eTech Classroom Technology Refresh Project

Overview
- UCI has 133 GACs, of which 131 are SmartClassrooms (108 "regular" rooms, 13 trailers, 10 lecture halls)
- Initial SmartClassroom renovations started in 2003, the bulk of which were completed before 2008
- A subset of equipment had been replaced as needed out of an operating budget, strategic purchase of spares as part of initial renovations, or special one-time funding for larger items
- Some equipment had been in service for 9+ years, and OIT CTS needed to replace that equipment before it failed and caused classroom disruptions
- Ongoing refresh funding allows OIT CTS to replace old equipment with new, replenish supplies of backup equipment, stay current with newer technology standards (digital signals, higher resolution images, widescreen aspect ratios, etc.), and make specific enhancements to meet departmental needs
- OIT CTS has planned a 5 year cycle for refreshing all 131 rooms, starting with the oldest rooms first
- Feedback on scope was gathered from student and faculty surveys, as well as one-on-one discussions with faculty and technical support staff
- OIT CTS will continue to adjust scope yearly as technology advances and the needs of room users change

Classroom Technology Enhancements
- New computers with digital outputs and widescreen monitors (computers are now on a 4-year refresh cycle)
- Software installation - AnyDVD to play multi-region DVDs on the computer; Doceri Desktop allowing wireless control of the PC and annotation from mobile devices
- 16:9 or 16:10 format screens and widescreen data projectors
- Full HD 1080p projection in Art History and Film Studies priority classrooms
- Blu-ray players and auxiliary A/V inputs installed, VHS decks removed
- Document cameras in most rooms >50 seats
- Lecture halls receive HD document cameras and widescreen digitizing tablets
- Addition of digital laptop cables (HDMI) to existing analog laptop cables (VGA)
- Re-wire all appropriate rooms for stereo audio, change out all cables and connectors
- Wireless mics in rooms >119 seats, gooseneck mics in rooms >49 seats, mic inputs in all rooms
- Extron touchpanels and controllers in place of AMX devices
- Video switchers and distribution amplifiers changed out
- Side shelves installed on 111 classroom lecterns, adding space for laptops, notes, or document cameras
- Lectern adjustments to reduce monitor glare & customize monitor angle
- Additional mobile or fixed whiteboards installed where appropriate
- Cameras installed above lecterns to assist in troubleshooting help desk calls
- LED rack lights installed to illuminate computer and blu-ray deck
- Addition of networked power controllers for lectern equipment and projectors

2012 Refresh Scope Completed (27 rooms touched)
- 20 (of 21) Humanities Hall classrooms
- HIB 110, IAB 130 (included in 2012 refresh to try and maintain the same new image standards in all Film & Media Studies and Art History priority rooms)
- SSLH 100, SSPA 1100 - Full refresh & audio system replacement
- ELH 100, HSLH 100A, PSLH 100 - Partial refresh (digital video infrastructure, control equipment) & audio system replacement
- Reduction of SmartClassroom equipment fees for student groups from $30/hr to $5/day

2013 Refresh Scope Completed (39 rooms touched)
- All 18 Social Science Lab classrooms

- SE2 1304, SH 128, SH 134, SH 174
- HICF, ICF, SSTR - Upgrade 13 trailer classrooms to full "regular" SmartClassrooms, including new instructor workstations
- HIB 100 - Full refresh (except the projector, which was already up to current standards)
- ELH 100, HSLH 100A, PSLH 100 - Complete a full refresh of halls that were partially refreshed last summer (includes upgrading projectors in ELH and HSLH, and adding several components in all 3 rooms to make them widescreen native)
- Change ICF 103 to a 2-projector room to accommodate existing furniture and the new instructor station
- Re-orient SSTR 103 and change to a 2-projector room to allow for better viewing of projected images
- Change blackboards to whiteboards in HICF classrooms and ICF 102
- Add several new whiteboards to other rooms
- Re-locate classroom phones in several rooms to be closer to instructor workstations
- Replace old, failing network cables to the HSLH 100A lectern
- Reduction of SmartClassroom equipment fees for student groups from $5/day to $0

