

# HAND SURGERY

Q U A R T E R L Y



## FROM THE PROGRAM CHAIR

### A Meeting to Bridge the American Hemispheres

**C**ancun's Hilton Beach and Golf Resort Hotel will be the exciting site where the AAHS will host the 32nd Annual Meeting.

National and International participants will provide those in attendance with a true "Bridging of the Hemispheres". Wednesday is now part of the meeting and on that day you can attend five panels conducted by nationally

known therapists and physicians. The topics are practical and timely. Simultaneously, on Wednesday there will be five Round Tables being given by renowned

physicians from Mexico, Central and South America. These comprehensive Round Tables will be conducted in Spanish and simultaneously translated to English. Between Thursday morning and Friday afternoon there are 77 free



Photo is courtesy of the Cancun Convention and Visitor Bureau.

papers on different topics pertinent to hand surgery including arthritis, nerve, tendon, basic research, microsurgery, fractures and trauma. There will be an opportunity to attend three of twelve Instructional Courses offered by well-known expert in the field during those two days. Drs. Allen Bishop from the Mayo Clinic, Rames Mattar from Brazil, and Carlos Zaidenberg from Argentina will give an International Panel on Vascularized Bone Grafts. Dr. Linda Cendales, from the Christine M. Kliener Institute for Hand and Microsurgery Center will be the invited Keynote speaker and will give the "Latest on Hand Transplantation." Saturday is the combined day with our colleagues from the American Society for

Reconstructive Microsurgery and the American Society for Peripheral Nerve. There will be the opportunity to attend one of four Instructional Courses. This will be followed by panels on Cubital Tunnel Syndrome and Thoracic Outlet Compression. The combined Presidents' Invited Guest Speakers will be Drs. Bob Acland and Russell Shatford, who will demonstrate a 3D anatomical video, which promises to be innovative and very instructional. By the way, the meetings will conclude each day at 2:00 pm so that family and leisure activities can also be enjoyed!

*Miguel J. Saldana, MD*



## Variations

**R**ecently I have had the opportunity to review the *Dartmouth Atlas of Musculoskeletal Health Care*, edited by James N.

Weinstein, DO, and published in 2000 by the AHA Press, Chicago. This fascinating work uses publicly available Medicare data to document variations both in the

distribution of physicians and the rates of various diagnoses and procedures across the country, broken down by hospital service area (HSA). In each area—there are 3436 of them—more Medicare patients were hospitalized locally than in any other area. These areas

were then aggregated into 306 hospital referral regions, based on similar data for cardiovascular surgery and neurosurgery procedures. The result is a jigsaw puzzle-like map of the US. To eliminate any impact of hospital referral bias, each person in a given referral region is considered to have had their care in that region, regardless of where that care actually took place. In this way, a hospital that gets patients from all over the country is not credited for any procedures done on persons outside its own region.

What is most fascinating about all this is the distribution of doctors and procedures within these regions. For example, carpal tunnel surgery rates varied across the country from 0.9 (Bronx, NY) to 5.2 (Traverse City, MI) per 1000 Medicare enrollees. Although Traverse City has twice as many doctors per 100,000 patients as the Bronx, that can't be the only reason; the density of doctors is 10% more in Lebanon, NH, than in Traverse City, yet the carpal tunnel surgery rate in Lebanon is 2.6 per 1000, half

the Traverse City rate. In fact, the correlation between number of doctors and surgery is very poor across the country and across procedures. The differences are even greater for the surgical treatment of Colles fractures. More than half of Medicare recipients with Colles fracture are operated on in Olympia, WA, while only 5% are in Greenville NC, and just 7.7% in Detroit, again, with little correlation to surgeon density in these communities.

What explains all this variation? There is little evidence that disease severity varies across these regions. There is a 'fracture belt' across the southern US, where it is felt that higher rates of osteoporosis in a socioeconomically deprived population may be the culprit, but as we have seen, the southern city of Greenville, where the rate of Colles fracture is 4.5 per 1000, has one tenth the surgical rate of Olympia, where the rate of fracture is just 2.1 per 1000. There is little evidence that coding for fractures varies across the country, or that people are less likely to diagnose carpal tunnel syndrome in Rochester, MN, where the condition was first described, or Cleveland, OH, where George Phalen popularized the diagnosis (both with a rate of 3.3 per 1000), than they are in Traverse City, MI. We have seen that physician workforce is not an issue, and it is hard to believe that the indications for either carpal tunnel or wrist fracture surgery are unclear. Instead, it appears that much of the difference is best attributed to the style of practice in a region. Whether this is a product of the expectations of surgeons, patients, or both, is unclear. What is clear is that all these rates can't be 'right'; somewhere there is undertreatment, and somewhere there is overtreatment. Indeed, most studies show that in both the high and low surgery rate areas, when individual cases are reviewed by a panel of experts, both undertreatment

(patients with clear surgical indications who were not offered surgery) and overtreatment (patients without a clear indication, who were treated) appear to exist sided by side.

What to do about all this is another matter. What I would suggest for a starter is to review the 'surgical signature' of your own community, by reviewing a copy of the *Atlas*, and seeing where you fit in comparison to the national rates. Then, consider how you go about indicating surgery in your own patients. Who makes the decision: you, your patient, or both together? Studies have shown that when patients share in surgical decision-making, rates often change—sometimes up (hysterectomy, joint replacement), sometimes down (prostate surgery). We don't know for sure what the case is for hand conditions, but my own informal experience with shared decision making for carpal tunnel surgery



PETER C. AMADIO, MD

## HAND SURGERY QUARTERLY

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suggests to me that rates may go down if we share the decision with patients, especially in the Medicare group, where EMG and nerve conduction changes may exceed symptoms. Finally, be sure you are learning from your experience, and not just repeating it year after year. Collect and analyze your results for common procedures from time to time. This may not lead to a homogenization of surgical rates, but it is certain to improve the quality of what we do. **H**

## 2002 Slate of Candidates



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## Mixing Business and Pleasure or Finding What's Important

**W**hat do you consider important in your life? How do the important parts of your life fit together? Do the things you do support what you consider important?

I suspect that most of us would list things differently if suddenly faced with or seriously considered our mortality. Having recently asked myself those questions and considered this, I know that I would have. Even after totally changing my life, there are still some things that I will change further as I discover different answers to these questions.

As many of you know, I recently moved from a very busy practice in Oklahoma City to one in Highlands, NC, a town in the Smokey Mountains with a permanent population of about 5000. I went from an all-consuming practice of from 12-14 hour days, 6 days a week, to one where I now work only 7-8 hour days, 4 and, occasionally, 5 days a week. I now come home for lunch most days and have time for the other parts of my life. This was an important consideration in the move. I can now get to know my wife again, see my children more often, be closer to my other family, have some time for the things I enjoy, and do all this in one of the most beautiful places in

the country. However, that was not the only reason for the move. I'm now enjoying the practice and my patients again. Because of the reimbursement I was receiving from all the insurance contracts I had signed, I felt that I had to see more patients more quickly to make enough to stay in business. This meant that I never got to know the patients. I am no longer contracted with any company and have a much smaller staff. In essence, I have gone back to practicing medicine the way I did when I first started. I get to know those who I treat.

I have examined the other parts of my practice also. I have critically evaluated each thing I do to see if it fits with my values, and changed or eliminated those that didn't. One of the things that has not changed, however, is my satisfaction with the AAHS. I joined this organization after completing my residency. I did so because I wanted to expand my knowledge of hand surgery. I stayed a member because I found this group shared my ideals and went about the task of educating me in such a way that I enjoyed it.

