



Maker Spaces: The Good, the Bad, and the Ugly

Nathan Delson

Teaching Professor

Dept. of Mechanical and Aerospace Engineering

Faculty Director

EnVision: the Arts and Engineering Maker Studio

My Maker Background

- ◆ Vocational High School
- ◆ TA for MIT 2.70
- ◆ Yale Design Studio
- ◆ UCSD Design Center
- ◆ UCSD EnVision Maker Studio



Student Empowerment is Key but Difficult to Implement

- ◆ Yale 1995
- ◆ Allowing students to take ownership of projects changes traditional teacher role.
- ◆ Bimodal
 - Either it takes off or not

Warm Up Projects

- ◆ Wide Range of incoming skills
- ◆ Teaches key skills
- ◆ Levels playing field among students
- ◆ Walk before running!
- ◆ Easy and safe tools.



Debby Grunewald's clock

People are the Most Valuable Resource

◆ Faculty By In

- Involve in their area of interest
- Part of hiring process
- Key for defining direction of space
- There will be critics: Hands on, Minds on, Hearts on.

◆ Technical Director

- Excellent people and organizational skills

◆ Student Cadre

- Get is started any way you can

Creating a Culture

- Do not leave it to chance
- Culture of inclusion
- Culture of excellence
 - Examples all around lab
 - Multiple iteration to get it right
- Webpages to highlight student work
 - Intro Design: <https://sites.google.com/a/eng.ucsd.edu/mae3-robots/home>
 - Capstone Design:
 - <https://sites.google.com/a/eng.ucsd.edu/mae156b-projects/>
- An Ethic of Excellence: Building a Culture of Craftsmanship with Students by Ron Berger

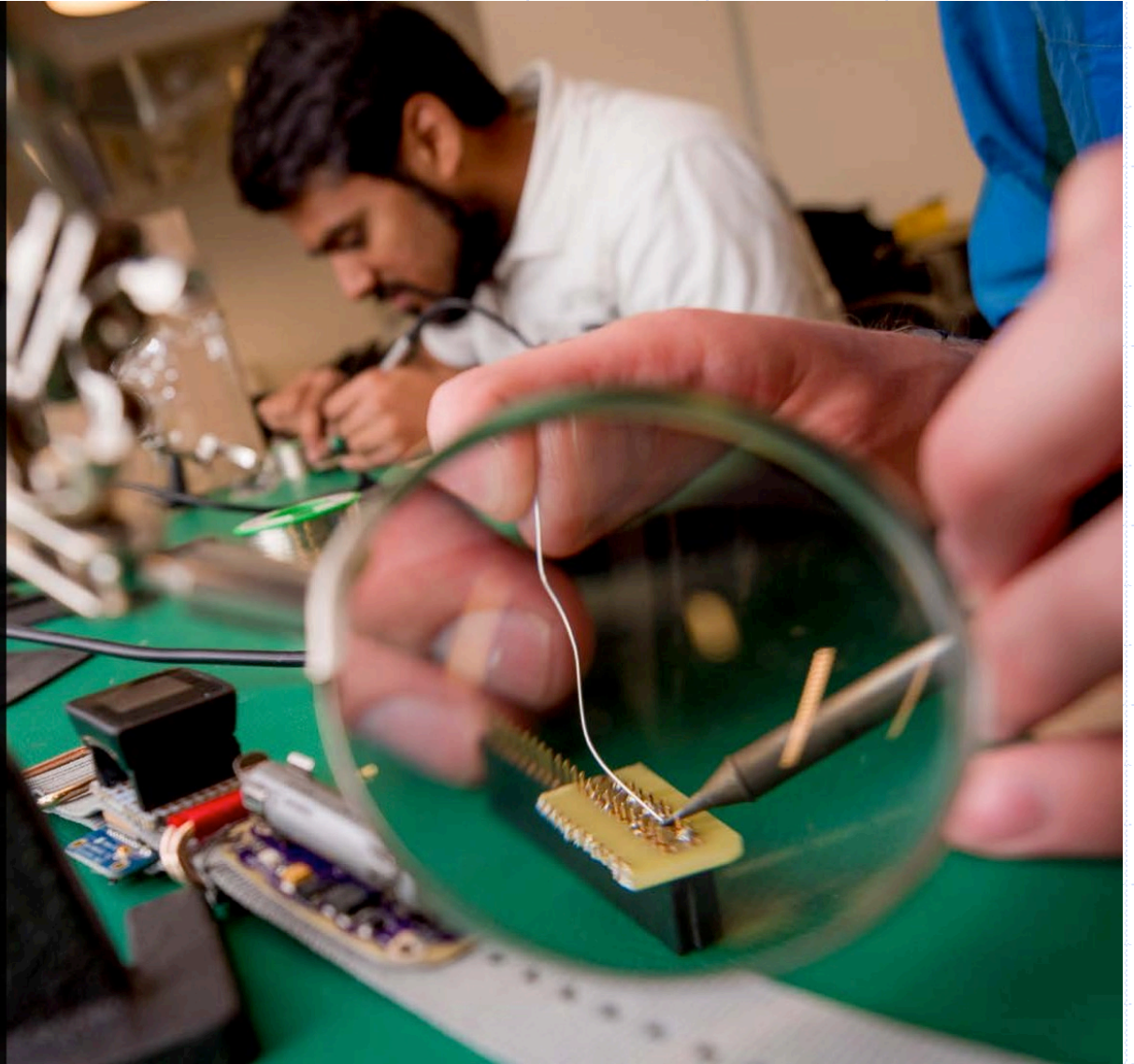
MAE Design Studio

- Mechanical, Aerospace, Environmental and Bio Engineering
- Time lapse move on robot demo day

UC San Diego

EnVision

Arts and Engineering Maker Studio





IT'S A CREATIVE SPACE.

ENGINEERING AND VISUAL ARTS
STUDENTS COME TOGETHER TO

THINK/DESIGN/MAKE/
TINKER/BREAK
/BUILD AGAIN.

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Arts and Humanities

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