Mackinnon, MD, AAHS President*  
*Maria Siemionow, MD, PhD, ASPN President*  
*William C. Pederson, MD, ASRM President*

7:55–8:00am **ASPS Presidential Remarks**  
*Scott Spear, MD, ASPS President*

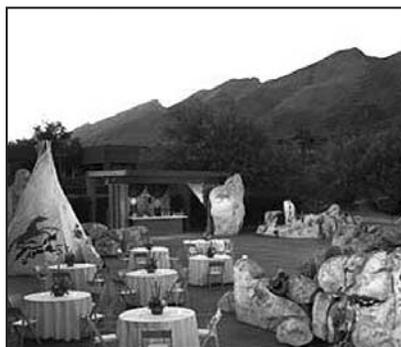
8:00–9:30am **Panel: Composite Tissue Allografts**  
*William C. Pederson, MD, Moderator*  
*W. P. Andrew Lee, MD*  
*Mary McGrath, MD*  
*Susan Mackinnon, MD*  
*Maria Siemionow, MD, PhD*

9:35–10:35am **AAHS/ASRM/ASPN Presidents' Invited Lecture: Colonel Mark Bagg, MD**

“War and Disaster Injuries”

10:35–11:00am Coffee/Exhibits Break

11:00–11:45am Outstanding Nerve Paper Presentations



Kiva patio at Loews Ventana Canyon Resort

12:30pm **10th Annual Day at the Links**

6:00–6:45pm **AAHS/ASRM/ASPN Reception with Exhibitors**

6:45–9:00pm **Off-Property Western Dinner**

## AAHS Saturday, January 14, 2006 AAHS Hand Therapy Program 12:00pm–5:00pm

**The Challenge: Hand Surgeons and Therapists—What Evidence Do You Have to Do That?**

**Carpal Tunnel Syndrome, DeQuervain's and Trigger Finger**  
*Peter Amadio, MD*  
*Sue Michelovitz, PhD, PT, CHT*  
*Mark Walsh, PT, MS, CHT*  
*Sandy Robinson, OTR, CHT*  
*Julianne Howell, PT, MS, CHT*

**Point-Counterpoint:**  
*Wyndell Merritt, MD, FACS*  
*Jane Fedorczyk, MS, PT, ATC, CHT*  
*Gail Groth, OTR/L, CHT, MHS*  
*Chris Novak, PT, MS*

**The Ultimate Challenge: Gathering the Evidence Base—Can We Get Hand Surgeons and Hand Therapists to Collaborate?**  
*Joy MacDermid, BSCT, PhD*

**Metacarpal and Phalangeal Fractures**  
*Lynne Feehan, PhD Candidate, MSc(PT), CHT*  
*Maureen Hardy, PT, MS, CHT*  
*Alan Freeland, MD*

Question & Answer 



## Candidates for AAHS 2006 Officers and Board

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Nominating Committee  
**Michael Neumeister, MD**  
**William Swartz, MD**

# Recurrent Carpal Tunnel Syndrome

The discussion is moderated by **Scott F. M. Duncan, MD, MPH**, Mayo Clinic, Phoenix, AZ. He is joined by hand surgeons **Anthony Smith, MD**, Head, Section of Hand Surgery, Mayo Clinic, Phoenix, AZ, and **Nicholas Vedder, MD**, University of Washington, Seattle, WA, and hand therapist **Sandra Robinson, OTR, CHT**, Hand Management Center, St. Joseph's Hospital, Elmira, NY.

**Dr. Duncan:** Dr. Smith, there's always some confusion over differentiating between carpal tunnel surgery failure and true recurrence. What definition do you use and how do you go about differentiating between them?

**Dr. Smith:** When I see a patient who has undergone a carpal tunnel release and is not doing well it is important to know when the surgery was done and how the patient's symptoms were influenced by the surgery. A patient is considered to have a failed carpal tunnel release if either they had no improvement in symptoms or their symptoms worsened after the surgery. For a patient to be diagnosed with recurrent carpal tunnel syndrome they must have significant improvement of their symptoms following their carpal tunnel release. Their symptoms then recur, whether it is 6 months, a year, or many years, following their successful carpal tunnel release.

**Dr. Vedder:** I agree with Dr. Smith in the definition, though it's often not entirely clear when they present, say, a year later, that they ever had really gotten better. Often the patients don't remember a year back, so sometimes differentiating between recurrence and failure of the original procedure isn't clear-cut.

**Dr. Duncan:** Ms. Robinson, have you noticed in your practice any specific patient risk factors for a recurrence or any specific group that tends to have a higher risk for recurrence?

**Ms. Robinson:** There are medical issues that make individuals at higher risk for recurrence, such as uncontrolled diabetes and rheumatoid arthritis. I've also seen people who had wrist fractures, have a release, get better for a few months and then do have a recurrence. This may be a mechanical issue related to the bony imbalance from the fracture. We also see patients on hemodialysis that initially do quite well post CT release but then have a recurrence. There is also the whole comp group of individuals who have work-aggravated carpal tunnel syndrome. They do quite well after a release, but go back to perhaps a vibratory job or a job that they really haven't been able to alter and then we see some recurrence there. Then, of course, there are patients, particularly in New York State where comp is often quite attractive financially, who are just not telling the truth. Fortunately, they are the minority.

**Dr. Duncan:** Very good, I think you brought up all the classic categories. Certainly I hadn't even thought about the trauma category. I haven't seen that myself but it makes perfect sense that even after having had a release prior that's not going to preclude someone from getting a post traumatic CTS.

