

Using Virtual Reality to Connect Ecosystems and Fuel Innovation

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Our Vision:

- Build a Virtual Innovation Ecosystem that allows unprecedented access to innovation, training, and talent

The VITAL Hub

(Virtual Immersive Teaching And Learning)

A New “Reality” for
Education and Training;
Using Virtual/Augmented
Reality to Train Learners of
the Future



VITAL Lab Virtual Immersive Teaching And Learning

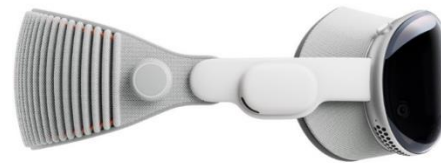


- First focus will be on National Academic Model differentiator and leveraging relevant innovative partnerships
- Opportunities:
 - Be a beacon to attract the best and the brightest
 - Room to lead as an early adopter
- Motivators:
 - National Board for Medical Examiners recently purchased MedVR, suggesting credentialing and licensure may in the future include assessment in a virtual space
 - Tools powered by AI are emerging and evolving

Use Cases

- Telemedicine
- VR for Training
- VR for Collaboration
- VR for Connecting Ecosystems

Virtual/Augmented/Mixed/Extended Reality (VR/AR/MR/XR)





VR Microscope Training - Luxsonic (video)

