



# Academic Initiative for System z

*The future runs on System z*

***Don Resnik***  
***System z Skills Leader***



# Mainframe skills opportunities world wide

- List of schools teaching the mainframe [ibm.com/university/systemz](http://ibm.com/university/systemz)

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- Enterprise Computing Community [ecc.marist.edu/](http://ecc.marist.edu/)

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- z/OS Certificate Program [idcp.org/learnzos](http://idcp.org/learnzos)

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- Community Resources [ibm.com/systems/z/advantages/newtosystemz/](http://ibm.com/systems/z/advantages/newtosystemz/)

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- z Skills Help Desk [zskills@us.ibm.com](mailto:zskills@us.ibm.com)



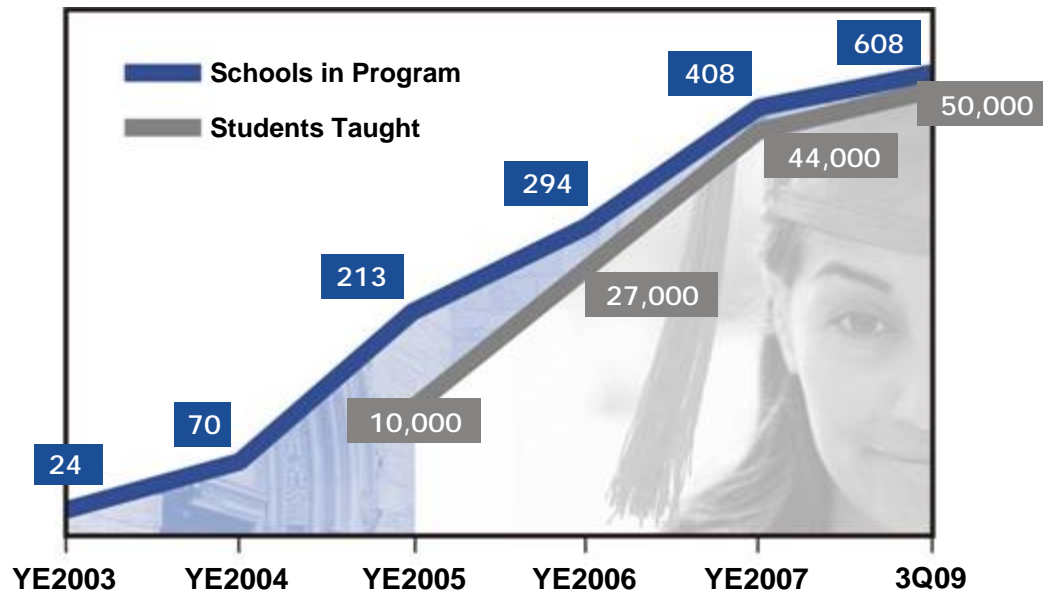
# September 2009 Press Release

<http://www-03.ibm.com/press/us/en/pressrelease/28430.wss>

***"Bank of America is building a new generation of talent to support our infrastructure. **We've hired students from colleges and universities enrolled in IBM's Academic Initiative,**" said Kim Grim, Senior Vice President, Mainframe Engineering at Bank of America."***

***"The students from those schools enrolled in IBM's initiative have the knowledge and skills ready to support the IBM System z server."***

# Growing number of schools teaching the mainframe



- **IBM Academic Initiative, System z:** [ibm.com/university/systemz](http://ibm.com/university/systemz)
  - ▶ **Participation** – 608 schools, >50,000 students attended mainframe education
    - 2379 schools participating in overall IBM Academic Initiative (all brands)
    - SWG course downloads - Rational 3283, Websphere 1492, DB2 563, Tivoli 300
  - ▶ **z Community** – hundreds of roundtables and events involving Clients / Schools / ISVs / BPs
  - ▶ **Student Mainframe Contests** – 15 countries, 14,672 students, 1,956 schools

