Targeted Coaching Skills for Instructors Preparing a Diverse Technician Workforce

Webinar

February 26, 2020

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This Webinar will be recorded and we will send you a link

Please use the chat window to ask questions

Complete our brief survey at the end, we want to hear from you

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This Webinar Is Hosted By

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Introductions

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Biotechnology Faculty, CCSF
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Diego Navarro
Advisor; Emeritus, Cabrillo College
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Agenda

01
Introduction &
Agenda
5 minutes

02
What the research
says about
coaching
15 minutes

03
Example 1:
Classroom
Coaching, ACE
15 minutes

04
Example 2:
Workforce
Coaching, CCSF
15 minutes

05
Closing Q&A
10 minutes

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Project context

- Funded by National Science Foundation's Advanced Technological Education (ATE) program, which supports technician education, particularly in community colleges

- This project was led by SRI Education, which is a division of SRI International, a nonprofit research institute based in Menlo Park, CA. SRI does work mostly funded by government grants and contracts. We partnered with Ann Beheler of Collin County College in Texas.

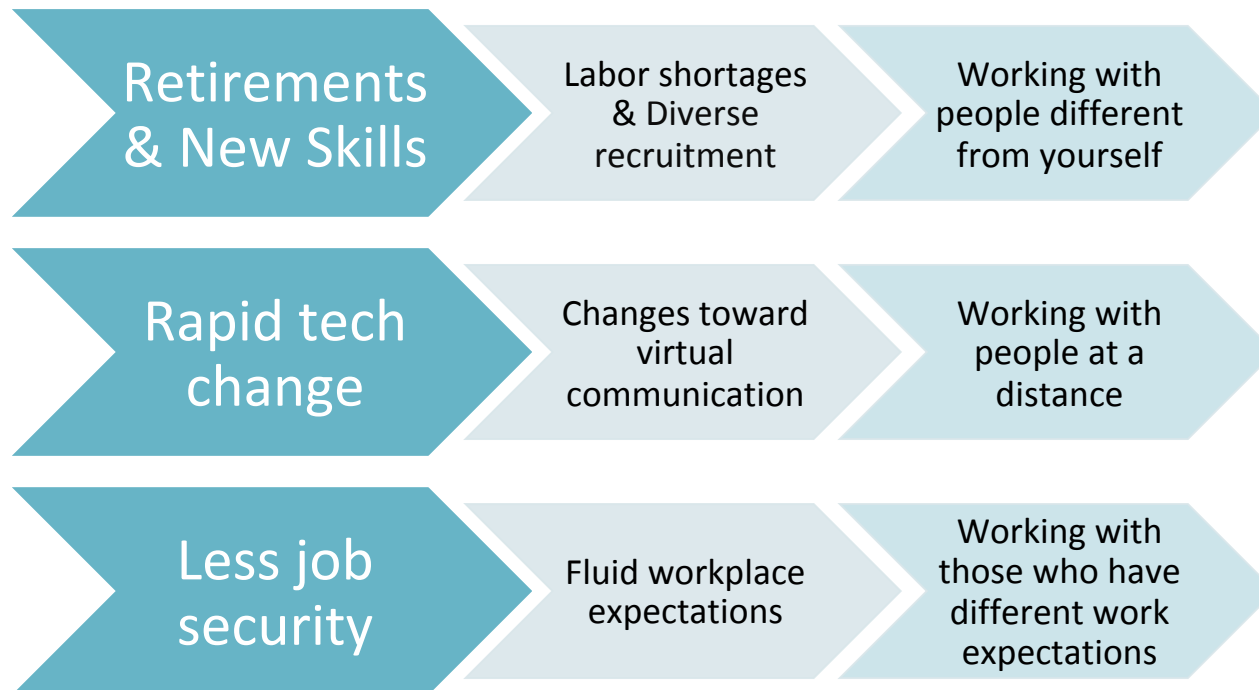# Quick Poll #1, Part 1

What do you do in workforce education?

[ ] Community college educator

[ ] Other educator (e.g. K-12, 4-yr. coll.)

[ ] Employer

[ ] Other – please describe in webinar comments

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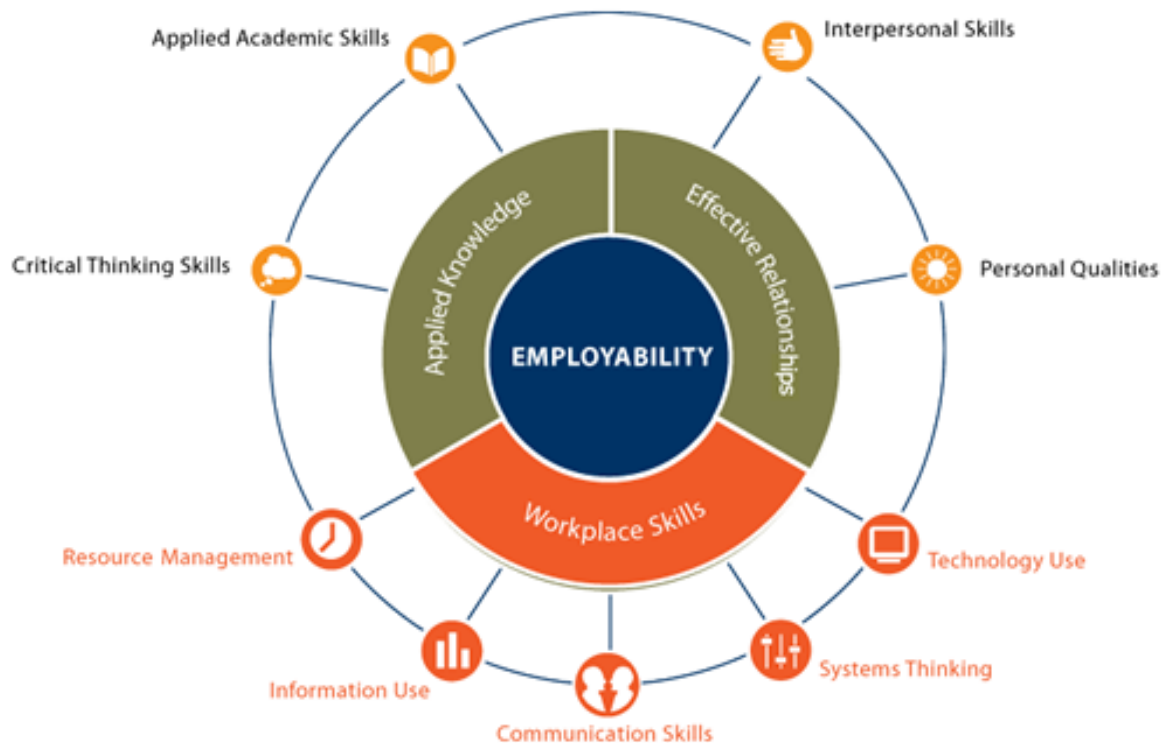
Quick Poll #1, Part 2

Do you specialize in a technical field? If so, which one?

