Introduction from the Chair

It gives me great pleasure to introduce the first volume of the Orthopaedic Department’s quarterly research newsletter. Our department is undergoing exciting transformations, and many of them are happening in research. We have long had a well-organized approach to basic science and biomechanics under the direction of Mark Ehrensberger, PhD and a focus on concussion research led by John Leddy, MD as well as Barry Willer, PhD from the Department of Psychiatry. To this we have been adding and organizing the assets needed for a robust clinical research program, which now include the following personnel: John Leddy MD, Director of Clinical Research; Terry Mashtare PhD, Biostatistician; Melissa Kluczynski, MS, Clinical Research Associate (CRA) for Sports Medicine; Allison Cornwall, MPH, CRA for ECMC; Sonja Pavlesen, MD, MS, CRA for Buffalo General Hospital; and Mary Bayers-Thering, who in addition to serving as a Research Coordinator at BGH will also act as Coordinator for Surgical Skills Training.

The focus of clinical research will be to carry out high-impact investigations in musculoskeletal medicine, prioritizing collaborations between multiple investigators, those which have high potential for intra- and extramural funding, and those which include investigators outside Orthopaedics. We have established a fracture registry at ECMC which records and classifies all major fractures treated there, facilitating improvements in trauma care. This registry has already collected data on over 1100 fractures. We have made a significant investment in a software program to measure patient outcomes, Oberd, which will be routinely used by UBMD Orthopaedics & Sports Medicine to continuously improve patient care. In addition to its substantial clinical utility, Oberd will facilitate outcome studies, helping us to accurately identify how and where treatments differ. Finally, we are entering into a productive collaboration with Carestream Health Inc., which will involve multiple investigations at ECMC using their cone beam 3D CT scanner. These are just a few of the exciting new events, and there are more to come! Please join me in welcoming our new people in research, please help them make our department successful, and please thank them for their work.

Leslie J. Bisson, M.D.
June A. and Eugene R. Mindell, MD Professor and Chair

Announcements

Thank you to everyone who attended the Good Research Practices (GRP) Training sessions! Handouts from the sessions can be accessed online: www.research.buffalo.edu/rsp/training

GRP training is mandatory for all personnel engaged in research. If you still need to complete this training, please sign up online: www.research.buffalo.edu/rsp/training/
Recent Presentations

Recent Publications

Peer-Reviewed Journal Articles


Recent Publications (continued)

Book Chapters


Sponsored Basic Science Studies

Study Title: The mechanical advantage of using a fully threaded postero-superior screw as part of the inverted triangle cannulated screw configuration when fixing intracapsular femoral neck fractures associated with posterior comminution in osteoporotic bone. Investigators: Rachala, SR, Kuechle, J., Kakish, S.; Sponsor: Zimmer.

Study Title: Reverse Total Shoulder Baseplate Fixation with Bone Loss. Investigators: Ehrensberger MT and Duquin T. Sponsor: Biomet Inc.


Study Title: Testing and Development of Orthopedic Proprietary Products. Investigators: Ehrensberger MT. Sponsor: Greatbatch Medical and UB Center for Advanced Biomedical and Bioengineering Technology.


Study Title: Novel Biomechanical Analysis of Hamstring Graft Fixation with Interference Screw. Investigators: Ehrensberger MT. Sponsor: Arthrex, Inc.

Clinical Studies, Recently Funded & New Studies

Study Title: ‘Comparison of a novel weight bearing cone beam computed tomography (CT) scanner versus a conventional CT scanner for measuring patellar instability,’ Investigators: Drs. Marzo, Bernas, Bisson, Fineberg, Notino, Rauh, & Wind; Sponsor: Carestream Health, Inc.


Study Title: ‘Frailty, sarcopenia and outcomes in orthopaedic trauma patients,’ Investigators: Touban, B., Anders, M., Mutty, C. Funding Source: Orthopaedic Trauma Association.

Study Title: ‘A prospective, randomized controlled trial evaluating regional liposomal bupivacaine versus ropivacaine on post-operative pain management after primary hallux valgus correction,’ Investigators: Boyle, K., Ritter, C., Rohrbacher, B. Funding Source: Department of Orthopaedics.


Study Title: ‘Synovasure: New Synovial Fluid Diagnostic Test for Infection,’ Investigators: Krackow, KA., Phillips, MJ., Rachala, SR.; Sponsor: Citrano Laboratories, Inc.

