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ABSTRACT

This directory is a reference for students and faculty to learn about extracurricular mathematics-based intervention projects. The individual projects are directed for the most part by collegiate mathematicians and held on their campuses. The "Strengthening Underrepresented Minority Mathematics Achievement" (SUMMA) Consortium of the Mathematical Association of America was organized in 1992 to disseminate information about these projects and provide a variety of services to the Project Directors. Support for these 132 programs comes from foundations, industry, universities, agencies, organizations, and individuals. Projects are conducted in 42 states, the District of Columbia, Puerto Rico, and Canada. The majority of projects are held in the summer, but they have academic year activities including meetings on Saturdays, electronic networking and newsletters. The two sections of the directory organize the programs by those sponsored by colleges and universities and those conducted by organizations. For each program information is given on the type of project, recruitment area, total students/grades, total staff, application deadline, project dates, cost to student, and stipend and scholarship availability. (DDR)

1997 Directory of Mathematics-based Intervention Projects

SUMMA

Strengthening Underrepresented Minority Mathematics Achievement

Directory of Mathematics-based Intervention Projects

Strengthening Underrepresented Minority Mathematics Achievement
The Mathematical Association of America
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Introduction

About SUMMA and the SUMMA Consortium

This Directory is a reference for students and faculty and others to learn about extracurricular mathematics-based intervention projects. The individual projects are for the most part directed by collegiate mathematicians and held on their campuses. The SUMMA Consortium (SUMMAC) of the Mathematical Association of America (MAA) was organized in November 1992 to disseminate information about these projects and provide a variety of services to the Project Directors.

These projects are supported by foundations, industry, universities, agencies, organizations and individuals. There are 132 projects listed here. The total student enrollment is 42,118 with 88% minority. Projects are conducted in 42 states, the District of Columbia, Puerto Rico, and Canada. The majority of projects are held in the summer, but they have academic year activities including meetings on Saturdays, electronic networking and newsletters. The range and extent of mathematics is contained in a brief narrative which follows a list of features common to all projects.

The Directory will be updated periodically to include new projects and descriptions of new curricula. With funds from the Carnegie Corporation of New York, SUMMA began a small grants program in 1991 to facilitate the designing of at least twelve new projects each year with a long-term goal of projects being conducted on every campus to encourage access of students, particularly minority students, to the further study of mathematics.

The magnitude of the underrepresentation of African Americans, Hispanic Americans and Native Americans in mathematics-dependent fields is well known. Since 1990, the MAA Office of Minority Participation and its SUMMA Program have focussed on 8 areas of activity: · developing a consortium, SUMMAC, of mathematics-based intervention projects · establishing mathematics-based intervention projects · attracting minorities into teaching at all levels · establishing mainstreaming projects for minority students on majority campuses · developing a collaborative for mathematics departments at minority serving institutions · surveying minority graduate students in mathematics · creating an archival record of minority PhDs in mathematics and mathematics education · creating a new mathematics program for American Indian Teacher aides. All of these activities are linked to intervention projects, which are seen as a major accessible way for mathematicians and mathematics educators to encourage minority students to study mathematics throughout their college years.

In addition to establishing new projects, the Office of Minority Participation, through SUMMAC, collects and analyses the data that can assist the MAA in this work. SUMMAC organizes an annual conference where mathematicians can share ideas that will increase the persistence of minorities in mathematics at all levels.

Dr. William A. Hawkins
SUMMA Director

Dr. Florence Fasanelli
Director of SUMMA Intervention Programs

Section I.

Pre-College Projects Sponsored by Colleges and Universities

Summer Student Science Training Program

Department of Mathematics
Alabama A&M University
Normal, AL 35762

Type of Project	Residential/Commuter
Recruitment Area	Southeast Region/national 28% minority
Total Students/Grades	200/5th-third year college 100% minority
Total Staff	16 Faculty 3 Graduate Students 2 Undergraduates 3 High School Teachers 95% minority
Application Deadline	April 1, 1997
Project Dates	ES*: June 2 - June 6 MS*: June 16 - June 27 HS: June 9 - July 11 Apprentice: June 9 - July 18 *Commuter Program
Cost to the Student	Activity fee of $5 - $25
Scholarship Availability	None
Stipend	Varies from $25 to $1400

Dr. Jerry R. Shipman

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The SSTP was first organized at Alabama A&M University in 1976 with a grant from NSF for the purpose of identifying 25-30 high-achieving minority high school students (grades 9-12) in order to provide them with an intense five weeks of summer academic enrichment. Since then, SSTP has expanded to serve minority students in grades 5 through the junior level in college. During the intense one- to five-week enrichment based summer sessions, students study concepts in mathematics, biology, chemistry, physics, computer science, and English. Students interact with minority guest speakers in career exploration seminars and take field trips to learn about science, engineering, and mathematics (SEM) careers. SSTP began a research apprentice program in 1991 for 11th - rising college juniors.

Over 1375 students have participated in SSTP activities since 1976. All of the participants in the SSTP activities have been minority students with about 58% women. The high school graduation rate of SSTP participants is 100%. The college entrance rate is 97%. The rate for SEM majors in college is 54%.

Amarillo PREP

Amarillo Prefreshman Engineering Program

Division of Sciences & Engineering
Amarillo College
Box 447
Amarillo, TX 79178

Therese Jones

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tjones@actx.edu

Type of Project	Commuter
Recruitment Area	Texas Panhandle 16% minority
Total Students/Grades	106 7th-11th (58% minority, 59% women)
Total Staff	4 Full-time Faculty 6 Part-time Faculty 8 Undergraduates 4 Office Staff 37% minority
Application Deadline	March 31, 1997
Project Dates	June 2 - July 25
Cost to the Student	None
Scholarship Availability	$2,500 Hastings Books, Music & Video Scholarship $1,000 Mason & Hanger/Pantex Plant; 2 - $250 ASCARO
Stipend	None

Amarillo PREP is designated as a site of the state-wide, nationally recognized program, TexPREP (Texas PreFreshman Engineering Program). It identifies high-achieving minority middle and high school students in order to provide them with academic enrichment to pursue careers in mathematics, science, and engineering. During the intense eight-week mathematics-based summer session students study logic, algebraic structures, probability and statistics, physics, computer science, engineering and technical writing. Abstract reasoning and problem-solving skills are developed through coursework assignments, exams and laboratory projects. Students hear guest speakers and take field trips to learn about careers in mathematics, science and engineering.

Amarillo PREP has grown from 36 students in the summer of 1990 to 81 students in 1995. Eighty-four students who have completed the program and reached college age are attending college.

Austin prefreshman Engineering Program
Huston-Tillotson College (see page 40)

Mathematics-Science Program for Minority Students

Arizona State University
Department of Mathematics, Box 871804
Tempe, AZ 85287-1804

Dr. Joaquin Bustoz

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602/965-0333

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Type of Project	Residential
Recruitment Area	Arizona
Total Students/Grades	195/10th-12th 100% minority
Total Staff	9 Faculty + 14 staff 18 Graduate Students 40 Undergraduates
Application Deadline	February 16, 1997
Project Dates	June 1 - July 3 June 6 - August 8; June 8 - August 1
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

The ASU Math-Science Program was initiated in 1985. Two hundred high-school students throughout Arizona who have expressed an interest in mathematics or science are intensively recruited into two five-week and one eight-week summer program on the ASU campus. They are enrolled in ASU for-credit mathematics courses ranging from Algebra through Calculus and Combinatorics, and in science courses such as General Chemistry. In addition students also attend presentations by ASU scientists. Once chosen, students can reapply each summer until they graduate from high school if they maintain a B average. ASU students who have previously participated in the program serve as dormitory counselors and tutors. Program staff visit the home of each participating student and explain the program aims to the parents (and student). Program staff speak languages appropriate for these visits (Spanish, Navajo). Parents are urged to visit their children on the campus during the program. These visits are critical.

Mathematics & Computer Program for the Pima Reservation

Arizona State University
Department of Mathematics, Box 871804
Tempe, AZ 85287-1804

Type of Project	Commuter
Recruitment Area	Pima reservation 100% minority
Total Students/Grades	60(Pima)/3th-8th 100% minority
Total Staff	1 Faculty + 12 support staff 4 Graduate Students 90% minority
Application Deadline	None
Project Dates	June 2 - June 27, 1997
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

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A four-week intensive summer mathematics program is conducted for 3rd-8th grade students of St. Peter's School. Course content, instructional materials, and the approach of this program emphasize hands-on activities, the use of manipulatives and visual models, and build on students' prior knowledge. Computer literacy and the use of calculators is emphasized. Instruction is dynamic, constantly modified to meet the emerging needs of students. ASU staff and St. Peters' faculty will teach this course.

All St. Peters' 8th grade students attend this mathematics enrichment program. The program is designed to increase students' awareness of career opportunities in mathematics, science and technology, and illustrate that mathematics can be fun and challenging without being intimidating. A learn-by-doing approach is employed. Calculators are used and students apply their new computer knowledge. Academic course work is augmented by special presentations about investigative efforts conducted at ASU by mathematics and science faculty.

A Mathematics and Computer Science Enhancement Project on The Navajo Reservation

Arizona State University, Department of Mathematics
Tempe, AZ 85287-1804

Dr. Tom Taylor
Dr. Joaquin Bustoz

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Type of Project	Residential
Recruitment Area	Navajo Reservation 99% Minority
Total Students/Grades	30/rising 7th 30/rising 8th 97% minority
Total Staff	6 Faculty 1 Faculty Associate 4 Staff 12 Undergraduate Counselors 8 High & Junior High School Teachers 60% minority
Application Deadline	March 14, 1997
Project Dates	June 4 - July 1
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

Arizona State University conducts a four-week residential Young Scholars project on the Navajo reservation and at Arizona State University for 60 students entering the seventh and eighth grades. Students are introduced to the experimental nature of mathematics. Topics in number theory, discrete probability, combinatorics and dynamical systems are investigated, taught and used as experimental material. The students learn to write computer programs to implement mathematical routines for use in checking conjectures. Students learn problem solving techniques and apply them to their investigations. Various science activities are correlated with the mathematical focus. For example, the students learn about the mathematics of lenses and build a four inch reflector telescope which is used to explore the beautiful night sky on the Navajo reservation. Students return for a second year.

MathStart

Mathematics and Computer Science Department
Armstrong State College
11935 Abercorn St.
Savannah, GA 31419

Type of Project	Commuter
Recruitment Area	Savannah, Georgia
Total Students/Grades	30/8th 100% minority
Total Staff	2 Faculty 4 High School Teachers 60% minority
Application Deadline	March 21, 1997
Project Dates	June 9 - June 27
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

Dr. Ed Wheeler

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912/927-5317

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erw@pirates.armstrong.edu

MathStart is a summer program initiated by the Mathematics and Computer Science Department of Armstrong State College in the summer of 1990. A group of approximately 30 African-American students who are rising eighth graders and have given evidence of strength in mathematics spend three hours each day for three weeks on the Armstrong campus. The primary focus is individual and group discovery exercises built around the theme, "Mathematics: A Language of Patterns." These exercises are drawn from the study of number sequences, pattern recognition, plane geometry, solid geometry, number theory, and problem solving.

In addition to enrichment activities in mathematics, the students stay two afternoons each week. On each of these afternoons the students complete an experiment in Biology, Chemistry, Physics or Computer Science.

SMART

Science and Mathematics Are Right Together

Natural Science and Mathematics Division
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Type of Project	Commuter
Recruitment Area	Atlanta Metropolitan Area
Total Students/Grades	36/7th-8th 90% minority
Total Staff	5 Faculty 2 High School Teachers 5 Undergraduate Students 90% minority
Application Deadline	March 31, 1997
Project Dates	June 16 - July 25
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Lunch, Transportation, $125

Project SMART is a five-week commuter program, begun in 1994 with funds from NSF, which is designed to cultivate a sense of wonder, intrigue, and challenge, and channel energies towards mathematics and the sciences.

Project activities include laboratory and field experiments arising from an investigation of the chemistry of the environment, and an investigation into the mathematics arising from these experiments.

This program is designed for the student who is interested in exploring what causes things to: ***STINK, SHRINK, GROW, AND GO.***

Investigations into acid rain, waste management, and electrochemistry will provide the mathematical models for this program.

Science and Mathematics Are Right Together II

Natural Science and Mathematics Division
1630 Stewart Ave., SW, Atlanta Metropolitan College
Atlanta, GA 30310

SMART II

Type of Project	Commuter
Recruitment Area	Atlanta Metropolitan Area
Total Students/Grades	30/8th-9th 90% minority
Total Staff	6 Faculty 4 Undergraduate Students 85% minority
Application Deadline	*Designated for returning students*
Project Dates	June 16 - July 18
Cost to the Student	None
Scholarship Availability	Not applicable

Jack Morrell

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Project SMART II is run through Morris Brown College and Morehouse College. It is a series of two-week commuter programs began in 1995, with funds from NSF, designed for the alumni to continue the work they began in Project Smart. There are two different two-week sessions, Project MAPA and Project SEEMA, both of which integrate mathematics and science in a collaborative learning environment.

Project activities include laboratory and field experiments. In SEEMA the mathematics arises from a study of astronomy. In MAPA the mathematics arises from a study of aeronautics as the students construct a wind tunnel to test the model airplanes they devise.

Prediction, Pricing & Profits: Explorations Actuarial Sciences
University of Central Oklahoma (see page 102)

Mathematics/Science PreFreshman Enrichment Program

Barber-Scotia College, Department of Mathematics
145 Cabarrus Avenue W
Concord, NC 28025

MSE

Type of Project	Commuter
Recruitment Area	Mecklenburg, Cabarrus and Rowan counties in NC 30% minority
Total Students/Grades	37/6th -8th 99% minority
Total Staff	2 Faculty 2 Middle School Teachers 2 Undergraduate Students 100% minority
Application Deadline	End of May, 1997
Project Dates	June
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$200

Prof. Sayku Waritay

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704/784-3817
704/598-8713 (home fax)

Barber-Scotia College, a private predominantly black, four year, liberal arts, co-educational institution, is the site for the Mathematics/Science Enrichment (MSE) Program. Students in the target counties scored below average on the California Achievement Mathematics Test and their scores dropped each year.

The program includes topics/instruction in the areas of algebra, geometry, computer science, science, test-taking and problem solving. It provides hands-on learning activities, group learning activities, experiences with the computer, laboratory experiences, field trips and guest speakers. During the academic year, the program will play an active role in the learning of the students and conduct at least two workshops for parents on substance abuse and prevention, college awareness, human sexuality, and financial aid.

MSE Program outcomes will include: increasing the interest of low-income students in mathematics and science, the achievement of academically talented students who choose professional careers in these fields and the number of students who choose professional careers in these fields. Parents will be involved.

BP STAT

Benedict Precollege Statistics Project: Increasing Access to Science and Mathematics

Math/Computer Science Department
Benedict College
Columbia, SC 29204

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Type of Project	Residential
Recruitment Area	South Carolina
Total Students/Grades	30/10th-11th 80% minority
Total Staff	4 Faculty 6 Undergraduate Students 3 High School Teachers 70% minority
Application Deadline	April 18, 1997
Project Dates	June 23 - July 23
Cost to the Student	None
Scholarship Availability	Not application
Stipend	$100 per week

Benedict College will a conduct a statistics project focusing on solving real-world problems arising in research requiring statistical analysis.

Participants will become familiar with the mathematics, probability and statistics needed for research and problem solving in environmental health, quality control, and experimental design and modeling. They will learn to utilize statistics software (MINITAB and MATHLAB Statistics Toolbox), Microsoft Word and Microsoft EXCEL for report writing and quick statistical representation of data. Participants will use HP graphing calculators in statistical analysis and will also learn about careers requiring statistics and about the misuse of statistics.

The project will provide students with a greater knowledge of mathematics; help students to develop an interest in research; make students aware of the academic preparation necessary for careers in mathematics, engineering and science; allow students to become acquainted with the resources of colleges and research organizations; and increase students' confidence in their ability to make career decisions.

Intensive Summer Science Program

Mathematics & Computer Science Department
Bennett College
900 East Washington Street
Greensboro, NC 27401-3239

ISSP

Type of Project	Residential
Recruitment Area	National 28% minority
Total Students/Grades	150/9th-12th 100% minority
Total Staff	14 Faculty 2 High School Teachers 1 Graduate Student 100% minority
Application Deadline	May 17, 1997
Project Dates	June 16 - July 12
Cost to the Student	$900
Scholarship Availability	Limited
Stipend	None

Dr. Nellouise D. Watkins, Bennett College

Dr. Nan Manuel, North Carolina A&T State University

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The first Intensive Summer Science Program (ISSP) was conducted in 1983 through funding initially provided by the Ford Foundation. ISSP/PREP is a four week college resident program for 9th - 12th grade students designed to help minority and women students make their mathematics functional, to provide them instruction in the sciences, to enhance their communication skills and to make them computer literate for careers in an information-based society. Courses are offered in mathematics (Algebra I, Geometry, Pre-Calculus, Calculus), science (Physical Science, Biology, Chemistry, Physics), communication skills and programming in BASIC and Pascal. Students meet guest speakers, make presentations before their peers and take field trips.

The ISSP/PREP program is a joint project sponsored by Bennett College and North Carolina A&T State University in Greensboro, North Carolina. Over 1500 students have matriculated. The percentage of students attending college majoring in the sciences, mathematics or engineering is over 70%.

PROMYS

Program in Mathematics for Young Scientists

Department of Mathematics
Boston University
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Boston, MA 02215

Dr. Glenn Stevens

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promys@math.bu.edu

Type of Project	Residential
Recruitment Area	National 28% minority
Total Students/Grades	60/entering 10th-12th 10% minority
Total Staff	7 Faculty 1 Graduate Student 18 Undergraduates 10% minority
Application Deadline	June 1, 1997
Project Dates	June 29 - August 9
Cost to the Student	$1,300
Scholarship Availability	Yes
Stipend	Available on need basis

PROMYS offers a lively mathematical environment in which ambitious high school students explore the creative world of mathematics. Through their intensive efforts to solve a large assortment of unusually challenging problems in number theory, the participants practice the art of mathematical discovery--numerical exploration, formulation and critique of conjectures, and techniques of proof and generalization. More experienced participants may also study group theory, dynamical systems, and Combinatorics. Field trips and special lectures by outside speakers offer a broad view of mathematics and its role in the sciences.

PROMYS was founded at Boston University in 1989 by alumni of Arnold Ross's highly successful program that has operated at Notre Dame and more recently at the Ohio State University since 1957. PROMYS aims to continue the Ross tradition of helping young people develop the habits of inquisitive exploration that are so vital to creative research in mathematics and science.

SCI-MA Connection

Bridgewater State College
Department of Mathematics and Computer Science
Bridgewater, MA 02325

SCI-MA Connection

Type of Project	Residential
Recruitment Area	Southeast Massachusetts
Total Students/Grades	40/7th grade 33% minority
Total Staff	6 Faculty 2 Graduate Students 4 Undergraduate Students 8% minority
Application Deadline	May 31, 1997
Project Dates	June 30 - August 8
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$200

Professor Gail Price

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The SCI-MA Connection at Bridgewater State College is a six-week, Young Scholars project in Mathematics and Physics begun in 1992. The SCI-MA Connection is designed to interest young girls in mathematics and physics as possible career choices. The program includes an academic year follow-up. During the summer the girls receive intense instruction and research experience in mathematics and physics (with an emphasis on hands-on, cooperative group experiments), career mentoring from college faculty and women working in "traditionally male" careers, and participate in discussions to foster positive social connections among the girls. The classroom activities include rockets, robotics, and amusement park physics.

Math and Science Camp for First Nations' Students

Faculty of Mathematics and Sciences
Brock University, Ontario
L2S 3A1, CANADA

Dr. Eric Muller

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e-mail
emuller@spartan.ac.brocku.ca

Type of Project	Residential
Recruitment Area	Southern Ontario
Total Students/Grades	30/6th-8th 100% minority
Total Staff	7 Faculty 1 Graduate Student 6 Undergraduate Students 1 High School Teacher 11% minority
Application Deadline	Not set for 1997
Project Dates	7 Days in May or June
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

The Brock University Math and Science Camp for Grades 6-8 First Nations' Students was first piloted in 1995. Students stay in university residences and use university laboratory facilities. They participate in activities developed by faculty and implemented by students preparing to be math and science teachers at grades 4 to 8. These activities involve topics in mathematics, the Internet, ecology, astronomy, biology, chemistry, earth science, and physics.

Science and Technology Enrichment Program

Department of Mathematics, Attn: Hal Anderson
California State University, Dominguez Hills
Carson, CA 90747

STEP

Type of Project	Commuter
Recruitment Area	Los Angeles County
Total Students/Grades	100/6th-8th 100% minority
Total Staff	2 Faculty/Teachers 50% minority
Application Deadline	First come first served
Project Dates	Fall 1997
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$150

Dr. Eunice Krinsky

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This project is a two-year program for minority 7th and 8th grade students who attend year-round schools and therefore are in school during the summer when most summer science camps are held. Participants will have opportunities to experience the excitement and fascination of the scientific experience. This Off-Track program consists of two two-week science camps and an academic year program. The two science camps will be conducted in September and October, to coincide with the breaks in each of the two education tracks which begin school in July. The camps are focused on the Challenger Learning Center at California State University at Dominguez hills and its space flight simulation. The academic year component continues the hands-on scientific investigations with a series of seven monthly sessions at the California Museum of Science and Industry. Seventy-two students will participate each year, with 7th grade participants being invited to return for an 8th grade experience. The goals of this Off-Track project are: (1) to enhance participants' interest in the study of mathematics and science, (2) to increase the probability that participants will enroll in college preparatory mathematics and science classes in high school, and (3) increase the probability that participants will pursue a career in mathematics and/or science.

HMMM

Helping Most through Meaningful Mathematics

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Type of Project	Commuter
Recruitment Area	Central California 50% minority
Total Students/Grades	200/9th-12th 70% minority
Total Staff	2 Faculty 2 Graduate Students 4 Undergraduate Students 4 High School Teachers 33% minority
Application Deadline	Not applicable
Project Dates	Academic year, starting September, 1997
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

In order to challenge and inspire high school students, to identify talented minority students, and to shift the emphasis from drill-and-practice or one-minute trick questions to mathematical investigations which require persistence, the CSU Fresno Mathematics Department organizes a Problems of the Month contest for 50 area high schools. A contact teacher at each school makes the problems available to students and collects their solutions. Correct solutions with the names and schools of all successful students are sent out at mid-month. Group solutions are encouraged.

Students/mathematics clubs with exemplary work are invited to the annual CSU Fresno Mathematics Field Day to participate/give a presentation.