[ ] Yes, Information technology

[ ] Yes, Advanced manufacturing

[ ] Yes, Biotechnology or biomanufacturing

[ ] Yes, something else – please specify in webinar comments

[ ] No, I do not specialize in a technical field

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Why is coaching for diversity important?

Retirements & New Skills	Labor shortages & Diverse recruitment	Working with people different from yourself
Rapid tech change	Changes toward virtual communication	Working with people at a distance
Less job security	Fluid workplace expectations	Working with those who have different work expectations

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Our study focused on employability skills

- Built on this model from U.S. Department of Education
  - Applied Knowledge
  - Effective Relationships
  - Workplace Skills
- Our report may be found here:
  - employabilityskills.org

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Five High-Priority Employability Skills for STEM Technicians

Essentials: For more info: https://www.necessaryskillsnow.org/2019SRI/

Capacity to build **relationships**	**Personal qualities** for career success	**Business fundamentals** and knowing your business value
1. Interpersonal skills 2. Communication skills	3. Orientation to lifelong learning 4. Meeting workplace expectations	5. Situational awareness

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Focused essentials for groups underrepresented in STEM fields

Capacity to build **relationships**	**Personal qualities** for career success	**Business fundamentals** and knowing your business value
1. Interpersonal strategies to manage stereotyping/bias 2. Communication strategies to support awareness/sensitivity	3. Orientation to lifelong learning to strengthen technical confidence 4. Understanding cultural differences in workplace expectations	5. Situational awareness of the importance of advancing cultural change in technician fields

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What Our Interviewees said: Targeted Coaching Needs

Relationship Building

- *Watch stereotypes: "For the most part, physically, anyone can do this work, but there is still a perception that this is a man's job...Women can be just as good...Usually when they come out of the training, they are confident and ready to build a career up in this industry." -- Advanced Manufacturing Employer 17*

- *Communicate clearly about life challenges: "Being able to adapt – if you have no flexibility with childcare, what do you do?" – Advanced Manufacturing Educator 7*

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What Our Interviewees said: Targeted Coaching Needs

Personal Qualities

- **Lifelong learning to build confidence:** "They can see that they are doing just as well as the person next to them. They get the confidence as they are working on different hands-on projects…" – Advanced Manufacturing Employer 17

- **Watch assumptions about "work ethic":** "[Instructors] need to understand the issues affecting the students … staff must have empathy, insight, and an understanding of … cultural awareness and social justice matters." – Advanced Manufacturing Educator 3

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What Our Interviewees said: Targeted Coaching Needs

Business Fundamentals

Reframing the mission of technician work to build appeal: "We need some way to take the STEM component and make it not such a focus on STEM itself, but on the career opportunity for [women/diverse learners] in the technical field…" – IT Employer 16

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Quick Poll #2

What diversity programming does your organization offer?

[ ] Understanding implicit bias, stereotyping

[ ] Sensitive communication strategies

[ ] Targeted career promotion programs

[ ] Backup transportation, childcare, counseling

[ ] Special interest groups, clubs, outreach, recruitment

[ ] Other – please describe in webinar comments

[ ] None

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How do people learn employability skills?

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Key themes on how such skills develop

Learners:

- It takes time and practice

- You may encounter those who think if you're not born with these skills, you cannot do them

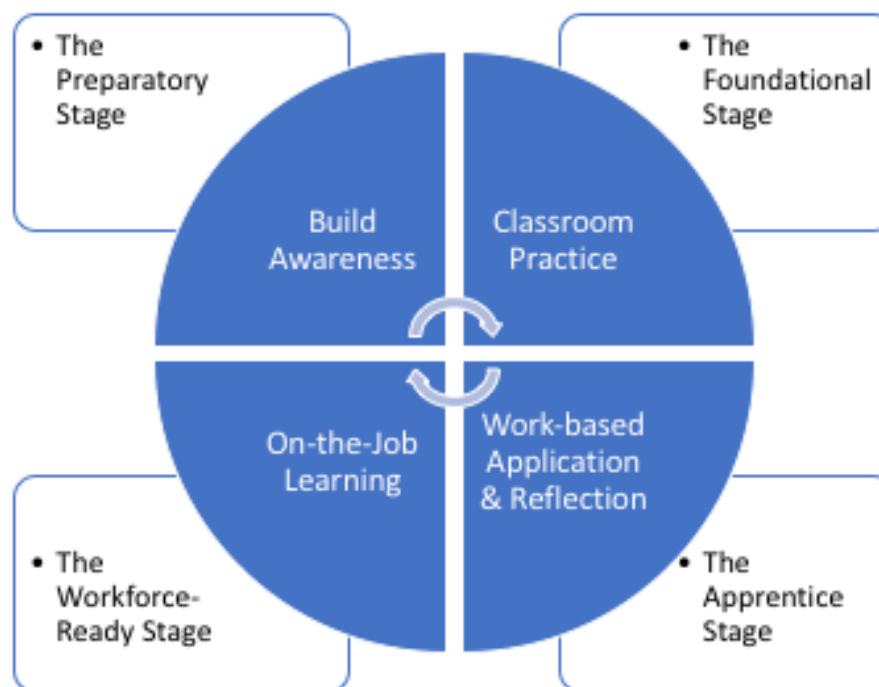- This isn't accurate. You can learn them at any time

Coaches:

- Coaching can and should happen at any time

- Coaching around these skills can be intimidating; it's important to support educators and managers who do the coaching

- More should be done to foster a "partnered" approach between education and industry

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Quick Poll #3

How comfortable do you, OR those who support, feel coaching learners around diversity awareness and skills?