I did not find these ideals in other organizations. My wife would go with me to one or another of their meetings. But, because they demanded so much of me while there, we began going early or staying after the meeting in order to have time together and enjoy the areas. She then started coming only for the time when I wasn't at the meeting. As a consequence, we didn't get to visit with many of our friends from around the country. The one exception to this has been the AAHS meetings. We still come to its meetings together and don't extend the trips. Not only have we been able to see our friends, we have had a great time each year

*continued on page 6*



**ROBERT T.  
BUCHANAN, MD**

# AAHS 32nd Annual Meeting

January 9-12, 2002  
Hilton Cancún Beach & Golf Resort  
Cancún, Mexico

## Program at a Glance

### AAHS

Wednesday, January 9, 2002

6:00 am-4:00 pm	Speaker Ready Room
6:00 am-2:30 pm	Registration
6:00 am-7:30 am	Continental Breakfast
6:20 am-2:15 pm	Concomitant Spanish Session
7:35 am-7:40 am	President's Welcome <i>Robert Buchanan, MD</i>
7:40 am-7:45 am	Program Chair Welcome <i>Miguel Saldana, MD</i>
7:45-2:00 pm	<b>Paradigm Shifts in Hand Therapy/Surgery: Challenge to Sacred Cows</b>
7:45 am-8:00 am	Hand Therapy Introductions <i>Paul LaStayo, PhD, PT, CHT and Richard Brown, MD</i>
8:00 am-9:00 am	Panel: Pain <i>Moderator: Paul LaStayo, PhD, PT, CHT</i>
9:10 am-10:20 am	Panel: Fractures/Instabilities <i>Moderator: Georgiann Laseter, OTR, FAOTA, CHT</i>
10:20 am-10:40 am	Coffee Break
10:45 am-11:45 am	Panel: Tendon <i>Moderator: Scott Kozin, MD</i>
11:45 am-12:15 pm	Boxed Lunch "Lets Talk": How therapists and surgeons communicate <i>Starring Scott Kozin, MD vs Sue Michlovitz, PhD, PT with Ken Flowers, PT moderating</i>
12:20 pm-1:20 pm	Panel: Nerve <i>Moderator: A. Lee Dellon, MD</i>
1:25 pm-1:58 pm	"Hooked on Evidence": Evidence-Based Practice <i>Moderator: Sue Michlovitz, PhD, PT</i>
1:58 pm-2:00 pm	Hand Therapy Closing <i>Paul LaStayo, PhD, PT, CHT and Richard Brown, MD</i>
2:00 pm	AAHS Adjourns
2:15 pm-5:15 pm	AAHS Board Meeting
1:00 pm-5:00 pm	Poster Set Up
6:30 pm-7:30 pm	AAHS Welcome Reception

### AAHS

Thursday, January 10, 2002

6:00 am-4:00 pm	Speaker Ready Room
6:00 am-2:30 pm	AAHS Registration
6:00 am-7:00 am	Coffee

6:15 am-7:10 am	Instructional Courses 101-104
7:00 am-5:00 pm	Posters Open
7:15 am-7:30 am	Report from the 2001 Vargas Award Winner <i>Gail Groth, OTR, CHT</i>
7:30 am- 8:38 am	Scientific Paper Session A
8:38 am-8:53 am	Continental Breakfast
8:53 am-10:35 am	Concurrent Scientific Paper Session B-1
8:53 am-10:35 am	Concurrent Scientific Paper Session B-2
10:35 am-10:50 am	Break
10:50 am-11:35 am	International Panel I: Vascularized Bone Grafts
11:40 am-12:40 am	Working Lunch Instructional Courses 105-108
12:40 pm-1:10 pm	AAHS Keynote Speaker <i>Linda Cendales, MD</i>
1:15 pm-2:00 pm	Scientific Paper Session B-3
2:00 pm	Adjourn
6:30 pm-9:00 pm	Dine-Around

### AAHS

Friday, January 11, 2002

6:00 am-4:00 pm	Speaker Ready Room
6:00 am-12:00 pm	AAHS Registration
6:00 am-7:00 am	Continental Breakfast
6:15 am-7:15 am	Instructional Courses 109- 112
7:00 am-5:00 pm	Posters Open
7:20 am-8:28 am	Scientific Paper Session C
8:30 am-1:00 pm	Exhibits Hall Open
8:30 am-9:00 am	Refreshment/Exhibits Break
9:00 am-10:08 am	Concurrent Scientific Paper Session D-1
9:00 am-10:08 am	Concurrent Scientific Paper Session D-2
10:10 am-11:20 am	Concurrent Scientific Paper Session F-1
10:10 am-11:20 am	Concurrent Scientific Paper Session F-2
11:21 am-11:36 am	Break
11:37 am-11:42 am	ASSH President <i>Marybeth Ezaki, MD</i>
11:43 am-12:28 pm	Presidential Speaker <i>Mayan Lecture</i>
12:29 pm-12:44 pm	Presidential Address <i>Robert Buchanan, MD</i>
12:45 pm-1:30 pm	AAHS Business Meeting
1:45 pm-2:30 pm	AAHS Board Meeting
2:45 pm-6:15 pm	ASRM Council Meeting
5:00 pm-9:00 pm	ASPEN Poster Set Up
6:30 pm-9:30 pm	ASPEN Council Meeting

### AAHS/ASPEN/ASRM

Joint Day Program  
Saturday, January 12, 2002

6:30 am-5:00 pm	Speaker Ready Room
6:30 am-7:00 am	Coffee
6:30 am-4:30 pm	AAHS/ASRM/ASPEN Registration
7:00 am-8:00 am	Instructional Courses 201-204
7:00 am-5:00 pm	Posters Open

8:00 am–8:15 am	Presidents' Welcome <i>Robert Buchanan, MD, AAHS President</i> <i>Randy Sherman, MD, ASRM President</i> <i>Nancy McKee, MD, ASPN President</i>
8:15 am–9:45 am	Joint Panel: Nerve Entrapment Controversies
8:00 am–1:00 pm	Exhibit Hall Open
9:45 am–10:30 am	Presidents' Lecturer <i>Bob Acland, MD and</i> <i>Russell Shatford, MD</i>
10:30 am–11:15 am	Coffee/Exhibits Break
11:15 am–12:15 pm	Joint Outstanding Nerve Paper Presentations
12:15 pm	AAHS and ASRM Adjourn
12:15 pm	ASPN Breaks
12:45 pm	Golf Tournament - Hotel Departure
12:00 pm– 5:00 pm	AAHS Poster Tear Down ASRM Poster Set Up
1:00 pm–6:00 pm	ASRM Resident/Fellows Symposium
1:00 pm–5:00 pm	ASPN Scientific Session
1:00 pm–2:00 pm	Guest Speaker <i>Freda Miller</i>
2:00 pm–3:30 pm	Scientific Session E
3:30 pm–4:00 pm	Coffee Break
4:00 pm–5:00 pm	Guest Speaker <i>Bruce Gold</i>
7:00 pm–10:00 pm	AAHS/ASRM/ASPN Fiesta Americana

## ASPN

### Sunday, January 13, 2002

6:30 am–2:00 pm	ASPN Registration
6:30 am–7:00 am	Coffee
7:00 am–8:00 am	Instructional Courses 401-403
7:00 am–5:00 pm	Posters Open
8:00 am–8:15 am	Welcome <i>Nancy McKee, MD, President</i> <i>Rajiv Midha, MD, Program Chair</i>
8:15 am–9:00 am	Guest Speakers <i>Susan Lederman</i>
9:00 am–10:30 am	Scientific Session F
9:00 am–2:00 pm	Exhibit Hall Open
10:30 am–11:00 am	Coffee Break/Exhibits
11:00 pm–12:00 pm	ASRM/ASPN Nerve Panel: Survey and Perspectives On Recent and Novel Nerve Repair Methods and Technologies
12:00 pm–1:15 pm	Scientific Session G
1:15 pm–2:15 pm	Mayan Speaker Lunch
2:15 pm–3:45 pm	Panel: Innovations in Peripheral Nerve Surgery
3:45 pm–5:15 pm	Scientific Session H
5:15 pm–6:00 pm	ASPN Business Meeting

## ASRM

### Sunday, January 13, 2002

6:30 am–5:00 pm	Speaker Ready Room
6:30 am–7:00 am	Continental Breakfast
6:30 am–2:00 pm	ASRM Registration

7:00 am–5:00 pm	Posters Open
7:00 am–7:08 am	President's Welcome <i>Randy Sherman, MD</i>
7:08 am–7:15 am	Program Chair's Welcome <i>Lawrence Colen, MD</i>
7:15 am–8:15 am	Panel I: Microsurgical Applications to Genitourinary Reconstruction
8:16 am–10:15 am	Scientific Paper Session A
9:00 am–2:00 pm	Exhibit Hall Open
10:15 am– 11:00 am	Coffee/Exhibits Break
11:00 am–12:00 pm	ASRM/ASPN Nerve Panel: Survey and Perspectives on Recent and Novel Nerve Repair Methods and Technologies
12:01 pm–1:45 pm	Scientific Paper Session B
1:45 pm	Adjourn
6:30 pm –9:00 pm	Dine Around

## ASRM

### Monday, January 15, 2002

6:30 am–5:00 pm	Speaker Ready Room
6:30 am–2:30 pm	ASRM Registration
6:30 am–7:00 am	Continental Breakfast
7:00 am–8:00 am	ASPN Incoming Council Meeting
7:00 am–8:00 am	Instructional Courses 301 - 304
7:00 am–1:00 pm	Posters Open
8:00 am–9:00 am	Panel II: "Past Presidents" Panel
8:30 am–1:30 pm	Exhibits
9:00 am–9:45 am	Godina Lecture <i>William Zamboni, MD</i>
9:45 am–10:30 am	Coffee/Exhibits Break
10:30 am–12:45 pm	Concurrent Scientific Paper Session C-1
10:30 am–12:45 pm	Concurrent Scientific Paper Session C-2
12:45 pm–1:15 pm	Boxed Lunch in Exhibit Hall
1:00 pm–5:00 pm	Audio Visual Theater
1:15 pm–2:15 pm	Panel III: Aesthetic Applications of Microsurgery
2:15 pm–2:45 pm	Founders' Lecture <i>Robert Russell, MD</i>
2:45 pm–3:30 pm	ASRM Business Meeting

