The AIMS^2 Program

California State University Northridge

S. K. Ramesh
Dean
College of Engineering and Computer Science

•*Jacaranda Hall- Courtesy Prof. Steven Stepanek*

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Outline

- Overview of CSUN
- What is the AIMS^2 program?
- Goals and Objectives
- Project Activities
- Work in progress

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- **CAMPUS SIZE:** 356 acres
- **FACILITIES:** Over 100 buildings totaling nearly 4 million square feet
- **ENROLLMENT:** 37,000 +
- **Annual Economic Impact of approximately $ 700 Million**
- **CSUN provides 5,800 jobs on campus and the University's economic activity creates an additional 5,700 to 6,000 jobs in the local economy**
- **CSUN is a major producer of basic and applied research averaging over $ 25 million in external grants annually**

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Background Information

- Engineering & Computer Science at CSUN
  - Approx. 3200 students (2500 undergraduate)
  - Five EAC ABET accredited Programs in Engineering and a CAC ABET accredited Program in Computer Science (all undergraduate)
  - ACCE accredited Program in Construction Management Technology Program (undergraduate)
  - New BS degree programs in Engineering Management and Computer Information technology
  - New Masters degree program in Assistive Technology Engineering
- College-Based Centers
  - Ernie Schaeffer Center for Entrepreneurship and Innovation
  - Center for Research and Services
  - Energy Research Center

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Organization

- College of Engineering and Computer Science
  - Computer Science
  - Mechanical Engineering
  - Manufacturing Systems Engr. & Management
  - Electrical & Computer Engineering
  - Civil Engr. & Applied Mechanics

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Department of Education Grant

CSUN Receives $5.5 Million Federal Grant to Increase Number of Minorities Studying in Engineering, Computer Science

http://blogs.csun.edu/news/2011/10/engineering-grant/

The San Fernando Valley Business Journal (10/6) reports, "California State University, Northridge has received a five-year, $5.5 million" HSI STEM grant "to increase underrepresented and low-income students in engineering, science and math." The piece notes that the goal of the ED HSI STEM Program is to "help students transfer from area community colleges and then graduate from CSUN with degrees in engineering or computer science."

Cal State Northridge, Harbor College Awarded Federal Science, Tech Grants.

The Los Angeles Times (10/4, Rivera) "LA Now" blog reported, "Cal State Northridge received $5.5 million from the Department of Education's Hispanic-Serving Institutions STEM program to boost the number of students who transfer from a community college and graduate with degrees in engineering and computer science." CSUN "will work with Glendale Community College and College of the Canyons in Santa Clarita to identify potential students who will receive tutoring, mentoring, research opportunities, career advice and stipends to help pay education costs. Faculty from the three institutions will also collaborate on curriculum." The Times reported

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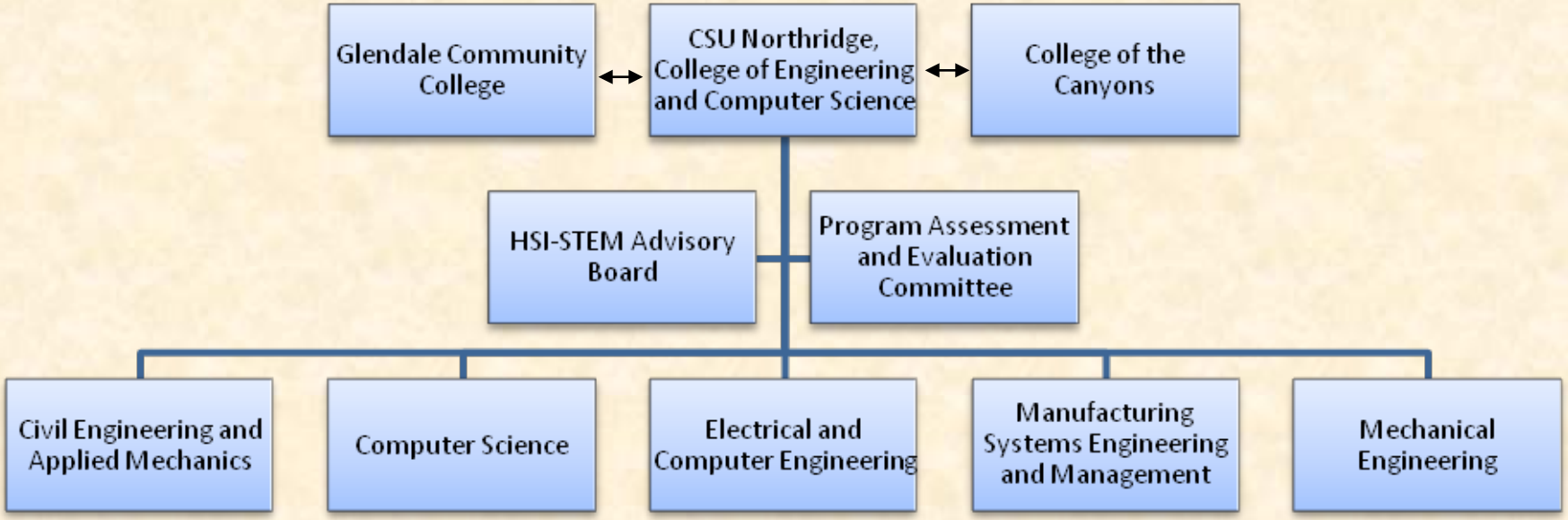
AIMS^2
Attract, Inspire, Mentor and Support Students



