PACE Monmouth
Program Overview

PACE (***Program for Acceleration in Careers of Engineering)*** is a science and engineering awareness program in which professionals volunteer their time to work with African-American and Hispanic high school students to help prepare them for college and technical careers. The mission of PACE is to inspire African-American and Hispanic/Latino high-school youth to pursue careers in science, technology, engineering and mathematics. Emphasis is placed on mathematics instruction, engineering orientation, college preparatory skills, leadership development and cultural awareness.

PACE aspires to be the premier organization for developing future African-American and Hispanic college students who are interested in pursuing career paths in science, engineering and technology. By partnering with educational, community, corporate and governmental entities, PACE fosters academic and career excellence with the primary purpose of developing future generations of scholars, professionals and entrepreneurs who will positively shape their communities.

PACE was founded in October 1982 by members of the National Technical Association at Brookdale Community College. The primary objectives of the program are to offer:

- Mathematical and technical skills development
- Leadership development
- College exploration and preparation
- Hands-on learning experiences
- Understanding of the use and role of technology
- Mentoring relationships with scientists, engineers and other technical professionals and
- A supportive learning environment that fully engages students, parents and staff

The PACE Monmouth Approach

PACE offers a unique educational experience in which a team-oriented approach to teaching, supplemented by hands-on learning in small to moderate size classes (10-15 students), enables the personal involvement that inspires our students to succeed. Our educational program includes math and engineering instruction, engineering field trips, college tours, workshops, and long-term (several month) research / development projects. Cultural awareness is broadened via guest speakers, field trips, and cultural celebrations.

Sessions are held on Saturday mornings (8:30 a.m. to 12:30 p.m.) from September through May at Brookdale Community College in Lincroft, NJ. Each Saturday students attend PACE according to the following schedule:

8:30am - 9:25am	Eye-Opener Sessions
9:30am - 10:30am	Math Classes
10:35am – 10:55am	Break / Networking
11am - 12:30pm	Engineering Classes

Eye-Opener sessions provide college preparatory skills and introduce socially and culturally relevant discussions. These discussions have included such topics as: choosing colleges, resume writing and interviewing skills, coping with peer pressure, current events, and technical, cultural and societal achievements of African-Americans, Africans, and Hispanics. Guest speakers also deliver talks on leading edge technologies exposing students to possible career tracks.

Mathematics classes aim to reinforce the math skills the students are learning in school. Classes are offered in the following five (5) subject areas: Algebra I, Geometry, Algebra II and Trigonometry, Pre-Calculus, and Calculus.

Engineering classes expose students to engineering fundamentals. There are four (4) engineering classes that are taken in the following sequence by any student that joins PACE in the ninth grade: Introduction to Engineering, Electrical Engineering, Computer Science, and Senior Engineering. ***Intro to Engineering*** covers a variety of basic engineering skills such as units of measure, drafting, circuit analysis, and an introduction to the Internet. ***Electrical Engineering*** covers basic electronics, both analog and digital. ***Computer Science*** teaches software design and programming concepts. ***Senior Engineering & Leadership Development*** offers students the opportunity to work on technology-related projects. Senior Engineering also teaches leadership concepts drawing upon the highly acclaimed model, *7 Habits of Highly Effective People*, developed by Stephen Covey.

Competitions and extra-curricular activities engage students in challenging, interesting, and fun ways. PACE-Monmouth holds annual Thinkathons, Math Bowls, and Science Forums.

In the fall students participate in the ***Thinkathon***, a team competition that tests the students' reasoning ability. In the spring, the students participate in the ***Math Bowl***. This team competition challenges the students' mathematical abilities. Both events are fun activities for both students and staff.

The ***Science Forum*** is a chance for students to work on a long-term (several months) research project. A staff member will act as a team advisor, providing ideas for possible projects and guiding the group of students throughout the project. The students are required to complete the project, write a report, and present their results to staff, students, and parents at the annual Science Forum.

Other special activities include SAT workshops, career days, field trips, and cultural celebrations. ***Student leadership*** is encouraged and developed through activities such as student-run eye openers, Student Take-Over Day and student involvement in the governing of the program.

Student Involvement

PACE-Monmouth students are the primary beneficiaries of the program. Because many PACE-Monmouth students will become our future leaders in industry and society, emphasis is placed on student investment in their education and development ***now***. The principal responsibilities of our students are to:

- come with an open mind, ready to learn
- practice what they learn through in-class exercises, projects and homework
- glean wisdom from the knowledge and experience of our staff
- develop goals for themselves and measure their progress towards these
- display mature attitudes and respect for themselves and others
- attend regularly

In addition to classes, students participate in a variety of other ways: competitions and activities, committee memberships, and governing the program.

