Learning Objectives

- Understand the challenges affecting teaching laboratories at community colleges.
- Learn design strategies that address these challenges.
Community Colleges

- 11.5 Million Students
- 1200 Community Colleges Nationwide
- 45% of All First Time Freshmen
- Enrollment is Increasing
- Re-educating Adults Changing Careers
- Tuition costs

Number of Associate Degrees
Conferred, Actual and Projected
1982-83 to 2007-08

Source | National Center for Education Statistics 1999b
The Labs of Yesterday

- Labs of the roaring 20’s
- Poor ventilation and lighting
- Safety concerns
- Bad layout for lectures

Do you recognize this lab?
The Labs of Today?

- Labs of the 80's
- Poor ventilation and lighting?
- Safety concerns?
- Bad layout for lectures?

Do you recognize this lab?
Teaching Labs of Tomorrow

Collaboration

- Group Activity
- Sight Lines
- Collaborative Arrangements
- Team Environment

Glen Oaks Community College
Teaching Labs of Tomorrow

Flexible

- Dance Floor
- Mobile Tables
- Fixed Perimeter Utilities
- Adjustable Overhead Utilities
Teaching Labs of Tomorrow

Technology

- Changing Technology
- Adaptable Rooms
- Stable Furniture
- Display and use new technology
Teaching Labs of Tomorrow

Integration

- Moveable furniture
- Great sight lines
- Team projects
- ADA and safety
- Lecture/lab integration
- Mechanical and electrical systems
Collaborative Learning

Collaborative Space

- Centrally Located
- Interdisciplinary Study
- Commuter Students

Schoolcraft College
Tweener Rooms

- Located between Labs
- 24 hour access
- Dry Lab
- Small Group meetings
- Seminar Courses
Science on Display

Kettering University
Science on Display

Demonstrations

- New Technology
- “Kick the tires…”
Science on Display

Outdoor Laboratories

- Rain Gardens
- Enhances Programs
- Sustainability

Schoolcraft College
Teaching Strategies

- Simulation Labs
- Plasticized vs. Preserved Cadavers
- Use of Technology to Reduce the use of Chemicals, Energy, Water and Waste
- Simulation Software
Sustainable Design

Teaching Strategies

- Using the building as a teaching tool
- Information kiosks
- Recycle and reuse of materials
- Solar shades
- Exposing mechanical systems
- Water conservation
Sustainable Design

Engineering Strategies

- Displacement Ventilation
- Day lighting
- Low flow plumbing fixtures
- Energy Recovery
- Commissioning building systems
Sustainable Design

Engineering Strategies

- Cow Power
- Convert methane to electricity
- Excess energy sold back to power grid
- Solar and wind power
- Reaching out for creative ideas for sustainable design
QUESTIONS?