[ ] Very comfortable

[ ] Somewhat comfortable

[ ] Somewhat uncomfortable

[ ] Very uncomfortable

[ ] Don't know or not applicable

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A Better Way: Collaborate and Coordinate Employability Skills Development

- The Preparatory Stage
- The Foundational Stage
- The Workforce-Ready Stage
- The Apprentice Stage

Build Awareness

Classroom Practice

On-the-Job Learning

Work-based Application & Reflection

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How to teach and learn these skills?

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Using learning principles to build diversity skills

Confront Misconception and Explain

Reflect and Grow

Play

Practice

Support

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Our website offers examples

- We will post this [webinar](#) for reference
- We will link to other useful resources for diversity coaching

Promoting Employability Skills

SKILLS   DEVELOPMENT   TEACHING   WEBINARS   ABOUT

Educators and employers described the need to provide more targeted strategies to prepare underrepresented technicians for the experiences they will face. Based on these findings, the research team tailored the employability skills (see table below) and reframed how the learning principles and the developmental model can support targeted diversity coaching. To help designers of diversity coaching programs, a February 26, 2020 webinar presents the overall approach along with two exemplar programs. A link to the webinar recording will be posted here along with a set of additional materials from ATE programs by March 31, 2020.

THE FIVE FOCUSED ESSENTIAL EMPLOYABILITY SKILLS SUPPORTING HISTORICALLY UNDERREPRESENTED POPULATIONS IN TECHNICIAN FIELDS

Capacity to build **relationships**	**Personal Qualities** for career success	**Business Fundamentals** and knowing your business value
1. Interpersonal strategies to manage stereotyping/bias	3. Orientation to lifelong learning as a way to strengthen technical confidence	5. Situational awareness of the importance of advancing cultural change in technician fields
2. Communication strategies to support awareness/ sensitivity	4. Understanding cultural differences in workplace expectations	

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Q & A

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Discussion Outline

1. Needs of Diverse Workforce
2. ACE Model for CTE Programs
3. Evidence of Effectiveness:

   - Increase in Salaries & Psychological Factors
4. Why ACE works

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Sabbatical Research on Affective Theories

Diego Navarro, Visiting Scholar, 2016

Carnegie Foundation for the Advancement of Teaching at Stanford

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Finding 1: Poverty and Stress

Sabbatical Research Carnegie Foundation for the Advancement of Teaching

Photo by Aarón Blanco Tejedor on Unsplash

- High Stress Backgrounds Create Physiological, Emotional and Academic Challenges

- Human stress response system's sensitivity is developed during childhood

- Experience of chronic scarcity creates cognitive overload and results in chronic stress

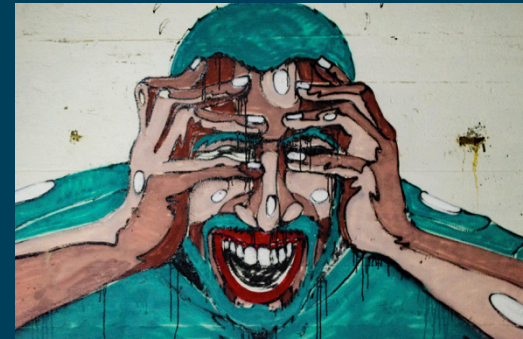- Chronic stress has an effect on academic performance

- Affective learning approaches mitigate these issues

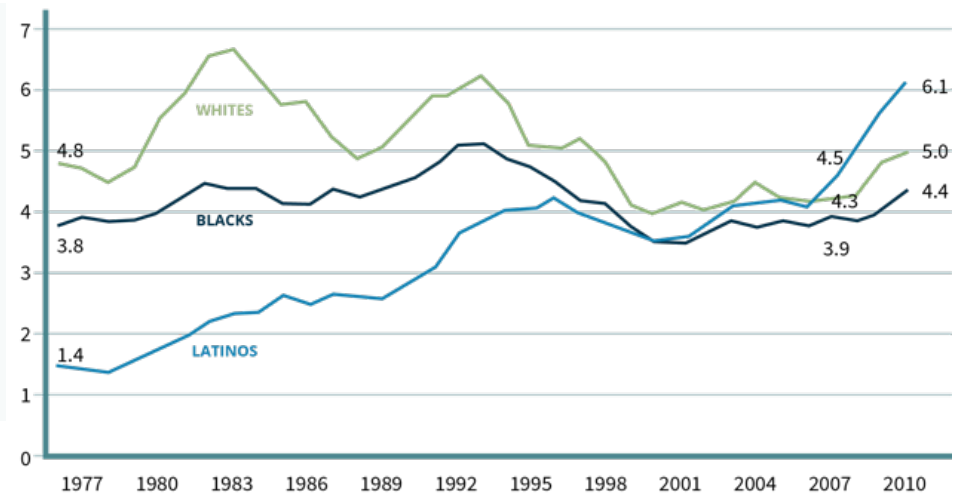# Children Living in Poverty in the U.S.
(from 2010 census data)

In 2010

- **37.3%** of poor children were Latino,
- **30.5%** were white and
- **26.6%** were black

according to an analysis of data from the U.S. Census Bureau by the Pew Hispanic Center, a project of the Pew Research Center.

Number of Children in Poverty by Race and Ethnicity, 1976-2010
in millions

Notes: Children include all individuals younger than 18. Whites include only non-Hispanic whites. Blacks include both Hispanic and non-Hispanic components of the black population.

Source: U.S. Census Bureau: http://www.census.gov/hhew/www/poverty/data/incpovhlth/2010/index.html

PEW RESEARCH CENTER

Source: Pew Hispanic Center (2011, September 28). The Toll of the Great Recession: Childhood Poverty Among Hispanics Sets Record, Leads Nation.

