

VR Lab

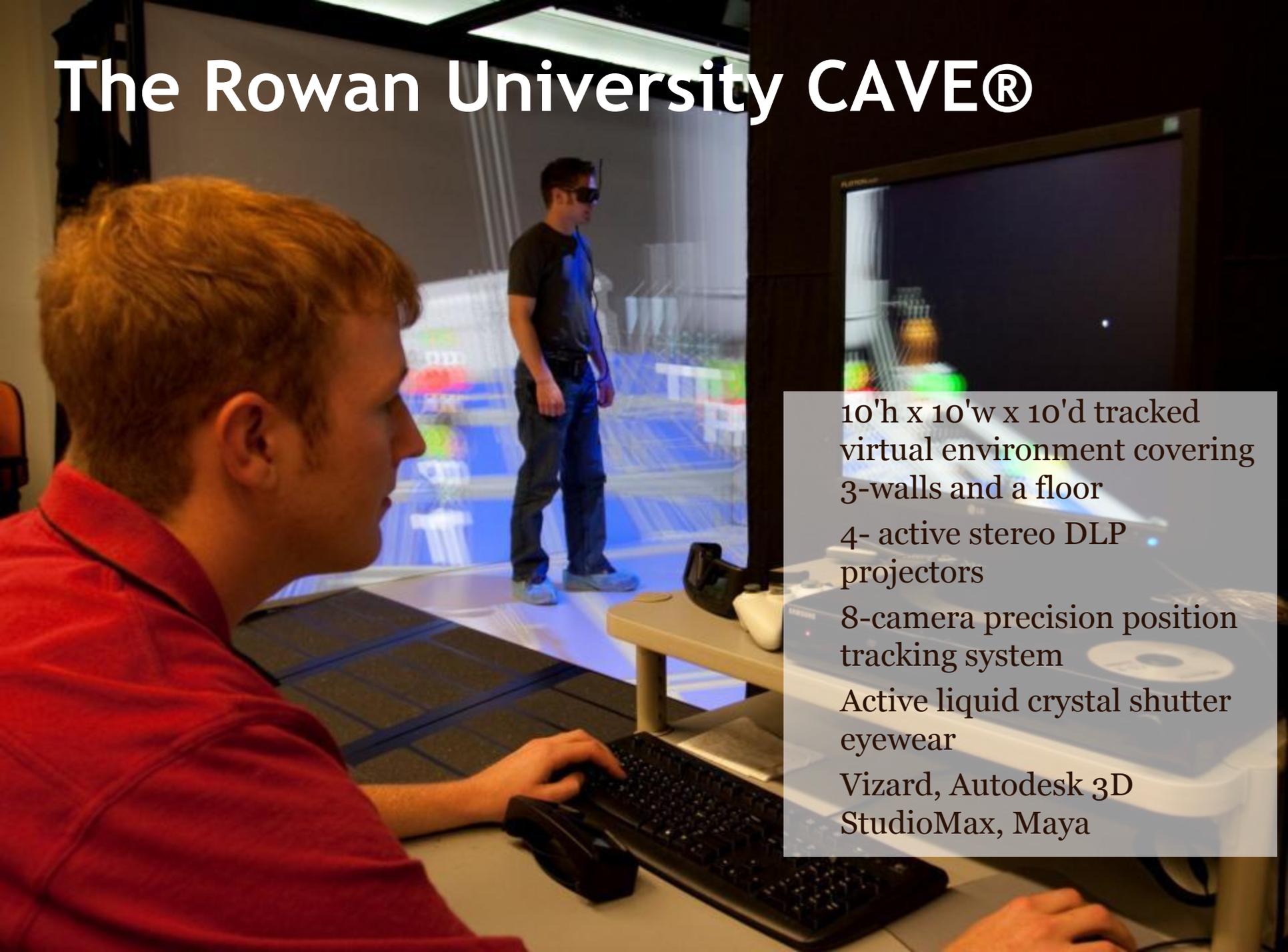
**Rowan University
Virtual Reality Laboratory**

