Orthopaedic Research & Education Foundation

IMPACT

VOLUME XII July/August 2008 NO. 2

Opening Doors

2008 Clinician Scientist Award Recipient to Study Why Thumb CMC Arthritis Is More Common in Women

Writing a note. Twisting the lid off a jar. Unlocking and opening a door. Simple, everyday tasks become painful activities for patients suffering from thumb carpometacarpal (CMC) arthritis.

"People are surprised by how much they use even their non-dominant hand," said **Jennifer M. Wolf, M.D.**, a hand surgeon and assistant professor at the University of Colorado School of Medicine, department of orthopaedics. "They don't realize how important the hand is until it's injured or unusable."

Photo at right courtesy of the University of Colorado, Denver.

continued on page 6

***Jennifer M. Wolf, M.D.** operates on a patient suffering from thumb CMC arthritis.*

Timothy C. Payne, M.D.

Model Patient, Model Results

Platinum Shands Member Tells of His Own Experience as an Orthopaedic Patient

Orthopaedists have collectively earned a reputation as high-energy achievers determined to find effective, efficient, elegant solutions to every clinical challenge. Does an orthopaedic surgeon reflect the same drive when making the transition to orthopaedic patient? In the case of **Timothy C. Payne, M.D.**, yes, indeed.

A specialist in sports medicine, arthroscopic surgery, and back rehabilitation, Dr. Payne is past chair, department of surgery and currently president-elect of medical staff at Advocate's Good Samaritan Hospital in Downers Grove, Ill., and is on staff at four other area hospitals. He is also one of 15 partners in M&M Orthopaedics Ltd., which operates five offices in Chicago's western suburbs.

Dr. Payne earned a bachelor's degree in psychology at Hamilton College, Clinton, N. Y., before completing his medical degree at Rush Medical School in Chicago. He interned in general surgery and also completed residency in orthopaedic surgery at Chicago's Rush-Presbyterian-St. Luke's Hospital, now Rush Medical Center.

continued on page 14

In This Issue

Page 4	*Endowment vs. Annual Giving Simplified*
Page 8	*Wright Medical Reaches Out for Orthopaedics*
Page 12	*Research Key to Hospital for Special Surgery's Success*

discovering the future of orthopaedics

William P. Cooney III, M.D.
Board Chair

About Impact

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Teach Them Early

It's Never Too Soon to Learn the Importance of Education and Research in Orthopaedics

Clinical and basic research has advanced the understanding of orthopaedic surgery principles and treatment applications. Applying those advancements clinically relies on education, especially during residency. Here are just a few of the opportunities OREF provides for residents.

Resident Research Symposia

OREF's annual spring Resident Research Symposia provide orthopaedic residents an opportunity to present research papers and posters to a panel of experienced investigators and clinicians. The panels critique and rank the work, and as a result of the review, the top presenters receive awards. Past participants — residents, panelists, and mentoring attending physicians — have told us these sessions are challenging, rewarding, and fun.

This past spring, Biomet gave an educational grant to OREF to support competitive research programs held in the greater Cleveland area, the Midwest, and metropolitan New York. State Society competitions for residents were also held in California and Mid-central states. We congratulate this year's winners (see page 11) and thank everyone who participated.

Resident poster

OREF is recognizing the 2008 Resident Research Symposia and State Society competition winners online at **www.oref.org/residents** and in print, through our call-for-grants poster. The poster was distributed to residents and candidates with the August 2008 issue of *The Journal of Bone and Joint Surgery*. Requests for extra copies of the poster, which also features grant and education opportunities OREF provides for residents, may be sent to **communications@oref.org**.

OREF resident PowerPoint for download

Residents can learn about the grants and educational programs available to them through OREF by downloading the presentation at **www.oref.org/helpingresidents**. From opportunities to receive research critiques from established investigators to how to apply for OREF funding, the Resident PowerPoint presentation will point residents toward tools designed to help them incorporate research studies into their clinical practices.

The abiding principle of OREF is that if we can teach orthopaedic residents and fellows the importance of educational programs and both clinical and basic research early in their careers, we can ensure the future of our specialty.

William P. Cooney III, M.D.
Board Chair

OREF is recognizing the 2008 Resident Research Symposia and State Society competition winners in its call-for-grants poster.

Help OREF Fund More Grants and Awards in 2009

Gifts to OREF's Annual Campaign fund the vast majority of OREF research grants and awards. Year after year our Grants Board is unable to approve about 50% of high scoring applications. Without your generous support, and that of your colleagues, OREF will simply not be able to fund many high-caliber research and education proposals. Your gift matters to clinicians, researchers, educators, and patients.

The Orthopaedic Research and Education Foundation was founded in 1955 to ensure an expanding base of knowledge and effective, evidence-based treatment protocols for orthopaedic surgeons to continually improve patient care. Support the research and education that supports you. Support OREF today.

Please visit www.oref.org/donate or fill out the form on page 15 and return in the postage-paid envelope provided to contribute to OREF's 2008 Annual Campaign today.

For more information, please contact:

Ed Hoover
VP, Development
(847) 384-4354
hoover@oref.org

Katie Carter
Annual Giving Coordinator
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Finding answers. Improving lives.