Dr. Smith, what's the rate of recurrence in your practice, and have you noticed any difference between open techniques and endoscopic procedures?

**Dr. Smith:** The rate of recurrence is quite small. The percentage of

patients who have undergone primary carpal tunnel release in my practice and then develop a recurrence is stable and, I would suspect, is well under five percent. Certainly, as my practice has matured, there are a growing number of patients who have undergone carpal tunnel surgery over the past 10 years. I am now seeing patients who underwent successful releases 8 or 9 years ago coming in with recurrent symptoms. As far as the two different techniques, there was a period of time in the mid 90's when I largely performed endoscopic carpal tunnel releases. For a variety of reasons, I've moved away from endoscopic releases and currently employ a limited open technique. I don't know that I saw an appreciable difference, as far as recurrence rate of endoscopic versus open, but I think it would be fair to say the literature supports a somewhat higher recurrence rate after endoscopic release.

**Dr. Duncan:** Yes, I think part of the problem is that it's very easy to lump failed surgery with recurrent surgery and that was why I brought up the first question.



**ONE OF THE OLD SURGICAL ADAGES IS, IF PLAN A DOESN'T WORK DON'T GO BACK AND DO PLAN A, BECAUSE IT'S NOT GOING TO WORK EITHER.**

**SCOTT F. M. DUNCAN, MD, MPH**

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**Dr. Smith:** Some of these studies have lumped failed endoscopic releases along with what we would call true recurrence, based on Wuhl's definition.

**Dr. Vedder:** I guess I'd have to say that I'm still on the endoscopic bandwagon. I really do think that the quicker recovery in the first month or two that's been reported in a number of studies, including from our institution, makes it worthwhile. I really only use the open approach in trauma cases, or for recurrences. But, like Dr. Smith, my recurrence rate has been negligible, with either open or endoscopic—at least those that I know about. It seems that the recurrences and failures that I do have always been done elsewhere—maybe where mine are going!

**Dr. Duncan:** Dr. Smith, since you brought it up, can you give us Wuhl's definition of true recurrence?

**Dr. Smith:** A patient undergoes a carpal tunnel release with improvement in their pain, numbness and tingling. The patient has a period of time, usually measured in months or years, with few, if any symptoms. The original symptoms of pain, numbness and tingling then recur.

**Dr. Duncan:** Ms. Robinson what do you usually do in the work up of the patient when you're trying to evaluate whether this is somebody who could potentially benefit from intervention?

**Ms. Robinson:** We basically start over. We do the same evaluation

that we would do with a primary carpal tunnel patient. We would do a patient history, look at what their home/work environment is like if we think that is a factor and do our sensory-motor evaluations. I also look for more proximal issues going on with a cervical screen and thoracic outlet testing. Pronator syndrome may be considered, but we don't really see that too often, at least in our practice. We also look for any kind of systemic issue that may be contributing: diabetes that's out of control, maybe a rheumatoid arthritis flare, or perhaps thyroid dysfunction. The surgeons almost always would refer the patient for a second nerve conduction study to see what that looked like and preferably have it done by the same electromyographer who performed the pre-op study.

**Dr. Duncan:** Yes, I think that's very important. Technique can vary quite substantially even from individual to individual, let alone office to office or institution to institution.

**Ms. Robinson:** I agree completely.

**Dr. Duncan:** That's a key point. Even if you don't necessarily normally utilize a certain individual, it may be worthwhile to have them repeat the study so that you're hopefully comparing apples to apples. Dr. Vedder, what is your approach?

**Dr. Vedder:** I think that electrodiagnostic studies can be very useful in evaluating both failed and recurrent carpal tunnel syndrome. I should admit, though, that I rarely ever do a primary release without first getting nerve conduction studies. In the case of recurrence, I would never reoperate if the nerve conductions were normal, and not even if they showed some improvement from the original preop studies.

**Dr. Duncan:** Dr. Smith, do you have anything to add on that? How you end up deciding to perform surgery on them?

**Dr. Smith:** Even though frequently it doesn't add much to the equation, I do think it is important to look at the operative note dictated by the first surgeon. This is particularly

important if the incision seems misplaced or if the patient's clinical picture doesn't fit with a patient who has undergone an isolated carpal tunnel release. I also ask the patient if they had a pre-operative EMG and nerve conduction velocities and if so, could they obtain them for our review. I would also ask the patient if they had undergone a carpal tunnel steroid injection prior to the surgery, and if they had, did the injection improve their symptoms?

**Ms. Robinson:** Right. Dr. Smith, if this was your patient, however, so you knew what was done at surgery, and the patient returned to you with what you thought was a true recurrence, would you ever consider a second opinion? My frustration with this group of patients is that the surgeon and I, having worked with the patient, sometimes lose perspective and objectivity. So oftentimes I actually suggest to the surgeon I'm working with that we have someone who we really respect do a second opinion on the patient.

**Dr. Smith:** That's an excellent point. It sometimes is hard to maintain objectivity when it is your own patient. Both patient and surgeon have a vested interest in a positive outcome.

**Ms. Robinson:** And you've seen it, and know you did a complete release. Sometimes we truly can't figure out why the patient has a recurrence so I think we need to get another head involved.

**Dr. Vedder:** Yes, I'll frequently get one of my partners to see them, especially if I'm considering operating. The high failure rate of reoperation and risk of making them worse and inheriting them for life makes me very leery of jumping in without being pretty sure that I can make them better.