## ASRM

### Tuesday, January 16, 2002

6:30 am–7:00 am	Continental Breakfast
6:30 am–12:00 pm	ASRM Registration
7:00 am–8:00 am	Instructional Courses 305 - 308
7:00 am–12:30 pm	Posters Open
8:00 am–9:00 am	Panel IV: What to Do When the Free Flap Fails
8:00 am–12:30 pm	Audio Visual Theater
9:00 am–1:00 pm	Concurrent Scientific Session D-1
9:00 am–1:00 pm	Concurrent Scientific Session D-2/3-Minute Presentations
1:00 pm	Adjourn
1:15 pm–3:45 pm	ASRM Council Meeting

## “Bridging the Hemispheres”

### 32ND ANNUAL MEETING

It's never too early to start thinking about next year's annual meeting. The association will hold its 32nd Annual Meeting January 9-12 at the Hilton Beach and Golf Resort in sunny Cancún, Mexico. The Program Committee has developed a preliminary schedule of events that will allow for a combination of education and warm weather recreation.



Cancún offers a wealth of Mayan cultural legacies, including Tulum, Xel-Há, Xcaret, Chichen Itza, and other appealing places like Cozumel and Isla Mujeres just an hour or less away.

### HOTEL INFORMATION

The 32nd Annual Meeting will be held at the Hilton Cancun Beach and Golf Resort. Situated at the tip of the Yucatán Peninsula, the resort covers 233 acres in the heart of Cancún's Zona Hotelera. Angled to take in panoramic views, all guest rooms and suite feature terraces or balconies for outdoor relaxation. The hotel adds an extra level of

pampering at its Beach Club, 80 rooms housed in low-rise villas. The resort's seven cascading pools form a dazzling aquatic complex, highlighted by two whirlpools and a swim up bar. Other facilities include a full service fitness center, two lighted tennis courts, a scenic golf course and a water sports center.

*Rates: \$220.00 for the Ocean View Room; \$270.00 for the Royal Beach Club Room. Reservations can be made by calling Mary Jo Harrold at the AAHS Central Office (312) 236-3307. Please be sure to mention you are attending the AAHS Annual Meeting. Members are encouraged to make their reservations early.*

In addition to the Hilton, rooms have been reserved at the Ritz-Carlton Cancún. Standing on over seven acres of the Yucatán Peninsula, this luxurious ocean-front property is finely decorated in marble, antiques and chandeliers. All

rooms have private balconies providing guests a magnificent view of the ocean. The hotel's amenities provide comfort, entertainment and fine dining in addition to lighted tennis courts, fitness center and spa. The Ritz is located in close proximity to the Hilton.

*Rates: \$285.00 for the Deluxe Ocean View Room. Reservations can be made by calling the Ritz Carlton directly 011 52 98 81 0808. Please be sure to mention you are attending the AAHS Annual Meeting.* **H**

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and I have generally learned more than I did at most of the other meetings I attended.

The next annual meeting in Cancun Mexico should be no exception. The reason for this is that the Board and Program Committee have taken great care to make sure that the meeting is in a fabulous location and that everyone will have time to enjoy it. Additionally, they have assembled an absolutely superb program designed to assure education in the shortest possible time. They have given everyone choices of what to attend to allow each attendee to design what they attend to fit their individual needs and better utilize the time available. Time has been provided also to allow each person to do what these meetings really do best, allow one to meet informally with recognized experts and learn from them.

So, what's important to me? My family, myself and my patients. I no longer am looking for wealth or fame. I simply want to enjoy what time I have been granted with my family and take the best care of my patients that I can. To do so, I now have to make choices that I never made before. Before I remain a member of an organization or go to a meeting, I now ask myself what I get in return for my effort, time and money. The AAHS still gives me a value I don't get elsewhere. I expect that it will continue to be an important part of my life. I hope you believe the same. **H**

# Reorienting after 9-11

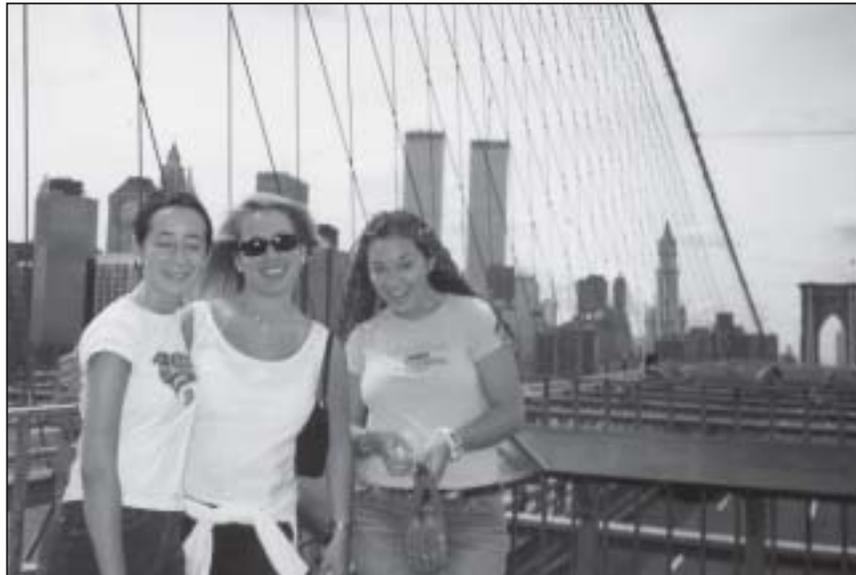
Lynn Bassini, MA, OTR, CHT

**O**peration Enduring Freedom. Ground Zero. Things aren't what they used to be. September 11 has changed the lives of many... in a brief moment for some and for others in ways still unfolding, our confidence, our daily life, our economy.

The count is now up to 6,500 and perhaps more. Never in our history have so many lives been missing in one day. At least 15,000 children have lost a father or a mother, in many cases a single parent. Many families are missing a parent, a child, a relative, a friend, or more than one. A firehouse in my community lost 12 of 30. One of our firemen had ten children. The stories are countless and each one is a tragedy.

My eighteen-year old daughter's bed is next to her window. The first thing she sees as she awakes are those two impressive towers. She knows her day is beginning. How disorienting! These navigational points are gone. There is emptiness. The all too familiar landscape is no longer. The Windows of the World are shattered. The smoke kept my son up at night. He calls it the tragedy of his lifetime.

We cry, we are transfixed to the news reports, to the stories...I am connected to at least twenty-eight stories and I am one of the lucky ones, my children are safe. The pain is all too familiar. I lost my mother at the age of five. The fear is all too familiar. I grew up in Guatemala in the 50's and 60's, when government coups and terrorism prevailed, and



Taken just one month before the tragedy, Lynn Bassini's daughter, Mona (far left), enjoys a care-free moment with two friends while on the Brooklyn Bridge overlooking Manhattan.

freedom was a banned word.

This was never going to happen in the United States of America. We all lived with a sense of security, perhaps an illusion that America was safe, protected by oceans, and invulnerable. We are a nation, crossing all racial lines, united in grief,

## IN THESE DIFFICULT TIMES, OUR FAMILIES AND OUR WORK BECOME OUR GUIDING LIGHTS.

experiencing profound sadness, perhaps anger and fear.

Mayor Giuliani described it as "we have seen the best and the worst of humanity." The heroes are many, people everywhere are moved to do something... anything... to show commitment, support, compassion. No gesture is too small. One at a time people are

reaching out to mend the fabric of our country. I am proud to be part of an America that never fails to help and to hope for a better country.

It has been a difficult time since that Tuesday morning, to say the least. Every day is the discovery of another missing person. What we counted on to be always there is not, things are still not back to "normal": phone lines, e-mail, faxes, mail, public transportation, bridges and tunnels. Yet in such a disconnected time, people from all over the world are finding ways to reach us. Thank you. New York is still a giant, a gentler giant with a wounded heart.

Our profession has given us the privilege of helping others in need. As Benjamin Franklin once said... "When we help others we are best to ourselves." Our commitment to excellence in hand care has always been a priority. In good times we have reached to all the corners of our country and across the oceans, to share, to learn and to teach.

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## Sandy Fletchall, OTR, CHT, MPA

**Personal:** Married.

**Education:** Bachelor of Science in Occupational Therapy from University of Missouri-Columbia; Masters in Public Health

Administration from University of Memphis, Tennessee; Certified Hand Therapist since 1991.

