

Center for Computer Games and Virtual Worlds

Walt Scacchi and others

<http://cgvw.ics.uci.edu>

University of California, Irvine

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Motivation

What are we doing?

- Empirical research and technology prototyping of CGVWs that support challenge problems in science, health care, energy, environmental, and defense studies

Why are we doing this?

- CGVWs are both *technology* and *new media*
 - this represents a new opportunity area for research and innovation
- Enable immersive and transformative experiences that facilitate learning through R&D and Play
- Engage new students and emerging scholars

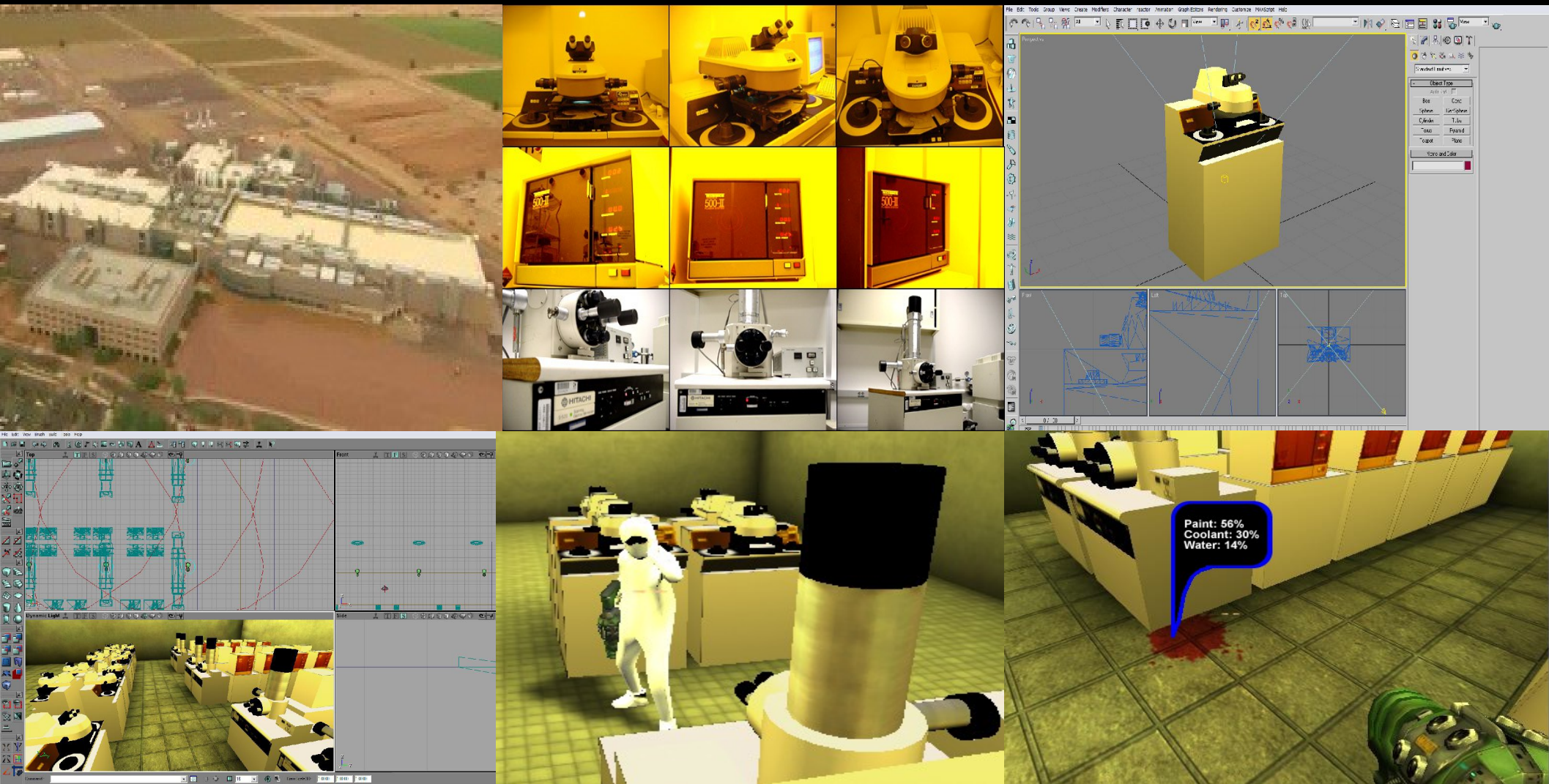
Web-based science learning games for informal science education for K-6 students and families