Competitions and Activities
Students are encouraged to participate in the various competitions and special activities, e.g. our Thinkathon, Science Forum, and Math Bowl. These competitions and activities are important components of each student's PACE-Monmouth experience. The students learn how to think quickly but accurately, how to work in teams, how to conduct scientific research, how to write well, and how to have fun while learning.

Committee Memberships
Students are encouraged to serve on various PACE-Monmouth committees. These committees oversee different program activities and events. Students participate in committee planning, decision-making, activity development, and implementation. Through their involvement the students get to shape the program to meet their needs and interests as well as develop leadership and planning skills.

Governing the Program
Students may choose to get involved in the organizing and running of the program. A student representative from each grade (9^{th} through 12^{th}) is elected by their peers to serve on the PACE-Monmouth Governing Body. They are responsible for representing the concerns of their peers in the Governing Body.

Student Benefits

Participation in PACE provides our students the opportunity to …

- learn from staff who actually work in product development and research organizations
- receive technical and mathematical instruction
- receive guidance and inspiration
- interact with role models and mentors
- develop and practice leadership skills
- learn what it takes to succeed in college and the job market
- shape the program through involvement in planning of events and activities
- be made aware of summer internship and part-time job opportunities
- learn more about their heritage and the contributions of minorities to science & technology

Parental Involvement

PACE-Monmouth parents play a critical role in the program. PACE is built upon the model of a **Cooperative Learning Environment** in which community volunteers and the parents of our youth come together *in partnership* for the development of our youth. PACE parents play a lead role in the planning & organizing of special events and help to make each PACE Saturday morning session run smoothly. PACE-Monmouth parents:

- set out snacks for the students during breaks
- help to keep the students motivated and arriving to class on time
- perform the majority of the planning, organizing, and chaperoning of special events such as the college tour, end-of-year Graduation & Awards Banquet and cultural celebrations
- leverage their skills and experience to enrich the program and help it fulfill its mission

Parents also get involved in governing the program. Parent representatives are elected by their peers to serve on the PACE-Monmouth Governing Body. They are responsible for representing the concerns of their peers in the Governing Body.

Parent Benefits

Participation in PACE provides parents the opportunity to …

- shape the program through involvement in planning of events and activities
- be intimately aware of the type of education their children are receiving at PACE
- be involved in the education of their children
- demonstrate belief in the importance of education through support of the program
- ensure the continued success of the program by leveraging their skills, connections & experience

PACE Monmouth Operations

PACE-Monmouth is run by a volunteer staff made up of members from the community, parents, and professionals from companies in the computer, telecommunications and other industries. PACE-Monmouth is managed by a Governing Body that includes: Executive Director, Deputy Director, Secretary, Treasurer, Engineering and Math Directors, Parent and Student Representatives, an Events Director and an Eye-Opener Director. Members of the Governing Body are elected annually through separate staff, parent, and student elections, depending on the position to be filled.

The regular operating costs for the organization are funded through annual registration fees paid by each student and various fund-raisers that are held throughout the year. In addition, grants are solicited from Corporations and Philanthropic Institutions. For events that involve large costs, such as our Annual College Tour, students are asked to cover a share of the costs through participation fees.

Student Recruitment

PACE-Monmouth is open to all high school students in the Monmouth County area who are motivated and prepared to make a commitment of Saturday mornings during the academic year. The focus of our recruitment efforts is in the African-American and Hispanic communities because these are the communities that are most under-represented in the technology fields. Students accepted into the program will be expected to work on technical projects, take exams, complete assignments, participate in program events & activities, and attend regularly. Group activities will enable students to interact with one another in a supportive environment, helping to build confidence and self-esteem. Through pride and preparation PACE graduates will be better able to meet the challenges of adulthood in an increasingly technological society!

Admissions Process

Students who enjoy math and science and believe they might be interested in a career in Science, Engineering or Technology are encouraged to apply. All applications will be reviewed during the summer. Qualified applicants will be invited to an interview in August. Final selections will be based on 1) *the number of available slots in each grade level,* and 2) *the fundamental criteria listed below*:

1. Genuine desire to be in the program with an earnest commitment to fulfill all projects / assignments and participate in all aspects of PACE

2. Ability to attend most, if not all, PACE sessions

3. 'C' or above overall grade average and a minimum ‘C’ grade in the applicant’s current math and science class (minimum ‘B’ avg. and math/science grades for all *H.S. Senior* applicants.)

4. Level of interest in science, engineering and technology, as expressed in the applicant’s essay and interview

5. Completeness of the application.