**Employer:** Therapist owned outpatient facility, Functions By Fletchall, in Memphis, Tennessee.

**AAHS Involvement:** Member for many years and presently a committee member on the Hand Therapy Committee.

**Best Part of My Job:** The ability and freedom to be creative to resolve the client's difficulties.



**SANDY FLETCHALL, OTR, CHT, MPA**

**Major Accomplishments:** Being recognized by my peers at American Occupational Therapy Association for treatment and outcomes for individuals with burns and/or amputations, and assisting individuals to re-gain a functional life, including return to work.

**Clinical Specialties:** I have specialized in trauma for the past 26 years. I love working with the physician, client and other team members to handle individuals with amputations, burns, and multiple fractures. I enjoy working with the individual from the moment of trauma until return to work. I have developed and now coordinate a weekly team meeting and clinic specializing in upper extremity amputations. The outcome of our program is return to competitive employment or retraining.

**Greatest Challenge:** Providing information and education to insurance adjusters regarding the cost savings of treatment provided by specialist in given fields of therapy.

**Three Words That Describe Me:** Innovative, dynamic and inspiring.



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In 1998 I was the Vargas Award Recipient. It was an honor for me to travel with Dr. A. Freeland to Puerto Rico and Venezuela. It was an experience that I will never forget and continues to influence my life. We have built on Dr. Miguel Vargas' dreams and efforts to reach beyond our borders. Our next annual meeting of the AAHS in Cancun on January 2002, is an extraordinary event, featuring world renown experts and an excellent scientific program in both English and Spanish.

In these difficult times, our families and our work become our guiding lights. They help us to focus and to direct our lives in meaningful ways. We are uplifted by the thought that others will join us... to share what we love. The sum is greater than its parts.

The suffering, the shock, the sorrow is profound; its mark will stay with us forever. The magnitude of the recovery seems overwhelming, but we all want to help in whatever we can. We await you with open arms to continue to build.

The following are some "words of wisdom" that seem to hit home: "Nothing which has entered into our experience is ever lost"; "Take risks based on what you have to gain rather than what you have to lose"; and "When there is a hill to climb, don't think that waiting will make it smaller."

GOD BLESS AMERICA! 

# Advances in Arthroplasty

In this edition of the *Around the Hand Table*, the panel will discuss the options of management of rheumatoid arthritis and osteoarthritis in the wrist, metacarpophalangeal and proximal interphalangeal joints, with emphasis on what types of arthroplasty are currently being used in the United States, and what each of the individual panelists' concepts are with regard to the way we should treat these problems at this time.

The moderator for the discussion is **Robert D. Beckenbaugh, MD**, Mayo Clinic, Rochester, MN; **Leonard Bodell, MD**, Affiliate Professor of Orthopedics, Midwestern University; Chief of Hand Services, Phoenix Orthopaedic Residency Program, Scottsdale, AZ; **Michelle Smith, OTR, CHT**, Mayo Clinic, Rochester, MN; **Peter Stern, MD**, Professor and Chairman, Department of Orthopaedic Surgery, University of Cincinnati College of Medicine, Cincinnati, OH; and **Arnold-Peter Weiss, MD**, Professor of Orthopaedics, Brown University, Providence, RI.

**Dr. Beckenbaugh:** I would like to begin with the wrist, and ask Dr. Bodell to start out by identifying where he feels we stand right now on the use of implant surgery in the wrist.

**Dr. Bodell:** Well, I think from the implant consideration, it's a situation where the use of total wrist arthroplasty is still very controversial. Dr. Beckenbaugh, you have obviously added perhaps the most to the literature and our information over the most recent years. I think what's going on is a real surge of change. I think we're seeing a new concept evolving in design. There are also new materials which decrease dependence on cement fixation and facilitate biological fixation. I think with that will come about a sense of change from using a total wrist perhaps as an end-stage procedure when nothing else is an option except a fusion, to the concept where it becomes more like the total hip and the total knee as an integral part of the treatment algorithm at varying stages of the disease, whether it be osteoarthritis, SLAC wrist, SNAC wrist, or in the more common situation, where it's used now, in rheumatoid arthritis.

**Dr. Beckenbaugh:** Have you had experience with the various devices on the market at this time?

**Dr. Bodell:** Yes, I have. When I was at the Mayo with Ron Linscheid, MD and Jim Dobyms, MD and with you, of course, we used the early versions of the ball and socket kind of design, the Meuli wrist, which has evolved into a cementless version with a so-called captured ball. It's a slight variant that's not available here in the United States in its new version, at least it's very hard to get. We've used the DePuy or biac, wrist, and we've used the universal KMI wrist. Those are the three that I have actual personal experience using. I'm familiar with a number of others that are being looked at in Europe at the present time. The general sense seems to be moving towards ellipsoidal concave-convex articulation, and away from the ball and socket concepts that were more common with the GSB, and the Meuli in the early 70's.

**Dr. Beckenbaugh:** Do other panel members have thoughts on the current use of cemented or non-cemented polyethylene and metal implants? I think I could summarize by saying that from my perspective at the present time, it seems as though we've pretty well settled on the concept of a ellipsoidal configuration and concave-convex concentric articulation. In our series, it appears quite apparent that biologic fixation is quite easy to

achieve in the proximal component. With the biaxial wrist, an occasional problem is one of distal component loosening which is being looked at with various technique and design modifications, including one developed in Europe in which a smaller component is passed just past the carpometacarpal joint instead of into the medullary canal to provide for a stronger distal point of fixation. The universal total wrist has been quite successful with distal fixation as reported at the recent ASSH meeting in Baltimore. The problems with this device have been a 15% incidence of dislocation with some radial loosening. But they've had no loosening of the distal component which has been the problem with the other device. All the people that are working on total wrist now seem to be going in the same direction I think, and that is to develop a device which will have options for screw fixation distally

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**THE PYROLYTIC CARBON DEVICE HAS NOW BEEN FUNCTIONING IN TWO PATIENTS WITH OSTEOARTHRITIS FOR MORE THAN 21 YEARS, AND HAS CONTINUED TO FUNCTION WELL WITH BIOLOGIC FIXATION AND ABSENCE OF PAIN AND INTACT NONFRACTURED IMPLANTS.**

**ROBERT D. BECKENBAUGH, MD**

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and biologic fixation proximally with an ellipsoidal interface. Dr. Stern, you've had some experience with silicone devices in the wrist. Do you feel there is any indication for the use of the silicone devices in the wrist anymore?

**Dr. Stern:** I really don't. I feel that there is absolutely no indication for silicone implants in the wrist. I think that all the current literature would refute its use.

**Dr. Beckenbaugh:** Dr. Weiss, your thoughts?

**Dr. Weiss:** I would agree with Dr. Stern, and I also think that your summation of the current implants, the ellipsoid implants, is correct. I've used both the biax and the universal. I like components of both of them. I've had some dislocations with the universal which I've been able to treat without removing it, (usually by putting an external fixator on and augmenting the capsule). But it's definitely a problem with that particular design. And I think the dislocation is less in the

biax. On the other hand, I like the fixation distally, as you mentioned, with the screws in the universal prosthesis. Because I consider the universal and biax devices third generation implants, I think the fourth generation implants which are coming up will probably resolve a lot of these issues. Instead of always having to worry about something or another, as Dr. Bodell pointed out, they may bring wrist implant arthroplasty to the point to

the same degree of shoulders and elbows. Maybe not quite to the sophistication of hips and knees yet, but to a very acceptable level.

**Dr. Bodell:** I think some of the design concepts will reach a happy medium where you have good fixation proximally and distally in the component design, but also enough capture of your articulating surfaces so that you have stability with little friction contact resulting in undue polyethylene wear or loosening.

**Dr. Beckenbaugh:** It's perhaps best summarized by some visitors from Wrightington that have recently commented on their experience with total wrists and other total joints. It's important to maintain the concept that any total joint in the upper extremities needs to be semi-constrained and not constrained. If it is constrained in any form, it can lead to significant wear.

**Dr. Weiss:** I would just make one more point on that. I think what's been telling for me is that I was a real big wrist fuser, and I've been really surprised, despite my initial reticence, at the very happy patients when everything works right after wrist implant arthroplasty. These patients are happier than those with wrist fusions. If the lack of predictability can be eliminated, I really think that we're going to end up doing a great service to this patient pool with wrist arthroplasty.

**Dr. Stern:** I would be inclined to echo what Dr. Weiss said. I think that if you compare patients that have a wrist fusion on one wrist and a successful wrist arthroplasty on the contralateral side, they prefer the side with the arthroplasty. To me the real issue with total wrist arthroplasty is how far can you push the envelope because I certainly believe that for the really bad wrist, arthrodesis in my hands is a safer and more acceptable way to go.

