

Innovative digital technologies assist specialists in anatomical reconstruction

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Techniques for using digital technology in separating conjoined twins, developing facial prostheses and acquiring data from anthropologic specimens will be among the topics presented at a symposium sponsored by the American Association of Anatomists (AAA) on April 28. The symposium is part of the Experimental Biology 2010 conference being held April 24-28, 2010 at the Anaheim Convention Center.

"The common thread of digital technology in fields from [prosthetics](#) to surgery to [anthropology](#) is its ability to enhance outcomes," said Suzanne N. Verma, MAMS, Assistant Professor and Anaplastologist, Oral and Maxillofacial Surgery at the Texas A & M Health Science Center Baylor College of Dentistry in Dallas, who will co-chair the symposium. "Technology is the palette and the specialist's creativity is the brush."

Kenneth E. Salyer, MD, FACS, FAAP, of the World Craniofacial Foundation in Dallas will discuss how he used technology in planning the surgery performed to separate Egyptian conjoined twins Mohamed and Ahmed Ibrahim in 2003. The twins were joined at the top of their heads. Lessons learned from the successful separation and reconstruction of the twins are opening up new opportunities for future work in tissue engineering and regenerative medicine.

Douglas Owsley, PhD, Curator and Head of the Division of Physical Anthropology at the Smithsonian's National Museum of Natural History in Washington, D.C., will discuss scientists' perspective of Kennewick

Man, one of the earliest skeletons ever found in the Americas. Kennewick Man is more than 9,000 years old, and Dr. Owsley used digital technology to scan the specimen's skull and help to physically determine what it would look like with facial muscles and skin.

Ms. Verma will speak about how [digital technology](#) assists her in planning surgery and designing facial prostheses. "For example, we can use radiographic data to virtually create a 3D model of our patients, allowing us to preoperatively plan where to place an implant, plan the surgical approach for removing a tumor, or use the data to create a physical model of the missing anatomy" she said.

Andy Christensen, President of Medical Modeling Inc. in Golden, Colo. and co-chair of the symposium will discuss tactile medical modeling and the digital reconstruction process. In tactile medical modeling, specialists use data from digital imaging processes such as computed tomography and magnetic resonance imaging to create accurate plastic models.

Other topics to be presented at the symposium include the assessment of hard tissue structure and mechanics using digital models, and synchronizing sound, spatial positioning and anatomic visualizations in real time.

Provided by Federation of American Societies for Experimental Biology

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