Mathematics Intensive Summer Session

Department of Mathematics
California State University, Fullerton
Fullerton, CA 92634

MISS

Type of Project	Residential
Recruitment Area	Orange County, CA 50% minority
Total Students/Grades	32 (minority-focused)/9th-10th 80% minority
Total Staff	1 Faculty 1 High School Teacher 50% minority
Application Deadline	May 1997
Project Dates	July 7 - August 1
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

Dr. David Pagni

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MISS was initiated in 1990 to address the needs of female high school juniors who were college bound and succeeding in all courses except mathematics. The project outcomes wanted to show that through an intensive mathematics experience students could regain the confidence and skills needed to succeed in Algebra II, the gatekeeper to college entrance in California. Students study mathematics for six hours a day during the month of July. Technology in the form of graphing calculators and a rich learning environment with plenty of support has turned the tide for many students who had previously achieved dismal grades in mathematics. Upon returning to high school for their senior year, most made grades of "C" or better in Algebra II. Many have continued on to precalculus and a few are take calculus the following year.

Young Scholars Modern Mathematics Program

Department of Mathematics
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Los Angeles, CA 90032

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Type of Project	Commuter
Recruitment Area	Los Angeles area 65% minority
Total Students/Grades	50/10th-12th 50% minority
Total Staff	2 Faculty 4 High School Teachers 10 Graduate Students 6 Undergraduates 50% minority
Application Deadline	April 18, 1997
Project Dates	July 1 - July 31
Cost to the Student	None
Scholarship Availability	Scholarships available
Stipend	Based on financial need

California State University, Los Angeles offers a 4 1/2 week program in mathematics beginning in July. Lectures are offered in aspects of modern mathematics such as number theory and group theory. Guest speakers discuss recent developments in mathematics in areas such as cryptography and non-Euclidean geometry. Speakers from industry discuss rewarding and challenging careers in mathematics and science. Graduate counselors and teaching assistants help students with specially designed problem sets.

Developing Mathematical Achievement

Department of Mathematics
California State University, Sacramento
Sacramento, CA 95819-6051

Type of Project	Commuter
Recruitment Area	Sacramento
Total Students/Grades	30/5th-12th 90% minority
Total Staff	1 Faculty 100% minority
Application Deadline	May 31, 1996
Project Dates	July 8 - July 25
Cost to the Student	$5.00 (includes materials)
Scholarship Availability	Not applicable
Stipend	Not applicable

Dr. Lloyd Gavin

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This three-week summer program is designed to enhance the oral, written, and problem solving skills of students in grades five to twelve. Computer usage will be emphasized. The program participants are required to present their solutions to a series of increasingly difficult problems. The solutions require:

- translating information from one form to another,
- finding patterns to organize information,
- choosing tools to help in problem solving, and
- visualizing objects from other viewpoints.

Their presentations must emphasize clear writing strategies, organized thought, and effective delivery. The students will work in groups and share experiences. The present meeting site is off-campus at Andrews AME Church.

HiMAP-G

High School Mathematics Access Program for Girls

Department of Mathematics
California State University, Stanislaus
Turlock, CA 95382-0299

Dr. Viji K. Sundar

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vsundar@koko.csustan.edu

Type of Project	Commuter
Recruitment Area	Stanislaus, San Joaquin, Merced, Calaveras, Tuolumne and Maripose Counties 40% minority
Total Students/Grades	70/9th-12th 100% female
Total Staff	2 Faculty 1 Graduate Student 4 Undergraduate Students 1 High School Teacher 80% minority
Application Deadline	None
Project Dates	September 28 1996 - June 1, 1997
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

The goal of High School Mathematics Access Program for Girls (HiMAP-G) - a PreCollegiate program for high school girls - is to enhance female students' understanding of mathematics and science. The increased subject matter competence is expected to enhance their persisting in mathematics and science classes, and later on to their choosing science-based careers. HiMAP-G has the following components:

- Saturday Academy with model lessons and ongoing tutoring sessions
- Coaching for the many mathematics competitions
- Coaching for College placement examination (PSAT and SAT)
- Pre-College counseling sessions about college applications

The Program, initiated in 1995 with funds from Tensor Foundation/MAA, has received some resources from the University. HiMAP-G meets on Saturdays from 10:00a.m. to 12:30p.m. Students get an hour's model lesson in mathematics, and spend the remaining time mastering their school mathematics/science lessons. This program complements our Summer Math/ Science Academy for Middle School students which began in 1989.

Summer Science Exploration Camp

Department of Mathematics and Computer Science
Claflin College
Orangeburg, SC 29115

Type of Project	Commuter
Recruitment Area	Orangeburg County 45% minority
Total Students/Grades	100/7th-9th 100% minority
Total Staff	4 Faculty 1 Graduate Students 5 Undergraduate Students 1 High School Teachers 90% minority
Application Deadline	February 28, 1997
Project Dates	June, July
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$100

Sylvester Ekpenuma
Marjorie Pough
Philip Sharpie

Office
803/535-5254

FAX
803/531-2860

Started with National Science Foundation - Summer Science Camp funds in 1995, the camp will continue through 1997. Participants study mathematics, physics, chemistry and engineering design. All mathematics is done with graphing calculators. Field trips to Westinghouse, a chemical plant, an electric generating plant, and a cement plant will be taken. Participants will also learn what course of study is required to become a scientist.

Mathematics and Engineering Summer Program

Box 5512
Clarkson University
Potsdam, NY 13699

Dr. Michael Felland
Vicki Clark

Office
315/268-2376
315/268-3785

FAX
315/268-7615

Type of Project	Residential
Recruitment Area	National
Total Students/Grades	40/11th 100% minority
Total Staff	3 Faculty 1 Project Coordinator 3 Program Assistants 50% minority
Application Deadline	February 15, 1997
Project Dates	June 22 - July 19, 1997
Cost to the Student	Travel only
Scholarship Availability	Not applicable
Stipend	Not applicable

In partnership with the American Indian Science and Engineering Society (AISES), Clarkson University offers a math-intensive enrichment program to Native American youth the summer before their eleventh grade year. Clarkson and AISES expect to broaden the education and career opportunities for American Indian students through a two-pronged program approach - an academic focus on mathematics and engineering and a personal development component. The program brings together American Indian educators, mathematics faculty, and industry representatives for a program curriculum that includes engineering, its applications and its relationship to mathematics, as well as a personal growth mechanism that allows Native youth to visualize and experience their place in the future.

The application process is administered by the AISES Comprehensive Enrichment Program, Boulder, CO. Students should have a minimum 3.0 GPA and have an aptitude and interest in mathematics or science. Applicants must provide a personal essay and a school transcript, solve a problem which requires creative and analytical thinking, and provide two recommendation forms from math or science teachers. Accommodations, meals, and program materials are provided.

Instructional Mathematics: Helping Our Teens Excel Program

Cleveland Heights High School
13263 Cedar Road
Cleveland Heights, OH 44118-2988

IMHOTEP

Commuter	
Recruitment Area	Cleveland Heights, University Heights City School district 68% minority
Total Students/Grades	120/7th-9th 99% minority
Total Staff	1 Director 8 senior instructors (undergraduates and graduates) 15 junior instructors (high school students) 12 assistants (9th grade students) 100% minority
Application Deadline	May 28, 1996
Project Dates	June 30 - August 1 plus Academic school year
Cost to the Student	$50
Scholarship Availability	Not applicable
Stipend	Not applicable

Raymon Spotsville
Office
216/371-6431

FAX
216/371-6506

Home
216/721-1518

e-mail
m_wessels@tiger.chuh.cleveland-heights.k12.oh.us

Type of Project

The Cleveland Heights-University Heights IMHOTEP was developed in 1991 by high school mathematics teacher Mark Wessels and Heights High graduates, including Raymon Spotsville, a graduate of Case Western Reserve University, to encourage more African-American students to enroll in the accelerated mathematics sequence offered by the district. The program accelerates the students before 7th grade and provides support during the school year. During a five-week, summer morning session, algebra is introduced in a small group setting with high school and college student instructors. The same older students provide help during the school year in after-school tutoring sessions. In the afternoon, second-year students review algebra concepts and are introduced to formal geometry. An introduction to probability, logic, and group theory is also included for all groups. Emphasis is placed on study skills through the use of mathematics. Students are also prepared for the state of Ohio ninth grade proficiency exam. No academic entrance requirements are made.

EMB	**Explorations in Mathematics and Biology** Division of Mathematics and Natural Sciences College Misericordia Dallas, PA 18612

Dr. Mazen Shahin
Dr. Karen Walker

Office
717/674-6452

FAX
717/675-2441

Type of Project	Residential
Recruitment Area	Northeastern PA, NJ, & NY
Total Students/Grades	20/10th 80% minority
Total Staff	4 Faculty 6 Undergraduate Students 20% minority
Application Deadline	April 14, 1997
Project Dates	July
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$100

This Young Scholars project at College Misericordia is a four-week residential program involving hands-on explorations in mathematics and biology with follow-up research activities in the ensuing academic year. The participants work in small groups and use computers extensively to explore and discover mathematical and biological concepts. Biology activities focus on animal physiology. Participants work with the cardiovascular system as the model organ system and control of blood pressure as the model for homeostatic regulation. They use computers to analyze biological experiments. Concepts of difference equations and matrices are the basic mathematical tools to build and investigate biological models for population growth, the spread of contagious disease, and genetic patterns of inheritance. Mathematical concepts are applied to biological models continuously to allow participants an appreciation of the exquisite integration of these two disciplines. Field trips are designed to expose participants to the use of science and mathematics in real world situations.

San Luis Valley Program at Colorado College

Department of Mathematics
The Colorado College
Colorado Springs, CO 80903

SLV Program

Type of Project	Residential
Recruitment Area	Southern Colorado/ Northern New Mexico 80% minority
Total Students/Grades	18/10th-11th 90% minority
Total Staff	4 Faculty 1 Graduate Student 3 Undergraduate Students 75% minority
Application Deadline	May 15, 1997
Project Dates	June 15 - June 28
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$300

Dr. John J. Watkins

Office
719/389-6542

FAX
719/389-6841

e-mail
jwatkins@cc.colorado.edu

The San Luis Valley Program at Colorado College is a three-week residential summer bridge program for high school students from the San Luis Valley, a rural and predominantly Hispanic region in southern Colorado and northern New Mexico. Begun in 1991 with a GTE Focus Grant, it is now funded by the National Systems & Research Co., one of the largest Hispanic-owned companies in the country.

We concentrate on mathematics (precalculus, number theory, graph theory) and computer science (Pascal), but also spend time on writing, astronomy and music. Students are between their sophomore and junior years in high school, but we also invite several students back for a second summer.

The main goal is to give students a positive introduction to college life both academically and socially. Their families spend the final weekend of the program on campus in order to get a sense of what college will be like for their children.

Teacher Enhancement and National Science Foundation Young Scholars

Department of Mathematical and Computer Sciences
Colorado School of Mines
Golden, CO 80401

Dr. Ardel Boes

Office
303/273-3882

FAX
303/273-3875

e-mail
oscar@isabella.mines.edu

Type of Project	Residential
Recruitment Area	National 28% minority
Total Students/Grades	30 (Indian)/7th - 9th 100% minority
Total Staff	4 Faculty 2 Middle School Teachers 16 % minority
Application Deadline	April 15, 1997
Project Dates	June 9 - June 28
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$75

The Colorado School of Mines initiated a three-week, residential program for 30 American Indian students entering 7th or 8th grades in the summer of 1988. The program is a two-year program. Young Scholars share a common three-week period with a Teacher Enhancement Project sponsored with institutional funds. Emphasis is on critical thinking and problem solving. Some hands-on projects include use of similar triangles and trigonometry to estimate heights attained by student-constructed rockets, and use of LOGO to create American Indian designs and tessellations. Students complete a research project under the tutelage of a professional mentor from AT&T Bell Labs. Career exploration and higher educational goals are an integral part of the program.

Ohio Pre-Freshman Reinforcement and Enhancement Program: Renewable Energy Technology Project

Department of Mathematics, Cuyahoga Community College, Cleveland, OH 44115

OHPREP

Type of Project	Commuter
Recruitment Area	Ohio 20% minority
Total Students/Grades	50/7th-9th 81% minority
Total Staff	3 Faculty 2 High School Teachers 1 Graduate Student 5 Undergraduates 2 High School Students 80% minority
Application Deadline	March 5, 1997
Project Dates	June 19 - August 28
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	To be determined

Professor Gaston Ndyajunwoha

Office
216/987-4562

FAX
216/987-4484

e-mail
gndyaju@tri-c.cc.ohio.us

The Greater Cleveland Renewable Energy Technology Project was launched in 1992 by Cuyahoga Community College in consultation with NASA's Technology Utilization Unit, the Texas PreFreshman Engineering Program, the National Technical Association (Cleveland Chapter), area colleges and universities, representatives of the US renewable energy industry, and businesses.

Academic enrichment and energy-related career awareness activities, use of cooperative learning, hands-on and research-methodology teaching and learning strategies, high expectations for teachers and students, a supportive learning environment, guardian/parental involvement in the African-centered educational process, multi-year involvement of students and renewable energy technology transfer/export are the key elements of this program.

This program is part of the Greater Cleveland Science, Engineering and Mathematics Center's initiative to maintain about 1,700 minority students annually in the K-12 segment of the science, engineering and mathematics (SEM) pipeline with the expectation that at least 80% will successfully complete college-track courses, graduate and pursue SEM degrees in college.

Corpus Christi PREP	**Corpus Christi Prefreshman Engineering Program** Mathematics Department Del Mar College Corpus Christi, TX 78404

Trenia Aquino

Office
512/886-1580

FAX
512/886-1599

Type of Project	Commuter
Recruitment Area	Corpus Christi 57% minority
Total Students/Grades	130/8th-10th 85% minority
Total Staff	14 Faculty 2 Graduate Students 3 Undergraduates 30% minority
Application Deadline	March 9, 1997
Project Dates	June 2 - July 25
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Lunch provided

Corpus Christi PREP was started in 1987 as a satellite of the San Antonio PREP program. High achieving students from grades 7-9 are identified and recruited for the eight-week summer program. Goals of the program include stimulating student interest in mathematics, science, and engineering; increasing their awareness of mathematics-based careers; increasing their computer literacy; and improving their reasoning and problem-solving skills. CC PREP has two components: the first-year students study mathematical logic, programming in Pascal, principles of engineering, and "hands-on" engineering; the second-year students study algebraic structures (mostly finite models), linear programming, and application of linear programming software to solve environmental and physics problems. Guest scientists give daily presentations, and the students go on field trips to area science and engineering facilities.

As of 1995, 71% of our graduates are minorities and 51% have been young women. We have had 675 students complete at least one summer of PREP. Of these, 327 are of college age. Of the 327, we were able to contact 234 students. Of these, 23 have graduated, 21 with math-based degrees; 184 are in college now (100 in math-based programs); and 21 are not presently in college.

Action Math and Physical Laboratory Experiences

Division of Science, Mathematics, and Health Careers, 315 HHH,
Fairmont State College, 1201 Locust Ave
Fairmont, WV 26554

AMPLE

Type of Project	Commuter
Recruitment Area	Marion, Harrison, Monongalia, and Taylor Counties in WV
Total Students/Grades	36/7th-8th 33% minority
Total Staff	5 Faculty 8 Guest Professors 4 High School and Middle School Teachers 8 Undergraduate Students 20% minority
Application Deadline	April 1997
Project Dates	3 weeks - July 1997
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Travel stipend furnished

Dr. Elizabeth W. Frye

Office
304/367-4621

FAX
304/367-4589

e-mail
ewfrye@fscvax.wvnet.edu

Project AMPLE is a yearlong, commuter project. The summer component consists of lab classes in physics and mathematics. Manipulatives, calculators, computers and real-world problems compose the "action" math component. Physics classes focus on lab activities relative to energy and mechanics. All students participate in a small-group research project of three-week duration during the summer program. During the academic year, students participate in workshops relative to their individual research efforts. College orientation activities are provided.

Career exploration experiences are provided by counselors, mathematicians, engineers and other scientists from Fairmont State College and many other sites. During follow-up sessions, extended research opportunities include individual or small group projects with professionals. Field trips to Morgantown Energy and Technology Center, Ft. Martin Power Station, and Greenbank Radio Astronomy Center are highlights.

FAMUYSP

Mathematical Modeling in the Natural and Social Sciences

Department of Mathematics
Florida Agricultural and Mechanical University
Tallahassee, FL 32301

Dr. Roselyn Williams

Office
904/599-3595

FAX
904/561-2155

Type of Project	Residential
Recruitment Area	Florida
Total Students/Grades	30/9th-11th
Total Staff	4 Faculty 1 Computer Specialist 2 Undergraduate Students 4 High School Students 90% minority
Application Deadline	April 14, 1997
Project Dates	June 23 - August 1 and academic year Saturdays
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$75 per week

The Florida Agricultural and Mechanical University will initiate a six-week, residential, Young Scholars project in mathematics for thirty students entering grades nine, ten, and eleven. The Florida A&M University Young Scholars Program (FAMUYSP) will expose promising Florida minority high school students to careers in science, engineering, and mathematics. Each student will develop a project and complete a research paper. The projects will be entered into science fairs. The research paper will contain an analysis performed by a computer. The students will reside on the campus from late June to early August. For each of the two years of the project, a new group of 30 students will be selected. Four participants from year one of the project will be invited to return in year two as program assistants. Workshops will be held during the academic year to prepare students for science fair and mathematical competitions.

Proyecto Access HACU - NASA

Florida International University
ECS 449 University Park
Miami, Fl 33199

Type of Project	*information not available*
Recruitment Area	*information not available*
Total Students/Grades	*information not available*
Total Staff	*information not available*
Application Deadline	*information not available*
Project Dates	*information not available*
Cost to the Student	none
Scholarship Availability	*information not available*
Stipend	*information not available*

Dr. Gustavo Roig
Associate Dean

Office
305/348-3700

FAX
305/348-3582

PROYECTO Access was created by HACU (Hispanic Association of Colleges and Universities) with financial support from NASA (National Aeronautics and Space Administration) and academic supervision from the University of Texas, San Antonio. The purpose of this program is to identify high achieving minority middle school students in order to provide them with academic enrichment to encourage them to pursue careers in engineering, mathematics, and science. For eight weeks, during the summer the participants receive instruction in logic, problem solving, computer science, engineering and technical writing. Students attend career in math related related fields. This program follows the San Antonio Prefreshman Engineering Program created in 1979 in Texas.

Hawaii Upward Bound

Upward Bound Mathematics and Science Center
200 W. Kawili Street
Hilo, HI 96720-4091

Dr. Mitch Anderson

Office
808/974-7337

FAX
808/974-7615

email
mitch@hawaii.edu

Type of Project	Residential
Recruitment Area	Hawaii, California, Arizona Guam, American Samoa, Federated States of Micronesia, Republic of Palau, Republic of the Marshall Islands, and the Commonwealth of the Northern Marianas
Total Students/Grades	40/9th-12th 95% minority
Total Staff	2 Director / Coordinator
Application Deadline	January 31, 1997
Project Dates	June 14 - July 25
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	None

The purposes of the Center are to: (1) provide academic enrichment and motivational activities to a select group of high school students who possess an interest in and aptitude for math, science, and/or technology, and (2) increase the number of mathematicians and scientists from amoug traditionally underrepresented groups.

Classroom instruction, tutoring, mentoring, study skills, educational enrichment activities (laboratory and field work), field trips, and research opportunities are provided throughout the year.

Career exploration, college planning, cultural, recreational, and socil activities, a six-week summer residential program at the University of Hawaii at Hilo Campus, and personal and motivational counseling are also provided.

Since 1993, 60 participants have graduated from the program and of that number, 56 are now enrolled in college.

Mathematics Enrichment Summer Project

Florida Memorial College
15800 NW 42nd Avenue
Miami, FL 33054

MESP

Type of Project	Commuter
Recruitment Area	Miami and vicinity
Total Students/Grades	20/7th-89h 100% minority
Total Staff	3 Faculty 2 Graduate or Senior Undergraduate Students or High School Teachers
Application Deadline	April 25, 1997
Project Dates	July 7 - August 8
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$25

Dr. Telahun Desalegne

Office
305/626-3702

FAX
305/626-3769

The Mathematics Enrichment Summer Project at Florida Memorial College is a five-week, commuter program for high potential underrepresented minority, women, and disabled 7th-9th grade students. The program is a highly focused mathematics-based enrichment project which includes hands-on mathematics activities incorporating technology, electronic communication systems, and career-awareness activities.

The objectives of the project are to provide the participants with a firm foundation in mathematics and build their confidence so that they enroll and succeed in mathematically rigorous courses; to provide participants with intellectually challenging mathematics activities and engage them in doing mathematics and discover mathematical ideas for themselves; to develop their problem-solving and logical reasoning skills; to encourage the use of technology in mathematical exploration; and to develop their oral and written communication skills.

Participants will be taught how to use the educational resources of the Internet to broaden their outlook beyond the scope of the classroom and communicate among themselves.

The academic activities are augmented with career-awareness exploration which will include educational field trips to local research centers, industries, and universities, invited speakers from underrepresented minority groups in mathematics-based fields, motivational science video shows, and mentoring. As a follow-up, communication with the group mentors and the instructors will continue throughout the academic year, and the participants, the group mentors, and the instructors will reconvene during the academic year.

Harris-Stowe State College Young Scholars Program

Harris-Stowe State College
Department of Arts & Sciences
St. Louis, MO 63103

Dr. Leteef Adelani

Office
315/533-3366

FAX

Type of Project	Commuter
Recruitment Area	St. Metropolitan Area
Total Students/Grades	32/7th-8th 95% minority
Total Staff	4 Faculty 4 Undergraduate Students
Application Deadline	April 30, 1997
Project Dates	June - August + Follow-Up in Fall and Spring
Cost to the Student	Cost of Transportation
Scholarship Availability	Not applicable
Stipend	$13/Student/Day in attendance

The Young Scholars Program at Harris-Stowe State College began in the summer of 1996 with funds from NSF. It consists of a five-week summer componet and two weeks of follow-up activities in each of the Fall and Spring semesters. Project activities include instruction/lab in mathematics, physics, writing, and robotics; field trips to area industries, and science center where students could experience applications of mathematics and the sciences. Students are provided with the opportunity to interact with scientists and mathematians through a guest-speaker program. Parental/Guardian involvement strongly encourage especially during field trips.