<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.

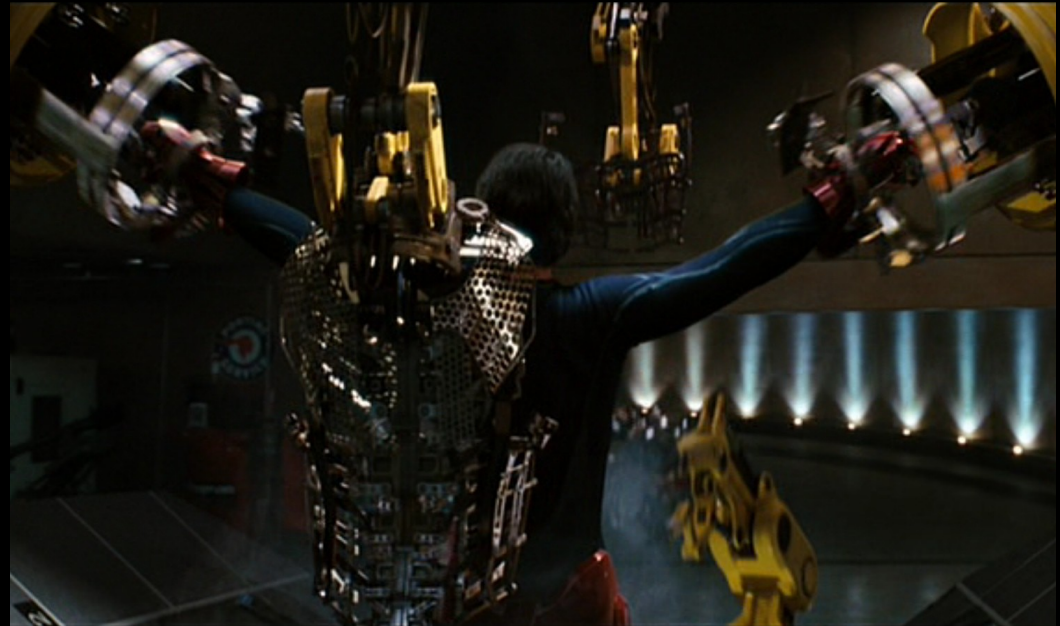
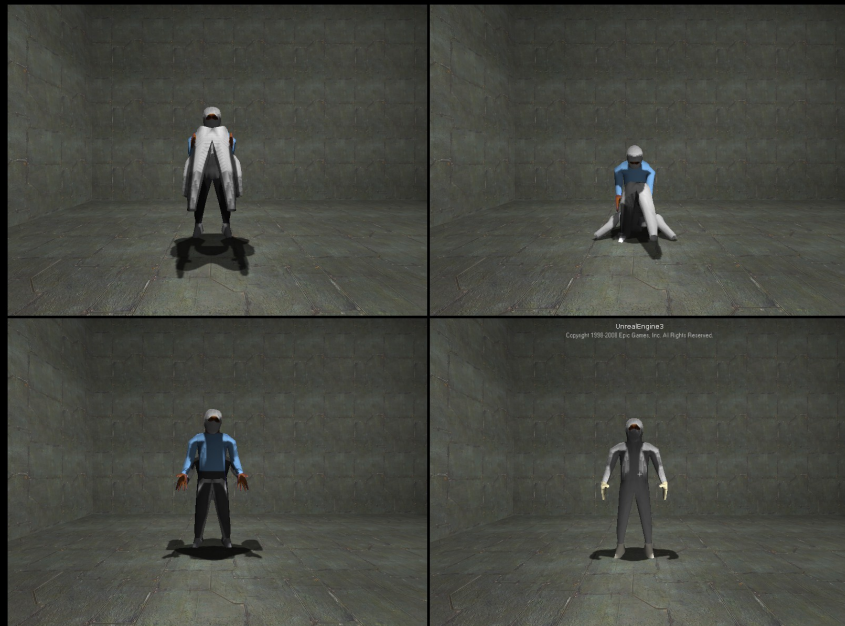
Semiconductor/nanotechnology fabrication training game



