Veterans to Engineering

California State University Northridge

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•*Jacaranda Hall- Courtesy Prof. Steven Stepanek*

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Outline

- Brief overview of CSUN
- Governor's Engineering Initiative
- Apprenticeship model
- Background information on CSUN's engineering program
- Veterans to Engineering examples from CSUN, COC and Stellar

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CSUN and Student Veterans

- Part of the 23-campus Cal State system, is one of the largest single-campus universities in the nation and the only public university in Los Angeles' San Fernando Valley, enrolling over 36,000 students.
- Annual economic impact of nearly $700 million and responsible for nearly 12,000 jobs, through direct employment and local spending.
- Major producer of basic and applied research, with over $ 30 Million in external grants for 2009
- CSUN is home to over 400 student Veterans (up 25 % from 2009)
- Programs to recognize and support Veterans
  - Campus Veterans Coordinator
  - Chartered Veteran Students Organization in 2010
  - Annual Outstanding Graduating Veteran Award ($ 1,000 scholarship) – Supported by the faculty who raised $ 20,000 to support the award
  - Outstanding Veteran Graduating Senior ($ 1,000 scholarship) – San Fernando Valley Employer Advisory Council

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Governor's Engineering Initiative

- *The gap between California trained engineers and industry demand will reach nearly 40,000 by 2014.*
- *Announced in December 2007, the Governor's Engineering Initiative seeks to bring 20,000 new engineers into the state's workforce over the next decade through new partnerships with schools, the military and the private sector.*
- *The Governor's Engineering Initiative seeks to establish programs at California Community Colleges (CCC), the California State University (CSU), and the University of California (UC) to expedite certification for veterans with engineering backgrounds.*
- *The program targets returning veterans with GI bill benefits and build upon the Governor's Troops to College initiative.*
- *The program is aligned to academic degree and certificate programs to build a pipeline to engineering careers.*
- *The work processes that make up the on-the-job training, as well as the curriculum, are driven by the needs of the employer*

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The Apprenticeship Model

- The program would engage veterans to pursue:
  - An engineering apprenticeship leading to a certificate or an Associate degree;
  - A 2-year Associate degree in an engineering or engineering-related discipline;
  - A 2+2 degree, where they receive an Associate degree on their way to attaining a Baccalaureate degree;
  - A 4-year Baccalaureate degree; or
  - A 2-year Masters degree

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Profile of the Veterans and Service Members

- The majority are high school graduates, with an average age of 27 years.
- Gender Distribution: Women – 16 % ; Men – 84 %
- Veterans and service members generally have demonstrated leadership skills
- Vast majority of the Veterans have been exposed to highly advanced technologies during their service.

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Organization

College of Engineering and Computer Science

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

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Background Information

- Engineering & Computer Science at CSUN
  - Approx. 2600 students (1800 undergraduate)
  - Five EAC ABET accredited Programs in Engineering and a CAC ABET accredited Program in Computer Science (all undergraduate)
  - Seeking ACCE accreditation for Construction Management Technology Program (undergraduate)
- College-Based Centers
  - Ernie Schaeffer Center for Entrepreneurship and Innovation
  - Center for Research and Services
  - Energy Research Center