Proyecto Access HACU - NASA

Hostos Community College
500 Grand Concourse
Bronx, NY 10451

Type of Project	*information not available*
Recruitment Area	*information not available*
Total Students/Grades	*information not available*
Total Staff	*information not available*
Application Deadline	*information not available*
Project Dates	*information not available*
Cost to the Student	none
Scholarship Availability	*information not available*
Stipend	*information not available*

Professor Humberto Cante

Office
718/518-6617

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718/518-4294

PROYECTO Access was created by HACU (Hispanic Association of Colleges and Universities) with financial support from NASA (National Aeronautics and Space Administration) and academic supervision from the University of Texas, San Antonio. The purpose of this program is to identify high achieving minority middle school students in order to provide them with academic enrichment to encourage them to pursue careers in engineering, mathematics, and science. For eight weeks, during the summer the participants receive instruction in logic, problem solving, computer science, engineering and technical writing. Students attend career in math related fields. This program follows the San Antonio Prefreshman Engineering Program created in 1979 in Texas.

The Hampshire College Summer Studies in Mathematics

Hampshire College
Box NS
Amherst, MA 01002-5001

Prof. David C. Kelly

Office
413/582-5375

FAX
413/549-0707

e-mail
dkelly@hamp.hampshire.edu

Type of Project	Residential
Recruitment Area	National 28% minority
Total Students/Grades	50-60/10th-12th
Total Staff	4 Faculty 5 Graduate Students 5 Undergraduates
Application Deadline	Rolling admissions
Project Dates	July 1 - August 11
Cost to the Student	$1500
Scholarship Availability	Yes
Stipend	Based on need

The Hampshire College Summer Studies in Mathematics, a National Science Foundation Young Scholars Program, is now in its 25th year. For six weeks, 50-60 motivated and talented students, college professors, math majors and graduate students all live in a program dorm on our rural campus to do, to share and to enjoy mathematics. Small and lively classes collaboratively investigate challenging and rewarding problems from number theory, combinatorics, probability, the fourth dimension, graph theory, infinity, fractals, chaos and other active branches of mathematics. Rather than simply accumulating results, we emphasize the processes of mathematical thought--discovering patterns, formulating questions and definitions, making conjectures, and creating proofs.

Summer Studies activities include classes for four hours each morning (M-S), evening problem seminars (M-F), daily Prime Time Theorems, visiting mathematicians, a weekly program journal, computers, films, hikes, trips, and afternoons devoted to relaxation and recreation.

Applicants are asked to write a friendly and informative letter describing their interest in mathematics, to obtain a teachers's sponsorship, and to work on the HCSSIM "Interesting Test."

Howard University Young Scholars Program

Howard University
Department of Mathematics
Washington, DC 20059

HUYSP

Type of Project	Commuter
Recruitment Area	Washington, DC region 33% minority
Total Students/Grades	20/7th-8th 40/9th-10th 95% minority
Total Staff	4 Faculty 3 Graduate Students 5 Undergraduates 84% minority
Application Deadline	March 3, 1997
Project Dates	June 23 - July 11
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	None

Dr. James Donaldson

Office
202/806-7727

FAX
202/806-4562

e-mail
jad@scs.howard.edu

Since 1993, the Howard University Young Scholars Program has brought 40 mathematically talented 9th and 10th grade students each year from the Washington DC region to the campus of Howard University for an intensive mathematics-based experience. For the summer of 1996 the program will be expanded to include 20 talented 7th and 8th grade students. Elementary Analysis and Combinatorics will be HUYSP's disciplinary focus for the 9th and 10th grade students, and Geometry and Pattern Recognition will be the focus for the 7th and 8th grade students. For both groups careful attention will be given to the applications and extensive use will be made of graphing calculators as aids in learning and applying the mathematical ideas.

Participants visit scientific laboratories, museums and centers to see mathematicians, scientists and engineers in their work environment; receive information about careers in mathematics and science; and establish a network among themselves, university faculty and undergraduate students.

Austin PREP	**Austin Prefreshman Engineering Program** Austin PREP Huston-Tillotson College 900 Chicon Street Austin, TX 78702

Dr. General Marshall

Office
512/505-3108

FAX
512/505-3190

Type of Project	Commuter
Recruitment Area	Austin 75% minority
Total Students/Grades	90/6th-11th 90% minority
Total Staff	6 Faculty 4 Undergraduates 38% minority
Application Deadline	April 15, 1997
Project Dates	June 2 - July 25
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Available based on need

Austin Prefreshman Engineering Program was organized in 1990 for the purpose of identifying high achieving middle and high school students interested in science and engineering careers. Female and minority students are targeted. During an eight-week session, students are provided challenging academic enrichment activities which are mathematically based. Students study logic, physics, algebraic structures, probability and statistics, computer science, engineering, problem solving, technical writing, and research and study. Abstract reasoning and problem solving skills are reinforced through assignments, examinations, and projects. Students meet guest speakers and take field trips to learn about careers in mathematics, science, and engineering. In the past, field trips have included Engineering Schools at the University of Texas at Austin and Texas A&M University and Austin based firms such as Motorola Inc., Sematech, Microelectronics & Computer Technology Corporation, Veterans Affairs, Tracor, Applied Materials, Thomas Conrad, Inc., and Holly Street power Plant.

Mathematics for Everyone Workshop

Department of Mathematics
Jackson State University
Jackson, MS 39217

Type of Project	Residential
Recruitment Area	70 mile radius of Jackson State University
Total Students/Grades	38/7th-9th 80% minority
Total Staff	3 Faculty 1 Graduate Student 6 Undergraduate Students 94% minority
Application Deadline	April 30, 1997
Project Dates	July 7 - July 27 *Pending funding
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$15

Ms. Edna Holbrook

Office
601/968-2161

FAX
601/974-5852

The Mathematics for Everyone Workshop Series began on the Jackson State University campus in the summer of 1991. The workshop series funded by the National Science Foundation is designed to encourage mathematically promising middle school students to take the high school mathematics courses necessary for careers in mathematics or science. The three-week summer session and the monthly academic year workshops are composed of numerous learning activities designed to teach mathematical concepts while highlighting the enjoyment and challenge of mathematics. During the summer, participants study mathematics through its application to such areas as biology, engineering and physics. The academic year workshops expose students to such mathematical topics as topology, number theory and non-Euclidean geometry. Participants also examine the accomplishments of African Americans and women in mathematics and science. Learning activities include experiments, math-fair-type projects, field trips and interaction with mathematicians in a variety of occupations.

Jersey City PREP, Proyecto Access HACU-NASA

Jersey City State College
Hepburn Hall 208A
2039 Kennedy Boulevard
Jersey City, NJ 07305-1597

Dr. Julio C. Guillen

Office
201/200-2190

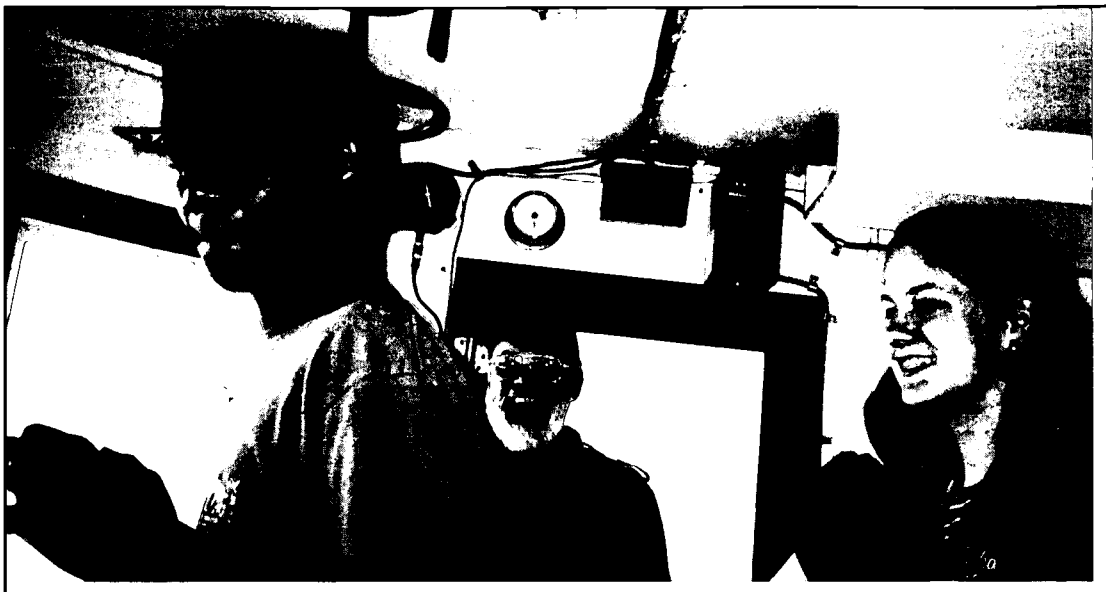
FAX
201/200-2072

email
guillen@jcs2.jcstate.edu

Type of Project	Commuter
Recruitment Area	Hudson County, NJ
Total Students/Grades	50/8th Grade 60% Minority
Total Staff	4 Faculty 2 Graduate Students 3 Undergraduate 50% minorities
Application Deadlines	March 3, 1997
Project Dates	July 7 - August 22, 1997
Cost to Student	None
Scholarship Availability	Not Applicable
Stipend	None

PROYECTO Access was created by HACU (Hispanic Association of Colleges and Universities) with financial support from NASA (National Aeronautics and Space Administration) and academic supervision from the University of Texas, San Antonio. The purpose of this program is to identify high achieving minority middle school students in order to provide them with academic enrichment to encourage them to pursue careers in engineering, mathematics, and science. For eight weeks, during the summer the participants receive instruction in logic, problem solving, computer science, engineering and technical writing. Students attend career in math related fields. This program follows the San Antonio Prefreshman Engineering Program created in 1979 in Texas.

Academic Camp with Computer Emphasis
Transylvania University *(see page 96)*



Modeling Acid Deposition: An Introduction to Scientific Methods
University of Wisconsin (see page 127)

Math and Science Camp for First Nations' Students
Brock University, Ontario (see page 16)

John Jay Summer Computer Camp

John Jay College of Criminal Justice
The City University of New York
445 West 59th Street
New York, NY 10019

JJSCC

Type of Project	Commuter
Recruitment Area	New York City 80% minority
Total Students/Grades	40/7th-9th 90% minority
Total Staff	4 Faculty 2 Undergraduates 83% minority
Application Deadline	April 1, 1997
Project Dates	June 26 - July 24
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	None

Dr. Lily E. Christ

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212/237-8926

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212/237-8742

e-mail
lecjj@cunyvm.cuny.edu

During the summer, small groups of participants led by College faculty actively engage in hands-on experiments to learn about number sequences, geometric patterns, probability, statistics, and forensic science. The curriculum provides and enhances the development of abstract reasoning and problem solving skills; calculators and computers are an integral part of the daily activities. The follow-up activities involve students completing individual projects under the direction of a faculty mentor.

The camp features guest presenters, videos, and field trips. Students learn about various science, engineering, and mathematics careers. Two such careers, operations research and forensic science, which are specialties at John Jay College, are emphasized. JJSCC is supported by the NSF-SSC Program.

José Valdés Summer Math Institute

3200 Senter Road
San Jose, CA 95111

Janet Espinosa

Office
408/227-8492

FAX
408/225-8011

e-mail
espinosaj@esuhsd.k12.ca.us

Type of Project	Commuter
Recruitment Area	East and South San Jose
Total Students/Grades	1200/6th-12th 90% minority
Total Staff	4 Faculty 2 Graduate Students 91 Undergraduate Students 50 High School and Elementary School Teachers 7 High School Students 80% minority
Application Deadline	February 28, 1997
Project Dates	June 16 - August 1
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

The primary goal of the Valdes Math Institute is to prepare middle school students for success in Algebra upon entering high school. It was originated in 1989 by Jose Valdes who was concerned that Hispanic and African American students were not in college prep math classes. The 1996 Institute included seven weeks of intensive mathematics at Santa Clara University, San Jose State University, Mission College, Evergreen Valley College and San Jose City College. In 1996, there were 1055 students with a completion rate of 91%, and 90% of those students recommended up to the next level. Staffing includes local talent from elementary, middle, and high schools, and new teachers from teacher credential programs. Each classroom teaching team includes one teacher and two program assistants, most of whom are college students from the local communities. Evaluation and follow-up show that students have increased success in mathematics and also in other classes. A high percentage are going on to complete college prep classes in high school.

Proyecto Access HACU- NASA

Los Angeles City College
855 North Vermont Avenue
Los Angeles, CA 90029

Type of Project	*information not available*
Recruitment Area	*information not available*
Total Students/Grades	*information not available*
Total Staff	*information not available*
Application Deadline	*information not available*
Project Dates	*information not available*
Cost to the Student	none
Scholarship Availability	*information not available*
Stipend	*information not available*

John Formsma

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213/953-4294

PROYECTO Access was created by HACU (Hispanic Association of Colleges and Universities) with financial support from NASA (National Aeronautics and Space Administration) and academic supervision from the University of Texas, San Antonio. The purpose of this program is to identify high achieving minority middle school students in order to provide them with academic enrichment to encourage them to pursue careers in engineering, mathematics, and science. For eight weeks, during the summer the participants receive instruction in logic, problem solving, computer science, engineering and technical writing. Students attend career in math related fields. This program follows the San Antonio Prefreshman Engineering Program created in 1979 in Texas.

GARDEN

Growth in Academics and Resolve: Developing MathEmatical KNowledge

LeMoyne-Owen College
Department of Mathematical Sciences
Memphis, TN 38126

Dr. John H. Harris

Office
901/774-9090 ext 411
901/942-7333
(secretary)

FAX
901/942-7810

Type of Project	Commuter
Recruitment Area	Memphis metro area
Total Students/Grades	20/(Inner-city focused) 7th-9th 100% minority
Total Staff	2 Faculty 2 High School Teachers 4 Undergraduate Students 1 Support Staff 100% minority
Application Deadline	April 15, 1997
Project Dates	June 7 - July 12
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$150

GARDEN (Growth in Academics and Resolve: Developing Mathematical Knowledge) is a five-week, intensive hands-on enrichment project for rising seventh, eighth, and ninth grade students, based at LeMoyne-Owen College. GARDEN provides a stimulating intellectual environment where young minds are challenged by scientific concepts and exposed to methodologies used in scientific inquiry. Students are exposed to probablitity, statistics, and modeling in mathematics and high-level programming languages. They are taught oral and written communication. They are also exposed to application programs such as word processors, databases, and spreadsheets.

The emphasis is on building problem-solving and critical thinking skills. Emphasis is also on hands-on activities as well as on mentoring involving local experts in mathematics, science, and engineering. Students will take field trips and visit local institutions where scientists work, thereby broadening their scientific horizons. GARDEN emphasizes activities which build confidence and which encourage students to stay in school and pursue mathematics and science-based careers.

Louisiana Preparatory Program

Mathematics Department
Louisiana State University - Shreveport
One University Place
Shreveport, LA 71115

LaPREP

Type of Project	Commuter
Recruitment Area	Shreveport-Bossier Area, LA 50% minority
Total Students/Grades	50/7th-9th 80% minority
Total Staff	6 Faculty 3 High School Teachers 3 Undergraduates 80% minority
Application Deadline	April 1, 1997
Project Dates	June 9 - July 25
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	None (lunches, transportation are provided.)

Dr. Carlos Spaht

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318/797-5356

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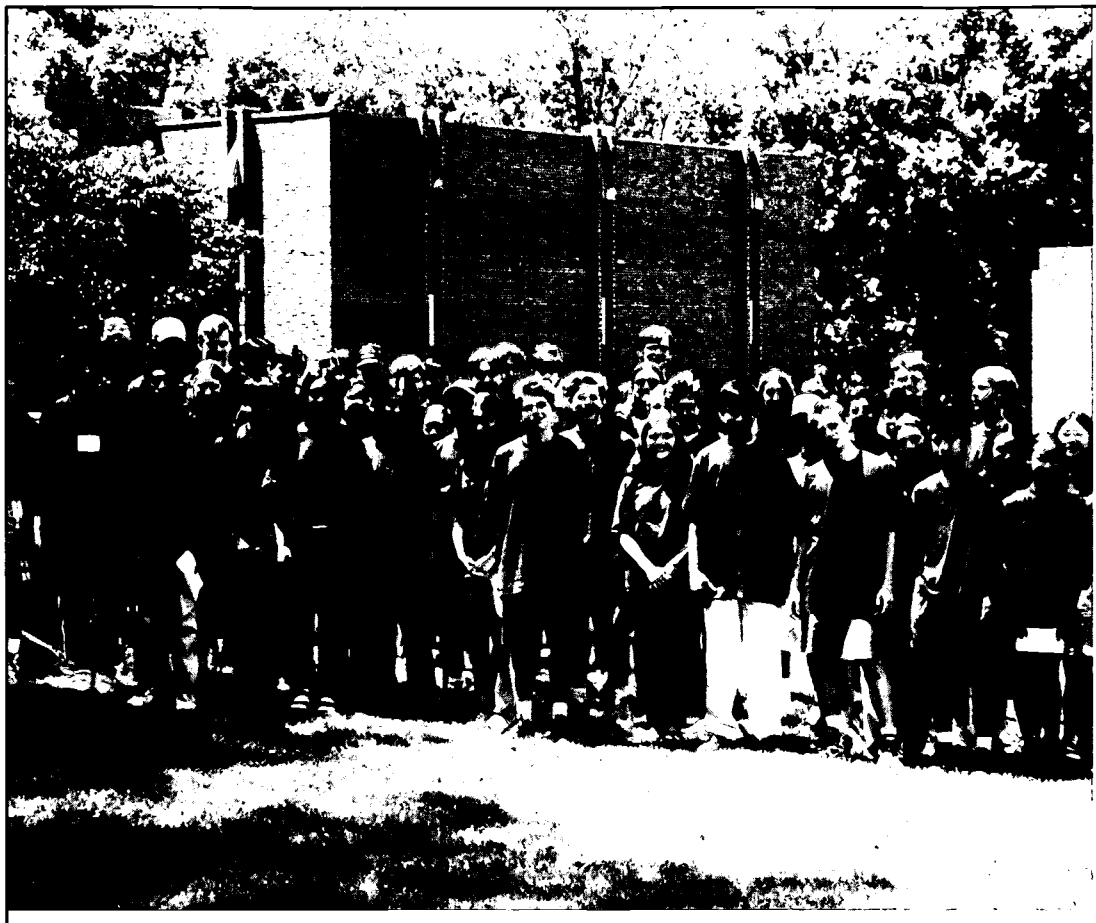
318/797-5230

LaPREP has been in existence since the summer of 1992. Its goal is to identify, encourage, and instruct competent middle and high school students, including women and minority students, who as a result of the program, will pursue college studies, preferably in mathematics or science. An enrichment program, LaPREP emphasizes the development of abstract reasoning, problem solving, and technical writing skills mainly through mathematics courses and seminars. For 2 consecutive summers, students attend 7 weeks of intellectually demanding classes and laboratories. Other aspects include visiting lecturers on science and engineering opportunities, well-known minority speakers, ACT preparation, and field trips to local industries. LaPREP has been very successful. Evaluations contributed by the participants, their parents, and by local and state officials are very high. The Shreveport City Council passed a resolution applauding the LaPREP. The Mathematical Association of America recognized and awarded the program for its impact on mathematics in north Louisiana. Almost all of the participants have expressed a desire to attend college and major in a science-related field (this is a different view from that which they expressed during their first weeks of participation).



Young Scholars Program
Rose-Hulman Institute of Technology (see page 81)

NSF/Loyola University Young Scholars Project

Department of Mathematical Sciences
Loyola University of Chicago
Chicago, IL 60626

YSP

Type of Project	Commuter
Recruitment Area	Chicago 50% minority
Total Students/Grades	18/11th-12th 60% minority
Total Staff	2 Faculty 2 Graduate Students 1 Undergraduate 2 High School Students 30% minority
Application Deadline	May 2, 1996
Project Dates	July 9 - August 30 Academic year Saturdays
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$300 plus a computer

Christine Haught

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312/508-3582

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312/508-2385

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erh@math.luc.edu

The precursor of the Young Scholars Project was designed by Eric Hamilton for Northwestern University's Center for Talent Development in 1984. NSF began funding an amplified version at Loyola University in 1987. The project integrates computer science, mathematics and physics for high school juniors and seniors. Students perform labs in digital electronics, engineering and computer architecture under a research physicist. They receive a mathematically-enriched introduction to programming. The project involves a rigorous summer session followed by Saturday morning classes during the school year. The summer includes visits to various R&D and production facilities.

After finishing the project, participants keep IBM-compatible computers, assembled in the electronics lab, and take the Advanced Placement Computer Science examination. The project accounts for approximately half of the Illinois African-American and Hispanic students who take the AP Computer Science AB test. The YSP has been replicated as a bilingual project for middle school students with DOE/PREP funding, as well as for high school students under a DOE Math/ Science Leadership Award.

Marymount College Summer Science and Math Workshop

Marymount College, Box 1173
100 Marymount Ave.
Tarrytown, NY 10591-3796

Dr. Maryam Hastings

Office
914/332-8291

FAX
914/631-8586

e-mail
hastings@mmc.marymt.edu

Type of Project	Residential
Recruitment Area	Westchester County & New York City
Total Students/Grades	20 (female)/10th-12th 70% minority
Total Staff	3 Faculty 3 Undergraduate Students 5 High School Teachers 18% minority
Application Deadline	April 1, 1997
Project Dates	June 22 - July 5
Cost to the Student	$100 lab fee
Scholarship Availability	Not applicable
Stipend	Not applicable

The Marymount Summer Science and Math Workshop began in 1993. Sponsors have included: CIBA, Coca-Cola, GE, Texaco and Pfizer. The aim of the workshop is to encourage young women to continue their study of mathematics and science and to recognize the value of these areas in advancing their career goals. We emphasize problem-solving so that the students are able to experience, first hand, how science and mathematics are actually "done." The residential program provides an opportunity to live with a culturally diverse group of students. To encourage collaborative learning, all projects are assigned to teams of students.

The curriculum is composed of innovative projects in: topology and geometry, physics, chemistry, biology, and computer applications. We complement the classroom experience with field trips to science centers, museums, research facilities and regional corporations. We invite women professionals to participate in our panels on Health, Environment, Finance and Technology. There are annual reunions in November and June.

