

Creating Opportunities for Computer Game R&D Projects

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Center for Computer Games and Virtual Worlds

and

Institute for Software Research

University of California, Irvine

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Motivation

What are we doing?

- Empirical research and technology prototyping of CGVWs for science, health care, art, technology, or defense studies.
- Collaborate with industry partner/ sponsors to produce innovative, future-oriented results.

Why are we doing this?

- CGVWs are both *technology* and *new media*
 - Playful socio-technical systems
- Enable new kinds of immersive and transformative experiences
- Engage new students and emerging scholars

Sample of CGVW R&D projects

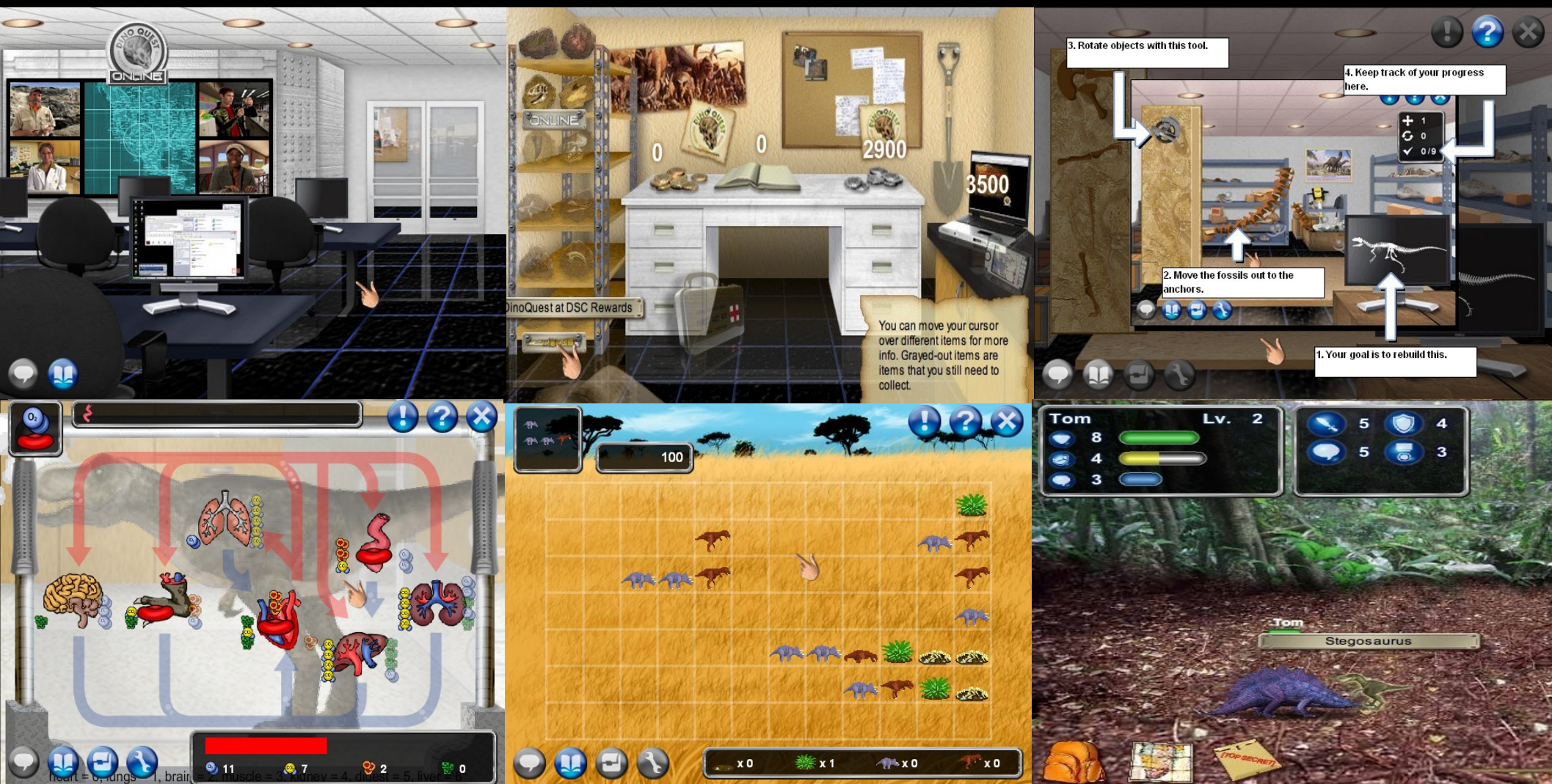
- Onsite and online science learning games for informal science education (Discovery Science Center)
- Game-based semiconductor fabrication operations training simulator (Intel)
- Onsite and online virtual world environments for space science educational experiences (DSC)
- Game-based decentralized command and control training simulator (Northrop-Grumman, Navy)
- Experimental games for business, cultural critique, art and technology (SKorean govt, NSF)
- Facilitating local game development community (UCI, IEEE)
- Active projects:
 - World of Music (San Francisco Symphony,)
 - Science Mission games (NSF, others/TBD)