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The CSUN 2011 Cohort

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The Project PI and Co-PI's

- **Cal State Northridge**

Ali Amini, Behzad Bavarian, Nazaret Dermendjian, Gloria Melara, Hamid Johari, Nagwa Bekir, Nathan Durdella, Karla Pelletier and S. K. Ramesh (P.I.)

- **Glendale CC**

Kristin Bruno, Scott Rubke, Jan Swinton, and Richard Cortes

- **College of the Canyons**

David Martinez and Susan Crowther

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Goals and Objectives

- To increase the number of Hispanic and low-income students who successfully transfer from Glendale Community College (GCC), and College of the Canyons (COC) to California State University, Northridge, to pursue majors in Engineering and/or Computer Science.
- To increase the number of Hispanic and low-income students who join CSUN as upper division transfer students and graduate with degrees from one of the undergraduate programs in the College of Engineering and Computer Science.
- To develop a model, seamless and sustainable transfer program to assist Hispanic and low-income students to successfully transfer from GCC and COC to California State University, Northridge where they will complete their studies in Engineering and/or Computer Science.

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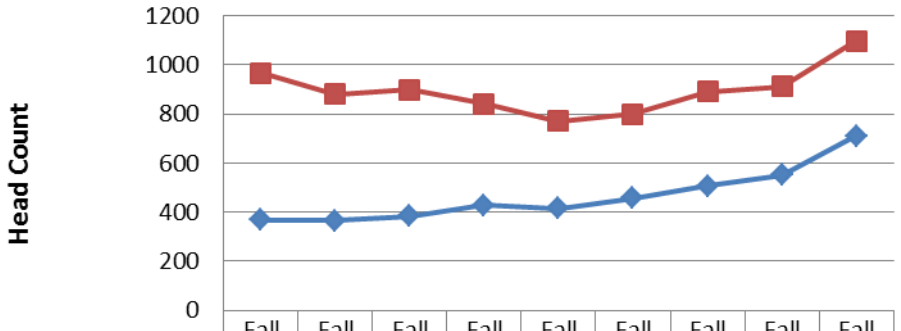
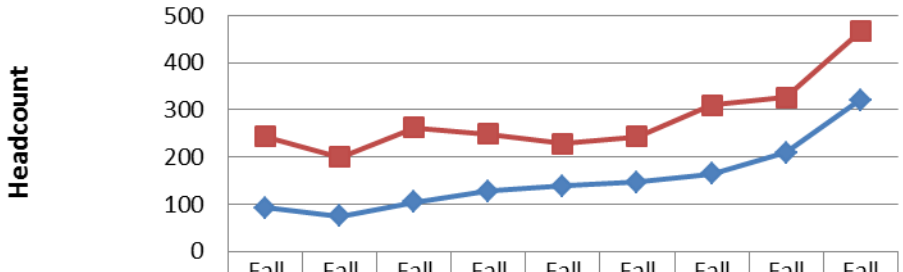
Minority Student Enrollments in CECS