Global, Environmental, and Mathematics Scholars

Department of Mathematics
Marymount Manhattan College, 221 East 71 Street
New York, NY 10021

GEMS

Type of Project	Commuter
Recruitment Area	New York City 80% minority
Total Students/Grades	27 (female)/10th 80% minority
Total Staff	1 Faculty 2 High School Teachers 3 Undergraduates 50% minority
Application Deadline	March 31, 1997
Project Dates	June 23 - July 18
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	None (lunch and transportation)

Dr. Margaret Wiener

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212/517-0413

GEMS was begun as a pilot project in 1993 to address the shortage of female minority students in mathematics and science careers. GEMS aims at arousing participants' interest in and enthusiasm for mathematics by modeling real data concerning environmental issues using graphing calculators. The curriculum includes earth algebra, population mathematics, probability and statistics, and is closely tied to environmental science, ecology, geography, sociology and economics. Summer field trips allow participants to experience, first hand, real world solutions to the problems of global survival especially in the unique context of New York City. During the following fall, students participate in weekend field trips. They also meet periodically for help in using their calculators in their high school math and science courses.

Mathematical Modeling at Mercy College

Mathematics/CIS Department
Mercy College
555 Broadway
Dobbs Ferry, NY 10522

Dr. Nagaraj Rao

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914/674-7519

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914/674-7518

e-mail
nsrao@aurora.liunet.edu

Type of Project	Commuter
Recruitment Area	New York and its boroughs
Total Students/Grades	30/10th-12th 55% minority
Total Staff	3 Faculty 4 Undergraduate Students 2 M^{3}C alumni 60% minority
Application Deadline	May 1, 1996
Project Dates	July 5 - August 8
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	50 per week

Mathematical Modeling at Mercy College is a Young Scholars program for 30 high-ability/ high-potential high school students begun in 1994. Real-world problems from the physical, natural, and environmental sciences are used to introduce Young Scholars to the mathematical modeling process. Collaborative learning in classrooms and hands-on activities in the computer laboratory are supplemented by weekly visits to research centers. The participants use the Maple V algebra system to solve equations and draw graphs; the Quattro Pro spread sheet to create tables, plot graphs, and solve differential equations numerically; and Word Perfect to prepare project reports. Students are exposed to research methodologies, to career options in mathematics and science, and to the ethical issues facing today's scientific community. During the following academic year participants complete independent modeling projects and present them to peers.

Mile High Young Scholars Program

Metropolitan State College of Denver
P.O. Box 173362
Denver, CO 80217

Type of Project	Commuter
Recruitment Area	Denver Public Schools, City and County of Denver 72% minority
Total Students/Grades	48/7th-8th 80% minority 50% female
Total Staff	2 Faculty 5 Undergraduate Students 3 High/Middle School Teachers 50% minority
Application Deadline	May 3, 1997
Project Dates	July 8 - August 2
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$50-$150 plus a calculator

Dr. C.G "Tino" Mendez
Dr. Ernest J. Cisneros

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mendezc@mscd.edu

This program was originally conceived with the support of a 1994 SUMMA Planning Grant and initially instituted in the Summer of 1995 with corresponding funding from the National Science Foundation. Students discover new mathematics with an emphasis on scientific applications working together in small groups. They study probability and statistics through hands-on experiments involving data collection and analysis. Participants learn descriptive graphing techniques, curve fitting, and function approximation models in multiple interdisciplinary contexts. They work with difference equations and fractals to understand such chaotic phenomena as epidemics, earthquakes, and the behavior of the weather and stock market. Graphing calculators and computers are used extensively. Students explore the Prisoner's Dilemma and other games as an introduction to game theory and study related applications in the behavioral and political sciences. They visit university, business, and research labs to learn about those environments and about careers in science, mathematics, and engineering. During the school year, students work with their mentors on research projects and participate in other follow-up activities.

MUMSYS

Miami University Mathematics & Science Young Scholars

Department of Mathematics & Statistics
Miami University
Oxford, OH 45056

Prof. Robert S. Smith

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513/529-3556

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513/529-1498

e-mail
rssmith@muohio.edu

Type of Project	Residential
Recruitment Area	Ohio
Total Students/Grades	30/10th 50% female
Total Staff	11 Faculty 12 Graduate Students 2 Undergraduate Students
Application Deadline	April 30, 1997
Project Dates	June 29 - August 8 *Pending funding
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$450

Miami University aims to develop a mathematics-based intervention program for high-ability, high-potential minorities and women in mathematics and the sciences. Rising high school juniors will study discrete (finite) mathematics and statistics -- two standards identified in *Curriculum and Evaluation Standards for School Mathematics.* These subject areas, which are very important tools for scientists, are not available at the secondary level in Ohio. Additionally, students would have a significant hands-on research experience with scientists in chemistry, geology, microbiology, physics, and zoology. Students will be engaged in mathematics and statistics in the mornings and then participate in scientific research projects in the afternoons. Students will present their research to their peers and will participate in post-summer follow-up projects. The program will be residential and run concurrently with other Miami University pre-college programs.

Cooperative Highly Accelerated Mathematics Program

A315 Wells Hall
Michigan State University
East Lansing, MI 48824

CHAMP

Type of Project	Commuter
Recruitment Area	Lansing, MI and vicinity 10% minority
Total Students/Grades	90 (midwest talent search)/ 7th-10th 10% minority
Total Staff	4 Faculty 6 Graduate Students 2 Undergraduates
Application Deadline	April 30, 1997
Project Dates	Academic year
Cost to the Student	$150
Scholarship Availability	None
Stipend	None

Dr. Peter Lappan

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plappan@math.msu.edu

In operation since 1986, CHAMP is a two-year academic program designed to allow mathematically gifted students to master within a two-year period the standard high school mathematics curriculum. CHAMP covers the equivalent of one year of high school mathematics in each of its four semesters. CHAMP courses are taught one afternoon each week on the campus of Michigan State University by mathematics professors. Students in CHAMP receive high school credit for CHAMP courses. Students qualify for CHAMP on the basis of SAT scores. The minimum qualifying scores are SAT-Math 500 and SAT-Math + Verbal = 900. These scores must be attained before the completion of the 8th grade.

Of the more than 350 students who have attended CHAMP, approximately 12% are minority and 35% are women. Most of the approximately 280 students who have completed CHAMP have studied Calculus, and of those who are now in college, more than half are majoring in mathematics, science, or engineering.

Summer Mathematics Program for Michigan Minority Youth

Department of Mathematics
Michigan State University
East Lansing, MI 48824

Dr. Irvin E. Vance

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517/432-1562

e-mail
vance@math.msu.edu

Type of Project	Residential
Recruitment Area	Michigan
Total Students/Grades	80/7th-10th 100% minority
Total Staff	6 Faculty 7 High School Teachers 1 Graduate Student 12 Undergraduates 76% minority
Application Deadline	March 31, 1997
Project Dates	June 22 - August 1
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$150

The Summer Mathematics Program for Michigan Minority Youth is one of the programs of the Michigan Minority Mathematics-Science Project (MMM-SP) at Michigan State University. The program brings eighty African-American, Hispanic-American, and Native American middle and high school students to campus for a six-week comprehensive program. The students study mathematics, science (physics, chemistry, or biology), computer science, and written and oral communication. Mathematical problem-solving, hands-on science and the use of technology in solving problems are features of the academic program. Counseling, guidance, career exploration, and field trips related to academic programs are included. Parents and guardians of participants must agree to participate in workshops designed to assist them in guiding minority youth through the mathematics and science pipelines. Academic year activities include conferences on campus involving parents/guardians and mentors, and staff visits to the schools of participants. Students may participate for two years. All prior participants are invited to attend academic year conferences.

Program for Acceleration in Math & Computer Science Careers for Minority Students

Monmouth College
29 Hillsdale Ave.
Long Branch, NJ 07740

PAC

Ms. Mary Gilmore

Office
908/229-7649

Type of Project	Commuter
Recruitment Area	Local area
Total Students/Grades	129/3rd-12th 90% minority
Total Staff	26 Faculty 4 High School Teachers 4 Graduate Students 2 Undergraduates 49 High School Students 90% minority
Application Deadline	Ongoing as space is available
Project Dates	Two 10-week sessions during academic year
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

PAC was started in September 1984. The program was established in response to a growing awareness that African-Americans and Hispanics are acutely underrepresented in the high technology professions. The program consists of mathematics development to strengthen basic skills and introduce mathematics required for understanding computer science; computer science development to establish literacy and hands-on experience; and tutoring/counseling to address remedial areas, to improve work ethic attitudes, to improve self images, and to identify minority role models. Field trips are scheduled to high technology companies.

Mathematics/Science Enrichment Institute

Montana State University
Billings, MT 59101

Dr. David M. Davison

Office
406/657-2174

FAX
406/657-2804

e-mail
edci_davison@vino.
emcmt.edu

Type of Project	Commuter
Recruitment Area	Billings area -100 mile radius
Total Students/Grades	3 Faculty 12 Graduate Students
Application Deadline	May 14, 1997
Project Dates	June 16- - June 27
Cost to the Student	$35
Scholarship Availability	Not applicable
Stipend	Not applicable

This two-week institute focuses on enrichment activities integrating mathematics and science for middle level students. The purpose is to encourage predominantly at-risk students to further their education in mathematics and science.

During the first week, activities are facilitated by the faculty with graduate students functioning as group mentors: during the second week activities are facilitated by graduate student teams with faculty supervision. In the second week each student group works on a project which is presented to the institute on the final day. In the past, these projects have demonstrated a high level of student creativity.

The institute serves as training for teachers working on graduate programs and has been offered for the last four years. Special efforts have been made to recruit minority students -- when funding has been available, the institute has bwwn residential for these students.

American Indians in Mathematics (AIM)
American Indian Science Engineering Society

Department of Mathematics
Montana State University
Bozeman, MT 59717

MSU/ AISESmath

Type of Project	Residential
Recruitment Area	MT, ND, SD, WY, ID and National in cooperation with AISES Office in Boulder, CO
Total Students/Grades	32/10th 100% minority
Total Staff	3 Faculty 1 Coordinator 2 Counselors 67% minority
Application Deadline	March 1997(Note: applications are handled through the AISES National Office)
Project Dates	July 13 - August 8
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Student; $400

Dr. Lyle Andersen
Prof. Nate St. Pierre

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406/994-3992

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406/994-3733

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andersen@math.montana.edu

The Mathematics Department at MSU in cooperation with the Center for Native American Studies has developed a summer program for reservation teachers and Native American students from a five- state region (22 students) and nationally with selections being made by AISES (10 students). The project incorporates four major components: a four-week Summer Institute in "Exploring the World of Mathematics with Graphics Calculators and Computers;" a five-week intensive summer institute for junior high and high school mathematics teachers from reservation schools; curriculum development activities designed to improve the mathematics curricula at Indian reservation schools through the integration of computer technology and culturally-relevant content; and a multitiered follow-up program with the students during the academic year. The project has just completed its fifth year with support from the Department of Education.

SummerMath

302 Shattuck Hall
Mount Holyoke College
South Hadley, MA 01075

Dr. Charlene Morrow
Dr. James Morrow

Office
413/538-2608

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413/538-2002

e-mail
cmorrow@mhc.
mtholyoke.edu

Type of Project	Residential
Recruitment Area	National 28% minority
Total Students/Grades	100/8th-12th 50% minority 100% female
Total Staff	10 Faculty 12 Graduate Students 9 Undergraduates 20% minority
Application Deadline	June 1, 1997 June 1, for financial aid
Project Dates	June 29 - August 9
Cost to the Student	$3,700 for boarding
Scholarship Availability	Limited financial aid
Stipend	None

SummerMath is an intensive, six-week program that provides new perspectives and new experiences in mathematics, computing, and science for young women. The program emphasizes greater conceptual understanding and affirmation of young women as capable members of a learning community. Students at Summer Math actively engage in problem solving and justify their means of solution. The atmosphere of the program is one of challenge and support: the challenge of rigorous study and of justifying thinking about difficult problems and the support of a community of teachers, residential staff, and peers. SummerMath helps students become independent, but not isolated, learners. In this way, students acquire confidence in their ability to excel. SummerMath completed its first decade in 1991 and currently enrolls over 100 students, recruited nationally and internationally. SummerMath was featured by ABC World News Tonight on its American Agenda Series in August 1994.

The Young Mathematicians/Scientists

The National Hispanic University
14271 Story Rd.
San Jose, CA 95127

TYMS

Type of Project	Commuter
Recruitment Area	San Jose 60% minority
Total Students/Grades	30/8th-9th 90% minority
Total Staff	2 Faculty 1 Graduate Student 1 Undergraduate Student 2 High School Teachers 5 High School Students 90% minority
Application Deadline	April 30, 1997
Project Dates	June 26 - July 30
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$5 per day

Dr. Riley Parker
Coordinator:
Dr. Tae-Soon Park

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510/436-2622

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408/254-1369

e-mail
tpark@ix.netcom.com

The Young Mathematicians/Scientists Program at The National Hispanic University is a five-week mathematics and technology transition mentoring program for 30 Hispanics and other at-risk students selected from the East San Jose School Districts. Eighth and ninth grade students will be paired to function as a team during the Summer program, and to continue as pairs during the next school year. The students will develop skills to master mathematics and related technology, problem solving, research techniques, use of technology in learning mathematics, and the preparation and presentation of a researched mathematics or pre-engineering topic in a cooperative motivational setting. The program will utilize minority career professionals from NASA/AMES to address the students of career options and the importance of mathematics.

Las Cruces PREP
Proyecto Access HACU - NASA

New Mexico State University
Science Hall #236, Box 30001/Dept. 3MB
Las Cruces, NM 88003

Alyne Fulte
Denette Sinclair

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afalte@nmsu.edu

Type of Project	Commuter
Recruitment Area	Las Cruces, NM
Total Students/Grades	50/7th-8th 60% minority
Total Staff	3 Faculty 2 Graduate Students 4 Undergraduates 50% minority
Application Deadline	March 3, 1997
Project Dates	June 2 - July 25
Cost to the Student	None
Scholarship Availability	Not Applicable
Stipend	None

PROYECTO Access was created by HACU (Hispanic Association of Colleges and Universities) with financial support from NASA (National Aeronautics and Space Administration) and academic supervision from the University of Texas, San Antonio. The purpose of this program is to identify high achieving minority middle school students in order to provide them with academic enrichment to encourage them to pursue careers in engineering, mathematics, and science. For eight weeks, during the summer the participants receive instruction in logic, problem solving, computer science, engineering and technical writing. Students attend career in math related related fields. This program follows the San Antonio Prefreshman Engineering Program created in 1979 in Texas.

Growth in Academics and Resolve: Developing Mathematical Knowledge
LeMoyne-Owen College (see page 48)

NUMS²C

Niagara University Math-Science Summer Camp

Department of Mathematics
Niagara University
Niagara University, NY 14109

Dr. Kenneth Bernard

Office
716/286-8193

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716/286-8308

e-mail
kjb@eagle.niagara.edu

Type of Project	Commuter
Recruitment Area	Regional 40% minority
Total Students/Grades	50/7th-8th 60% minority
Total Staff	3 Faculty 2 High School Teachers 2 Graduate Students 6 Undergraduates
Application Deadline	April 1996
Project Dates	July 14 - July 25
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

Niagara University conducts a two-week Math-Science Summer Camp for middle school students with high potential to succeed in careers in science, engineering or mathematics. These students are encouraged to take the high school mathematics and science courses necessary for these careers. Enrichment experiences are provided in the disciplines of mathematics, biology, and chemistry. Emphasis is placed on "hands-on" experiences in "doing mathematics and sciences." Problem solving techniques, the graphing calculator and the computer are utilized. Field trips are conducted to local business and professional operations. Follow-up activities are conducted during the Fall and Spring.

Tidewater Young Scholars Program

Department of Mathematics
Norfolk State University
Norfolk, VA 23504

TYSP

Type of Project	Commuter
Recruitment Area	Chesapeake, Norfolk, Portsmouth, Suffolk, and Virginia Beach
Total Students/Grades	40/8th-9th 85% minority
Total Staff	6 Faculty 4 Undergraduate Students 2 High School Teachers 80% minority
Application Deadline	April 30, 1997
Project Dates	July 7 - August 2
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$400

Dr. Phillip E. McNeil

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804/683-8820

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p_mcneil@vger.nsu.edu

The Tidewater Young Scholars Program is a four-week program in math and science at Norfolk State University for 40 rising 8th and 9th grade students in the Tidewater, VA area. The overall theme for the summer program is water. Students examine various aspects of water shortage and water quality problems in the Tidewater area. They analyze water samples collected on a field trip excursion on the Elizabeth River sponsored by the Chesapeake Bay Foundation; they study water-born bacteria cultures in the biology lab; they perform water treatment experiments in conjunction with field trips to local water treatment plants; they examine aspects of the Lake Gaston Pipeline Project; and they conduct other math/science investigations associated with field trips to local science installations. The data generated from these activities is analyzed with mathematical models using calculators and computers. Students are challenged by a number of visiting scientists, and they engage in comprehensive career exploration activities sponsored by Norfolk State's Career Counseling staff. Students culminate their activities by completing group and individual projects. They continue to work on their projects in six follow-up sessions during the academic year.

Northern Kentucky University-Young Scholars Program

Department of Mathematics and Computer Science
Northern Kentucky University
Highland Heights, KY 41099

Dr. Linda Sheffield
Dr. Maria Falbo-Kenkel

e-mail
sheffield@nku.edu

Type of Project	Commuter
Recruitment Area	Greater Cincinnati Area
Total Students/Grades	40/8th-9th 10-50% minority
Total Staff	3 Faculty 1 High School Teacher 2 Student Assistants
Application Deadline	Not available
Project Dates	June 5 - July 2, 1997
Cost to the Student	Not available
Scholarship Availability	Not available
Stipend	Not available

This program will consist of a four-week summer camp with activities focusing on mathematics applied to problems in aeronautics and space science and periodic school year follow-up activities. The academic year program has been in operation since 1988. Yearly follow-up surveys are conducted on mathematics and science courses taken in high school and college majors.

South Dakota Native American Mathematics Enhancement

Department of Mathematics and Natural Sciences
Northern State University
Aberdeen, SD 57401

SDNAME

Type of Project	Residential
Recruitment Area	Northern and Eastern SD 100% Native American
Total Students/Grades	30/10th-11th 100% Native American
Total Staff	5 Faculty 1 Graduate Student 5 Undergraduate Students 1 High School Teacher 30% minority
Application Deadline	March 30, 1997
Project Dates	June 3 - June 28
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$160

Dr. Abid Elkhader
Mr. Mike Cutler

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The South Dakota Native American Mathematics Enhancement (SDNAME) Program at Northern State University is a four-week residential summer program for 30 Native American students entering grades 10 and 11 from reservations in northern and eastern South Dakota who have expressed an interest and shown proficiency in mathematics.

Initiated in the summer of 1995, SDNAME encourages students to participate in activities and experiments involving mathematical topics from discrete mathematics, game theory, geometry, coding theory, graph theory, and mathematical biology.

Students also participate in biology, chemistry, and physics activities and travel on field trips to industries and businesses to observe the daily use of mathematics and natural sciences in a variety of career settings.

SDNAME is funded by the National Science Foundation and is free to selected participants, each of whom receive a stipend and graphing calculator.

Missouri Women & Mathematics Mentoring Project

Department of Mathematics and Statistics
Northwest Missouri State University
Maryville, MO 64468

Dr. Cheryl Gregerson-Malm
Ms. Myrna Main

Office
816/562-1206

FAX
816/562-1188

e-mail
0100211@acad.nwmissouri.edu

Type of Project	Commuter
Recruitment Area	Missouri
Total Students/Grades	27/10th-12th 9 Middle School Teachers
Total Staff	2 Faculty 2 High School Teachers
Application Deadline	September 1996
Project Dates	October 5, 1996 - May 30, 1997
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

This project is designed to encourage middle school girls to continue their study of mathematics. Seeing girls engage in and succeed at mathematics will provide a link in the mentoring process and enhance each student's perception of their abilities in mathematics. During two full-day workshops, nine middle school teachers and their teams of three high school girls experience hands-on mathematics activities incorporating the use of manipulatives and technology. Each team is then required to present mathematical activities to the middle school girls in their district. Teams meet at least once per month during the 1996-97 school year with a group of 10 or more middle school girls. Having the high school girls prepare and present concrete enrichment activities to the middle school girls will increase the understanding and ability of both groups. Thus all participants benefit from this ongoing mentoring process.

Occidental Partnership to Increase Mathematics Opportunity

Department of Mathematics
Occidental College
Los Angeles, CA 90041-3392

OPTIMO

Type of Project	Residential
Recruitment Area	Northeast Los Angeles, west Pasadena, south Glendale
Total Students/Grades	32/8th-9th 80% minority
Total Staff	4 Faculty 1 Graduate Students 6 Undergraduate Students
Application Deadline	April 14, 1997
Project Dates	July 6 - August 2
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$200

Dr. Donald Goldberg
Dr. Nalsey Tinberg

Office
213/259-2729

FAX
213/341-4988

e-mail
don@oxy.edu

Occidental College is one of only a few selective liberal arts colleges in the heart of a major American city. The College initiated the OPTIMO program in 1992 to stimulate local students' participation in mathematics, to develop students' abilities to be think actively, to enrich their experience with a variety of mathematics and applications, and to inspire them to strengthen their commitment to academic success.

Working with local middle school teachers, the College identifies able and motivated students from a rainbow of ethnic backgrounds to join a four-week long summer residential community, with weekends spent at home. Monthly Saturday sessions during the academic year extend students' involvement with OPTIMO peers and activities.

Students actively participate in the development of mathematical ideas: they create mathematical evidence, seek patterns, state conjectures, form arguments, and develop skills in computation, visualization, reasoning, writing and speaking. Mathematical activities are complemented by directed use of personal graphing calculators, computers, and continuing physical science laboratory experiments.

Academic year activities include classes and computer workshops, visits by engineers and science professionals, field trips, and optional Science Fair participation.

In its first four years, OPTIMO has received financial support from the GTE Foundation, Union Bank Foundation, and the NSF Young Scholars Program. *(*Pending Funding)*

RYSP	**Ross Young Scholars Program** Department of Mathematics 231 West 18th Avenue Ohio State University Columbus, OH 43210-1174

Dr. Arnold Ross

Office
614/292-1569

FAX
614/292-1479

e-mail
aer@mps.ohio-state.edu

Type of Project	Residential
Recruitment Area	National 28% minority
Total Students/Grades	70/9th-12th
Component I	High achieving participants
Component II	100% minority, imbedded in Component I
Total Staff	6 Faculty 1 Graduate Students 8 Undergraduates
Application Deadline	May 14, 1997
Project Dates	June 22 - August 16
Cost to the Student	$1500
Scholarship Availability	Based on financial need for qualified students
Stipend	Not applicable

The objective of the Ross Young Scholars Program is to break ground for those who have a strong desire to pursue careers in mathematics, science or technology -- in short to provide a vivid apprenticeship to research. We are governed by the knowledge that science floats on a sea of mathematics; therefore, the basis of our program is intensely mathematical. As a point of departure, we choose discrete mathematics which is very accessible; its ideas are increasingly important in all of mathematics as well as in science and technology. Also, discrete mathematics provides an environment rich in opportunities for observation, conjecturing, testing conjectures for possible counterexamples, and ultimately achieving a measure of security through reasoned argument--all important components of scientific thinking. The program provides involvement in problem-solving not only as a means for acquisition of techniques, but also for achieving appreciation of new ideas. Number Theory (taught to all first year participants) serves as an underpinning for discrete mathematics, followed by Combinatorics, among other things, in the second summer of our multilevel program.