Onsite science learning game play using physical control devices (IR wands and embedded sensor network) at DSC



DinoQuest at Discovery Science Center

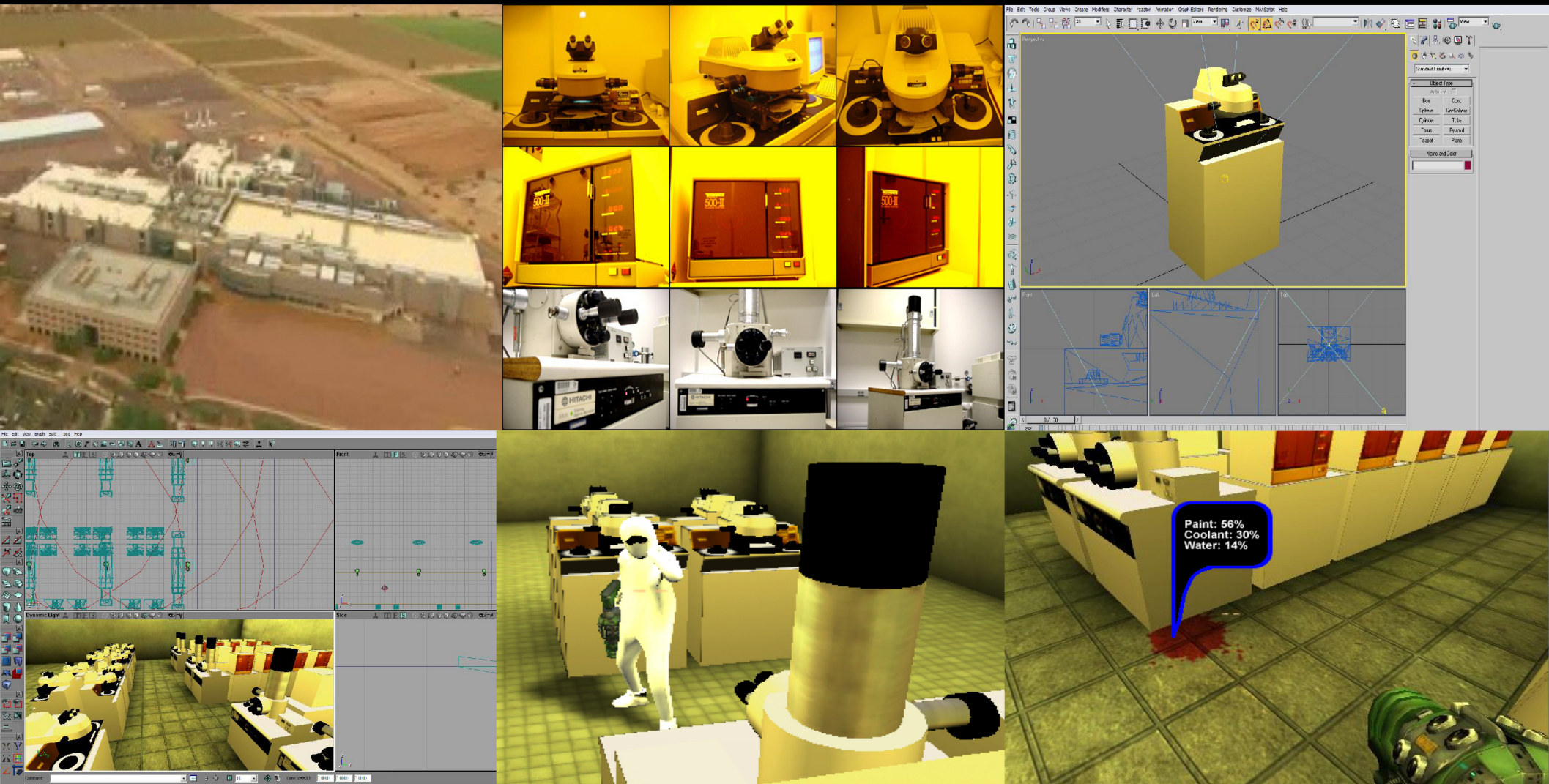
Web-based science learning games for informal science education for K-6 students and families: *DinoQuest Online*



<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.