VR for Collaboration

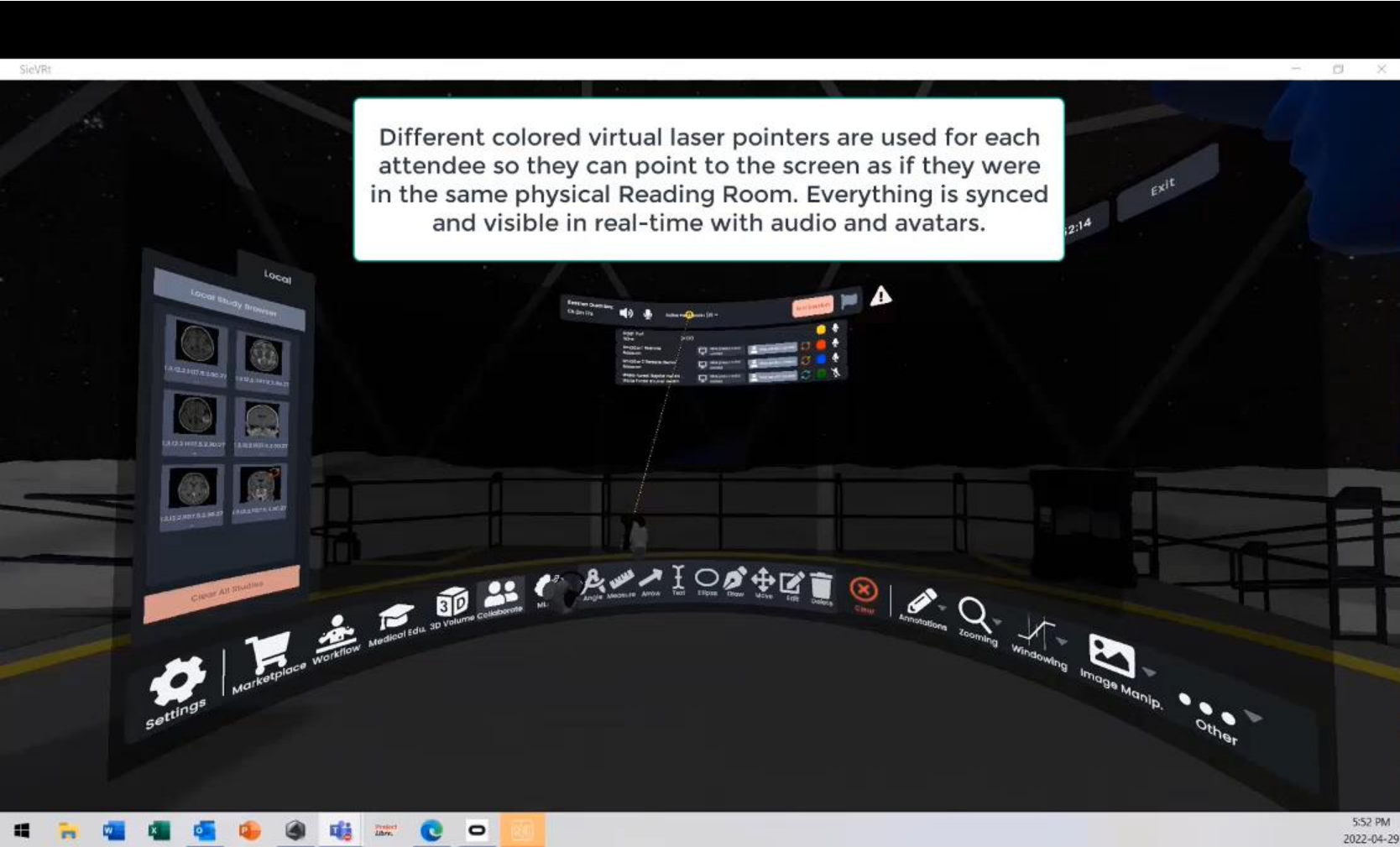


- Virtual Radiology Reading Room for Radiologists and Neurologists to collaborate in real-time from different locations, cities, states, and countries
 - Pilot project with WFB and Ecuador
 - Currently, working on a pilot project with Radiology Residents and attending Faculty using newer hardware
- Luxsonic, providing the pilot software: SieVRt
 - Lenovo, providing the pilot hardware and VR headsets



luxsonic.ca, sievrt.com, varjo.com, lenovo.com

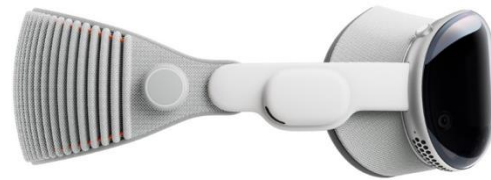
VR for Collaboration and Bringing Expertise to Remote Areas



VR for Training



Apple Vision Pro



apple.com

VR for Immersive Training



Use Case: Exploring Mars app for Apple Vision pro

App Store Preview

This app is only available for Apple Vision Pro. [Learn More](#)

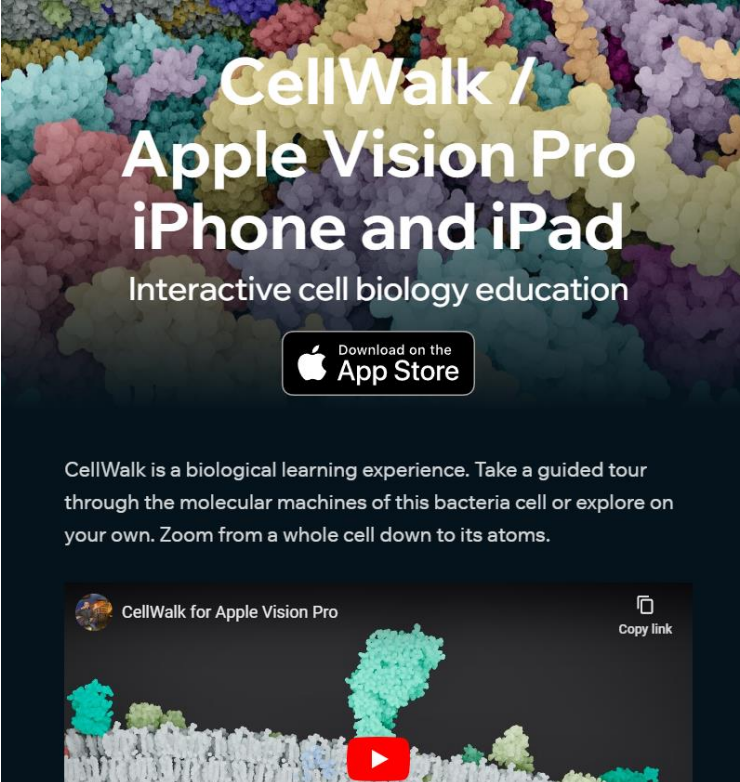


Exploring Mars 4+
Mars rovers and environments
[Jet Propulsion Laboratory](#)
Free


