



BASE (Broadening Access to Science Education) Camp for Young Women

Dr. Amanda S. Harper-Leatherman,¹ Dr. Shannon M. Harding,² and Dr. Shelley A. Phelan³

Fairfield University Chemistry & Biochemistry,¹ Psychology,² and Biology³ Departments, Fairfield, CT 06824

Background

- Exposure to current science content and engagement in scientific inquiry in high school helps to attract students to and retain students in the science pipeline in and beyond college.
- Engaging students in science is particularly important for students of health disparity populations in urban areas.
- These locations often have underfunded science curricula and limited access to role models and mentors in STEM and health careers.
- Our neighboring city of Bridgeport, CT is a socioeconomically diverse community where 91% of students are minority status, 95% qualify for the free lunch program, and many health disparity populations traditionally underrepresented in science are found.
- The camp specifically targets young women in this group, based on the disproportional underrepresentation of women in science careers.

Camp Goal

The program, entitled **BASE** (Broadening Access to Science Education), has an overall goal to excite and inform female students from local health disparity populations, specifically Bridgeport, CT, about the process and promise of science in an effort to increase interest in the pursuit of STEM and health careers after college.

History of BASE Camp

- 2007** – First year of camp run as a male and female one-week day camp (funded by Maximilian E. & Marion O. Hoffman Foundation Inc. and The Louis Calder Foundation, \$35K total)
- 2010** – One-week residential camp for female students (funded by Bank of America, \$25K and Hoffman Foundation, \$10K)
- 2011** – One-week residential camp for female students (funded by Bank of America, \$25K, Fairfield's College of Arts & Sciences, \$3.5K, and the Science Institute of the College of Arts & Sciences, \$1.5K)
- 2012–2016** – Annual two-week residential camp for 24 rising female juniors and seniors (funded by the National Institute of Health, \$382K)

Schedule & Logistics of Camp

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Week 1	Check-in 4:00-5:00pm 6:30pm Welcome Dinner	Research Immersion Experience	Research Immersion Experience	Research Immersion Experience	Research Immersion Experience	Research Immersion Experience
Week 2	Check-in 4:00-5:00pm	AM – FIELD TRIP PM – Presentation Preparation	AM – Presentation Preparation PM – Science & Health Careers Exploration	AM – Presentation Preparation PM – College Admissions Counseling 7:00pm Reception with parents	AM – Finish Presentation & Practice Talks 3:00-4:30pm Poster Presentations	AM – 9:20-11:30am Oral Presentations Check-out 4:30-5:30pm

There are many important pieces to running the camp not apparent from camper's perspective. For instance,

- College of A & S provides course release for camp director in spring semester to accomplish all planning and coordinating duties.
- Dedicated BASE administrative assistant makes all reservations, coordinates paper work, and places supply and food orders.
- State required assistant director and first aid director live in the dorm with the girls for the camp duration.
- Camp follows all state regulations for youth camps such as renewing state license every year, obtaining up-to-date staff and camper medical records, and preparing for surprise state inspection.



Three Key Camp Components

1. Research Immersion Experience

- Fairfield female faculty members lead 4-5 campers each in week-long research projects assisted by female Fairfield undergraduate science majors.
- Projects based on research expertise of faculty member and span the fields of biology, chemistry, biochemistry, neuroscience, psychology, mathematics, and engineering.
- Campers gain hands-on experience in "real" research, with exposure to scientific methodology and data analysis.
- Female scientist role models at both the faculty and undergraduate level mentor the individual campers.
- In the second week, students tie together what they have learned by producing a Power Point presentation presented to campers orally and then to parents in poster format on the last day.



2. Science & Health Careers Exploration

- Students participate in interactive presentations by professionals in healthcare careers (pharmacy, public health, physical therapy, speech therapy, radiology, dentistry) organized by the Southwestern Connecticut Area Health Education Center.
- Professionals provide mentorship on undergraduate majors, courses, skill sets, and other experiences that can support students in career pursuits.
- Professionals discuss local and national organizations that promote women and minorities in science.
- During the 2013 camp, one evening will involve a panel of scientists discussing careers outside of the healthcare industry (forensic scientist, high school science teacher, lab technician, PhD scientist in marketing).
- In 2012, campers took a field trip to the University of Connecticut Health Center in Farmington, CT and in 2013 campers will take a field trip to Boehringer Ingelheim Pharmaceuticals in Ridgefield, CT.

3. College Admissions Counseling

- A two-day set of activities that follows the career exploration component in the second week.
- In association with the Fairfield University Office of Undergraduate Admissions we:
 - Educate students about the process and requirements for admission to college.
 - Inform students about financial aid opportunities including our Bridgeport Tuition Plan.
 - Engage students in mock interviews and essay writing required for college.
 - Provide a student/parent information session one evening, to inform parents and integrate them into the process.

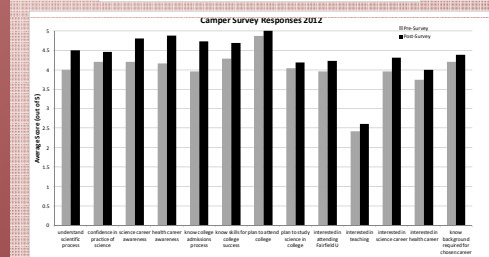
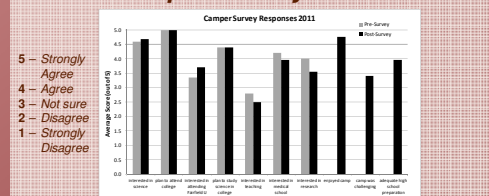


Sample Research Immersion Projects

- Investigating Marine 'Invasions' in Long Island Sound, Biology & Mathematics
- Cognition and the Brain, Psychology
- How Our Oceans Move and Why We Care, Engineering
- Understanding How Genes Work Using Nematodes, Biology
- The Physics of Sports in Slow Motion, Physics
- How Do Fish Swim, Biology



Camper Survey Results



- Overall, campers enjoy BASE Camp; plan to attend college; and to study science.
- Addition of the health careers and college admissions focused week in 2012 was a big success, with campers indicating the biggest positive pre- to post-camp change in response for survey questions related to these events.
- 19 out of 22 counselors over the past two years rated **enthusiasm** as one of the most important characteristics of a **camper** to a meaningful camp experience.
- Results so far from a recent follow-up survey of former BASE campers; show 6 out of 6 responding **plan to major in science, engineering, or nursing**, and plan to pursue careers in research, engineering, or medicine; 6 out of 6 also applied to Fairfield University.

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