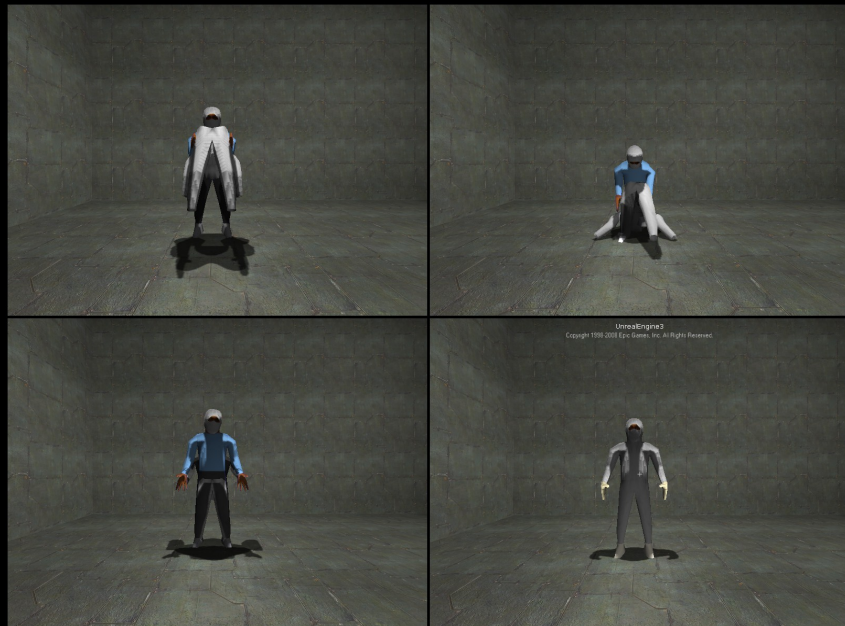
Semiconductor/nanotechnology fabrication training game



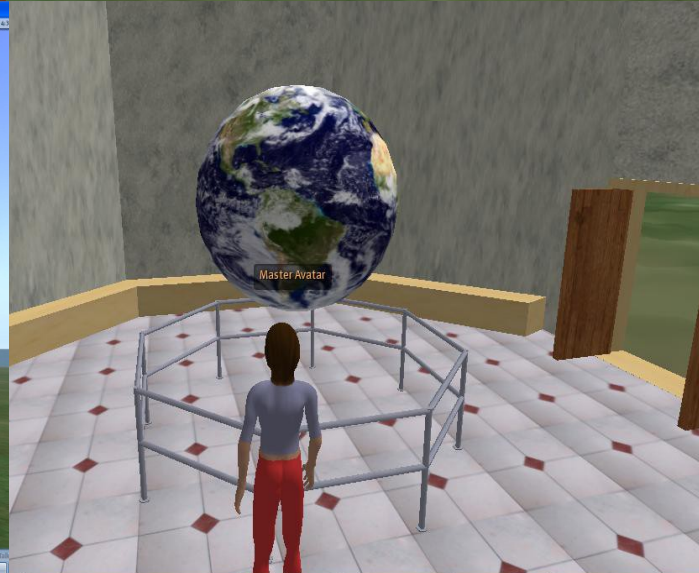
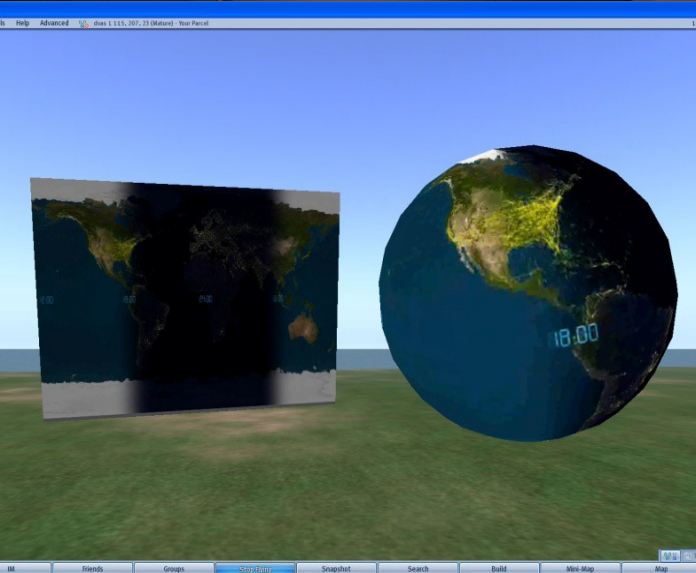
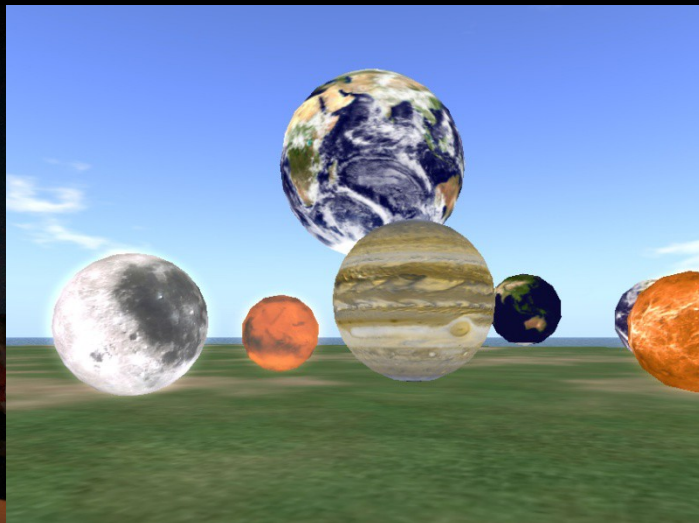
FabLab Demo Reel

