

ILLINOIS LS-AMP

FIFTH ANNUAL STUDENT RESEARCH SYMPOSIUM

IN SCIENCE, MATHEMATICS, ENGINEERING AND TECHNOLOGY

Thinking Outside The Box

Chicago State University
Friday - Saturday
October 12 & 13, 2001

ILLINOIS LOUIS STOKES ALLIANCE FOR MINORITY PARTICIPATION
CHICAGO STATE UNIVERSITY, DEPAUL UNIVERSITY, GOVERNORS STATE UNIVERSITY, ILLINOIS INSTITUTE OF TECHNOLOGY, ILLINOIS STATE UNIVERSITY, NORTHEASTERN ILLINOIS UNIVERSITY, SOUTHERN ILLINOIS UNIVERSITY AT EDWARDSVILLE, UNIVERSITY OF ILLINOIS AT CHICAGO, HAROLD WASHINGTON COLLEGE, HARRY STRUMAN COLLEGE, KENNEDY-KING COLLEGE, MALCOLM X COLLEGE, OLIVE-HARVEY COLLEGE, RICHARD J. DALEY COLLEGE, SOUTH SUBURBAN COLLEGE, ST. AUGUSTINE COLLEGE & WILBUR WRIGHT COLLEGE



The Illinois Louis Stokes Alliance for Minority Participation gratefully acknowledges the support of

The National Science Foundation

Dr. Judith A. Ramaley, Assistant Director
Directorate of Education and Human Resources

Dr. Norman Fortenberry, Acting Division Director
Division of Human Resource Development

Dr. A. James Hicks, Program Director
Louis Stokes Alliance for Minority Participation

**Illinois Louis Stokes Alliance for Minority Participation 2001 Symposium
Thinking Outside the Box**

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Department of Mathematics
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Illinois LS-AMP Board of Directors

Dr. Marian Wilson-Comer

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Illinois LS-AMP Overview

The Illinois Louis Stokes Alliance for Minority Participation (Illinois LS-AMP) program was established in 1993 and is funded by the National Science Foundation (NSF). Illinois LS-AMP is one of a number of consortia of colleges and universities in the United States and Puerto Rico with the goal of significantly increasing the number of undergraduate and graduate degrees awarded to underrepresented minorities in science, mathematics, engineering and technology (SMET).

Illinois LS-AMP represents the Illinois branch of the National Louis Stokes Alliance for Minority Participation program; it consists of eight (8) Universities, nine (9) regional community colleges, and several research organizations. Together these groups participate in a collaborative effort to provide programs that improve the quality of science, mathematics, engineering and technology education for minority students. Each of these organizations has made a commitment of faculty, staff, research facilities and technical assistance to ensure successful opportunities for students participating in Illinois LS-AMP programs.

Illinois LS-AMP activities are comprehensive and multidisciplinary, focused specifically on SMET education. Great effort is expended to address transition points in a student's academic career and to provide intervention at junctures crucial to preventing withdrawal from the SMET pipeline. Consequently, critical transition points along the SMET education pipeline; high school-to-college, 2-year to 4-year college, undergraduate study and graduate study-to-careers, are addressed in various and innovative ways.

The efforts include:

- *Hands-on Research Opportunities*
- *Scholarship Programs*
- *Science Conferences*
- *Facilitated Study Group Sessions*
- *Professional Development*
- *Peer Mentoring Activities*
- *Summer Bridge Programs*
- *Tutoring Programs*
- *Internships*
- *Graduate Activities*

Conference Planning Committee

Illinois LS-AMP would like to thank the following people for their contributions and assistance in organizing the conference.

