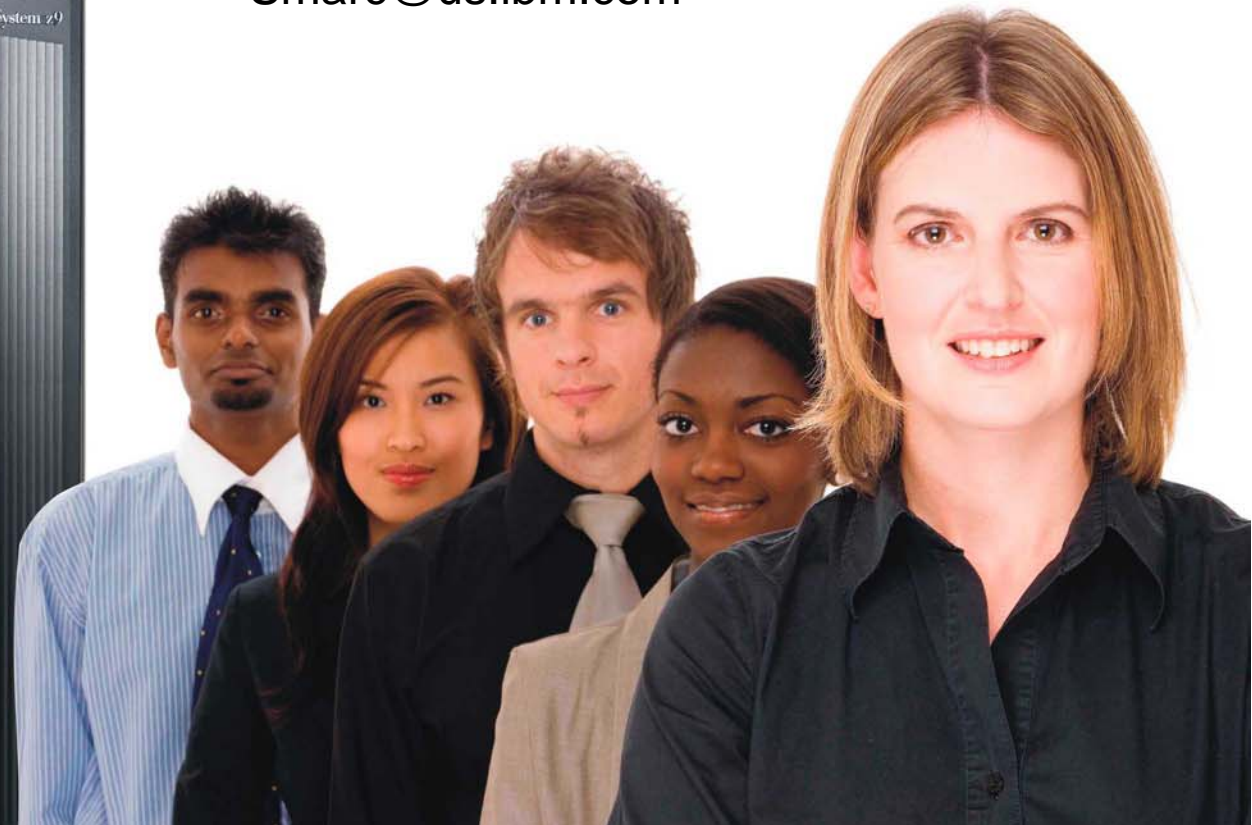




Growing Skills of the Future – Today

IBM Academic Initiative, System z

Marc Smith
University Ambassador
Smarc@us.ibm.com

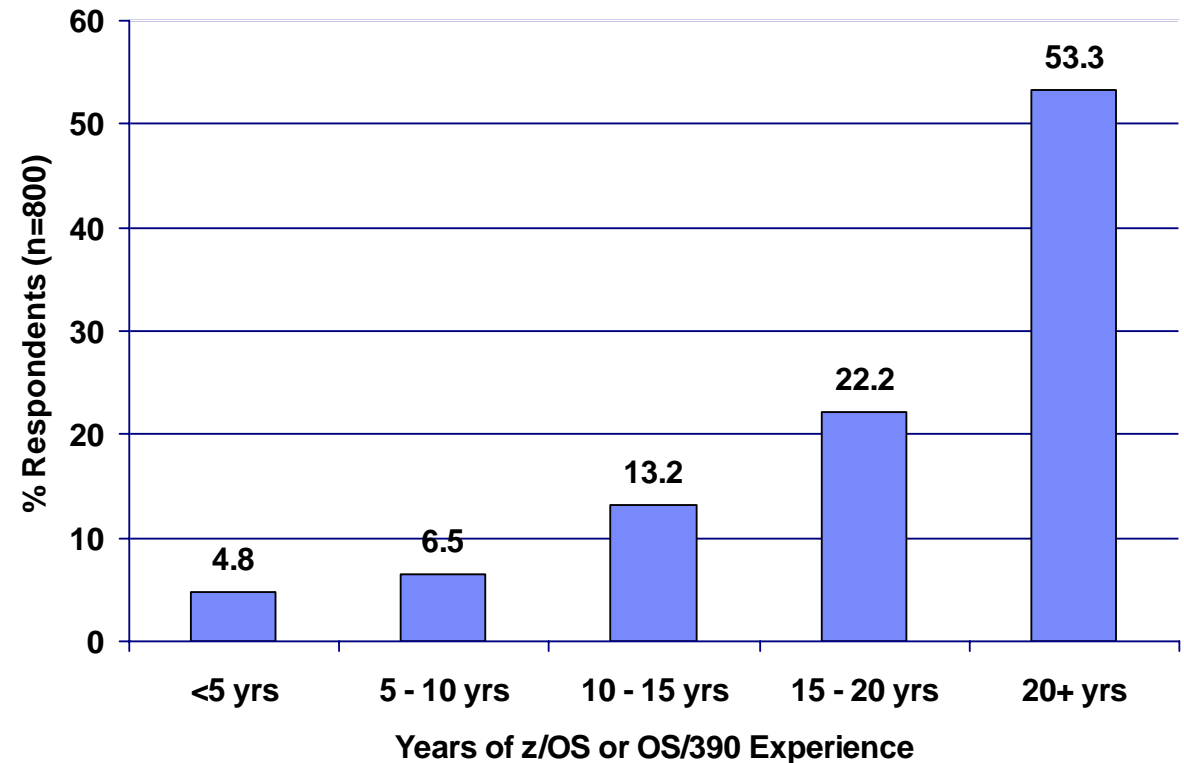


A perfect storm is brewing....

- 1.5M skilled I/T workers needed by 2012
- 70M baby boomers exiting the workforce in next 15 years
- Only 40M additional skilled workers anticipated
- Newly declared Computer Science majors down 32%



We know those mainframe workers want to retire and go surfing!



53% of mainframe workers have 20+ years

Why Enterprise Systems Thinking in College?



January 9, 2008

The U.S. IT job market grew at a blistering pace in 2007, shooting up 8% and adding nearly 300,000 jobs, according to year-end data from the Bureau of Labor Statistics.

What is “Enterprise Systems Thinking”?

- Education about:
 - Enterprise systems
 - Commercial computing
 - Large scale computing
- Including:
 - Enterprise Servers (IBM Mainframes)
 - Operating Systems and Software
 - Service Oriented Architecture (SOA)
 - Virtualization
 - Open source, open standards
 - IT Optimization and energy efficiency

IBM System z
The cornerstone



Made in the USA

What is the IBM Academic Initiative?

IBM Academic Initiative

Open standards, open source and IBM resources for academia

Updated 18 July 2007



- **Membership in the IBM Academic Initiative is free and open to individual faculty members. Apply at www.ibm.com/university**
 - Worldwide program
 - Supports many IBM Brands and technologies
 - Encourages open standards, open source
 - Provides easy access to hardware, software, courses, textbooks, and resources