2014 Refresh Scope Completed (24 rooms)
- All 10 Information & Computer Science classrooms
- All 6 Physical Science Classroom Building classrooms
- ELH 110, ET 201, ET 202, ET 204, RH 101, RH 104
- DBH 1100, PCB 1100 - full refresh (except for center projectors, which were already up to standards)
- Digital laptop cables changed from DVI to HDMI in all refreshed rooms
- LED rack lights installed to illuminate computer and blu-ray deck
- Addition of networked power controllers for lectern equipment and projectors
- Side shelves installed on 111 classroom lecterns, adding space for laptops, notes, or document cameras
- Document cameras added as part of standard equipment in 16 medium sized rooms
- Wireless microphones installed as part of available equipment in ICS 174, RH 101, and RH 104
- Addition of Doceri Desktop software to all classroom computers allowing wireless control of the PC and annotation from mobile devices
- Touchpanel GUI enhancements
- Additional mobile or fixed whiteboards installed where appropriate
- Cameras installed above lecterns to assist in troubleshooting help desk calls

2015 Refresh Scope Completed (24 rooms)
- BS3 1200, EH 1200 - full refresh (except for center projectors, which were already up to standards)
- 12 DBH classrooms & 2 PCB classrooms, including new electric screens in most
- HH 178 & SSH 100, where stages were extended & lecterns moved to counteract classroom design flaws. SSH 100 also received a new 80" display for better visibility from some audience seats
- IAB 128, IAB 129, IAB 131, SST 120, SST 122, SST 238
- Continuation of scope enhancements from 2014 refresh project
- The computer refresh cycle was accelerated to 4 years due to aging machines in many rooms - new computers were installed in all 44 remaining refresh rooms (yrs. 4 and 5)
- Document cameras added as part of standard equipment in 7 medium sized rooms
- Wireless microphones installed as part of available equipment in DBH 1600 and HH 178, and a second wireless mic receiver added to SSH 100
- Chalkboards were removed and whiteboards were installed in HH 178 and SSH 100, including a new vertical sliding whiteboard in SSH 100

2016 Refresh Scope Completed (20 GACs and 7 computer classrooms)
- HG 1800, 2310, 2320
- MM 116, including coordination with Music to install upgraded speakers and audio equipment

- MPAA 320 & 330, including re-orientation of the classrooms and re-configuring equipment and controls to work with Education's small capital improvement project for a combinable/divisible room. Pen displays added in place of Eno interactive whiteboards.
- MSTB 114, 118, 120, 122, 124
- RH 108, 114, 184, 188, 190, 192
- SE2 1306; SSPA 1165, 1170
- Computer classrooms & training rooms included: AIRB 1020, MSTB 210 & 226, SBSG G240 & G241, SST 104 & 107
- Additional audio output cables added to improve quality and simplify external recordings
- Cardkey systems added to several classroom/lab doors
- Upgrades of Extron components to Pro line for additional support/control options

Plan, Reasoning, & Additional Information

OIT CTS is roughly following the original renovation/construction schedule, refreshing the oldest rooms first over a 5-year cycle. In 2012 we replaced equipment in the Humanities Hall classrooms and SSPA 1100, which were originally renovated in 2003. In 2013 we refreshed equipment in the Social Science Lab classrooms that were originally renovated in 2004.

Because the original renovation spanned more than 5 years (and had significant fluctuation year to year in the number of rooms touched), we cannot follow the original schedule exactly. As we refresh rooms, we are grouping rooms that make the most sense based on:
1) equipment age
2) rooms in need of immediate help (see 2012 "hot spot" issues, or 2013 "trailer" classrooms)
3) location
4) room type
5) workload that we can physically manage over the Summer months

**In 2013, we particularly wanted to address long-standing concerns with the 13 trailer classrooms. These rooms were moved up in our refresh rotation and the technology was upgraded to match the other SmartClassrooms, including a new instructor station complete with computer, laptop cables, blu-ray player, touchpanel controller, etc. ICF 103 and SSTR 103 were partially renovated to add multiple projectors and screens, chalkboards were replaced with whiteboards in several trailers, and more writing boards were added where appropriate.

OIT CTS performs the majority of this work over the summer months, with assistance from outside vendors, Facilities trades, and OIT network & telecom services where necessary. Classroom support staff has taken special training classes, researched and developed new system models, and re-designed and re-engineered the equipment installation and all signal pathways. We provide the labor and materials in-house for removing old equipment, installing and wiring new equipment, programming the new control panels, testing all aspects of the new components, and training faculty and staff on the use of the new systems.