

**AUDIO SCRIPT**

**[F1: Female Interviewer; M1: Male Interviewee]**

F1: Welcome to *What's Next?* with WYNA in Hamilton. We have a special guest with us today: Chris Collins, assistant curator of McSwain University's Museum of Antiquities. Dr. Collins has been promoting the use of 3-D printing technology to recreate damaged ancient artifacts and temples, a technique that is revolutionizing the art world. Dr. Collins, welcome.

M1: Thank you, Dena.

F1: Tell us more about the fascinating work you're doing.

M1: Technicians at our museum work to recreate antiquities—objects, buildings, and art from the very distant past—that have been virtually destroyed through lack of care or simply by time.

F1: You say “recreate,” not “restore”?

M1: Yes, recreate. These objects are sometimes 90 percent gone. For example, we have a ceramic lion from an archeological site in Iraq. We have only two pieces: its front paws and a small part of its back legs.

F1: How do you go about recreating a piece of art that's been almost totally destroyed?

M1: First, we try to locate an intact specimen—something that's all in one piece, similar to the one we're working on. We got ahold of a lion from the Museum of Fine Arts in Boston that was from the same period and from the same general area.

F1: The museum just gives you the lion?

M1: No! We borrow it ...

F1: Oh! Well, that makes sense ...

M1: Yes, and with the museum's consent, we've reconstructed the missing parts of the lion. Through a specific process and with the use of high-tech mechanisms, we've successfully recreated the lion.

F1: Tell us a little about that technical process, Dr. Collins.

M1: Simply put, we took hundreds of digital photos of the damaged piece and the intact piece, very precise images from hundreds of different angles. Then we sort of

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layered the images together to create a 3-D model. Then, using high-density foam, we printed it out on a 3-D printer. We can then recreate the artifact in a material that's close to its original, like ceramic, in the case of the lion.

F1: Remarkable. And the 3-D model of the lion is identical to its original form?

M1: No, not identical—that would be impossible—but very close.

F1: What do you do if you don't have an intact specimen, as you had with the lion? How can you recreate a work of art that's been heavily damaged, when there's no model to work off of?

M1: If we don't have a similar object, we can still recreate the damaged object with pictures. Pictures of the objects allow us to digitally reconstruct the original piece. The more pictures, the better, and with as many different angles and perspectives as possible. Once we have a 3-D picture, we can build models and then recreate the artifact.

F1: Is McSwain the only place that's using these types of techniques?

M1: No, not at all. Harvard University is another place that's using 3-D technology to recreate art.

F1: How long has the museum been using digital technology to recreate artworks?

M1: I'd say maybe ten years. But, let me just say that the project is not just about recreating damaged antiquities. It's also about using the latest technology to examine the thousands of pieces in the collection and learn what we can from them. We have a duty to give time and attention, using all the technical tools we have, tools not dreamed of when the artifacts were dug up. Imagine, for hundreds of years, researchers who wanted to examine a statue might have had to travel halfway around the world. Now these digital 3-D models provide a chance for researchers anywhere in the world to see and examine a one-of-a-kind statue.

F1: It is impressive. Are there other ways this technology might be used?

M1: We think this technology could be very useful for teaching. In fact, it's not a new approach; it's an old method of research—very hands-on. Nowadays, we don't usually let undergraduates handle these very old and valuable objects. But in the past, that's exactly what students did; that's how they learned about the precise details of the objects they were studying. Now they can do that again without worry. For instance, if a clumsy student drops a model of an artifact, a new one can be printed on a 3-D printer. This technology can create a more dynamic sort of learning. It's all very exciting.

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F1: Yes, it is. Well, I want to thank you for being here today. Dr. Chris Collins of McSwain University. I'm sure this is not that last we'll hear of this exciting technique...