Screenshots





Use Case: Cell Walk app for Apple Vision pro



**CellWalk /
Apple Vision Pro
iPhone and iPad**
Interactive cell biology education

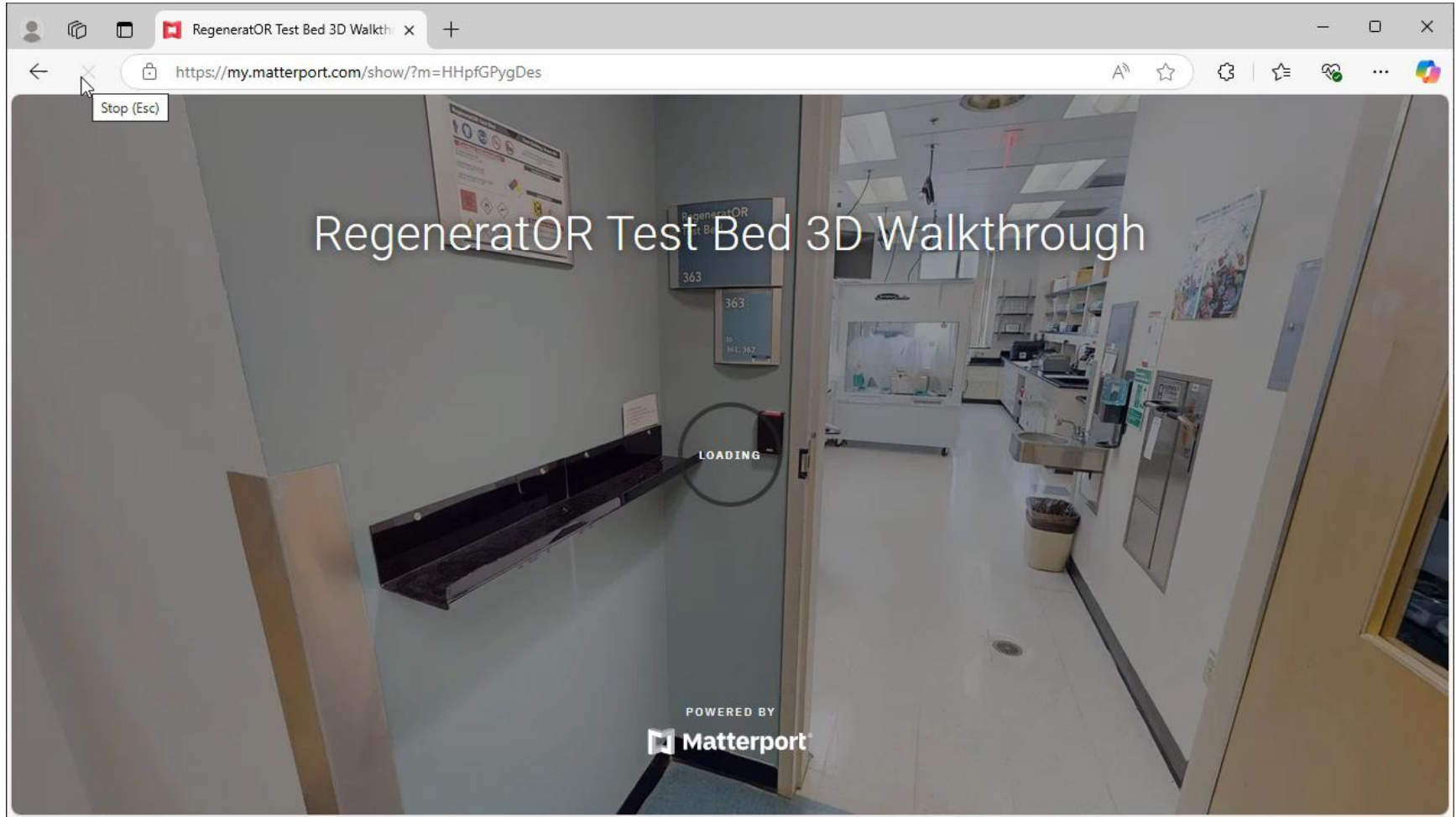
 Download on the
App Store

CellWalk is a biological learning experience. Take a guided tour through the molecular machines of this bacteria cell or explore on your own. Zoom from a whole cell down to its atoms.

 CellWalk for Apple Vision Pro  Copy link

The image is a promotional graphic for the CellWalk app. It features a background of colorful, textured spheres representing a cell. The text is white and centered. Below the text is a 'Download on the App Store' button. Further down is a paragraph of text describing the app. At the bottom is a video player showing a 3D model of a cell with a red play button in the center. The video player has a title 'CellWalk for Apple Vision Pro' and a 'Copy link' button.