**Dr. Smith:** What is important in these patients is to have a clear appreciation of what symptoms constitute carpal tunnel syndrome. These symptoms can usually, with a careful history and physical, be



**IMMEDIATE MOBILIZATION OF THE NERVE IS THE MOST IMPORTANT THING THAT WE CAN DO POSTOPERATIVELY-- BOTH FOR PRIMARY CASES AND RECURRENCES.**

**NICHOLAS VEDDER, MD**

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sorted out from post-operative pillar pain, for example.

All of us have had patients who underwent a successful carpal tunnel release and come in with new symptoms; convinced their carpal tunnel syndrome has recurred. More frequently than not, these patients have an entirely different condition. Certainly, if they are within the recent post-operative period, they may have just pillar pain. To diagnose recurrent carpal tunnel syndrome one has to apply the same diagnostic criteria used to diagnose carpal tunnel syndrome. If a patient has pain, tingling and numbness in the median nerve distribution with more severe nocturnal symptoms, it seems difficult to make any other diagnosis other than CTS. If on the other hand, the patient has vague wrist pain or a myriad of other symptoms you can't explain, it seems unlikely the patient has recurrent CTS.

**Dr. Vedder:** And I think that numbness and tingling in the median distribution absolutely has to be part of the picture. If it's just pain, especially in the case of failed or recurrent carpal tunnel, I think your chance of helping them with another release is slim.

**Ms. Robinson:** I agree completely with Dr. Smith. Again, that's why we start over and do a new evaluation. I think especially CMC osteoarthritis is often misdiagnosed by the primary care physician. Patients have a carpal tunnel release, do great, and then the thumb CMC becomes the pain problem.

**Dr. Duncan:** Another point you had brought up, Ms. Robinson, was an area of proximal compression. And it seems among hand surgeons and neurosurgeons that double crush phenomenon is an accepted entity. However, after talking to neurologists and some of our neurology colleagues, they don't necessarily believe in the double crush phenomenon.

**Ms. Robinson:** I do believe that we see this. It was originally described, I believe, in Lancet back in the 70's.

That was my first introduction and it was almost a revelation with some of the patients we splinted: they got a little better, but still had pretty significant symptoms after we tried our distal modalities. The group that didn't do well with traditional conservative modalities went on to carpal tunnel releases and perhaps still didn't do well. With my patients, I compare the nerve to having a long hose from the neck to the wrist. If we've got a kink in the proximal end of the hose, the distal end isn't going to be running very well. And whether it exists or not I certainly am not a neurophysiologist or a neurologist, but I think it explains some of our failed carpal tunnels that we know are legitimate with no secondary gain. We know that they had complete carpal tunnel release and they just didn't get any better. They're not any worse, but they just didn't get any better and we can't identify pronator syndrome or anything else that might be causing their problem.

**Dr. Duncan:** I would like to throw out just a couple of hypotheticals to all of you. One would be somebody who had a carpal tunnel release, open or endoscopic, they improve for about 3 to 4 months, but 6 months later they're starting to say that they're noticing some numbness and tingling and pain while they're driving, maybe a little bit at night. They're set for EMG and NCV studies and those come back unchanged from their preoperative readings. What would you do at that point or how would you advise the patient?

**Ms. Robinson:** As we talked about earlier, I would re-evaluate, then explore what they're doing, both at home and at work, and perhaps suggest some proximal modifications. We have our patients do a series of upper body fitness, which is basically starting at the cervical spine and doing some cervical flexion and extension, and some shoulder rotations to reverse static postures that many people assume at work. I look at what they're doing and try to modify it to see if it

made a change for them. Some would propose gentle nerve mobilization. If someone's nerve is irritated anyway, a lot of times I find that that actually makes things worse so I would approach that carefully. What you just described is actually my most difficult patient. I guess the question back to you is, is that patient, after you've evaluated them, a candidate for secondary surgery?

**Dr. Duncan:** I would usually give them a trial run of cortisone injection into the carpal canal and see if there was any improvement in their symptoms. If there were, that to me would suggest that potentially it was an incomplete release by the surgeon. Perhaps it is representing some scarring that has formed about the nerve and that the cortisone is decreasing some of the synovitis, but that there could be a choke point. For me that's one method of trying to differentiate who may benefit from surgery in this early recurrence picture.

Any other thoughts, Dr. Smith?

**Dr. Smith:** You mentioned obtaining a new EMG with nerve conduction velocities. Even after successful surgery there are instances when the EMG/NCV doesn't return to normal.

**Dr. Duncan:** Especially if they had a severe carpal tunnel.

**Dr. Vedder:** Yes, but it should at least show some improvement, I think.

**Dr. Smith:** Correct. When seeing a patient with suspected recurrent CTS, I would do exactly as you alluded to. I would obtain a new EMG/NCV but I would stress the use of the cortisone injection. It is both a diagnostic and a therapeutic

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**AT RE-OPERATION WE USUALLY FIND THE LIGAMENT WAS COMPLETELY RELEASED BUT THE MEDIAN NERVE IS ADHERENT TO THE RADIAL LEAF OF THE LIGAMENT.**

**ANTHONY SMITH, MD**

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injection. It's diagnostic in that if someone has symptoms and we're uncertain as to what they represent and these symptoms all go away with the cortisone injection to the carpal tunnel, it confirms in my

own mind, and I think in the patients' minds too, that their symptoms are all related to the carpal tunnel syndrome. On the other hand, it's therapeutic simply because it's treating the carpal tunnel. Regardless of what the EMG/NCV showed, if I felt the patient had recurrent CTS, I would concur with your recommendation of giving them a cortisone injection to the carpal tunnel.