# System z Academic Initiative - Flexibility

- **The program is not one size fits all**
- **Wide variety of schools in the program**
  - ▶ *Different levels of participation*
- **Delivery of z education varies**
  - ▶ Designed to provide flexibility to the school to meet their requirements and capabilities
- **World wide participation**
  - ▶ 45% North America
  - ▶ 24% Europe, Middle East, and Africa
  - ▶ 16% Latin America
  - ▶ 15% Asia/Pacific



# Our goal with educators

- Explore enterprise systems education
- Not selling IBM products
- Not asking educators to teach a predefined training program
- Enable and Assist at no charge

***IBM enables and assists educators***

**EXTREME IT**  
A Partnership with North Carolina A&T State University and North Carolina Central

**November 19, 2009**  
**9:00 a.m. - Noon**  
**Memorial Student Union**

**The Future Runs on System z**  
**For More Information Please Contact:**

**Dr. Ben Okoro (Uwakwen), Dean**  
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**336.334.7567**

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**919.530.7513**

**Dr. Mary Lind, Professor**  
School of Business - North Carolina A&T State University  
**336.334.7656**

**Dr. Gerry Dotzler, Chair**  
School of Engineering - North Carolina A&T State University  
**336.334.7245**

**Keynote Speaker:**  
**Chris O'Malley, CA, Inc.**  
CA's Mobile Business Unit  
Executive Vice President, General Manager

IBM and Red Hat logos are visible at the bottom of the poster.

# System z academic initiatives



**Access to  
mainframes  
worldwide  
for teaching**



**30 courses and z/OS Mastery Exam  
*to validate z knowledge***



**z Skills Help Desk and SMEs  
*to assist the community***



**Student Mainframe Contests  
*to generate interest***



**Roundtables and workshops on  
Campus *to get industry input***

# Courses under Development for IBM Academic Initiative

School	Course Title	Status
Syracuse University *	Enterprise Systems Technology	Fall '09class
Stevens Institute of Technology *	Managing Security on Enterprise Systems	Spring '09 class
University of Arkansas *	Enterprise Transaction Management	Aug '09 anticipated completion date
Fairleigh Dickinson University *	Enterprise Computing for System i & System z	Fall '07 class
University of Arizona *	Enterprise Lifecycle Management (graduate level)	Fall '07 class
San Jose State Univ	Query Processing in Industrial Strength database mgt systems (graduate level)	Spring '09 class
	Development & Management of High Volume Applications on Mainframe Database Systems (DB2 and IMS)	Under development
Marist College	Data Warehousing on z	Under development
Clarkson U	IMS Systems & related z/OS topics in Operating Systems Class	1H07 class
North Carolina State	Senior Design Projects on z	Fall '07 projects
West Texas A&M *	Curriculum development large systems	Under development
	Web Enterprise Engineering	Under development
IBM-Developed	Developing COBOL with IBM WebSphere Developer for z	TBD, volunteer-driven
	EGL for z/OS environments using IBM WebSphere Developer for z	Testing labs

\* IBM faculty award



# Courses under Development for IBM Academic Initiative

School	Course Title	Status
SUNY Binghamton	Intro to Mainframe: z/VM Basics	Spring '09 class
	Intro to the zSeries Hardware Management Console	Spring '10 class
	z/VM System Programming	Fall '10 class
	Linux on z/VM Intro	TBD

\* *IBM faculty award*

# Sample of Teach the teachers ...

## System z Professor Summer Seminars and workshops

Ball State University

Baruch College

Cégep de Thetford

City University of New York (CUNY)

Clarkson University

Columbus State Community College (OH)

Columbus State University (GA)