Joseph C. McCarthy, M.D.
Chair, Shands Circle Committee

Jo A. Hannafin, M.D., Ph.D.
Vice Chair, Development

Why Endowment and Annual Giving Are Both Crucial

There are many ways to give to OREF, but all contributions go to either the Annual Campaign or the OREF Endowment. The chart compares Annual and Endowment giving, showing the importance and benefits that each type has to offer. Both types of giving are necessary for OREF to sustain research and education funding in the future while simultaneously providing grants and awards for applications requesting 2009 funding.

Endowment Giving has been impressive to date, with $26.0 million in cash deposits as of April 30, 2008. However, we are still in the early stages of building a firm foundation. In the near term, only about $565,000 in endowment earnings are available to OREF yearly to fund research and education. OREF needs additional yearly funds to continue supporting critical research and education and that additional support comes from the Annual Campaign.

Your donation does make a difference — to your organization, to your peers, to your profession, and most of all to your patients. Please help us to maintain OREF's 53-year tradition of driving advances that benefit all of orthopaedics by designating a generous portion of your Endowment and Annual Campaign gifts to OREF.

Sincerely,

Joseph C. McCarthy, M.D.
Chair, Shands Circle Committee

Jo A. Hannafin, M.D., Ph.D.
Vice Chair, Development

2 Ways to Give
2 Ways to Direct Your Gift
What Your Gift Supports
How Funding is Awarded
Recognition and Benefits

Contact OREF

For more information about planned giving and Legacy Gifts, please contact:

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President and CEO
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wurth@oref.org

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Vice President, Development
(847) 384-4354
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Define Your Dreams Through Your Will

Ms. Mary Hill was born, raised, and died in the same small town. She and her husband spent Friday nights each fall on the bleachers of the local stadium, and warm days each spring planting flowers. Once grown, her five children returned often, grandchildren in tow, to help with their mother's latest charity fundraiser or volunteer effort.

Because Ms. Hill died without a will, nearly 45% of her estate went straight to the government. The remainder was divided equally among her children, according to state law. Her hopes of leaving each grandchild a little "dream" money and of creating a memorial fund in her late husband's name to further her charitable work never materialized.

Do you need a will?

You need a will if you have children or not; if you are married, single, widowed, or divorced; if you own property of any kind. A properly drafted

GIVING TO YOUR ORGANIZATION THROUGH OREF

ANNUAL GIVING
to support current research and education

Yearly contributions which will fund research and education in the current or the coming year.

TO YOUR ORGANIZATION	TO OREF
Any amount over the first $500 of a $1,000+ contribution can be designated to Your Organization or other group(s).	Gifts in any amount can be made to the OREF Annual Campaign.
Your Organization's research and education initiatives	CURRENT research and education, including bridge funding to help leading investigators secure NIH and other long-term funding for major studies.
As approved by Your Organization	Independent OREF peer review process modeled on NIH criteria, conducted by volunteer reviewers and approved by the OREF board.

Annual Campaign Gifts of $1,000 or more earn recognition as follows:

Your Organization's recognition	**OREF ORDER OF MERIT**
	Order of Merit Pin
	Order of Merit Ribbon
	OREF Annual Report

ENDOWMENT GIVING
to sustain future research and education

Yearly or occasional contributions to the established endowment fund(s) managed by OREF. The investment income will ensure research and education funding in perpetuity.

TO YOUR ORGANIZATION	TO OREF
Gifts in any amount can be directed to the OREF Endowment Fund, or to one or more of the established partner endowment funds managed by OREF, including any Your Organization has in place.	
Your Organization's research and education initiatives	CURRENT AND FUTURE research and education, including bridge funding to help leading investigators secure NIH and other long-term funding for major studies.
As approved by Your Organization	Independent OREF peer review process modeled on NIH criteria, conducted by volunteer reviewers and approved by the OREF board.

Commitments of $20,000 or more (cash/stock) or $50,000 or more deferred* qualify for recognition as follows:

Your Organization's recognition	**OREF SHANDS CIRCLE**
	Shands Circle Gala
	Shands Circle Pin
	Shands Circle Ribbon
* Including gifts made through insurance, a trust, or a will.	VIP housing/AAOS Annual Mtg.
	OREF VIP Suite
	OREF Annual Report

will can help you avoid paying unnecessary estate taxes. Perhaps most importantly, only through a will can you benefit the people and organizations you care about most in the exact manner you have intended.

Your will's expiration date

Once executed, your will should be updated regularly, especially following a birth, marriage, or divorce in the family; a move to another state; a change in tax laws; a change in the status of dependent children; or a change in personal circumstances or needs, including impending retirement.

An out-of-date will can be more trouble than no will at all. Consider this court case involving a man who executed a will in 1992, giving $50,000 to a woman he named as a "friend." A year later, the man and woman married and remained so until the man's death in 1995. Unfortunately, he never updated his will. As his wife, the woman claimed her elective share of the estate (one-third) rather than abiding by the terms of the will. The children from the man's first marriage objected. The court upheld a statute that an omitted spouse couldn't claim an elective share if any bequest was left to the spouse in the will. So the wife received only the $50,000 bequest.

We can help

A properly drafted and current will is the first step toward making the best use of your assets at your death. For more information on how to plan the distribution of your estate, please contact **Gene Wurth** or **Ed Hoover** for a no-obligation consultation. ■

2008 Clinician Scientist Award Recipient to Study Why Thumb CMC

continued from page 1

According to Dr. Wolf, some statistics show that hand osteoarthritis is second only to knee arthritis in the United States, leading to high health care costs and a negative economic impact due to job loss. In addition, thumb CMC arthritis occurs nearly 10 times more often in women than in men. With the help of a 2008 OREF Clinician Scientist Award, funded by the **Dr. Zachary and Mrs. Kathleen Friedenberg Endowment Fund**, Dr. Wolf plans to learn why.

