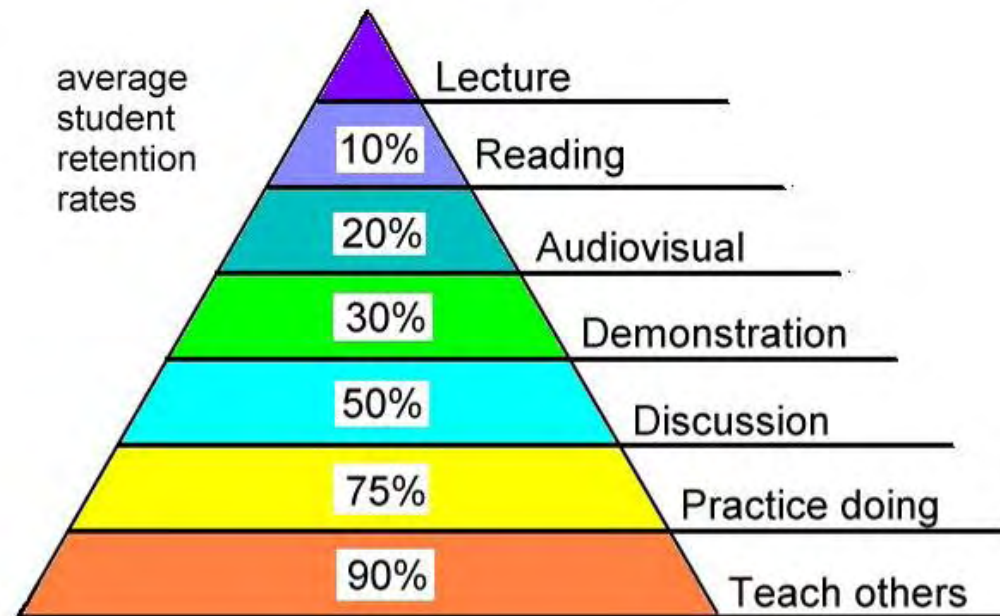


# Reinventing Teaching Laboratories at Community Colleges

DSA



## Learning Pyramid



Source | National Training Laboratories | Bethel, Maine

# Learning Objectives

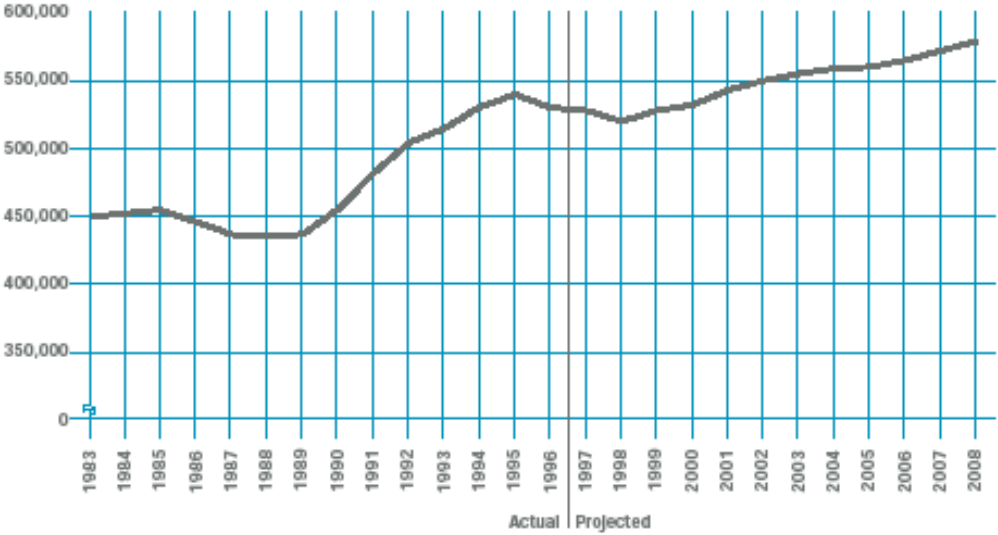
DSA



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

# Community Colleges

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

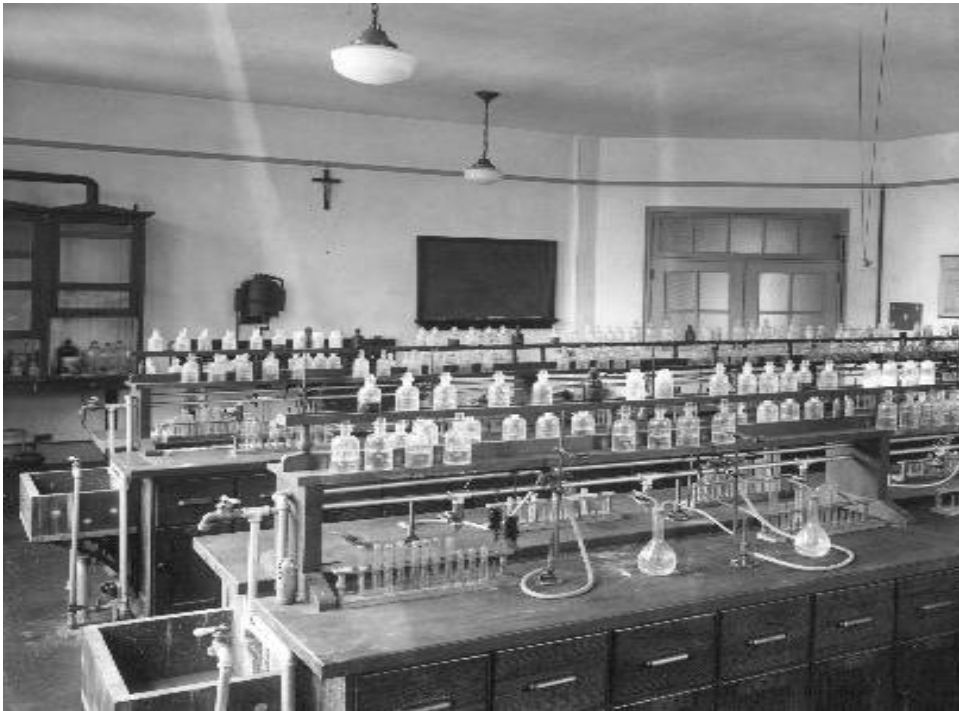


- 11.5 Million Students
- 1200 Community Colleges Nationwide
- 45% of **All** First Time Freshmen
- Enrollment is Increasing
- Re-educating Adults Changing Careers
- Tuition costs

Source | National Center for Education Statistics 1999b

# The Labs of Yesterday

DSA



- 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?

DSA



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

Do you recognize this lab?



Glen Oaks Community College

## Collaboration

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



Wayne County Community College

## Flexible

- Dance Floor
- Mobile Tables
- Fixed Perimeter Utilities
- Adjustable Overhead Utilities



Oakland Community College

## Technology

- Changing Technology
- Adaptable Rooms
- Stable Furniture
- Display and use new technology