American Indian Science Engineering Society & Young Scholar Math Project at Stillwater, OK

Department of Mathematics
Oklahoma State University
Stillwater, OK 74078

OSU/ AISESmath

Type of Project	Residential
Recruitment Area	National 28% minority
Total Students/Grades	34/11th 100% American Indian
Total Staff	1 Project Director 3 Faculty 4 Resident Assistants 1 Teaching Assistant 78% minority
Application Deadline	April 1997 *(Applications for this project are handled through AISES, 5661 Airport Boulevard Boulder, CO 80301-1014)
Project Dates	June 1 - June 28
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

Dr. Bruce Crauder

Office
405/744-5688

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405/744-8275

e-mail
crauder@math.okstate.edu

The OSU Mathematics Department began hosting the AISES summer program in 1994. The program is designed to encourage Native American students to excel in the areas of Math and Science. Participants are exposed to new technology through computers and graphing calculators. Topics covered range from patterns and design, through matrix algebra and calculus. Applications of these mathematics topics are seen in a variety of outside activities and field trips.

Since many of the students later pursue collegiate goals, they work on mathematics enrichment projects and prepare for the many academic and social choices needed to succeed in college. Encouragement of creativity and goal achievement is presented throughout the camp and also in follow-up with the students. The AISES summer program at OSU is both a learning and cultural experience for all that participate. This project is primarily supported as a National Science Foundation Young Scholars program.

Prefreshman Engineering Program

Palo Alto College
1400 West Villaret
San Antonio, TX 78224

Mr. Fermin Ortiz

Office
210/921-5159

FAX
210/921-5115

e-mail
fortiz@accd.edu

Type of Project	Commuter
Recruitment Area	Bexar County, San Antonio
Total Students	130/6th-12th 75% minority
Total Staff	7 Faculty 6 Undergraduates 70% minority
Application Deadline	April 1, 1997
Project Dates	June 2 - August 4
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$40 - $100

Participants are in large part women or students from minority groups traditionally underrepresented in the engineering and science professions. They are middle school and high school students from the San Antonio area and were identified as high achieving students with an interest in learning about the engineering and science professions. The objectives include the development of abstract reasoning skills and problem-solving skills. The academic components of the program are: Logic and its Applications to Mathematics, Introduction to Engineering, Introduction to Computer Science, and Problem Solving Seminars.

Engineers, scientists, and other professionals from private industry and government agencies discuss career opportunities.

Comprehensive Enrichment Program

AISES (*Pembroke State Univ., Pembroke, NC*)
1630 30th Street, Suite 301
Boulder, CO 80301-1014

AISES-Precollege

Type of Project	Residential
Recruitment Area	National
Total Students/Grades	42/9th 100% minority (American Indian)
Total Staff	3-5 Faculty 2-5 High School Teachers 2-5 Graduate Students 2-5 Undergraduate Students 1 High School Student 80% minority
Application Deadline	February 14, 1997
Project Dates	3 weeks in summer
Cost to the Student	Travel only
Scholarship Availability	Limited hardship travel
Stipend	None

Dr. Freda Porter-Locklear

Office
303/939-0023

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303/939-8150

e-mail
aisespc@spot.colorado.edu

The American Indian Science and Engineering Society (AISES) pre-college enrichment programs seek to empower American Indian and Alaskan Native youth to make informed choices and preparation for college and careers, in mathematics and the sciences. Programs provide American Indian students a series of mathematics and science experiences on University campuses across the country, with year-round research projects and mentoring to maintain their interest and ability in mathematics and science throughout middle and high school.

The Pembroke State site will offer students a mathematics-based program. The curriculum includes problem solving, communication and reasoning skills development as well as an algebra and geometry emphasis. Students will develop a research project that incorporates mathematics and science and that relates to their own communities. Students will have access to the Internet and be able to communicate electronically with their instructors and mentors.

Students are selected based on: academic/scholastic record; essay in which student discusses potential career interest and the application of mathematics/science within that career; a written/illustrated description of a mathematical or engineering related problem-solving activity; and two references from mathematics and science teachers.

Proyecto Access HACU - NASA

Pima Community College
1255 N. Stone Avenue
Tucson, AZ 85709-3100

Dr. Ana Mantilla

Office
520/884-6153

FAX
520/884-6172

Type of Project	*information not available*
Recruitment Area	*information not available*
Total Students/Grades	*information not available*
Total Staff	*information not available*
Application Deadline	*information not available*
Project Dates	*information not available*
Cost to the Student	None
Scholarship Availability	*information not available*
Stipend	*information not available*

PROYECTO Access was created by HACU (Hispanic Association of Colleges and Universities) with financial support from NASA (National Aeronautics and Space Administration) and academic supervision from the University of Texas, San Antonio. The purpose of this program is to identify high achieving minority middle school students in order to provide them with academic enrichment to encourage them to pursue careers in engineering, mathematics, and science. For eight weeks, during the summer the participants receive instruction in logic, problem solving, computer science, engineering and technical writing. Students attend career in math related fields. This program follows the San Antonio Prefreshman Engineering Program created in 1979 in Texas.

Proyecto Access HACU - NASA

Richard J. Daley College
7500 South Pulaski Road
Chicago, IL 60652

Type of Project	*information not available*
Recruitment Area	*information not available*
Total Students/Grades	*information not available*
Total Staff	*information not available*
Application Deadline	*information not available*
Project Dates	*information not available*
Cost to the Student	None
Scholarship Availability	*information not available*
Stipend	*information not available*

Dr. M. Vali Siadat

Office
312/838-7658

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312/838-7524

PROYECTO Access was created by HACU (Hispanic Association of Colleges and Universities) with financial support from NASA (National Aeronautics and Space Administration) and academic supervision from the University of Texas, San Antonio. The purpose of this program is to identify high achieving minority middle school students in order to provide them with academic enrichment to encourage them to pursue careers in engineering, mathematics, and science. For eight weeks, during the summer the participants receive instruction in logic, problem solving, computer science, engineering and technical writing. Students attend career in math related fields. This program follows the San Antonio Prefreshman Engineering Program created in 1979 in Texas.

FAME

Faculty and Minority Education

Department of Mathematics and Computer Science
Ripon College
Ripon, WI 54971

Dr. Robert Fraga

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414/748-8361

FAX
414/748-7243

e-mail
fragar@acad.ripon.edu

Type of Project	Residential
Recruitment Area	SE Wisconsin 36.6% minority
Total Students/Grades	27/11th 100% minority
Total Staff	2 Faculty 2 Undergraduate Students 6 High School Teachers 30% minority
Application Deadline	April 25, 1997
Project Dates	June 25 - July 1
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Subsidized purchase of a TI-82 Calculator

FAME involves an introduction to the capacities of a graphing calculator supplemented by a calculator based lab, as well as a variety of software packages on Macintosh computers. Students use these to explore topics in graph theory, symmetry, and the theory of chaos with particular emphasis on African and Hispanic cultures. Speakers of minority background speak to students about their work in math-related fields and careers in mathematics and science. The concluding event of the workshop was an exhibition of student projects related to subjects explored during the week and shared with their parents and siblings.

Amarillo PREP
Amarillo College (see page 2)

Rockhurst College/St. Teresa's Academy Supporting Young Women in Mathematics

Mathematics Department, Rockhurst College
1100 Rockhurst Road
Kansas City, MO 64110

Anita Salem
Paula Shorter

Office
816/501-4081

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816/501-4169

e-mail
salem@vax1.rockhurst.edu
shorter@vax1.rockhurst.edu

Type of Project	Commuter
Recruitment Area	Greater Kansas City
Total Students/Grades	32/8th and 12th 1000/4th-6th (Girl Scouts)
Total Staff	3 Faculty 10 Undergraduate Students 2 High School Teachers 20 High School Students
Application Deadline	November 12, 1996
Project Dates	November 12, 1996 - June 30, 1997
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

For the past five years, Rockhurst College has invited talented 12th grade women and minority students to come to out campus to take calculus. St. Teresa's Academy (a private all women's high school) has also developed a program that invites talented eighth grade students to take Algebra I on their campus. We have a strong relationship with the Mid-America Girl Scout office by offering science and math badge completion programs and a summer science and math camp for girl scouts. This program will gather together the young women (8th and 12th graders) who have demonstrated achievement in mathematics to serve as counselors for the girl scout program. In addition, college mathematics majors will serve as counselors and mentors to the 8th and 12th grade students. The young women mentors (8th grade, 12th grad, college students) will participate in two workshops each year to encourage them to pursue careers in mathematics.

Young Scholars Summer Program

Department of Mathematics
Rose-Hulman Institute of Technology
5500 Wabash Avenue
Terre Haute, IN 47803-3999

YSSP

Type of Project	Residential
Recruitment Area	National 28% minority
Total Students/Grades	30/9th-11th
Total Staff	3 Faculty 3 Undergraduates 1 Graduate students
Application Deadline	April 1, 1997
Project Dates	June 8 - June 28
Cost to the Student	$500
Scholarship Availability	Scholarships Available
Stipend	None

Dr. George Berzsenyi

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812/877-3198

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george.berzsenyi@rose-hulman.edu

The USA Mathematical Talent Search (USAMTS) is a year-round, year-after-year nationwide competition in creative mathematical problem solving for high school students, encouraging scientific endeavor as an ongoing activity. The associated Young Scholars Summer Program (YSSP) gives an opportunity to 30 successful participants of the USAMTS to work together more intensively, to improve their problem-solving skills (both individually and in group settings), and to explore coherent, axiomatic bodies of mathematics on the campus of Rose-Hulman in a 3-week long session. During the YSSP, the students are also given opportunities to explore careers in science, engineering, and mathematics, with the guidance of practicing professionals. Since the participants of the YSSP are expected to continue their excellent work in the USAMTS, the USAMTS and its YSSP are reciprocal activities. While the USAMTS involves several thousand students each year, the YSSP component is limited to 30 participants.

The USAMTS is presently in its 8th year of operation; its participants receive four sets of five problems during the year. The solutions submitted are evaluated by mathematicians at the National Security Agency.

RYSP

Rutgers Young Scholars Program in Discrete Mathematics

Science and Engineering Resource Center, Room 221
Busch Campus, Rutgers University
Piscataway, NJ 08855-1179

Dr. Robert Davis
Dr. Michael O'Nan
Dr. Joseph Rosenstein

Contact:
Lisa Estler

Office
908/445-4065

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908/445-3477

e-mail
estler@dimacs.rutgers.edu

Type of Project	Residential
Recruitment Area	New Jersey 22% minority
Total Students/Grades	40-45/10th-12th 25% minority
Total Staff	7 Faculty 6 Graduate Students 7 Undergraduates 50% minority
Application Deadline	April 15, 1997 or until filled
Project Dates	July 14 - August 8
Cost to the Student	$900
Scholarship Availability	Full & partial scholarships
Stipend	Not applicable

Rutgers University has sponsored since 1990 a four-week, residential Young Scholars Program in Discrete Mathematics for 45 students entering the 10th, 11th, and 12th grades. A total of 275 students, including 131 women, 103 Asian students, 16 Hispanic students, and 34 African-American students participated during 1990-1996. The purposes of the program are to introduce students to discrete mathematics, an accessible field with many applications and many open problems; to increase students' problem-solving ability; and to expose them to a wide variety of mathematical scientists as role models. These purposes further the overall goal of encouraging students to consider careers in mathematics and the sciences. Among the topics discussed are applications of graphs, algorithms in graph theory, nonlinear systems and chaos theory, iteration and fractals, and number theory. The staff each summer includes 7 faculty members, 9 teaching assistants who are graduate and undergraduate students majoring in mathematics or computer science, and 4 residential life staff members. The program includes a research project with industrial mathematicians, speakers from industry, field trips, computer activities, and career orientation workshops. Follow-up sessions are held on four Saturdays during the school year; programs include speakers, continuation of summer activities, computer activities, and mathematical puzzles and contests.

Mathematics Achievement and Performance in Science for Native American Young Scholars

St. Norbert College
De Pere, WI 54115

Type of Project	Residential
Recruitment Area	National 22% minority
Total Students/Grades	30/rising 8th graders 100% minority
Total Staff	3 Faculty 12 Undergraduate Students 4 High School Teachers 2 Middle School Teachers 3 Professionals 4 Staff Volunteers 17% minority
Application Deadline	March 18, 1997
Project Dates	July 14 - July 29
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

Bonnie Berken

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414/403-3191

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414/403-4098

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estler@dimacs.rutgers.edu

This project is for students from American Indian tribes throughout the U.S. A thematic focus, Mother Earth, provides the context for the hands-on activities including conducting experiments, making measurements, analyzing data, working with computers.

The goal of MAPS for Native Americans is to increase the number of Native Americans who pursue a college education, specially in the area of mathematics, computers, engineering, and science. Objectives of MAPS include: *increasing student commitment to remain in school and continue the study of mathematics, computers, engineering, and science*; *exposing students to a variety of mathematical, scientific and technological fields and see that mathematics is more than computation with numbers*; *illustrating to students how to plan realistically for a college education both through wise curricular choice in high school and knowledge of financial aid*; *providing students with information about career opportunities in mathematical and scientific fields.*

Students work closely with St. Norbert College faculty, local secondary school educators, and Native American mathematics and scientists to integrate career exploration and problem solving skills in both classroom and laboratory settings. Numerous field experiences provide data for analysis. Follow-up experiences including an academic year project help to insure that MAPS alumni continue their interest in mathematics.

Through a broad range of participatory activities mathematics, computers, and science, MAPS students see the importance of those areas in their daily lives. The goals of MAPS are provide a solid basis for a lifelong interest in science and mathematics.

Wind, Water, and Waves

Department of Mathematics
Seattle University
Seattle, WA 98122

Sister Kathleen Sullivan
Edie Lie

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206/296-5931

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206/296-2179

e-mail
ksulliva@seattleu.edu

Type of Project	Commuter/Residential
Recruitment Area	Seattle 60% minority
Total Students/Grades	30/ rising 8th graders 60% minority
Total Staff	4 Faculty 10 Volunteer Professional Scientists 5 Middle School Teachers 5 Undergraduates
Application Deadline	March 1, 1996
Project Dates	July - August
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$100

Seattle University, in partnership with Boeing and KCM, will conduct a highly interactive program designed for middle school girls with demonstrated aptitude and interest in science and mathematics. In each of two years, 30 students will participate in a yearlong educational and research program. With wave behavior as a unifying theme, the program will enable participants to become more familiar with scientific methods; work closely with professional scientists, engineers, and science educators; improve their communication, teamwork, project management, computer research and study skills; and develop increased confidence. A four-week summer program will include classroom, laboratory, and field activities featuring sophisticated Boeing simulation equipment. In the subsequent academic year, students will work closely with professional mentors on small group projects extending the summer's themes, culminating with a presentation at a science fair in April.

The Lake Tahoe Watershed Project

Sierra Nevada College
P.O. Box 4269
Incline Village, NV 89450-4269

Type of Project	Commuter
Recruitment Area	Washoe County, NV 14% minority
Total Students/Grades	28/6th-10th 36% minority
Total Staff	4 Faculty 2 Graduate Students 4% minority
Application Deadline	April 30, 1997
Project Dates	June 30 - August 1 *Pending funding
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$50 (travel stipend)

Sue Welsch
Jane Rohrer

Office
702/831-1314

FAX
702/831-1347

This project began in 1993 with funding from the Department of Energy designed for girls from 6th to 10th grade gifted in math and science. Since the middle school period is a time when research has shown that girls often lose interest in math and science, this project uses several strategies to help encourage and maintain their interest in these fields. Instruction is characterized by hands-on, field-based, motivational experiences with the Lake Tahoe Watershed, including the environmental science components of watersheds, water quality, hydrology, physics, geography, geology, ecology, and wildlife, and the mathematics components of algebra, statistics, geometry, and demographics. The variation in geology, climatic zones, wilderness and urbanization, wildlife and human habitat result in an area which is ideal for the project. Female instructors and graduate students provide role models of women engaged and interested in math and science careers.

Mathematics Intensive Summer Session
California State University, Fullerton (see page 19)

Tidewater Young Scholars Program
Norfolk State University (see page 67)

Southwest Texas State University Honors Summer Math Camp

Department of Mathematics
Southwest Texas State University
San Marcos, TX 78666

Type of Project	Residential
Recruitment Area	Primarily Texas 60% minority
Total Students/Grades	60/10th-12th 60% minority
Total Staff	7 Faculty 1 Graduate Student 9 Undergraduates 40% minority
Application Deadline	April 30, 1997
Project Dates	June 8 - July 18
Cost to the Student	$200
Scholarship Availability	Yes
Stipend	$60

Dr. Max Warshauer

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512/245-3439

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512/245-3847

e-mail
mw07@swt.edu

The Southwest Texas State University Honors Summer Math Camp is a 6-week residential program, sponsored by the National Science Foundation Young Scholars Program. The curriculum includes courses in Elementary Number Theory with computer lab using Mathematica; Combinatorics and Problem Solving; an Honors Seminar; and a follow-up school year research project. Returning students study abstract algebra, topology and a research topics course. Each student is provided with a copy of Mathematica and modem if needed so that everyone can communicate electronically during the school year.

The goal is to excite young students about doing mathematics and to teach the students to reason rigorously and precisely. Students learn mathematics by studying in an intense, cooperative environment. Working together in groups of four, each supervised by a counselor, they explore new ideas and share in the excitement of finding the simple mathematical ideas which underlie and explain seemingly complex problems. Other activities include weekly seminars by guest speakers, picnics, and weekend excursions which give the participants a chance to relax and enjoy the local surroundings.

PMS 21st

Pathways of Math & Science of the 21st Century Summer Program

E-282 Thompson Hall
State University of New York, College at Fredonia
Fredonia, NY 14063

Dr. Laila Denoya

Office
716/673-3521

FAX
716/673-3224

e-mail
denoya@fredonia.edu

Type of Project	Commuter
Recruitment Area	Chautauqua County, NY 60% minority
Total Students/Grades	50/6th-8th 100% minority
Total Staff	4 Faculty 4 Graduate Students 4 High School Students 50% minority
Application Deadline	May 31, 1996
Project Dates	July 2 - August 2
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

In its fourth (final) last year, the Pathways of Math and Science of the 21st Century Program began in the summer of 1993, at the State University of New Yorkfunded by the National Science Foundation, with the goal of encouraging sixth - eighth grade minority students to become interested in math/science fields, illustrating the importance of math/science in their daily lives, and strengthening the students' commitment to remain in school. The program has three modules: *Knowing Your Coursework*; *Knowing Yourself*; *Knowing Your School System*. The first module seeks to improve the academic skills and motivation of the students, enabling them to succeed in math/science. The second aims to enhance the students' understanding of their development, their sociocultural influences, and the career and decision-making skills needed to succeed in the schools. The third is designed to develop adequate adjustment skills and provide complete information on how the high school system operates, easing students' transition from middle school to high school. The math and science coursework includes: geometry, statistics, proportion, percentage, probability, with applications in solid waste management, environmental geology and mineralogy. Hands-on experiences, field trips, computer and lab training are part of the instructional activities.

Institute of Creative Problem-Solving for Gifted and Talented

Mathematics Department
SUNY/College at Old Westbury
Old Westbury, NY 11568-0210

Type of Project	Commuter
Recruitment Area	Long Island, NY 25% minority
Total Students/Grades	60/5th-10th
Total Staff	2 Faculty 12 High School Teachers 23% minority
Application Deadline	April 14, 1997
Project Dates	Academic year Saturdays
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

Dr. Jong Pil Lee

Office
516/876-3261

FAX
516/876-3126

The Institute's objective is to improve the problem-solving skills of a selected group of sixty high ability students of grades 5 through 10 in Long Island.

The creative problem-solving sessions will stimulate and challenge the minds of young children on 20 Saturdays during the 1997-98 academic year. These participants will deepen their background in mathematics, sharpen their thinking skills and develop their problem-solving ability. Each session will have a section for grades 5-6; 7-8; and 9-10. For each section a team of four teachers will collaborate to set forth the syllabus, pedagogy, activities for students, and ongoing evaluative techniques. There are two main components: a sequence of topics and subtopics and a set of widely accepted problem-solving strategies. Participants will be given problems having several possible solutions, and then each strategy will be introduced with a problem, discussed and reviewed through other problems.

EMP Young Scholars Program

Explorations in Mathematics and Physics

Mathematics Department - Snygg Hall #18
State University of New York, College at Oswego
Oswego, NY 13126

Dr. Jack Narayan
Dr. Philip Downum
Dr. Alok Kumar

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315/341-2888

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315/341-3177

e-mail
narayan@oswego.
oswego.edu

Type of Project	Residential
Recruitment Area	Syracuse/rural Oswego Co.
Total Students/Grades	32/8th 50% minority
Total Staff	8 Faculty 2 High School Teacher 6 Counselors 1 Graduate Student 2 High School Students
Application Deadline	May 16, 1997
Project Dates	July 7 - August 1
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$100

SUNY College at Oswego offers a four-week summer residential project with a disciplinary focus in mathematics and physics. The project challenges students to develop new ways of thinking about mathematics and physics. Exploratory sessions, workshops and hands on activities focus on such topics as: graph theory and its applications, Geometer's Sketch Pad, mathematical patterns in number theory, elementary mechanics and the physics of light. All students work on group and individual projects with help of the mathematics and physics instructors. Students are recruited from Syracuse City and Oswego County school districts. Fifty percent of the students are selected from historically underrepresented populations. Follow up activities include four Saturday workshops and conferences.

Syracuse University's Mathematics/ Science Young Scholars' Program

Syracuse University, Office of Academic Affairs
304 Tolley Administration Bldg.
Syracuse, NY 13244-1100

SUMSYSP

Type of Project	Residential
Recruitment Area	Upstate New York districts with minority populations
Total Students/Grades	50/8th 100% minority
Total Staff	6 Faculty 2 High School Teachers 6 Undergraduates
Application Deadline	April 29, 1997
Project Dates	July 6 - August 1
Cost to the Student	None
Scholarship	Not applicable
Stipend	Not applicable

Dr. Howard Johnson

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315/443-2373

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315/443-3423

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johnsonh@suadmin.syr.edu

The Young Scholars' Program is a four-week, intensive summer program designed to encourage bright young minority students to continue studying mathematics, science and computer technology in high school. During this time educators from the math, science and computer areas work continuously with the students to provide a challenging academic experience that will supplement the regular school year program. Our goal for the Young Scholars Program is to give all of these students the opportunity to strengthen their skills in math, science and computer technology, an opportunity they may otherwise not receive.