"Dr. Wolf proposed an interesting hypothesis regarding the role of gender in understanding how a specific molecule might explain the predilection of women for a joint abnormality associated with laxity leading to arthritis of the thumb," said **Thomas A. Einhorn, M.D.**, vice chair, grants for OREF's Board of Trustees. "The findings from this research could explain other gender-associated differences in joint disorders and how prevention and treatment strategies may need to be adapted to women and men. Dr. Wolf's track record of academic accomplishments and her focus on a specific aspect of orthopaedic science made her an extremely attractive candidate for this award."

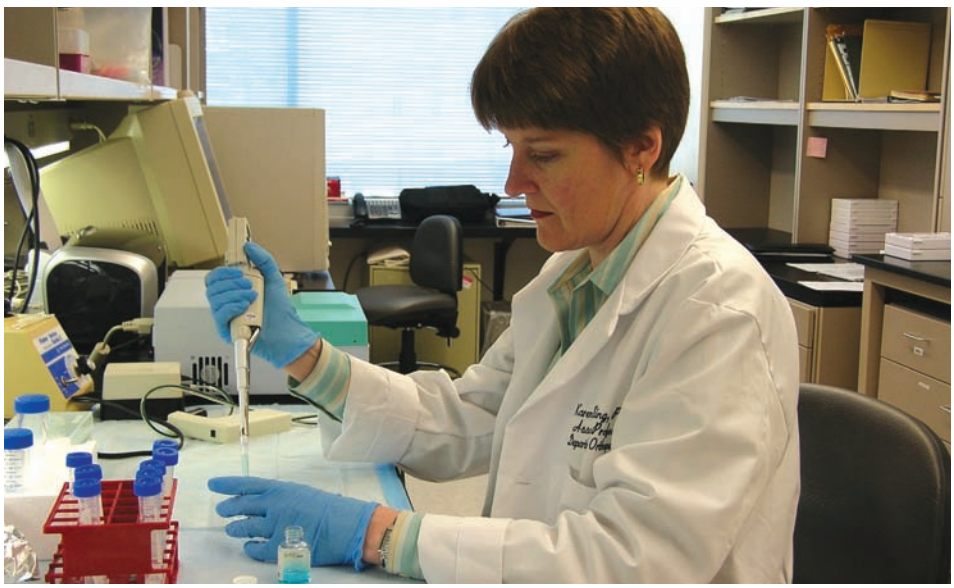
The OREF Clinician Scientist Award will give Dr. Wolf the time to conduct the research by providing a salary stipend — $100,000 per year for three years — to cover clinical time lost.

"The challenge in academic orthopaedics and in academic research in general is having the time and funding," Dr. Wolf said. "OREF understands how difficult it is for clinicians to use the majority of their week for research when we need time for clinical work as well."

Not only will the award allow Dr. Wolf the time for research, but it will be instrumental in continuing the study, she said.

"I think OREF's greatest strength is supporting young scientists. This study will provide the preliminary data I need to apply for federal funding such as a National Institutes of Health grant."

As a Clinician Scientist Award recipient, Dr. Wolf will be asked to devote extensive time to research, serve as a role model for orthopaedic residents, interns, and medical students, as well as organize and participate in conferences. Dr. Wolf will use the time the award allows her to investigate why more women than men suffer from thumb CMC arthritis.



***Karen B. King, Ph.D.**, an associate professor and director of the Orthopaedic Molecular Biology Laboratory at the University of Colorado, Denver, will help Dr. Wolf analyze relaxin.*

According to Dr. Einhorn, "Women and men are different in so many ways but physicians rarely understand these differences in terms of the pathogenesis and treatment of specific tissue disorders. Identification of a gender-specific difference in the physiological role of a molecule, leading to a difference in the way a common disorder like joint laxity or arthritis is expressed, will provide a 'wake-up call' to orthopaedists to consider gender in their evaluation and treatment of musculoskeletal conditions."

Dr. Wolf thinks that the level of relaxin serum — the hormone that prepares the female body for childbirth by softening the pelvic ligaments and cervix — may be at least part of the reason. Some relaxin is also found in men and women who are not pregnant, but its possible role in the chain of events that lead to arthritis is not yet understood.

"We're trying to learn more about the relationship between relaxin and ligament laxity, a slackness or looseness in the motion of a joint that may play a role in the development of osteoarthritis," she said.

One theory, Dr. Wolf said, is that relaxin up-regulates, or increases, matrix metalloproteases (MMP) 1 and 3, enzymes that break down connective tissue.

"Matrix metalloproteases are implicated as part of the cascade within the joint that causes arthritis. It's interesting that relaxin has a direct effect on matrix metalloproteases," Dr. Wolf said.

Dr. Wolf hypothesized that the higher level of relaxin serum and up-regulated MMP 1 and MMP 3 are responsible for increased joint laxity, leading to abnormal joint forces and then to arthritis. "This theory could explain why more women than men develop thumb CMC arthritis."

While there is some preliminary data on laxity and thumb CMC arthritis, few specific studies have focused on this issue. Dr. Wolf's research will look at two groups: normal volunteers, and patients undergoing surgery to ease their suffering from thumb osteoarthritis.