**Dr. Beckenbaugh:** As a general principle, I think we can summarize by

saying if you have other normal upper extremity joints, arthrodesis is selected as the treatment of choice in all situations. That would include all patients generally with osteoarthritis and traumatic arthritis, unless there was a special need for motion such as a musician. Now we consider the results of the best total wrist arthroplasty better than the best arthrodesis, but they carry a higher risk factor of loosening or need for revision surgery. Therefore, it's a higher risk, higher reward procedure than arthrodesis, which is normally the first choice. Ms. Smith, do you have any comments on a therapy protocol following total wrist replacement?

**Ms. Smith:** My experience has been that a therapist role is often less critical following wrist arthroplasty than in MCP or PIP arthroplasties. I really think these patients tend to do well with a more limited supervised program, as an emphasis on aggressive motion can lead to increased wear or instability of the implants.

These patients are typically seen a few days postoperatively for edema control measures and maintenance of shoulder and finger range of motion. The timing of mobilization of the wrist will generally depend on the soft tissue stability as noted during surgery. If there is a very loose fit in the wrist, we would keep them immobilized up to eight weeks postoperatively. As a guideline, we tend to begin limited active wrist flexion and extension at four weeks. We like to limit the wrist to 30 degrees of extension and 30 degrees of flexion with just a trace of radial and ulnar deviation. We can achieve much more than that with an aggressive therapy program, however, that can increase the potential for dislocation as well as polyethylene wear. A goal of 60 degrees of balanced wrist motion is very satisfactory.

**Dr. Beckenbaugh:** At this point, I would like to turn to the metacarpophalangeal joint and ask Dr. Stern to start our discussions. The



THE GENERAL SENSE SEEMS TO BE MOVING TOWARDS ELLIPSOIDAL CONCAVE-CONVEX ARTICULATION AND AWAY FROM THE BALL AND SOCKET CONCEPTS THAT WERE MORE COMMON WITH THE GSB, AND THE MEULI IN THE EARLY 70'S.

LEONARD BODELL, MD

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first question I would like to ask is, are we satisfied with the outcomes following silicone replacement arthroplasty of the MCP joint?

**Dr. Stern:** I think that we are reasonably satisfied, but we certainly would like to see better products on the market. Silicone arthroplasty has been around in excess of 30 years, and it is my impression, particularly in a rheumatoid patient, that it's given a reasonably high degree of satisfaction in terms of aesthetic improvement, with some recurrence of ulnar drift, improvement in function, and perhaps some improvement in strength. However, I believe that, over time, most of the silicone implants deteriorate. I believe that there are problems, significant problems, probably under-reported, with implant breakage. I believe that subsidence is a problem, particularly in the small finger. And I also think that there are, although not widely reported, definite problems with particulate wear debris, which is evidenced by scalloped erosions on both the phalangeal and the metacarpal side of the bone. Nevertheless, the general acceptance rate by patients is high. More than half of my patients at some point will undergo bilateral MP arthroplasties which, given the amount of therapy and rehab involved in the procedure, is testimony that it's a reasonable thing to do.

**Dr. Beckenbaugh:** So you continue to do it, Dr. Stern?

**Dr. Stern:** I do.

**Dr. Beckenbaugh:** And Dr. Bodell, what is your experience?

**Dr. Bodell:** Well, we continue to do it too. I would agree with Dr. Stern. The problem is fracture, and then wear debris, and associated with it, recurrent deformity. Many of the patients, even with some of the fractures and those who have initially more subluxation than ulnar deviation as their initial presenting deformity, tend not to drift off very much. When we see x-rays with fractures, many of these patients,

particularly the lower demand patients, are still very happy with their cosmetic appearance and their ability to function. In none of the patients have we been able to truly objectively identify increased grip. It's interesting, however, that the patients seem to feel that their hand is more useful, probably because of the improved arc of motion and the improved ADL function. Their perception is that they are stronger even though we've not really been able to measure increased strength.

**Dr. Beckenbaugh:** Dr. Weiss, you have obviously been very active in the development of design modifications in silicone implants, what would you consider your current indication for a silicone MCP arthroplasty? Do you consider it as primarily a salvage procedure or do you consider it as an earlier reconstructive type of procedure to correct the deformity and improve function?

**Dr. Weiss:** I would say for rheumatoid patients, which is the largest pool by far, I would consider it appropriate for moderate to severe disease. I prefer to try to get patients that are not at this severe palmarly subluxed, dorsally eroded at the proximal phalanx type stage because those have some rebalancing issues associated with the surgery. So we consider surgery when you get a patient that's sort of at the moderate stage, starting to lose function, becoming somewhat dissatisfied with the way their hand is working, with or without a significant amount of pain. They may get functional disability before they get a significant amount of pain. I actually like some of the current silicone devices for that particular moderate group.

I think the problem patients are rheumatoid patients with a lot of pain but not a lot of deformity, or osteoarthritis where, even though I have used silicone devices in both groups, I'm concerned about poor function and wear debris. In these groups, I would prefer to look at some of the newer designs out

there. I think for the moderately to severely involved rheumatoid patient, there are some very good silicone devices that do a respectable job of function, both short-term and despite some of the issues that Drs. Bodell and Stern spoke about, even long-term.

**Dr. Beckenbaugh:** I would like to ask any or all of the panel members, if they are presented with a patient with severe rheumatoid disease and 90 degrees of extension lag at the metacarpal phalangeal joints with subluxation and perhaps some shortening, but relatively good or even moderately good inter-phalangeal joints, do they feel they can help that patient with silicone arthroplasty?

**Dr. Bodell:** Well, you have to look at the soft tissues and the ability to rebalance everything and the whole picture of the patient, including what the wrist looks like. But if we just isolate the MP joints, and this is a relatively low demand to low moderate demand patient, I think there is an opportunity to improve the patient. I realize that they may not get a great deal of motion once we get them in their splints. We need to emphasize motion at their PIP and DIP joints if they were reasonably normal. I think rebalancing and realigning the fingers at the MP level, all other things being considered, will probably improve that patient's appearance, their psychological perspective on their hands, their willingness to go out in public, and to a significant degree, their ability to function provided they can learn to readapt. Many of the patients with

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**I BELIEVE THAT, OVER TIME, MOST OF THE SILICONE IMPLANTS DETERIORATE [AND] THAT THERE ARE PROBLEMS, SIGNIFICANT PROBLEMS, PROBABLY UNDER-REPORTED, WITH IMPLANT BREAKAGE.**

**PETER STERN, MD**

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rheumatoid disease with these terrible deformities have adapted to those deformities in terms of doing their ADL activities. One of the more difficult things to know is whether they will have difficulty readjusting to the so-called normal. But once they do that, I think they are better off. In other words, they

reach a higher level of functionality than the maximum functionality they were able to adjust to in the face of their deformity.

**Dr. Beckenbaugh:** I would certainly agree with that. I do think that the one strong indication for silicone arthroplasty at the metacarpal phalangeal joint is the patient that you can take from a totally dysfunctional hand (and I need to say dysfunctional because some people with an extension lag of 90 degrees have pretty good and useful grip). To a useful hand, in general, with a dysfunctional hand like that bringing the hand into an extensile stance with a limited arc of motion improves

function as well as appearance and patient acceptance. Dr. Weiss mentioned the new devices that are on the market. As most of us are aware, effective in the last three months, there have been two types of ball and socket joints that have been approved by the FDA for use in the United States. The first is one that was developed here at Mayo by my colleagues, Dr. Ronald Linscheid and Dr. William Cooney. We have been involved with a pro-

tolocol for some years now in a prospective study comparing the polyethylene and metal ball and socket SR device with silicone implants. A second device has also been developed at Mayo with a ball and socket design and pyrocarbon material. In an experience we had over the 1980's in 51 patients this ball and socket pyrocarbon device was found to be useful and very non-reactive with a stable and functional arthroplasty. It's important to emphasize that these new designs with the ball and socket concept do provide for restoration of bony anatomy, but it still does nothing for the soft tissues. So just as with our silicone arthroplasties, it's very important that we reconstruct the soft tissues because these joints have the capability of dislocating, which the silicone joints do not. The new ball and socket designs offer something on the horizon that has the potential to provide a fixed fulcrum type of total joint replacement which we think in our early experience is going to be superior to that which we had with our previous cemented and hinged prostheses of the past years. One of the things that's important to consider in dealing with both of the ball and socket prostheses is the difference in the post-operative therapy program. As we all know, we generally are working to develop motion in the 0-60 degrees range, following silicone arthroplasty. I'd like to ask our therapist, Ms. Smith, to describe the differences in the protocol in the ball and socket type arthroplasty such as the SR or the pyrolytic carbon.