**Dr. Vedder:** Yes, I agree. I think a steroid injection is a great diagnostic test. Often these recurrent patients will say, "Oh, that made it way worse. I couldn't use my hand for a week." Those are the patients you *never* want to reoperate on!

**Dr. Duncan:** Well you've beaten me to the punch for my

next scenario which was a patient who basically presents with complaints of recurrence, you get the electrical study but it's improved. So it sounds like from what you're saying you would go more by the patient's exam, clinical symptoms and response to the injection and not necessarily just rely on the electrical study to differentiate a patient with recurrence.

**Dr. Smith:** Even though this is a bit of a digression, I think all of us would agree that there are patients

who have carpal tunnel syndrome and have a normal EMG/NCV. I'm talking about someone who has not been previously operated on. These patients frequently require a carpal tunnel release despite having a normal EMG. Applying the same logic to a patient with recurrent carpal tunnel syndrome, while I would obtain the EMG/NCV, it wouldn't hold as much importance as the response to the carpal tunnel injection.

**Dr. Vedder:** I guess I disagree, to a point. I think that if the nerve conduction studies are improved from preop, and especially if the primary complaint is pain rather than numbness, I would be very hesitant to reoperate.

**Dr. Duncan:** Okay. Next, I'd like you to discuss some of the various techniques, from a surgical perspective, that could be used for treatment. What are the advantages and disadvantages of some of the different procedures that are commonly used now? Dr. Smith?

**Dr. Smith:** Before we cover operative technique, I think we should describe the typical operative findings encountered in re-operative carpal tunnel surgery. In recurrent carpal tunnel syndrome, scarring is an important consideration. While there are the patients who have had an incomplete release, this is not a common operative finding in my own practice. More commonly, I will find the ligament was completely released but there is significant scarring and the median nerve is adherent to the underside of the radial leaf of the transverse carpal ligament and basically fixed in that position. This fixation of the nerve causes, in essence, a traction phenomenon.

**Dr. Duncan:** The nerve loses its excursion ability underneath the ligament.

**Dr. Smith:** Correct.

**Dr. Duncan:** Well, in regards to techniques, there are several, it seems. The two that are probably most popular at this time are vein wrapping and hypothenar fat flaps. Care

to comment on either or both of those?

**Dr. Smith:** When performing a redo a carpal tunnel release there are three operative maneuvers that, at least in my practice, are essential. First, with the median nerve being adherent to the underside of the radial leaf of the ligament, the median nerve must be freed up from the scar such that it can be brought into the operative field and inspected. This allows one to appreciate how the nerve is deformed and whether there is an hourglass deformity. Once this is completed, my own approach, as a second step, is to employ an operating microscope. We remove the scarred epineurium to the point that we see normal fascicular alignment. Once we see normal fascicles, the neurolysis is done. The neurolysis is done through the area of the worst scarring and, if you use a microscope, you can very easily see that you have normal nerve proximally and normal nerve distally. Once the neurolysis is done, the final consideration in recurrent carpal tunnel syndrome, in addition to the scarring, is that the nerve has not been in a bed that allowed for nerve gliding. For this reason, I have uniformly then carried out a hypothenar fat pad flap to the carpal tunnel in these cases. It's very easy to do, and can be done through the same incision, so it doesn't require harvest of a vein from a different location so there's not a secondary donor site problem. More than that, it provides a good bed for both gliding for the nerve and also preventing recurrent adherence of the median nerve to the radial leaf of the ligament.

**Ms. Robinson:** If I can interject, that was actually one of my questions, because in our area we see a lot of secondary carpal tunnel releases that basically do the same thing that was done in the first place. And in your hands, I think I'm hearing you say that you must provide an environment for the nerve that allows it to glide secondarily, or we're looking at another failure



**I SUGGEST EARLY TENDON GLIDING (AFTER A RE-RELEASE AND FAT FLAP) BECAUSE OF THE WORK DONE IN THAT CARPAL TUNNEL REGION TO PROVIDE THE NERVE WITH A GOOD ENVIRONMENT. TO HOLD IT TOTALLY STILL FOR 4 WEEKS WOULD CONCERN ME, ESPECIALLY IN THE OLDER POPULATION.**

**SANDY ROBINSON, OTR, CHT**

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or recurrence. Am I interpreting that correctly?

**Dr. Smith:** We would all recognize the one thing that we can't prevent in surgery is scarring.

**Ms. Robinson:** Correct.

**Dr. Smith:** When you're going to operate on a recurrent carpal tunnel syndrome patient and the problem that you're encountering is scarring, I think doing a redo primary release and not considering the scarring as a potential problem the second time, is a mistake. We must somehow change our operative plan and do something different than was done at the initial carpal tunnel release.

**Ms. Robinson:** I agree because basically by going in and cutting them surgically we're simply creating another scar environment for the nerve. Perhaps it's a newer scar that we therapeutically can work on remodeling, but I have rarely seen that work to accomplish a good outcome. So you would attempt to make an environment for the nerve

to allow it to potentially be less adherent to the surrounding structures.

**Dr. Smith:** The neurolysis extends through the zone of previous surgery. It extends from normal nerve proximally through the zone of surgical injury and compression to normal nerve distally. The fat pad flap then is placed between the underside of the radial leaf of the ligament and the median nerve, preventing re-adherence of the nerve.

**Ms. Robinson:** Right. This is not a simple surgery.

**Dr. Smith:** It is not.

**Dr. Vedder:** I guess the one situation where I'd disagree, though, is when you find an incompletely released ligament. In those cases, which do seem to be more commonly the cases previously done endoscopically, I think that simply releasing the distal ligament should be all you need to do. But certainly, if what you find is just a lot of scar, with no gliding of the nerve, I agree

that you need to change the environment.