Arthritis Is More Common in Women

With Institutional Review Board approval, Dr. Wolf is recruiting volunteers who have never injured their thumbs or been treated for thumb pain. Dr. Wolf will study three age groups: 18–39-year-olds, 40–59-year-olds, and volunteers age 60 and above. Age groups will be compared as will men versus women and a subgroup of women at different points in their menstrual cycles.

Dr. Wolf plans to draw the volunteers' blood to learn whether serum relaxin levels correlate with laxity shown in X-rays. **Karen B. King, Ph.D.**, an associate professor and director of the Orthopaedic Molecular Biology Laboratory at the University of Colorado, Denver, will lend her lab and experience to the relaxin analysis part of the research.

In addition to relaxin level analysis, Dr. Wolf will look at volunteers' responses to questions about prior injuries or problems with their thumbs, and among the women volunteers, menstrual and pregnancy history. She will also measure body mass index to see if it affects joint laxity. Degree of laxity will be measured through both a radiographic stress test and the Beighton-Horan Joint Laxity Index test.

Dr. Wolf will then perform these same tests and analyses on patients undergoing surgery for thumb CMC arthritis. While most surgical patients fall into the 60-and-older group, Dr. Wolf will still be able to compare men and women. She will also compare patients with the normal volunteers.

"The other thing we'll do during surgery is take out a piece of the patients' anterior oblique ligaments — the stabilizing ligament of the thumb basal joint that we reconstruct during surgery," Dr. Wolf explained. "We'll analyze it for the presence of relaxin, relaxin receptor, matrix metalloproteases 1 and 3, and tissue inhibitors of the metalloproteases."

Using molecular markers, Dr. Wolf will compare the levels of these hormones and enzymes to learn the differences between the normal volunteers and surgical patients as well as differences between men and women. She would also like to know whether relaxin is present at any age, or found only in the younger individuals.

From the results, Dr. Wolf hopes to develop further studies that could lead to treatments that prevent thumb CMC arthritis, especially in women. For example, if it turns out that relaxin levels do correlate with joint laxity, which in turn leads to arthritis, she thinks a molecular target, an intra-articular blockade for relaxin receptors, could be one way to prevent the ligaments from stretching and developing arthritis.

Recommending at-risk women wear a hard splint at night and soft splint during the day may be another way to prevent them from over-stretching their ligaments and risking arthritis later in life.

"Is there a way to keep people from attenuating or stretching out their thumb ligaments? I think the intra-articular blockade or prevention at the molecular level is the most attractive solution," she said. "I'd like to use the information from the OREF-funded study to focus on a molecular target and how we can change the molecular environment to prevent the problem."

Preventing the problem could mean a lot to thumb CMC patients, who are often unable to work and therefore affected economically as well as physically.

"Our goal should be to give people back their life in the sense that they want to live it," Dr. Wolf said. "We shouldn't be telling them that they have to modify their activities so severely because they have this problem. As a woman I want to find a solution so I don't have to worry about thumb CMC arthritis later in life and continue to operate and ski and do all of the things I like to do. Our goal should be to give patients solutions."

Dr. Wolf's is the second Clinician Scientist Award funded by Dr. and Mrs. Friedenberg's endowment, which also supported **David L. Glaser, M.D.'s** award in 2004.

Dr. Wolf graduated from the University of Pennsylvania Medical School, Philadelphia before attending Brown University/Rhode Island Hospital, Providence, R.I., for her orthopaedic surgery residency. She completed a hand surgery fellowship at Mayo Clinic Department of Orthopaedics in 2003 before accepting her current position at the University of Colorado, Denver. Dr. Wolf has received several honors and awards, including a North American Traveling Fellowship from the American Orthopaedic Association and a Young Leader Program award from the American Society for Surgery of the Hand. ■

Dr. Wolf *(right) hopes information obtained from her study will lead to a way to prevent thumb CMC arthritis. Also pictured (l-r)* ***Jason Stoneback, M.D., Melissa Munkwitz, P.A.-C.***

Photos courtesy of the University of Colorado, Denver.

A Winning Partnership

Wright Medical — Committed to Orthopaedics and OREF

Since becoming a Corporate Associate 15 years ago, Wright Medical Technology has made an impact on orthopaedic health by supporting OREF. In 2006, the company stepped up support, joining the Platinum level ($200,000 and above).

"When I first came to Wright in 2006, one of the first things I did was look at our relationship with OREF to see if it could be expanded," said **Mr. Gary D. Henley**, Wright president and CEO.

(l-r) ***Mr. Gary D. Henley****, Wright president and CEO, and* ***Mr. Frank S. Bono****, Wright senior vice president of research and development*

Wright through time

Founded in 1950 as Wright Manufacturing, the company's first product was a rubber heel cast invented by **Mr. Frank O. Wright**. Through his job as an orthopaedic industry sales representative, Mr. Wright had witnessed many patients in leg casts who suffered from chronic back pain. Believing this could be attributed to walking on standard-issue, steel-bottomed casts, he created an alternative soft heel that acted as a shock absorber.

Through OREF, Wright supported a recent AOFAS trip to Vietnam and Cambodia to operate on patients suffering from severe deformities.

Wright Manufacturing's commitment to patient mobility intensified as its product line expanded to include hip and knee implants and world-renowned devices such as: the Swanson finger implant, a prosthesis that could be easily embedded because the tensile strength of tendons held it in place; and the Whiteside modular knee, which modeled the complexity of the kneecap through a system of replaceable parts that could be tailored to individual patients.

