

2008 STEM Recruitment Survey

Summary

As part of our ATE grant (DUE # 0501971), we conducted a two-week online survey using SurveyMonkey.com in February 2008. Our sample for this survey consisted active ATE projects and centers funded under DUE in the 2006-2007 academic year. We required each grant in the sample to have started before 6/30/06 and been in operation until at least 12/31/06 to allow for the preparation of activities. Special grants concerning such topics as research, library collections, and planning grants, were excluded from the sample, because they were not expected to be doing recruitment. This left 202 projects and centers to which email invitations were sent. The final number of respondents participating in the survey was 81 of which 47 (58%) completed the entire survey. 10 emailed saying they do not target women specifically, and 8 more emailed with technical issues. We responded to the technical issues and encouraged those who experienced them to complete the survey. The total response rate for the survey was 45% (91 out of 202).

There were thirteen questions in the survey. The results of the first close ended question show that the majority of respondents recruit the following underrepresented populations: women specifically (71.4%), Blacks/Africans (61.0%), and Hispanics (58.4%). The results of the second close ended question show that the majority of respondents recruit students in high school (75.6%), followed closely with 2-year college students (59.0%), and people already in or re-entering the workforce (55.1%).

The next close ended question section (questions # 3-7) lists a number of recruitment activities. Those activities that respondents considered most effective are the following: flyers, newsletters, career fairs, campus tours, visits to high schools, brochures, videos, activities for parents, tutoring, financial aid, mentoring, socially oriented activities (e.g. workshops, camps, & clubs). Those activities that respondents considered either not applicable or ineffective are the following: advertising on the radio/TV/online, email campaigns and telethons, child care, celebrity speakers, student housing, e-mentoring, national programs.

In question # 8, respondents were asked to describe the activities with the most impact. The majority of responses fall into the categories that follow: organized mentoring, (traditional, peer, & gender) role models, socially oriented activities (hands-on summer camps or workshops, cohort/group activities), provision of resources (financial aid). Activities that are mentioned in this question, but do not obtain the same numbers as the activities listed above fall into these categories: marketing activities (visits to high schools, science fairs), public awareness (competitions, videos), institutional integration, (dual enrollment programs, national programs such as career pathways).

Questions # 10 & 11 asked respondents to list ineffective activities. The majority of activities that respondents list fall into the following categories: posting recruitment materials (sending out flyers, brochures) and online mentoring. One respondent comments on the use of brochures and other marketing materials, stating that "...it seems that recruiting people is more effective than recruiting a certain group. Students who see posters portraying engineers for example as exclusively multicultural females can see through that. It's important to make opportunities available to everyone..."

Question # 12 asked for any other comments that the respondents had. Out of those responses rise a couple of themes. Respondents mention the following practices as effective:

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Edmonds Community College, Lynnwood, WA



NSF DUE 0501971

mentoring, cohorts, support groups, and financial aid. Other comments are made about uninformed counselors who are a current break-down point in the process of recruiting students to their programs. One respondent states that “K-12 counselors are still not internalizing the fact that many ‘blue collar’, highly technical professions are rewarding for women.”

Lessons Learned

1. The survey was biased towards effectiveness, as there were two categories for effectiveness (i.e., Very Effective and Somewhat Effective) and only one for ineffectiveness (i.e., Not Effective). Also, respondents may be combining the effectiveness of some activities rather than looking at each activity individually. For example, respondents may be thinking of a brochure’s effectiveness (which was rated favorably) when incorporated into something like a career fair, rather than a brochure’s effectiveness by itself. Likewise, the effectiveness of other activities, such as celebrity speakers, which was not rated favorably, may be increased when applied with other activities embedded in it.
2. Many of the respondents in our study (no data was collected for this in the survey) had no good system of empirically tracking the effectiveness of their recruitment activities. In our site visits, we found that sometimes a recruitment activity would be applicable to the needs of a program’s recruitment goals, such as a career fair, but this activity showed little effectiveness when they actually asked students who had attended one before coming to college. It would be informative to know how many programs have tracking systems help to evaluate the effectiveness of their recruitment, or whether they track this based solely on perception and fluctuation in overall enrollment.
3. A few respondents emailed because they were confused as to whether the survey asked them about recruitment practices of their program or that of their institution. They thought they could not fill out the survey, because they did not know what their institution was doing to recruit. This problem was corrected for these respondents through email, but it shows that these respondents were not familiar with the resources their institution offered. Because they did not know what their institution was doing and how this could supplement and support their individual program, they were limiting themselves to only what their program could do to recruit. The same can also be said for those ATE centers and projects who do not share recruitment information with their partners.
4. The list of recruitment activities in the 2008 survey has been revised based on the results of the open ended questions of the survey and further research outside the survey (i.e., review of literature, site visits, interviews, and consultations with other professionals). This list is more comprehensive and is listed at the end of the “New Recruitment Practices List” Section of this report.

