Developing STEM Scholars
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RUTGERS The State University of New Jersey
BROOKDALE COMMUNITY COLLEGE
Background of Project

• Approached by Rutgers to participate in the current grant
• First met with Haim Baruh in Spring 2014
• Formed a STEM Advisory group in summer 2014 to submit a proposal
• Proposal was accepted Fall 2014
• Began the grant in January 2015
• Grant to Brookdale will run from January 2015 through June 2016
NJSGC Community College Activities

- Fellowships (all participating community colleges)
- STEM Clubs (Brookdale, Essex, Middlesex)
- Boot Camps (Union County CC)
- Female Student Clubs (Brookdale, Essex)
- Outreach to K-12 Communities (Brookdale, Atlantic Cape)
- Coordination of Transfers Between Community Colleges and 4-Year Institutions (Rowan Univ., Rutgers Univ.)
- Sending Fellows to NASA Centers and/or industry (NASA GISS in summer 2015)
- STEM Educator Conference (TBD)

- Currently five participating community colleges. We are in talks with two others.
Why STEM In Community College?

• Women and underrepresented minorities in STEM are more likely to begin their college studies in Community Colleges.

• Smaller class size for entry level STEM classes (100 level Biology, Chemistry, Math and Physics). Class size at Brookdale is less then 30 for most classes.

• Support of Foundational Studies. (70% of community college students need at least on Foundational Studies course in Reading, Math, or Writing)

- Doctorate
- Master's
- Bachelor's

Percent women vs Number of women (thousands)

Doctorate
Master's
Bachelor's

Percent women
Number of women (thousands)

1993
2002
2012
Undergraduate enrollment, by type of school: 2012

NOTE: Hispanic may be any race.
Goals of the Grant

• Increase Brookdale’s visibility as a STEM College
• Create and Support a STEM Community
• Encourage more students to major in STEM fields, even those who need foundational studies.
• Community Outreach
Creating a STEM Community

STEM Lounge Opening March 2015

Peer Tutoring in STEM Lounge
STEM Fellowship: Developing our students

8 STEM Fellowships were created (2 cohorts of 4 students)

Selection Criteria
• US citizenship
• Current enrollment as a full time student at Brookdale with a declared STEM major
• Completed 24 credits with at least 2 semesters' worth of Program requirements for the STEM major
• GPA of 3.5 or higher
• Remain full time Brookdale student during the length of the fellowship (one year)
• Underrepresented minorities are especially encouraged to apply
Fellowship Responsibilities

• 20 hours of tutoring or assisting in a STEM Lab each semester
• 20 hours of Peer Tutoring in the STEM Lab
• Complete a project and present it during the student showcase.
Cohort 1: January 2015 - Summer 2015

Accomplishments
- Built an aquaponic system for Neptune Middle School
- Research at NASA Goddard Institute for Space Studies
- Research at Rutgers in the Complex and Software Materials Lab
Cohort 2: September 2015-May 2016

Computer Science Major
Biology Major
Two Engineering Majors
W.E.S.T: Women in Engineering Science and Technology

The purpose of WEST is to support and encourage women taking math, engineering, science, and technology courses by organizing peer study groups, providing mentoring of women students by appropriate faculty, and providing opportunities to get information on careers, scholarships, grants, etc. and provide such members with incredible network devices for future experiences.

Started in 2006
WEST SPRING DINNER

8 Speakers and 50 students and faculty attended the Dinner
WEST Spring Career Dinner
Eight Great Speakers!

Career Professionals

Eva Chu
Chemical Engineer
Sealed Air Corporation

Alyssa Gambino
Nuclear Engineer
Senior Reactor Operator
Oyster Creek NGS

Dr. Rebecca Mercuri
Computer Scientist
President Notable Software, Inc

Beatriz Ospina Varon
Mathematician
Gaming Laboratories International

Starting Out

Tea Bestavashvili
BS Mathematics
Rutgers 2014
Quality Assurance Analyst
Index Engines

Jessica Buck
BS Computer Science
Monmouth University 2014
Hybrid Healthcare Communications

Tierney Griffin
Civil Engineering Student
Drexel University

Jessica Kostiou
BS Software Engineering
Monmouth University May 2015
Lockheed Martin
WEST Club Meeting

Clubs meets twice a month
WEST Mentoring

- WEST Students can have a 1-1 mentor from application until graduation
- Twice a year WEST Sponsors a Speed Mentoring Event
Middle School Outreach:
Hope Academy Charter School (Asbury Park, NJ)
Bradley Beach Elementary School (Bradley Beach NJ)

• STEM Club created as part of their after school Program October 2015
• Grant Funds use to buy materials for the STEM Club and pay a stipend for a teacher in the school
• Brookdale students will help in the clubs.
• STEM Day in June 2016 which will bring 5-7 grade students for a day of STEM Activities.
Outreach Event with the Girl Scouts:
Partnership WEST, AAUW, GSA, and Rutgers School of Engineering
Future

• Use the grant to create ongoing sustainable programs for our students
  • STEM Lounge
  • Peer Tutoring
  • STEM Clubs in Middle Schools (Both schools have funding in place to continue the clubs after the grant)
  • Create Professional Development for Middle Schools to start their own STEM clubs

• New opportunities
  • Continue a fellowship program
  • Look for ways to continue to connect our students to research opportunities
  • Increased partnerships with 4 year schools (Rutgers, Monmouth University)
  • Partnership with Professional Organizations (AAUW, GSA, WIS, IEEE)
  • New Grants