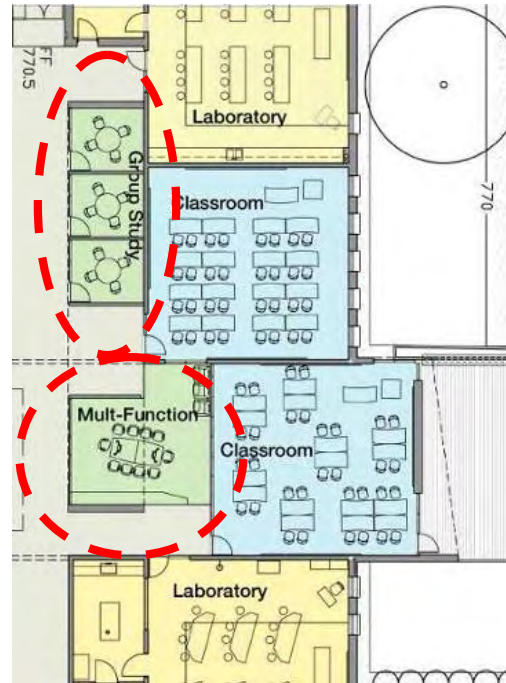
Monroe County Community College

## Integration

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



Schoolcraft College

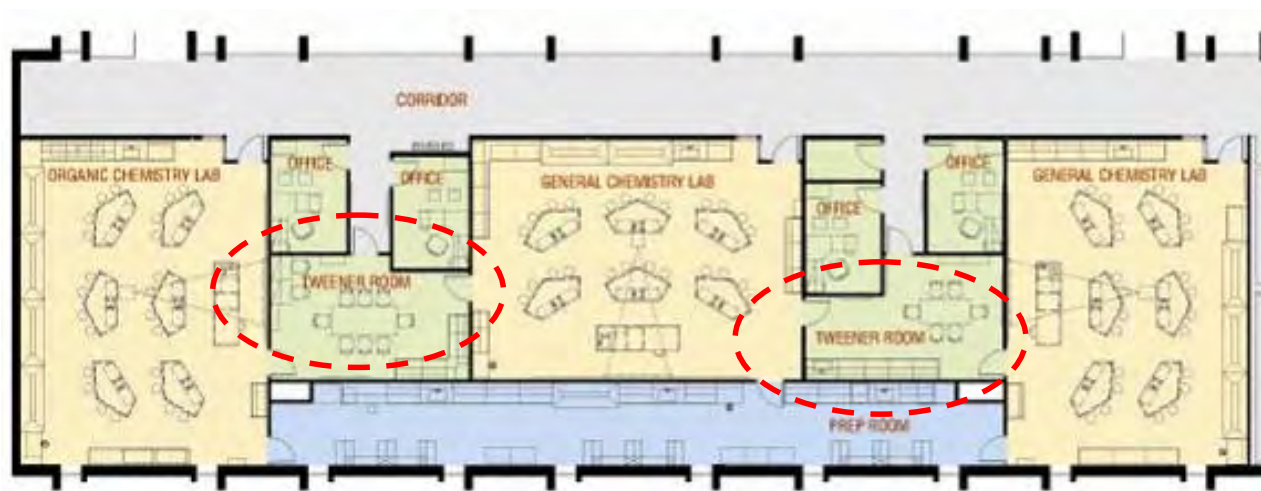


## Collaborative Space

- Centrally Located
- Interdisciplinary Study
- Commuter Students

# Tweener Rooms

DSA

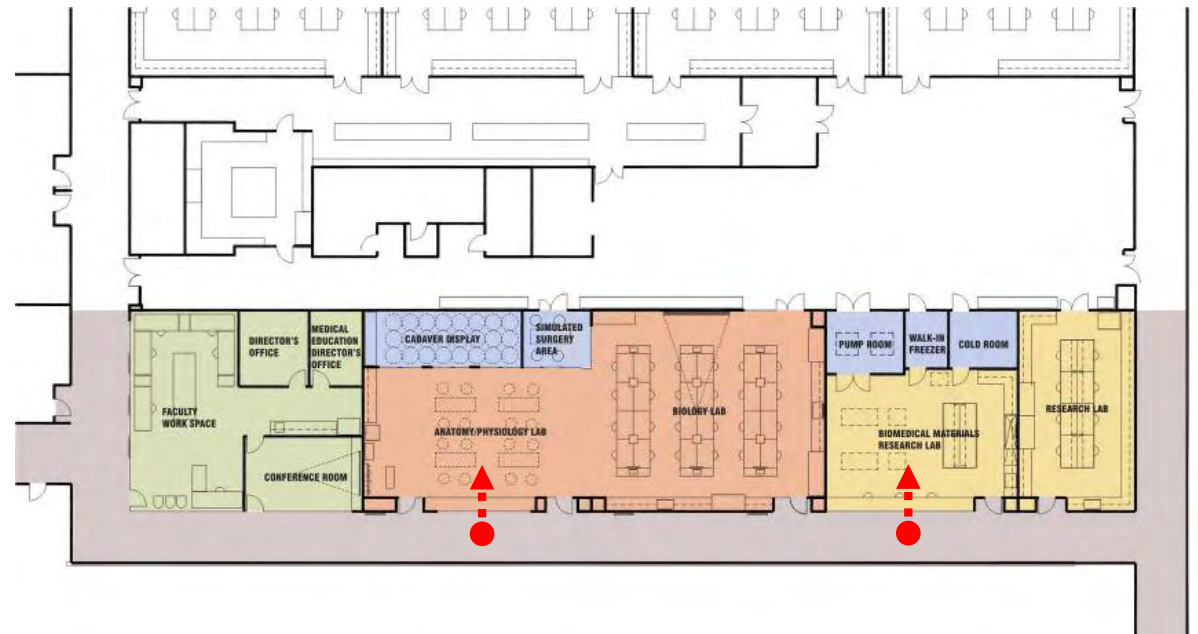


Jackson Community College

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



Kettering University



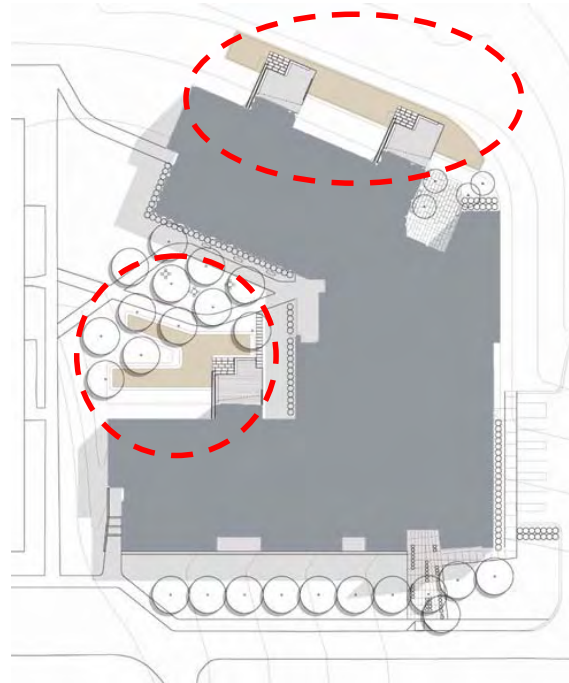


Schoolcraft College