Finding 1: Poverty and Stress
Sabbatical Research Carnegie Foundation for the Advancement of Teaching

- High Stress Backgrounds Create Physiological, Emotional and Academic Challenges

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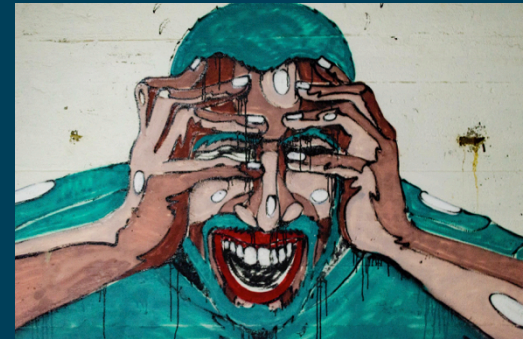
- Affective learning approaches mitigate these issues

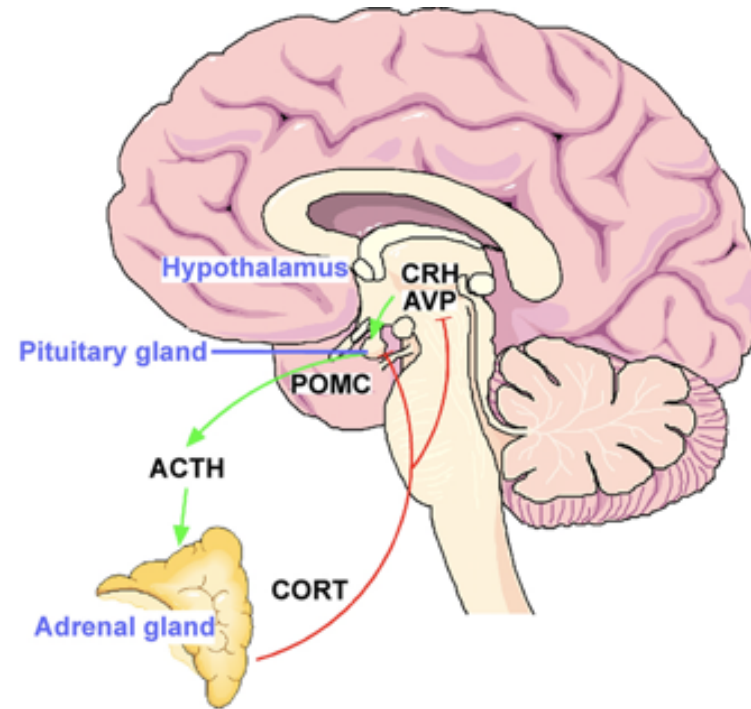
Photo by Aarón Blanco Tejedor on Unsplash

Brain, Poverty, and Trauma Axis

Adrenal Cortex/Cortisol mediate:

- Cardiovascular adaption
- Vigilance
- Catabolism
- Immune suppression
- Growth suppression

Modulates and inhibits HPA Axis

Image source: Murgatroyd C and Spengler D (2011)
https://commons.wikimedia.org/wiki/File:Hypothalamo%E2%80%93pituitary%E2%80%93adrenal_(HPA)_stress_axis.jpg

Finding 1: Poverty and Stress

Sabbatical Research Carnegie Foundation for the Advancement of Teaching

- High Stress Backgrounds Create Physiological, Emotional and Academic Challenges

- Human stress response system's sensitivity is developed during childhood

- Experience of chronic scarcity creates cognitive overload and results in chronic stress

- Chronic stress has an effect on academic performance

- **Affective learning approaches mitigate these issues**

Photo by Eye for Ebony on Unsplash

Finding 2: Faculty and Student Success

Sabbatical Research Carnegie Foundation for the Advancement of Teaching

- Students' experience powerlessness in face of authority

- Punitive discipline has negative impact

- Faculty need to avoid "attribution errors"

- Affective approaches increase the quality of teacher-student relationships
  - They build mutual respect, understanding and trust

Finding 2: Faculty and Student Success

Sabbatical Research Carnegie Foundation for the Advancement of Teaching

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- Faculty need to avoid "attribution errors"

- **Affective approaches increase the quality of teacher-student relationships:**
  - **They build mutual respect, understanding and trust**

Photo by Sebastián León Prado on Unsplash

Finding 3: Belonging, Autonomy, and Growth

Sabbatical Research Carnegie Foundation for the Advancement of Teaching

- Most effective education for community college students
  - Social belonging, autonomy and feeling competent
  - Social belonging strongest predictor

- Paradoxical effect
  - Student misbehavior leads to more control and diminishes feeling of autonomy & damages student/teacher relationships
  - Limited connection with peers diminishes belonging

- **Teachers can create environments conducive to connection and engagement by moving beyond cognitive and seeing students holistically**

Feelings of Belonging

↓

Leads to Autonomy

↓

Promotes Growth

Quick Poll #1 -- Diego Presentation

Your interest in learning more about Affective theories and practices?
[ ] Very Interested
[ ] Interested
[ ] Not Interested
[ ] Not Sure

For Diego's research report email: Diego.James.Navarro@gmail.com

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Discussion Outline

2. ACE Model for CTE Programs

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ACE Affective Support Model for CTE Students

Prepare Students for Affective Success

"21st Century Professional Skills"