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

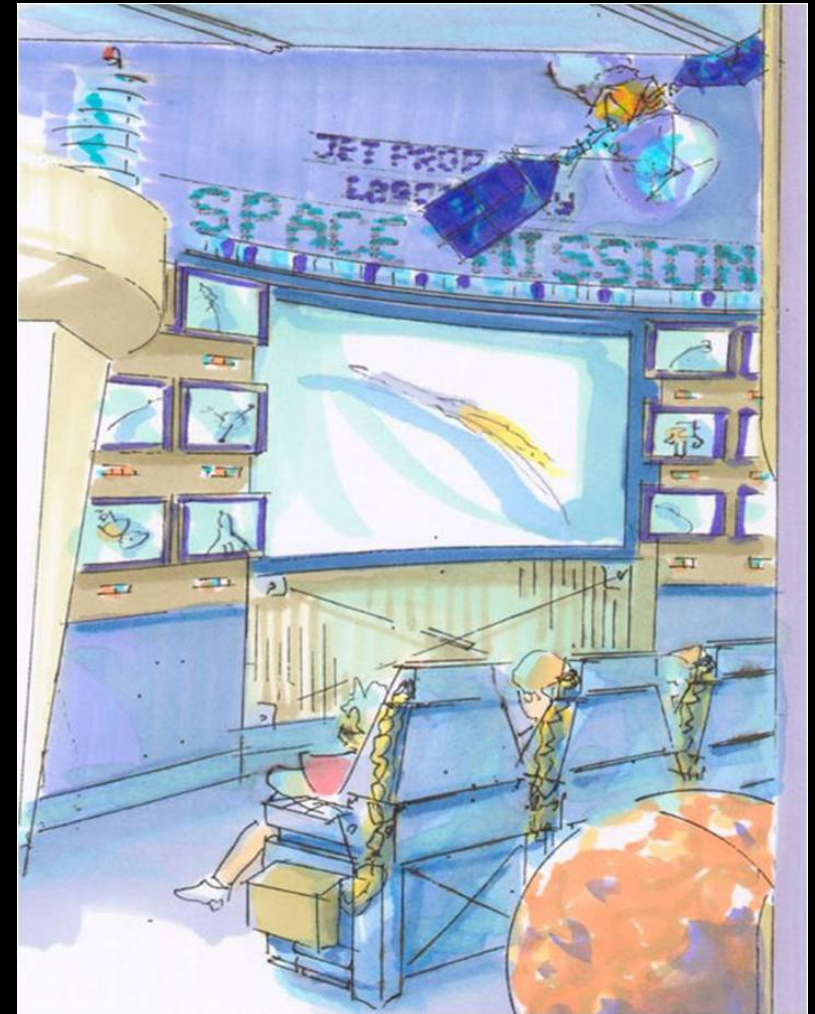


Planetary science data visualization and “spherecasting” support: *NOAA Science on a Sphere* installation in *Opensim* VW platform