Study Title: ‘Minimum 2 Year Follow Up of a Hydroxyapatite Coated Metal Backed Patella,’ Investigators: Notino, Rauh, & Wind; Sponsor: Stryker.
What is the S Drive?
Password protected file storage space for the Dept. of Orthopaedics

What are some things that are stored on the Ortho S Drive?
- A list of specialty associations, meeting dates, funding deadlines
- Steps for clinical research projects
- Current research projects and ideas
- Resident research proposals
- Templates (Pre-study abstract, Dept. PowerPoint, etc.)
- Research staff contact info

How do you access the S Drive?
S:\ORT\Research
- Citrix: http://www.smbs.buffalo.edu/omc/computing_application.htm
- Cloud: https://cloudmed.med.buffalo.edu/htcomnet

Research Funding Sources/Grant Deadlines

The Knee Society Research Grant Program
Funds: $15,000/1 yr. basic science; $45,000/2yrs clinical study award
Eligibility: PI or C0-PI must be member of The Knee Society
Deadline: open
Web-link: http://www.kneesociety.org/web/research.htm

The American Foot & Ankle Society (AOFAS)
Funds: $20,000/1 yr. Research grant; $5,000/1 yr. Pilot project grant
Eligibility: Research grant (PI or C0-PI must be AOFAS active member, candidate member, or international member; Pilot project grant (applicants must be resident or fellow AOFAS member, and an AOFAS active member, candidate member, or international member must serve as either study PI, CO-PI, or project advisor)
Deadline: December 1, 2015 (application material August 2015)

Upcoming Abstract Deadlines
American Orthopaedic Society for Sports Medicine (AOSSM)/Specialty Day, Abstracts accepted from mid-March through May 12, 2015
American Academy of Orthopaedic Surgeons (AAOS), Abstracts due June 1, 2015
Steps to a Clinical Research Project

†Required for all study investigators and staff engaged in research.
*only applies to prospective research

This flow chart shows the start-up steps for conducting clinical research. Please seek assistance from a study coordinator for any/all steps of this process. Our dept. asks that all IRB and hospital applications are approved by a research coordinator before submission.

The template for the pre-study abstract is located in the research folder on the department S drive. When completed, you can submit to any member of the clinical research staff. It will be reviewed, you will receive comments within 2 weeks.

When the pre-study abstract is approved, begin writing the study protocol. The appropriate template is also located on the S drive labeled “HRP-503 TEMPLATE PROTOCOL.” Please seek the assistance of a research coordinator for help with study design and the dept. biostatistician for a power analysis and data collection set up.
What is the MTS Machine?