**Dr. Duncan:** Nerve loves fat, as we see throughout the body. With the vein wrap, I've only done a few so I can say I think they do okay. I have converted over to the hypothenar fat flap and the microneurolysis the same that Dr. Smith performs, and have been extremely happy with that. I know by personal communication a hand surgeon in Vancouver who actually does both for his recurrent carpal tunnels. They get a vein wrap as well as the hypothenar fat flap, but he does not perform the microneurolysis.

Ms. Robinson, I know how the practice is in our region of the country, but was curious to know whether vein wrapping was popular out in your neck of the woods or if there were other procedures that you had seen, given that the Pittsburgh group has really advocated the vein wrapping technique?

**Ms. Robinson:** I thankfully do not see a lot of secondary carpal tunnel

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releases and if they are done, there are not a lot of surgeons in our local region that are doing the vein wrapping or the fat flaps. We're in a rural hand area with a number of plastic and orthopaedic surgeons who are not specialists doing these things. Our patients that travel to Rochester or Syracuse are more likely to undergo a procedure other than a simple re-release.

**Dr. Duncan:** Well it makes sense. One of the old surgical adages is, if Plan A doesn't work don't go back

and do Plan A, because it's not going to work either. And so your point is well taken. From a hand therapy standpoint, are there any specific post operative provisions or interventions that you provide in this group of patients once they've left the operating room and are now in your hands? No pun intended.

**Ms. Robinson:** Basically, a recurrent carpal tunnel would be handled very similarly to a primary carpal tunnel patient. Everything that we would do would be directed at achieving a favorable scar, at least externally to our ability to remodel it to give that median nerve a rea-

sonable environment. Again, I don't have a lot of experience with the vein wrapping or the flaps, but the key I would think even in those cases is early, gentle motion. We splint post operatively only if the patient is particularly painful, and if they are splinted they come out of their splints to do gentle tendon and nerve gliding, gentle early wrist movement, scar management once the sutures are removed with scar massage or perhaps a conformer if the external scar looks hypertrophic. We then progress into very gentle strengthening and prep for return to their functional needs. We do a lot of educational things regarding positions and postures to try to alter. In a more broad sense, we really try to get this group of patients to stop smoking by referring them to smoking cessation programs. I'm a firm believer that the distal vascularity is important for healing in this group and in a lot of the hand groups.

**Dr. Duncan:** Dr. Smith, do you care to go over your protocol for?

**Dr. Smith:** Post-op, these patients are placed in a thumb spica splint. The splint effectively "narrows the palm" and prevents the flap from pulling away from the radial border of the carpal tunnel. The IP joint of the thumb is free to prevent stiffness. The patient is encouraged to do active range of motion exercises of the ulnar four digits. The splint is removed at four weeks and active range of motion of the wrist is begun with an emphasis on median nerve gliding.

**Ms. Robinson:** Do you begin tendon gliding with the fingers while they're in the thumb spica splint? So you're just holding thumb and wrist still?

**Dr. Smith:** Right. We do not typically institute therapy for the first 4 weeks.

**Ms. Robinson:** But you are instructing them to do tendon gliding exercises in their cast?

**Dr. Smith:** We make sure patients understand we don't want their

### PEDIATRIC Hand/Microvascular Surgeon

The Cardinal Orthopedic Institute and Children's Hospital in Columbus, Ohio, seek a BC/BE Orthopedic Surgeon, fellowship trained in hand surgery to do a majority of their practice in pediatric hand surgery. The Cardinal Orthopedic Institute, a private practice group has 23 orthopedic surgeons. The group has both adult and pediatric orthopedic surgeons and provides orthopedic surgery services to the Greater Columbus area and surrounding communities. The practice is multi-dimensional and has specialty-trained surgeons in pediatrics, foot and ankle, hand (2), sports medicine, knee, shoulder and spine. The group is very stable and has an excellent reputation both for the quality of their clinical practice and for working effectively as a group and with other practitioners in the community. The pediatric hand/microvascular surgeon will be the primary provider of hand/microvascular surgery for Children's Hospital.

Children's Hospital is a 353 bed, full service, tertiary care, teaching hospital that is a regional referral center and has a Level I trauma and Level III neonatal program. Children's is the clinical practice site for the Department of Pediatrics for the Ohio State University. The faculty at Children's provide all Pediatric specialty and most subspecialty clinical services for the region. The hospital has excellent ancillary and support services and has an active clinical research program and basic science research program that is located at the Children's Research Institute, adjacent to the hospital.

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fingers to get stiff and that we would like them to begin some active range of motion exercises. Once the splint comes off at 4 weeks, patients are referred to occupational hand therapy. In therapy, we begin a more formal protocol concentrating on median nerve mobilization.

**Dr. Vedder:** Yes, I agree. I think that immediate mobilization of the nerve is the most important thing that we can do postoperatively—both for primary cases and recurrences. You know, we used to all splint them for weeks, but all that did was set the stage for scarring and ongoing problems. Early mobilization is especially important for recurrent cases, and in those cases I do involve our hand therapists early on.

**Ms. Robinson:** That makes total sense. My thought in suggesting early tendon gliding is you've done a lot of work in that carpal tunnel region to give the nerve a good environment and to hold it totally still for that period of time would concern me, especially in the older population.

**Dr. Smith:** Absolutely.

**Ms. Robinson:** But with you instructing your patient in tendon gliding you're getting that little bit of motion through that area to help hopefully internally remodel that scar. So, thank you for that.