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

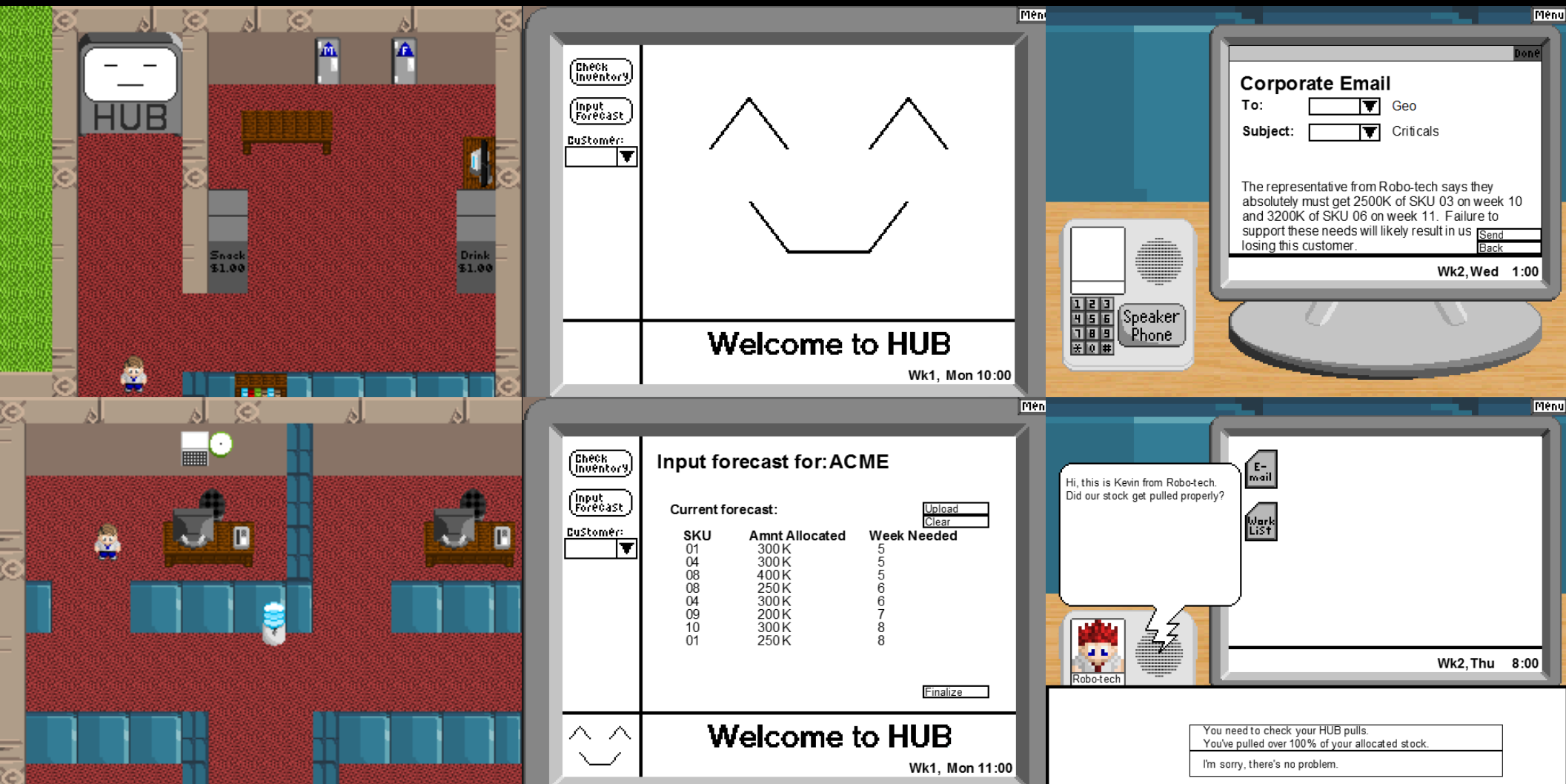
DSC Mission Control Room: *Vision (pending)*



VW for experimental studies in decentralized command and control centers



CBA: Customer relations training system implemented using low-cost, rapid micro-development cycle