**Ms. Smith:** Therapists and surgeons need to be aware that these new non-constrained implants will require more supervision initially than the traditional silicone implants. This is particularly true for patients with rheumatoid arthritis where a delayed mobilization program, typically 3 weeks, is necessary to allow for soft tissue stabilization. For these patients, it is imperative for the success of this surgery that the MCP's are not

allowed to flex past 45 degrees for the first six weeks. More aggressive motion can result in recurrent ulnar deviation of the MCP's, an extension lag, or instability. The emphasis for this new protocol stems more on stability initially rather than mobility, which tends to be different than the traditional silicone protocols. The focus will not initially be on gaining flexion of the MCP, but on maintaining full extension and alignment. For this reason, close monitoring of the dynamic splints is critical and many times modification such as derotation slings are necessary. These slings assist with pronation and supination which are seen more commonly in the index finger.

**Dr. Stern:** Could I ask a question with respect to the silicone arthroplasty. Barry Simmons a few years ago presented a paper in which they compared silicone arthroplasty with a postoperative protocol of either classic dynamic splinting versus no dynamic splinting and use of immobilization for four weeks with the MP's held in extension and the IP's left free for flexion exercises. Over the past couple of years, we have discontinued dynamic splinting in those patients who at their first postoperative visit at a week are well aligned. If the patient had some residual ulnar drift, then we use the dynamic splint with static splinting at night. And I'd like you to comment on whether or not you've had any experience in silicone arthroplasty with not using dynamic splinting.

**Ms. Smith:** I actually have not had the experience of using just a static splint and not the dynamic splint, so I cannot comment to that effect. But generally speaking, I think that the dynamic splint is beneficial in allowing the patient to exercise in the splint, yet protecting their joint position and soft tissue repair. I think Dr. Simmons has an interesting concept, however, and would welcome an opportunity to evaluate such a protocol.

**Dr. Beckenbaugh:** We have in our



THERAPISTS AND SURGEONS NEED TO BE AWARE THAT THESE NEW NON-CONSTRAINED IMPLANTS WILL REQUIRE MORE SUPERVISION THAN THE TRADITIONAL SILICONE IMPLANTS.

MICHELLE SMITH, OTR, CHT

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severe salvage cases, like I was describing earlier, gone through a program similar to Dr. Simmons' program of immobilization in extension for a three to four week period of time. We mobilized the interphalangeal joints in the severe rheumatoid patients for three to four weeks in full extension, and work on interphalangeal motion immediately as they do. But the difference with our program has been that we stayed with dynamic splinting after the removal of the splints to help assure that the fingers go in the correct direction. So that's just been the way we chose to do it.

**Dr. Weiss:** I'd like to comment on that. We were very skeptical about Dr. Simmon's original report, but we randomized some folks for a while, and I would tell you fairly conclusively from our data, which is coming out shortly, that we've had better patient satisfaction with the extension splint protocol. They're certainly stiffer at four weeks when you stop the full-time

extension splinting versus the dynamic. But at three months, the range of motion for both groups is essentially identical. And so we have actually, as of about six months ago, abandoned using dynamic splints for silicone MP arthroplasties.

**Dr. Beckenbaugh:** What do you do if you have a little tendency towards a little rotation or a little ulnar deviation that is so common as I see it, especially in the long finger after surgery.

**Dr. Weiss:** I would say, Dr. Beckenbaugh, we don't see that for the first four weeks because, first of all, they come back all padded up and in a post-operative splint, and we usually see them at 10 to 14 days. If we do see some rotation, we fabricate outrigger resting position splints with some gutters, and use derotational slings to prevent rotation. I can't honestly say that I have not seen a greater or lesser

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## Freeland Professorship Created

An anonymous donor has funded "The Alan E. Freeland, MD Professorship in Hand Surgery" in The Department of Orthopaedic Surgery and Rehabilitation at the University of Mississippi Medical Center through a 2 million dollar contribution to The University of Mississippi Foundation. Dr. Freeland is Professor of Orthopaedic Surgery and Director of the Hand Fellowship Program at the University of Mississippi Medical Center. He is the current President-Elect of the American Association for Hand Surgery. **H**

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incidence of supination or pronation problems or ulnar deviation when comparing the two groups prospectively. We have those same problems with the dynamics, which require you to change the angle of the rubber band and use derotational devices. The patients still have some problems after therapy.

We still see those issues with the extension protocol, but I don't really believe that there's more or less of that.

**Dr. Beckenbaugh:** Do any of the panel members use the silicone devices for osteoarthritis or traumatic arthritis at the MCP?

**Dr. Bodell:** Over the last 30 years we really have not had another choice. In an index or middle finger, perhaps, you might be able to consider in a heavier laborer, an arthrodesis, specifically if they had good PIP joints. I've had the opportunity on a couple of occasions now to use the SR implant. And I've been involved in cases outside the country using the

pyrolytic carbon, but not as a primary caregiver, so I can't comment. But I think that the new ball and sockets as you described them would, certainly, because they are rigid, fixed fulcrum designs that are appropriate in patients with osteoarthritis and post-traumatic arthritis. The patients suggest that it feels more like a normal joint, more like it's their real hand. The patients from years ago that we did the silicone in lost their knuck-

le appearance and the length of the finger was never quite the same, so you had fingers where you would get 0–90 degrees in all the other digits, and then one digit, whether it be the middle finger or ring finger, typically was limited to 0–60, and they didn't really like that very much. They may have gotten some pain relief for a while, but silicone devices were associated with limited function. So my feeling is given the opportunity now, the fixed fulcrum design will be preferable for post-traumatic or osteoarthritic patients.

**Dr. Beckenbaugh:** I agree with you. We do have now available to us something that we can use in those situations in which the soft tissues are still quite good and the bony articulation is damaged. These seem to be quite natural, and we've had a quite satisfactory experience with both devices. The pyrolytic carbon device has now been functioning in two patients with osteoarthritis for more than 21 years, and has continued to function well with biologic fixation and absence of pain and intact nonfractured implants. So this is something that really is exciting, and the challenge is going to be in thinking about utilizing these newer devices in the rheumatoid patients. It seems quite clear that the ideal indication is going to be in the patient that Dr. Weiss referred to earlier with minimal bony deformity, slight subluxation, loss of articular cartilage and pain. We see this more in the younger type patient. The noncemented devices may be more appropriate in treating rheumatoid arthritis and younger patients than the silicone devices we are currently using.

At this point, I would like to finish up by reviewing the current status of PIP joint arthroplasty in the hand. I would like to ask Dr. Weiss what you think we can do for the PIP joints, and what you're doing. It's my understanding that your device recently added a silicone PIP joint implant.

**Dr. Weiss:** Personally, I'm more

skeptical about the use of silicone joint replacement in the PIP joint than I am in the MP joint. I think the device that I've been involved with, the NeuFlex, in the MP joint is, in my experience, superior to the other silicone devices from a functional arc perspective. It still has the problems associated with silicone, but I think it's doing a very good job in rheumatoid patients. I have some concern with the PIP joint silicone replacement, although it was designed on the rationale of NeuFlex MCP prosthesis. Although I do PIP joint arthroplasty extremely sparingly, I am personally waiting for more of the total joint replacement types to become available before I start using PIP joint arthroplasty to a substantial degree. I think silicone has a place if your back is against the wall. If there is a reason—they can't be fused, you can't make them happy, you don't have another alternative—then I think it is a reasonable option, but I'm skeptical that it's going to be the long-term answer in any form.

**Dr. Beckenbaugh:** Dr. Stern, do you use silicone devices at the PIP?

**Dr. Stern:** Yes. I'm actually not quite as skeptical as Dr. Weiss is. I have not had good experience in the rheumatoid patient, but particularly in the osteoarthritic patient, my experience for pain relief has been excellent. Surprisingly, the revision rate has been—and we've published this—infrequent. Range of motion is variable but tends to reflect the preoperative range of motion, whether the implant is put in through a dorsal, a lateral or a volar approach. So I, in general, have been happy and willing to do it in the index finger in a lesser demand patient, and prefer it to arthrodesis in the osteoarthritic population.

**Dr. Beckenbaugh:** Has the panel used any of the condylar polyethylene and metal prostheses?

**Dr. Bodell:** I've not had that much success over the years with the silicone implants for the PIP joint. I concur with what Dr. Stern has said



**FIVE YEARS FROM NOW, I THINK THAT THE MP JOINT... WILL STILL BE A PRIMARILY SILICONE-BASED TYPE OF JOINT, ALTHOUGH OSTEOARTHRITIS AND EARLY RHEUMATOID WILL PROBABLY BE SERVED BY THE NEWER IMPLANTS.**

**ARNOLD-PETER WEISS, MD**

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with regard to post-traumatics in terms of pain relief, but we've had a terrible time really getting very good motion. Most of the patients we have had to use it on would end up with 30 degrees of motion. These patients were happy in the sense that they had pain control, but we couldn't reestablish, as a general rule, good motion. And from that perspective, we remain dissatisfied in the management of post-traumatic and osteoarthritis with silicone implants. In the rheumatoid, the problem we've always come across is the recurrent instability problem and, therefore, up until more recently, we've used it very sparingly in patients and have not had the successes that have been occasionally reported by other groups.