ACE
Foundation Course
1-Week Intensive on
21st Century Prof. Skills

Student Cohort →

CTE Program

2 credits

8 to 15 credits
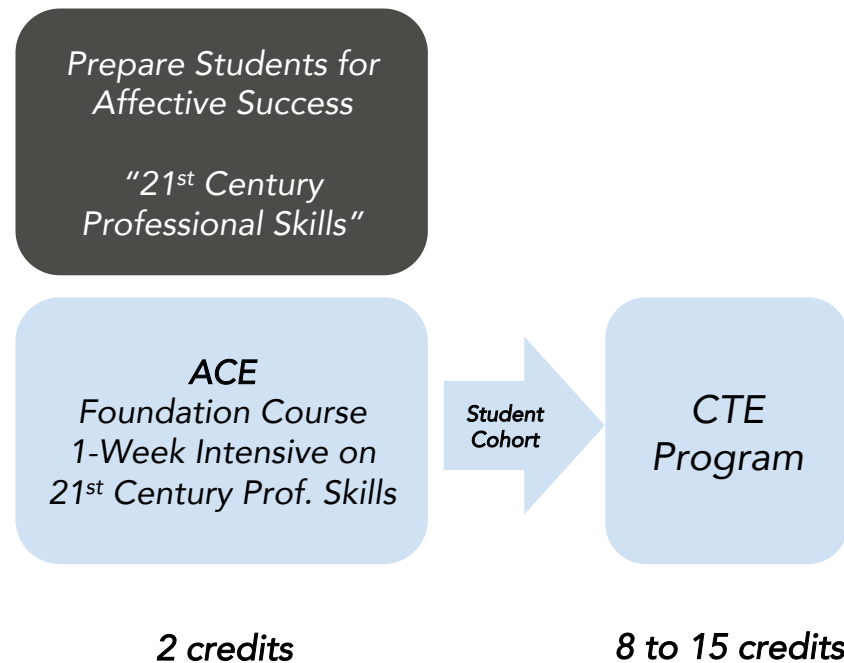
Discussion Outline

3. Evidence of Effectiveness:

- Increase in Salaries & Psychological Factors

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CTE/Nursing Wage Outcomes

Post 6 year median wages

ACE Nurse: 84,077

Pre-ACE Nurse: 44,853

	Before year 1	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Pre-ACE Nursing*	$(5,100)	$(6,524)	$(6,918)	$(7,611)	$593	$5,349	$8,875
ACE Nursing*	$(9,998)	$(9,832)	$(18,183)	$6,518	$33,939	$42,625	$42,541

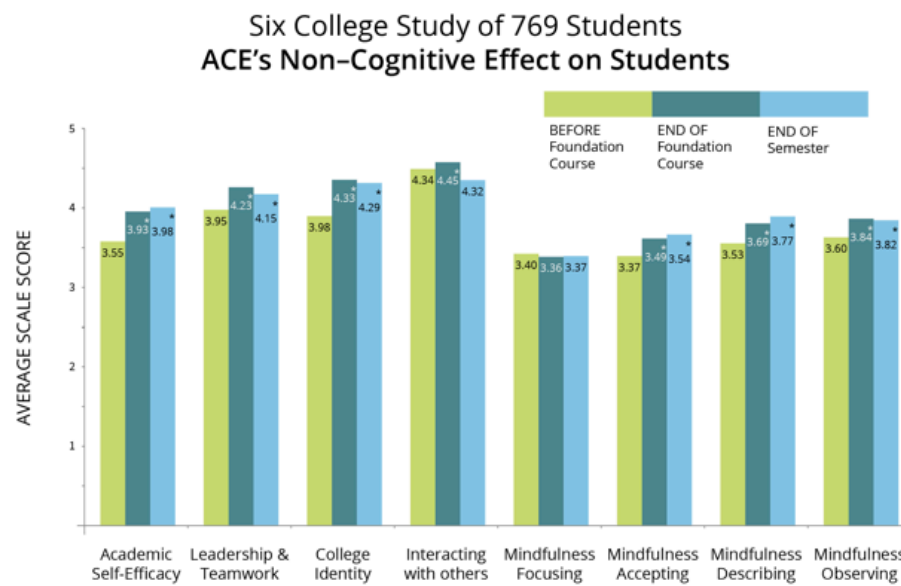*Matched Peers

Y-axis: Difference in Annual Mean Salary
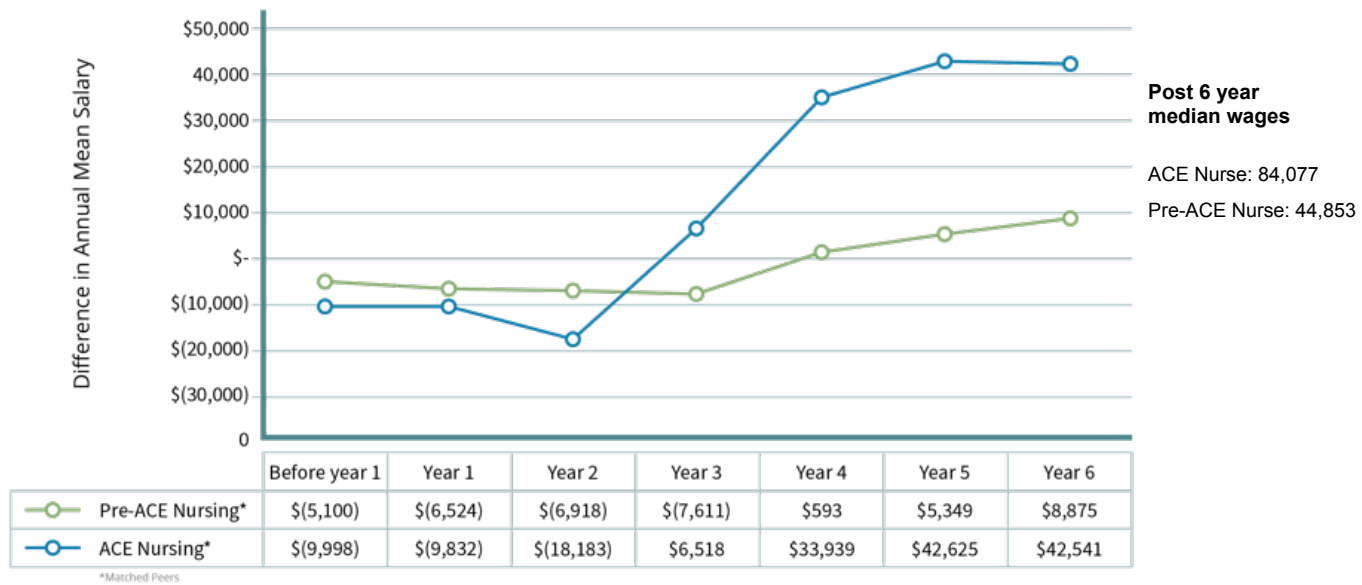
Study Conclusions

- Adding the Foundation Course to CTE programs enhance academic and wage outcomes

- ACE approach boosts potential in earnings over time for all students, **but especially for males of color and underrepresented minorities**

CSSAS Results

Six College Study of 769 Students
ACE's Non-Cognitive Effect on Students

BEFORE Foundation Course | END OF Foundation Course | END OF Semester

	BEFORE	END OF Foundation	END OF Semester
Academic Self-Efficacy	3.55	3.93	3.98
Leadership & Teamwork	3.95	4.23	4.15
College Identity	3.98	4.33	4.29
Interacting with others	4.34	4.45	4.32
Mindfulness Focusing	3.40	3.36	3.37
Mindfulness Accepting	3.37	3.49	3.54
Mindfulness Describing	3.53	3.69	3.77
Mindfulness Observing	3.60	3.84	3.82

AVERAGE SCALE SCORE

Source: RTI Associates
January 2014

*p<.001: statistical significance is based on comparison with Time 1 scores.

