

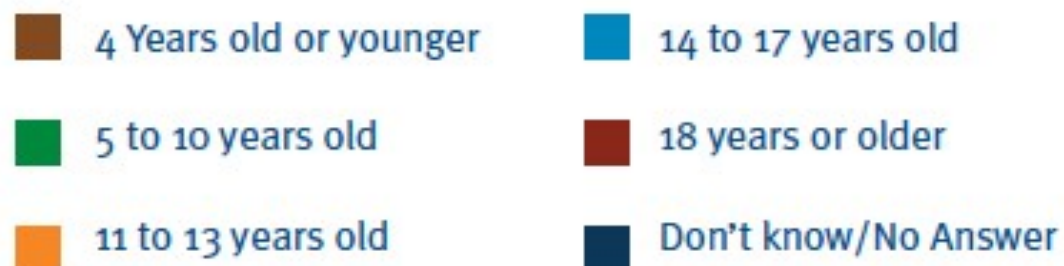
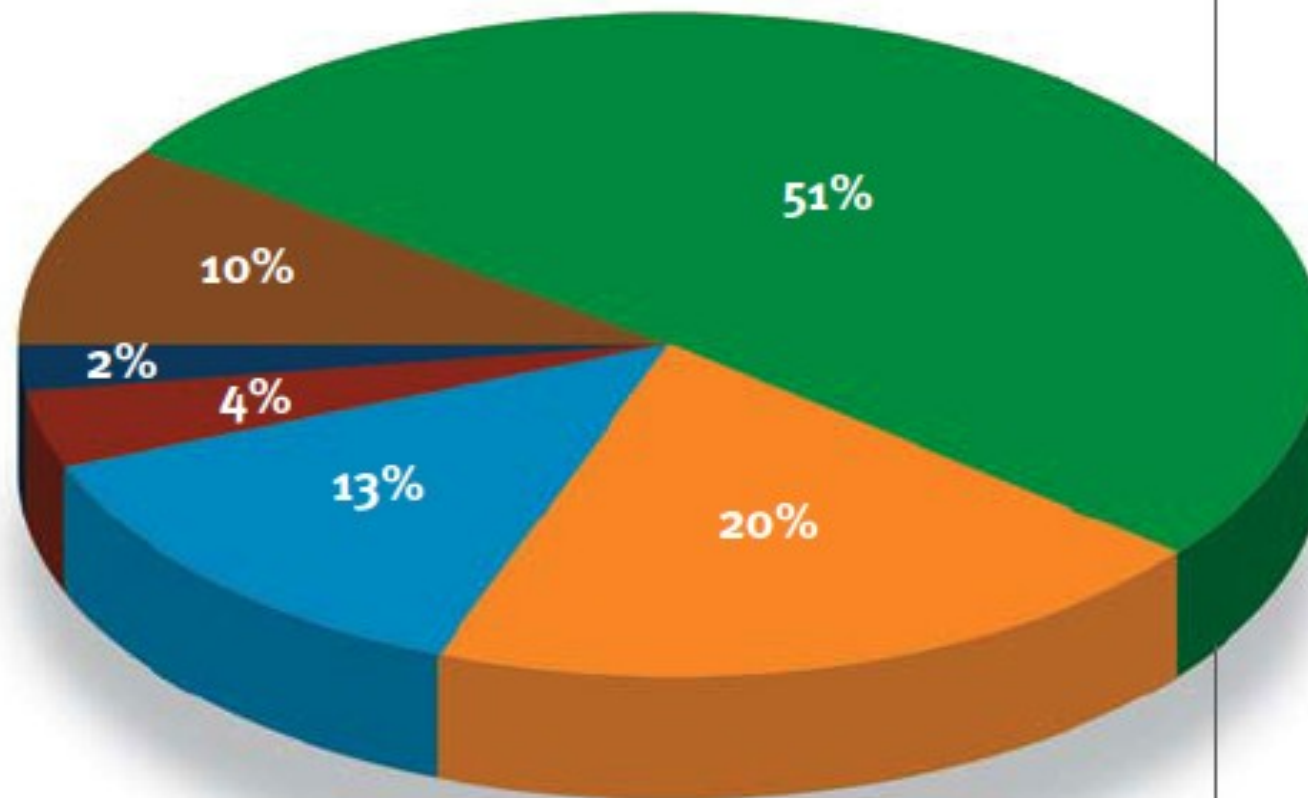
Learning Science and Technology through Online Game-Based Virtual Environments

Walt Scacchi, Robert Nideffer, Alex Szeto, Yuzo Kanamoto,
Craig Brown, YongNam Jeung, Kook Joong An,
and others