MAST

Mathematics Academy for Inner-City Scholars at Temple

Department of Mathematics
Temple University
Philadelphia, PA 19122

Dr. John J. Schiller

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215/204-5012

FAX
215/204-6433

e-mail
schiller@euclid.math.
temple.edu

Type of Project	Commuter
Recruitment Area	Inner-City Philadelphia
Total Students/Grades	40/8th 100% minority
Total Staff	2 Faculty 8 Undergraduate Students 2 High School Teachers 67% minority
Application Deadline	Not available
Project Dates	July - August 1 10 Saturdays in academic year 1996-97
Cost to the Students	None
Scholarship Available	Not applicable
Stipend	$40 per week, transportation, & lunch

MAST provides high-potential, inner-city, middle-school students an opportunity to discover and strengthen their ability to apply mathematics to practical problems, to interact with professional mathematician in research projects, and to develop an understanding of the academic requirements and process needed for a career in fields dependent on mathematics.

During a period of four weeks in the summer following their graduation from middle school and for ten Saturdays in their first year of high school, 40 Young Scholars will engage in mathematical and career-related activities. They will work in groups of five with Temple faculty, assisted by minority undergraduates majoring in mathematics, engineering, or science. On the ten Saturdays, high school teachers will also participate. Minority professional groups will conduct career-planning workshops for the scholars and their parents.

In the summer portion of the program, the activities will focus on discrete mathematics, utilizing graphing calculators and computers. The groups will design research projects to be completed and presented during the academic-year follow-up. In the follow-up period, the scholars will also tackle a selection of problems generated by the Interactive Mathematics Program (IMP).

Texas A&M Prefreshman Enrichment Program

Department of Mathematics
Texas A&M University
College Station, TX 77843-3368

TAMUPREP

Type of Project	Commuter
Recruitment Area	25-mile radius of campus
Total Students/Grades	35/7th-8th 60% minority
Total Staff	1 Faculty 2 Graduate Students 2 Undergraduates 2 Staff 50% minority
Application Deadline	April 29, 1997
Project Dates	July 14 - August 8
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

Dr. Jeff Morgan

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409/845-3261

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409/845-6028

e-mail
jmorgan@math.tamu.edu

TAMUPREP has provided exciting mathematics, science and engineering experiences for 35 children who are entering 7th or 8th grade each summer since 1989. This five-week program features the research facilities of scientists and engineers at TAMU, problem-solving and critical thinking skills, skills to communicate in writing and speech, historic and contemporary role models, encouragement to pursue science and college preparation studies, and maximum access for students from underrepresented groups.

The daily activities include: Logic and Problem Solving, Engineering, Science and Society, Writing and Speaking Lab, Applications of Science Lab, and Computer Lab. Enrichment and motivational activities are included which consist of laboratory demonstrations, hands-on activities, and tours of research facilities on campus, NASA, Texas Municipal Power Agency and Lignite Mine, and Dow Chemical.

MIL	**Mathematics Integration Laboratory** Department of Computing & Mathematical Science Texas A&M University - Corpus Christi Seabreeze Hall, Suite # 8 Corpus Christi, TX 78412

Dr. Nadina M. Duran

Office
512/994-2367

FAX
512/994-2484

Type of Project	Commuter
Recruitment Area	Nueces County, TX 85% minority
Total Students/Grades	20 Middle School Teachers 55% minority 40 Middle School Students 88% minority
Total Staff	2 Faculty 2 Middle School Master Teachers 1 Graduate Student 1 Undergraduate Student 50% minority
Application Deadline	April 30, 1997
Project Dates	May 30 - July 14
Cost to the Student	None
Scholarship Availability	Available
Stipend	$300, lunch, transportation, and child care

The MIL was initiated in 1993 as the result of a collaborative effort among Texas A&M University-Corpus Christi, the Education Service Center-Region II, Corpus Christi ISD and the TexPREP program at Del Mar Junior College to improve the knowledge base and the delivery strategies of middle school mathematics and science teachers in the Coastal Bend Area of South Texas. The program integrates cognitive and affective strands to enhance the possibility that students moving into the 21st Century are taught in a manner that will aid them in becoming creative, literate, resourceful, responsible, competent and collaborative members of a global society. Middle school and high school mathematics teachers and TexPREP students work together to develop problem-solving and critical thinking skills in mathematics. Technology in the form of graphing calculators, computer software, and an entrepreneurial classroom environment facilitate the analysis and solution of everyday complex problems that could otherwise become unmanageable to the participants. A variety of evaluation mechanisms are used which range from portfolios to dramatics. The approach is thematic.

Discovery Camp

Tidewater Community College
7000 College Dr.
Portsmouth, VA 23703

Type of Project	Commuter
Recruitment Area	Portsmouth 65% minority
Total Students/Grades	40/8th 75% minority
Total Staff	2 Faculty 3 Undergraduate Students 4 High School Teachers 44% minority
Application Deadline	March 31, 1997
Project Dates	June 27, 1997 - May 1, 1998
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

Richard Gill

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In the summer of 1991, the Portsmouth Campus of Tidewater Community College sponsored the first Discovery Camp: a five-week math-science summer camp featuring hands-on activities for forty rising eighth-graders in the Portsmouth School System. Each April Discovery Camp recruits seventh grade students in the Portsmouth School System who are earning at least a "B" in math or science and who live in neighborhoods with low graduation rates. Our goal is to get our campers excited about a career in math, science, or engineering and then show them the courses that they will need to take in high school in order to make this goal a reality. Each day campers do activities in math-science, PE, word processing and boat building. If they can finish high school on a college track TCC will pay for 60 credits of tuition.

Academic Camp with Computer Emphasis

Natural Sciences and Mathematics Department
Transylvania University
300 N. Broadway
Lexington, KY 40508

Dr. James E. Miller

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606/233-8155

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606/233-8171

e-mail
mill@music.transy.edu

Type of Project	Residential
Recruitment Area	Kentucky 25% minority
Total Students/Grades	100 total/ Session I: 8th-10th; Session II: 10th-12th 25% minority
Total Staff	9 Faculty 5 Undergraduates 2 High School Teachers 10% minority
Application Deadline	May 1, 1997
Project Dates	I. June 8 - June 13; II. June 15 - June 20
Cost to the Student	$250
Scholarship Availability	Limited
Stipend	None

The camp has been in existence since 1982 and has an annual average enrollment of 100 students. It offers a one-week study of computer fundamentals and computer programming in the languages BASIC or C. The camp also introduces the student to four areas of academic study other than computer science through microcourses. A one and one-half hour program on the taking of standardized examinations is a part of the daily activities. From personal observation it has accomplished the task of helping to relieve the tension of taking such exams as well as how to study for these exams.

The specific goals of the camp are to 1) enhance students' awareness of various academic disciplines; 2) introduce and help to prepare students in the stimulating and advancing field of computer science; 3) assist in the taking of, as well as help remove fear of, standardized examinations; 4) help students understand the dedication and preparation necessary for pursuit of academics beyond high school.

Turtle Mountain Community College - Mathematics Equity Project

P.O. Box 340
Turtle Mountain Community College
Belcourt, ND 58316

TMCC-MEP

Type of Project	Commuter
Recruitment Area	Turtle Mountain reservation 100% minority
Total Students/Grades	20/7th-8th 100% minority females
Total Staff	2 Faculty 2 College Students 80% minority
Application Deadline	Early April 1997
Project Dates	June 2 - June 17
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	None

Prof. Sunil Karnawat

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701/477-5028

Turtle Mountain Community College, on the Turtle Mountain Indian Reservation in North Dakota, will conduct a two-week summer commuter project in mathematics for twenty Native American middle school girls. The MEP project is funded by AISES. The primary objective of the MEP program is to ensure that a cadre of promising young Native American girls is prepared for, and matriculates into, mathematics, engineering, and mathematics based disciplines at the college level.

The girls in the program will be involved in problem solving activities. The emphasis will be on applications, and much of the data for this study will be collected from field trips to cultural sites on the reservation. A field trip to the Minot State University will occur at the end of the summer component of the program. The girls will be kept actively engaged during the academic year through their participation in Saturday academies. The MEP project is designed to simulate interest, increase participation, improve achievement, increase visibility, and accelerate career advancement and success of girls on the Turtle Mountain Reservation in science, engineering and mathematics.

AISES-Precollege

Comprehensive Enrichment Program

AISES (*University of Alaska, Fairbanks, AK*)
1630 30th Street, Suite 301
Boulder, CO 80301-1014

Dr. Claudette Bradley-Kawagley

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303/939-0023

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303/939-8150

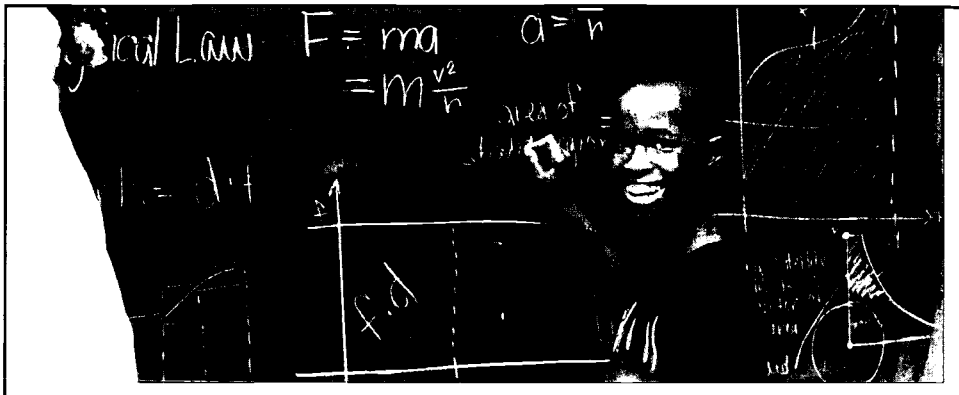
e-mail
aisespc@spot.colorado.edu

Type of Project	Residential
Recruitment Area	National
Total Students/Grades	42/12th 100% minority (American Indian)
Total Staff	3-5 Faculty 2-5 High School Teachers 2-5 Graduate Students 2-5 Undergraduate Students 1 High School Student 80% minority
Application Deadline	February 15, 1996
Project Dates	3 weeks in summer
Cost to the Student	Travel only
Scholarship Availability	Limited hardship travel
Stipend	None

The American Indian Science and Engineering Society (AISES) pre-college enrichment programs seek to empower American Indian and Alaskan Native youth to make informed choices and preparation for college and careers, in mathematics and the sciences. Programs provide American Indian students a series of mathematics and science experiences on University campuses across the country, with year-round research projects and mentoring to maintain their interest and ability in mathematics and science throughout middle and high school.

The University of Alaska site will offer students a mathematics-based program. The curriculum includes problem solving, communication and reasoning skills development as well as a precalculus emphasis. Students will develop a research project that incorporates mathematics and science and that relates to their own communities. Students will have access to the Internet and be able to communicate electronically with their instructors and mentors.

Students are selected based on: academic/scholastic record; essay in which student discusses potential career interest and the application of mathematics/science within that career; a written/illustrated description of a mathematical or engineering related problem-solving activity; and two references from mathematics and science teachers.



Howard University Young Scholars Program
Howard University (see page 39)

Action Math and Physical Laboratory Experiences
Fairmount State College (see page 31)

Summer Mathematics Program for Whiteriver Apache Students

Department of Mathematics, Building #89
University of Arizona
Tucson, AZ 85721

Dr. Fred Stevenson

Office
602/621-6880

e-mail
frstv@math.arizona.edu

Type of Project	Residential
Recruitment Area	Whiteriver 100% minority
Total Students/Grades	16 (Apache)/8th-9th 100% minority
Total Staff	2 Faculty 2 High School Teachers 50% minority
Project Dates	June 1 - June 6, 1997
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

The Apache Summer Mathematics Camp was founded in 1989. Its purpose is to provide a nontraditional experience in mathematical exploration. Sixteen students from Whiteriver Junior High School on the White Mountain Apache Reservation visit the University of Arizona campus for one week. During their stay they are introduced to the computer and work on exploratory problems. They write up their results and present them to their peers.

The students live in a dormitory and are chaperoned by their junior high school mathematics teacher and his spouse. 98 students have completed the camp; 96% have been Native American, 67% have been female.

Summer Program for Gifted Junior High School Mathematics Students

Department of Mathematics
University of Arizona
Tucson, AZ 85721

Type of Project	Residential
Recruitment Area	National 28% minority
Total Students/Grades	16/9th 22% minority
Total Staff	2 Faculty 2 Graduate Students
Application Deadline	Mid-March 1997
Project Dates	July 20 - August 1, 1997
Cost to the Student	$250
Scholarship Availability	Partial
Stipend	$100

Dr. Fred Stevenson

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frstv@math.arizona.edu

The Arizona Summer Mathematics Research Camp was founded in 1986. Its purpose is to provide an experience in mathematical research for 16 motivated and talented students entering 9th grade. At the beginning of the two-week program, the students are given a list of exploratory problems. After a day of pondering, they pick a particular problem and go to work. They may work alone or in small groups. During the first week, the students are also given classes in the use of the computer to help in their research. In the second week, the students write up their results. These are collected and made into a journal for the students to keep. On the program's last day the students present their findings.

164 students have completed the camp; 22% have been underrepresented minority students, 43% have been female.

College Planning and Careers: Explorations in Actuarial Sciences Emphasis

Department of Mathematics & Statistics
University of Central Oklahoma, 100 N. University Dr.
Edmond, OK 73034-5209

Dr. David E. Boliver

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Type of Project	Residential
Recruitment Area	Oklahoma 19% minority
Total Students/Grades	30/8th 43% minority
Total Staff	3 Faculty 3 Undergraduate Students 1 High School Teacher 29% minority
Application Deadline	April 15, 1997, or until filled
Project Dates	July 7 - July 25 *Pending funding
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$50

This project began in the summer of 1995 as a Regents' Summer Academy funded and publicized by the Oklahoma Regents for Higher Education. Participants live on the campus from Sunday night through Friday afternoon and become a mathematical community driven by research problems and energized by visits from working mathematicians and field trips to their places of work at an insurance company and FAA training facility. Actuarial formulae are derived from spreadsheets recursively displaying periodic growth or shrinkage of funds and these formulae summarize work and motivate future study in algebra. Students report work via an integrated word processing and spreadsheet package and maintain a journal of their experiences. They discuss questions of ethics and values in the context of actuarial work. A follow-up reunion day is held in March and correspondence will follow these students through the coming years of academic and career development.

Young Scholars Program

Department of Mathematics
University of Chicago
5734 University Avenue
Chicago, IL 60637

Type of Project	Commuter
Recruitment Area	Chicago area 15% minority
Total Students/Grades	100/7th-12th 35% minority
Total Staff	6 Faculty 3 Graduate Students 20 Undergraduates 30% minority
Application Deadline	May 1, 1997
Project Dates	June 30 - July 25
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

Dr. Paul Sally
Dr. Diane Herrmann

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The University of Chicago conducts a four-week, commuter, Young Scholars project in mathematics, physics, and computer science for 100 students entering grades 7-12.

This project is designed principally for students who attend the Chicago public schools. The goal is to identify mathematically talented students, especially members of minority groups and females, early in their schooling, and maintain contact with them over a period of several years. The program has three components, one for students entering grades 7 and 8, one for students entering grades 9 and 10, and one for students entering grades 11 and 12. In summer 1997, the focus of the program will be on number theory, with accompanying courses in chaos and computer science at the high school level. Each component operates on a two-year cycle with students progressing to the next level after completing a given cycle. Our intention is to provide participants with a rich diverse experience in computer science, mathematics, and physics. A follow-up program, focusing on problem solving, will meet regularly on Saturdays throughout the academic year.

UDC-SEC/Dunbar Project

Science and Engineering Center
University of the District of Columbia
4200 Connecticut Ave., NW, MB4201
Washington, DC 20008

Dr. Winson Coleman
Coordinator:
Amaate Neil

Office
202/274-6289

FAX
202/274-5094

Type of Project	Commuter
Recruitment Area	Dunbar Senior High School 99% minority
Total Students/Grades	16/12th 100%minority
Total Staff	2 Staff 100% minority
Application Deadline	I. April 15, 1997 II. October 30, 1997
Project Dates	I. January 16 - May 12, 1997 II. August 29 - Dec. 16, 1997
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$10 per week

The UDC-SEC/Dunbar Project, located on the University of the District of Columbia, provides support for Dunbar High School Students to take a UDC engineering curriculum while earning a stipend. Courses most often taken include engineering graphics, Calculus I, computer science, and laboratory science courses.

Participants qualify by scoring on a college level on UDC's diagnostic test. Students are selected from those with the 50 highest G.P.A.s in Dunbar's Pre-Engineering Program, which focuses on math, science, and technology courses from 9th through 12th grades. The UDC-SEC/ Dunbar Project gives the students exposure to college, and with parental cooperation, provides assistance in the college and financial aid application process. Lack of attendance or poor performance results in students being dropped from the program.

Over 80% of the participants choose quantitative college majors.

Summer Science Camp

Science and Engineering Center
University of the District of Columbia
4200 Connecticut Ave., N.W., MB 4201
Washington, DC 20008

Type of Project	Commuter
Recruitment Area	Metropolitan D.C. area 33% minority
Total Students/Grades	60/7th-8th 90% minority
Total Staff	8 Faculty and staff 96% minority
Application Deadline	May 5, 1997
Project Dates	June 23 - July 18
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

Dr. Winson Coleman
Ms. Theresa Ettienne

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202/274-5094

This program is designed to provide a wealth of academic experiences in the sciences for a select group of urban youth from the District of Columbia. Activities, tested in other pre-college programs administrated by the Science and Engineering Center, will be used in a nontraditional learning environment that will allow the participants to acquire knowledge in "hands on" activities involving creative mathematics, computer science and electrical engineering.

Saturday Academy

Science and Engineering Center
University of the District of Columbia
4200 Connecticut Ave., N.W., MB 4201
Washington, DC 20008

Dr. Winson Coleman
Ms. Tsitsi Nyika

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202/274-5094

Type of Project	Commuter
Recruitment Area	Metropolitan D.C. area 33% minority
Total Students/Grades	900/4th-8th 98% minority
Total Staff	80 Faculty and staff 96% minority
Application Deadline	I. January 6, 1997 II. June 9, 1997 III. September 8, 1997
Project Dates	I. January 18 - April 5 II. June 23 - July 25 III. September 20 - Nov. 22
Cost to the Student	None
Scholarship Availability	None
Stipend	Not applicable

The Saturday Academy, located on the campus of the University of the District of Columbia, is designed to provide enrichment experiences for academically talented minority youth without cost to them. These experiences are in creative mathematics, electrical engineering, and computer science.

Participants in the program are students who have been identified as academically talented. To be selected for this program, students must have an overall B average, be recommended by their mathematics/science teacher or counselor, and must have a parent or guardian willing to attend two Saturday sessions and an orientation session. The student must agree to the program's mandatory attendance requirements; more than one unexcused absence results in dismissal from the program.

The Saturday Academy Program has been replicated in the Pasadena Unified School District, at Fayetteville State University, at J. Seargeant Reynolds Community College in Richmond, VA, Edward Waters College in Jacksonville, FL, Treholm State Technical College, Montgomery, AL and two sites in Southeast DC. Three other HBCU's (Historically Black Colleges and Universities) are presently applying to replicate these activities.

Summer Program in Mathematics and Computer Science

Department of Mathematics
University of the District of Columbia
Washington, DC 20008

Type of Project	Commuter
Recruitment Area	Washington, D.C. 70% minority
Total Students/Grades	40/8th-10th 90% minority
Total Staff	7 Faculty and staff 100% minority
Application Deadline	May 12, 1996
Project Dates	June 23 - July 25
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$250

Dr. Vernise Steadman

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vsteadma@udc.edu

The Reach Program, a Summer Program in Mathematics and Computer Science at the University of the District of Columbia was started in 1982 for the purpose of demonstrating that more underrepresented minority students will pursue careers in mathematics-based fields and will take more calculus-track and calculus courses while in high school: if they are given the academic enrichment and made aware of their career options early in their high school years.

During the intensive five-week summer session, students study finite algebraic and topological systems, Pascal, probability, and statistics. Abstract reasoning and problem-solving skills are emphasized and graphing calculators are introduced. The students take field trips, view video tapes and films, and participate in a forum on careers in mathematics-based fields.

The classes are held in classrooms and a computer laboratory on the Van Ness campus of the university. About 600 students have completed the program. Over 90% are minority students and about 50% are women.

Hawaii-SSTP in Calculus-Physics

University of Hawaii at Hilo
200 W. Kawiki Street
Hilo, HI 96720-4091

Prof. Suk R. Hwang

Office
808/974-7319

FAX
808/974-7693

Type of Project	Residential
Recruitment Area	Hawaii 33% minority
Total Students/Grades	32/10th-11th 25% minority
Total Staff	4 Faculty 3 College Students 35% minority
Application Deadline	March 17, 1997
Project Dates	June 11 - July 27
Cost to the Student	$1,600 (in-state) $2,000 (out-of-state)
Scholarship Availability	Yes
Stipend	Based on financial need

Hawaii-SSTP in Calculus-Physics is an enrichment program designed for scientifically gifted and motivated high school students. The 6-week residential and co-educational program comprises six coordinated study activities (coursework, laboratory, computer programming, recitation/discussion, field trips, research participation). The program started with an NSF grant in the summer of 1979 and continued to operate with additional NSF grants until the end of 1981. Since 1982 the program has been funded through the State of Hawaii and private donations. The program became the prototype of a statewide enrichment program for gifted public high school students in the State of Hawaii. By the conclusion of the 17th year, all 503 participants--except one--completed the project requirements.