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Vice President for Research

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The Rowan University CAVE®



10'h x 10'w x 10'd tracked
virtual environment covering
3-walls and a floor

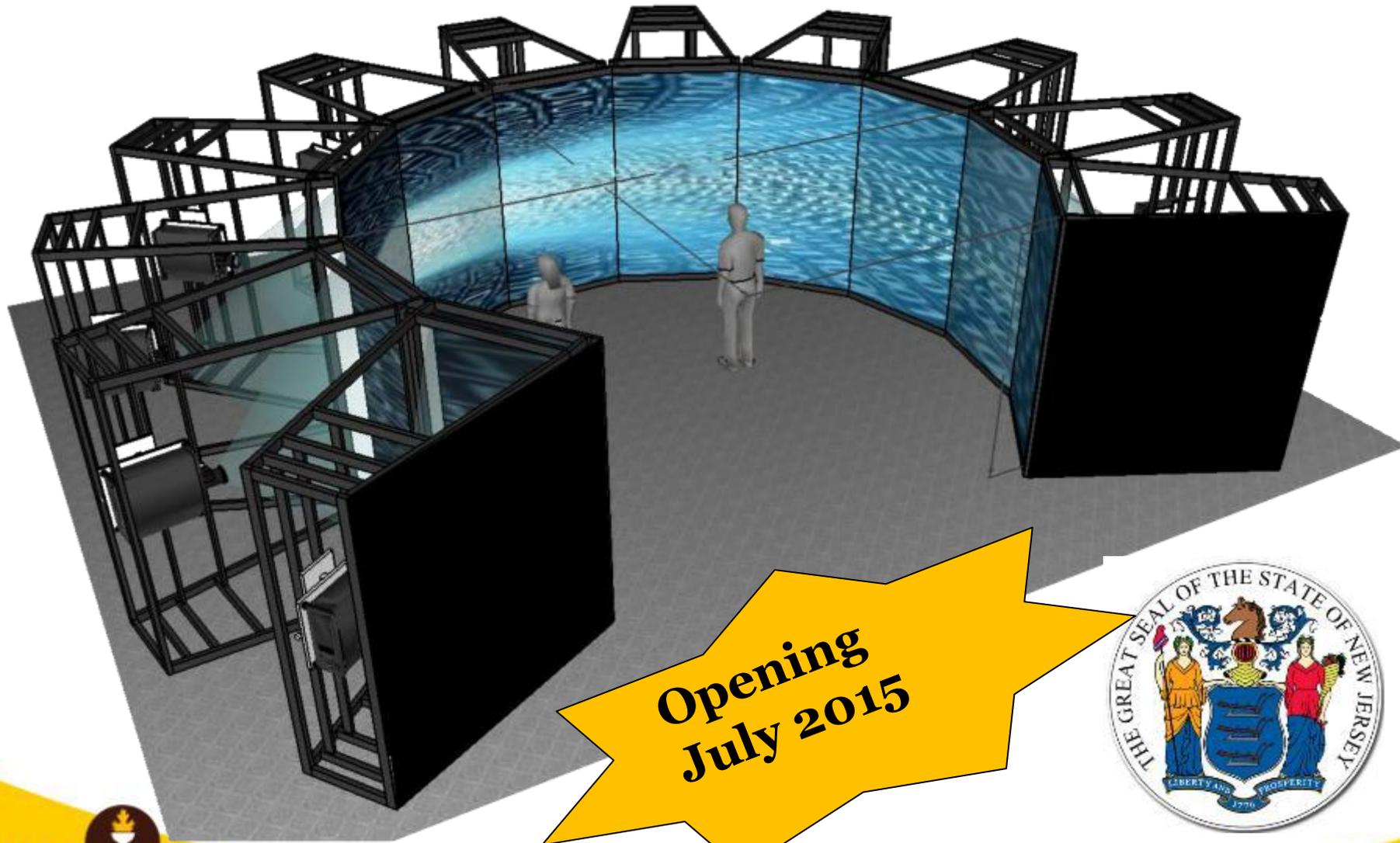
4- active stereo DLP
projectors

8-camera precision position
tracking system

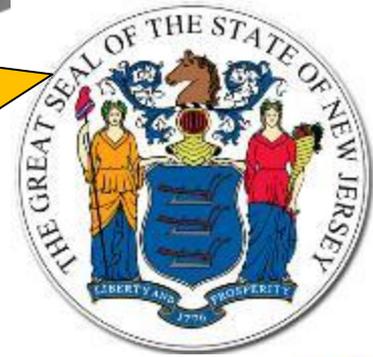
Active liquid crystal shutter
eyewear

Vizard, Autodesk 3D
StudioMax, Maya

Rowan VR Lab Expansion



**Opening
July 2015**



The Rowan University C-10®



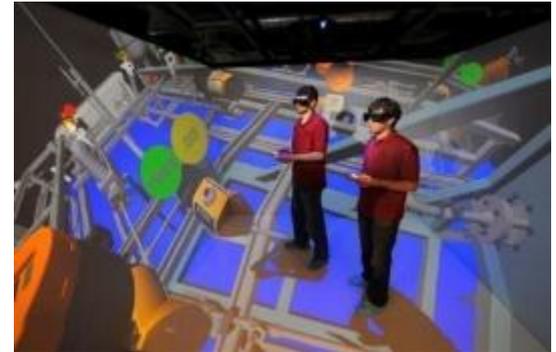
Ten 1920 x 1080 Digital Projection Titan projectors
Total system resolution is 10800x1920
8 Camera Infrared ART Tracking PC

Rowan VR Capabilities

