

National Resource Center for Materials Technology Education

STEM Recruitment

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STEM Careers

- On average, a worker with STEM knowledge earns \$76,000 versus a non-STEM knowledgeable worker at \$46,000
- STEM workers have less layoffs
- Industry also supports short term, professional certificates and industry recognized credentials
- STEM majors earn the highest starting salaries

NSF Research Project

- Proven Practices for Recruiting Women to STEM Careers (#0501971)
- National Science Foundation Funded 4 Year Research Project
- Extensive Literature Review
- Advanced Technological Education Centers/Projects
- Resources available on website
- www.materialseducation.org

STEM Students

- Need a varied group of contacts and perspective of jobs
- Need active engagement
- Prefer hands-on environment
- Mentors are important – structured and consistent
- Mentors from underrepresented populations needed
- Need roadmap that shows how to navigate STEM educational pathways

Recruitment Practices Project Survey

- Sample survey of 202
- 91 of 202 (45%) responded
- Respondents rated 30 different **recruitment practices** and also resources that could be used as recruitment draws as: **Very Effective; Somewhat Effective; Not Effective; or Not Applicable**

Recruitment Practices Project Survey

Survey overall responses rated these activities as: Very Effective

- Activities for, or activities that, include parents and or guardians
- Organized college campus tours
- Science and technical fairs

Recruitment Practices Project Survey

- Some survey questions were open-ended
- Respondents were also asked to identify three activities that had the ***most impact recruiting females*** to STEM programs
- Respondents ranked the three activities or practices they identified from most to least effective

Recruitment Practices Project Survey

Respondents identified these four activities as having the most impact in recruiting females to STEM programs:

- Cohort/group activities (included clubs, peer or support groups)
- Organized Mentoring
- Role Models
- Socially Oriented Activities –activities involving interpersonal relationships are beneficial

Latino Leadership Initiative



Latino Leadership Initiative



Latino Leadership Initiative

- Student Cohort Graduation
- 32 began – 28 finished; 15 met all requirements
- Nine girls/six boys - earned 2 college credits



Latino Leadership Initiative

“We are very pleased with the results obtained. The students have displayed a tremendous desire to contribute to the community and it is hoped that these types of connections will bring much needed mentorship and job shadowing opportunities for the students of today, who in fact will be leaders of tomorrow. This is indeed...youth leadership at its best!!”

Ms. Rosario Reyes, CEO

Las Americas

Latino Education Training Institute (L.E.T.I)

Recruitment Practices Project Survey

- Referring back to the Survey
- Open Ended Questions
- Respondents listed Other Effective activities as:
 - Marketing Activities/Face to Face Time
 - Public Awareness such as competitions and video
 - Dual Enrollment Programs
 - National Programs (such as Career Pathways for Women)

Recruitment Practices Project Survey

- Other *Not Effective, Somewhat or Very Effective* activities that do or do not have the desired impact were:
 - Flyers
 - Brochures

Interesting point: 11 respondents responded that distributing flyers and brochures does not have the desired impact; whereas, 50 respondents responded that these were somewhat or very effective.

Provided food for thought – we reviewed our brochures

Recruitment Brochures

Do yours look like this?



Recruitment Marketing Materials

- Gathered Marketing Samples
- Short term contract with marketing professional
- Input from students, instructors, industry and our research project said:
 - Make them colorful
 - Make them attractive to look at
 - Need to be relevant to topic
 - Tell a story – why would they pick it as a career

We developed a complete portfolio of materials for outreach and recruitment activities

Increased number of females in program from zero to 5

Recruitment Brochures Result



STEM Statistics

- Growth in STEM jobs over the last decade has been three times of non-STEM jobs (7.9% versus 2.6%)
- Between 2008 and 2018, the Bureau of Labor Statistics estimates STEM occupations nationwide will grow by 17% from 6.8 million to 8 million; while non-STEM occupations will grow by 9.8%
- It is important to note that the BLS projects many STEM jobs will require less than a baccalaureate; and 92% of these positions will only require some postsecondary education

STEM Statistics

- Earnings for women with STEM jobs are 33% higher than the earnings for comparable women in non-STEM jobs
- For men, the earning premium for STEM jobs is smaller; STEM jobs earn 25% more than their counterparts in non-STEM jobs
- 70% of STEM workers with a high school or college education make more than the average for workers in all other occupations at the same education level

STEM Gap

- Recruiting underrepresented populations can be a challenge and also an opportunity
- 57% of the 16.8 million undergraduate students in the country are women and 38% are people of color
- Georgetown University Center for Education and the Workforce concluded that ***“increasing the number of women and minorities in STEM fields is an effective strategy for creating more equal opportunity in the labor market.”*** (Carnevale, Smith and Melton, 2011)

Recruitment Practices

- No one recruitment practice is deemed sufficient and effective by itself
- Aims to facilitate transitions for potential students
- Practices must be used in combination when designing and implementing recruitment programs
- 46 Activities were organized in 30 Practices
- 46 activities were also clustered into 7 Categories

Recruitment Categories

- Modes of Advertising
- Events
- School Visits
- Mentoring
- Promotion Outside the Educational System (to incumbent/unemployed workers seeking retraining)
- Student Support
- Enrollment Agreements with other schools

Recruiting Women into STEM Fields

- **First** – successful recruitment requires building relationships with prospective female students, i.e., peer mentoring, workshops led by female faculty, visits to STEM programs at community or technical colleges, promote active participation and discussion
- **Second** – offering information on financial aid, child care and other supports is key and knowledge of the availability of internship and apprenticeship opportunities in STEM programs is important

Recruiting Women

- **Third** – community and technical colleges need to reach out to women who are already enrolled and taking courses at community and technical colleges. Career and academic counseling can play a critical role in presenting STEM opportunities to women who are still exploring majors during their first year of college

Recruiting Women

- **Fourth** – combine recruitment efforts that reinforce each other is important. Circulating a brochure that pictures a diverse group of women in STEM fields may not be sufficient. Recruitment efforts are more likely to be successful if advertising is supplemented by personalized outreach, information about financial aid, childcare, and other supports such as mentoring, interactive workshops and intensive visits to local programs

Summary

- Several practices can be combined
- Combination of practices leads to effective strategies
- Following up on the strategies can positively affect recruitment, enrollment and retention
- And, they can be replicated for multiple audiences





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