Use Case: Test Bed to PR Training



Axiom Space Offers VR Experience of Axiom Station during IAC Special Session

- (PARIS) - Axiom Space on 9/21/2022 debuted an innovative session at the International Astronautical Congress (IAC) in Paris providing a virtual tour of Axiom Station, the world's first commercial space station. Making use of Axiom's industrial and design and engineering models, Axiom leaders used virtual reality technology to guide the audience through an interactive video of Axiom's in-production space station.
- <https://www.axiomspace.com/news/iac-vr-axiomstation>

NASA Doctor 'Holoported' to Space in Technology Experiment



Holoportation team members are seen projected virtually at the International Space Station, on October 8, 2021. (Image Credit: ESA European Space Agency astronaut Thomas Pesquet)

A doctor with the American space agency NASA has made a virtual visit to the International Space Station (ISS) after being "holoported" by technology. Dr. Josef Schmid and several other people took the virtual trip October 2021. NASA recently announced results of the experiment. The agency said it was the first time that humans had been "holoported" from Earth to space.

VRCORE and NASA Bring the International Space Station to Schools

- CALGARY, AB, Dec. 17, 2024 /CNW/ - VRCORE Education, a leader in virtual reality learning, has partnered with the International Space Station National Laboratory (ISSNL) to introduce "ISS: Curiosity in Orbit," an innovative VR experience that transforms school gymnasiums into immersive space labs. Funded by the Center for the Advancement of Science in Space (CASIS), this initiative allows students to virtually explore space environments, conduct experiments, and solve real-world problems—all without leaving their schools. CASIS manages the ISSNL through a cooperative agreement with NASA, seeking to utilize the space station to its greatest potential.

VR for Mental Health



European Space Agency astronaut Andreas Mogensen testing a VIVE Focus 3 virtual reality headset on the International Space Station. (Image credit: NASA / ESA)

A virtual reality (VR) headset paired with a new exercise bike lets [International Space Station](#) (ISS) astronauts experience their favorite cycling routes on Earth. Denmark's Andreas Mogensen, for example, has five routes to choose from in locations ranging from Copenhagen to Svanninge Bakker. "It's actually one of my absolute favorite activities on board the space station," said Mogensen, commander of the ISS' current Expedition 70 and a [European Space Agency](#) (ESA) astronaut, told Space.com during a Wednesday (Feb. 21) press conference from the ISS about science experiments.



NSF ENGINES: PIEDMONT TRIAD
REGENERATIVE MEDICINE ENGINE

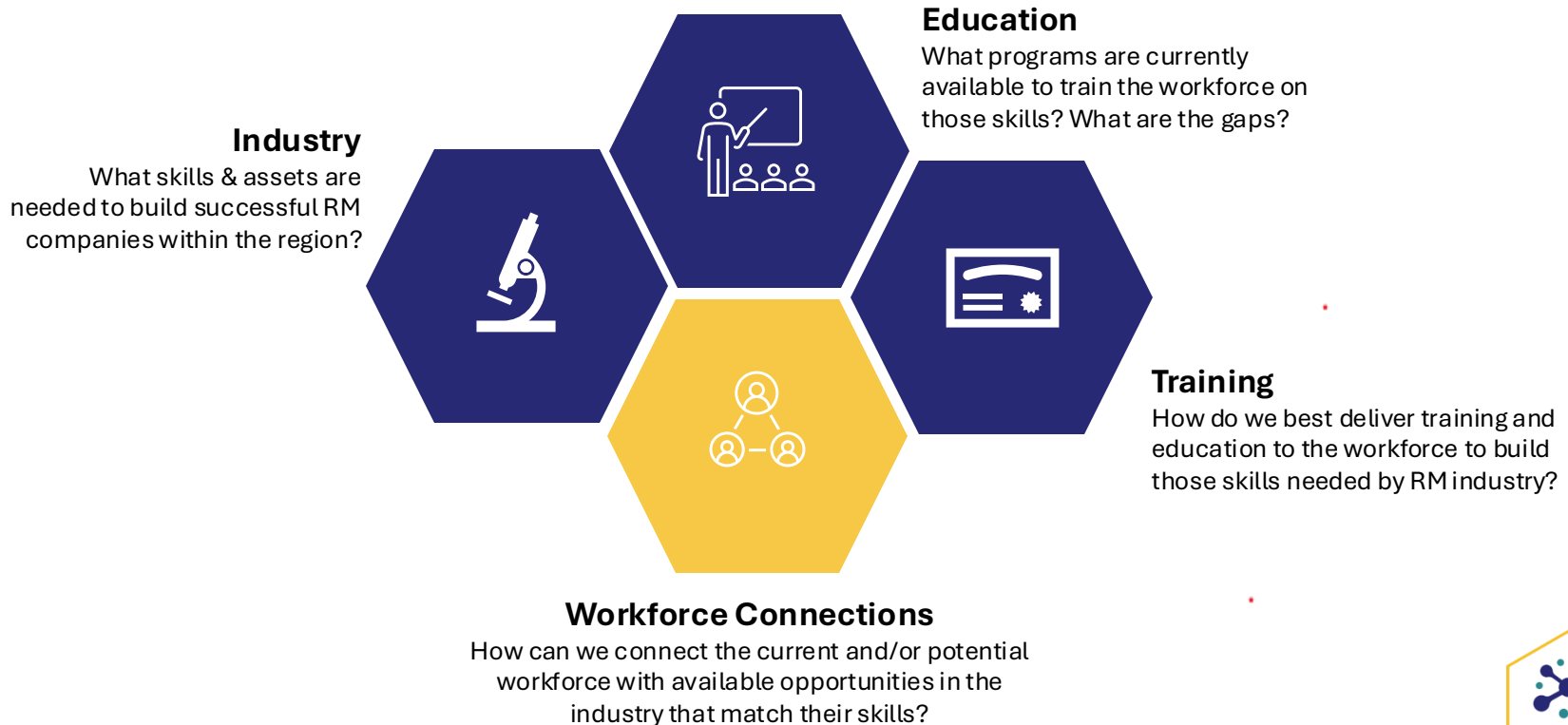
Regenerative Medicine Education and Workforce Development in K-12 Classrooms

