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COMMUNITY ENGAGEMENT IN STEM CLASSROOMS:

BUILDING COMMUNITY PARTNER RELATIONSHIPS AND ENHANCING LEARNING

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AGENDA

Introductions and Warm Up

Community Engaged Learning at Stanford

Benefits of Community Engaged Learning

Developing Partnerships

STEM Project Examples

Q&A

INTRODUCTIONS

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WARM-UP: SHARE YOUR INSPIRING STEM LEARNING EXPERIENCES

What was one of your most inspiring learning experiences?

Share your ideas on the Jamboard! Link is in the chat…

THE PRINCIPLES OF ETHICAL AND EFFECTIVE SERVICE

Guide our work with faculty, students, and community partners
Provide a roadmap to consider how course design can promote ethical and effective service
A resource for creating and deepening community partnerships
Serve as a tool to engage students in reflection about their work in the community

https://haas.stanford.edu/about/our-approach/principles-ethical-and-effective-service

CARDINAL COURSES APPLY CLASSROOM KNOWLEDGE TO REAL-WORLD SOCIETAL PROBLEMS

- Engage with a community to address a social problem or societal need
- Integrate course objectives and community-based experiences
- Produce reciprocal benefits for students, faculty, and community partners
- Provide opportunities to critically examine public issues
- Embody Stanford's Principles of Ethical and Effective Service

HOW WE SUPPORT FACULTY AND STUDENTS

Plan

- Identify relevant community partners
- Assist with student placements
- Clarify roles and expectations

Implement

- Prepare students for community experience
- Communicate with partners/students
- Facilitate student reflection

Sustain

- Measure impact with students and partners
- Maintain community partnerships

BENEFITS OF COMMUNITY ENGAGED LEARNING

It's motivating to work on a project that will benefit others

Offers opportunities to build valuable "soft skills"

Provides opportunities to connect with organizations (including potential employers!) in your field

Allows you develop something that people can use rather than something that's abstract

DEVELOPING PARTNERSHIPS

FINDING COMMUNITY PARTNERS

- Review previous projects completed by other students
- Reach out to your network and their contacts
- Use your previous volunteer experiences
- Contact alumni
- Keep a database of community members who ask for help

PREPARING TO CONTACT PARTNERS

Research the organization; what do they do?

- Study their website and printed materials
- Understand who they serve
- Attend events hosted by organizations that interest you
- Summarize where they might need technology-based solutions

Call or use the website to find out who to contact

Don't offer solutions; let them tell you what their needs are

You can respond with how technology can help them meet these needs

DESCRIBE WHAT YOU CAN OFFER

Develop a summary of:

- Your course's learning objectives
- The resources you [and your team] will bring
  - Knowledge, experience, specific skills, interests
- The time you are prepared to commit
- Previous project examples and deliverables
  - What you developed
  - The impact of your project
  - How your technology is being used

BE RESPONSIVE TO REPLIES

While college students have complicated schedules and many commitments, so do community partners

In general, respond to an organization contact's email within 24 to 48 hours

Be patient waiting for them to respond

WRITE AN UNAMBIGUOUS PROJECT BRIEF

Project Title	Project Partner(s)	Project Goal—2-3 sentences	Project Inspiration and Motivation—1-2 paragraphs narrowing down from the big picture to the project goal	The Problem—1-2 paragraphs describing the problem from the perspective of the user
Importance—1-2 paragraphs describing why the project is important and how it aligns with overall goals	User(s)—1-3 paragraphs providing background on the users)	User needs—1-3 paragraphs including the use case that defines the user needs)	Prior work—Describe what has been done to try to address this problem and why there is no pre-existing solution)	Project Liaison—Point of contact: name, email, phone)

PREPARE YOUR PARTNERS

Share the syllabus

Explain Responsibilities

Discuss Time Constraints

Describe Students

PREPARE YOURSELF

Read, Watch, and Listen

Ask Questions

Reflect on your Positionality

WORKING WITH COMMUNITY PARTNERS: KEY STEPS

IDENTIFY POTENTIAL PARTNERS

INITIATE DIALOGUE ABOUT WORKING TOGETHER

COMMUNICATE CLEARLY ABOUT EXPECTATIONS

BUILD TRUST AS YOU COLLABORATE

SHARE YOUR PROJECT OUTCOMES

PAVE THE WAY FOR OTHERS

ALL OF THIS TAKES TIME – START EARLY!!