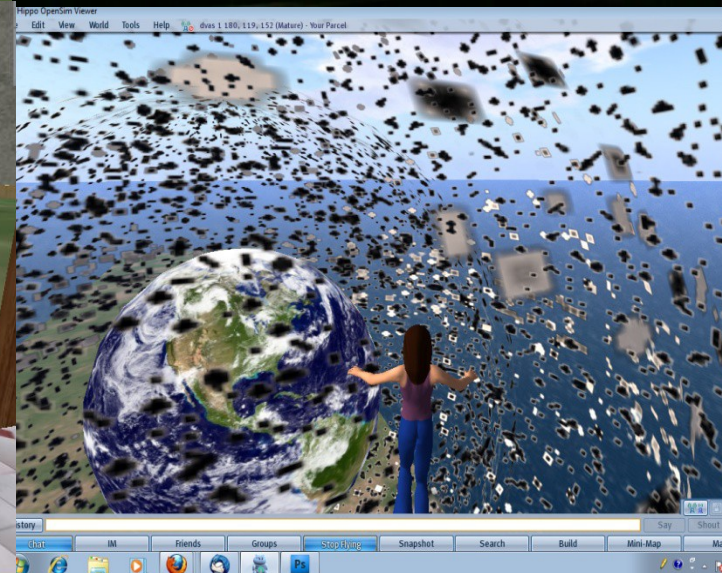
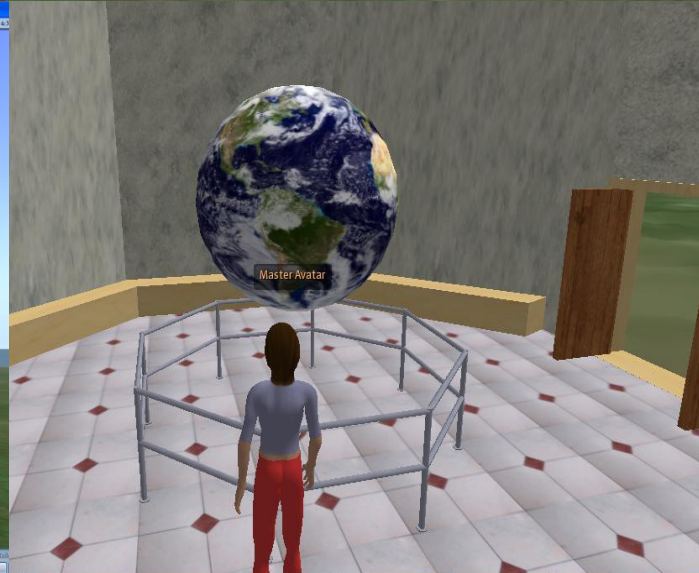
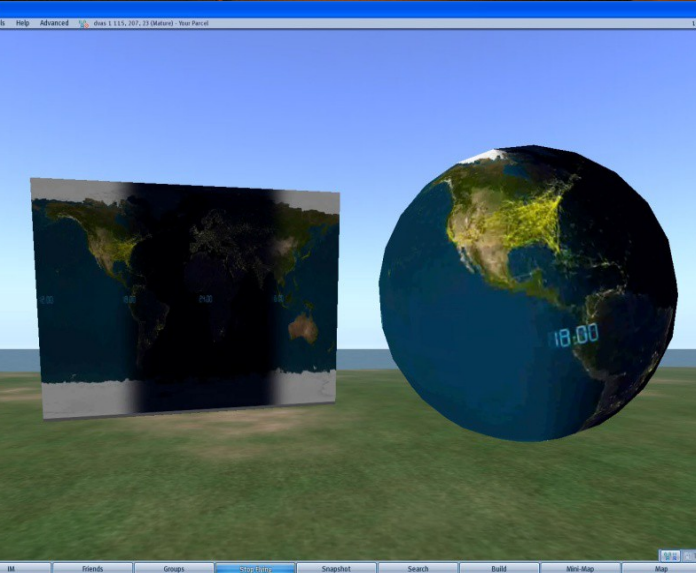
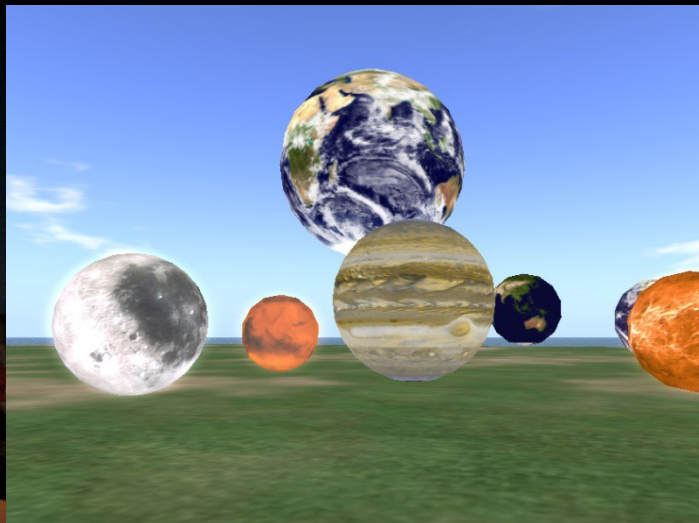
FabLab Demo Reel