The laboratory maintains an MTS 858 Mini Bionix servo-hydraulic load frame that provides a versatile platform for mechanical testing of orthopaedic specimens and materials. The performance specifications of this system enable axial testing (compression/tension) in load-controlled (0-10kN) or displacement-controlled (+/- 60mm) conditions, as well as torsional testing in torque-controlled (+/- 100N-m) or rotation-controlled (+/- 140 deg) conditions. The typical test configuration includes a load/torque sensor that is rigidly secured to the stationary baseplate of the load frame. The load/torque sensors available in the lab include 100N, 2500N, and 10,000N sensors. The actuator piston is mounted within the height adjustable load frame crossbeam. A variety of test fixtures (grips, vises, custom jigs, etc.) can then be connected to the ends of the actuator and load sensor to enable the secure mounting of specimens for mechanical testing. Specialty test fixtures available include the MTS three- and four-point bending test stages and the Bose thermal-electrically cooled soft tissue grips. More information can be found at www.mts.com.
<table>
<thead>
<tr>
<th>Organization/Institution</th>
<th>Direct web-link</th>
<th>Deadlines</th>
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<tr>
<td>OREF (Orthopaedic Research and Education Foundation)</td>
<td><a href="http://www.oref.org/site/PageServer?pagename=OREF_Grants_and_Awards">http://www.oref.org/site/PageServer?pagename=OREF_Grants_and_Awards</a></td>
<td>Various, 2015 deadlines not announced yet</td>
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<tr>
<td>ORS (Orthopaedic Research Society)</td>
<td><a href="http://www.ors.org/awards-grants-funding/">http://www.ors.org/awards-grants-funding/</a></td>
<td>Various</td>
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<tr>
<td>OTA (Orthopaedic Trauma Association)</td>
<td><a href="http://ota.org/research/research-studies/">http://ota.org/research/research-studies/</a></td>
<td>Research &amp; Resident Grants- June 2015</td>
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<tr>
<td>AO Foundation (Trauma)</td>
<td><a href="https://www.aofoundation.org/Structure/research/research-funding/Pages/Start-up-grants.aspx">https://www.aofoundation.org/Structure/research/research-funding/Pages/Start-up-grants.aspx</a></td>
<td>July 2015</td>
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<td>Organization</td>
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<td>AFAR (American Federation for Aging Research)</td>
<td><a href="http://www.afar.org/research/funding/">http://www.afar.org/research/funding/</a></td>
<td>Various, 2015 deadlines not announced yet</td>
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<td>The Knee Society</td>
<td><a href="http://www.kneesociety.org/web/research.html">http://www.kneesociety.org/web/research.html</a></td>
<td>Open</td>
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<td>Arthritis Foundation</td>
<td><a href="http://www.arthritis.org/research/funding-opportunities/">http://www.arthritis.org/research/funding-opportunities/</a></td>
<td>2015 deadlines not announced yet</td>
</tr>
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<td>NASS (North America Spine Society)</td>
<td><a href="https://www.spine.org/Pages/ResearchClinicalCare/FundMyResearch/FundingOpportunities.aspx">https://www.spine.org/Pages/ResearchClinicalCare/FundMyResearch/FundingOpportunities.aspx</a></td>
<td>May 4, 2015 (by invitation only)</td>
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<td>NIAMS (National Institute of Arthritis and Musculoskeletal and Skin Diseases)</td>
<td><a href="http://www.niams.nih.gov/Funding/Funding_Opportunities/">http://www.niams.nih.gov/Funding/Funding_Opportunities/</a></td>
<td>Various, ongoing</td>
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<td>NIDDR (National Institute of Disability and Rehabilitation Research)</td>
<td><a href="http://www2.ed.gov/programs/nidrr/fy15nidrrandaclgrantcompetitions.html">http://www2.ed.gov/programs/nidrr/fy15nidrrandaclgrantcompetitions.html</a></td>
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<td>CDMRP/DOD (Congressionally Directed Medical Research Program/ Department of Defense)</td>
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<td><a href="http://cdmrp.army.mil/funding/default.shtml">http://cdmrp.army.mil/funding/default.shtml</a></td>
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<td>PCORI (Patient Centered Outcome Research Opportunities)</td>
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<td>UB IMPACT (Innovative Micro_Programs Accelerating Collaboration in Themes)</td>
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<td><a href="http://www.research.buffalo.edu/funding_programs/impact.cfm">http://www.research.buffalo.edu/funding_programs/impact.cfm</a></td>
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<td>UB CTR (Clinical and Translational Research Center/ Translational Pilot Study Fund)</td>
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<td><a href="http://www.research.buffalo.edu/funding_programs/translational.cfm">http://www.research.buffalo.edu/funding_programs/translational.cfm</a></td>
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<td>UB Medical Education Program</td>
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<td>The John R. Oishei Foundation (Buffalo NY)</td>
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<td><a href="http://www.oishei.org/index.php/apply">http://www.oishei.org/index.php/apply</a></td>
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<td>Patrick P. Lee Foundation</td>
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<td><a href="http://www.patrickpleefoundation.org/types/medical-care-research/">http://www.patrickpleefoundation.org/types/medical-care-research/</a></td>
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<tr>
<td>NFL (National Football League Foundation)</td>
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<td><a href="http://www.nflfoundation.org/#grants">http://www.nflfoundation.org/#grants</a></td>
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<td>NCAA (National College Athletic Association)</td>
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<td><a href="http://www.ncaa.org/about/resources/research/ncaa-innovations-research-and-practice-grant-program">http://www.ncaa.org/about/resources/research/ncaa-innovations-research-and-practice-grant-program</a></td>
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<tr>
<td>OMeGA (Medical Grants Association)</td>
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<td><a href="http://www.omegamedicalgrants.org">http://www.omegamedicalgrants.org</a></td>
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List of 2014 Publications and Presentations

PUBLICATIONS


**PRESENTATIONS**


Reed, K.B., Ehrensberger, M.T. *Rocking-Horse Loosening of Glenoid Components Cemented in Cadaver Bone and Bone Foam.* University at Buffalo School of Medicine Scholarly Exchange Symposium 2014, Buffalo, New York. *1st Place Award Basic Science Research Project


Please note that every effort was made to compile all departmental publications and presentations from 2014. Please contact a Clinical Research Associate if you have any additional items for this list.