Center for Computer Games and Virtual Worlds
School of Information and Computer Sciences
University of California, Irvine

Overview

- Collaborative science learning game (SLG) environment at Discovery Science Center
 - *DinoQuest and DinoQuest Online (DQO)*
- Collaborative game environment for learning about watershed science
 - *Regional water quality sensing and environment improvement game*
- Collaborative game world for semiconductor or nanotechnology fabrication
 - *FabLab training simulator for Intel*
 - *Nanotech design environment for K-12 (pending)*
- Collaborative virtual world for envisioning possible cultural and technological opportunities
 - *Intel Research (w/ Linden Labs)*
- Next-generation, client-side game engine (Rich Internet Application)
 - *2D, Side-scrolling, role-playing game engine and SDK (“DQO 2.0”)*
 - *MMOG back-end (in development)*
- Pathway to MMOSLG that span network of science learning centers



Source: *Bayer Facts of Science Education IV: Scientists on Science for the 21st Century*, 1998, Bayer Corporation/Roper Starch Worldwide

Mixed reality games for informal science education for K-6 students and families

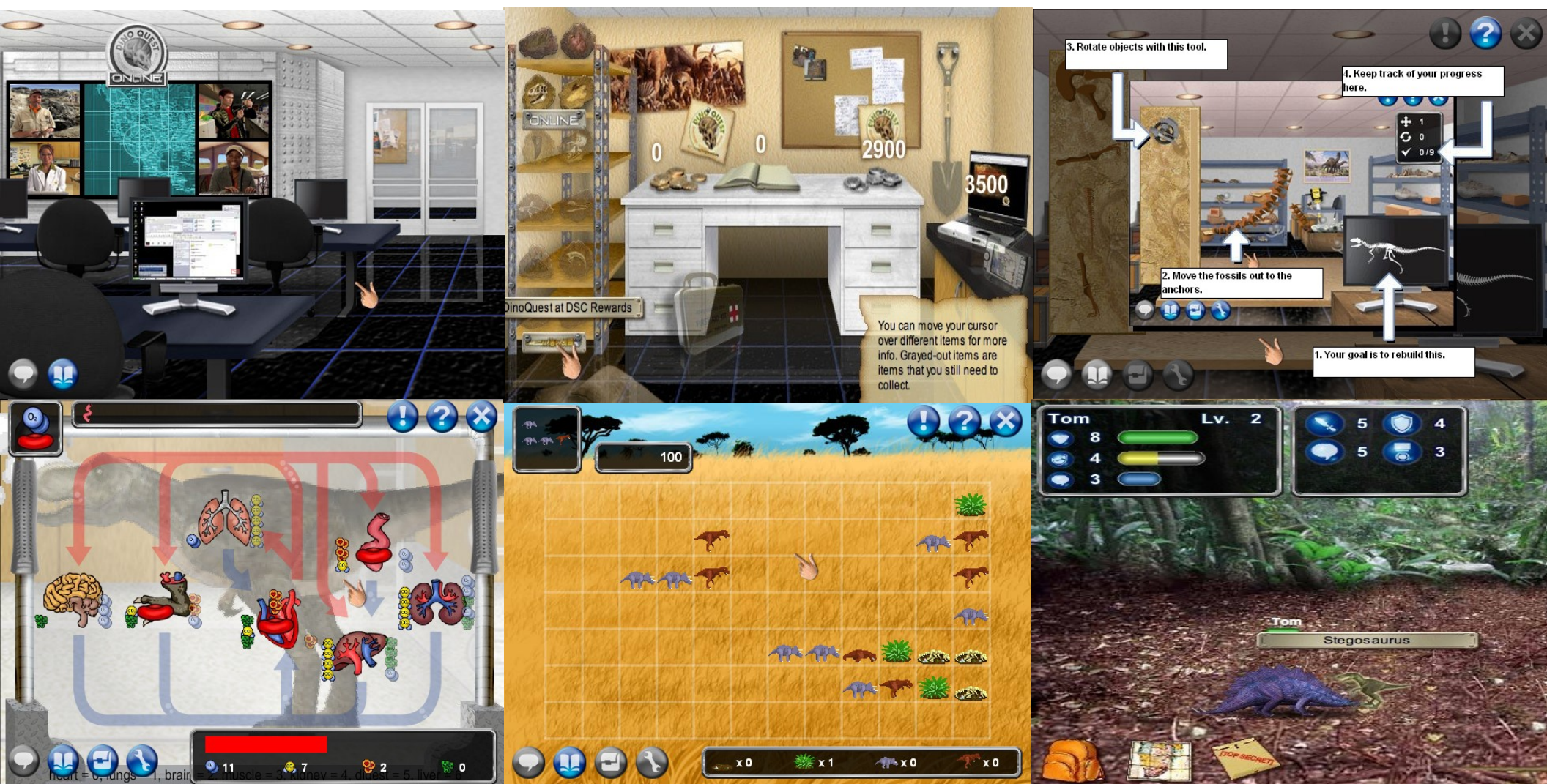


DinoQuest Research Team and Collaboratories:
Diverse Science Role Models (ethnicity, age, gender)