Products & technologies	
DB2.	Information Management Software

System i	

System z	

IBM.	ON DEMAND BUSINESS

Lotus.	software

Rational.	software

Tivoli.	software

WebSphere.	software

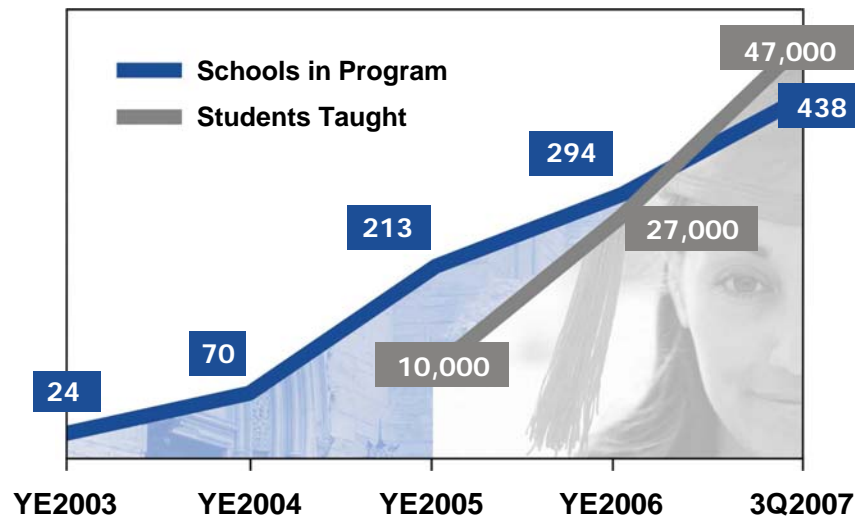
Access to valuable resources and offerings

- Access to IBM hardware and software
- Course materials and textbooks
- Ongoing Faculty skills development
- Certification offerings and discounts
- Curriculum advisory
- Roundtable events
- Student Opportunity System (SOS)
- Tutorials, articles and Redbooks
- Forums, technical webcasts, forums and newsletters
- Contests
- Student portal
- IBM Ambassador community



What schools are teaching Mainframe technologies?

Growing Academic Initiative



- Educators from over 430+ schools worldwide are currently investigating or teaching mainframe technologies
- For a complete list, see www.ibm.com/university/systemz - "Participating schools" tab

IBM System z courses

Foundational principles

- Intro to the Mainframe: z/OS Basics
- Work in progress to add z/VSE Content
- Intro to the Mainframe: Networking
- Intro to the Mainframe: Security
- Intro to the Mainframe: Large Scale Commercial Computing

Operating systems

- Linux on System z
- Introduction to z/VM®
- UNIX® System Services (Module)
- Work in progress to add z/VSE Content

User interfaces

- ISPF: z/OS Basic Interfaces

Storage management

- VSAM

Tivoli security, systems, network, and storage management courses

- IBM Tivoli License Compliance Manager for z/OS 4.2 Implementation
- IBM Tivoli System Automation for z/OS 3.1 Introduction and Operations
 - IBM Tivoli System Automation for z/OS 3.1 Implementation and Administration
 - IBM Tivoli Workload Scheduler 8.2 for zOS Scheduler's Workshop

Application development

- WebSphere Application Server for z/OS
- Intro to IBM WebSphere Developer for z (Web based)
- WebSphere MQ for z/OS System Administration

Information, data and transaction management

- Enterprise Server Data Management
- DB2 Family Fundamentals (Cross product)
- DB2 SQL Workshop (Cross product)
- DB2 for z/OS Database Admin Workshop – Part 1
- DB2 for z/OS Database Admin Workshop – Part 2
- DB2 Programming Workshop for z/OS
- An Introduction to IMS (Textbook reference)
- Transaction Management

Programming languages

- Assembler
- JCL

eLearning resources:

- Flash Demo for professors and students: *Learn about your future in Large Systems*
- Interactive e-Learning module: *Careers in Mainframes*
- Interactive e-Learning Module: *z/OS Basics*

Worldwide Mainframe hub systems

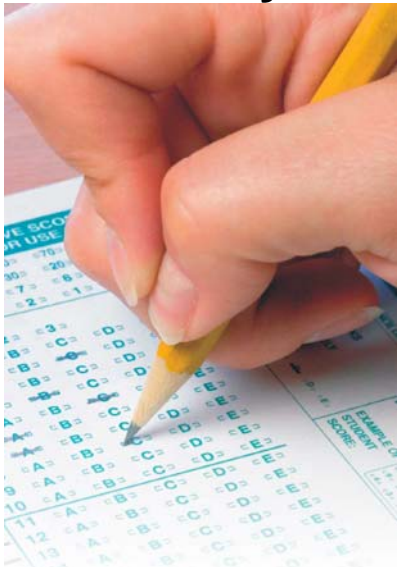
Locations:

- Marist College, New York
- University of Arkansas
- Brazil
- Montpellier, France:
IBM site "ZEUS"
- China: 5 systems, serving 8 schools
- IBM Innovation Center