Survey responses were based on a five-point scale, from "strongly disagree to strongly agree" for the non mindfulness items and from "never or very rarely true" to "always or almost always" true for the mindfulness items.

Affective-Learning approaches improves psychological outcomes

- Students improved in 7 of the 8 psychological factors after the two-week *Foundation of Leadership Course* (FC)

- With the exception of two factors, the change remains consistent or improved four months later (at the end of the semester)
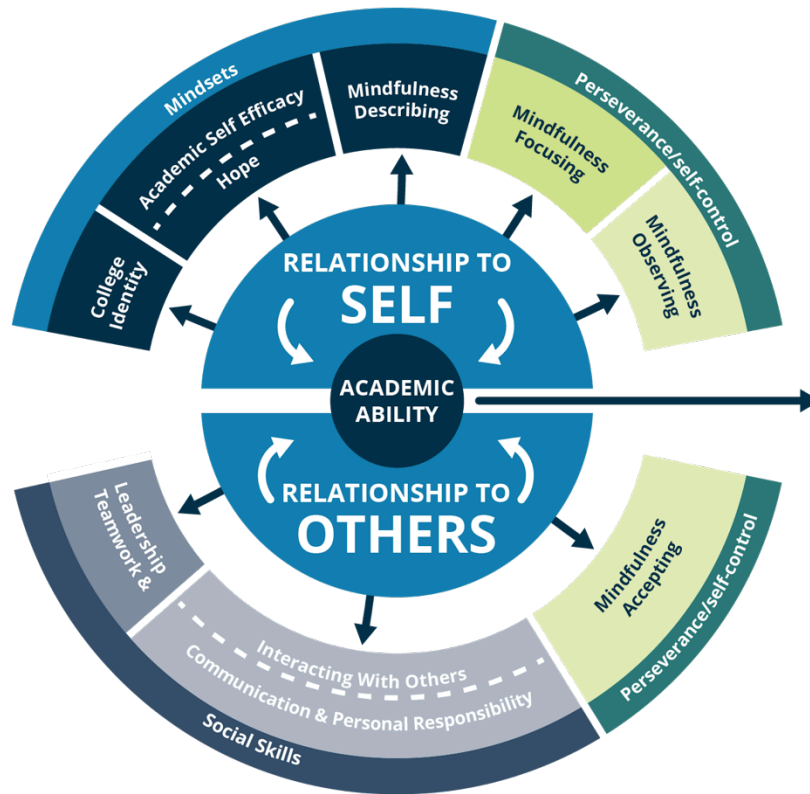
Discussion Outline

1. Needs of Diverse Workforce

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3. Evidence of Effectiveness:

   - Increase in Salaries & Psychological Factors
4. Why ACE works

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ACE Theory of Change
Affective Learning Model

Persistence
- - - - - - - - - - -
Completion
- - - - - - - - - - -
Salary Increases

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Quick Poll #2 -- Diego Presentation

What affective Professional Development topics interest you?

[ ] Increasing persistence of diverse student populations

[ ] Student Equity -- Meeting diverse students needs

[ ] Theories of affective learning & adaptive mindset skills

[ ] ACE's 1-week CTE course on 21st Century Professional Skills

[ ] All the above

For more info. on Prof. Dev. email: Diego.James.Navarro@gmail.com

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Q & A

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Evolving Work-Based Learning Program
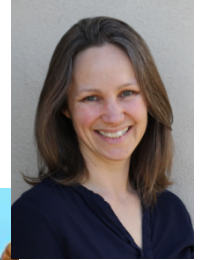
Technical Skills Training

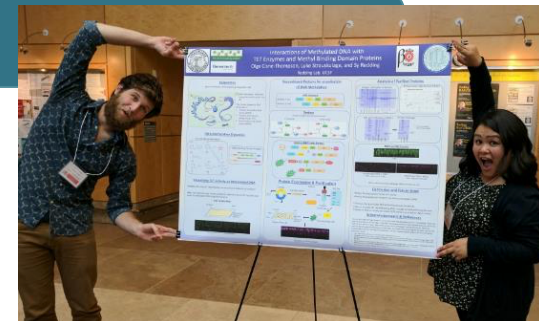**Work-Based Learning (Internship)**

Employability Skills & Support Course

Skilled Work-Based Learning/Internship Mentor

Work-based Learning Relationship Foundational to Student Success
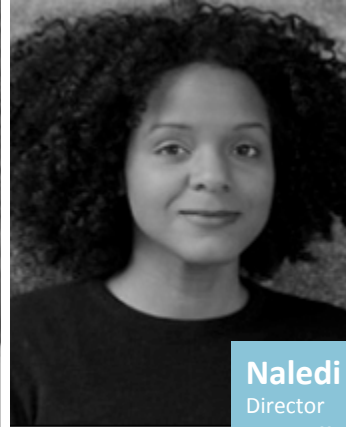
How do we get more skilled mentors?