In 1993, the company became Wright Medical Technology and began developing products that replicated the natural motion of the body, in addition to bone graft substitutes and artificial limbs that could be stimulated electromagnetically to grow with a young patient.

Today, according to Mr. Henley, Wright technology serves three areas: large joint, upper and lower extremity, and biologics.

"We've been in the large joint business for a long time," Mr. Henley said. "And we've been an innovator in that business. We were the first in the United States to introduce a number of hard bearing surfaces — ceramic on ceramic for hips and metal on metal for large femoral hip implants and medial pivot knees."

In addition to large joints, creating upper and lower extremity products continues Wright's legacy begun with the Swanson finger. Recently, Mr. Henley indicated, Wright has emphasized foot and ankle.

Said **Mr. Frank S. Bono**, Wright senior vice president of research and development, "Within the last two years, one benefit of giving to OREF is that its directed research program has expanded, allowing us to fund some smaller organizations like the American Orthopaedic Foot and Ankle Society (AOFAS) and its program, the Outreach and Education Fund (OEF)."

Mr. Curtis Johnson *performs a dimensional inspection of a finished Wright knee implant component.*

Biologics also constitute part of Wright's business, Mr. Henley said, with a demineralized bone matrix and synthetics such as calcium sulfates and phosphates pioneered by Wright.

Win-win-win: OREF's independent peer-review service

Wright's expanding product base and focus led to a new opportunity, and its reason for stepping up support for OREF.

"We were inquiring with universities about conducting basic research for us, but being a small company, it was not always easy to get their attention," explained Mr. Henley. "Then I wondered if OREF would be interested."

Mr. Henley asked OREF's Board of Trustees if the OREF peer-review committee, made up of about 70 volunteers, would be interested in reviewing Wright's research proposal. If the committee found the proposal to be scientifically valid and beneficial to the broader orthopaedic industry — not just to Wright — then it could direct the research by circulating the proposal to universities.

Photos courtesy of Wright Medical Technology.

***Mr. John T. Treace**, Wright vice president of biologics & extremities, visited with young patients during a recent outreach trip to Vietnam and Cambodia.*

"OREF is well-respected in the community," Mr. Henley said. "If its peer-review committee deems a proposal as valid, it validates the effort to the orthopaedic community."

This is one of the many advantages, Mr. Henley said, of funding research through OREF.

"I could go directly to a university and perhaps not pay as much, but then I don't get the value of OREF's endorsement and oversight of the research. Giving to OREF is a win-win-win. The university still gets paid to do the work, Wright gets the data coming under the auspices of OREF, and OREF gets the additional funding."

This independent peer-review service established with Wright is now offered to all OREF's Platinum-level Corporate Associates. The peer-review process evaluates basic science and clinical research proposals against OREF's criteria for scientific rigor and clinical relevance.

Unbiased results

An opportunity such as OREF's independent peer-review service, Mr. Henley said, is important to small companies like Wright. According to Mr. Henley, there was a time when Food and Drug Administration approval meant reimbursement, but today companies must demonstrate to government, private payors, physicians, hospitals, administrators, and purchasing groups that their technology and products are long-term improvements over tried-and-true methods.

"The industry has had to move pretty rapidly into evidence-based medicine and pay-for-performance. Because reimbursement is becoming based more and more on clinical outcomes and economic impacts, we need research data to support the efficacy of our products."

Mr. Bono agrees. "We look for unbiased third parties to validate our technology. OREF has that reputation."

In addition to validating technology, Mr. Henley continued, research begun with OREF funding teaches scientists within the industry what they need to know about the diseases they're treating.

"Many companies sell bone substitute materials and we want to better understand which have the greatest effect and how efficient they are versus autografts. All of the orthopaedic industry — not just Wright — will learn from research, and better understanding of diseases will help us design better treatments and implants," he said.

"With research and education, OREF allows for earlier adoption of new technology," added Mr. Bono. "On the flip side of that, you'll also learn if your product is not technically viable through unbiased research funded through OREF."

Preventing bias from tainting research results is especially valuable in the current industry climate.

Said Mr. Henley, "One of the advantages that's salient for today — given the legal scrutiny of the orthopaedic industry — is that giving to OREF is an excellent way for companies to fund research at an arm's length. That independence, that oversight, is relevant in today's landscape."

Beneficiaries of research

Industry, however, is not the only beneficiary of research. According to Mr. Henley, when a paper is published by an OREF-funded investigator, surgeons are more apt to take notice.

"It's not easy to change an orthopaedist's mind," he explained. "They spend their entire lives learning and studying and sometimes they're reticent to change once they start practicing — with good reason. Change should be based on good evidence."

Patients also play a role in the research equation. As research advances treatment techniques and

continued on page 16

Currently, Wright Medical is putting more emphasis on foot and ankle, leading its vice presidents to join the AOFAS trip to Cambodia and Vietnam. Wright Medical employees pictured (front row, l-r): ***Mr. John T. Treace*** *and* ***Ms. Holly Robbins****, a foot and ankle sales representative.*

Orthopaedic Research & Education Foundation

Saluting Our Corporate Associates

OREF is proud to acknowledge these Corporate Associates for their generous support. A strong and productive alliance with industry enables OREF to fund quality programs that advance the orthopaedic profession, ultimately leading to improved patient care.