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.

Semiconductor/nanotechnology fabrication training game



Planetary science data visualization and “spherecasting” support: *NOAA Science on a Sphere* installation in *Opensim* VW platform

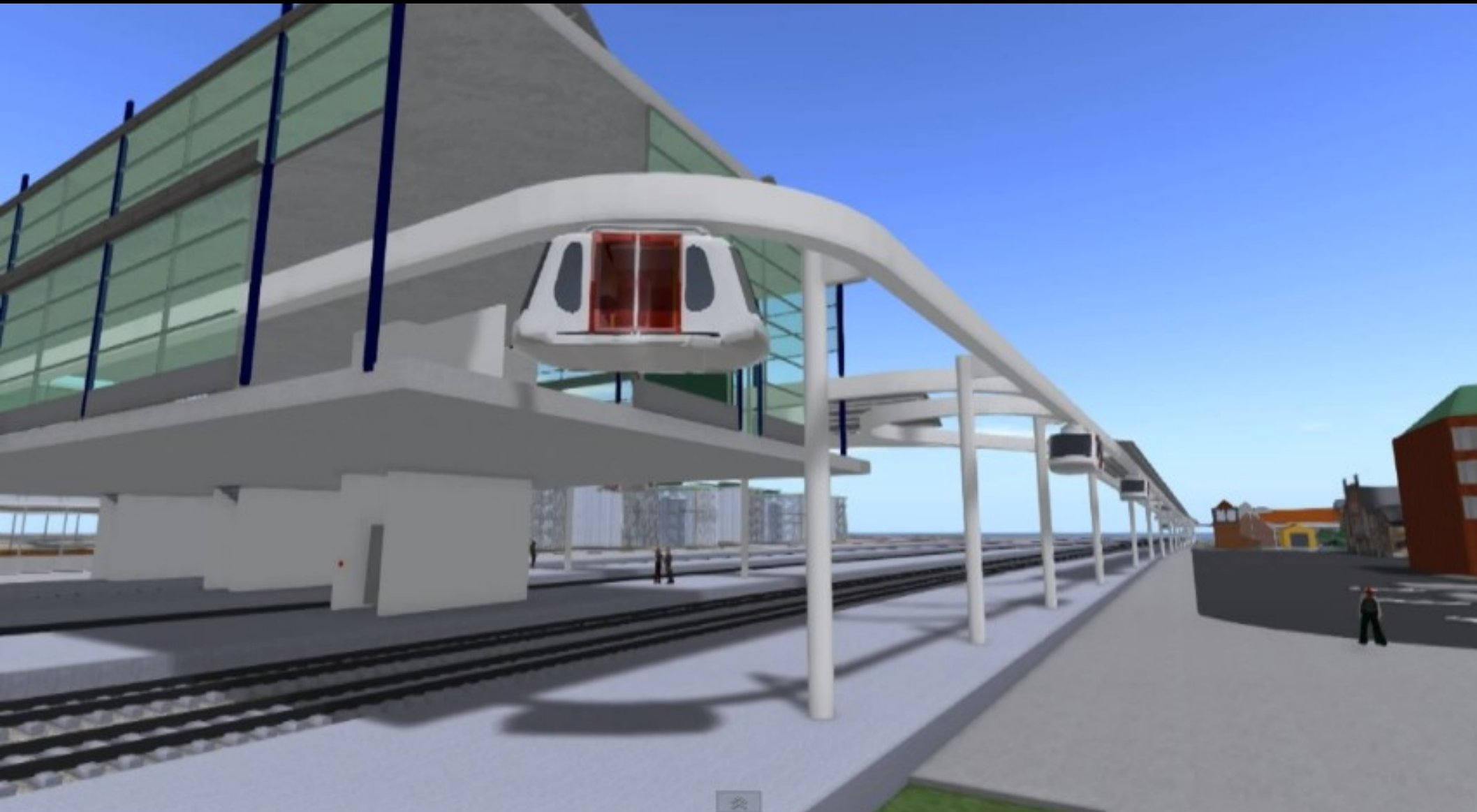


Supporting virtual planetary exploration and near-earth objects (space debris, small satellites, near-earth asteroids)

VW for experimental studies in decentralized command and control centers



Modeling and Simulating the design of a Personal Rapid Transit system for Uppsala, Sweden



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

The image displays three screenshots from a game-based VW (Virtual World) interface, illustrating how real-world news feeds and geopolitically located Twitter feeds are integrated into the game environment.

Top Screenshot: Shows a city street scene with a large building, a car, and a stock market overlay. A speech bubble from a user named "PyameKenoshi" reads: "Doing differential diagnoses in class. I knew watching House would pay off someday. Totally diagnosed syphilis in a fake patient."

Bottom Left Screenshot: Shows a city street scene with a large building, a car, and a stock market overlay. The stock market overlay displays the following data:

Stock	Price	Change
Dow Jones Industrial	11,362.41	
S&P 500	1,221.53	
NASDAQ	2,579.35	

Bottom Right Screenshot: Shows a city street scene with a large building, a car, and a stock market overlay. The stock market overlay displays the following data:

Stock	Price	Change
MSFT	25.0	
MkCap	249B	

The interface also includes a "Hot Soup" advertisement and a "Foreign Military" notification.