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

Aoedipus.net

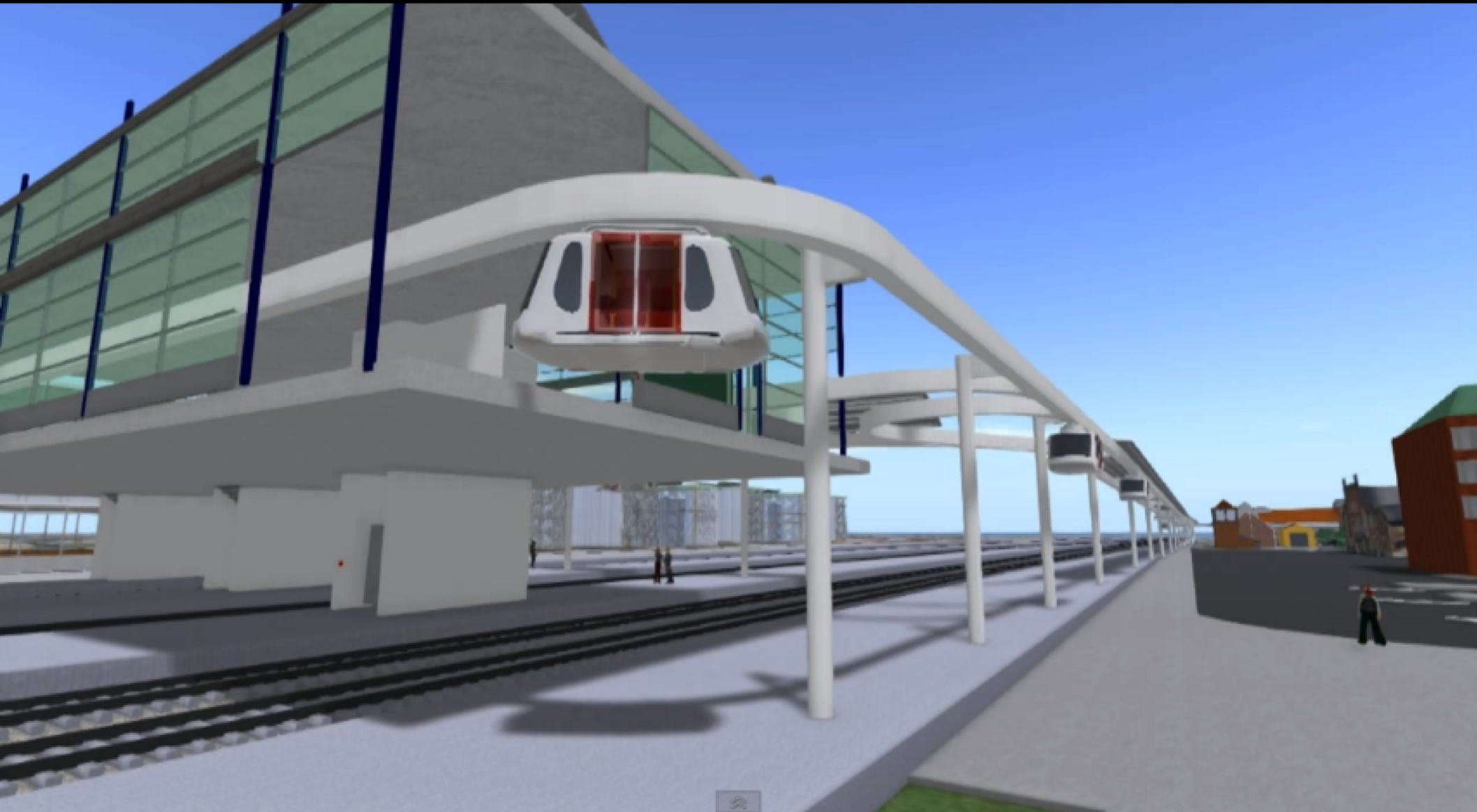


Envisioning a virtual social computing world



Virtual Life Demo Reel

Crista Lopes: 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



Game-based VW simulator interfaces for immersive motorsports racing experiences



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



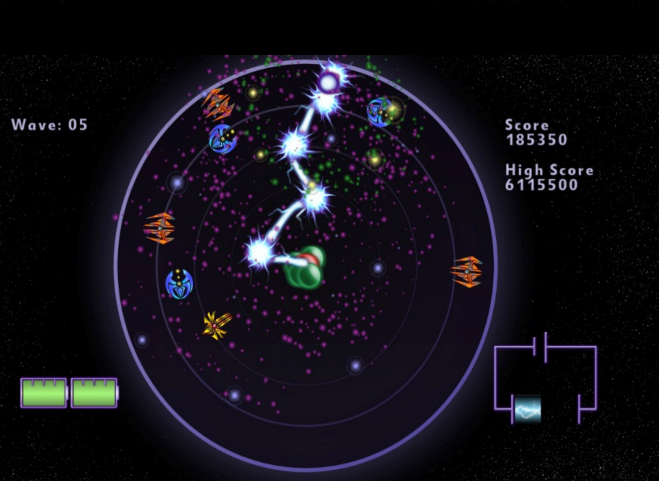
<http://www.conceptlab.com/outrun>

Circuit Bending and digital Toy Hacking for kids



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

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



Community development: Supporting UCI video game developers club via Computer Game Science Laboratory



Community development: *IEEE Intercollegiate Computer Game Development Showcase (2012-2014)*



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Intercollegiate Game Showcase 2013



Programming skills on Fire

University of California at Irvine (UCI)
Saturday April 27, 2013 at 2:00PM

COMPETE in our Game Contest, Win PRIZES,
EARN ACHIEVEMENTS & FINE TUNE YOUR SKILLS





Game Event

details about game event

Venue: University of California at Irvine in Bren Hall, Saturday, April 27. Setup starts at 11:00 AM. Main event starts at 2:00PM and ends at 4:00PM, followed by a reception with game demos from 4:00PM to 6:00PM.... [READ MORE](#)



Our Esteemed Sponsors

making this event possible

We have attracted even more sponsors this year, helping us make this event more exciting than ever. Please support these fine schools and companies... [SEE COMPLETE LIST](#)




Submission Guidelines

our submission rules etc.