Building mainframe skills for the community

z/OS Mastery Exam

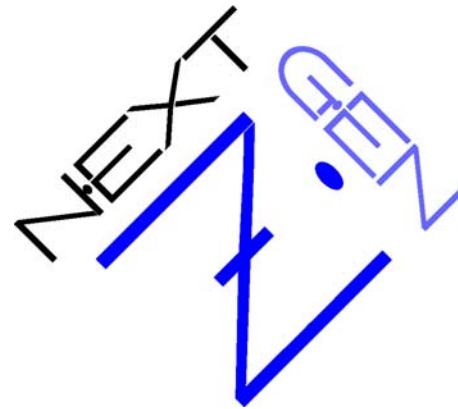


to validate z knowledge



Z Skills Help Desk
to assist the community

zNextGen & SHARE Academic Initiatives



to extend the community

Student Mainframe Contests



to generate interest



Roundtables on Campus
to get industry input

IBM System z entry level for z/OS System Programmer Mastery Test

- Measure and validate mainframe z/OS knowledge
 - *Introduction to the Mainframe: z/OS Basics*
- Developed by a panel of subject matter experts
 - IBM
 - College and university faculty
 - Mainframe customers
- Worldwide proctored exam

- Results recorded in IBM certification database
 - Goal: Increase the chances for success within an organization



THOMSON
—*—
PROMETRIC

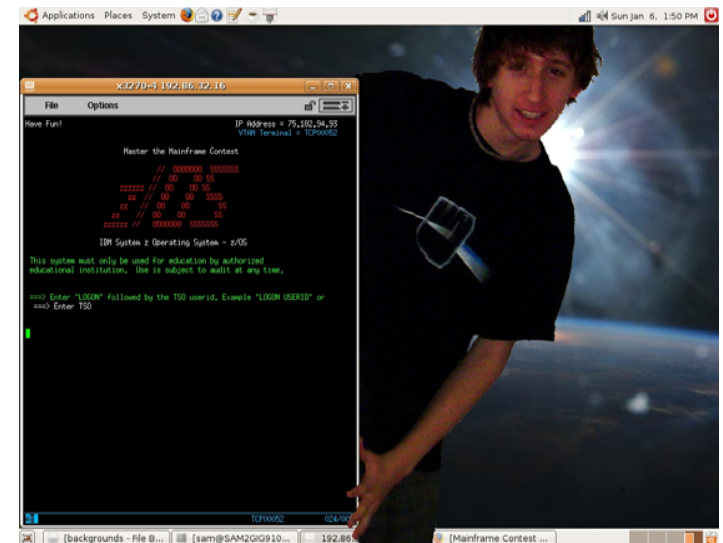
ibm.com/certify/mastery_tests/ovrZ01.shtml

Student Mainframe Contests

- Hands-on remote mainframe contest
 - No experience necessary
 - Three levels of challenges
 Prizes: T- shirts, iPods, Laptops, Xbox360, Wii, Sony PSP, trips