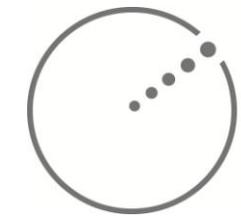
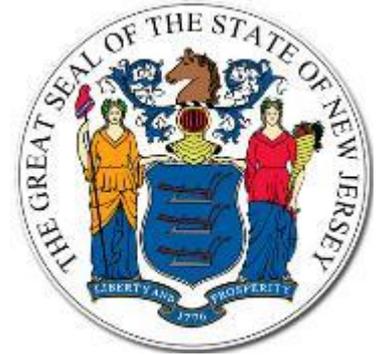
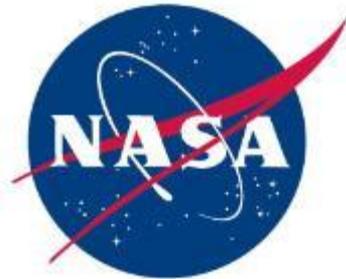
- 🔦 Visualization
- 🔦 Modeling and simulation
- 🔦 Data analysis and algorithm development
- 🔦 **Training**
- 🔦 Applications
 - UAVs
 - Medical
 - Transportation
 - Defense

Rowan VR Lab Platforms

- 🔦 CAVE 3D Projection Environment
 - Immersive, interactive and navigable environment for multiple users
- 🔦 Oculus Rift, Google Glass, Vuzix
 - Portable low-cost platforms for individual users
- 🔦 Laptop/Desktop/Tablet/Smartphone compatibility
- 🔦 3D Scanner/Digitizer and Printer
 - Virtual prototyping



Rowan VR Lab Sponsors



ELEKTA



Medtronic



AT&T



COOPER'S FERRY
DEVELOPMENT ASSOCIATION, INC.