Cuyahoga Community College

Dutchess Community College

Eastern Illinois University

Eastfield College

Estrella Mountain Community College

Fairleigh Dickinson University

Fox Valley Technical College

Georgian College

Georgia Institute of Technology

Highland Park High School

Houston Community College

Huston-Tillotson University

Illinois State University

LeMoyne College

Long Island University

Malone College

Marist College

Minnesota State University

Montclair State University

North Carolina Central University

Palm Beach Community College

Prince George's Community College

Rochester Institute of Technology

San Jacinto College

Seneca College

Southern University

Stevens Institute of Technology

SUNY New Paltz

Syracuse University

Tecnologico de Monterrey

Universidad de Colima

University of Alabama - Birmingham

University of Arkansas

University of Denver

University of Maryland Eastern Shore

University of South Carolina

University of Valencia

Weber State University

West Texas A&M University

West Virginia University

Widener University

*T3s were also conducted in these countries ...*

Canada

Malaysia

Europe

Mexico

Vietnam

Thailand

Australia

*SHARE Attendees*

# Global - Master the Mainframe Contests

- **15 countries and spreading**
  - ▶ Three levels of challenges
  - ▶ Prizes: T- shirts, iPods, Laptops, Xbox360, Wii, Sony PSP, Nintendo DS, HDTVs, trips



- **2009, 2010**
  - ▶ Australia
  - ▶ North America
  - ▶ UK
  - ▶ Russia – 1<sup>st</sup>
  - ▶ Taiwan – 1<sup>st</sup>
  - ▶ Netherlands (planning)
  - ▶ France (planning)
  - ▶ Germany (planning)

Location	Contests	Students	Schools
Brazil	2007 2008	2011 3287	390 400
BeNeLux	2007	76	9
Nordics	2007	147	11
Thailand	2007	960	40
UK	2006 2007 2008	725 676 876	40 59 64
North America	2005 2006 2007 2008	750 1085 1750 1879	85 177 325 325
Australia	2008 2009	450 315	31 29
<b>Totals</b>	<b>13</b>	<b>14,987</b>	<b>1,985</b>

**[ibm.com/university/contest](http://ibm.com/university/contest)**

## Sample feedback from students and professors

- *"My participation in the IBM Master the Mainframe Contest helped me get a job at an international bank working as a Junior Systems Support Analyst. This position has never been offered to a student before, and I never would have been able to secure it without all that I have learned so far in the contest. Thanks for the great experience! I really appreciate it!"*, Student, Georgian College
  
- *"The hands on experience with z/OS got me even more interested in the mainframe world,"* Student, Northern Illinois University
  
- *"Once again, the Master the Mainframe contest has been a big hit with my students. And it helps me greatly in making the content of my z/OS Basics course more practical and realistic."*, Professor, Georgian College
  
- *"I just want to drop a line to thank you for allowing me to participate in the contest. I not only learned a great deal, but also enjoyed myself tremendously."* - Student, West Virginia University

# Ocoee High School *Mainframe Masters*



**Participants in the 2008 IBM Master the Mainframe Contest**

# Academic Initiative Status - Spain

- **Jordi Busquets Cervera/Spain/IBM@IBMES@IBMGB**

We are creating some interest on the Spanish University community around education on System z. In that sense we already have 3 universities running courses (Valencia, Alicante & Carlos III) but we have other 4 (UPM, UPC, CEU, UAH ,...) that have been showed interest.

- **Francisco J Galvez Ramirez/Spain/IBM@IBMES**

Once more we start again with Academic Initiative system z Courses in several universities here in Spain. I manage two system z teaching programs on two universities, namely Univ. of Alicante (UA) its 2nd edition and Univ. of Valencia (UV) its 3rd edition. (<http://www.uv.es/ibmuv/>)