Mr. Ronald Banks

Southern Illinois University at Edwardsville

Ms. Vera Mayes

Illinois State University

Ms. Paula Causher

Olive-Harvey College

Dr. Charles E. Morris

Illinois State University

Mr. Mark Clancy

Harold Washington College

Dr. Diane Ostojic

South Suburban College

Ms. Arlicia Corley

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Dr. Marian Wilson-Comer

Illinois LS-AMP

Mrs. Yolanda Mc Gehee Jordan

Illinois LS-AMP



OFFICE OF THE MAYOR

CITY OF CHICAGO

October 12, 2001

RICHARD M. DALEY
MAYOR

GREETINGS

As Mayor and on behalf of the City of Chicago, I extend warmest greetings to the Illinois Louis Stokes Alliance for Minority Participation (Illinois LS-AMP) and all those attending its Fifth Annual Student Research Symposium, *Thinking Outside the Box*, at Chicago State University.

Funded by the National Science Foundation, the Illinois LS-AMP is committed to promoting the study of science, mathematics, engineering and technology at the undergraduate level by students of underrepresented minority communities. This symposium allows students to present their research findings to a body of peers and current professionals in the science and technology fields, empowering them to be valuable contributors to current study in their disciplines.

I applaud the Illinois LS-AMP for organizing this youth initiative and offer my best wishes for much continued success.

May all of you have an enjoyable and memorable event.

Sincerely,

A handwritten signature in black ink, appearing to read "Richard M. Daley".

Mayor



CHICAGO STATE UNIVERSITY

BISHOP HENRY FORD FREEWAY



Chicago State University, Williams Science Center, Room 101A
9501 S. King Drive, Chicago, IL 60628 (773) 995-3296 FAX (773) 995-2966

A Message from the Illinois Louis Stokes Alliance for Minority Participation Executive Director

It is my pleasure to welcome you to the Fifth Annual Illinois Louis Stokes Alliance for Minority Participation Student Research Symposium, "Thinking Outside the Box." We have looked forward to this symposium with much anticipation. The members of the conference committee have worked long hours to prepare for this event. The success of this conference will be due in large part to their dedication.

In addition to recognizing the conference committee, I must recognize the efforts of the professors and students whose work is being showcased this weekend. It is their curiosity and the persistence that made this event possible.

We are extremely delighted that you have taken the time from your busy schedule to join the Illinois LS-AMP to help the students of our fine institutions achieve their educational and professional goals. The Student Research Symposium is designed to support the development of undergraduate research, and to give students the chance to present their research to peers and to professionals in scientific and technological fields. Students also benefit from the opportunity to attend a variety of workshops on topics of interest to the scientific and technologic communities.

I am excited about the dynamic guest speakers, moderators and panelist who will challenge participants to "think outside the box." On behalf of the Illinois LS-AMP, the Governing Board, Program Advisory Council, Coordinators and Illinois LS-AMP Student Symposium Conference Committee, I hope you enjoy the conference, make new friends, network and find inspiration in the things you see and hear this weekend.

Marian Wilson-Comer, Ph.D.
Executive Director, Illinois LS-AMP



9501 S. King Drive / ADM 313
Chicago, Illinois 60628-1598

PRESIDENT'S MESSAGE

On behalf of the Illinois Louis Stokes Alliance for Minority Participation Program (Illinois LS-AMP), I am delighted to welcome you to Chicago State University's campus for the 5th Annual Student Research Symposium, "**Thinking Outside the Box.**" It is truly an honor and a pleasure to have you participate in this year's symposium.

As in previous years, we anticipate a forum that will allow all participants to explore the vast world of science, mathematics, engineering and technology. This task will be accomplished through various poster exhibits and oral presentations. All those gathered this weekend understand the critical importance of seeking more profound understandings of the planet that we share and must sustain. The many disciplines represented here today have contributed immensely to the expansion of human knowledge through inquiry, investigation and analysis.

This event is the result of the investment of considerable time and effort on the part of the students and faculty at each of the participating institutions. The experience gained in the course of this weekend's activities will enhance student's knowledge and experience through interaction with peers, faculty and other experts, as well as personal and professional growth for all who participate. You should be exceptionally proud of facilitating these ends for our developing scholars.

Best wishes for a successful and productive symposium.