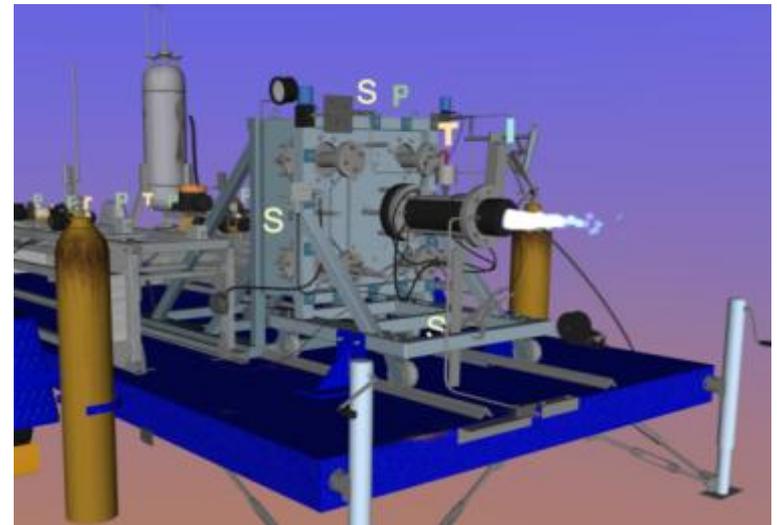


\$6-Million in sponsored projects
Over 3,000 visitors, 300 events

Modeling of Engineering Structures

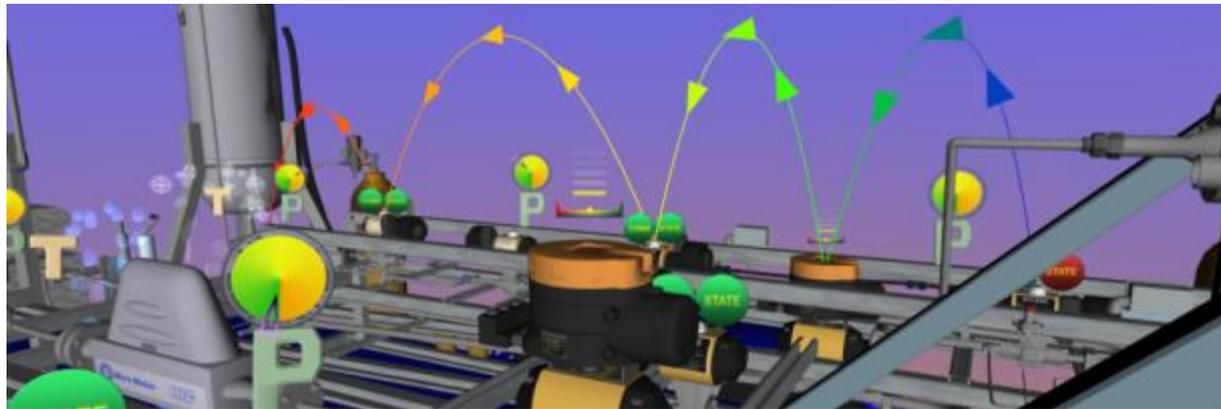
🔦 Rocket Engine Test Stand Simulation

- Modeled methane rocket booster test-bed
- Implemented virtual reality simulations using numerical data acquired from the actual system
- Developed graphical displays for numerical data



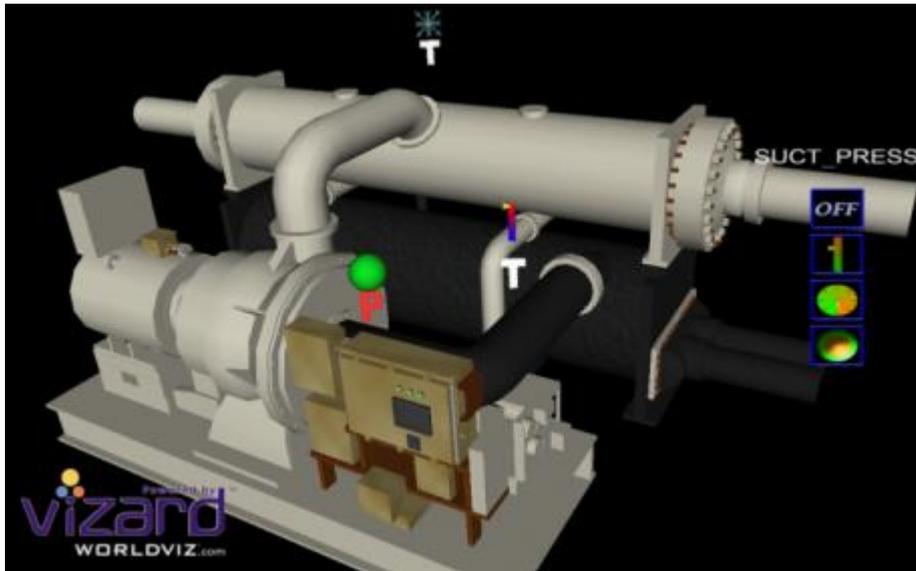
Simulation of Complex Environments

- 🕒 Real-time simulation using actual system data
- 🕒 Cascading fault tree algorithms to identify subsystem/component failures
 - Upstream root cause
 - Downstream effects



