IGNITING THE DREAM: SUPPORTS AND STRATEGIES TO DIVERSIFY STEM FIELDS

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Explore findings from a national research project focused on determining the predictive factors influencing and promoting diverse students to enter STEM fields in academia. Key findings, along with practical tools, will be presented for educators to provide culturally appropriate supports and strategies.
PROJECTED PERCENTAGE INCREASES IN STEM JOBS: 2010-2020

- All Occupations: 14%
- Mathematics: 16%
- Computer Systems Analyst: 22%
- Systems Software Developers: 32%
- Medical Scientists: 36%
- Biomedical Engineers: 62%
Note: The first number in each box represents females; the second, males.
Figure 1. Percentage distribution of students enrolled in public elementary and secondary schools, by race/ethnicity: Fall 2002, fall 2012, and fall 2024.
If you can see it, you can dream it and be it
UC DAVIS ADVANCE

- Aims to increase the participation and advancement of women in academic science and engineering careers.
- Establish an institution-wide, inclusive STEM climate that values diversity
- Promote equitable STEM career advancement for women and underrepresented minorities
- Understand the barriers to academic careers and the catalysts for career success for Latinas in STEM
Social Science Research Initiative Team

- Chancellor Linda Katehi, Principal Investigator
- Adela de la Torre, Co-PI
  Professor of Chicana/o Studies - Director, Center for Transnational Health- Vice-Chancellor, Student Affairs
- Yvette Flores, Professor of Chicana/o Studies
- Laura Grindstaff, Professor of Sociology
- Marylou de Leon Siantz, Professor of Nursing. Director, CAMPOS
- Lisceth Brazil-Cruz, School of Education
To conduct empirical, qualitative research that …

- 1) identifies the personal and institutional factors influencing the career paths of Latina STEM scholars in academia.

- 2) informs the UC Davis ADVANCE program initiatives.

- 3) contributes to the literature explaining the under-representation of Latinas in STEM.
Methodology

• In-depth, semi-structured interviews

  1 – 2 hours in length

  Questions regarding: background, early education, PPFP program, Career path after PPFP, work environment, work-life balance, and future goals

• “Grounded theory” approach to qualitative analysis

• Narrative representation of themes and patterns

• Connections and additions to existing literatures
Emergent Themes

- Early childhood experiences (home, school, neighborhood)
- Role of family in pathway
- Conflicts/challenges
- Resilience
- **Structural and programmatic supports**
- **Mentoring**
- **Creation of a “Scientist” identity**
Structural and Programmatic Supports

- Generally they work and are effective
- They are especially crucial for the most disadvantaged
- They often work in conjunction with mentoring
Structural and Programmatic Supports

- Access to academic networks
- Educational navigational capital

Science clubs, Science talks, Scientist day, shadow a college student for the day, different science majors and what they can do with degree
Mentoring

- Provides access to field
- Create a sense of “community” in supporting student success
- Provides access to other people in field
- Insight into what fields is really about
Mentoring

- Mentor of similar cultural background
- Mentor with similar interests
- Mentor willing to connect with families
- Mentor willing to commit for long term

Professional, graduate students, college students
Scientist “identity”

- If you can see it, you can dream it and be it
- Students need to see themselves as scientists

Research scientists of their background and interest, international scientists, refer to students as scientists, write about their scientific discoveries
Thank you

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