## Demonstrations

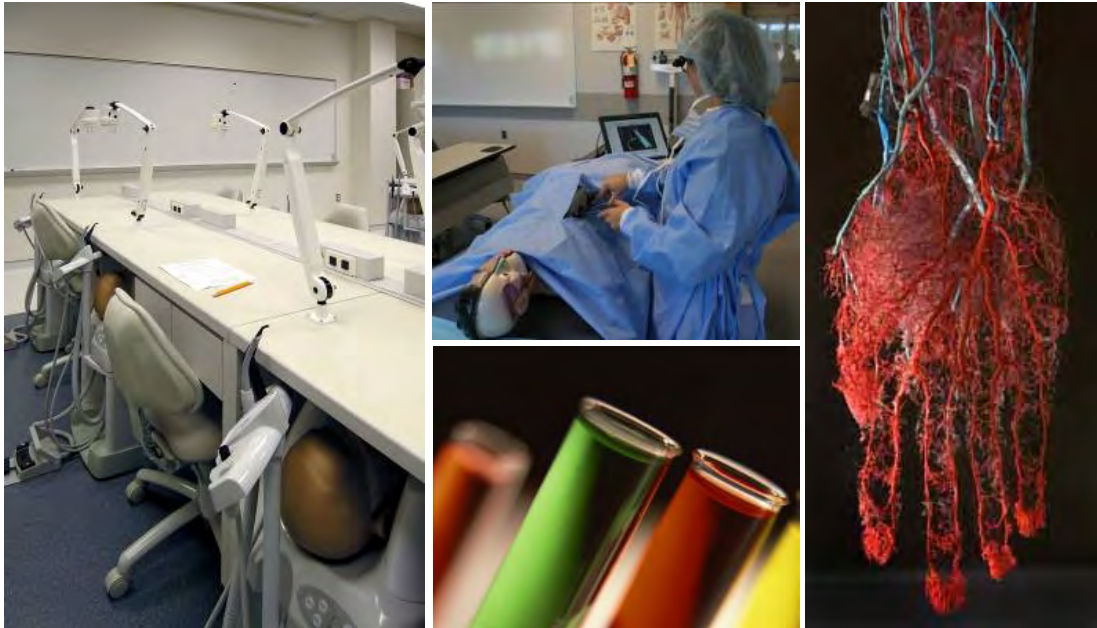
- New Technology
- “Kick the tires...”



Schoolcraft College

## Outdoor Laboratories

- Rain Gardens
- Enhances Programs
- Sustainability



## Teaching Strategies

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



## Teaching Strategies

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

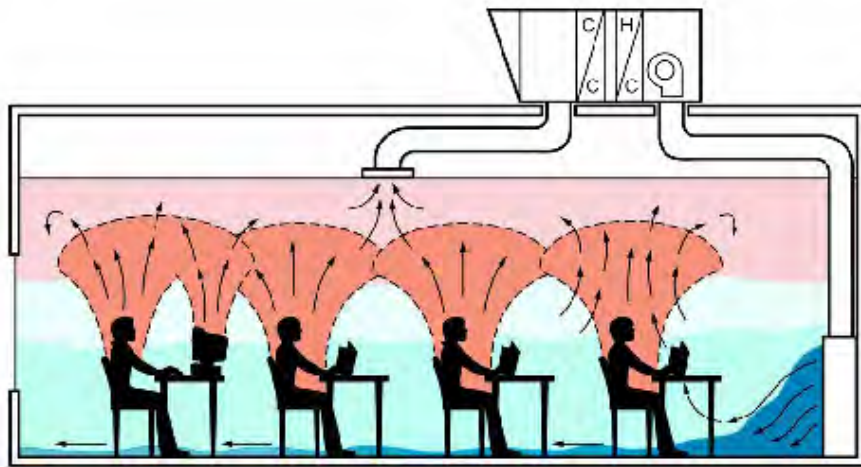


Figure 1 - DV Schematic

## Engineering Strategies

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



=



## 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?**