

## RICHMOND AREA PROGRAM FOR MINORITIES IN ENGINEERING

### 2008 SUMMER ENGINEERING INSTITUTE INFORMATION

#### General Information

The Richmond Area Program for Minorities in Engineering (RAPME) and its sponsors will be presenting the *2008 Summer Engineering Institute*. The institute will be held at the following three educational facilities—Virginia State University (VSU) and Virginia Commonwealth University (VCU). The main office of RAPME is located at VSU, Room 300-E, Engineering Building.

The RAPME Summer Engineering Institute is a *three or five-week* academic program for middle and high school *minority students* in the Richmond/Petersburg metropolitan area. The program provides students with information about various fields of engineering in order to acquaint them with the requirements for pursuing a career in engineering. Middle school students participate in engineering related classroom projects, while high school students blend engineering and computer classes with robotics projects. All students enjoy visiting local area firms to witness first hand, the work of engineers as well as attend lectures by practicing engineers in various fields.

*Daily attendance is mandatory.* Students who apply for the program should meet the following criteria:

- Be a member of a minority group (African American, American Indian, Hispanic) that is under-represented in engineering and technology
- Be interested in learning about engineering as a career
- Be academically talented, especially in mathematics and science

#### The Application

- Required attachments include *an essay*, a transcript of current grades, and current achievement test scores.
- Signatures are required from the student, a parent/guardian, and the student's school official.
- The RAPME office will indicate each applicant's Mathematics and Science grades for all the Phases, using the transcripts attached to the Application Form.

RAPME Summer Engineering Institute applications will be available at middle and high school offices and also at the RAPME website: [www.rapme.org](http://www.rapme.org). The applications and all supporting documents must be received by **Friday, April 25, 2008**. **Late or incomplete applications will not be processed.** Students will be advised of their enrollment status during the early part of May 2008. **Do not enclose payment (cash, check or money order) with the application form.**

**Return Completed Application to:** RAPME Summer Engineering Institute  
P. O. Box 9212  
Virginia State University  
Petersburg, VA 23806  
Tel: (804) 524-8989  
Fax: (804) 524-6732

**RICHMOND AREA PROGRAM FOR MINORITIES IN ENGINEERING  
2008 SUMMER ENGINEERING INSTITUTE (SEI) INFORMATION**

**PHASE DESCRIPTION**

<b>Phase:</b>	<b>Phases I, II, &amp; III</b>	<b>Phases I, II, &amp; III</b>	<b>Phase IVA &amp; IV</b>
<b>Dates:</b>	6/16/08 – 7/02/08	7/07/07 – 7/25/08	6/23/08 – 7/25/08
<b>Classes:</b>	M – F, 9 a.m. – 12 noon	M – F, 9 a.m. – 12 noon	M – Th, 9 a.m. – 12 noon
<b>Venue:</b>	<b>VA State University</b>	<b>VA Commonwealth Univ.</b>	<b>VA State University</b>

**Phase I:** For *rising* 7th and 8th graders. This phase introduces students to the practice of engineering and familiarizes them with engineering as a *profession*. Practicing engineers are invited to talk to the students about their job. Arrangements will be made for the students to tour local industries and businesses. They will also participate in engineering related projects and present them at the closing ceremonies. This year's projects will include *Bridge Building* and *New Lego's Robotics*.

**Phase II:** For *rising* 8th and 9th graders. This phase exposes students to applied Engineering and Computer Concepts, all of which will supplement their robotic projects. Phase II is aimed at cultivating the scientific method in all aspects of the robotic, circuit and geosciences projects. This phase is for rising high school students who may be considering applying to the phase III program. In addition, the students will attend engineering lectures/seminars given by professionals and will visit local area *firms* to see engineers at work. The mathematics pre-requisite for this phase is the completion of Algebra I.

**Phase III:** For *rising* 10th and *talented* 9th graders. This is a summer high school research opportunities to qualified students who are interested in summer research experiences in engineering and related sciences. Phase III is designed to encourage underrepresented minorities who are interested in engineering, medicine, physics, chemistry, materials science, biology, astronomy or any relevant sciences, to pursue scientific research as a potential career, and to prepare these students for undergraduate studies in a Higher-Education Institution as outstanding research students and leaders in the scientific community. Students of this program will acquire stronger research skills by working under the direction of participating faculty mentors at both VSU and VCU, and they will improve their skills and competitiveness necessary for the successful pursuit of an undergraduate degree (B.S.). Final group projects will be presented to parents during the closing ceremony.