**Dr. Duncan:** Well, Ms. Robinson have you seen complex regional pain syndrome as a challenge in your group?

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## IN MEMORIAM

### Peter A. Nathan, MD

**P**eter A. Nathan, MD died from complications of leukemia on September 25, 2005.

Dr. Nathan was in the private practice of hand surgery in Portland, Oregon, from 1971-2005. His clinical and surgical activities were punctuated by his passion to improve access to hand surgery in developing nations. Throughout his career Dr. Nathan made at least twice-yearly volunteer tours to various developing nations. For the past 20 years he also engaged in clinical research relating to etiology of upper extremity peripheral nerve conditions. His findings are represented in the body of literature on this subject.

Dr. Nathan was an active member of the Hand Association since 1976, co-chairing the initial AAHS cumulative trauma disorder conferences in the 1990s. He is survived by his wife Helle and three children. He is remembered by hand surgery colleagues throughout the U.S., Europe and Asia for his indefatigable energy, for the courage of his convictions and for his devotion to his chosen field of medicine. **H**

## 10th Annual Day at the Links Golf Tournament

being held in conjunction with the AAHS and ASRM Annual Meetings

The 10th Annual Day at the Links will unfold on the Loews Ventana Canyon Resort's fabled Mountain Course. Designed by Tom Fazio, named "Architect of the Year" by Golf Digest, this course features the celebrated hole #3, the most photographed golf hole in the west. Prizes will be awarded to the team with the lowest gross score, and individuals who win the longest drive, longest putt and closest to the pin competitions. Tournament registration will officially close on Friday, January 13, at 11:00 am. If you prefer to be paired with specific players, requests must be submitted to our Registration Desk staff by 11:00 am on Friday, January 13. After this time, foursome changes can only be made at the pro shop prior to tee time. Tournament costs include green fees, cart, tournament coordination, prizes and range balls.

No metal spikes are permitted on the course. Tickets are non-refundable.

To sign up or for more information, call 312-456-9579.

Saturday, January 14, 2006

12:30 pm Shotgun

Cost: \$200.00 per player

## AROUND THE TABLE

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**Ms. Robinson:** I can't recall one patient in 20 years that I would really categorize as complex regional pain syndrome. The patients that are more memorable to me were the iatrogenic true median nerve injury patients that were labeled CRPS or RSD but they actually had a nerve injury. In the actual recur-

rent CTS group, I have fortunately not seen this.

**Dr. Smith:** Fortunately, we have yet to see a patient develop CRPS after surgery for recurrent carpal tunnel syndrome.

**Ms. Robinson:** I think that we see people who might be on the edge of developing complex regional pain syndrome and they might have some elements, but if we intervene early, I believe we can prevent a full-blown CRPS.

Fortunately, that's not a group of patients that we see a lot of.

**Dr. Duncan:** Well, Dr. Smith, how do you feel about your outcomes? I know we've looked at the results, but can you go over those a little bit for us?

**Dr. Smith:** I consider our results in recurrent carpal tunnel syndrome are very good. Like anything else, proper patient selection largely determines operative result. No patient who we consider for a redo carpal tunnel release is operated on without a repeat EMG/NCV. None of them are operated on without a trial of non-operative treatment. Every patient receives a carpal tunnel injection and the response to the injection would influence whether we proceed. Fortunately, the patients that we have then taken to surgery and treated per our operative protocol, have done well.

There's no question these patients may indeed have some residual symptoms. We make it very clear to the patients we're looking for a significant improvement. We wouldn't promise any patient that all of their symptoms would resolve. That's an important point regarding the surgery. Improvement of the pain is noted uniformly, but tingling and numbness are much less reliably improved with repeat surgery. Our results for our series have shown that about 3/4 of the patients have improvement in sensation and strength at 2 years but about 1/4 still have some persistent dysesthesias. There is resolution of most of the pain and the nocturnal symptoms. Provocative activities, such as driving or reading a newspaper, are no longer a problem.

**Ms. Robinson:** Because recurrent carpal tunnel is such a complicated issue, it doesn't make sense to me to not look directly at what the problem is. I know there are some proponents out there of endoscopic surgery, even secondarily, but the concept doesn't make sense to me.

**Dr. Duncan:** Dr. Vedder, what do you think?

## 2007 Application for Research Grants

The AAHS Research Grant Awards were established to further the purpose of the Association as stated in its Bylaws and to foster creativity and innovation in basic and/or clinical research in all areas pertinent to hand surgery.

### Awards and Eligibility

Grants will be made for a one year period to up to three investigators. Grants are available to all AAHS members. One of the investigators must be an active or affiliate member of the association.

### Grant Application

Applications may be obtained from the AAHS website at [www.handsurgery.org](http://www.handsurgery.org), or, you can call 312-236-3307 to request a copy. Applications (an original plus seven copies) must be received by the committee chair no later than Monday, November 6, 2006, in order for the judging to be completed in time and the recipients to be announced at the Annual Meeting.

The AAHS and the Research Committee are required by the IRS to document disbursement of grant funds. Award recipients will be required to sign a letter of acceptance and submit a progress report once each year. The AAHS must be acknowledged as the source of funding in any presentation or publication. A final report must be submitted at the completion of the study. It is expected that the results of the funded research be submitted for presentation at an Annual Meeting within two years of the receipt of the award.

Funds must be returned to the AAHS if the study is not undertaken within twelve months of the receipt of the award.

Failure to follow these guidelines will disqualify the recipient from any further grant opportunities and from presenting any papers at the AAHS Annual Meeting for a period of three years following such default.

