



California Community Colleges

Invention and Inclusive Innovation (i3) Initiative

Funding Opportunity Information Session

January 14, 2022

AGENDA

- Overview of Invention Education
- Experiential Learning
- i3 Program Overview
- Phase 1 Overview (Prototyping)
- Letter of Intent Application Overview
- Questions



Your Questions

- Please use the Q&A window to submit your questions during the presentation.
- Questions will be monitored and answered either via the Q&A window during the presentation or discussed during the Q&A period at the end of the presentation.
- Questions may be submitted up through February 4, 2022 to wedd@cccoco.edu.
- A FAQ document will also be posted to the our website and updated regularly.



Why Invention Education?

We as a society, and our upcoming generations, face a future of new, more demanding, and increasingly complex problems.

Why Invention Education?

- Solving these problems will require *agile thinkers with diverse perspectives and life experiences*, and an *ability to identify and acquire the new, yet unknown knowledge* needed to operate and *create tomorrow's technologies and industries*.
- Additionally, education as a system, risks growing increasingly out of step with the needs of life and work in the 21st century.

Invention Education offers a powerful approach to bridge this gap.

The Benefits of Invention Education

- Helps students identify and create new possibilities for themselves and their world.
- Teaches essential skills students need, whether they become inventors or not.
- Provides a safe learning environment that encourages students to take risks, experience failure, and be comfortable in ambiguity.
- Increases students' self-confidence and resilience to navigate ambiguity by creating a new sense of their identity, their abilities, and their future.
- Develops leadership skills.

Definitions of Invention Education

▲ Facilitation of educational engagement in which people find and define problems, design, and build new, novel, useful and unique solutions that contribute to the betterment of society.

▲▲ A pedagogical approach focused on problem identification through empathy and collaborative problem solving that results in novel solutions by integrating the process of invention into teaching and learning.

Common Elements of Invention Education

- A problem finding or defining stage
- Open inquiry to solve real world problems
- Teamwork and collaboration within and beyond teams
- Engaging with mentors and others from the larger community
- Iterative and evolving learning and design cycles
- Embrace learning from failure and uncertainty
- Faculty as guides, mentors, or coaches of learning working alongside students



Experiential Learning

Experiential Learning

- An **engaged learning process** where you “learn by doing” and by **reflecting on the experience**.
- The **process of learning** invites you to understand yourself as a learner and **empowers** you to take charge of your own learning and development.
- Well-designed programs **stimulate academic inquiry** by promoting **interdisciplinary learning**, civic engagement, career development, cultural awareness, leadership, and other professional and intellectual skills.

Experiential Learning

Contains all of the following elements:

- Reflection, critical analysis and synthesis.
- Opportunities for students to take initiative, make decisions, and be accountable for the results.
- Opportunities for students to engage intellectually, creatively, emotionally, socially, or physically.
- A designed learning experience that includes the possibility to learn from natural consequences, mistakes, and successes.

Experiential Learning

- Helps students better able to connect theories and knowledge learned in the classroom to real-world situations.
- The way we learn is the way we approach life in general.
- It is also the way we solve problems, make decisions, and meet life's challenges.
- Learning occurs in any setting and continues throughout our life. The experiential learning process supports performance improvement, learning and development.



i3 Program Overview

i3 Program Overview

The **Invention and Inclusive Innovation (i3) initiative** is about meeting students where they are, particularly women and students of color and other underrepresented groups, to seed and grow an entrepreneurial mindset that will empower them to build their lives on their own terms and take their dreams and careers into their own hands.

i3 Program Overview

What i3 initiative is designed to help solve:

- ✓ Complex challenges
- ✓ Rapidly changing technologies
- ✓ The talent shortage
- ✓ Lack of diversity in the workforce



i3 Program Overview

Introduces entrepreneurial mindset skills and experiential learning to students via learning invention education

- Utilizes a student-centered experiential learning approach across multiple disciplines
- Seeks to expand diversity, equity, and inclusion to expose students of all racial and economic backgrounds, age, and geographies to career pathways including science, technology, engineering, and math (STEM)



Phase I Overview (Prototyping)

Phase 1 Overview

- Initial program prototype phase completed in Summer/Fall of 2021
- Four pilot colleges – Chaffey College, College of the Desert, Modesto Junior College, and Sierra College
- Faculty received training and support from Lemelson-MIT (LMIT)
- Each college successfully delivered a pilot workshop or course to students