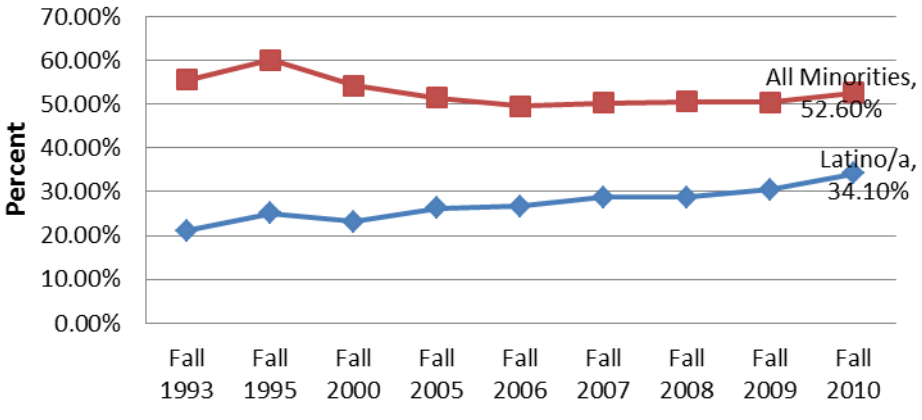
	Fall 1993	Fall 1995	Fall 2000	Fall 2005	Fall 2006	Fall 2007	Fall 2008	Fall 2009	Fall 2010
Latino/a	368	367	385	429	416	456	508	552	711
All Minorities	968	880	899	841	770	799	892	913	1,098

New Undergraduate Minority Student Enrollments

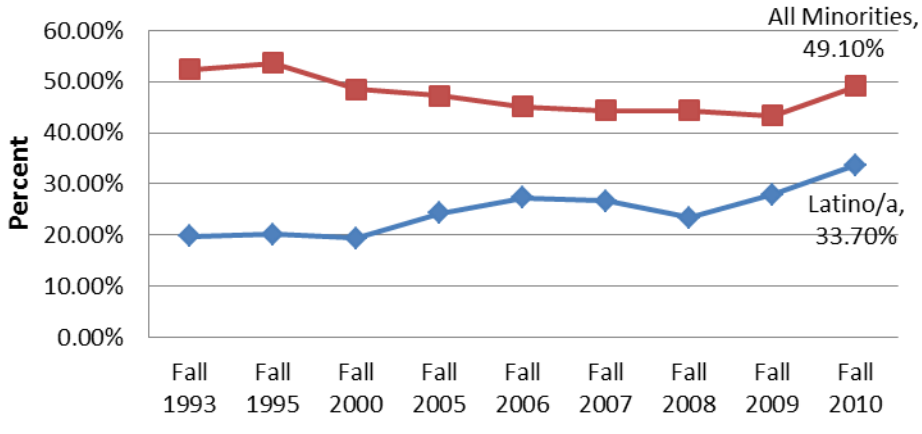


	Fall 1993	Fall 1995	Fall 2000	Fall 2005	Fall 2006	Fall 2007	Fall 2008	Fall 2009	Fall 2010
Latino/a	92	75	105	128	138	147	164	210	321
All Minorities	243	200	263	249	228	244	310	327	467