Dr. Elnora D. Daniel
President
Chicago State University
October 12-13, 2001

**Illinois Louis Stokes Alliance for Minority Participation 2001 Symposium
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Our Saturday Luncheon Keynote Address will be given by

**Mr. Cordell Reed
Retired Senior Vice President, Commonwealth Edison Company**

Mr. Cordell Reed retired in 1997 as Senior Vice President, Commonwealth Edison Company, Chicago, Illinois after years of dedicated service. In this position, he was responsible for the Fuel Department, which purchases coal, gas and oil for the Company's ten fossil fuel fired generating stations. Before his appointment to this position, he served as Ethics Officer and Chief Diversity Officer. He also served as Senior Vice President—Chief Nuclear Officer, Energy Productions Facilities and Fossil Generation and Fuel, respectively. Prior to this experience, Mr. Reed worked as Vice President-Chief Nuclear Officer, Assistant Vice President for Nuclear Licensing, Nuclear Services, and Environmental Affairs Departments and was manager of the Station Nuclear Engineering Department. He began his career at Commonwealth Edison Company in 1960 and his first assignments included coal-fired and nuclear power plants' design and operation.

Mr. Reed has received numerous awards and is involved in several business, professional, civic and social activities. Some of his awards include, but are not limited to, the University of Illinois' 1983 "Alumni Honor Award for Distinguished Service in Engineering", Black Engineer of the Year Awards, "Lifetime Achievement" Award and the American Nuclear Society Tommy Thompson Award. In addition, Mr. Reed serves as Director of Underwriters Laboratories, Inc., Walgreen Company and Scientech, Inc. He is also a member of the National Academy of Engineering (NAE), Tau Beta Pi, National Technical Association, Shedd Aquarium Community Advisory Committee, Chicago State University Foundation, Urban Bankers and the Druids Club. These are only a few of the many activities that Mr. Reed devotes his time and efforts.

Mr. Reed graduated from the Chicago Public School System and went on to receive a Bachelor of Science Degree in Mechanical Engineering in 1960 from the University of Illinois.

Our Saturday Dinner Keynote Address will be given by

Dr. Allan S. Myerson
Dean, Armour College Of Engineering and Science
Illinois Institute of Technology

Dr. Allan S. Myerson is the Dean of the Armour College of Engineering and Science at Illinois Institute of Technology (IIT) in Chicago, Illinois. He also serves as Associate Editor of *Crystal Growth and Design*, which is a journal published by the American Chemical Society. Before arriving at IIT, Dr. Myerson worked at Polytechnic University in Brooklyn, NY where he served as Professor and Associate Professor of Chemical Engineering, Vice Provost of Research and Graduate Studies, Dean of the School of Chemical Science and the Head of the Department of Chemical Engineering. He also served as Associate and Assistant Professor of Chemical Engineering at Georgia Institute of Technology in Atlanta, GA. Prior to this appointment he held the position of Assistant Professor of Chemical Engineering at the University of Dayton in Dayton, OH.

Dr. Myerson has edited several books and published articles in the *AIChE Journal*, *Industrial and Engineering Chemistry Fundamentals*, *Journal of Energy and High Temperature High Pressures*. He is also the recipient of the Distinguished Faculty Research Award, Sigma Xi (Polytechnic Chapter), 1992 and the Virginia Engineering Foundation Engineering Achievement Award, 2000.

Dr. Myerson's research interests are in the areas of crystallization from solution, nucleation and molecular modeling. His research involves experimental and theoretical studies of the thermodynamics and kinetics of nucleation, the interaction of impurities with crystals, polymorphism and pseudo-polymorphism in organic solids and the application of molecular modeling to crystallization.

Born in Brooklyn, NY, Dr. Myerson received his B.S. in Chemical Engineering from Columbia University (May 1973). He earned his M.S. and Ph.D. both from University of Virginia in Chemical Engineering (January 1975 and 1977, respectively).

