

## Technical Report

### Graduate Student Focus on Diversity Workshop

1999 SIAM Annual Meeting  
Atlanta, Georgia  
May 12, 1999

The Third SIAM Graduate Student Focus on Diversity workshop was held May 12 at the Sheraton Atlanta Hotel on the first day of the 1999 SIAM Annual Meeting. Partial support was provided by the Department of Energy and the National Security Agency; and organizational assistance was provided by the Boeing Company.

The day-long workshop consisted of several different activities: eight technical talks by underrepresented minority graduate students, a lively panel discussion concerning the benefits of undergraduate summer research programs, informal luncheon and pizza breaks to foster social interaction, and an evening forum with candid discussions of graduate school experiences from a minority graduate student perspective. These sessions were open to the entire SIAM community and served to highlight the progress, achievements, and aspirations of the workshop participants.

The eight technical speakers were Charles Hardnett, Byron Jeff, and Vernard Martin (Georgia Institute of Technology); William Christian, Jr. and Ilya Hicks (Rice University); Erika Camacho and Stephen Wirkus (Cornell University); and Monica Romeo (Brown University). Their talks covered topics in the areas of nonlinear dynamical systems, planar graph algorithms, compile-time cache utilization analysis, the management of real-time media space applications, and the construction of distributed computational laboratories.

The summer research program panelists were Juan Restrepo (University of Arizona), Pablo Negron (University of Puerto Rico), Douglas Varela (California Institute of Technology) and Stephen Wirkus (Cornell University). Each panelist was associated or familiar with a different undergraduate research program, and their common features were discussed. In particular, the advantages to undergraduates for participating in these research programs was emphasized -- especially their effectiveness in developing computer science skills, mathematics skills, and research training in preparation for graduate school studies.

Dr. Steven L. Lee of Lawrence Livermore National Laboratory and Professor Ricardo Cortez of Tulane University organized the Workshop.

Submitted by:

Steven L. Lee and Ricardo Cortez  
Workshop Co-organizers

SOCIETY FOR INDUSTRIAL AND APPLIED MATHEMATICS  
3600 University City Science Center  
Philadelphia, PA 19104  
Phone: 215-382-9800  
[www.siam.org/meetings/](http://www.siam.org/meetings/)

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Wednesday, May 12, 1999

8:00 AM – 10:00 PM

Rooms: Georgia 1 & 2

**Third SIAM  
GRADUATE  
STUDENT  
FOCUS ON  
DIVERSITY**

*A One-Day Workshop  
for Underrepresented Minorities*

Hosted by the Society for Industrial and Applied Mathematics  
in conjunction with its 1999 Annual Meeting.

*Register at the  
Sheraton Atlanta Hotel  
165 Courtland Street, NE  
Atlanta, GA*

**Organizers**

Steven Lee, Lawrence Livermore National Laboratory  
Ricardo Cortez, Tulane University

This event is a chance for undergraduate and graduate students to interact  
and listen to technical presentations given by minority graduate students.

*Thanks and appreciation to the Department of Energy and the National Security Agency  
for providing support to SIAM in organizing the Diversity Workshop.*

**siam.**

Society for Industrial and Applied Mathematics  
3600 University City Science Center, Philadelphia, PA 19104-2688  
215-382-9800 • Fax 215-386-7999 • E-mail [meetings@siam.org](mailto:meetings@siam.org) • [www.siam.org](http://www.siam.org)

## PROGRAM

Wednesday, May 12, 1999

### MORNING

■ 8:00-8:45 • Capitol North/Center/South  
**Optimization in Machine Learning and Data Mining**  
Olvi Mangasarian, *University of Wisconsin, Madison*

■ 9:00-11:00 • Georgia 1 and 2

### DIVERSITY WORKSHOP

■ 9:00-9:25

**Global Compile-Time Analysis of Cache Utilization for Regular and Irregular Problems**  
Charles Hardnett, *Spelman College*

■ 9:30-9:55

**Flat-top Solutions of a Ginzburg-Landau Equation**  
Monica Romeo and Christopher K. R. T. Jones, *Brown University*

■ 10:00-10:25

**Dynamics of Two-Coupled van der Pol Oscillators with Delay Coupling**  
Stephen A. Wirkus and Richard A. Rand, *Cornell University*

■ 10:30-10:55

**Variable Service Quality Management for Real-Time Media Space Applications**  
Byron Jeff, *Georgia Institute of Technology*

■ 11:00-11:40 • Exhibit Hall  
Coffee break

■ 11:40-12:25 • Capitol North/Center/South  
**Krylov, Lagrange, Newton, and Schwarz: Combinations and Permutations**  
David E. Keyes, *Old Dominion University and ICASE, NASA Langley Research Center*

### AFTERNOON

■ 12:30-1:30 • Georgia 1 and 2  
Lunch (Diversity Workshop participants)

■ 1:30-3:00 • Georgia 1 and 2  
**Panel Discussion (Summer Research and Fellowship Programs)**  
Panelists: Arizona Internships in Mathematics, Engineering and Sciences (AIMES)  
Juan Mario Restrepo, *University of Arizona*

### What Are the Benefits of Attending a Summer Internship?

Pablo V. Negron, *University of Puerto Rico*  
Topics to be announced

Stephen A. Wirkus, *Cornell University*, and  
Sheila K. Scott, *National Consortium for Graduate Degrees for Minorities in Engineering and Science*

■ 3:00-4:00 • Exhibit Hall  
Coffee break

■ 4:00-6:00 • Georgia 1 and 2  
**DIVERSITY WORKSHOP**

■ 4:00-4:25

**Finding Branch Decompositions for Planar Graphs**  
Ilya Hicks, *Rice University*

■ 4:30-4:55

**Nonlinear Dynamics of the Bombardier Beetle**  
Erika Camacho and Richard A. Rand, *Cornell University*

■ 5:00-5:25

**The Construction and Management of Distributed Computational Laboratories**  
Vernard Martin, *Georgia Institute of Technology*

■ 5:30-5:55

**Algorithms for Graphs with Small Branchwidth**  
William Christian, Jr., *Rice University*

### EVENING

■ 6:30-7:30 • Capitol Center/South  
**The I.E. Block Community Lecture: Some Mathematical Insights Into Car and Bicycle Racing**  
Richard A. Tapia, *Rice University*

■ 7:30-8:30 • Poolside  
Community Reception

■ 8:30-9:00 • Georgia 1 and 2  
Pizza Break (Diversity Workshop participants)

■ 9:00-10:00  
**"The Real Deal" — An Informal Graduate Student Session**  
Moderator: Richard A. Tapia, *Rice University*

**Workshop Organizers:** Ricardo Cortez, *Tulane University*, and Steven Lee, *Lawrence Livermore National Laboratory*