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Enabling Workforce Development

Creating Alignment & Opportunities



Meet Training Needs

- **Connect** to HS CTE's, accelerate dual-enrollment and articulate pathways
- **Regionalize** pre-apprenticeships, apprenticeships and work-based learning opportunities for the RM PTRME region
- **Build out** short - term worker training tailored to RM Company needs
- **Train** RM faculty, and company staff, based on needs gap survey via short course offerings e.g. Quality Management
- **Implement** Interactive Learning systems to reach into CCs, MS and High School students to stimulate interest in RM

Tactics

- *Engage and coordinate* with informal and formal K12 regional partners through inquiry-based curricula, near-peer mentoring and teacher professional development
- *Develop series* of short, hands-on, inquiry-based RM programming and professional development for CC instructors and K12 educators
- *ITEC @ FT* – provide training courses* that address skills gaps identified by industry partners for skills improvement - e.g. bioprinting, mass spec, lab information systems, quality- based programs, clean rooms, etc.
- **Develop VR** modules (e.g., bioprinting, SEMS, etc.) with BioNetwork for use in 58 community colleges and MS and HS classrooms
- **Advance AI** training in RM, course buildout and internships
- *Connect* to HS CTE's, accelerate dual-enrollment and articulate pathways

VR for Outreach & Training

Equipment/VR Module	Status	Funding Source
Biomanufacturing	Development	EDA BBB (NC)
Bioprinting	Development	NSF PTRME
Scanning Electron Microscope	Future	?
QTOF Mass Spec	Future	?

VR/XR Links of interest

- Apple Vision Pro: Mars Rover
- Apple Vision Pro: Cell Walk

- Test Bed 3D Walkthrough: <https://my.matterport.com/show/?m=HHpfGPygDes>
- <https://www.axiomspace.com/news/iac-vr-axiomstation>
- <https://www.axiomspace.com/research/holoportation>
- <https://cellwalk.ca>
- <https://learningenglish.voanews.com/a/nasa-doctor-holoported-to-space-in-technology-experiment/6539581.html>
- <https://www.instagram.com/scienceoftheuniverse/reel/CykvGivsuFr>
- <https://www.youtube.com/watch?v=1D8ZN7Tmv5w#:~:text=Supporting%20Astronaut%20Mental%20and%20Physical,the%20headset%20on%20the%20ISS>
- <https://www.newswire.ca/news-releases/vrcore-and-nasa-bring-the-international-space-station-to-schools-803402802.html>
- <https://www.space.com/iss-vr-headset-astronaut-mental-health-exercise>
- Camel City Game Jam - <https://camelcitygamejam.com>
- <https://newsroom.wakehealth.edu/news-releases/2022/07/school-of-medicine-collaborating-with-physicians-in-ecuador-on-virtual-reality-project>