**Dr. Beckenbaugh:** That's been my experience. I have found that silicone arthroplasty can sometimes be useful for long periods of time in very well-motivated patients at the ring and the small finger for achieving flexion, and I've seen and have patients with traumatic arthritis that have maintained nearly 80 degrees of motion over a long period of time without adverse effect. But the vast majority, in my experience have been associated with the occurrence of cold flow of the silicone with recurrent deformity including usually ulnar deviation at the PIP joints and progressive loss of motion with subsidence. So the panel is somewhat split on this particular topic of the use of silicone at the PIP joint. There are, however, available again, joints that are made of polyethylene and metal developed by both Drs. Bodell and Linscheid.

**Dr. Bodell:** The idea has been over the years to try and develop a joint that again has a fixed fulcrum rigid implant. Dr. Linscheid developed a condylar design, which he started using in the 70's, and I got involved with Dr. Amy Hollister to create a similar design, and since it has been hybrid into one implant

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## The Electronic Clinical Trial

In the mighty wake of the Dot."Bomb" bust, most are now convinced that companies producing nothing find it difficult to survive. And yet, the "new economy" has forced information-dependent sectors to reassess. Faster data and communications can translate into real success advantages.

### How does medicine fit in?

- Experts have estimated that 25% of every dollar spent in medicine is related to information processing—mostly paper-based.
- The pharmaceutical industry spends \$15 billion annually collecting and re-collecting clinical data for therapeutic approvals.
- The legal industry is extracting huge \$\$\$ from medicine for data communications mishaps.
- The National Academy of Science has pointed to patient data accuracy issues as causative in adverse outcomes.

Notwithstanding the great need for a head to toe upgrade in medical informatics, consider a "here and now" example, that of the clinical trial. Every doctor in practice is dependent upon the clinical trial to evaluate potentially beneficial therapeutics for incorporation into his or her practice. Patients demand the "latest and greatest," but are strikingly unwilling to accept complications. Physicians are motivated to provide the newest and best treatments, but are often hesitant to do so until convincing data are presented to them. Scientific abstracts often change between presentation

and publication as additional facts are discovered—our process works, but it is SLOW (measured in years).

The Internet now can support clinical trials management, respecting all government requirements through log-on consents, encryption, electronic signatures, and de-identification of patient data for collective review. Traditional data collection proceeds as follows: event (delay), recording through data duplication (delay), submission (delay), data "clarification" (delay), and analysis (delay). The on-line paradigm permits the following sequence: event (real-time recording, range checking, and required field forced compliance to produce both documentation AND analytic data submission in a single step), data "clarification" AND analysis (real-time analytic processing and on-line reporting with out of range and out of trend re-verification). This strategy means that studies can conclude (or branch) just as soon as data significance is achieved, and expenditure will be required in exactly sufficient amounts. Conclusions will be available sooner rather than later. The communications network will facilitate updates.

Final thoughts... Lipitor is a statin class medication that lowers cholesterol. Its sales are in excess of \$4 billion annually. Although the medication is in active use having achieved FDA approval, 10% of the revenues are being re-invested in on-going clinical research: \$400,000,000 annually. From a strictly budgetary perspective, look for the private and corporate sector to lead the way in the medical informatics revolution. "Boutique" therapeutics and less widely applied methodologies will benefit secondarily from clinical research technologies developed for big-ticket medications. **H**



J. DANIEL LABS, MD

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that is metal and polyethylene with a cementless option. What we found in our original design is that there was some loosening of the distal component, which we felt had to do with the fixation methods we were using. The newer design I believe will be better as long as we have good bone. The option of cement is always one that's available, and one that many of us look at somewhat with disfavor in the finger joints in particular because of heat generation. What we have seen, at least in my experience is a significant amount of difficulty in initially reestablishing motion on these patients. One of the problems seems to be our initial tendency to be very conservative with our post-operative protocol and not starting motion very early. Over the later years we began to do motion earlier, utilizing the Chamay approach. We've had less trouble with tendon adhesions and have seen the ability to achieve motion of 0–70–90 degrees with maintenance of good lateral stability. The implants, and I think the pyrolytic carbon perhaps allows this as well, will allow preservation of the collateral ligaments so that you have that soft tissue stability. There is an intrinsic stability to these implants to lateral stress, which you don't really find with silicone. So I think in that regard, there's a significant potential benefit with these devices as well.

**Dr. Beckenbaugh:** I would agree with you on that, especially with newest hybrid SR implant. We're finding we can not only improve patients who have failed silicone devices with ulnar deviation, but we can provide a very acceptable range of motion which can approach up to 70–75 degrees with good correction of mediolateral instability. We have concerns about wear with these devices. The pyrolytic carbon device is not available in the United States at this time. It may be avail-

able next year, and it is available and being used successfully in Europe. But the majority of our experience in total joint replacement has been with the Avanta SR device. What's been of interest has been the rather variable forms of therapy that are necessary. I prefer an extensor splitting approach dorsally, which is similar to the Chamay, but we have the potential problems with these devices for both hyperextension and extension lag. So, Ms. Smith could you comment on the therapy protocol that you are utilizing for the PIP joint?

**Ms. Smith:** For the osteoarthritis patients, we begin therapy at two to four days postoperatively. We use a conservative therapy regime with dynamic splinting where we have active PIP flexion to 30 degrees with active assisted extension in the splint. After a week if there's no extension lag, we can increase the PIP flexion to 45 degrees. At two to four weeks, when the extensor tendon repair is stronger, we can discontinue the dynamic splinting if the extension has been maintained. A lot of times buddy taping can be used at this time to make sure that the finger is properly aligned. The initial goal by six weeks is to achieve the PIP motion in an arc of 0–75 degrees.

Another important concept that therapists need to look for would be to prevent hyperextension. If this is noted, an extension block can be added to the splint at the PIP to block extension at 30 degrees with the arc of motion then modified from 30–60 degrees of motion. There are also some modifications you can do in the dynamic splints with derotational slings to prevent pronation and supination. Also, if an angular deformity is present, we can construct a hinged PIP splint to provide radial and ulnar support, yet still allow for flexion and extension.

**Dr. Beckenbaugh:** Basically, the therapy in this group of patients is really quite individualized. But we have seen some patients that hyperextend, and if hyperextension is

allowed to persist, it will persist indefinitely giving a swan neck and would have to be corrected surgically. So if we find that a patient can actively extend beyond zero in the first several weeks, we will actually place them in an extension block splint at 30, and splint them at 60 degrees of flexion at night. The other thing that can happen, of course, is decreased extension. And if we have decreased extension, then we need to continue to utilize dynamic splinting with extension splinting at night so that we don't lose full active extension. We have to fine tune the splints more frequently in PIP therapy with frequent visits to both the therapist and the doctor.

**Dr. Beckenbaugh:** Dr. Bodell, do you use the volar approach at all with the SR implant?

**Dr. Bodell:** No, we really haven't, although, as I said, we use the dorsal approach primarily with the Chamay incision of the extensor tendon, to gain joint exposure. I've thought about trying—but I just don't have enough patients—to see whether or not a particular deformity might be more amenable to a particular approach. As you know, in the published reports, both what Dr. Stern has talked about and the ones that Ron Linscheid reported with the SR's, there was seemingly no difference regardless of what approach was used. But I wonder; what if we had patients who had swan neck deformities, and we approached it volarly and could then reconstruct the volar structures that way and not interfere with the dorsal apparatus, and for the patient with a boutonniere deformity, perhaps, go through the dorsal approach where we could reconstruct, tighten up the dorsal apparatus. Then there might be a select group of patients with neither of those deformities who might actually do well with the lateral approaches, and thereby not violate the extensor tendon and decrease the likelihood of extensor tendon

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# Joint Replacement Surgery

Stiles T. Jewett, Jr., MD, FACS

CPT coding for prosthetic implant replacement of joints of the wrist and hand is fairly straightforward. Codes 25441 – 25446 are used for arthroplasty with prosthetic replacement of the distal radius and ulna, carpal bones and carpometacarpal joints.

Replacement of the metacarpophalangeal joint is coded 26531 and replacement of interphalangeal joints coded 26536. (See Table 1.)

It is important to know what surgical services are considered global in performing joint replacement. In general, the CPT codes (and the RVUs for them) assume that certain surgical maneuvers must, as a matter of course, be performed when carrying out replacement arthroplasty. For **wrist and carpal bone** replacements these **global services** include:

1. All standard pre-, peri- and post-operative care – local infiltration, bandages, casts, wound irrigation, placement of drains, etc.
2. Any tenolysis or neurolysis and/or neuroplasty *needed for surgical exposure* of the joint.
3. Arthrotomy.
4. Excision of osteophytes and bone fragments and joint debridement.
5. Synovectomy and synovial biopsy.