Submissions begin on April 1, 2013 at 12:01AM Pacific Time (PST), and end on April 7, 2013 at 8:00AM Pacific Time (PST). Finalists will be selected based on their one page Executive Summary and 3-5 minute YouTube video submissions.... [READ MORE](#)

Informal game-based music learning environment for 8-13 year olds

 SAN FRANCISCO SYMPHONY

SFSKIDS

FUN & GAMES WITH MUSIC

Discover Listen Play Perform Conduct Compose Search 


Play with Music


Musical Skies

The music is your playground. Let's have a little fun!

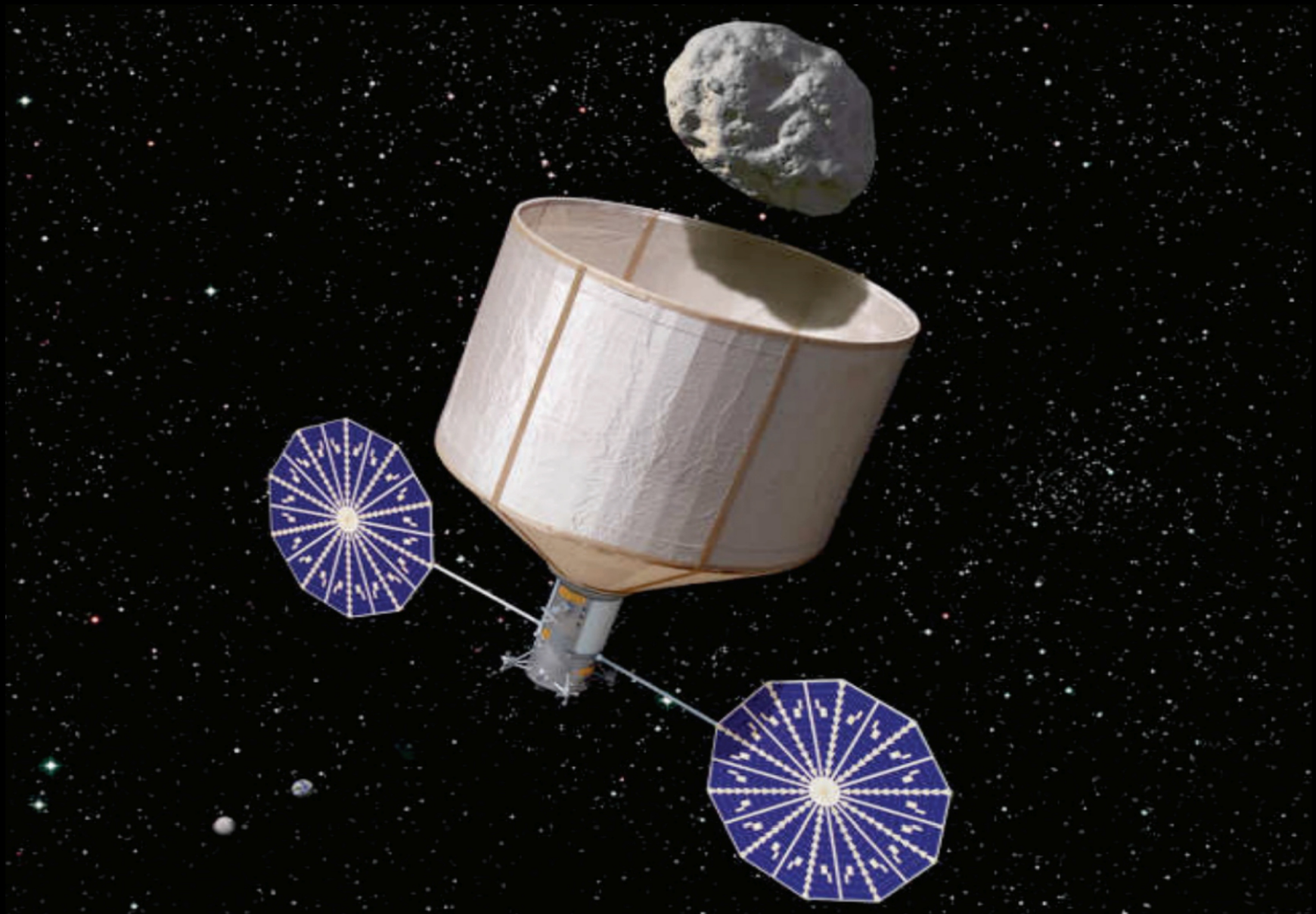
In Star Catcher, use the rhythm of the music as your guide and capture all the stars in the sky!

