Bringing Game Research to the Real World

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What are we doing?

- Empirical research and technology prototyping of Computer Games and Virtual Worlds that support challenge problems in science, health care, art, technology and defense studies.

Why are we doing this?

- Computer games are both *technology* and *new media*
  – An opportunity area for research and innovation in playful socio-technical systems
- Enable immersive and transformative experiences that facilitate learning through R&D, play and failure experiences
- Engage new students and emerging scholars

Some game projects of interest

- Science learning games for informal science education at regional science museums
- Game-based semiconductor fabrication operations training simulator
- Virtual worlds for space science on a sphere
- Game-based decentralized command and control training simulator
- Experimental games for business, cultural critique, art and technology
- Facilitating local game development community
- New game research projects in progress

Web-based science learning games for informal science education for K-6 students and families: *DinoQuest Online*

http://www.DQOnline.org/

Scacchi, W., Nideffer, R. and Adams, J. (2008), *A Collaborative Science Learning Game Environment for Informal Science Education*, in *New Frontiers for Entertainment Computing*; P. Ciancarini, R. Nakatsu, M. Rauterberg, M. Roccetti (Eds.); Boston: Springer, 71–82.

Semiconductor/nanotechology fabrication operations and diagnostics training game
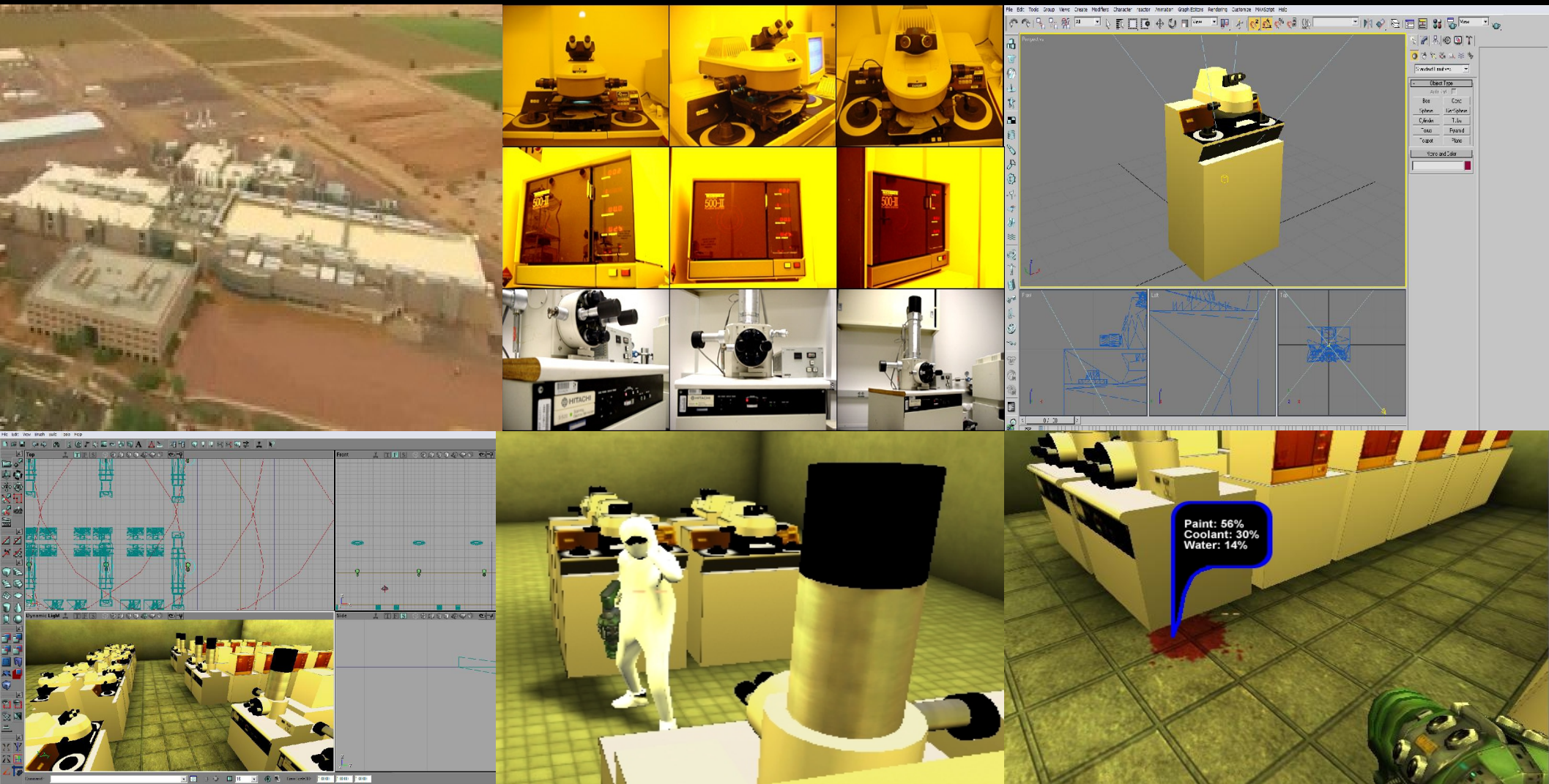
FabLab Demo Reel

Scacchi, W. (2010). Game-Based Virtual Worlds as Decentralized Virtual Activity Systems , in W.S. Bainbridge (Ed.), *Online Worlds: Convergence of the Real and the Virtual*, Springer, New York, 225-236.

