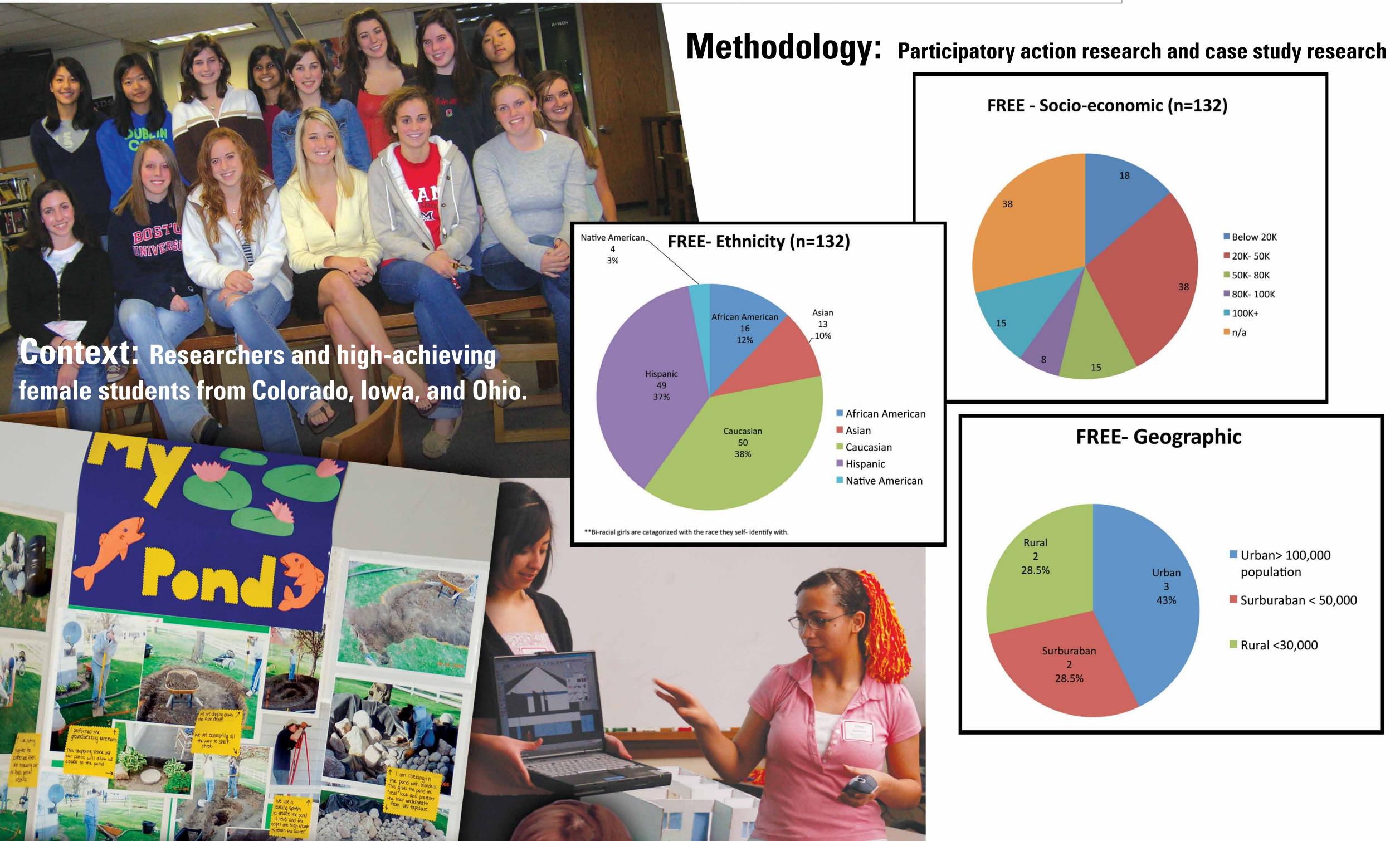
Purpose: To support groups of academically-able young women to think seriously about engineering as a career. To follow the course of their career decision making over time.

Female Recruits Explore Engineering



Research Questions & Preliminary Findings:

Our results suggest that many high-achieving girls know little or nothing about engineering; thus, they really can't develop an interest in it or choose it. Theoretically they are free to choose, but their "choice" is empty.