Platinum $200,000 & above

Abbott — A Promise for Life
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KYPHON — AHEAD OF THE CURVE
Medtronic
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Genzyme Biosurgery
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CALENDAR ALERT *for OREF Grants and Awards*

NEW for All Orthopaedic Surgeons: OREF/Current Concepts in Joint Replacement Awards recognize exceptional papers on completed investigations that focus on health care policy, clinical outcomes or translational research with immediate clinical impact. Two awards of $2,000 each will be given; applications for the first award are invited through October 15, 2008.

NEW for ASES Members: The OREF/ASES/Rockwood Clinical Shoulder Research Grant is available through a generous contribution from **Charles A. Rockwood Jr., M.D.** One grant of up to $50,000 per year for up to two years will be awarded, conditional upon annual review. The application deadline is October 1, 2008 for funding to begin July 1, 2009.

NEW for POSNA Members: The OREF/POSNA Research Grant provides up to $40,000 per year for up to two years, conditional on annual review and philanthropic support, to encourage new investigators in pediatric orthopaedics. Funds may not be used for salary. Applications are invited through October 1, 2008 for both laboratory and clinical projects.

GENERAL REMINDER: October 1, 2008 is the submission deadline for many OREF grants and awards. Please visit **www.oref.org/grants** for additional information and to download applications for these and other OREF grants and awards.

Congratulations!

2008 Resident Research Symposia Winners

Greater Cleveland Area

Andrew J. Schoenfeld, M.D.
Akron General Medical Center
Edward Westrick, M.D.
University of Pittsburgh
Alison Rozansky, M.D.
Akron General Medical Center
Patrick J. Messerschmitt, M.D.
University Hospitals of Cleveland
Case Western Reserve University

Midwest

Matthew D. Saltzman, M.D.
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Nirav A. Shah, M.D.
Northwestern University
Samuel Coy, M.D.
University of Chicago
Michael Garcia, M.D.
Loyola University
Robert W. Wysocki, M.D.
Rush University

New York Metropolitan

PODIUM PRESENTATIONS

Lawrence Gulotta, M.D.
Hospital for Special Surgery
Samuel Cho, M.D.
Columbia University
Marc Fajardo, M.D.
NYU/Hospital for Joint Diseases

POSTER PRESENTATIONS

Paul D. Kim, M.D.
Columbia University Medical Center
Michael K. Shindle, M.D.
Hospital for Special Surgery
Mark C. Drakos, M.D.
Hospital for Special Surgery

2008 State Society Resident Research Award Recipients

California Orthopaedic Association

Vidyadhar Upasani, M.D.
University of California, San Diego

Mid-Central States Orthopaedic Society

Brad A. Wall, M.D.
University of Kansas
School of Medicine at Wichita
James T. Dunlap, M.D.
University of Kansas
School of Medicine at Wichita

Beyond Innovation

As a Leading Research Institution, HSS Supports OREF to Improve Patient Care

Thomas P. Sculco, M.D.
HSS surgeon-in-chief

For more than ten years, the entire orthopaedic faculty at the Hospital for Special Surgery (HSS), numbering nearly 80 members, has contributed to OREF at the Order of Merit level ($1,000 and above). A number of staff members have given at the Shands level additionally.

"The orthopaedic staff was amazingly supportive. We're proud of what we do here in terms of orthopaedic research and education and treating orthopaedic patients, so we felt we should step up and support an institution like OREF that is so beneficial in terms of orthopaedic research," said **Thomas P. Sculco, M.D.**, HSS surgeon-in-chief.

Because HSS exclusively treats musculoskeletal conditions, funding orthopaedic research is vital to its mission to provide the best in research, education, and patient care.

"We're not an orthopaedics department in a large multi-specialty institution," Dr. Sculco explained. "We're focused primarily on musculoskeletal diseases. Discoveries made by OREF-funded research make an impact on everyone, but because all our patients have orthopaedic and rheumatologic diseases, OREF makes an even bigger impact on us."

HSS was founded in 1863 as the Hospital for the Ruptured and Crippled by **James Knight, M.D.** with support from the society from which it took its name. Although risk of infection caused Dr. Knight to avoid surgical intervention, the hospital's second surgeon-in-chief, **Virgil B. Gibney, M.D.**, encouraged its use when necessary. Renamed Hospital for Special Surgery in the 1940s, HSS is one of the oldest and the largest orthopaedic hospitals in the world.

Today HSS continues as a leader in the investigation and treatment of musculoskeletal and autoimmune diseases, providing care for tens of thousands of individual patients and for major sports teams such as the New Jersey Nets and New York Knicks, Giants, and Mets. In an evaluation of more than 5,000 hospitals on criteria such as patient volume, mortality rate, and quality, *U.S. News and World Report* ranked HSS No. 1 in orthopaedics in both 2007 and 2008.

"We're proud of the institution and work really hard to be No. 1 at everything we do. In this country so much outstanding orthopaedic work is done at so many fine institutions." Dr. Sculco said. "Because we're focused, we can provide efficient, high-quality, cost-effective care. Through the Internet and the media, patients learn about where to find orthopaedic care and seek us out. We have patients come from all over the world," continued Dr. Sculco, who recently operated on patients from Texas, Israel, and South America.

With so much demand — about 22,000 operations in 2007 — HSS had to expand.

"The building was bursting at the seams. There weren't enough operating rooms or beds, and patients were on long waiting lists to get in."