Phase 1 Prototype Offerings

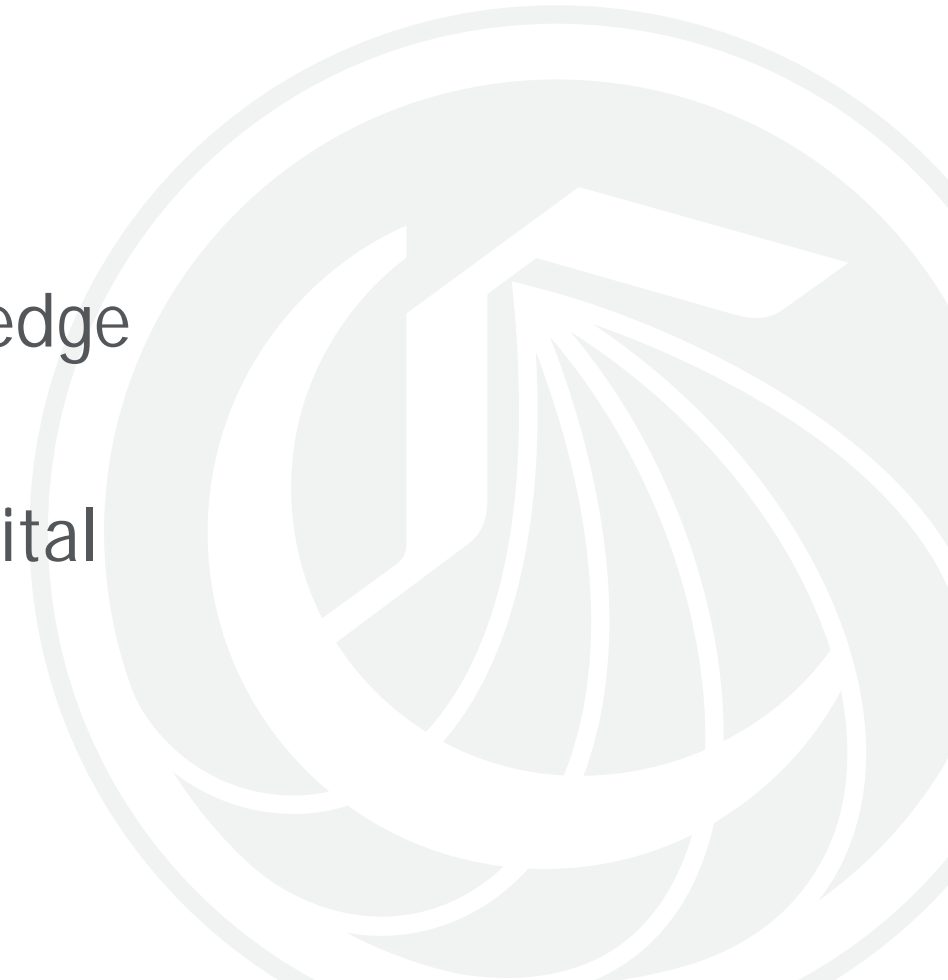
	Chaffey College	Modesto Junior College	College of the Desert	Sierra College
Offering Format	Internship	Workshop	Workshop ¹	Embedded Course ²
Duration	8 weeks	10 days	5 days	16 weeks
Timeframe	Summer 2021	Summer 2021	Summer 2021	Fall 2021
Number of Students	10 STEM interns (plus 6 journalism students)	15	12	9
Student Demographics	3 Female 7 Male	10 Female 5 Male	6 Female 6 Male	3 Female 5 Male 1 Unknown
Ethnicity/Race Breakdown	Hispanic (3), Asian (3), Black (1), Native American (1), White (1), Other (1)	Hispanic (7), Indian (2), Middle Eastern (2), White (2), Asian (1), Black (1)	Hispanic (6), Asian (2), Ecuadorian (1), Peruvian (1), Swede (1), Not Identified (1)	Hispanic (4), White (2), Multiple Ethnicity (2), Black (1)

¹College of the Desert held a second offering in Fall 2021 that was a 10-week embedded course format with 12 students.

²Sierra's offering consisted of three courses taken concurrently during the 16-week semester.

How i3 Helped Students

- Connect to real world experiences
- Opportunities to integrate and apply knowledge
- Benefit from Peer Learning
- Connect with community to build social capital
- Interest in tackling real-world challenges
- Focus of equity and social justice issues
- Excitement of new process of learning



Phase I College Experience

Amy Schultz

Dean of Career, Continuing & Technical Education
Sierra College

Mark Padilla

Physics Professor/Coordinator
Chaffey College

Chad Redwing

Former Academic Senate President
Professor of Humanities/Applied Creativity and Community Transformation (ACCT) Institute Coordinator
Modesto Junior College

Additional Information on Phase 1

- Videos about the program experience
 - [Chaffey College](#)
 - [Sierra College](#)