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Edmonds Community College, Lynnwood, WA



NSF DUE 0501971

Numerical Data

2008 STEM Recruitment Survey					
Q1. Which of the following under-represented groups are specifically targeted by recruitment efforts at your institution? Please mark all that apply.					
<i>Answer Options</i>	<i>Response Percent</i>	<i>Response Count</i>			
Women	71.4%	55			
Disabled	18.2%	14			
Black/Africans	61.0%	47			
Hispanic	58.4%	45			
Native American	22.1%	17			
Asian & Pacific Islanders	18.2%	14			
N/A	10.4%	8			
Comments		5			
	<i>answered question</i>	77			
	<i>skipped question</i>	4			
Q2. Which of the following educational levels are targeted by your institution's recruitment efforts? Please mark all that apply.					
<i>Answer Options</i>	<i>Response Percent</i>	<i>Response Count</i>			
Students, K-8 (elementary & middle school)	32.1%	25			
Students, 9-12 (high school)	75.6%	59			
2-year college students	59.0%	46			
Mixed educational levels of people already in or re-entering the workforce	55.1%	43			
N/A	2.6%	2			
Comments		2			
	<i>answered question</i>	78			
	<i>skipped question</i>	3			

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Edmonds Community College, Lynnwood, WA



NSF DUE 0501971

Q3. Marketing Activities:					
<i>Answer Options</i>	<i>Very Effective</i>	<i>Somewhat Effective</i>	<i>Not Effective</i>	<i>N/A</i>	<i>Response Count</i>
Advertising in newspaper	5	27	7	20	59
Advertising on radio	5	19	4	31	59
Advertising on TV	5	15	4	35	59
Advertising online (blog, utube, etc.)	6	20	2	31	59
Newsletters/magazines sent to prospective students	11	28	1	19	59
Letters or info sent to students' parents/guardians	11	25	2	21	59
Organized telethons, email campaigns	0	13	4	42	59
Science/technical and/or career fairs; open houses	28	24	3	4	59
Organized college campus tours	28	19	3	9	59
College faculty, staff, and/or students visit K-12 schools (providing info through lectures, workshops, etc.)	28	22	4	5	59
				<i>answered question</i>	59
				<i>skipped question</i>	22
Q4. Public Awareness:					
<i>Answer Options</i>	<i>Very Effective</i>	<i>Somewhat Effective</i>	<i>Not Effective</i>	<i>N/A</i>	<i>Response Count</i>
Brochures, flyers, posters, program websites	18	33	4	4	59
Videos, CDs, DVDs	13	23	3	20	59
Activities for or that include parents/guardians	26	16	2	15	59
Availability of tutoring	15	25	1	18	59
Availability of child care	9	11	2	37	59
Celebrity speakers (well-known, inspirational, famous people)	4	16	3	36	59
Availability of student housing	2	4	1	52	59
Competitions	10	18	2	29	59
Award ceremonies	10	18	5	26	59
				<i>answered question</i>	59

“Proven Practices for Recruiting Women to STEM Careers in ATE Programs”
Edmonds Community College, Lynnwood, WA