Planetary science data visualization and "spherecasting" support: *NOAA Science on a Sphere* installation in *Opensim* VW platform
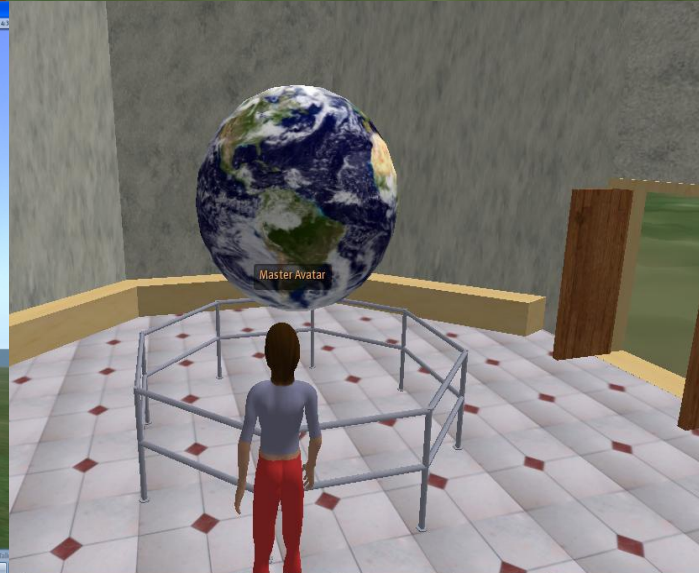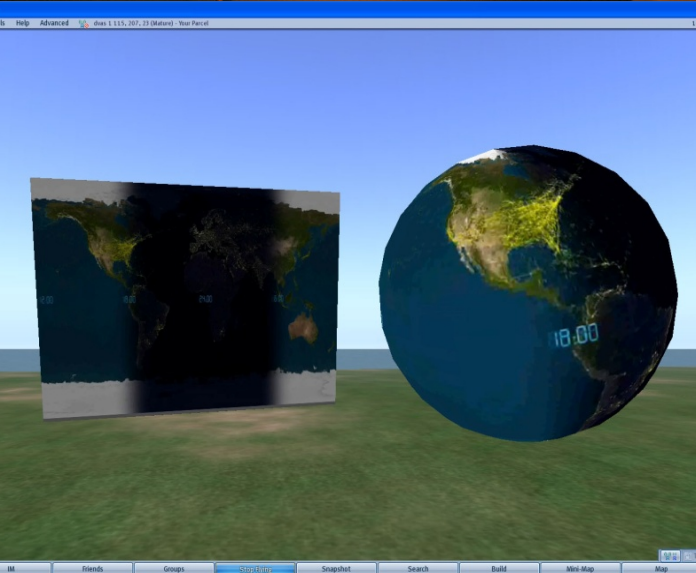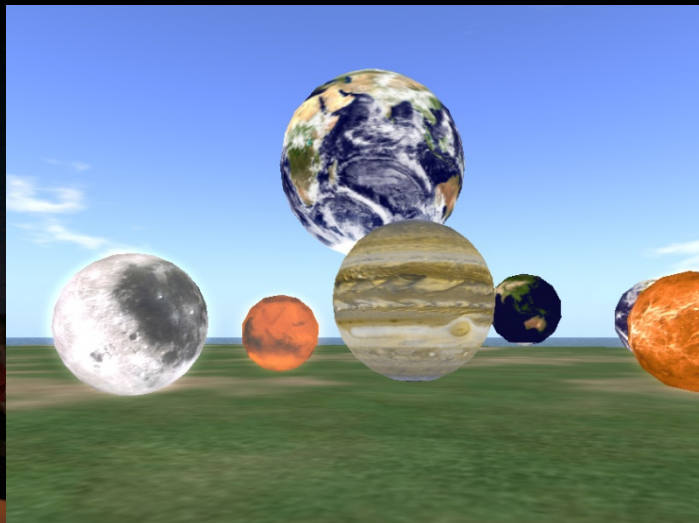
Supporting exploration of planets, earth systems (ocean, climate) and near-earth objects (space debris, small satellites, near-earth asteroids)

2D, side-scrolling, *World of Warcraft* inspired, role-playing game parody and CGVW development/modding kit