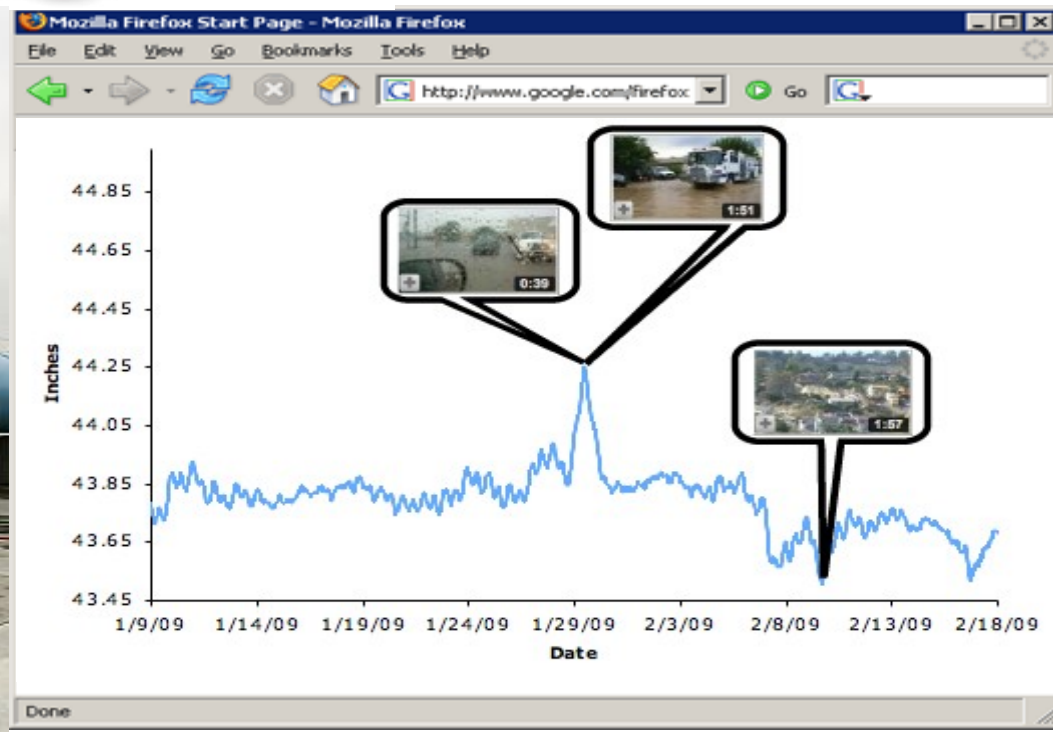
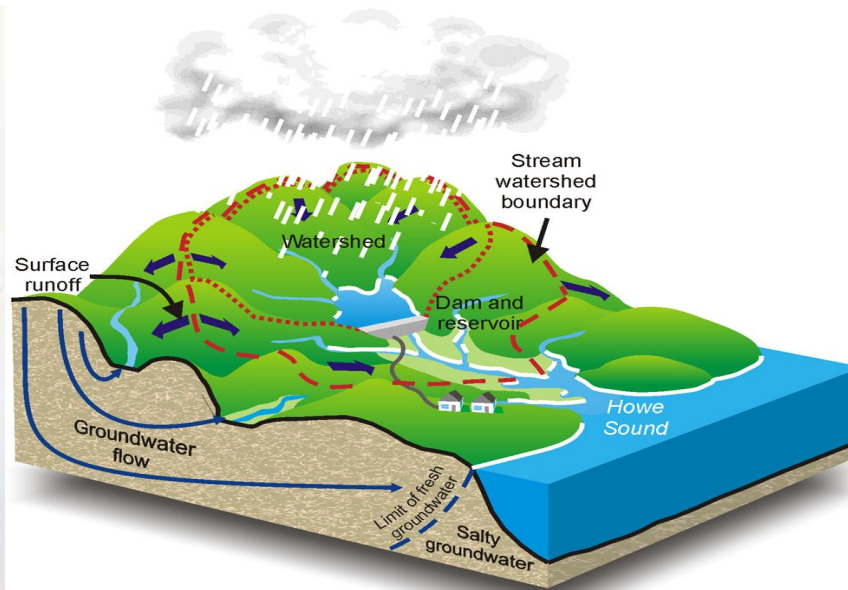
<http://www.DiscoveryCube.org/>