STEM PROJECT EXAMPLES

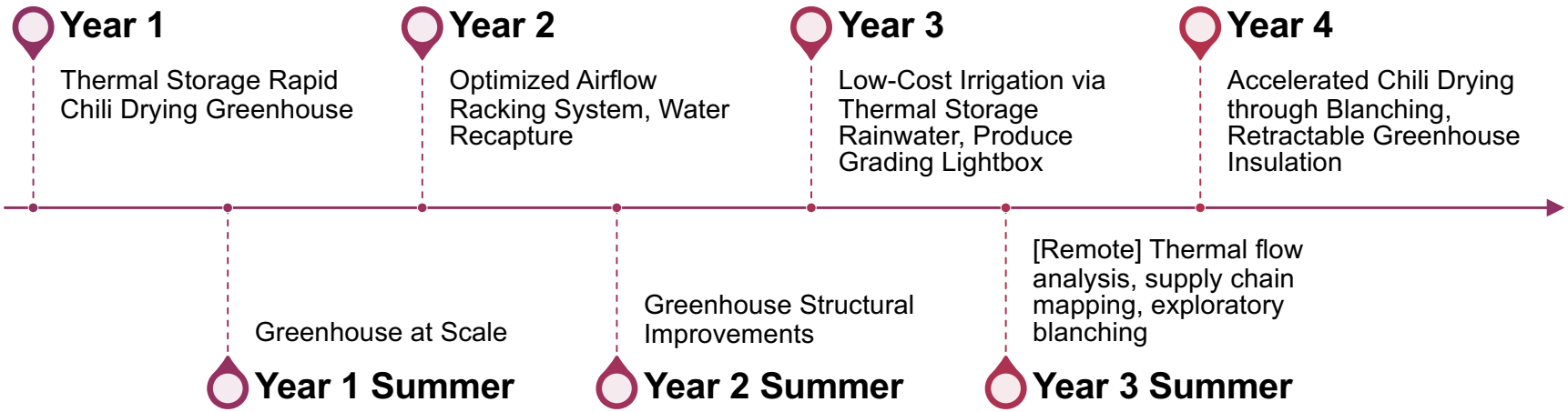
MECHANICAL ENGINEERING Example: INTEGRATING CONEXT WITH ENGINEERING (SENIOR CAPSTONE COURSE)

Course learning objectives: Working in teams, design and develop an engineering system addressing a real-world problem

Community partners: medical research labs, farms and farming cooperatives, corporations, rural communities, faculty

Deliverables to partner: Tested prototype, product documentation, plan for future work

The “Chili sequence”



ENVIRONMENTAL SUSTAINABILITY EXAMPLE: SCIENCE OF SOILS

Course learning objectives: understand physical, chemical, and biological processes functioning within soils

Community partners: farms and community gardens (ex: Green Beginnings Garden)

Project: students dig a soil pit at partner's site, analyze samples, develop a soil management plan

Deliverable to partner: Recommendations on a partner's management challenge

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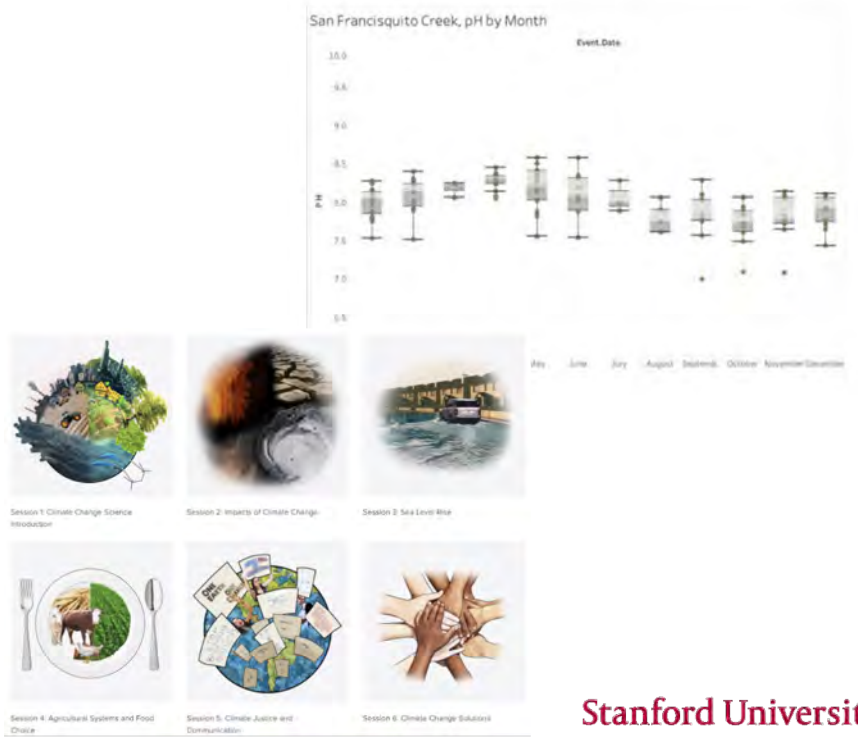
ENVIRONMENTAL SUSTAINABILITY EXAMPLE: MASTERS' SEMINAR

Course learning objectives: develop/enhance professional skills in environmental science and communications

Community partners: Grassroots Ecology, Acterra, and many more

Projects: analyze data and create visualizations; develop climate change ed materials; and more

Deliverables to partner: trends in water monitoring data; learning modules for climate change curriculum, and more



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HEALTH EXAMPLE: START: A Primary Care Effort to Bridge the Telehealth Divide

Course learning objectives: Explore concepts in design thinking, communication, community-building, and team-based patient care.

Community partners: Ravenswood Family health Center, East Palo Alto Academy Foundation.

Projects: Students help connect patients/caregivers to health care providers by helping with video visit set-up.

Deliverables to partner: Students volunteered x number of hours per week and were on-call to receive requests for service.

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HEALTH EXAMPLE: Covid-19 Case Investigation and Contact Tracing

Course learning objectives: Epidemiology and contact tracing. Understand and describe the natural course of COVID-19.

Community partners: Santa Clara County Public health Department and Heluna Health (County contractor)

Projects: Provide health coaching. Effectively educate patients and apply motivational interviewing skills to patients with COVID-19 and those exposed to COVID-19. Navigate ethical dilemmas encountered in the process of contract tracing.

Deliverables to partner: Students made a commitment to receive training from the county's contact tracing contractor who assigned students to make calls to people in the community who tested positive for COVID-19 or who were exposed to COVID-19.

Q&A/Discussion