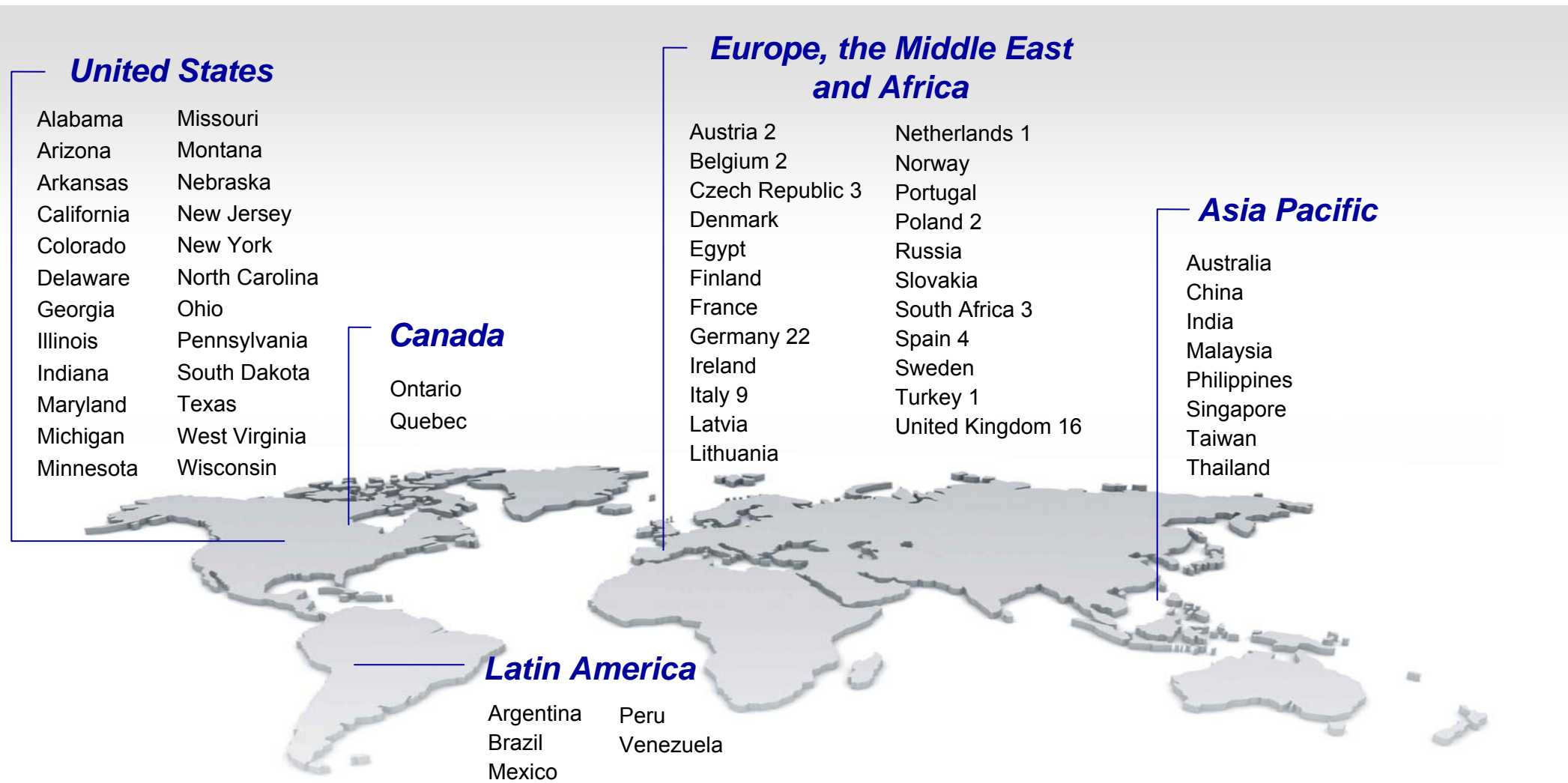
# Academic Initiative for System z, Status 2009 Germany