Houston Prefreshman Engineering Program

Center for Comp. Science and Advanced Distributed Simulation
University of Houston-Downtown
Houston, TX 77002

Houston PREP

Type of Project	Commuter
Recruitment Area	Houston and Harris County 58% minority
Total Students/Grades	250/7th-9th 90% minority
Total Staff	11 Faculty 3 Middle School Teachers 11 Undergraduate Students 3 Other Support Staff 58% minority
Application Deadline	March 15, 1997
Project Dates	June 9 - July 31
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

Dr. Richard A. Aló

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Houston PREP is one of twelve programs of the Texas Prefreshman Engineering Program which provides educational enrichment opportunities for high ability middle school and secondary school students interested in pursuing science or engineering careers. The emphasis of this program is on study and research work in mathematics, physics, engineering, science, and technical writing. PREP strongly encourages women and students from minority groups who have been traditionally underrepresented in science and engineering to apply for participation. 125 first year students from the 7th, 8th, and 9th grades of the Greater Houston Area will be selected to participate in the Summer Program. Second and third year students will be selected from previous PREP participants. This summer program consists of the following academic programs: First year--logic and its application to mathematics, introduction to engineering, introduction to computer science. Second year -- algebraic structures, introduction to physics. Third year -- introduction to probability and statistics, technical writing. All years -- problem-solving seminar, research and study, career awareness, guest speakers, and field trips.

CS Academy

University of Houston-Downtown Computer Science Academy

Center for Comp. Science and Advanced Distributed Simulation
University of Houston-Downtown
Houston, TX 77002

Dr. Richard A. Alό

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alo@dt.uh.edu

Type of Project	Commuter
Recruitment Area	Houston and Harris County 58% minority
Total Students/Grades	50/11th-12th 85% minority
Total Staff	4 Faculty 4 Assistants 50% minority
Application Deadline	September 1, 1997
Project Dates	Academic year Saturdays
Cost to the Student	None
Scholarship Availability	$1,000
Stipend	Not applicable

This Computer Science Academy, starting in Fall 1997 for high school seniors and outstanding juniors, will prepare students for college in the areas of Computer Science, Computational Science, and Mathematics. Classes will be held every other Saturday on the campus.

Funding is provided by the Department of Defense, US Army Research Office, and the National Science Foundation Minority Institution Infrastructure Program.

College Preparatory Mathematics Program

Department of Mathematics (M/C 249)
University of Illinois at Chicago
851 South Morgan Street
Chicago, IL 60607

CPMP

Type of Project	High School-University Consortium
Recruitment Area	Chicago Metropolitan and Southeastern Wisconsin
Total Students/Grades	1950/9th-12th 79% minority 93 Teachers
Total Staff	8 Faculty 4 High School Teachers 2 Administrative staff 2 Undergraduates
Application Deadline	Not applicable
Project Dates	Year round
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

Dr. John Baldwin
Dr. Roberta Dees

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312/996-1491

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rdees@uic.edu

The College Preparatory Mathematics Program (CPMP) is a comprehensive program with a major goal of increasing minority representation in the mathematics and science pipeline. The primary strategy is cooperative learning. Teachers learn to work together and form a peer support group; then they enable their students to do the same in CPMP mathematics classes. University staff provide innovative and exemplary curricular materials, training in cooperative learning, and year-round support for the teachers.

The essential teaching enhancement activity is the Summer Institute, which consists of in-service sessions and a teaching laboratory, where teachers team-teach and internalize their changes by practicing with students who will be attending their schools.

SEP

Northeast Science Enrichment Program

Department of Mathematics and Statistics
University of Massachusetts
Amherst, MA 01003-4515

Dr. Rose M. Meyers
Dr. D. F. St. Mary
Georgette Healy

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~sep

Type of Project	Residential
Recruitment Area	New England & upper New York
Total Students/Grades	50/10th 90% minority
Total Staff	12 Faculty 5 Executive Staff 8 Graduate Students 8 Undergraduates 64% minority
Application Deadline	April 1, 1997
Project Dates	July 13 - August 16 *Pending funding
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$250

The objective of SEP is to encourage minority and underserved students entering tenth grade to pursue careers in science. Students are selected on the basis of their applications. High school teachers are teamed with professors to provide hands-on, exciting courses in biology, chemistry, computer science, mathematics, physics, and language arts. Other activities include educational, cultural, and recreational events such as seminars by scientists at the forefront of research; field trips to destinations such as the Boston Science Museum; hands-on data collection in Boston Harbor aboard the research vessel ENVIROLAB; excursions to nearby sites and events of interest; daily recreational activities; and ethnic and cultural exchanges. Students, faculty, and staff are housed in a University residence hall. Students are supervised by faculty and staff experienced in working with culturally diverse teenagers. SEP has been sponsored by the National Cancer Institute.

Young Emerging Scholars Initiative

University of Minnesota, School of Mathematics
115 Vincent Hall
206 Church Street, SE
Minneapolis, MN 55455-0487

Project YES

Project Type	Commuter
Recruitment Area	Minneapolis/St. Paul
Total Students/Grades	87/5th-7th
Total Staff	1 Faculty 2 Post Doctoral Instructors 2 High School Teachers 4 Student Assistants 1 Administrator
Application Deadline	September 25, 1996
Project Dates	October 25, 1996 - May 3, 1997
Cost to the Student	$45
Scholarship Availability	Yes, based on financial need
Stipend	None

Dr. Harvey Keynes
Ms. Andrea Olson

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612/625-2861

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olson@math.umn.edu

The goal of the Young Emerging Scholars Initiative is to provide a rich and diverse program of informational and enrichment activities to support further study of mathematics and enhance interest in career opportunities in mathematics and the sciences. Project YES especially encourages female students, students of color, and economically disadvantaged students to participate.

The project consists of a comprehensive academic year program of monthly activities for students identified as talented by a variety of school and community sources, parents, and other nontraditional resources, as well as those who nearly obtained admission into UMTYMP (University of Minnesota Talented Youth Mathematics Program). Current UMTYMP students participate in some activities to provide peer tutoring, a social context, and motivation for participation in UMTYMP. Families are invited to attend several of the activities, and parents are asked to help their children carry out their commitment to the program. The Institute helps students learn how to appreciate mathematics at an advanced level. It is not an accelerated course on one subject, but engages students in challenging mathematical and enrichment activities covering a broad range of topics. An important outcome of the Institute is the friendships that are made. Students thrive when they are given the opportunity to spend time with students like themselves who are interested in math and like to be challenged. Learning and teaching emphasize hands-on activities. Students build models and actively use graphing calculators and computer software. In addition to mathematics, professionals who use math and science in their careers give presentations and workshops during the Institute. Field trips to local industries are also planned.

Young Scholars Initiative Summer Enrichment Institute

School of Mathematics, 115 Vincent Hall
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Minneapolis, MN 55455-0487

Dr. Harvey Keynes
Ms. Andrea Olson

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Type of Project	Commuter
Recruitment Area	Minneapolis/St. Paul, Minnesota
Total Students/Grades	60/6th-8th
Total Staff	1 Faculty 1 Administrator 3 High School Teachers 4 Teaching Assistants
Application Deadline	May 15, 1997
Project Dates	June 30 - July 25
Cost to the Student	$425
Scholarship Availability	Yes, based on financial need
Stipend	None

The Young Scholars Initiative Summer Enrichment Institute is a summer program for students entering the 6th through 8th grade who are interested in exploring mathematics and careers using mathematics. The Institute encourages students from populations underrepresented in mathematics and science to participate.

During the Institute, students are introduced to a variety of mathematics topics that are not part of the standard 7th-8th grade mathematics curriculum. Activities and curriculum are designed to provide students with opportunities in mathematics using an exploratory, investigative and discovery approach to learning. The Institute curriculum includes units on chaos and computing, physics of motion, and architecture/civil engineering, along with forays into applications of math to such areas as the health sciences and aerospace. There will be field trips to sites related to these topics as well as presentations and workshops by professionals who work in these areas. Although students will be pushed intellectually during the 3 1/2 weeks, the atmosphere of the Institute will be relaxed, with no homework or grades plus 2 to 2 1/2 hours of recreational activities each day. Learning and teaching will be emphasize hands-on activities. Students will build models and actively use graphing calculators and computer software. In addition to mathematics, professionals who use math and science in their careers will give presentations and workshops during the Institute. Field trips to local industries and labs such as 3M, Honeywell, the U of MN virtual reality lab, and the Geometry Center have been planned. The unit on mathematical physics include a full day trip to Valley Fair, a local amusement park.

Young Scholars Initiative Summer Enrichment Institute II

University of Minnesota, School of Mathematics
115 Vincent Hall, 206 Church Street, SE
Minneapolis, MN 55455-0487

UMTYMP

Type of Project	Commuter
Recruitment Area	Minneapolis/St. Paul, Duluth, St. Cloud, Rochester
Total Students/Grades	20/8th
Total Staff	1 Faculty 1 Administrator 1 Teaching Assistant
Application Deadline	May 15, 1997
Project Dates	July 14, 1997 - July 25, 1997
Cost to the Student	$300
Scholarship Availability	Yes, based on financial need
Stipend	None

Dr. Harvey Keynes
Ms. Andrea Olson

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olson@math.umn.edu

The Project YES Summer Enrichment Institute II is open to all qualifying students who will in the 8th grade in the fall of 1997. Student who are identified by their teachers, school coordinators, and parents as mathematically-talented are invited to the Institute. Students from populations underrepresented in mathematics and science are especially encouraged to apply.

The Summer Institute II allows mathematically-talented middle-school students from within the state of Minnesota to attend a two-week program that focuses on a specific enrichment topic, i.e., geometry of the 4th dimension, the mathematics of physics, or statistical applications. An important outcome of the Institute is the friendships that are made. Students thrive when they are given the opportunity to spend time with students like themselves who are interested in math and like to be challenged. There will be one to two industrial field trips and one to two presentations by professionals whose work is related to this topic. Although students will be pushed intellectually during the 3 1/2 weeks, the atmosphere of the Institute will be relaxed, with no homework or grades plus 2 to 2 1/2 hours of recreational activities each day. Learning and teaching will be emphasize hands-on activities. Students will build models and actively use calculators and computer software.

Project Prime

Professions and Recreations: Intermediate Mathematics Enrichment

University of Minnesota, School of Mathematics
115 Vincent Hall, 206 Church Street, SE
Minneapolis, MN 55455-0487

Dr. Harvey Keynes
Dr. Karen Singer
Ms. Andrea Olson

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612/625-2861

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olson@math.umn.edu

Type of Project	Commuter
Recruitment Area	Minneapolis/St. Paul
Total Students/Grades	230/5th and 6th
Total Staff	1 Faculty 1 Assistant Professor 1 Administrator 3 Graduate Assistants 4 Undergraduate Assistants
Application Deadline	September 12, 1996
Project Dates	Sept.12, 1996 - June 25, 1997
Cost to the Student	$25 (initial 50 participants sup ported by a grant from the Tensor Foundation)
Scholarship Availability	Yes, based on financial need
Stipend	None

Based on the success of the University of Minnesota Talented Youth Mathematics Program (UMTYMP) and its interventions, Project PRIME, which focuses on a younger population possessing mathematical talent, was initiated in 1996. The program objectives are to: (1) engage students in mathematical activities (2) introduce students to careers related to mathematics and (3) provide opportunities for students to make new friends and mentors associated with UMTYMP and the University of Minnesota.

Project PRIME was initially developed to reach out to females in the fifth and sixth grades from a diverse group of Minneapolis and St. Paul schools. An enrollment of the fifty students was anticipated. Based on an overwhelming response from students, parents, and teachers to the fall program announcement, the program was opened to a large audience. Three hundred and sixty-seven students expressed interest in Project PRIME and 230 females are registered to date. Inquiries about PRIME and requests to be place on the 1997-98 waiting list continue to be received. Plans are currently under development for a summer institute, and to open Project PRIME to young male students in 1997-98.

The 1996-97 PRIME program includes a variety of events throughout the year: fall orientation, two hands-on mathematical workshops focusing on geometry through the use of visualization software applications, the annual math fair with exhibits and activities from a wide range of institutions, and a day of science and engineering lab visits and career speakers. Students also receive subscriptions to the bi-monthly PRIME Times puzzle newsletter, which offers them the chance to write in and share their solutions to a variety of math puzzles.

Sciences Experiences in Science, Engineering and Mathematics

University of Minnesota, School of Mathematics
115 Vincent Hall, 206 Church Street, SE
Minneapolis, MN 55455-0487

Type of Project	Residential
Recruitment Area	National/International Students
Total Students/Grades	50/11th - 12th
Total Staff	10 Faculty 1 Administrator 5 Graduate Assistants 4 Undergraduate Assistants
Application Deadline	March 1, 1997
Project Dates	July 16, 1997 - July 22, 1997
Cost to the Student	$3000
Scholarship Availability	Yes, partial scholarships to Minnesota residents based on financial need
Stipend	None

Dr. Eugene Fabes
Dr. Harvey Keynes
Ms. Andrea Olson

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A unique summer program for high school students who have a strong interest in science, engineering, and mathematics and are motivated to experience learning at a university with other students, faculty, researchers, and industrial leaders. Applications from current high school sophomores and juniors, or international equivalent, with a demonstrated interest in a intense pre-engineering experience are welcomed. Exceptionally strong applications from high school freshman and graduating seniors may be acceptance. Women and underrepresented minorities are especially encouraged to apply. The Project YES Summer Enrichment Institute II is open to all qualifying students who will in the 8th grade in the fall of 1997. Student who are identified by their teachers, school coordinators, and parents as mathematically-talented are invited to the Institute. Students from populations underrepresented in mathematics and science are especially encouraged to apply.

Students will be immersed in opportunities and modern applications created by faculty leaders in science and engineering areas including: Aerospace Engineering and Mechanics, Astronomy, Biomedical Engineering, Calculus Topics, Civil Engineering, Electrical Engineering, Geology, Interfacial Engineering, and Physics. In addition, the students will learn about related collegiate, research, and career opportunities. Field trips and industrial tours, such as visits to Imation, Honeywell, and Medtronic, will be conducted throughout the program.

University of Puget Sound Academic Challenge Project

Department of Mathematics
University of Puget Sound
Tacoma, WA 98416

Dr. David Scott

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206/756-3500

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scott@ups.edu

Type of Project	Commuter/7th-10th; Residential/11th-12th
Recruitment Area	Tacoma metropolitan area
Total Students/Grades	80/7th-12th 80% minority
Total Staff	2 Faculty 3 High School Teachers 9 Undergraduates 2 Professionals 75% minority
Application Deadline	May 2, 1997
Project Dates	June 18 - July 16
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

The University of Puget Sound's Academic Challenge Project is a mathematics and science based summer enrichment program for students in grades 7-12.

Two different programs are offered. One is a commuter program with classes in mathematics, science, computers and English for students in grades 7-10. The other is a residential program for students in grades 11 and 12.

The curriculum for the commuter students is organized around different themes in different years. In 1992 the theme was "computers," and included electricity, magnetism, logic, and programming. In 1993 the theme was "flight," covering aerodynamics, navigation, geometry, and images of flight. In 1994 the theme was "construction" and covered computer-aided design, geometry, forces, and materials. In 1995 the theme was "salmon recovery" and the content included ecology, population models, fish biology and resource management models.

The curriculum for the residential students is an introduction to contemporary mathematics and covers such topics as statistics, scheduling, networks, and fair apportionment. Field trips related to the subjects are part of both programs.

Over six years, 270 students have participated in the project with 80% being minority and 60% being female.

Institute for Mathematics Enhancement

University of Michigan
Department of Statistics
Ann Arbor, MI 48109

Type of Project	Residential
Recruitment Area	Detroit
Total Students/Grades	30/9th 100% minority
Total Staff	7 Faculty 1 High School Teacher 2 Graduate Students 3 Undergraduate Students 100% minority
Application Deadline	April 15, 1997
Project Dates	During the month of June/July
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$150 per week

Dr. Martha Aliaga

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The Institute for Mathematics Enhancement (IME) is a three-week summer program at the University of Michigan followed by academic-year activities for girls from either MacKenzie or Cooley High Schools in Detroit, where the follow-up activities take place twice per month. The objectives are: 1) To enhance positive attitudes towards mathematics and statistics through cooperative, hands-on, relevant and group-oriented learning. 2) To learn how to use graphics calculators and computer programs for problem-solving and discovery. 3) To explore career opportunities in mathematics and statistics. 4) To encourage the participation of families in mathematical problem-solving. 5) To learn technical writing.

Topics covered include number theory, logic, statistics, sampling techniques, using a graphic calculator and cryptography. In addition, the topic of ethics is presented, both as it applies to group study and as it is used in sampling design.

Mathematics as a Tool to Understand the Marine Environment: LPSM-USD Partnership

Mathematics Department
University of San Diego, 5998 Alcal'a Park
San Diego, CA 92110

Jane Friedman
Sarah Gray

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Type of Project	Commuter/Residential
Recruitment Area	San Diego/Los Angeles
Total Students/Grades	High School Students 100% minority
Total Staff	2 Faculty 1 Graduate Student 6-10 Undergraduate Students
Application Deadline	Information unavailable
Project Dates	Academic year
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

This project is part of a developing partnership between the Law and Public Service Magnet Program (LPSM) at Dorsey High School in Los Angeles and the University of San Diego. The focus of the program is applications of mathematics to marine and environmental studies. There will be a field trip for LPSM students in early February and a three-day residential institute at USD in early June. These events will be supported by integrated curriculum developed by a team of USD students who plan on careers in teaching, in close consultation with the project directors and the staff of LPSM. *(Pending Funding)*

Pre-Freshman Enrichment Program

University of the Sacred Heart
Box 12383 Loiza Station
Santurce, Puerto Rico 00914-0383

Prof. Doribel M. Rodriguez

Office
809/728-1515 x 285

Type of Project	Commuter
Recruitment Area	San Juan Educational Region 99% minority
Total Students/Grades	24/7th-9th 100% minority
Total Staff	5 University Professors 2 Faculty 1 High School Teacher 2 Library Staff 2 Undergraduates 90% minority
Application Deadline	End of April
Project Dates	End of June - End of July
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	None

This project consists of a summer program in the San Juan Educational Region which includes the municipality of San Juan and the neighboring municipalities of Carolina, Guaynabo, and Trujillo Alto. The project emphasizes the acquisition and strengthening of skills in the areas of Computer Science and Mathematics in order to prepare students adequately and encourage them to select career goals in these areas. It stresses the development of higher order thinking skills, career exploration, philosophy and ethics of science and research methodology.

Participating students have demonstrated a high potential in computer science and mathematics. Participation in the project is open to students from all social and economic strata. The participation of female and handicapped students is encouraged.

Two seminars are planned for the teachers of participating students. This program is funded by the Department of Energy.

USF-CMS Mathematics, Science and Engineering Programs

Center for Mathematical Services, University of South Florida
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Dr. Kenneth Pothoven

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Type of Project	Commuter
Recruitment Area	Hillsborough, Pasco, and Polk Counties 50% minority
Total Students/Grades	135/8th-12th 50% minority
Total Staff	5 Faculty 6 Graduate Students 1 Undergraduate Student
Application Deadline	May 15, 1997
Project Dates	June 12 - July 25
Cost to the Student	$100 depending on program
Scholarship Availability	Yes
Stipend	$100 (tentative)

The Program consists of two-sub programs - each meeting five days per week for six weeks.

1. The **Mathematics and Science Program**, in its eighteenth year, is designed for 85 talented/gifted students entering grades 8, 9, or 10. In this program students receive instruction in basic foundations of mathematics, astronomy, C programming, and environmental science. Students are taught by faculty from the Department of Mathematics (includes Astronomy) and scientists from the Museum of Science and Industry.

2. The **Mathematics and Engineering Program** is designed for 50 gifted students entering grades 10-12. In this program students are taught number theory, linear algebra, computer programming in Pascal, and engineering with computers. Second year students are instructed in theoretical aspects of linear algebra, mathematical modeling, and spend a good deal of time working with individual faculty on projects in research laboratories. Faculty from the Departments of Mathematics, Physics, and Chemistry, as well as from the College of Engineering instruct in this program.

Brownsville Prefreshman Engineering Program

The University of Texas, Brownsville
83 Fort Brown
Brownsville, TX 78520

Brownsville PREP

Type of Project	Commuter
Recruitment Area	Cameron County, Texas 85% minority
Total Students/Grades	300/7th-11th 95% minority
Total Staff	1 University Faculty 10 High School Teachers 25 Undergraduates 1 High School Student 97% minority
Application Deadline	February 28, 1997
Project Dates	June 4 - July 27
Cost to the Student	None
Scholarship Availability	Not Applicable
Stipend	Based on need

Prof. Roger Contreras

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210/544-3802

Brownsville PREP was organized by the University of Texas, Brownsville in 1986 for the purpose of identifying high achieving middle and high school students with the potential of becoming scientists, mathematicians or engineers and to provide them with academic enrichment and reinforcement in the pursuit of these fields. Forty-three students participated in the first program with enrollment consistently increasing to 360 by the 1995 program. During this intense eight-week mathematics-based summer program students study Logic, Algebra I, Algebra II, Geometry, Probability and Statistics, Problem Solving, Calculus, Physics, Computer Science, Engineering and Technical Writing. Abstract reasoning and problem solving skills are developed through coursework, special assignments, competitions, examinations, and special projects. A career awareness component involves guest speakers as well as field trips to learn about careers in science, mathematics and engineering.

787 students have completed at least one summer of Brownsville PREP with 94% being minority and 52% women.

El Paso PREP

El Paso Prefreshman Engineering Program

Department of Mathematics
500 W. University
The University of Texas, El Paso
El Paso, TX 79968

Dr. Michael Gray
Dr. Sam Self

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Type of Project	Commuter
Recruitment Area	El Paso County, TX
Total Students/Grades	250/6th-11th 90% minority
Total Staff	5 Faculty 18 Middle and High School Teachers 1 Graduate Student 16 Undergraduate Students 70% minority
Application Deadline	April 1, 1997
Project Dates	June 2 - July 25
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Based on financial need

El Paso Prep was organized at the El Paso Community College in 1989 to identify high achieving minority middle school students in order to provide them with academic enrichment to pursue careers in mathematics, science, and engineering. During the intense eight-week mathematics-based summer session, students study logic, algebraic structures, probability and statistics, physics, computer science, engineering, technical writing and telecommunications projects. Students meet guest speakers and take field trips to learn about careers in mathematics, science, and engineering.

Over 330 students have completed at least one summer of El Paso PREP; 89% have been minority, and 50% women. The high school graduation rate is 100%.

Ńdahoo'aah (Relearning - New Learning)

Department of Mathematics
University of Utah
Salt Lake City, UT 84112-1107

Ńdahoo'aah

Type of Project	Commuter
Recruitment Area	Utah Navajo Reservation 95% minority
Total Students/Grades	35/middle school 100% minority
Total Staff	16 Faculty 2 High School Students 80% minority
Application Deadline	May 1, 1997
Project Dates	June 9 - July 2
Cost to the Student	None
Scholarship Availability	All students funded
Stipend	Not applicable

Dr. Herb Clemens

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This project combines learning of traditional Navajo craft and art with learning of computer programming (LOGO) and computer geometric design. Traditional weavers teach participants their craft. The patterns for the students' rugs are ones they design for themselves using LOGO.