Game-based VW simulator interfaces for immersive motorsports racing experiences



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

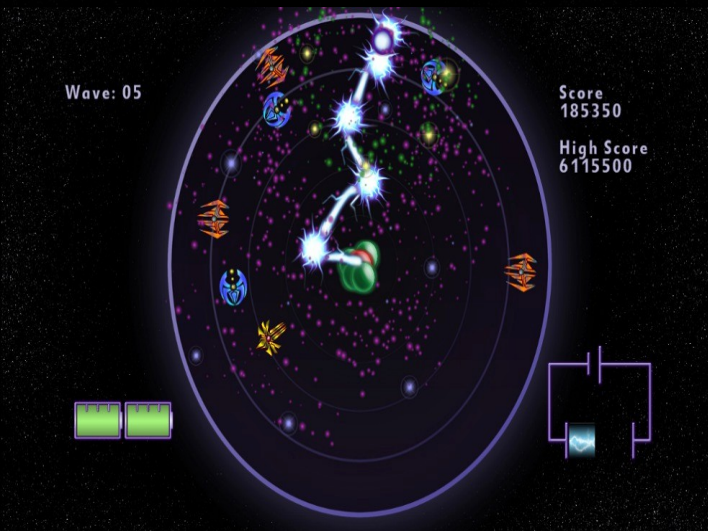


<http://www.conceptlab.com/outrun>

CGVW Laboratory and experimental game devices



Computer games developed by UCI video game developers club (undergrad students)



Developed concept for IEEE Intercollegiate Computer Game Development Showcase