**Klaus-Dieter Mueller**, [kmuller@de.ibm.com](mailto:kmuller@de.ibm.com)

1. IT Akademie Bayern - Ausbildungsprogramm
2. Humboldt Universität Berlin und TU Berlin - Mainframe Summit
4. Hochschule Bochum - Sommerseminar
5. Technische Universität Chemnitz - Online-Praktika
6. Fachhochschule Coburg - Lehrveranstaltung
7. Fachhochschule Darmstadt - Online-Praktika u. Gastvorträge
8. Technische Universität Darmstadt - Vorlesung
9. Technische Universität Dresden - Lehrveranstaltungen
10. Universität Duisburg-Essen – Lehrveranstaltung
11. Hochschule Esslingen - Vorlesung
12. Universität Hamburg – Hanseatic Mainframe Summit
13. Fachhochschule Köln - Seminar
14. Universität Leipzig - Vorlesungen u. Online-Praktika
15. Fachhochschule Lüneburg - Online-Praktika
16. Berufsakademie Mannheim - Vorlesung
17. Technische Universität München – Ringvorlesung
18. Universität Münster - Vorlesung u. Praktika
19. Fachhochschule Schmalkalden - Online-Praktika
20. Fachhochschule Stuttgart - Online-Praktika
21. Hochschule der Medien Stuttgart - Vorlesung
22. Universität Tübingen - Vorlesungen u. Online-Praktika

# Reference schools worldwide teaching System z

[ibm.com/university/systemz](http://ibm.com/university/systemz) – Click on ‘Participating Schools’ tab





# Partners with System z Academic Initiative

**cole** software®

## Cole Software

assembler tool  
installed on z hub



PathPoint® Software

## PathPoint

working with Academic Initiative  
schools on COBOL

“PathPoint Software is very pleased to provide a unique means to support the mainframe COBOL instructional needs of Academic Initiative participants”.

**Novell.**



## RedHat and Novel

attended professor  
summer seminars and  
supporting z academic  
hub systems with  
zLinux



## Rocket Software

sharing emulation software  
for educators

## CA



providing mainframe software  
on Academic hubs for  
educators to teach mainframe  
courses

## IBM Sellers

(mainline, Sirius  
Computer Solutions,  
etc..) – spreading  
the message to  
clients



# Academic Initiatives in Italy – Mario Moretti

## Sapienza Università di Roma



- ❑ 2006/2007 – Seminar - First level degree - 70 students
- ❑ 2007/2008 - Full formal course 12 x 2 hours + 12 x 2 hours labs - 25 students
- ❑ 2008/2009 - Full formal course 12 x 2 hours + 12 x 2 hours labs - 40 students
- ❑ 2009/2010 - Full formal course 12 x 2 hours + 12 x 2 hours labs - starting

## Università di Catania



- ❑ 2005/2006 – Science of Information – Full formal course - 170 students.
- ❑ 2006/2007 – Full formal course 12 x 2 hours - 120 students
- ❑ 2007/2008 – Full formal course – 60 students.
- ❑ 2008/2009 - Full formal Course – 60 Students – Credits Doubled - Examinations
- ❑ 2009/2010 - Full formal Course – 60 Students – Credits Doubled (planned for March 2010)

## Politecnico di Bari



- ❑ 2005/2006 – Engineering and Electronics - Seminar - 90 students
- ❑ 2007 UniBari buys System z9 BC

## Università di Palermo



- ❑ 2005/2006 – Institute of Engineering – Full formal course – Master degree – 70 students
- ❑ 2006/2007 – Institute of Engineering – Full formal course – Master degree – 96 students
- ❑ 2007/2008 – Institute of Engineering – Full formal course – Master degree – 50 students
- ❑ 2008/2009 – Institute of Engineering – Full formal course – Master degree – 70 students
- ❑ 2009/2010 - Institute of Engineering – Full formal course – Master degree – 70 students (planned 11/09)

## Seconda Università di Napoli



- ❑ 2006/2007 – Seminar - First level degree - 25 students

Almost 1.000 Students!