Phase I of a two-phase renovation increased the number of operating rooms to 28 and total beds (including in- and out-patient) to more than 200. Phase II will rebuild HSS' pediatric pavilion, increase physician office space, and add additional operating rooms and beds.

"We have about 80 full-time orthopaedic surgeons on our staff and this year we expect to do more than 24,000 operations. But that's not good enough," said Dr. Sculco. "You can't just be big. You've got to be good. We're always trying to improve the quality of the care we provide to our patients. Education and research are key to making this happen."

Jo A. Hannafin, M.D., Ph.D. *evaluates a patient's knee.*

The amount of research conducted by HSS and supported by OREF reflects this. **Jo A. Hannafin, M.D. Ph.D.**, attending orthopaedic surgeon, assistant scientist, and associate clinical investigator, and **Scott A. Rodeo, M.D.**, associate attending orthopaedic surgeon, and assistant scientist, department of research, both received RO1 grants from the National Institutes of Health after receiving grants from OREF. While Dr. Hannafin is working on different research than that for which she received an OREF Resident Clinician Scientist Training Grant, Dr. Rodeo's investigation is directly related to work conducted under an OREF Career Development Award.

"Dr. Rodeo is investigating using growth factors to stimulate improved healing of a tendon and its attachment to a bone. The OREF award got him going and then he ultimately was awarded the RO1 thanks to OREF and a lot of his hard work," Dr. Sculco said.

HSS has also created and runs 10 to 12 prospective registries that track patient outcomes data. One registry, funded by a Centers for Education and Research on Therapeutics grant from the Agency for

Healthcare Research and Quality, reviews implant failures.

"We do about 800 to 900 revisions a year and have been retrieving failed implants for more than 30 years — about 15,000 to 20,000 total," said Dr. Sculco. "For every implant that comes out, we retrieve, test, and identify what the problem was, and that leads to improved implant design."

For other HSS registries, such as the anterior cruciate ligament, basal thumb arthritis, and cartilage registries, patients fill out questionnaires pre-operatively and then at follow-up points of six months, one year, two years, and five years. Collected data tell of complications, failures, and infections, and help improve implant design and surgical techniques.

Beyond the registries, research at HSS also includes an osteolysis lab where HSS scientists are investigating how to prevent the breakdown of bone around implants, an imaging laboratory that uses magnetic resonance imaging to gauge cartilage injury and soft-tissue damage, and an osteoarthritis initiative that will use biological markers to identify what causes the disease.

The Computer Assisted Surgery Center at Hospital for Special Surgery aims to develop and validate surgical navigation and medical robotics in orthopaedic surgery. Here, ***Andrew D. Pearle, M.D.*** *demonstrates the acquisition of reference points by navigated instruments to help plan knee replacement surgery.*

Education is just as important at HSS, something its 400-plus residency applicants realize as they compete for a mere eight openings. Those who win a spot as an HSS resident learn first-hand about research and the role OREF plays in funding it.

"All residents who go through our program develop at least one major research project that they complete by the time they graduate," said Dr. Sculco. "The project goes through careful review and scrutiny, and by the end of post-graduate year 3 or into PGY-4, it's developed enough to apply for an OREF grant."

Although many of these are not funded, Dr. Sculco said, it's still a good experience for the residents. "Residents learn a lot by creating and writing the project, and intellectually going through the process."

And they may get a second chance. HSS uses its own research endowments created from donations to the institution to fund three to four smaller grants if applications are scored highly by the OREF peer-review committee and HSS' internal review team.

"Although some residents may never do another research project, we work hard at turning out clinician scientists. We've created a clinician scientists program to help those who are interested to succeed."

Currently, Dr. Sculco said, there are six clinician scientists on HSS' staff, but he'd like to see about 10. HSS regularly demonstrates its commitment to providing for clinician scientists by supporting OREF.

"Research — be it basic science or clinical — is key to improving how we take care of patients and improving outcomes. That's always been the cornerstone of HSS, and OREF does a great job funding research and education, so we'll always be supportive."

Scott A. Rodeo, M.D. *investigates ways to improve methods for attaching a tendon or ligament to bone.*

HSS believes in this so much, in fact, that it is providing two years of support for an OREF grant recipient, **Shang-You Yang, M.D.**, who is investigating osteolysis at Wayne State University.

"To improve the research that's out there, we're willing to use our clinical revenue to support investigators at other institutions who are doing good work," Dr. Sculco explained.

Others, Dr. Sculco said, should consider doing the same, or at least making some contribution to research through OREF.

"The beauty of contributing to OREF is that it's a focused research foundation for orthopaedic surgery. If you're an orthopaedic surgeon, what is there better that you can support than research in your own specialty? Every orthopaedic surgeon in the country should give something to OREF." ■

Photos courtesy of Hospital for Special Surgery.

Platinum Shands Member Tells of His Own Experience as an Orthopaedic Patient

continued from page 1

Dr. Payne is a longtime supporter of orthopaedic research and education through OREF, having joined the Shands Circle in 1997 at the Platinum level ($1 million and above), and regularly contributes to the Foundation's Annual Campaign. His sports medicine practice at M&M Orthopaedics teaches young athletes and their parents about safe sports, including the risks of steroids and how to avoid common field traumas, such as concussions and anterior cruciate ligament injuries.

Dr. Payne felt a hip replacement was in his future about three years before he decided to go forward with the procedure. "By September 2007, the pain was compromising movement and accelerating in intensity. I knew my time was coming," he said.