In Mood Journey, listen to the music and show what you feel through words and pictures, then share it with others!

 Let's Start!



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

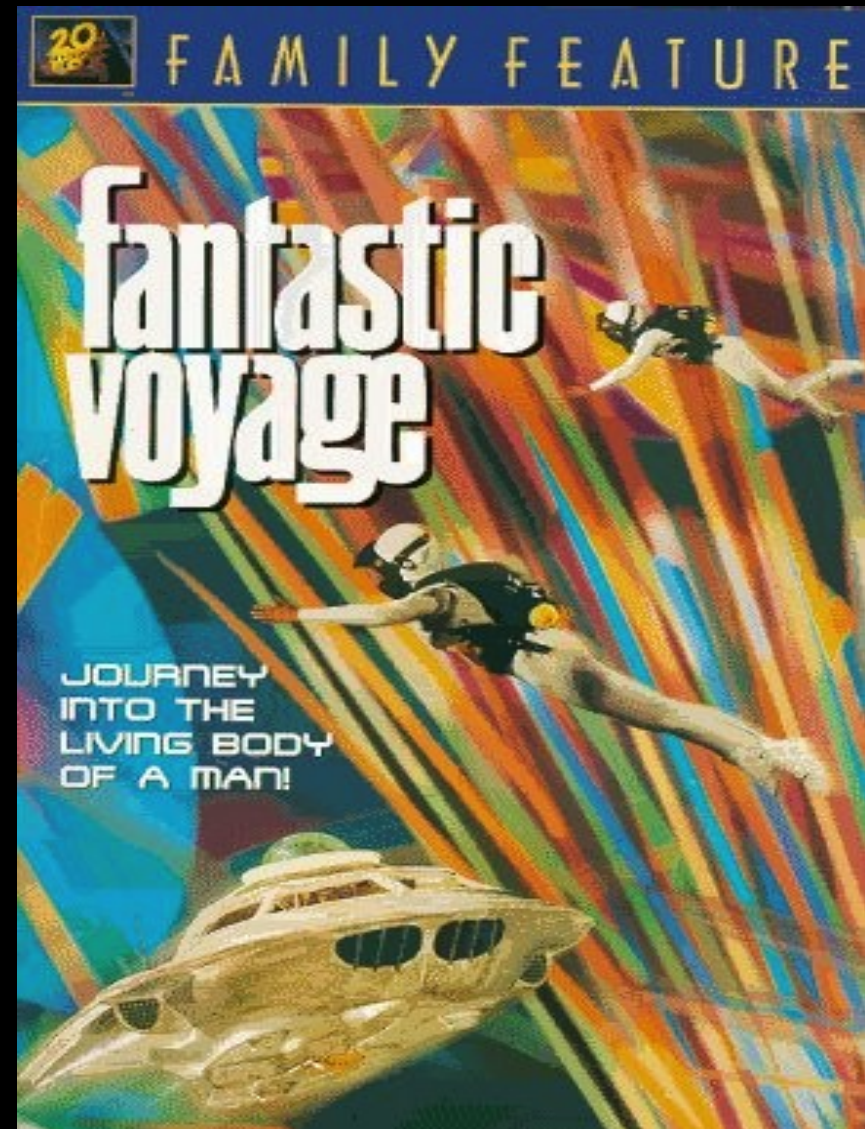


Sample project: *Capture near-earth asteroid*

Game-Based Worlds for Neuroscience

Adventure/Quest games for learning *neuroscience* via experiments in simulated brain/anatomical testbeds, to study:

- Microbiological and molecular processes
- Disease and drug pathologies
- Brain repair and rehab.



Research Collaborators

Faculty from Informatics and elsewhere

— Robert Nideffer (Studio Art, now at RPI), Thomas Alspaugh, Jill Berg (Nursing Science), Yunan Chen, Steve Cramer (Medicine), Alfred Kobsa, Crista Lopes, Gloria Mark, Bonnie Nardi, Andrea Nicholas (Neurobiology), David Redmiles, Richard Taylor, and others

Artist-in-Residence/Research Scientist/Maker

— Garnet Hertz (UCI Lab for Ubiquitous Computing and Interaction)

Research Staff

— Craig Brown (SMU), Yuzo Kanomata (IGB), Kari Nies (ISR), Alex Szeto (ISR)

UCI Video Game Developers Club

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