Minority Enrollments as % of CECS undergraduates



% of New Undergraduate Minority Student Enrollments



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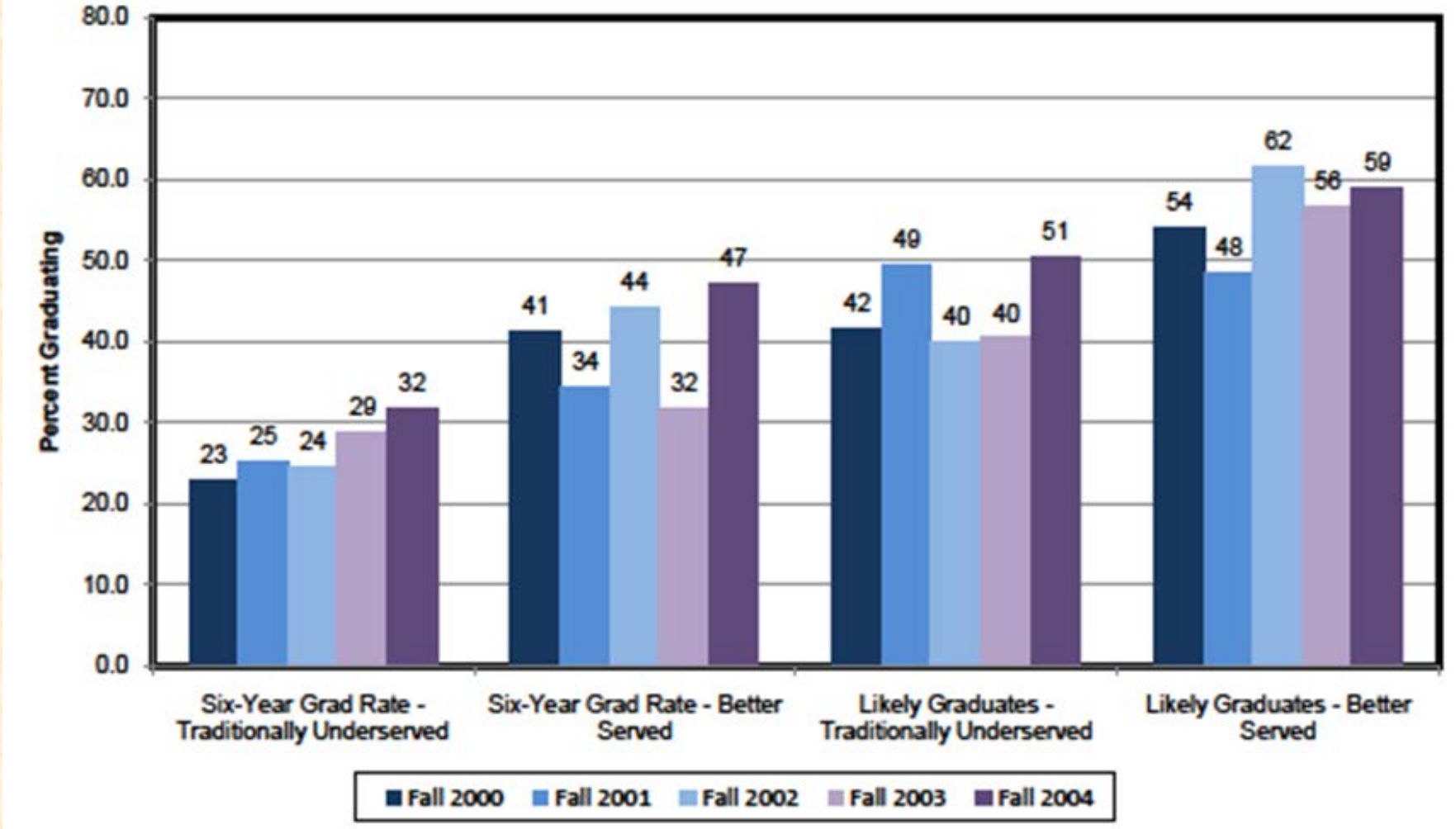

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Project Activities

- Tutoring to improve student performance in preparatory Math and Science courses.
- Advising and tracking of students in cohort
- Work closely with faculty and staff in feeder community colleges to develop seamless articulation agreements, especially for students transferring from 2 year colleges to CSUN.
- Create a mobile digital environment with Tablet PCs and appropriate software, so that the project team can work with the cohorts to enhance communication, engagement, collaboration and creativity, and instant learning assessment.
- Expand Facilitated Academic Workshops (FAW) in required introductory courses and key upper division courses offered by the college's programs
- Faculty/Peer mentoring and career advising of students in the cohort
- College wide events focused on careers and jobs such as the biannual Tech Fest events held in February and September.
- Provide students with opportunities to work on hands-on projects and research activities that encourage them to stay connected with their majors

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Hands-on Project Based Learning