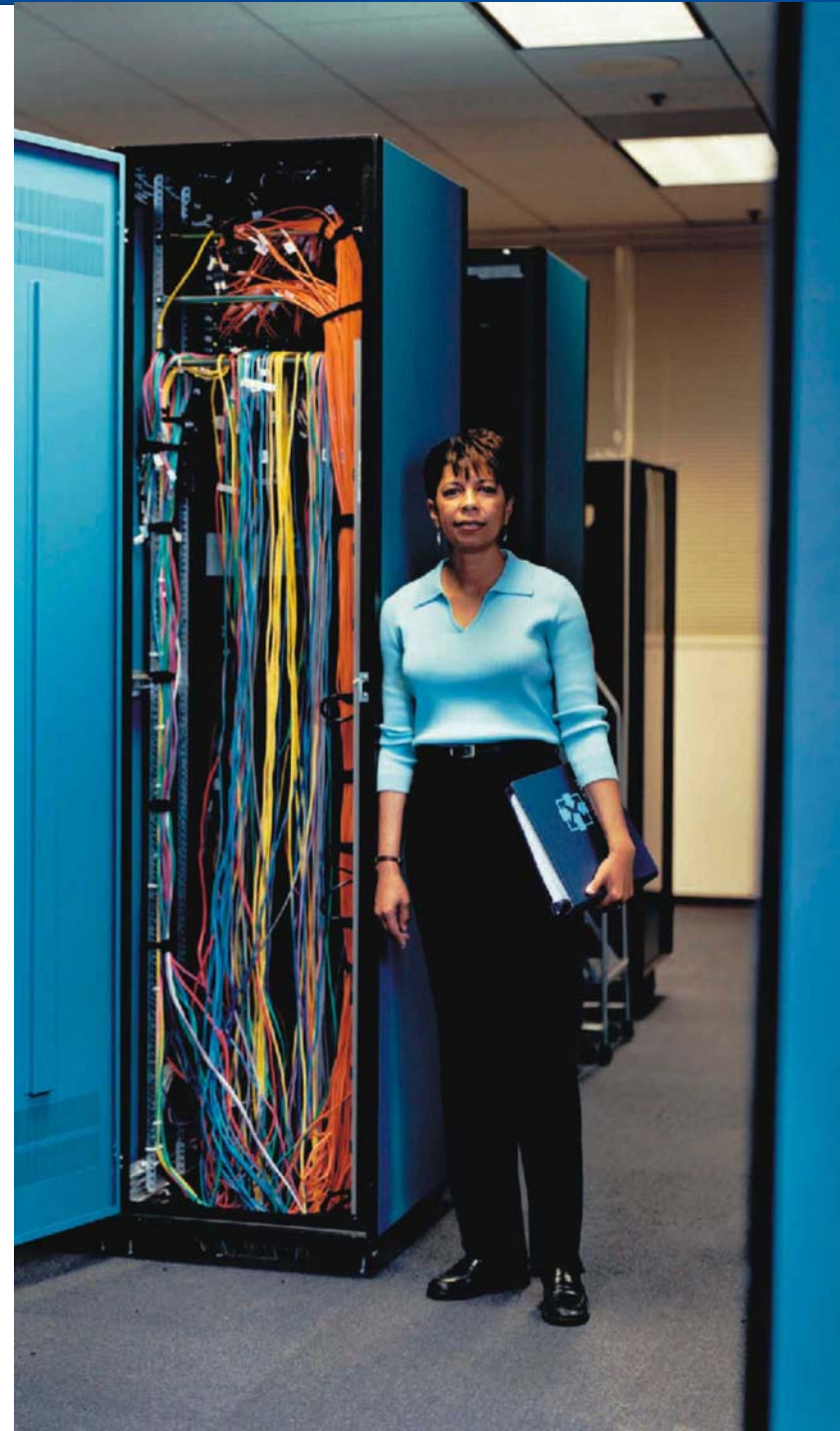
- 2007 U.S./Canada contest
 - 1,750 students from 325 schools
 - 133% increase in registration since 2005
 - 57 high schools represented
 - Contest, winner details at ibm.com/university/contest

Location	Students	Schools
Brazil	2011	390
BeNeLux	76	9
Nordics	147	11
Thailand	960	40
UK	1401	99
North America	3585	587
Totals	8,180	1,136



Large Systems Thinking Roundtables on Campus

- Introduce Large Systems Thinking to educators
- Validate the demand for students educated in Large Systems Thinking
- Show faculty how to leverage the IBM Academic Initiative
- Include business perspective from the mainframe community



Building relationships - zConnections


zNextGen & SHARE Academic Initiatives




to extend the community

zNextGen member profiles
+ zAcademic Initiative students

= Valuable connections with
Mainframe professionals




SHARE
Technology • Connections • Results



zNextGen Member Profiles

CIGNA HealthCare



Keith Shaffer

Location: Windsor, Connecticut

Contact preference: keith.shaffer@cigna.com, (860) 298-2889

Graduated from: Syracuse University, Computer Engineering (2003)

Job description: I am a z/OS system programmer. My responsibilities include installing new base products, applying PTF/APARs to all of our SMP/E zones, and configuring parms for our Initial Program Loads (IPLs) and Power-on-Resets (PORs). More recently, I have been exposed to z/VM.

Mainframe background and interests: Out of school, I took a job as a DB2 database administrator and got thrown into the world of z/OS. After two years, I wanted to learn more about the mainframe and so I moved to the z/OS & z/VM system programming team. In the future, I would like to learn more about the individual products running on the mainframe (MQ Series, WAS, etc.).

Hobbies: Soccer, running, tennis, golf, photography, Nintendo Wii

Building awareness through Career Days

•Building awareness through grass roots efforts:

- High School
- College
- Educators

IBM.

Computer Science

Business

Computer Information Systems

WAVV and IBM invite you to meet the Mainframe and explore a new career opportunity!