### Mail Grant Proposals to

W. P. Andrew Lee, MD  
University of Pittsburgh  
3550 Terrace Street  
Scaife Hall 690  
Pittsburgh, PA 15261



## Hand Therapy Day

Hand Surgeons & Therapists—  
What evidence do you have to do that?

Julianne W. Howell, PT, MS, CHT

**W**e've assembled a lively group of hand surgeons and therapists to defend their interventions for some common hand conditions. Our panel of seasoned clinicians has been asked to share their technique, rationale and experience with a particular intervention for conservative management Carpal Tunnel Syndrome, DeQuervain's and trigger finger. The clinicians will also have to include the evidence-base to support their chosen intervention. A point-counterpoint discussion will follow between our panel and another group of equally seasoned colleagues who represent opposing beliefs and evidence-base. Most importantly we want to seize the unique AAHS surgeon-therapist membership mix to promote collaborative research. Evidence-based research expert, Joy McDermid, BScPT, PhD will offer suggestions for how we can best work collectively to gather the evidence-base for "why we do that".

### Interventions:

Injection  
Iontophoresis-phonophoresis-laser  
Upper limb tension testing/nerve mobilization  
Splinting  
Tendon gliding exercises

### Clinicians:

Peter Amadio, MD  
Sue Michelovitz, PhD, PT, CHT  
Mark Walsh, PT, MS, CHT  
Sandy Robinson, OTR, CHT  
Julianne Howell, PT, MS, CHT

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## HAND THERAPY PROFILE

### Cynthia Ivy, MEd, OT, CHT



Cynthia Ivy, MEd, OT, CHT

**Personal:** I have 4 fabulous children, Jacob 12, Caroline 10, Calvin 8 and Jonah 7. I enjoy the arts both as a participant and patron. I love the ocean, mountains, desert and meeting people.

**Education:** I graduated in 1983 with BS in Occupational Therapy from the University of Wisconsin, Madison. In 1996 I completed a Master of Education in Counseling Psychology from Northern University. I was in the first group to attain a Certificate in Hand Therapy (CHT) in 1991.

**Employer:** Mayo Clinic: 1987 – present Arizona; 1984-1987 Minnesota

**AAHS Involvement:** One of my first experiences was being asked to speak in the early '90's at an AAHS conference with my co-worker, Karyn Fletcher. I enjoy the academic and friendly nature of AAHS.

**Best Part of My Job:** The best parts of my job are the variety of patients, team cohesiveness and plethora of knowledge available within the Mayo system. We have 3 fantastic surgeons; [Drs Smith, Renfree and Duncan], and a super team of therapists, PA's and nurses.

**Clinical Specialties:** I really like everything, however I get excited about treating patients following rheumatoid reconstruction and trauma.

**Greatest Challenge:** I thrive on challenges, and I'm frequently surprised to discover that a patient or a situation I initially thought clinically unchallenging often becomes the most challenging! My greatest clinical challenge is not to prejudice any situation.

**Three Words That Describe Me:** My hand therapy co-workers say that I am enthusiastic, compassionate and knowledgeable. **H**

## AFFILIATE'S CORNER

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### Point-Counterpoint:

Wyndell Merritt, MD, FACS  
Jane Fedorcyck, MS, PT, ATC, CHT  
Gail Groth, OTR, CHT, MHS

Our well known bone healing and fracture management experts, Allen Freeland MD, Lynne Feehan, PhD Candidate, MSc(PT), CHT and Maureen Hardy, PT, MS, CHT will explore the concepts of "early" vs delayed motion of non-articular fractures. They will share their surgical and clinical techniques and rationale for management of phalangeal and metacarpal fractures.

In keeping with the theme of our meeting, the available evidence-base on "early" fracture mobilization will be discussed. Our experts have been challenged to examine past pitfalls in the collection of the evidence-base on this topic, and to propose a research design that would support collaborative research and improve the evidence-base.

Make plans to attend and support Hand Therapy Day on Saturday, January 14, 2006, from noon to 5 pm. Lunch is included. For anyone not attending the AAHS or ASPN meeting, a one-day registration is available for Hand Therapy Day. See you in Tucson!

**H**

## AROUND THE TABLE

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**Dr. Vedder:** In most cases, I agree. Because the risk of failure with repeat release is so high, I would pull out all the stops and do a full open release and dissection as Dr. Smith described, usually with a fat pad flap, though I'm not necessarily so keen on an internal neurolysis, because I think that just generates additional scar. Maybe the only situation I'd consider endoscopic for a redo is when it's a case of failure of the initial procedure after an endoscopic release and there's the possibility that the distal ligament wasn't completely released. I must admit, though, I've not done that.

**Dr. Duncan:** Dr. Smith, any thoughts?

**Dr. Smith:** I would agree with Ms. Robinson almost completely. I recognize that there are proponents for doing recurrent carpal tunnel surgery endoscopically, but I don't see how this technique can deal with operative findings such as we described earlier.

**Dr. Duncan:** It seems like it's that theory of doing Plan A again when Plan A didn't work.

**Dr. Smith:** Right. I'm very skeptical it is the appropriate procedure in light of the findings that we see when we do recurrent carpal tunnel syndrome surgery. It would be difficult to free up the scarred median nerve.

**Ms. Robinson:** Exactly.

**Dr. Duncan:** It's not providing either a fat or vein milieu to surround and protect the nerve and preserve gliding.

Well, I'd like to thank you all for joining me on this panel. **H**



THE AMERICAN ASSOCIATION FOR HAND SURGERY PRESENTS

# ADVANCES IN ADULT BRACHIAL PLEXUS RECONSTRUCTION

## A SURGICAL SKILLS COURSE

APRIL 28-30, 2006 MAYO CLINIC ROCHESTER, MINNESOTA

It's not often that we have the opportunity to learn from so many expert physicians in one complete surgical skills course at one of the finest medical facilities in the United States.

