



# The Education at Penn Orthopaedics— the Human Fresh Tissue Laboratory



Nicole S. Belkin, MD and L. Scott Levin, MD, FACS

On May 1, 2011, The University of Pennsylvania's Department of Orthopaedics Human Tissue Laboratory (HTL) opened its doors. The laboratory offers the opportunity to combine the historic study of anatomy with the most modern technology.

Since becoming fully operational, the laboratory has been a whirlwind of seminars, workshops, and educational and research activities. The day-to-day operations of the lab are managed by Ms. Lorianne Kish. With an extensive background in embalming, Ms. Kish ensures that the highest quality specimens are procured, lightly preserved and provided for the activities in the lab. She also oversees the storage of specimens to allow for repeat usage, thereby optimizing their utilization.

In August, the lab was utilized by our colleagues in the Department of Plastic Surgery (Dr. Ivona Percec) and the Department of Dermatology (Dr. Joseph F. Sobanko) to conduct a workshop focusing on Mohs surgery and the subsequent reconstruction.

Monthly surgical approach and regional anatomy workshops have been coordinated and led by Orthopaedic Chief Residents, Dr. John Scolaro and Dr. Surena Namdari. Topics covered thus far include relevant surgical approaches to the hip, distal femur, tibial plateau, ankle, shoulder, and proximal humerus modeled after the curriculum presented in "Surgical Exposures in Orthopaedics: The Anatomic Approach" by Hoppenfeld. Additional sessions are also led by subspecialty faculty. The anatomy of the shoulder was reviewed extensively in a collaborative effort between Dr. Russell Huffman and Dr. David Glaser from the division of Shoulder and Elbow Surgery as well as Dr. John Kelly from the division of Sports Medicine.

Drs. David Bozentka, David Steinberg, and L. Scott Levin also execute upper extremity sessions twice per month. This curriculum is tailored to complement the experience and supplement the didactic education of the residents and fellows.

In September, the Penn HTL and the also brand-new Penn Translational Research Center hosted the annual Upper Extremity Approach workshop sponsored by The Foundation for Orthopaedic Trauma. This course was directed by Dr. Jaimo Ahn, professor of Orthopaedic Trauma at the University of Pennsylvania. This course was designed for PGY2-3 residents, intended to review the anatomy of and learn approaches to the upper extremity through hands-on practical anatomic dissections as taught by leading experts. Scholarships for travel expenses for residents were available through FOT. The distinguished faculty included: Dr. L. Scott Levin, Dr. Jaimo



Ahn, Dr. John Ingari (Hand Surgery, York, PA), Dr. Erik Kubiak (Orthopaedic Trauma, University of Utah), Dr. Alyssa Schaffer (Hand and Microsurgery, Temple University), Dr. Joseph Thoder (Sports Medicine and Hand Surgery, Temple University), and Dr. Saqib Rehman (Orthopaedic Trauma, Temple University). Twenty-five residents from eight different states, representing twelve different residency programs, attended this workshop. The evaluations received were overwhelmingly positive.

In addition, visiting professors have teamed with Penn faculty to demonstrate their expertise in surgical techniques and approaches. In October, Dr. Thomas Parker Vail, Chairman of the Department of Orthopaedics at the University of California, San Francisco, joined us. During Grand Rounds, he shared with us his expertise in complex cases of joint replacement and revision arthroplasty as well as his thoughts on unicompartamental knee arthroplasty. In the lab, Dr. Vail, partnered with Dr. Charles Nelson, demonstrated various surgical approaches for hip arthroplasty. In November, we were visited by Dr. Milan Stevanovic, Professor of Plastic and Reconstructive Surgery at the University of Southern California. Dr. Stevanovic shared his expertise through case presentations and lectured on functional free muscle transfer for upper extremity reconstruction. The evening prior to Grand Rounds, in the HTL, Dr. Levin and Dr. Stevanovic demonstrated the techniques involved in performing a free functional latissimus dorsi transfer to restore elbow flexion.

In November, the Penn HTL hosted The Perry Initiative, an outreach program with a mission to inspire young women to be leaders in the exciting fields of Orthopaedic Surgery and

Engineering. The program, founded by Jenni Buckley, PhD (Assistant Professor of Mechanical Engineering, University of Delaware) and Lisa Lattanza, MD (Associate Professor of Orthopaedic Surgery, University of California, San Francisco), is named in honor of Dr. Jacquelin Perry, who was the first woman orthopaedic surgeon to graduate from the residency program at the University of California, San Francisco. Dr. Helen Horstmann and Dr. Andrea Evenski represented the University of Pennsylvania faculty with their participation in the event. Residents Eileen Crawford, Mara Schenker, and Nicole Belkin, as well as a number of graduate students from the McKay Orthopaedic Research Laboratory, also volunteered at the event. Thirty-six female high-school juniors and seniors from Southern New Jersey, Southeastern Pennsylvania and Delaware were selected to participate from the numerous applications received. All of the participants spent the day engaged in interactive workshops led by the surgeon and engineer volunteers with brief discussions given by the faculty, highlighting opportunities available to

women in the field of Orthopaedics. All the participants were given the opportunity to be matched with a mentor in the field of their interest, surgery or engineering. The event was sponsored by Stryker.

In December, thanks in part to Axilium (the maker of Xiaflex), Dr. Levin hosted a Depuytren's Disease Symposium. Didactic lectures were given by Dr. A. Lee Osterman and Dr. Levin, with commentary by Drs. Steinberg and Bozentka. Following the morning lectures, the afternoon was spent in the HTL focusing on meticulous dissection and appreciation of the radial, ulnar, and central aponeuroses; palmodigital fascia; and digital fascia – all of which are part of the palmar fascial complex.

We have big plans for the Penn Human Tissue Laboratory, and we invite our colleagues to propose educational and research collaborations that we can embark on collectively.