# Academic Initiatives in Italy

## Università Federico II di Napoli



- ❑ 2006/2007 – Seminar - First level degree - 78 students

## Università di Genova (DISi)



- ❑ 2007/2008 - Computer Science – 2 Seminar 8 hours - 20 students
- ❑ 2008/2009- Computer Science – 2 Seminar 8 hours - 20 students

## Università ROMATRE



- ❑ 2008/2009 –Seminar inside Master “Governo dei Sistemi Informativi” 20 students
- ❑ 2009/2010 Seminar inside Master “Governo dei Sistemi Informativi “ starting

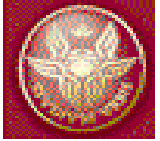
## Università Cagliari



- ❑ 2006/2007 - Computer Science – Full formal course 8 x 3 hours - 91 students
- ❑ 2007/2008 - Computer Science – Full formal course 8 x 3 hours – xx students

Almost 1.000 Students!

# “Sistemi Centrali” at Sapienza University of Rome



- *Classes of Second Cycle Degree (postgraduate) inside Computers Science Department (Third year )*
- *48 Hours ( Lessons +Labs), 6 CFO and 2 visits at Customer Data Centers*
- *Book “ Il Mainframe” for free to each student*
- *Program : Mainframe overview, Hw, SW, zArchitecture, zOS and Subsystem overview (DB2, CICS , IMS, WAS ) zLinux, Virtualization (PR/SM and zVM) Consolidation and TCO*



# Students and “Sistemi Centrali”

- *Attended at IBM z10 Announcement events*
- *Study tours in IBM Almaden (CA) for a Student (A.Piva)*
- *Two Stages on Cell processor for a Student (F.Milo)*
- *2.5K€ Award of G.U.I.D.E Italy for the best thesis on Mainframe.*
- *Dr. Andea Dessi will be awarded for Thesis “Across Platform Server Consolidation” on October 29th*