Remote Diagnosis

- 🔦 Video sensor protocol for monitoring leaks on shipboard systems



Training

🔦 Coldspray simulation and training



ARL

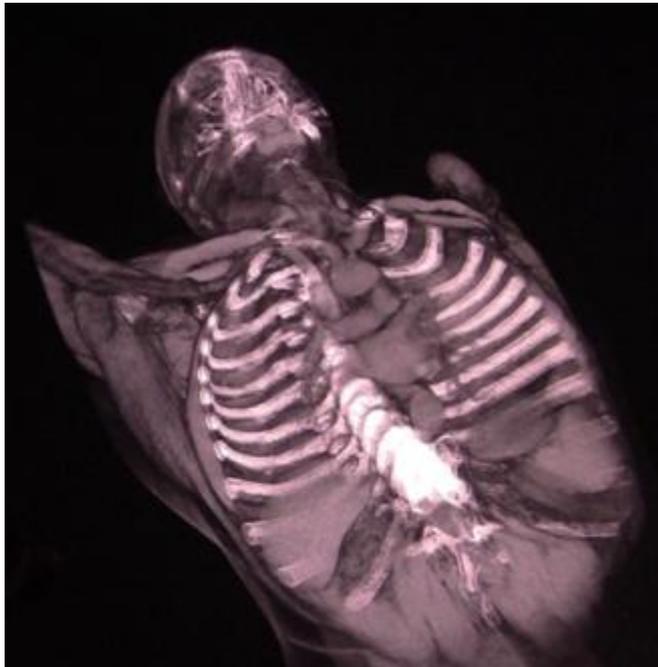
Cityscapes, Terrain and Buildings

- 🔦 Capability to model and simulate both cityscapes and rural terrains, complete with landscape features and structures
- 🔦 Interiors of buildings



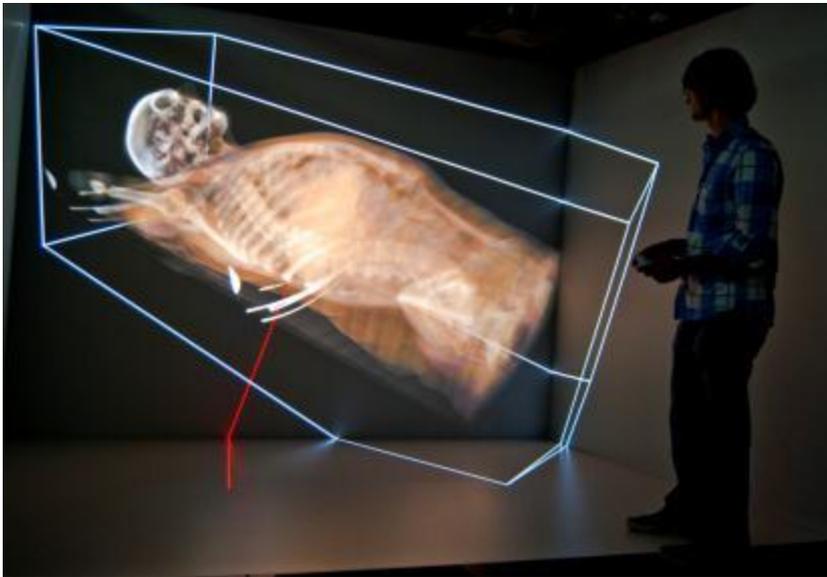
Medical Visualization

- 🕯️ 3D viewer which can import typical medical images (MRI/CT/PET) and create interactive 3D representations



Medical Visualization: Diagnosis and Education

- 🔦 Data fusion for multiple imaging technologies
– CT, MRI, PET
- 🔦 Virtual scalpel for surgery or dissection



Institutional Points of Contact

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