



## TEACHING AND TECHNOLOGY

by Arcelia Martin

### Virtual Reality Brings History to Life

Students in Gonzaga University Professor Andrew Goldman's History 193 course can look forward to traveling somewhere new and far away—and into the past—this fall. They could travel to the streets and monuments of Pompeii or to first-century Rome to visit the Colosseum.

"What was the experience of the Colosseum like for a gladiator?" Goldman could ask his students. "Or for a wealthy person?"

After viewing over a dozen interior and exterior views of the Colosseum for themselves, students can begin to draw conclusions about what the ancient city used to be like and compare it to their experiences of modern-day Rome. The experiential learning is all thanks to virtual reality.

#### Reconstructive Virtual Trips

Last spring, Goldman began incorporating these reconstructive virtual trips to ancient cities and landmarks into his

classroom—bringing history alive for students. This semester, he is taking the lessons he has learned from using virtual reality in class and applying them to his Roman Archaeology course this spring when he plans to use the technology more extensively.

"It also allows you to feel and experience in an immersive sense, what's actually there, and that's what's really valuable about it," said Goldman, Ph.D., Gonzaga's former Alphonse A. and Geraldine F. Arnold Distinguished Professor. Using virtual reality, Goldman's students look at landscapes and evaluate how these cities were formed and lived in, and how they have changed.

## A Core Component in Class

While conducting archaeological research in Turkey in 2013, Goldman met Simon Young, Ph.D., an Australian archaeologist. They have become close friends over the years. In 2017, Young visited Goldman's research site and told him about archaeological reconstructions he was working on and his plan to use them for tourism purposes.

Goldman saw opportunity for his Gonzaga students. He's the first Gonzaga professor to use virtual reality as a core component of a class.

Young went on to found Lithodomos VR and serves as its CEO. The company offers an affordable alternative to an often-expensive field of technology, by making the reconstructions available for purchase online, and by offering a cardboard headset option that fits a smartphone, to experience them.

After getting the green light last summer from Young to use Lithodomos VR in the classroom, Goldman applied for and received a grant from the Dean's Faculty Development Fund in the College of Arts and Sciences as well as additional support from the Digital Humanities Initiative to allow students to use this technology in his classroom at no extra cost.

"Andy is authentically asking his students to consider the affordances presented by emergent technologies, not just for flashy appeal, but a deep consideration of the opportunities virtual reality presents to create deep, rich, and dynamic learning communities where students are truly active participants." —DR. KATEY RODEN, DIRECTOR OF DIGITAL INITIATIVES

## Attention to Archaeological Accuracy

What sets the reconstructions produced by Lithodomos VR apart from others, said Goldman, is the attention to archaeological accuracy. Its reconstructions were built by experts in ancient sources and it is apparent in the details—from the gold awnings to the placement of statues on the Colosseum.

While Goldman was impressed with the technology and application, he continuously gathered feedback from his students last spring in his History 302 course to assess their thoughts.

"The students felt that it was very immersive and they thought it was very interesting," Goldman said. "It helped them to remember details. They thought it made class more exciting and it certainly made the ancient landscapes and buildings and cities more relatable."

The students also wanted to be able to move around in the cities. Currently, users cannot freely walk around the virtual sites, but can view sites in a 360-degree panorama. To enter structures and move around sites, users must unlock viewpoints by focusing their sight toward the highlighted viewpoints.



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—DR. ANDREW GOLDMAN

### A Strong First Step

“There is a lot of room for improvement, but I think it was a very good first step in trying to use this technology in an actual classroom, using class content, on a regular basis,” Goldman said. “The second half of the class, we spent most classes looking at this sort of stuff. I think it gave them a real sense of what the space was like—what it would have felt like in the ancient city. Of course, it would be fun to be there, but it’s the next best thing.”

For the students’ term project, they were grouped into three-person teams that had 10 weeks to develop their own set of research to create virtual realities for the reconstruction of an ancient site.

The project, a competition among the students, culminated during the last week of school with presentations before a juried panel composed of GU faculty and Simon Young.

The winning team of the competition presented reconstructed viewpoints of the famous Greek sanctuary at Epidaurus, the healing center of the

god Asklepios. The students’ research informed their development of potential viewpoints for people to experience what a pilgrim to the shrine would have seen.

This summer, they worked remotely with Lithodemos VR to create a virtual reality reconstruction site, in addition to the 74 sites Lithodemos VR currently has that feature nearly 500 viewpoints in 18 countries.

Clearly enthused about the prospects of virtual reality at Gonzaga, Goldman and others look forward to helping introduce the technology more widely across the University.

### Gonzaga’s Burgeoning Digital Humanities

Katey Roden, Ph.D., assistant professor of English and director of the Digital Humanities Initiative, said Goldman’s work with virtual reality represents the best of burgeoning digital humanities pedagogical practice at Gonzaga.

“Andy is authentically asking his students to consider the affordances presented by emergent technologies, not just for flashy appeal, but a deep consideration of the opportunities virtual reality presents to create deep, rich, and dynamic learning communities where students are truly active participants,” Roden said, adding that the work Goldman’s students have done demonstrates the value of virtual reality experiences in Gonzaga’s humanities classrooms and academic practice.

“Virtual reality presents a great deal of potential, but the Digital Humanities Initiative is committed first and foremost to ensuring that technological application in our classrooms and curricula are intentional and geared toward the ultimate goal of transformative learning experiences,” Roden said. “To this end, we are exploring opportunities to extend access to VR technology more broadly on campus.”



**ABOUT THE AUTHOR:** Arcelia Martin is a student at Gonzaga University studying journalism, political science and writing. She has worked on the university’s online and weekly print newspaper, *The Gonzaga Bulletin*, for four years and currently serves as the Editor-in-Chief.

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