Conference Agenda

Friday, October 12

Welcome

Holiday Inn - Oak Lawn, Illinois

4:00 – 7:00p.m. Welcome Reception
 Check-in

Saturday, October 13

Registration, Poster and Table Set-up, and Continental Breakfast

Robinson University Center (RUC)
Snack Area

8:00 – 9:30 a.m. Poster and Table Set-up

Student Union Building (SUB)
Rotunda

8:00 – 9:30 a.m. Registration
 Continental Breakfast

9:30 – 10:00 a.m. Welcome
 Dr. Elnora D. Daniel, President, Chicago State University
 Dr. Marian Wilson-Comer, Executive Director, Illinois LS-AMP

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Morning Session

Concurrent Workshops

10:00 – 11:00 a.m.

Keys to Undergraduate Success
SUB-Conference Room A

What are the keys to obtaining associates and baccalaureate degrees? Experts will provide helpful information and advice for undergraduate success.

Moderator:

Mr. Emerson Buie, Admission Counselor, Western Illinois University

Panelists:

Ms. Kimberley Hollingsworth-Pettis, Director of the Transfer Center, Harold Washington College

Ms. Cassandra Howard, Office of Admissions, Roosevelt University

Dr. Zafra Lerman, Institute for Education & Science Communication, Columbia College Chicago

Dr. Pamela Moss-Jones, Pharm. D, M&R Prescription

Is Graduate School for Me?

SUB-Conference Room B

Panelists share their experiences about deciding to attend graduate school, what graduate school is like, and their strategies for success in graduate school.

Moderator:

Dr. Mohan Sood, Dean of Graduate College, Northeastern Illinois University

Panelists:

Dr. Eduardo De Santiago, Assistant Professor, Civil & Arch. Engineering, Illinois Institute of Technology

Mr. Robert Harris, Programmer Analyst, Blue Cross/Blue Shield of Illinois

Ms. Penny Warren, Assistant Dean of Minority Affairs, Northwestern University

Mr. Jaime Bruguera, Ph.D. candidate in Applied Mathematics, University of Illinois at Chicago

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11:00 –12:00 p.m.

Teacher Preparation and Professional Development
SUB-Conference Room A

Experts in the field of education share information regarding science education. Topics include, teacher preparation, professional development, classroom management, teacher certification, and teacher resources.

Moderator:

Dr. Sandra Westbrook, Dean, College of Education, Chicago State University

Panelists:

Ms. Sheryl Bond, Science Teacher, Bowen High School Chicago
Mr. Clifford Burgess, Director of Instruction for Science, Mathematics, Health and Technology, Chicago Public Schools
Mr. Lee Moss, Gary Community School Corporation
Ms. Melanie Wojtulewicz, Manager of Science, Chicago Public Schools

Thinking Outside the Box
SUB-Conference Room B

Workshop participants will be challenged to “think outside the box” and to be more creative in their area of study. They will hear from science and technology professionals who have been successful in using their traditional degrees in non-traditional ways.

Moderators:

Ms. Carolyn Arthur, Diversity Analyst, Argonne National Laboratories

Panelists:

Mr. James Foster, Retired, Development Director, Lucent Technologies
Dr. Linda Phaire-Washington, Senior Program Leader, Argonne National Laboratories
Dr. Asare Nkansah, Research Scientist, BP Chemicals
Mr. Kevin Smith, Associate Director, Digital Media Center, Illinois Institute of Technology

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Afternoon Session

RUC
Dining Room A & B

12:00 – 1:30 p.m. **Luncheon**
Keynote Speaker- Mr. Cordell Reed, Retired Sr. Vice President Commonwealth Edison

RUC
Snack Area

1:30 – 3:00 p.m. **Student Poster Competition**
College, University and Internship Representatives Table Display

SUB
Conference Rooms

3:00 – 5:00 p.m. **Student Platform Presentations**

***See Platform Presentations listings for Individual scheduled times and room assignments.**

Awards Banquet

RUC
Dining Room A & B

5:00 – 6:30 p.m. **Dinner**
Keynote Speaker- Dr. Allan Myerson, Dean, Armour College of Engineering and Science, Illinois Institute of Technology
Awards Ceremony
Closing Remarks