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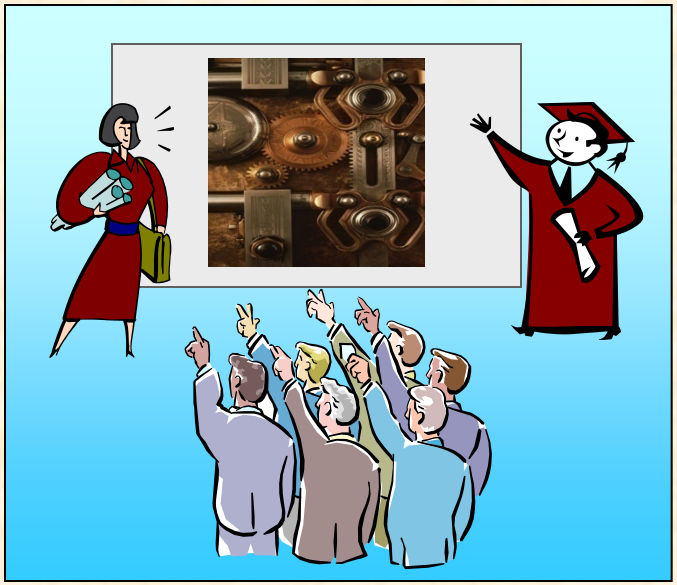
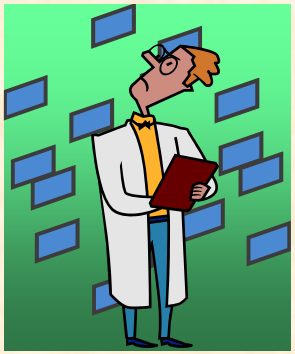
•Design Clinics

What Is It?

- A program to bring industry, students, and faculty together into the classroom
- Sponsors present problems
  - Product development
  - Technology insertion
  - Trade study ….
- College presents design clinic proposal
  - Faculty contact
  - Solution ideas
  - Schedule and budget





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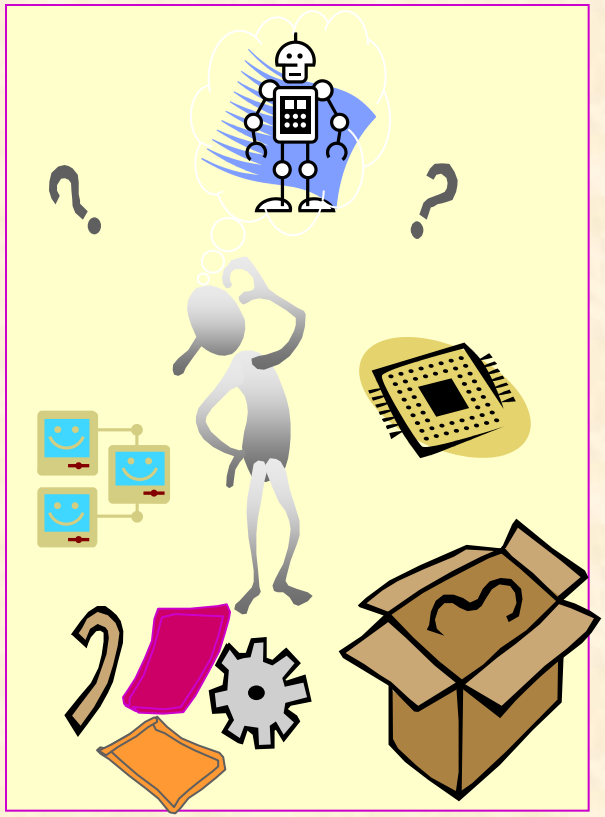
A Win-win Program

- Adds fun and excitement to the curriculum
- Students love to tackle real-world engineering projects sponsored by industry and government
- Students often create innovative designs, develop new processes that benefit the sponsors