				<i>skipped question</i>	22
Q5. Provision of Resources:					
<i>Answer Options</i>	<i>Very Effective</i>	<i>Somewhat Effective</i>	<i>Not Effective</i>	<i>N/A</i>	<i>Response Count</i>
Transitional (a.k.a. enrichment) courses to facilitate transition into programs	17	25	1	16	59
Availability of scholarships or other financial aid	26	22	2	9	59
Internship/apprenticeship programs	25	25	1	8	59
				<i>answered question</i>	59
				<i>skipped question</i>	22
Q6. Organized mentoring used as a resource to recruit:					
<i>Answer Options</i>	<i>Very Effective</i>	<i>Somewhat Effective</i>	<i>Not Effective</i>	<i>N/A</i>	<i>Response Count</i>
Traditional mentoring--interaction between professor/teacher and K-12 students	13	24	0	22	59
Peer mentoring--college students mentoring students on a lower education level (e.g. student role model, mentor, ambassador)	24	19	1	15	59
Cultural/Gender Mentoring--mentor is of the same ethnicity or gender as the student	15	19	1	24	59
Electronic mentoring--online interaction between mentor & student	3	16	4	36	59
Comments					1
				<i>answered question</i>	59
				<i>skipped question</i>	22
Q7. Socially Oriented Activities:					
<i>Answer Options</i>	<i>Very Effective</i>	<i>Somewhat Effective</i>	<i>Not Effective</i>	<i>N/A</i>	<i>Response Count</i>

“Proven Practices for Recruiting Women to STEM Careers in ATE Programs”
Edmonds Community College, Lynnwood, WA



Short workshops and weekend programs (less than 1 week)	12	20	0	27	59
Student camps or workshops (1 week or longer)	15	21	1	22	59
Support groups and/or student clubs or chapters	17	26	2	14	59
National and/or company programs targeting girls (CISCO Systems Gender Initiative, Career Pathways for Women, IGNITE, etc.)	7	16	2	34	59
Comments					5
				<i>answered question</i>	59
				<i>skipped question</i>	22

Q8. Please identify three strategies that had the most impact recruiting females to STEM programs, ranking them by most to least effective.

<i>Answer Options</i>	<i>Response Percent</i>	<i>Response Count</i>			
1	100.0%	37			
2	91.9%	34			
3	83.8%	31			
	<i>answered question</i>	37			
	<i>skipped question</i>	44			

Q9. Describe the impact that these top three recruitment strategies had on STEM programs.

<i>Answer Options</i>	<i>Response Count</i>			
	35			
<i>answered question</i>	35			
<i>skipped question</i>	46			

Q10. Has a strategy been tried that did not have the desired impact?

<i>Answer Options</i>	<i>Response Percent</i>	<i>Response Count</i>			
Yes	35.3%	12			
No	64.7%	22			
	<i>answered</i>	34			

	<i>question</i>				
	<i>skipped question</i>	47			

Q11. If "yes" to the previous question, please describe.

<i>Answer Options</i>	<i>Response Count</i>			
	11			
<i>answered question</i>	11			
<i>skipped question</i>	70			