CCSF-UCSF Mentor Training Team

Laurence Clement, PhD
Director, Research in Career Education
UCSF Office of Career and Professional Development

Naledi Saul, MPM
Director
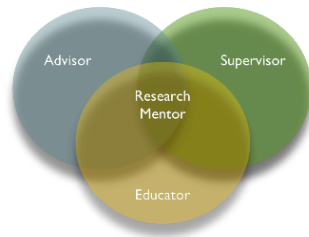UCSF Office of Career and Professional Development

James B. Lewis
Program Director/Bridge to Biosciences
City College of San Francisco

Karen Leung, PhD
Biotechnology Faculty & Internship Coordinator
City College of San Francisco

UCSF-CCSF Mentor Training Workshops: TRAIN-UP

Workshop 1 - Mentoring & Supervising 101
Being an effective mentor and supervisor

Workshop 2 - Supervising People Who Aren't You
Creating a positive work environment for all trainees

Workshop 3 - Identifying the Right Candidates for Your Team
How to strategically select candidates to reach your goals

Workshop 4 - Evaluating performance
How to evaluate performance as a new supervisor and mentor

Inclusive & Effective practices for Internship Mentors & Employers

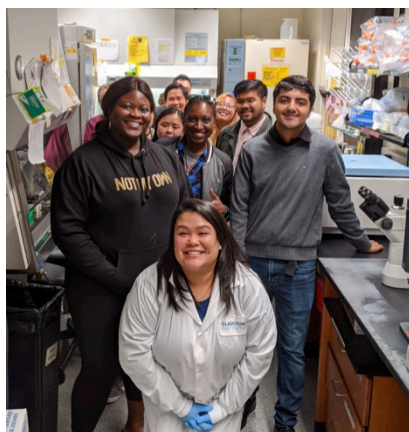| Mitigate bias in hiring/selecting	Set clear expectations	Provide equitable access to resources and support	Evaluate progress systematically	Provide regular, actionable feedback	Be transparent about rewards and consequences	Manage conflict (culture, values and behaviors)

Create an inclusive culture that takes into account
work styles and learning styles, cultural backgrounds, lifestyle and responsibilities, cultural and social capital.
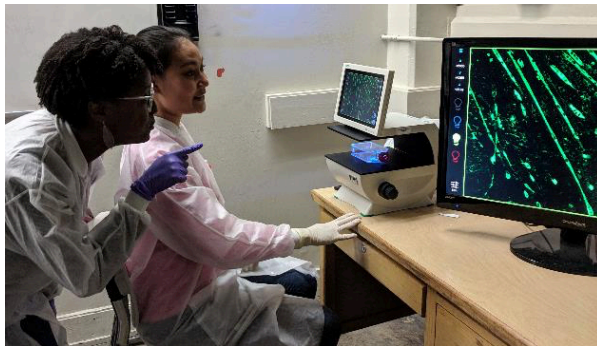

UCSF Office of Career & Professional Development
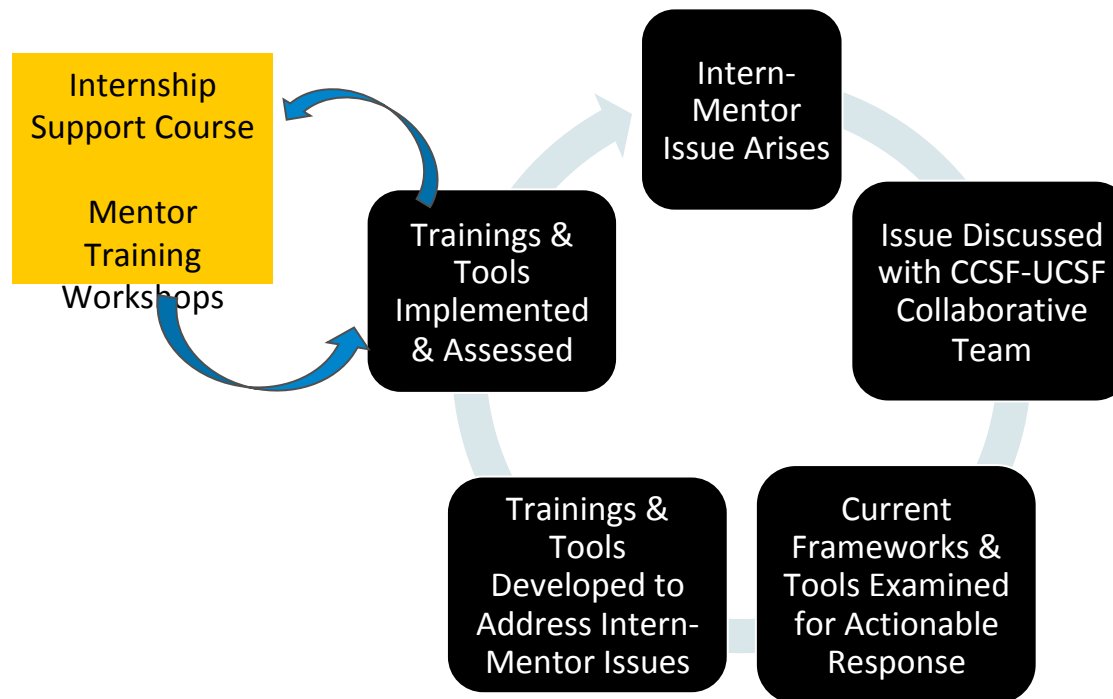Student Academic Affairs

Employability Skill Alignment

Capacity to build **relationships**	**Personal qualities** for career success	**Business fundamentals** and knowing your business value
1. Interpersonal strategies to manage stereotyping/bias 2. Communication strategies to support awareness/sensitivity	3. Orientation to lifelong learning to strengthen technical confidence 4. Understanding cultural differences in workplace expectations	5. Situational awareness of the importance of advancing cultural change in technician fields

Employability Skill Training Development

Backward Design for Expectation Setting for Mentors/Employers

Baseline Assessment	Teaching/Training	Evaluation	Expectation/Goal

- What does your intern need to do well by the end of their internship for you to feel confident recommending them to another lab, an employer or an educational program?

- How will you and your intern know they have attained this expectation/goal? How will you measure their success?
  - Specifically, if you were to have them prove to you and themselves that they can achieve a certain level of expertise or mastery for a specific skill, what would you ask them to say or do?

- How will you directly assess your intern's baseline level of competency with this expectation/goal at the beginning of the internship?
  - Specifically, how will you determine what they do and do not already know/have the skills/ability for in relation to this expectation/goal?