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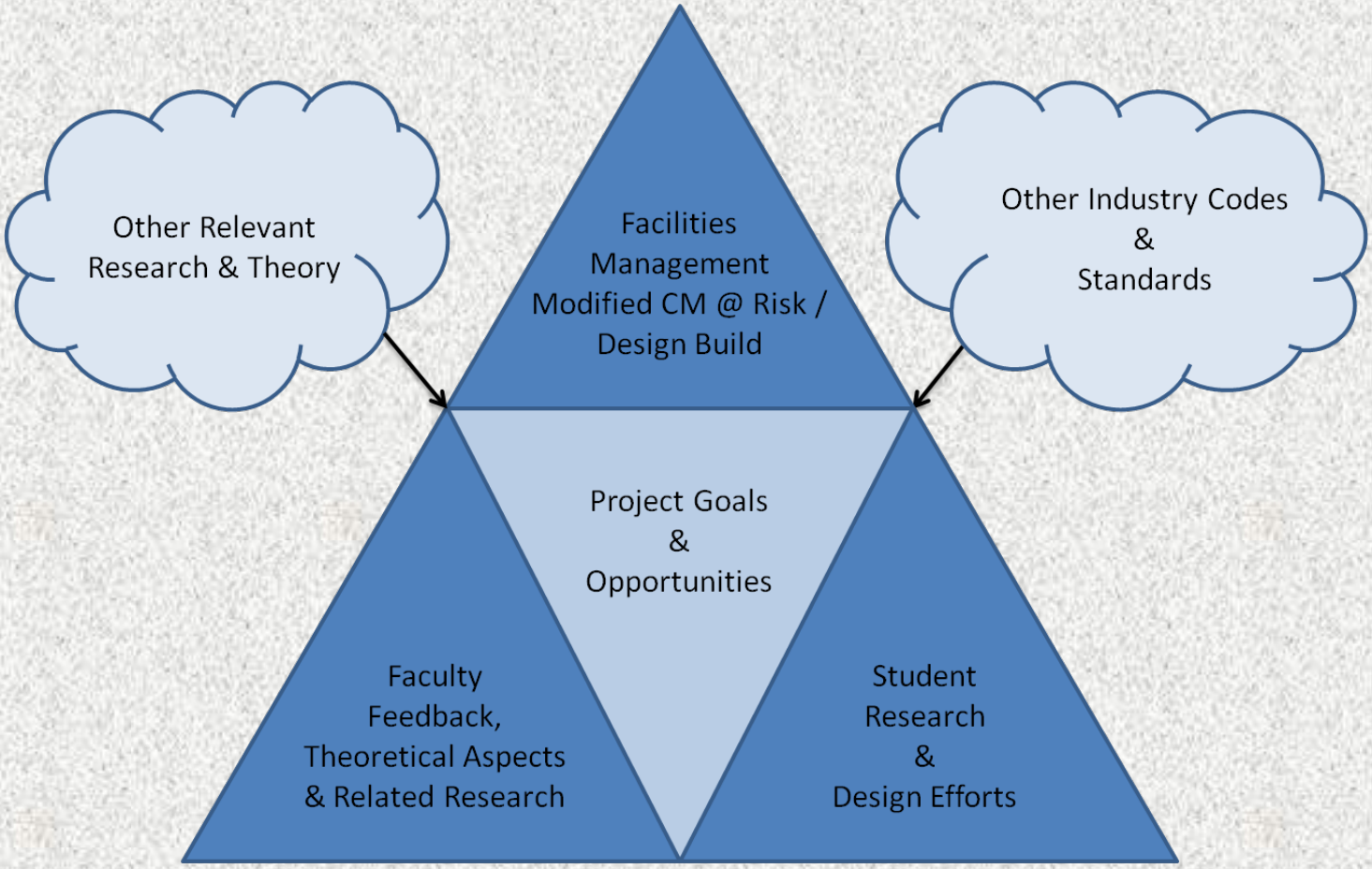
STUDENT DESIGN TEAM MODEL



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•SHPE National Design Competition-October 2011

- **First Place**: "Bench Press Power Generator" Team Members: Andres Lopez, Jonathan GJemso, Evangelina Garcia and Michael Marchesian
- *Faculty Advisors: Prof. Stewart Prince and Prof. Preminger*
- **Second Place**: "Powered Footwear" Team Members: Ana Avelar, Eliud Munguia, Melissa Martinez
- *Faculty Advisors: Profs. Sharlene Katz and James Flynn*

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AHETEMS/SHPE National Design Competition

Oct 28-31, 2009

First Place Winners

“Floating Cabinet Design”

$ 3,000

Team Members: *Eduardo Ekmekgian, Mario Servin, Maurycy Sarosiek*
SHPE Team Advisor: Hector Perez
SHPE Faculty Advisor: Prof. Shraibati
Faculty Advisors: Profs. Robert Ryan, Mike Kabo, CT Lin

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Tech Fest – Biannual Event

- Typically 35-40 companies attend
- Information Sessions (Fall 11-Spring 12)
  - JPL, INTEL, Google, Sysmind, Boston Scientific, Well Point, NAVAIR, Southern California Gas Company
- Employer Feedback

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Projects Showcase event !!! April 20, 2012

See http://www.ecs.csun.edu/ecs/sdps/ for details

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Thank you on behalf of The AIMS^2 Project Team