6. In the case of the distal ulna and radius, excision of the distal ulna and/or radius.
7. Removal, partial or total of the involved carpal bone(s).
8. Removal of previous fixation device (if present) e.g., in performing a “total wrist”.
9. Capsular repair or reconstruction with local tissue.
10. Insertion of the implant or prosthesis (any type) with or without bone cement.
11. Insertion or application of internal or external fixation device(s).

The above procedures *do not include*:

- Complicated wound closure requiring local or distant flap coverage and/or skin graft.
- Tenosynovectomy unrelated to the surgical procedure.
- Tendon repair, transfer, or tenodesis.
- Harvesting and insertion of tendon or fascial graft (separate incision).

CPT Code	Description
25441	Arthroplasty with prosthetic replacement; distal radius
25442	distal ulna
25443	scaphoid (navicular)
25444	lunate
25445	trapezium
25446	distal radius and partial or entire carpus (total wrist)
26531	Arthroplasty, metacarpophalangeal joint; with prosthetic implant, each joint
26536	Arthroplasty, interphalangeal joint; with prosthetic implant, each joint

Global service for **metacarpophalangeal and interphalangeal joint** replacement are similar to those above but also include:

- Release of the volar plate.
- Flexor tenosynovectomy through dorsal approach.
- Intrinsic release.
- Bony resection and preparation of bone for implant insertion.

- Repair/reconstruction of collateral ligaments.
- Repair/reconstruction of extensor mechanism (includes centralization).

The above procedures *do not include*:

- Complicated wound closures requiring local or distant flap coverage and/or skin graft.
- Extensor tendon transfers.
- Extensor tendon grafting.
- Intrinsic tendon transfers.
- Flexor tenolysis or tenosynovectomy through separate volar approach.
- Additional joint replacements.
- Additional reconstructive procedures.



STILES T. JEWETT, JR., MD, FACS

ICD-9-CM coding for the most common conditions leading to joint replacement surgery of the hand, namely, rheumatoid and osteoarthritis were discussed in the month/year issue of HJQ.

**Sample Case:** A 56 year old female with longstanding, rheumatoid arthritis of both hands has severe ulnar drift at the second through fifth MP joints of her right hand. In addition, she has suffered a recent rupture of the extensor communis tendon to the little finger. She undergoes replacement of all four MP joints with prosthetic implants through a standard dorsal approach. Release of the abductor digiti minimi, suture of the EDC of V to the EDC of IV, and intrinsic transfer from the ulnar side of IV to the radial side of V is performed.

**Solution:**

26531 Arthroplasty, metacarpophalangeal joint; with prosthetic implant, each joint **H**

## AROUND THE TABLE

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imbalance or adhesions. It would be an interesting prospect to see if, by selecting out the pre-operative deformity, and then selecting which approach you used, it would make a difference. But I don't know that that's ever been looked at quite that way. Personally, I have not done enough to isolate the patients. So we basically generically resorted to the dorsal approach because it worked the easiest and best for us.

**Dr. Beckenbaugh:** And I think that's what we should be recommending. I think that your rationale is solid for using the volar approach in the extensile deformities, and dorsal approach in the flexion deformities. Technically speaking, you can perform the SR arthroplasty through the volar approach, but you need to be aware that you cannot do that with the pyrolytic carbon implant because the implant cannot be properly inserted. I want to thank the panel for their contributions, and ask each of you if you have any last comments to make as we close our discussion.

**Dr. Weiss:** I would just make a prediction for five years from now. I

think that the MP joint, because of the epidemiology of the patients we see and the referral patterns from rheumatologists, will still be a primarily silicone-based type of joint, although osteoarthritics and early rheumatoids will probably be served by the newer implants. My gut feeling is that the PIP will be the opposite, and, despite what Dr. Stern has said, my suspicion is that with the newer devices, they are likely to supplant silicone-based implants at the PIP because of motion and stability issues.

**Dr. Beckenbaugh:** I agree with you completely on that, Dr. Weiss. Dr. Stern, any rebuttal or maybe your thinking is similar?

## 2003 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:

American Association for Hand Surgery  
20 N. Michigan Avenue, Suite 700  
Chicago, Illinois 60602

Applications (**an original plus seven copies**) must be received by the committee chair no later than **Friday, November 1, 2002**, 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



Saleh M. Shenaq, MD  
Baylor College of Medicine  
6560 Fannin Street, Suite 800  
Houston, TX 77030

**Dr. Stern:** I would certainly agree with him at the MP joint, and I would say that the jury is still out at the PIP joint. I'm very concerned, particularly in the rheumatoid, that the resurfacing device, although very, very attractive because of problems with soft tissue reconstruction and/or balance, are not going to become dominant in the next five years. And I feel that the silicone arthroplasty will probably still remain the dominant force, or dominant implant, in the PIP joint. But, ultimately, I would love to see something more anatomic, with biological fixation, supersede it.

**Dr. Beckenbaugh:** In osteoarthritis and traumatic arthritis, the new PIP joints seem to be superior. I do not think they will be indicated often in rheumatoid arthritis. While we do RA cases with very special indications, as a rule, it's a prosthesis for osteoarthritis and traumatic arthritis.

**Dr. Bodell:** I would certainly agree with the concept for the PIP joint. The vast majority of patients that have been done, and certainly the ones we have done, have been more in the osteoarthritic and post-traumatic group. Their results are certainly much more consistent and, in my opinion, give an exponentially better result than what we can get with silicone, and at least for now, that's where they have their greatest role.

**Dr. Beckenbaugh:** I want to thank the panel very much for your participation. **H**

## 6th Annual Day at the Links Golf Tournament

being held in conjunction with  
the AAHS and ASRM Annual Meetings

**Saturday, January 12, 2002**  
12:45 pm Depart Hotel  
Price: \$130.00

The scramble will be held at the  
Hilton Cancun Golf Club. This championship Aoki  
designed golf course will challenge even the most seasoned  
golfer. Manicured Bermuda fairways and greens, spectacular  
scenery, exotic wildlife and an attentive staff await your arrival with  
traditional Mexican hospitality. Every interest of golf enthusiasts  
from scratch players to high-handicappers has been provided with care and  
anticipation. Tournament fees include greens fee, cart rental, box lunch and two  
drink tickets. Please note the Club is a spikeless facility—no metal spikes are  
allowed. Proper golf attire (collared shirts, slacks or Bermuda length  
shorts of non-denim material) is required.

Registration will officially close on FRIDAY, JANUARY 11, 2002 at 5:00 pm.  
All pairing will be done on-site in the pro shop. Golfers are encouraged to  
submit completed foursomes to the golf pro shop.  
**To sign up, or for more information, call 847-236-3307.**

### 6th Annual Day at the Links Registration Form

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

PHONE \_\_\_\_\_ FAX \_\_\_\_\_

HANDICAP (If HC is not known, please indicate scores from the last three rounds of golf played)

**Payment Method**     VISA     MASTERCARD     CHECK

CARD NUMBER \_\_\_\_\_ EXP. DATE \_\_\_\_\_

SIGNATURE \_\_\_\_\_

Please fax this back to the AAHS/ASRM Central Offices at 312-782-0553 or mail to,  
AAHS/ASRM, Golf Registration, 20 N. Michigan Avenue, Suite 700, Chicago, IL 60602.

# American Association for Hand Surgery Calendar

## 2002

**January 9-12, 2002**  
32nd Annual Meeting  
Hilton Cancun Beach & Golf  
Resort  
Cancun, Mexico

**July 12-14, 2002**  
Mid Year Board of Directors  
Meeting  
Ritz Carlton Hotel  
Chicago, IL

## 2003

**January 8-11, 2003**  
33rd Annual Meeting  
Hyatt Regency Kauai  
Koloa, Kauai, HI

## April 17-19, 2003

Post Traumatic Reconstruction  
of the Upper Extremity  
Hotel Inter-Continental  
Chicago, IL

## 2004

**January 14-17, 2004**  
34th Annual Meeting  
Westin Mission Hills  
Palm Springs, CA

## 2005

**January 12-15, 2005**  
35th Annual Meeting  
Sanibel Harbor Resort  
Sanibel Island, FL

## 2006

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

## 2007

**TBA**  
37th Annual Meeting  
Westin Rio Mar Resort  
Rio Grande, Puerto Rico

### For information contact:

**AAHS Central Office**  
20 North Michigan Avenue, Suite 700  
Chicago, Illinois 60602  
Phone 312-236-3307  
Fax 312-782-0553  
[www.handsurgery.org](http://www.handsurgery.org)

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