UNIVERSITÀ DEGLI STUDI DI CAGLIARI  
FACOLTÀ DI SCIENZE MATEMATICHE, FISICHE E  
NATURALI

Corso di Laurea Specialistica in Tecnologie Informatiche

ACROSS PLATFORM SERVER  
CONSOLIDATION

Docente di riferimento:  
Prof. Francesco Maria Aymerich

Candidato:  
Andrea Dessi

ANNO ACCADEMICO 2008-2009

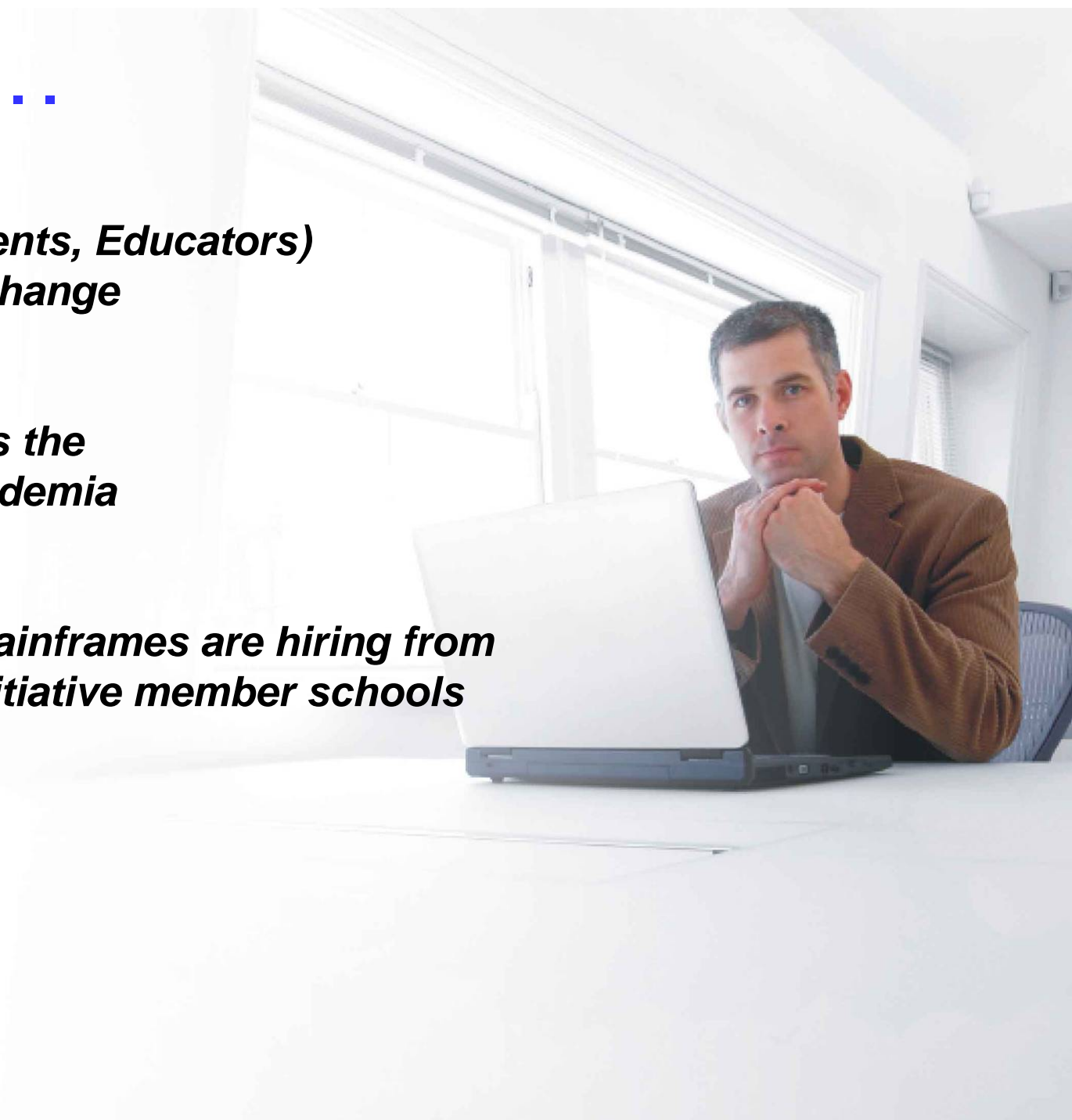
# Prof. Alessandro Mei – Sapienza University of Rome

- *Associated Professor of Computer Science at Sapienza University of Rome*
- *Unique European Professor participating to “System z Academic Initiative Faculty Advisory Council”*
- *Participated events and round tables on mainframe technology .*
- *Consultant on Etherogeneous architecture for important italian public entities*



## Closing thoughts . . .

- *Partnerships (IBM, Clients, Educators) influence curriculum change*
- *'Enterprise' Systems is the preferred name in academia*
- *Companies that run mainframes are hiring from System z Academic Initiative member schools*



# Thank You for your business, please let us know if we can assist you

- **Academic Initiative for the Mainframe**
  - ▶ [ibm.com/university/systemz](http://ibm.com/university/systemz)
- **Assisting the z community**
  - ▶ [zskills@us.ibm.com](mailto:zskills@us.ibm.com)
- **z/OS Entry Level Mastery Exam & DB**
  - ▶ [ibm.com/certify/mastery\\_tests/ovrZ01.shtml](http://ibm.com/certify/mastery_tests/ovrZ01.shtml)
- **zNextGen**
  - ▶ [znextgen.org](http://znextgen.org)
- **Mainframe resources and education**
  - ▶ [ibm.com/systems/z/about/charter/skills.html](http://ibm.com/systems/z/about/charter/skills.html)



***Academic Initiative System z Skills Leader***

**Don Resnik, [resnik@us.ibm.com](mailto:resnik@us.ibm.com)**