

## Bared bones

*Natural history museum, CWRU create licensing framework for skeleton collection*

By **CHUCK SODER**

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Thousands of skeletons are being put to work on behalf of the Cleveland Museum of Natural History and Case Western Reserve University.

The museum last month began requiring some form of payment from companies that study its collection of 3,100 skeletons when designing products.

Those companies, which tend to be medical device makers designing metal plates, joint replacements and other implantable products, now will need to sign a contract agreeing to pay licensing fees or royalties on future product sales before accessing the museum's Hamann-Todd Osteological Collection.

The massive collection of bones — which fills several rows of drawers stacked to the ceiling of a large room in the museum's basement — will remain free for academics, students and others wishing to study it.

The new policy is expected to generate revenue for both the museum and CWRU, which is charged with negotiating the contracts. Officials from the two institutions declined to estimate how much money the policy might yield, but any revenue would be an improvement considering the museum used to grant companies free access, said Joe Jankowski, assistant vice president for biomedical sciences in CWRU's technology transfer office.

"It'll be a lot more than the zero we used to get," Dr. Jankowski said.

Eighteen medical device companies have conducted research using the Hamann-Todd Osteological Collection at various times over the past 10 years, but the collection has the potential to draw more, said Dr. Daniel Cooperman, a CWRU professor of orthopedic surgery. He recommended the policy change after using the collection himself for 20 years.

The museum has done little to market the collection, Dr. Cooperman said, noting that researchers hear about it mainly through word of mouth and scientific journals, which frequently cite it.

Now, however, the museum and CWRU plan to spread the word about the collection at conferences and trade shows related to medical devices. They also plan to study how the collection can be used by device



Bruce Latimer (front), executive director of the Cleveland Museum of Natural History, and Dr. Daniel Cooperman, professor of orthopedic surgery at CWRU, display a portion of the museum's collection of 3,100 skeletons.

*Photo credit: MARC GOLUB*

companies.

“I don’t think we’ve made every effort we could,” said Dr. Cooperman, who also is a surgeon at MetroHealth Medical Center and Rainbow Babies and Children’s Hospital.

Dr. Cooperman said a few companies have expressed hesitation about using the collection now that they’ll need to pay for the privilege.

Nonetheless, Smith & Nephew Orthopaedic Trauma & Clinical Therapies of Memphis, Tenn., plans to look into the new arrangement because the museum’s collection was “vital” to the development of the company’s Peri-Loc plate system, which supports injured arm and leg bones, said company spokesperson Victor Rocha.

“We’re very happy with our past relationship with them,” Mr. Rocha said.

### **Body of knowledge**

The depth of information available in the collection could help implantable device makers figure out the best designs for their products. Dr. Cooperman said implantable metal plates and joints often come in just a few versions, whereas bones come in all shapes and sizes.

“They’re like noses,” he said.

Not only is the collection huge, but it also contains detailed information about the skeletons, which were unclaimed bodies that CWRU researchers collected between 1893 and 1938, mostly from the Cuyahoga County Morgue and city hospitals.

Museum records list each skeleton’s sex, race, age at the time of death, cause of death, and more than 70 measurements. Records also include full autopsy reports for each one.

Companies with access to the collection not only can take measurements on thousands of skeletons to help them figure out the average sizes and shapes of whatever bones they’re interested in, but they also can separate those measurements by category. The ability to do the latter would allow them to design products tailored to people with different bone structures. Those differences are particularly notable between men and women, or adults and children.

The collection is a rare one and could be one of a kind, said Ford Bell, president of the American Association of Museums in Washington, D.C.

“I can see why it might be very useful,” Dr. Bell said.

### **Securing the future**

Some of the revenue generated will go toward the collection and other museum expenses, and some will go to CWRU’s orthopedic surgery department and its medical school.

The museum decided to charge companies for access as a way to ensure it can pay to house the collection for the long run, said Bruce Latimer, executive director of the museum.

“It’s our responsibility to make sure this collection is here in 100 years, in 200 years,” Dr. Latimer said.

On top of the benefits to the museum, companies would be bound contractually to release their data back to the museum after a negotiated number of years, which would help other researchers gather more information and avoid redundant tasks.