Letter of Intent Application Overview

Letter of Intent Background & Overview

- Expanding program to include up to 20 additional colleges for Phase 2
- Grant duration: 15 months, from April 1, 2022 through June 30, 2023
- Grant award: \$125,000 per college
- Funds to support costs associated with the i3 pilot program
 - Faculty time to
 - Engage in four-month orientation and training process to learn invention education content
 - Learn through observation of i3 offerings in progress
 - Attend meetings to plan and design a pilot offering, as well as office hours with experts in the planning and design process
 - Offset the costs of colleges implementing the pilot offerings designed
- Colleges encouraged to utilize other funding sources to support and sustain the program upon grant completion

Summary Grant Activities Milestones

Grant activities and tied to deliverables and milestones:

1. Finalize the Pilot Project Team and Supporting Cast
2. Attend and participate in project meetings and convenings
3. Plan, design, and deliver i3 pilot offering
4. Attend or participate in conferences, research interview, or other events
5. Submit final report

14 Written Response Items ⁽¹⁾

1. Please provide current college student demographics and identify students or community groups who will be targeted and recruited to the program. Describe your counseling and career services for underserved populations.
2. Based on description of the i3 program, in what way or how do you see your students and the college benefiting from participating in this effort?
3. Please describe the perceived benefits of the college assembling a cross-disciplinary faculty team (humanities, business, STEM) to participate in training over the grant period? Are there any anticipated barriers in assembling a cross-disciplinary faculty team?
4. Please describe how your college would determine which faculty would be the best fit (for example experience, interest, and commitment) for participation in this program to ensure successful project completion?

Written Response Items ⁽²⁾

5. Please describe the college's current method(s) in which faculty would be compensate for participation in this grant project.
6. Please explain which department or area this program would best be housed at your college and why?
7. Please describe the college's goal/experience in growing student engagement in entrepreneurial projects? Why is this important to the college?
8. Please provide the college's experience working with the community to expand and grow the local/regional entrepreneurial ecosystem, and what current programs are already in place, if any, that are available to support this effort.

14 Written Response Items ⁽³⁾

9. Please describe programs that the college considers to be innovative that are currently being delivered on campus, including any innovative practices in teaching and learning.
10. Please explain how the CIO and CTE Dean would engage and support faculty during the pilot project and in the delivery of a pilot offering?
11. Please indicate if college faculty is currently utilizing NexusEdge application within its Canvas instance.
12. If applicable, please provide names of faculty and their disciplines at your college who are currently involved with LMIT InvenTeams at local high schools.

14 Written Response Items ⁽⁴⁾

13. Please provide an estimate for how the \$125,000 in grants funds would be utilized, including estimated amounts for faculty salaries, benefits, and other anticipated expenses in delivery of a pilot offering, and include narrative to explain expenditures.
14. Please identify other sources of funds available at your college that could be utilized to support the i3 program during and beyond the grant period. Please include description of any sources of match or leveraged funds.

Faculty Training Only Option

- Colleges may participate in the faculty training only component of the pilot
- If selecting this option, please provide:
 - Written responses for all items except #10, 13, and 14
 - Check the appropriate option on the Letter of Intent
- A limited number of colleges will be selected to participate, and provided with a small grant to cover participating faculty time.

Pilot Project Team & Supporting Cast

Pilot Project Team

- CEO
- CIO
- CTE Dean
- Faculty (Business)
- Faculty (Humanities)
- Faculty (STEM)
- Faculty (additional, optional)

Supporting Cast

- Academic Senate President
- Communications/Public Relations
- Workforce Development
- Director of Foundation
- Student Support Services
- Associate Student President

Budget Estimate

COLLEGE NAME:		
Expenditure Category	Budget Narrative (description, details, percentage of staff time or hours, etc.)	Estimated Amounts
Faculty & Staff Salaries		
Benefits		
Operating Expenses		
Other		
	TOTAL	\$125,000

Budget Note

- Grants may not be used for student stipends, internships, or other methods to pay students in the i3 pilot offering.
- Match is not required, but colleges are encouraged to show how other funds will be leveraged.

LOI Submission

- Provide the completed and signed Letter of Intent (Form)
- Include written responses to the 14 items identified in the Letter of Intent
 - Maximum of 4 pages with size 12 font for all 14 items
- Letter of Intent packet submitted to the Chancellor's Office by 5:00pm, Tuesday, Feb 15, 2022
 - Via email at wedd@cccco.edu



Q & A

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*IS THE MOST POWERFUL
WEAPON YOU CAN USE TO*
**CHANGE
THE WORLD.**
NELSON MANDELA



California
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Thank you!

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