**Phase IVA:** For *rising* 11th and *talented* 10th graders. This phase exposes students to design for electrical and computer engineers. The students will be given the opportunity to apply the design process with a sound academic basis that is integrated with their theoretical knowledge to bring useful systems to reality. The topical integration is reflected in the design of professional websites and VEX robots.

**Phase IV:** For *current* 12th and *talented, rising* 12th graders. Students will complete an academic course at JSRCC or VSU. This phase combines two standard engineering curriculum offerings in *Engineering Graphic/Design* and *Engineering Methods* or *Introduction to Engineering* Freshmen level course. Students who complete the course requirements will earn **two-five** college credit hours. The courses covered are the same as the two popular courses in these topics currently offered in the Henrico (Highland Springs) and Chesterfield (L. C. Bird) County High School Engineering programs. The courses are typical of those taken during one's freshman year of college in engineering. Qualified applicants are selected on the basis of various criteria, including math and science abilities, and the student's interest to pursue a college degree in engineering. The pre-requisite for this phase is the completion of Algebra II and Geometry. Students must also *place* into the class based on their performance on a mathematics placement test administered by JSRCC or VSU.

Phase IV students are given an opportunity to earn scholarships to cover the cost of the two (2) credit hours at VSU and five (5) at JSRCC and supply fees (worth a total of \$420). *Students will be required to purchase the textbooks for the courses.* To earn the scholarship and the two (2) or five (5) college credit hours, each student admitted must:

- Pay a non-refundable **program fee** of fifty dollars (\$50).
- Satisfactorily complete the courses with a 2.75 grade point average (GPA) or better.
- Have no more than **three** (3) days of approved absence from class.

Please note that VSU services the public and private school systems in the Petersburg, Hopewell, Colonial Heights, Prince George, Dinwiddie, Charles City, and Chesterfield areas, while VCU services the public and private school systems in Richmond, Hanover, Henrico, and Chesterfield. JSRCC regular sessions are open to all students.

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**TRANSPORTATION:** Students are responsible for getting back and forth to the University/College that is hosting their specific phase. The institute will gladly assist in organizing *carpool* for those interested; however, it will not be held liable for any arrangements. Transportation for all field trips will be provided by RAPME.

**SNACKS:** Students will have access to vending machines located throughout the buildings and will be allowed to get snacks and drinks from the machines during a 15-minute break between classes. Students are **not** allowed to leave the building under any circumstances without supervision. Any student(s) violating this privilege (and it is a privilege not a right) will be disciplined accordingly.

**FEES:** A non-refundable program fee of **\$50** is required for each phase (I, II, III, IVA & IV). The fees will help to offset administrative costs incurred to run the Summer Engineering Institute. Financial aid may be available depending on documented financial need. **A \$25 fee will be charged for all checks returned for insufficient funds. This fee covers charges RAPME incurs from the bank(s).**

**ATTENDANCE:** Daily, prompt attendance is *mandatory*. Students are expected to attend the Summer Engineering Institute each scheduled day. Parent/Guardian must submit a written excuse to RAPME (prior to any absence when possible) each day a student is absent. After **three (3)** absences, the student will be **dismissed** from the program without a refund. There will be **no** SEI classes on July 3- 4, 2008, in observance of the holiday.

**DECORUM:** RAPME expects proper behavior during all facets of the program. The RAPME staff will make every effort to provide for the students' comfort and safety, and will monitor all periods of activity, including field trips. We look forward to having an orderly and enjoyable learning experience.

**ATTIRE:** *Represent yourself at all times*; this is not a sports camp or social club. Casual but neat dress is acceptable. No short *shorts* or bogus *neck chains*. Young ladies should wear tops and bottoms that adequately cover the body; young men are **not** allowed to wear net shirts or sleeveless T-shirts. Closed shoes (no sandals or heels) are a basic requirement for field trips. Above all, remember that the building and classrooms are air-conditioned and can get rather cool, so dress accordingly. *The RAPME officials reserve the right to enforce the dress code accordingly.*

**EVALUATION:** Students will be asked to evaluate the entire program. In addition, RAPME staff will evaluate the students. Student evaluation will be based on the following criteria:

- Initiative
- Effort
- Performance
- Interest
- Behavior
- Attendance

**RICHMOND AREA PROGRAM FOR MINORITIES IN ENGINEERING**

**\* APPLICATION FORM FOR THE SUMMER ENGINEERING INSTITUTE**

**PART I: FOR THE STUDENT**

**YEAR:** \_\_\_\_\_

Name \_\_\_\_\_  
Last First MI

Date of Birth \_\_\_\_\_ Age \_\_\_\_\_ Gender (M/F) \_\_\_\_\_ Minority Group/Race \_\_\_\_\_

Address \_\_\_\_\_ City \_\_\_\_\_ Zip Code \_\_\_\_\_

Phone (\_\_\_\_) \_\_\_\_\_ - \_\_\_\_\_ ; Current Grade in School \_\_\_\_\_ ; T-Shirt (Adult) Size \_\_\_\_\_

Name of School \_\_\_\_\_

School Address \_\_\_\_\_ City \_\_\_\_\_ Zip Code \_\_\_\_\_

Award/Honors \_\_\_\_\_

Current School Activities \_\_\_\_\_

Math/Science Projects, if any \_\_\_\_\_

Computer Experience/Knowledge of Computer Language \_\_\_\_\_

Previous SEI Attendance (check 

See Phase Description to Select: **Applying for VSU: Phase I** \_\_\_\_\_ **Phase II** \_\_\_\_\_ **Phase III** \_\_\_\_\_

**Applying for VCU: Phase I** \_\_\_\_\_ **Phase II** \_\_\_\_\_ **Phase III** \_\_\_\_\_

**Applying for VSU: Phase IVA** \_\_\_\_\_ **Phase IV** \_\_\_\_\_ .

**\*Do not enclose any payment (cash, check or money order) with this application.**

Applicant's Signature \_\_\_\_\_ Date \_\_\_\_\_

**RAPME USE ONLY**

Mathematics Grade (Average): \_\_\_\_\_ ; Science Grade (Average): \_\_\_\_\_ .

**Committee Evaluation:** Accepted: \_\_\_\_\_ Rejected: \_\_\_\_\_ Board Member Signature \_\_\_\_\_

Reason(s) for Rejection \_\_\_\_\_

**PART II: FOR THE PARENT/GUARDIAN**

If selected, my child has my permission to participate in the Summer Engineering Institute (SEI) sponsored by RAPME. I understand that this is a *three or five week* program and *daily attendance is mandatory*.

Signature of Parent/Guardian \_\_\_\_\_ Date \_\_\_\_\_

Name (print) \_\_\_\_\_ Home Phone: \_\_\_\_\_

Work Phone: \_\_\_\_\_

Home Address \_\_\_\_\_ City \_\_\_\_\_ Zip Code \_\_\_\_\_

**PART III: FOR THE COUNSELOR/TEACHER/SCHOOL OFFICIAL**

I recommend \_\_\_\_\_ to participate in the RAPME Summer Engineering Institute. S/he has shown academic potential and has an interest in *Engineering*.

Signature \_\_\_\_\_ Date \_\_\_\_\_

Name (print) \_\_\_\_\_ Phone #: \_\_\_\_\_

Title \_\_\_\_\_ School \_\_\_\_\_

School Address \_\_\_\_\_ City \_\_\_\_\_ Zip \_\_\_\_\_

#### **PART IV: SUPPORTING DOCUMENTS**

This application **must** be accompanied by:

- A copy of recent *semester grades* **and** copies of grade reports for the past **two semesters** only.
- A copy of recent achievement test score(s), i.e. PSAT, SAT, ACT.
- An essay (500 words or less) answering **either** of the following questions:
  - **How have your past accomplishments in science and engineering prepared you for the 2008 RAPME Summer Engineering Institute?** or
  - **How will the 2008 RAPME Summer Engineering Institute help you achieve your personal and educational goals?**

The essay must be written by the applicant; his/her name must be clearly displayed.

*Please staple all supporting documents to the application. Incomplete application package will not be processed. Do not enclose payment (cash, check or money order) with your application.*

**DEADLINE TO RETURN APPLICATION IS APRIL 25, 2008**

**To: RAPME Summer Engineering Institute  
P. O. Box 9212  
Virginia State University  
Petersburg, VA 23806**

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