MESA	**Seattle MESA Science Program for Girls** University of Washington Department of Engineering Seattle, WA 98195	
Dr. Nancy Cook Office 206/543-0562 FAX 206/685-0666 e-mail cook@engr.washington.edu	Type of Project Recruitment Area Total Students/Grades Total Staff Application Deadline Project Dates Cost to the Student Scholarship Availability Stipend	Commuter Greater Seattle 15% minority 36 female /7th 66% minority 6 Faculty 1 Researcher/private sector 2 Middle School Teachers 3 Undergraduate Students 1 Graduate Student 95% Female April 1997 July None Not applicable None

The Seattle MESA summer program at the University of Washington focuses on the use of computers in the sciences, followed by monthly workshops at University of Washington during the ensuing school year focused on preparing for the Washington Science Teachers Science and Engineering Contest. A culturally diverse group of middle school girls who are interested in mathematics or science have an opportunity to work in small groups with University scientists and engineers, with University science and engineering students, with Seattle MESA Science Program for Girls Alums, and with peers from across the city who have similar interests in mathematics and science. The goal is to increase the number of female students pursuing careers in mathematics, engineering, and the sciences.

The curriculum, based on real-world uses of computers in science, emphasizes hands-on activities designed to facilitate the growth of scientific reasoning. The girls keep informal science journals as well as write formal lab reports. Each week involves activities developed and conducted by University faculty; activities focused on the mathematics necessary for the week; and a field trip related to the work during that week.

Modeling Acid Deposition: An Introduction to Scientific Methods

Department of Mathematics & Computer Science
University of Wisconsin, Superior
Superior, WI 54880

Type of Project	Residential
Recruitment Area	Regional and national
Total Students/Grades	20/11th-12th 20-30% minority
Total Staff	5 Faculty 3 Undergraduates 2 High School Students
Application Deadline	April 14, 1997
Project Dates	June 16 - July 18 *Pending funding
Cost to the Student	$30 activity fee
Scholarship Availability	Not applicable
Stipend	$100-$500 based on need

Dr. Francis Florey

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Modeling Acid Deposition: An Introduction to Scientific Methods was first held on the University of Wisconsin-Superior campus in 1988. Funding for the program has been provided by grants from the National Science Foundation Young Scholars program. Sixteen eleventh and twelfth graders participated initially, while 20 students, four of whom were minorities, participated in 1996. Pollutant sources, chemistry of acid deposition and effects of acidification are introduced. Stressing the role of mathematical modeling, participants use techniques of exploratory data analysis to analyze National Atmospheric Deposition Program (NADP) data. Five teams of four students each use computers to develop multiple linear regression models of the pH of acid rain. At a two-day camp-out students inspect a NADP sampling station and the Little Rock Lake acidification project. Using a VCR tape of the activities, participants relate their summer experiences to classmates in their high schools.

NIYSP

Northwest Indiana Young Scholars Program

Valparaiso University
Valparaiso, IN 46383

Dr. Rick Gillman
Dr. Mary Treanor

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219/464-5065

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rgillman@exodus.valpo.edu

Type of Project	Residential
Recruitment Area	Northwest Indiana 25% minority
Total Students/Grades	16/9th-10th 40% minority
Total Staff	2 Faculty 1 High School Teacher 4 Undergraduate Students
Application Deadline	April 30, 1997
Project Dates	June 22 - July 19
Cost to the Student	$50
Scholarship Availability	Not applicable
Stipend	$150

The Northwest Indiana Young Scholars Program is a four-week mathematics camp, held on the Valparaiso University campus. During this time students study combinatorics and group theory in a collaborative setting, explore some of the relationships between those two fields, take field trips to area industries, and interact with guest speakers from science and industry. Participants receive information about career options available to them, and begin to develop an understanding of the professional and work ethics necessary to succeed as a mathematician, engineer, or scientist.

Summer Algebra Workshop

Peabody College of Education, Box 330
Vanderbilt University
Nashville, TN 37203

Type of Project	Commuter
Recruitment Area	Nashville, TN
Total Students/Grades	20-30/8th 60% minority
Total Staff	1 Director / Teacher 2 Graduate Assistants
Application Deadline	May 15, 1997
Project Dates	June 10 - July 8
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

Dr. Rodney McNair

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mcnairre@ctrvax.vanderbilt.edu

The Summer Algebra Workshop was developed in 1996 by Vanderbilt University professor Rodney E. McNair to help students, especially African American students to understand the connection between mathematics and their daily lives. During a four week program students matter taken from the local media and their own personal interest to study and develop mathematics concepts. Topics covered include algebra and beginning calculus. Emphasis is placed on developing mathematics understanding through investigation of student generated questions. No academic entrance requirements are made.

Mathematics and Science Education Network Pre-College Program
Mathematics and Science Education Network (see page 138)

HHMI/NSF Young Scholars Summer Program in Biology and Mathematics

Department of Mathematical Sciences
Villanova University
Villanova, PA 19085

Villanova HHMI-NSF

Type of Project	Residential
Recruitment Area	New York City-Washington Corridor 50% minority
Total Students/Grades	40/10th-11th 50% minority
Total Staff	5 Faculty 4 Graduate Students 3 Undergraduates 25% minority
Application Deadline	April 2, 1997
Project Dates	June 22 - August 2
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$100 per week

Dr. William Fleischman

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The Villanova Summer Program includes course work in biology with application-oriented mathematics enrichment and a substantial experimental component involving both biology and mathematics. Participants work closely with Villanova faculty from the Departments of Biology, Mathematical Sciences, and Computing Science. They make extensive use of computing equipment in two of the University's modern laboratories.

The 1997 Summer Program will include topics in Physiology, Population Biology, and Genetics, with substantial attention to the mathematical and computational aspects of the biological subject matter. Laboratory experiences include: use of the physiograph to record and analyze heart rates, electrocardiograms, and respiration rates; enzyme assays; ultracentrifugation; measurement of basal metabolism rates; hemoglobin electrophoresis; actual and computer-simulated experiments in genetics. In addition, participants use the University's scanning and transmission electron microscopes. Mathematical topics include: difference and differential equations, models of population growth, competition, and spread of epidemics; construction of life tables; Lineweaver-Burk plots to analyze enzyme kinetics; and techniques of data analysis including lines of best fit.

Richmond Area Young Scholars Program

Department of Mathematical Sciences
Virginia Commonwealth University
Richmond, VA 23284-2014

Dr. Reuben Farley

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Type of Project	Commuter
Recruitment Area	Richmond, VA 35% minority
Total Students/Grades	30 (minorities)/7th Underrepresented populations in math and science
Total Staff	3 Faculty 2 High School Teachers 6 Middle School Teachers 2 Undergraduate Students 62% minority
Application Deadline	February 28, 1997
Project Dates	June 30 - July 18 Academic year follow-up through May 1997
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$30

Virginia Commonwealth University will conduct a three-week, commuter, Young Scholars Project in Mathematics and Physics for thirty students in seventh grade.

The Richmond Area Young Scholars Program emphasizes mathematics and physics and is designed for 7th grade students in the Richmond area from populations traditionally underrepresented in math and science. Honors topic instruction will be provided by university faculty and by pre-college faculty who are members of the active Mathematics Teacher Professional Network. Student interest in mathematics and physics will be nurtured, students will report on small group interactions with industry and academic researchers, and students will conduct and report on small scale research projects. Academic year follow-up activities include regular mentor contact and group activities through the Richmond Area Mathematics and Science Center.

E. I. DuPont; Richmond Public Schools and Virginia State University Pre-College Mathematics/Science Partnership

Department of Mathematics, Virginia State University
Petersburg, VA 23806

Type of Project	Commuter
Recruitment Area	Richmond Public Schools 88% minority
Total Students/Grades	40/9th-12th 100% minority
Total Staff	3 Faculty 2 Graduate Students 2 Undergraduate Students 2 High School Teachers 3 Administrative Staff 83% minority
Application Deadline	May 16, 1997
Project Dates	June 30 - July 18
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	$150 plus a TI-82 Graphing Calculator, transportation and lunch

Dr. George W. Wimbush
Dr. Jacquelyn Joyner

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DuPont/VSU/RPS Pre-College Mathematics/Science Program is a four-week commuter program, begun in 1995 with funds from E.I. DuPont, which is designed to assist minority high school students interested in careers in mathematics and science. The two-year initiative involves 40 high school students who are enrolled in the Richmond Public School System. The program is held at Virginia State University (VSU) during the summer with 10 Saturday sessions during the Fall and Spring semesters. Courses are offered in Mathematics (Problem Solving and Geometry), TI-82 Graphing Calculators, Probability and Statistics, and Computer Science. Students participate in group research projects; SAT, PSAT and AHSME preparation; Career Awareness seminars and field trips. The program also provides Richmond students with the opportunity to interact with VSU professors, graduate students and senior undergraduate mathematics majors through a mentoring component designed to direct students toward postsecondary study in the Mathematics or Science disciplines. The program represents a collaboration with VSU, Richmond Public Schools and the DuPont Corporation to combine their talents and resources to create an innovative, hands-on program which will prepare minority leaders in critical science and mathematics fields.

Young Scholars Program in Math and Science

A 110 Butterfield
Wesleyan University
Middletown, CT 06459-0200

Director, Dr. Robert A. Rosenbaum

Coordinator, Ms. Joan W. Miller

Office
860/685-2452 ext2446

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Type of Project	Commuter
Recruitment Area	Connecticut
Total Students/Grades	60/9th-11th 70% minority
Total Staff	2 Faculty 8 High School Teachers 4 Graduate Students 4 Undergraduates 25% minority
Application Deadline	March 14, 1997
Project Dates	July 7 - August 1
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Not applicable

These are four-week summer programs at Wethersfield High School and the Aquaculture Center in Bridgeport for students from schools in the area. The curriculum includes enrichment courses in mathematics and computers, biology and chemistry, earth science and physics; seminars in ethics and career awareness; and projects directed by mentors from college faculties and industry. The projects lead into mentored school-year activities which culminate in science-fair submissions.

Section II.

Pre-College Projects Conducted by Organizations

AISES

Comprehensive Enrichment Program

Administered by: AISES
1630 30th Street, Suite 301
Boulder, CO 80301-1014

Ms. Suzanne Benally

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Type of Project

Residential Recruitment Area	National
Total Students/Grades	450/8th-12th 100% minority (American Indians)
Total Staff	20-25 Faculty 20-25 High School Teachers 10 Graduate Students 45 Undergraduates 5-10 High School Students 80% minority
Application Deadline	February 15, 1996
Project Dates	3-6 weeks
Cost to the Student	Travel only
Scholarship Availability	Limited hardship travel
Stipend	Some Programs

The American Indian Science and Engineering Society (AISES) pre-college enrichment programs seek to empower American Indian and Alaskan Native youth to make informed choices and preparation for college and careers in engineering, science, mathematics, and technology. AISES's summer academic programs provide American Indian students a series of mathematics and science programs on University campuses across the country, with year-round research projects and mentoring to maintain their interest and ability in mathematics and science throughout middle and high school.

Students are selected based on: academic/scholastic record; essay in which student discusses potential career interest and the application of mathematics/science within that career; a written/illustrated description of a mathematical or engineering related problem-solving activity; and two reference from mathematics and science teachers

Program dates vary depending on site. Accommodations, meals, and program material are provided. Hardship travel will be considered based on financial need. Program sites are in Wisconsin, Montana, New York, New Mexico, Iowa, California, Oklahoma, Alaska, North Carolina, and Colorado.

AISES Mathematics Equity Project

3215 Marine St. CU-Campus box 456
Boulder, CO 80309

AISES

Type of Project	Residential
Recruitment Area	North Dakota, South Dakota, and Minnesota
Total Students/Grades	60/6th-8th 100% minority (American Indians)
Total Staff	*information not available*
Application Deadline	*information not available*
Project Dates	*information not available*
Cost to the Student	none
Scholarship Availability	*information not available*
Stipend	none

John Hoover

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The AISES Mathematics Equity Project includes a 14-day commuter summer and academic year follow-up activities for Native American middle school girls. The project content is mathematics and emphasizes the use of internet technology in the study of mathematics. The project also includes equity workshops for teachers and parents, site visits, and research projects completed by the participants. Programs exist for 60 girls annually in the states of North Dakota, South Dakota, and Minnesota. For more information please contact the Project Director.

MSEN

Mathematics and Science Education Network Pre-College Program

University of North Carolina at Chapel Hill
134 1/2 Franklin St., CB #3345
Chapel Hill, NC 27599-3345

Executive Director, MSEN:
Dr. Gerry Madrazo
Project Coordinator:
Dr. Joyce Hilliard-Clark

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Type of Project	Commuter
Recruitment Area	Regions surrounding sites: Raleigh, Greensboro, Charlotte, Elizabeth City, Chapel Hill, and Fayetteville (110 Schools) 85% minority
Total Students/Grades	3000 (females and minorities) /6th-12th 85% minority
Total Staff	20 University Faculty 20 Graduate Students 20 Undergraduates 160 High School Teachers 14 High School Students 60% minority
Application Deadline	May 15, 1997
Project Dates	July [dates vary by center]
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	None

The MSEN Pre-College Program is designed to increase the number of historically underrepresented students -- minorities and females-- who graduate from high school with sufficient interest and preparation to pursue mathematics and science based fields at the university level. The objective is to increase the number of underrepresented students moving into careers in science, technology, engineering and teaching.

To achieve these goals, the six Pre-College Program sites offer students academic enrichment classes in the schools, after-school clubs, Saturday Academy Sessions, Summer Scholars Sessions, and other special trips and competitions. The MSEN Pre-College Program has completed nine full years of operation with notable success.

Science and Math Investigative Learning Experiences

Oregon State University
18 Gladys Valley Center
Corvallis, OR 97331

SMILE

Type of Project	Residential or Commuter
Recruitment Area	Chiloquin, Madras, Nyssa, Ontario, Pendleton, Siletz, Willamina, and Woodburn
Total Students/Grades	480/4th-12th 80% minority
Total Staff	5 Faculty 3 Graduate Students 20 Undergraduates 48 Public school teachers
Application Deadline	Varies by school
Project Dates	Academic year; Middle School Camp - 2 weeks in July; STARS 8 weeks during OSU Summer Term
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	STARS students, $50/week

Director:
Miriam Orzech
Assistant Director:
Sue Borden

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The Science and Math Investigative Learning Experiences (SMILE) Program is a partnership between Oregon State University and eight rural Oregon school districts to provide hands-on, integrated math/science enrichment for minority and disadvantaged students, grades 4-12. Begun in 1988, SMILE functions as a pipeline taking children from 4th to 12th grade and on to post-secondary education. SMILE conducts a yearlong schedule of activities to strengthen students' knowledge and interest and raise their academic and career aspirations. SMILE activities include weekly after-school SMILE Club meetings (20 students and 2 teachers per club), monthly field trips, a three-day Outdoor Science Adventure camp for elementary students, Challenge Weekends at OSU for middle and high school students, an eight-week summer bridge program for high school graduates who will enter OSU in the fall. Teacher enhancement workshops, equipment loans, and computer networking support the program.

PRIME

Prime Universities Program

PRIME, Inc.
The Wellington
135 South 19th Street, Suite #250
Philadelphia, PA 19103

Richard E. Woodring
Executive Director

Office
215/561-6800

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215/561-6810

Type of Project	Commuter
Recruitment Area	Public, Parochial, and Private schools in Philadelphia and Camden, NJ area 90% minority
Total Students/Grades	250/post 7th - post 11th 90% minority
Total Staff	26 Faculty 10 Graduate Students 30 High School Teachers 75% minority
Application Deadline	April 1, 1997
Project Dates	July 1 - July 26
Cost to the Student	$100 for resident student (post - 11th grade) $50 for commuter student (all other programs)
Scholarship Availability	Yes
Stipend	None

The PRIME Universities Program (PUP) consists of five consecutive years of sequential summer enrichment instruction. The program begins at the post-7th grade level and extends throughout the post-11th grade level.

Programs at each grade level are offered on college campuses and consist of a unique focus as well as provide intensive instruction in mathematics, communication skills, science and computer applications. At the post-7th grade level focus is on building vocabulary and reading comprehension levels. At the post-8th grade level focus is on mathematics and at the post-9th grade level on written and oral communication. At the post-10th and 11th grade level students may choose one of four tracks to follow: engineering, actuarial science, computer science or pharmacy and allied health.

Unique aspects of the PUP programs include specialized curricula, individual counseling and tutoring, hands-on career awareness and exploration activities, and a residential experience simulating college life at the post-11th grade level.

Southeastern Consortium for Minorities in Engineering

c/o Georgia Institute of Technology
Atlanta, GA 30332-0270

SECME

Type of Project	Residential/Commuter
Recruitment Area	AL, FL, GA, KY, MS, NC, SC,TN, VA, and the District of Columbia
Total Students/Grades	21,014/K-12th 100% minority
Total Staff	1 Executive Director 1 Associate Director 3 Program Coordinators 1 Administrative Supervisor 1 Sr. Secretary 83% minority
Application Deadline	None
Project Dates	Academic Year
Cost to the Student	None
Scholarship Availability	Available
Stipend	None

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SECME is a collaboration of 34 universities and 65 industry/government agencies with 463 schools and 21,014 students. While SECME is an all inclusive program, our goal is to increase the pool of minorities who are prepared to enter and complete studies in engineering, mathematics and science and data is only maintained on minorities.

The program works within the existing educational structure at K-12 grade school levels. At each participating school, a SECME Team is formed to plan and carry out the program. A typical team includes the principal, a counselor, a mathematics teacher, a science teacher, a language arts teacher, and a media specialist.

Team members are trained by SECME at a Summer Institute held for two weeks at a different SECME university campus each year and at Regional workshops during the school year.

Overall, more than 91% of graduating SECME seniors attend a college or university and almost half of those opt for engineering or other mathematics-based pursuits. SECME member universities offer scholarships to SECME graduates.

North TexPREP

North TexPREP Prefreshman Engineering Program

Texas Woman's University
P.O. Box 425846
Denton, TX 76204

Catherine Banks

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Type of Project	Commuter
Recruitment Area	Dallas, and Fort Worth Area School Districts
Total Students	600/7th-11th 83% minority
Total Staff	4 Faculty 15 High School Teachers 2 Graduate Students 9 Undergraduates 40% minority
Application Deadline	April 25, 1997
Project Dates	June 2 - July 24
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	Possible

North TexPREP is one of 12 programs of the Texas Prefreshman Engineering Program which provides educational enrichment opportunities for high ability middle school and secondary school students interested in pursuing science or engineering careers. The emphasis of this program is on study and research in mathematics, engineering, and computer science. PREP strongly encourages women and students from minority groups who have been traditionally underrepresented in science and engineering to apply for participation. Sites include Texas Woman's University (Dallas and Denton), SMU, UTD, Dallas Co. Community Colleges and Texas Wesleyan University.

San Antonio Prefreshman Engineering Program

PREP Office
University of Texas, San Antonio
San Antonio, TX 78249-0661

Type of Project	Commuter
Recruitment Area	San Antonio, Texas 62% minority
Total Students/Grades	1,600/6th-11th 80% minority
Total Staff	96 Faculty: directors, college faculty, military officers, civilian industrial engineers, scientists, mathematicians 90 Program Assistant Mentors 60% minority
Application Deadline	February 3, 1997
Project Dates	June 2 - July 25
Cost to the Student	None
Scholarship Availability	Not applicable
Stipend	None

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San Antonio PREP was organized by The University of Texas in 1979 for the purpose of identifying high achieving minority middle school and high school students in order to provide them with academic enrichment to pursue careers in mathematics, science, and engineering. During the intense eight-week mathematics-based summer session participants study logic, algebraic structures, probability and statistics, physics, computer science, engineering and technical writing. Abstract reasoning and problem solving skills are developed through coursework assignments, examinations and laboratory projects. Students attend career awareness seminars and take field trips to learn about careers in mathematics, science and engineering.

San Antonio PREP meets on eight college campuses and several high schools in the city. Over 6000 students have completed one summer of San Antonio PREP, 79% have been minority, 54% women, and 52% came from low income families. The high school graduation rate is 99.9%. The college graduation rate is 80%. Science and engineering graduation rate is 56%.

The Texas Prefreshman Engineering Program was organized in 1986 and replicates San Antonio PREP in 14 other cities around the state.

Utah MESA	**Utah Math Engineering and Science Achievement** 2068 Annex University of Utah Salt Lake City, UT 84112	
ExecutiveDirector **Christine Reyes**	Type of Project	Commuter
	Recruitment Area	Utah 8% minority
Office 801/585-3135	Total Students/Grades	2,500+/6th-12th
FAX 801/585-7402	Total Staff	59 High School Teachers 35% minority
e-mail reyes_c@gse.utah.edu	Application Deadline	September 1 and ongoing
	Project Dates	Academic year and summer
	Cost to the Student	None
	Scholarship Availability	Based on participation
	Stipend	None

The mission of the Utah MESA/STEP consortium, an organization committed to improving the quality of people's lives, is to increase the number of historically underrepresented ethnic minority and women students in engineering, science or math related fields, who graduate prepared for teaching careers by developing academic and leadership skills, raising educational expectations and enhancing self confidence. Currently MESA serves over 3300 students in 10 school districts.

MESA is the pre-college component of the UTAH MESA/STEP. The goals of MESA are: to incorporate into the educational system enrichment and counseling activities which prepare participants for engineering and other math based careers; to promote career awareness so that participating students may learn of opportunities in the mathematics and science related professions early enough to prepare for them; to encourage students to acquire the academic and social skills they need to major in mathematics, engineering, technology or the physical sciences at an institution of higher education.

STEP is the higher education component of the Utah MESA/STEP. Current members include Salt Lake Community College, University of Utah and Weber State University. The goals of STEP are: to increase the number of historically underrepresented ethnic minority and women students majoring in engineering, science or other math based fields; to increase the retention and progression rates of these students, thereby increasing the number graduating with technical degrees; to provide an atmosphere which fosters academic excellence in institutions of higher learning. Utah MESA/STEP student services and activities include: academic competitions, academic and career advising, career conferences, community involvement, cultural activities, field trips and conferences, financial aid information, incentive awards, MESA Math Class, parental involvement and support, professional development, summer enrichment programs, teacher training and support, tutoring and mentoring, and workshops and seminars.

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The
Mathematical
Association of
America

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement (OERI)
Educational Resources Information Center (ERIC)

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