Aoedipus.net

Game-based VW incorporating real-world news feeds and geopolitically located Twitter feeds

Game-based VW simulator you can actually drive in physical world! -- *OutRun* @ UCI

http://www.conceptlab.com/outrun

Community development concept: Supporting UCI video game developers club projects (sample)

Community development concept: *IEEE Intercollegiate Computer Game Development Showcase*

New Project: Informal game-based music learning environment for San Francisco Symphony
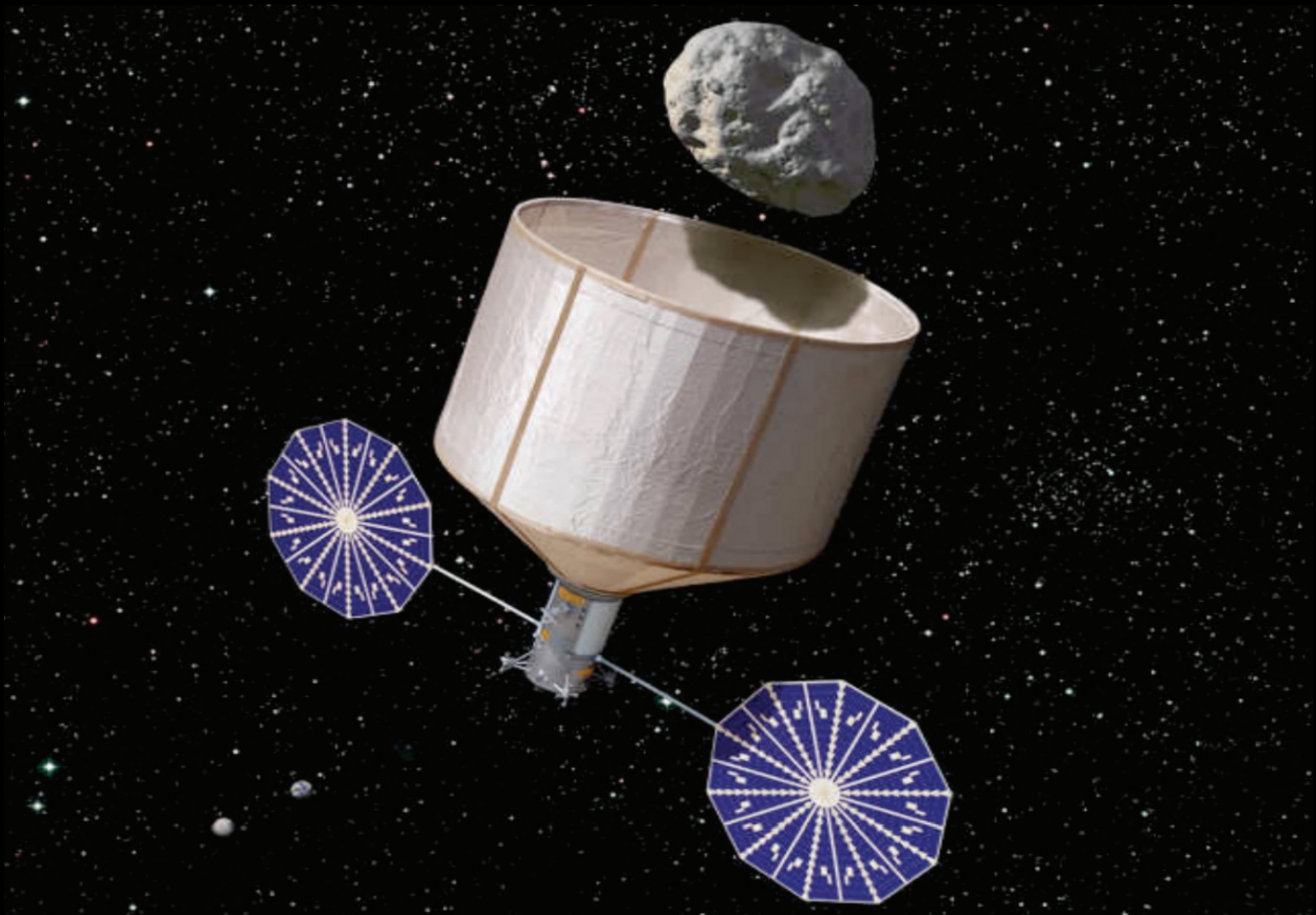
Sample game activity: *Capture a near-earth asteroid*

The Future of Research in Computer Games and Virtual Worlds

UCI Research Collaborators

Faculty
– Robert Nideffer, Thomas Alspaugh, Jill Berg, Yunan Chen, Steve Cramer, Alfred Kobsa, Jung-Ah Lee, Crista Lopes, Gloria Mark, Bonnie Nardi, David Redmiles, Richard Taylor, and others

Post-Doctoral Scholars
– Garnet Hertz (UCI LUCI)

Research Staff
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