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



<http://www.DQOnline.org/>

OC Water Quality Game Environment (Pending): NSF, UCI, DSC, OCWD, IRWD, USGS, and others



FabLab Demo Reel

Envisioning collaborative virtual worlds 2010-2012



Virtual Life Demo Reel

2D, side-scrolling, WoW-inspired, role-playing game and open source game engine

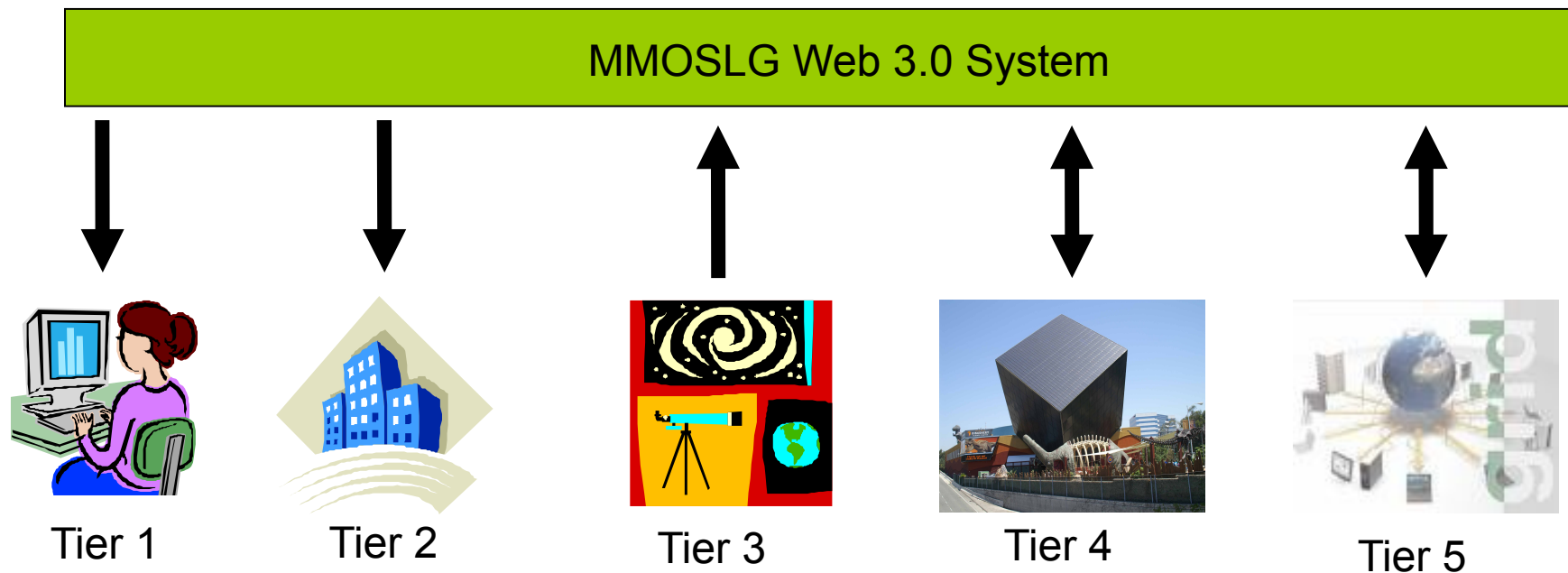
Aoedipus.net



2D, side-scrolling, extensible role-playing game (engine)

- **WTF?! released May 2008**
 - 1000+ linked postings already indexed by Google within four weeks (viral marketing)
 - Global players
 - US, UK, Netherlands, Austria, Turkey, Finland, Australia, Germany, Hungary, Greece, Latvia, etc.
 - Recommendation/review sites
 - Digg, WoW Forums, Cnet News, Reddit, BoingBoing, PlayThisThing, MSN India, WIRED Blog Network, ForTheHorde (WoW Social Networking), NewGrounds, etc.
 - ISP (DreamHost) has already throttled back access to the site
 - Overview and Tutorials still online; Play now requires game download (slowly) as .zip archive

Goal: Develop cyberinfrastructure for networked Science learning game environments



Tier 1: Individual player connection: your Internet connection at home.