- What will you do to help the trainee reach this expectation/goal from their baseline level?
  - Consider a variety of resources: videos, articles, discussions, mini presentations, providing examples (consider what you know about your intern's learning and work styles to best assess what teaching, training or resources might be best - if you don't know, just ask!)
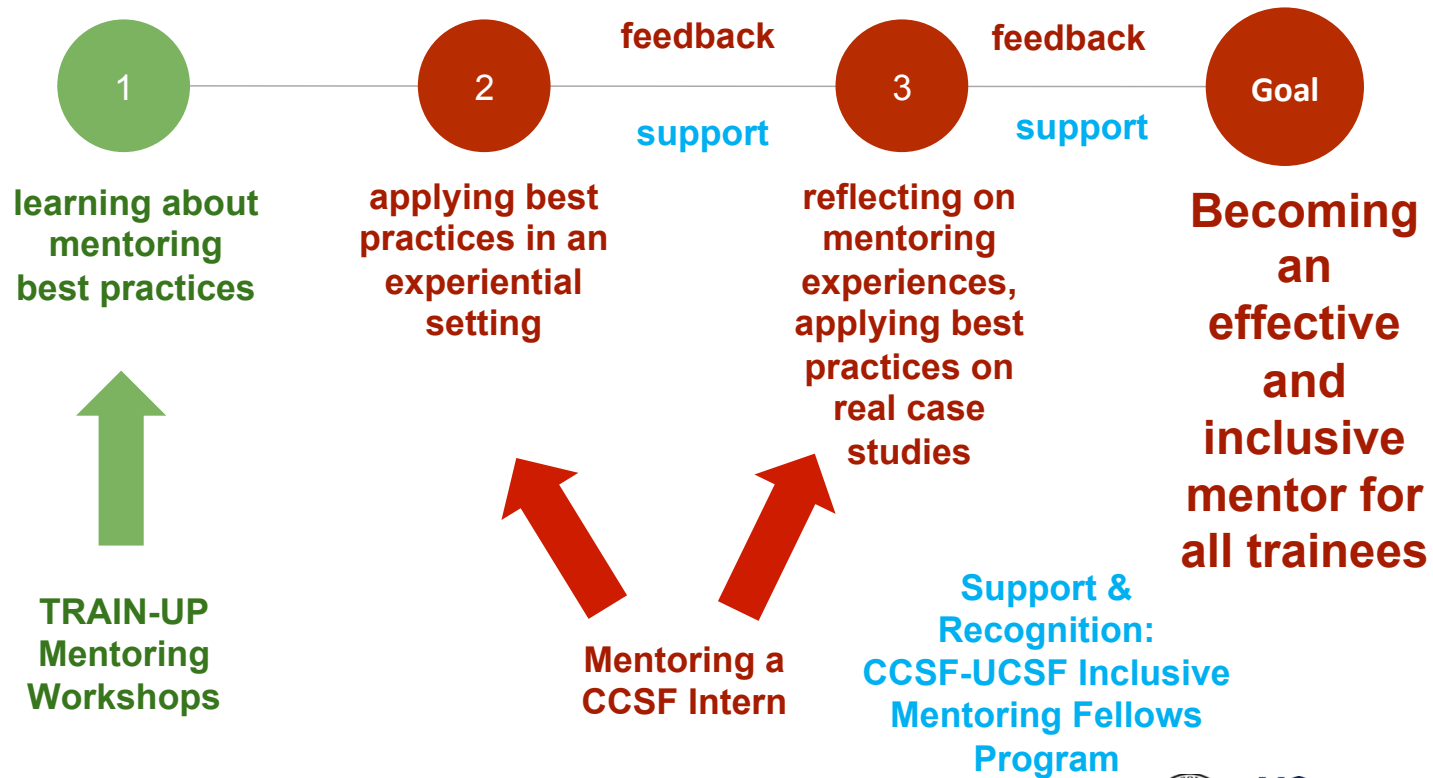
Office of Career & Professional Development
Student Academic Affairs

Backward Design for Expectation Setting for Mentors/Employers

	Conceptual Knowledge	Technical Skills	Performance	Professional Skills and Attitudes
Goals/Expectations: What final goal would you like your trainee to reach? Start the sentence with "Be able to..."				
Evaluation: **(Measure of success)** How will you and the trainee know they have attained this goal?				
Assessing baseline level: How will you directly assess the trainee's level of competency before they start?				
Teaching Strategy/ Support: What will the mentor do to help the trainee reach the goals/expectations from their baseline level?				

Office of Career & Professional Development
Student Academic Affairs

Becoming an Inclusive & Effective Mentor Requires

1 — learning about mentoring best practices

feedback

2 — applying best practices in an experiential setting

support

feedback

3 — reflecting on mentoring experiences, applying best practices on real case studies

support

Goal — **Becoming an effective and inclusive mentor for all trainees**

TRAIN-UP Mentoring Workshops

Mentoring a CCSF Intern

Support & Recognition: CCSF-UCSF Inclusive Mentoring Fellows Program

UCSF Office of Career & Professional Development
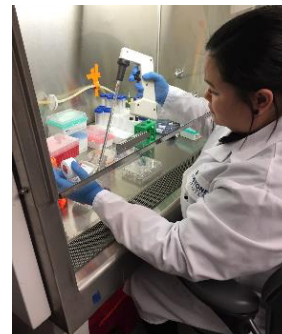Student Academic Affairs

Communicating the Value of Employability Skills

Being an Effective & Inclusive mentor means:

- Building strong working relationships that accomodate & value diversity

- Retention & Success for all trainees/employees
- Increased productivity
- Skills they can communicate in their next review or interview

Q & A

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Resources

- **SRI Website:** employabilityskills.org
  - louise.yarnall@sri.com
- CCSF Website: career.ucsf.edu/NSFATE2018
  - karen.leung@mail.ccsf.edu
- ACE Website:academyforcollegeexcellence.org
  - diego.james.navarro@gmail.com

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- Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

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Evaluation Link

Please help us improve our work by filling out a brief survey:

https://sriedu.quickbase.com/db/bp5g3v8fi?a=nwr

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