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Michael B. Wood, MD, Rochester, MN

Register early, as space is limited. Visit us online at:

[www.handsurgery.org](http://www.handsurgery.org)

THIS MEETING IS ENDORSED BY THE AMERICAN SOCIETY FOR SURGERY OF THE HAND AND THE AAHS/CNS JOINT SECTION ON DISORDERS OF THE SPINE AND PERIPHERAL NERVES.

Hand Surgery  
Quarterly

.....  
Winter  
2006

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# Recurrent Carpal Tunnel Syndrome

The topic for this issue of *Hand Surgery Quarterly* and the Coding Corner is recurrent carpal tunnel syndrome. We will look at codes for re-exploration of the median nerve as well as adjunctive procedures that can be performed for this condition.

There is no specific code that corresponds to a repeat (or exploration for "recurrent" carpal tunnel syndrome), so the primary code that would be used is the one that describes opening of the carpal tunnel. This would be 64721 for an open approach and 29848 for an endoscopic approach. (Obviously, the endoscopic method is less likely to be used for repeat exploration.) Use of a modifier may be helpful to indicate the additional complexity of operating through scar tissue. The modifier -22 might seem appropriate, although insurers are sensitive to its overuse and typically require an additional letter of explanation that explains why this modifier applies. The modifier -60 might be better; it refers to operating through "an altered surgical field" as was created in 2001 to address the increased complexity or time required to perform surgery in revision cases that involve additional scar from previous surgery, infection, radiation, or distorted anatomy for any other reason. It is not completely clear which modifier, -22 or -60, will reimburse better, and you may have to track your particular reimbursement data to know

Recurrent Carpal Tunnel Syndrome	
64721	Neuroplasty, median nerve at the carpal tunnel
29848	Neuroplasty, endoscopic approach, median nerve at the carpal tunnel
64727	Internal neurolysis, requiring use of the operating microscope (includes external neurolysis)
25115	Radical excision of bursa, synovia of wrist, or forearm tendon sheaths; flexors
14040	Adjacent tissue transfer or rearrangement, forehead, cheeks, chin, mouth, neck, axillae, genitalia, hands, and/or feet; defect 10 sq. cm. or less

which one is more appropriate for your particular payor mix.

Other procedures that might apply to the scenario of recurrent CTS include use of the operating microscope to perform an internal neurolysis. This corresponding code is 64727 and this is reported separately to the primary code for the carpal tunnel release. The code 64727 takes into account use of the microscope, and it is not appropriate to add 69990 to this code.

Performed a flexor tenosynovectomy may also be a consideration in re-exploring the carpal tunnel, and the corresponding code is 25115. Use of a hypothenar fat pad flap to cover the nerve after exploration would correspond to a code for adjacent tissue transfer; an appropriate code would be 14040, which describes adjacent tissue transfer or rearrangement for the hands for a defect of 10 square centimeters or less.

At the most recent Annual Meeting of the American Society for Surgery of the Hand, a poster described a method of Z-lengthening the transverse carpal ligament after releasing it in order to reduce scar formation and reduce pillar pain. If this were done, an appropriate code would again be 14040.

Several papers in the past 5 years have identified use of either veins or "nerve tube" materials as useful in wrapping around scarred nerves in order to reduce recurrent adhesion formation. At the present time there are no specific codes that describe use of vein or synthetic conduits to treat nerve adhesions, and the best approximation of such work might be to use an internal neurolysis code and write a letter of explanation to the insurer.

### You Code It

A 72 year old diabetic patient undergoes re-exploration of the carpal tunnel for recurrent symptoms after her index procedure five years ago. She has re-release of the transverse carpal tunnel, a flexor tenosynovectomy, and a hypothenar fat pad flap used to protect the nerve during closure.

Solution: Code 64721-60  
25115-51  
14040-51



LEON S. BENSON, MD

# American Association for Hand Surgery Calendar

## 2006

**January 11–14, 2006**  
36th Annual Meeting  
Loews Ventana Canyon  
Resort  
Tucson, AZ

**April 28–30, 2006**  
Brachial Plexus Course,  
hosted by AAHS  
Mayo Clinic  
Rochester, MN

**July 14–16, 2006**  
Mid-Year Board of Directors'  
Meeting  
The Broadmoor Hotel  
Colorado Springs, CO

**September 7–9, 2006**  
American Society for  
Surgery of the Hand – 61st  
Annual Meeting  
Washington, DC

## 2007

**January 10–13, 2007**  
37th Annual Meeting  
The Westin Rio Mar Beach  
Resort  
Rio Grande, Puerto Rico

**July 12–14, 2007**  
Mid-Year Board of Directors'  
Meeting  
Silverado Resort  
Napa, CA

## 2008

**January 9–12, 2008**  
38th Annual Meeting  
The Westin Century Plaza  
Hotel & Spa  
Beverly Hills, CA

## 2009

**January 7–10, 2009**  
39th Annual Meeting  
Grand Wailea Resort  
Wailea, Maui, HI

## 2010

**January 6–9, 2010**  
40th Annual Meeting  
Boca Raton Resort & Beach  
Club  
Boca Raton, FL

**For information contact:**  
AAHS Central Office at 312-236-3307 or [www.handsurgery.org](http://www.handsurgery.org)



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