Research Qu	uestions	Preliminary Findings				
1. What do want to know engineerin		Not hard to get girls interested in engineering activities. Were surprised at the different types and contexts of engineering. Interested in the benefits of engineering to self and others. Concerns about engineering surfaced (questions about time, stress, women in the field, curricular requirements).				
engineerin	s the prospect of ag fit into the fthe girls' lives?	Most of the girls knew little about engineering when FREE began and very few were planning to pursue engineering (see table below). Engineering did not fit easily into girls' lives. The FREE project was difficult to fit into their busy schedules. The girls: 1. saw engineering as a largely male domain 2. were concerned that the practice of engineering may be incompatible with future family lives.				
economic, positioning	racial, socio- and rural/urban of affect girls' on engineering?	Lower socio-economic class minority girls had more difficulty fitting engineering into their lives than middle class white girls. Pursuing engineering in college or a career was more than a matter of being interested. The girls in FREE lacked other resources making it difficult to pursue even with interest Lack of role models, mentors and communities of practice Lack of knowledge about college Fear of what college will bring Immigration status Lack of economic resources.				
fun OSIIVicit	4. How and why do young women's interests in engineering change over time?	Once exposed to interesting aspects of engineering, interest grows, even to the point of expressing a desire to pursue engineering in college (see table below). After exposure to engineering, the girls began to name more styles of engineering, identify more characteristics,				

STEM or engineering-based projects, such as Pen with a candy top, Adjustable high-heeled shoes, Playground for disabled children, RoboNanny, Green Kitchen, Cleaning up

JAN: First FREE meeting, Career Fairs

MAR: Global Marathon, FREE website LIVE

APR: Deliver Blackberry, SHPE Shadow Day

JUL: Interview an Engineer, Fisher Controls

SEP: Engineering project work begins

OCT-DEC: Project work continues

DEC: Textile Engineering Field Trip

MAY: Explore research question with girls, Forensic Lab

bodies of water of pollutants

FEB: IA Career Fair Debriefing

JUN: Space Command Lab

AUG: ISU Visit

Web-based Vitual Learning Community is written and in a principal summer of the summer

(Content created by FREE participants) kind of sales

and virtual learning mobile technology and a free site f

New Password-protected online, wiki-like, learning environment by first-tire

supported by dedicated servers.

this approach promotes exploration and learning

resulting in frequent and spontaneous data.

	Gi	irls' Trajectories of Interest in Engineering Over Time									
\mathbf{I}		Start Spr 07	Consider'g Eng at Start	Retained Aug08	Consider'g Eng Aug 08	Stay in Eng Eng	Stay in NEng	Switch Eng→ NEng	Switch NEng→Eng		
	CO	69	16 (23%)	38(65%)	15 (39%)	6(16%)	19(50%)	4 (11%)	9 (24%)		
	IA	46	13 (28%)	21 (29% & 56%)*	10 (48%)	7 (33%)	1 (5%)	2 (9.5%)	5 (24%)		
	ОН	20	2 (10%)	15 (75%)	12 (60%)	2(10%)	3(15%)	2(10%)	10(50%)		
ľ		131	31 (24%)	74 (65%)	37 (50%)	15 (20%)	23 (31%)	8 (11%)	24 (32%)		

*One site in IA was an urban district serving 4 schools. Retention in this multi-school site was 29%. Retention in single school sites was 56%.

Recommendations:

Data Collection:

FREE Activities Timeline Sample

MAR 2007-MAY 2009 FREE participants collaborate online using FREE's secure web-based learning environment

MAR: Projects

APR: Projeccts

SEP: Case Study Kick-Off

OCT: Case Study interviews begin

Jun

JAN: Career Fairs, Bioengineering Lab Visit, Projects

MAY: CELEBRATION - Presentation of projects

FEB: SWE Sleepover, PWSE Get Away Weekends, Projects

Female Recruits Explore Engineering We must proactively provide contexts in which

engineering and other STEM-related interests can be developed, supported, and nurtured.

JAN: Career Fair (IA)

APR: Case Study Interviews

JUN: School Graaduations

FEB: Case Study Interviews, OSU Visit

MAY: Case Study Interviews, Graduations

Cultivate communities of practice to support career exploration and influence vocational development.

Programs like FREE that provide sites for engineering practice must be supported and protected.

Research Team: Practitioners, experts and scholars in anthropology, career development and post-secondary education transitions, education, engineering, Latino studies, Native American studies, sociology, curriculum and instructional technology, and women's studies.

and express more personal interest



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