Under the care of **James C. Kudrna, M.D.** of Illinois Bone and Joint, Inc., a practice group that supports OREF, Dr. Payne's surgery was scheduled at Glenbrook Hospital last Dec. 17. "By the second day I was doing pretty well on a walker," said Dr. Payne. "On the morning of the third day, I was able to manage going down stairs backward. I convinced them to take me for what I was sure would be my prerelease X-ray and was discharged at 4:30 that afternoon, Dec. 19 — without pain medication. I actually spent less than 48 hours in the hospital."

By the sixth day after surgery, Dr. Payne was walking up to 45 minutes on the treadmill and had his in-home therapist guessing which hip had been replaced. In less than four weeks, Dr. Payne was back at work on a halftime schedule.

While admitting that being a lifelong athlete gave him a head start, Dr. Payne attributed his postoperative progress to taking seriously the pre-operative exercises he was given, particularly those designed to strengthen core muscles.

"Like Good Samaritan, where I practice, Glenbrook has a pre-op evaluation program to educate patients as to what to expect, and what they can do at home both prior to and following surgery to optimize results. I'm a full-out champion for the exercise program," Dr. Payne said.

"The sooner a patient is able to sit up in bed without assistance, the better, as one example. Without the ability to properly use core muscles, hip replacement patients don't have the control necessary to maintain stability as they learn to walk again, so they risk collapsing and dislocating the prosthesis right off the bat."

> *"Research and education have brought about tremendous advances that enable everyone, no matter their age, to function at a much higher level than we could have imagined."*
>
> *— Timothy C. Payne, M.D.*

When first interviewed in January, Dr. Payne predicted he would be modifying his golf game beginning this season, riding in the cart for 18 holes instead of walking the course. In mid-June, Dr. Payne reported on his return to the links with improved results.

"Since being released to play golf on March 14, I've played 28 rounds, and have been driving the ball 50 yards further than I ever could in the past."

Dr. Payne also makes it a point to stay active day-to-day. "I have no complaints of pain. I can walk easily. I'm exercising three to six times week, doing 25 to 40 minutes on the treadmill. I'm also continuing with a hip rehab program that involves a series of exercises."

As encouraged as Dr. Payne is by his continued progress, he was quick to identify some of the risks that come with pushing too hard, too fast.

"As orthopaedic surgeons, we need to remind ourselves of the complications associated with our own type-A, high-achiever tendencies and practice what we preach. It's very important that an orthopaedic patient give his or her body a chance to heal. There's a lot to be said for taking it slow for a while."

Aside from the importance of physical conditioning before and after surgery, Dr. Payne acknowledged the invaluable role that his care team, family, and friends have played in his recovery.

"I was fortunate and well-prepared in so many ways. I knew the system and got through pretty quickly, with my family and great care. I can't imagine how difficult it would be for a single parent with one or two kids, trying to deal with a serious health issue."

Finally, Dr. Payne said we all need to recognize the gift of 21st century orthopaedics.

"OREF does not do enough to blow its own horn about what it has done for the well-being of people across the board — young, middle-aged, or elderly. Back in the 1940s, when there was no total joint replacement option available, my stepfather's father was crippled and could not get out of a chair. He died from complications of inactivity. Fast forward to 1987. At age 75, my stepfather, **George Butts**, had both hips replaced, one on Dec. 24, the other two weeks later — by **Dr. Jorge Galante**, in fact, a fellow Shands Circle member and a former board chair for OREF. In four months' time, my stepfather was back playing golf, and he kept playing for another 17 of his remaining 20 years. Research and education have brought about tremendous advances that enable everyone, no matter their age, to function at a much higher level than we could have imagined." ■

THANK YOU for Supporting OREF's 2008 Annual Campaign

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Bone and Joint DECADE 2002 – USA – 2011

A Winning Partnership

continued from page 9

implants' efficacy, Mr. Henley said, patients are able to recover more quickly, decreasing health care costs.

"Look at the products being implanted today versus what was implanted 15 years ago. It's pretty clear that advances in technology and a better understanding of diseases have enhanced not just implant design, but also technique."

A recent AOFAS trip to Vietnam and Cambodia, which Wright supported by giving to AOFAS' Outreach and Education Fund through OREF, allowed some surgeons and Wright vice presidents to witness this firsthand.

"Surgeons traveled to Vietnam to operate on patients suffering from severe deformities," Mr. Henley stated. "Seeing the before pictures and the post-operative pictures of patients who've received follow-up treatment over several years brings tears to your eyes."

The company has a similar outreach trip to Lima, Peru, planned for October through Operation Walk, Maryland, which strives to provide ongoing education and patient care in impoverished communities around the world. Wright representatives will join the trip to offer surgical assistance for 60 knee replacement and 10 hip replacement surgeries — at no cost to the patients, thanks to various private and industry donations.

OREF helped make the Vietnam/Cambodia trip possible by giving Wright an avenue through which it could support OEF. Said Mr. Bono, "OREF allows us to form a relationship with other institutions that have expertise in areas in which we're interested."

Between the benefits of peer review, research, and the ability to reach out to orthopaedic partners, OREF is a good organization to support, Mr. Henley said.

"It's a great way to be a good corporate citizen and give back to the industry. We think Wright helps a lot of people. That's our mission and we're going to continue to do that with OREF's help." ■

Photo above courtesy of Wright Medical Technology.