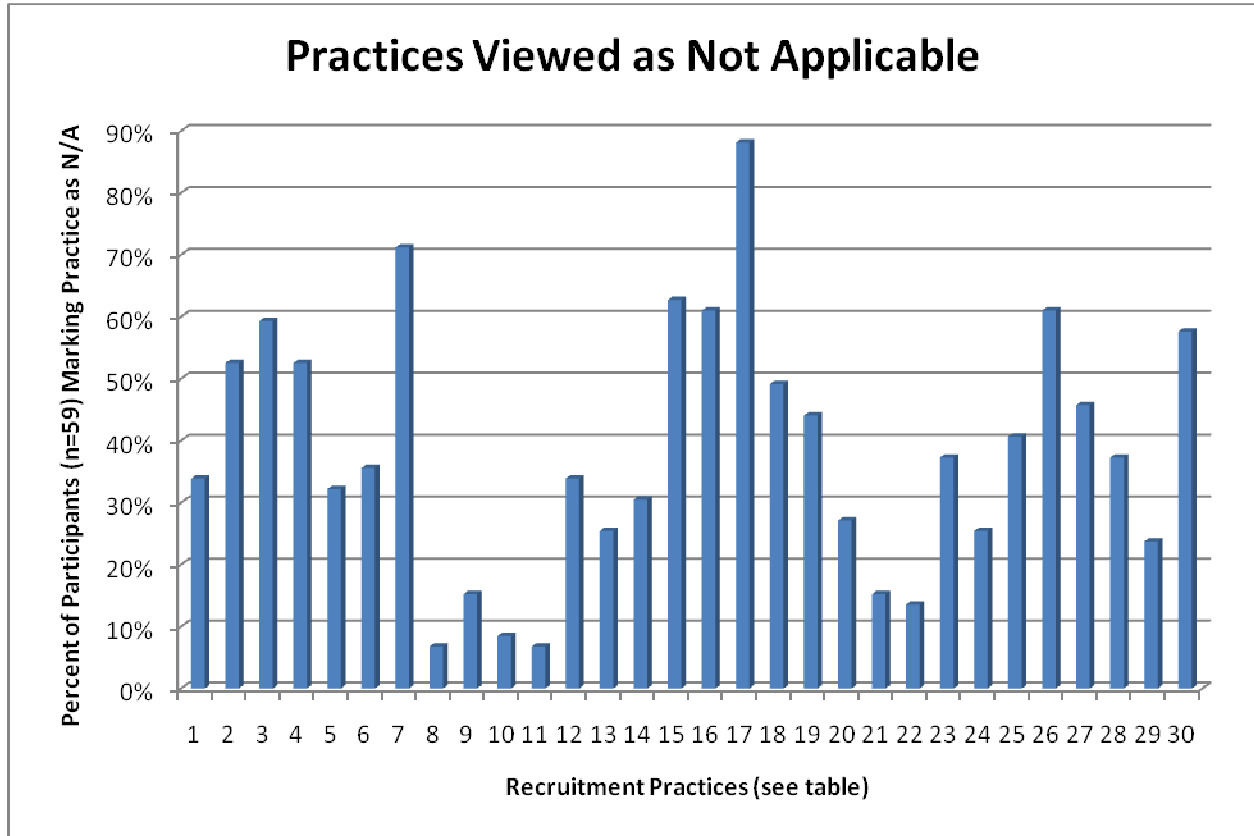
Q12. Is there anything else you would like to share with us regarding recruitment of females to STEM programs?

<i>Answer Options</i>	<i>Response Count</i>			
	17			
<i>answered question</i>	17			
<i>skipped question</i>	64			

Q13. If you would like your institution to receive recognition for completing the survey, or to receive any additional information regarding this study, please provide your contact information below.

Data for individual institutions will not be reported in the survey or study results.

<i>Answer Options</i>	<i>Response Percent</i>	<i>Response Count</i>		
Recognition	57.9%	11		
Additional Information	42.1%	8		
Comments		18		
	<i>answered question</i>	19		
	<i>skipped question</i>	62		



“Proven Practices for Recruiting Women to STEM Careers in ATE Programs”
Edmonds Community College, Lynnwood, WA