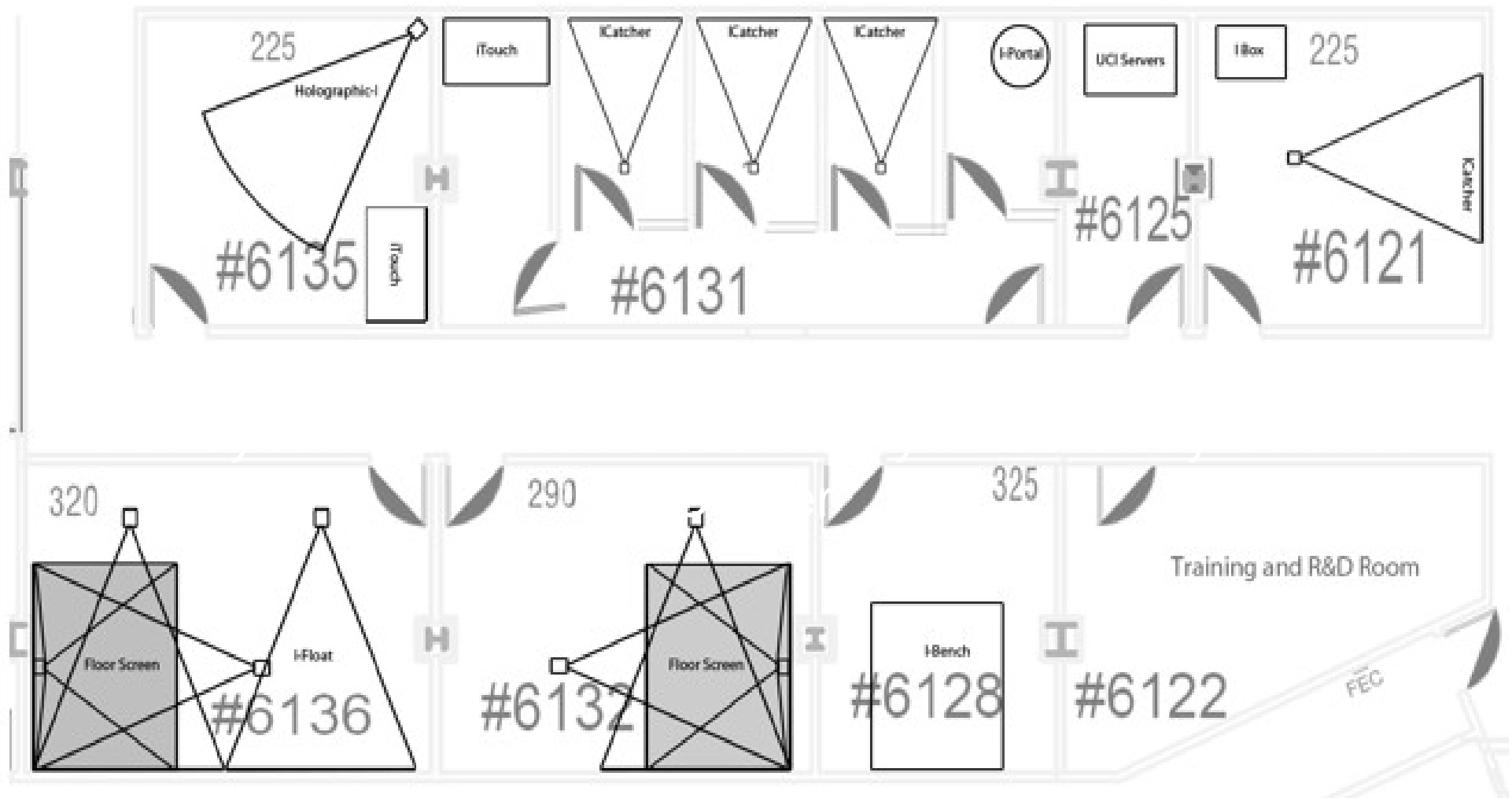
Tier 2: Local institutional connection: library, science center, school.

Tier 3: Regional science center provides local exhibit content connected online.

Tier 4: "Gateway" science centers provide open interfaces and extensible content.

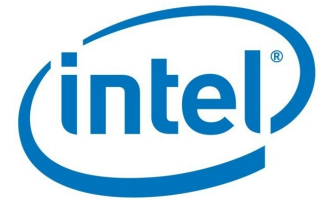
Tier 5: Science Games Grid: **Massive Multiplayer Online Science Learning Games** and **collaboration infrastructure** for informal K-12 science education

UCI Cyber-Interaction Observatory: A Gateway Science Center



Partnership between UCI, EON Reality, and IDCs

UCI GameLab Research Partners and Sponsors



Research Symposium Sponsors