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Intercollegiate
Game Showcase

2012



Programming skills on Fire

Venue: Chapman University, Folino Theater
Saturday April 28, 2012

Do You Have
What It Takes?



COMPETE in our GAME CONTEST, WIN PRIZES,
EARN ACHIEVEMENTS & FINE TUNE YOUR SKILLS





Game Event
details about game event



Contest Parameters
know more about contest



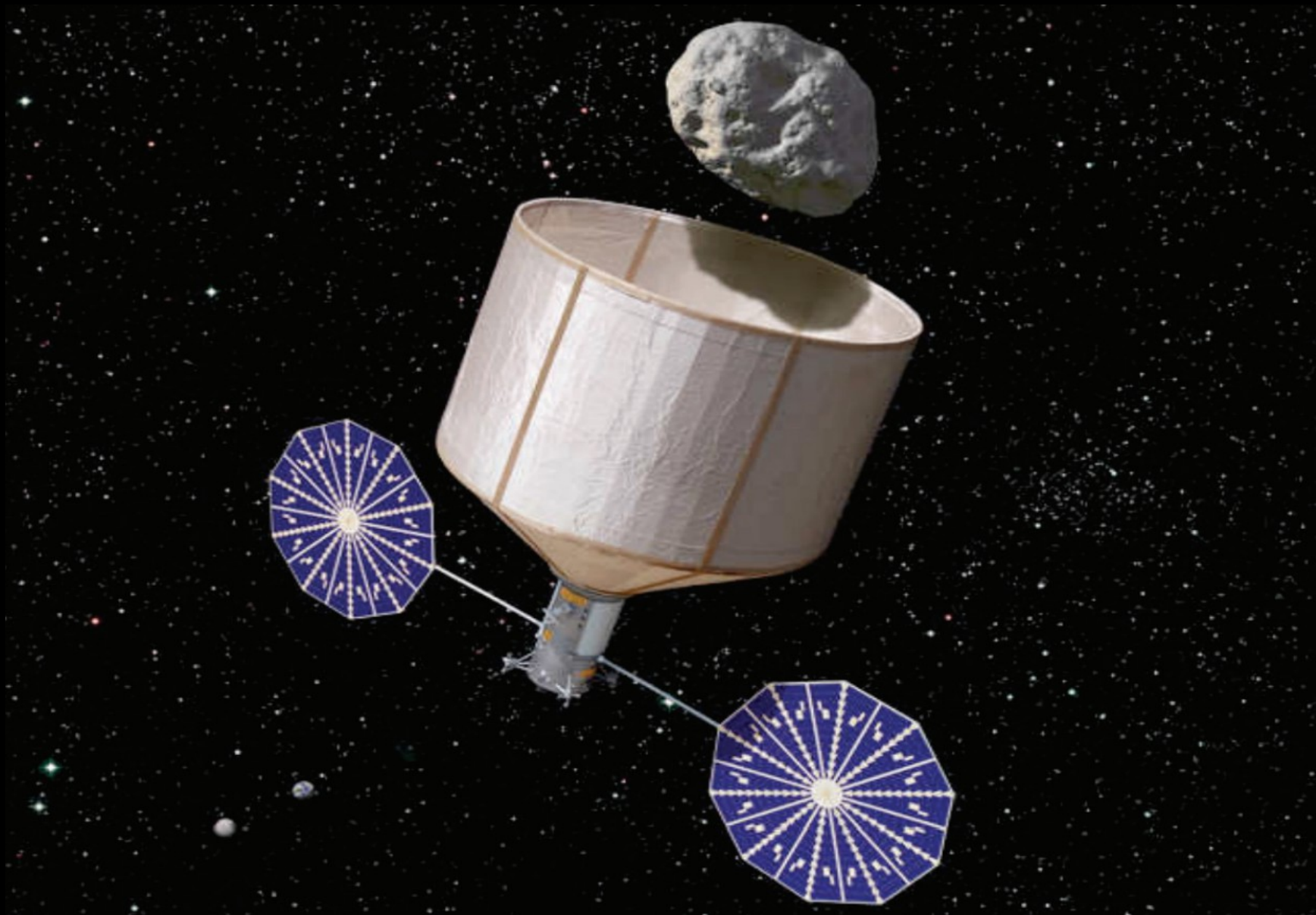
Submission Guidelines
our submission rules etc.