Percentage of Practices Viewed as Not Applicable			
Recruitment Practice #	Recruitment Practices	# of Participants Marking N/A (n=59)	Percentage of Participants Marking N/A
1	Advertising in newspaper	20	34%
2	Advertising on radio	31	53%
3	Advertising on TV	35	59%
4	Advertising online (blog, utube, etc.)	31	53%
5	Newsletters/magazines sent to prospective students	19	32%
6	Letters or info sent to students' parents/guardians	21	36%
7	Organized telethons, email campaigns	42	71%
8	Science/technical and/or career fairs; open houses	4	7%
9	Organized college campus tours	9	15%
10	College faculty, staff, and/or students visit K-12 schools (providing info through lectures, workshops, etc.)	5	8%
11	Brochures, flyers, posters, program websites	4	7%
12	Videos, CDs, DVDs	20	34%
13	Activities for or that include parents/guardians	15	25%
14	Availability of tutoring	18	31%
15	Availability of child care	37	63%
16	Celebrity speakers (well-known, inspirational, famous people)	36	61%
17	Availability of student housing	52	88%
18	Competitions	29	49%
19	Award ceremonies	26	44%
20	Transitional (a.k.a. enrichment) courses to facilitate transition into programs	16	27%
21	Availability of scholarships or other financial aid	9	15%
22	Internship/apprenticeship programs	8	14%
23	Traditional mentoring--interaction between professor/teacher and K-12 students	22	37%
24	Peer mentoring--college students mentoring students on a lower education level (e.g. student role model, mentor, ambassador)	15	25%
25	Cultural/Gender Mentoring--mentor is of the same ethnicity or gender as the student	24	41%
26	Electronic mentoring--online interaction between mentor & student	36	61%
27	Short workshops and weekend programs (less than 1 week)	27	46%
28	Student camps or workshops (1 week or longer)	22	37%
29	Support groups and/or student clubs or chapters	14	24%
30	National and/or company programs targeting girls (CISCO Systems Gender Initiative, Career Pathways for Women, IGNITE, etc.)	34	58%

“Proven Practices for Recruiting Women to STEM Careers in ATE Programs”
Edmonds Community College, Lynnwood, WA



NSF DUE 0501971

New Recruitment Practices List

1. Events

- 1.1. Science/technical and/or career fairs; open houses
- 1.2. Non-residential workshops, weekend programs, and day-camps
- 1.3. Residential workshops, camps, and learning/living programs
- 1.4. Organized college campus tours
- 1.5. Competitions
- 1.6. Award ceremonies
- 1.7. Celebrity speakers
- 1.8. Activities for, or that include, parents or guardians

2. School Visits

- 2.1. College faculty, staff, and/or students visit K-12 schools
- 2.2. College faculty visits to high schools
- 2.3. Visits by college non-faculty representatives that involve interface with students
- 2.4. Visits by faculty or college representatives to schools to talk with teachers, counselors, or administrative staff
- 2.5. College students visiting high schools
- 2.6. Informal networking between high school teachers and college faculty and/or staff

3. Organized Mentoring Across Educational Levels

- 3.1. Traditional in-person mentoring between instructor and K-12 students
- 3.2. Peer mentoring--college students mentoring students on a lower education level
- 3.3. Cultural/Gender Mentoring
- 3.4. Electronic mentoring

4. Student Support Programs

- 4.1. Availability of scholarships or other financial aid
- 4.2. Availability of child care
- 4.3. Availability of student housing
- 4.4. Presence of a women's program
- 4.5. Availability of a living/learning housing option
- 4.6. Career exploration, development, and planning activities
- 4.7. High School Counselors
- 4.8. Career Planning Classes and Associated Activities
- 4.9. Support groups and/or student clubs or chapters
- 4.10. National and/or company programs targeting girls
- 4.11. Transitional and/or Enrichment Courses
- 4.12. Availability of tutoring

"Proven Practices for Recruiting Women to STEM Careers in ATE Programs"
Edmonds Community College, Lynnwood, WA



4.13. Internship/apprenticeship programs

5. Institutional Integration (Dual Enrollment)

5.1. Vertical integration

5.2. Horizontal integration

6. Practices targeting those outside of the educational system

6.1. Provision of employee training

6.2. State offices dealing with employment and unemployment

6.3. Community organizations such as YM and YWCAs, churches or civic groups

7. Modes of Advertising

7.1. Brochures, flyers, posters, website notices, tee shirts

7.2. Videos, CDs, DVDs

7.3. Newsletters/magazines sent to prospective students and parents

7.4. Letters or information sent to students' parents/guardians

7.5. Newspapers and magazines

7.6. Radio

7.7. Television Advertising

7.8. Online (website, blog, YouTube, etc.)

7.9. Organized telethons, email campaigns

7.10. Billboards