Are you a high school student, college student or educator looking for an opportunity to learn more about Enterprise Systems and the critical role they play in industry worldwide?

Did you know that:

- 25 of the top 25 worldwide banks run on IBM® System z™.
- 23 of the top 25 US retailers run on IBM System z.
- 9 of the top 10 global life or health insurance providers run on IBM System z.
- 71% of global Fortune 500 companies are IBM System z clients.

Please join us at the World Alliance of VSE VM Linux (WAVV) Technology Exchange Expo to:

- See an IBM System z Mainframe in operation.
- Talk with IBM experts about the modern Mainframe.
- Talk with IBM Business Partners and Mainframe users about careers in Enterprise Systems.

With over 70% of the world's data residing behind and accessed by a Mainframe, these machines are a company's best kept secret. Come learn why these servers are important to large and small companies alike, how they affect your daily life, and what rewarding career opportunities exist in this exciting field!

Location: Chattanooga Convention Center, Chattanooga, Tennessee

Date: Monday, April 21
 Session 1: 10 - 11:15 AM Session 2: 1:15 - 2:30 PM

Visits are by appointment only, please contact Marc Smith, smarc@us.ibm.com or 877-247-6079 by April 1 to reserve your time.

It's all about assisting clients with z skills.....

IBM's Academic Initiative, System z

- **Mainframe Skills Help Desk – zskills@us.ibm.com**

Where can I locate students?

Who do I contact at the school?

How can IBM help me with internal education?

Are there online programs?

Will someone at IBM talk with my VP about skills?

How do we partner with IBM and schools?

Does IBM have certifications for the mainframe?

Does IBM have resumes from the student mainframe contest?

Will someone from IBM join me on a call with a professor?

Are there schools that need speakers or teachers?

Marist College z/OS Certificate Program

- Fully online, web based delivery
- Three Certificates, 10-12 week modules
- "Lectures", Quizzes, Labs, Assignments



Certificates	Modules
System z™ Associate (starts March, 2008)	<ul style="list-style-type: none"> ▶ Introduction to the z/OS Operating System and Components (03/03/2008 - 05/23/2008) ▶ System z Networking (9/08*) ▶ System z Security (12/08*)
System z™ Professional (starts 2008)	<ul style="list-style-type: none"> ▶ Advanced Topics in zArchitecture: (including z/OS) ▶ RAS and Diagnostics (Availability, Serviceability, and Diagnostics) (12/10/2007 - 02/22/2008) ▶ Emerging Technologies (Linux, Grid, System Oriented Architecture)(03/03/2008 - 05/09/2008)
System z™ Expert (starts September, 2008 and 2009)	<p><u>Application Development Track</u></p> <ul style="list-style-type: none"> ▶ Application Development Environment and Deployment on System z, Unix System Services, Eclipse, WDz (WebSphere Development for z/OS) ▶ J2EE on System z <p><u>Systems Administration Track</u></p> <ul style="list-style-type: none"> ▶ Operating System, Installation, Configuration (JES, RACF, TSO, SMP/E and Fixes) ▶ System Measurement and Tuning (WLM configuration, SMF and RMF)