Venue: Chapman University, Folino Theater,
Saturday, April 28. Setup starts at 1:00. Main event
starts at 2:00 and ends at 4:00...
[READ MORE](#)

All platforms are acceptable. Submissions will be
judged based on originality, creativity and
execution – and on whether they are fun to play...
[READ MORE](#)

Finalists will be selected based on YouTube videos
3 to 5 minutes long. These should demonstrate
gameplay and key visuals and should include the
name of the game... [READ MORE](#)

New project: develop reusable framework for developing
“science mission games”



Sample project: *Capture near-earth asteroid*

Research Collaborators

Faculty

- Thomas Alspaugh, Alfred Kobsa, Crista Lopes, Gloria Mark, Bonni Nardi, Robert Nideffer, David Redmiles, Richard Taylor

Post-Doctoral Scholars

- Hazel Asuncion (UWash), Garnet Hertz (UCI), Chris Jensen (Google)

Research Staff

- Craig Brown, Yuzo Kanomata, Kari Nies, Alex Szeto

External Partners

- Aerospace Corp., Discovery Science Center, Encitra Inc., EON Reality Inc., Intel Research, Naval Postgraduate School, Northrop-Grumman, Panasonic Shikoku Electronics, San Francisco Symphony, UCI Calit2, UCI Video Game Developers Club, others.

HSSOE Faculty Interests in CGVW R&D

- EECS: *Mark Bachman* (play device/controllers)
- EECS: *Athina Markopoulou* (wireless multi-player game network engineering)
- MAE: *Marc Madou* (games for advanced nanotechnology manufacturing)
- MAE/BME: *David Reinkensmeyer* (game-centric assistive robotic therapeutic devices; iMove Center)
- CE: *Bill Cooper* (games for informal water science education; Urban Water Research Center)

Acknowledgements

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- Discovery Science Center, Naval Postgraduate School, Center for Edge Power, Intel, Northrop-Grumman, San Francisco Symphony, UCI School of Medicine (Anatomy & Neurobiology, Nursing Science)
- Digital Industry Promotion (DIP) Agency, Daegu, South Korea
- UCI Video Game Developers Club
- ◉ *No review, approval, or endorsement implied.*