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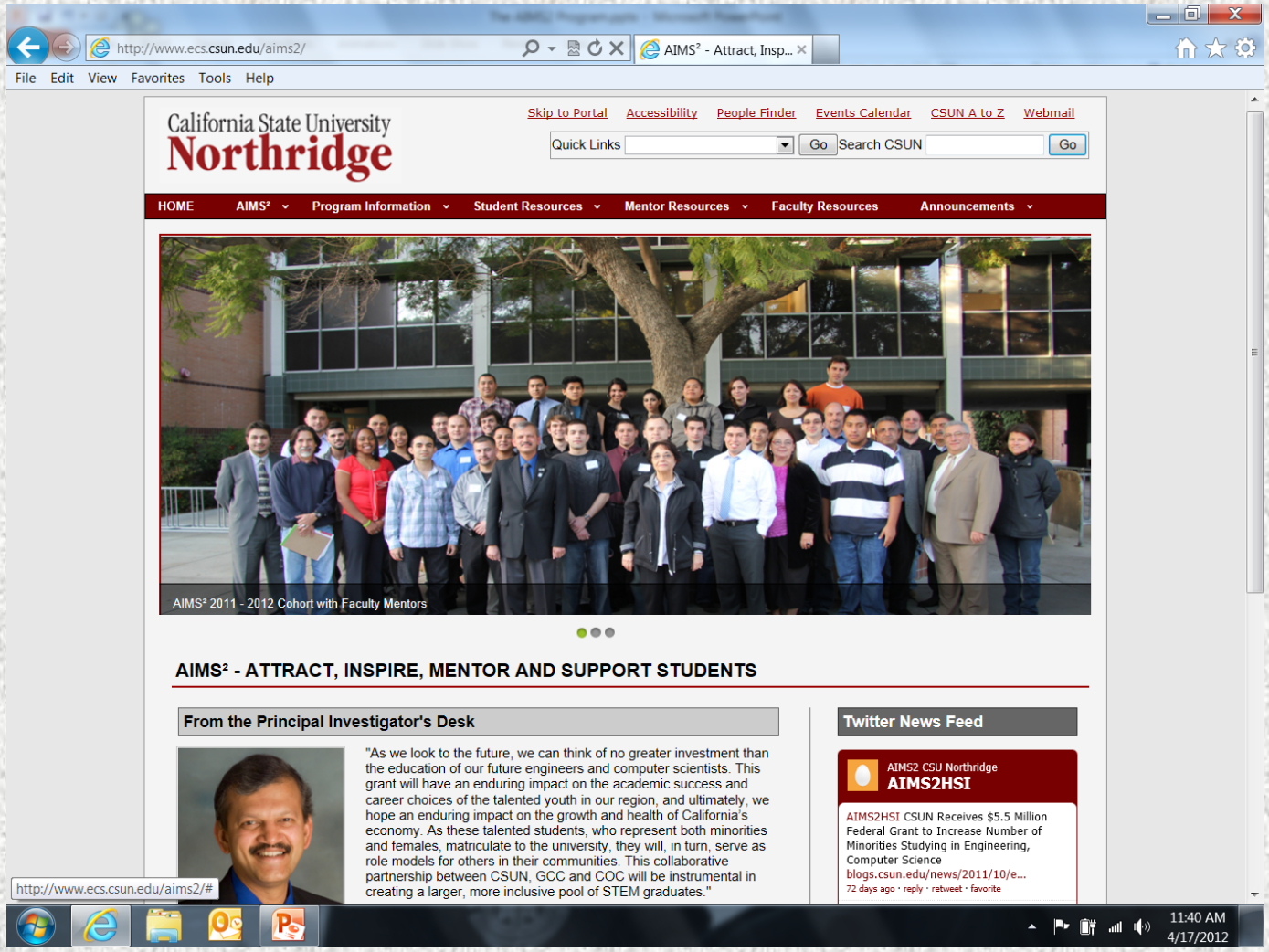
AIMS² Project Website: http://www.ecs.csun.edu/aims2/



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For Additional Information..

CECS Web URL:

http://www.csun.edu/ecs/

College e-Newsletter:

http://www.ecs.csun.edu/ecs/enews

Or contact CECS Dean:

S. K. Ramesh – (s.ramesh@csun.edu)