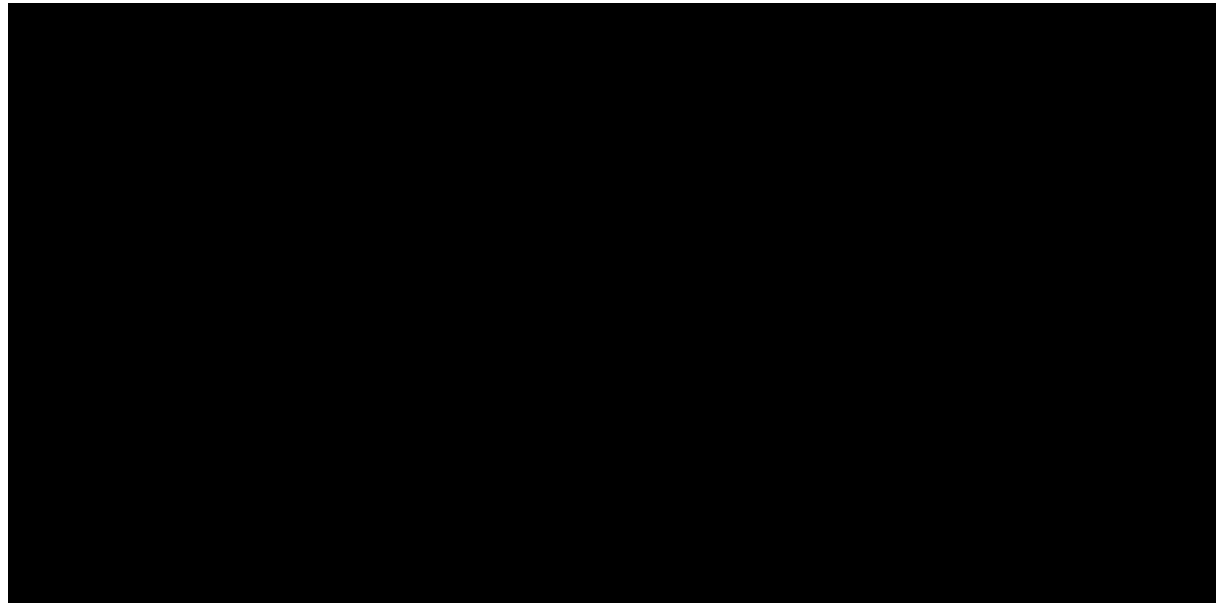
www.idcp.org/learnZOS

Contact:
Angelo.Corridori@Marist.edu

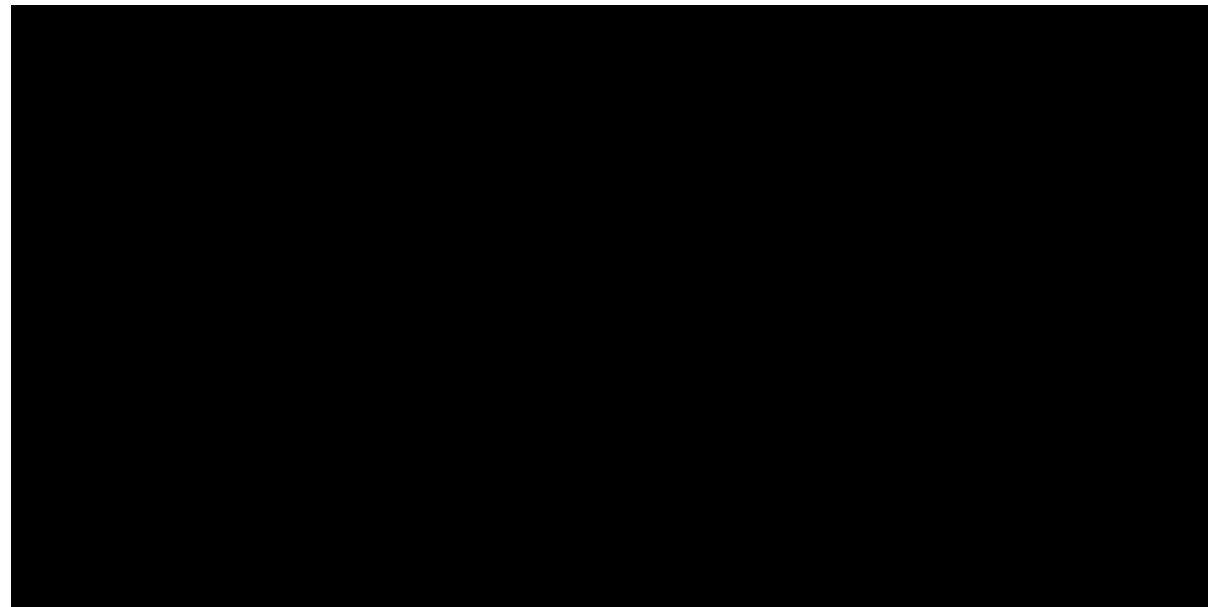
•Scholarships up to 50% of cost

Academia Speaks!

- US Schools



- German Schools



Important Web sites and contacts

- **System z Community**
 - ibm.com/systems/z/about/charter/community.html
- **Academic Initiative for the Mainframe**
 - ibm.com/university/systemz
- **z/OS Entry Level Mastery Exam & DB**
 - ibm.com/certify/mastery_tests/ovrZ01.shtml
- **zNextGen**
 - Znextgen.org
- **Enhanced skills portal**
 - ibm.com/systems/z/about/charter/skills.html

**Program Manager,
Academic Initiative for the Mainframe:**
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External skill leader, System z
Don Resnik, resnik@us.ibm.com