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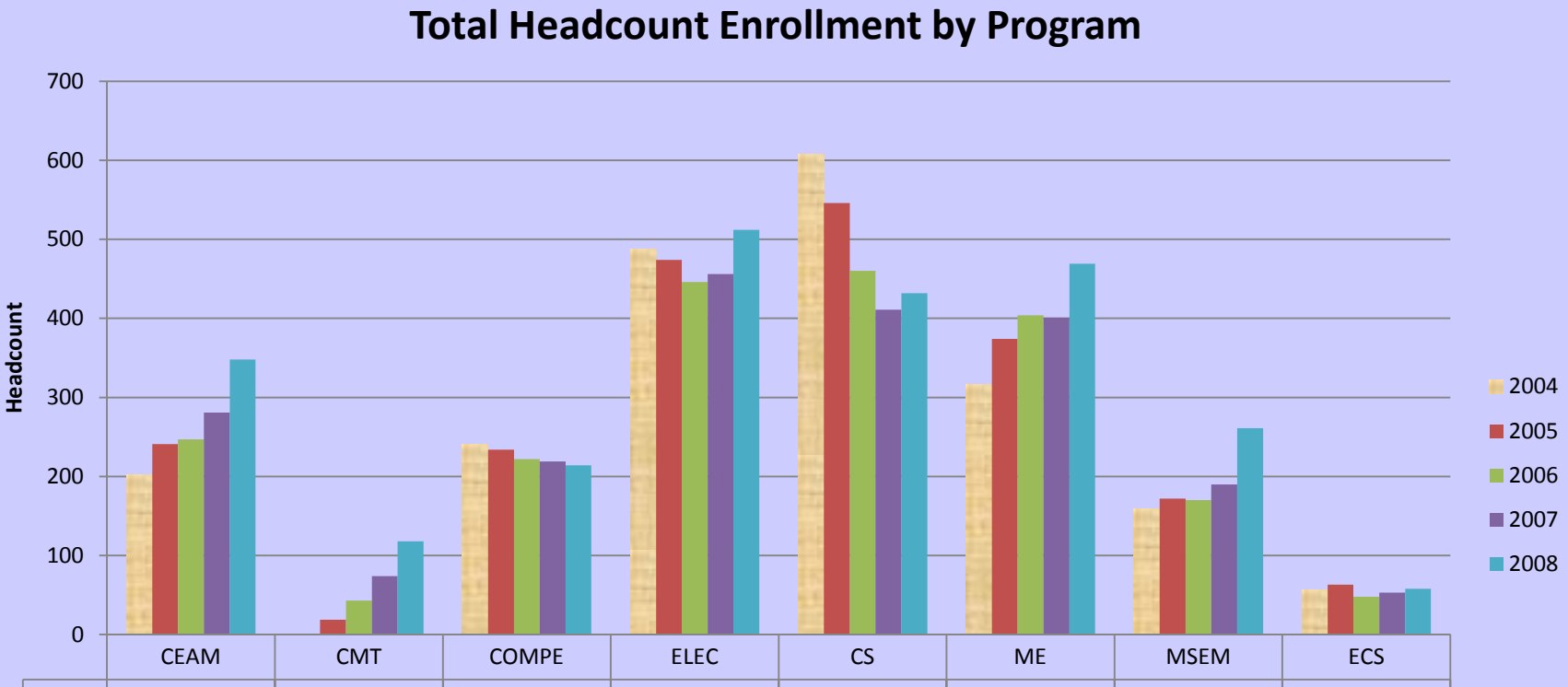
Enrollment Trends in ECS: Continued..



	CEAM	CMT	COMPE	ELEC	CS	ME	MSEM	ECS
2004	202	0	241	488	608	316	159	57
2005	241	19	234	474	546	374	172	63
2006	247	43	222	446	460	404	170	48
2007	281	74	219	456	411	401	190	53
2008	348	118	214	512	432	469	261	58

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CSUN's undergraduate engineering programs are the fastest growing in the nation in the past 3 years (96% growth)- ASEE March 2010

FASTEST-GROWING UNDERGRADUATE ENGINEERING SCHOOLS: 2005 TO 2008

	School	Growth in Bachelor's Degrees*	B.S. Degrees: 2008	B.S. Degrees: 2005
1.	California State U., Northridge	96%	190	97
2.	South Dakota State University	82%	162	89
3.	California State U., Long Beach	70%	350	206
4.	University of Texas, Arlington	59%	295	186
5.	Univ. of California, Riverside	57%	182	116
6.	City College of the CUNY	54%	249	162
7.	SUNY — Binghamton	49%	218	146
8.	University of Connecticut	44%	272	189
9.	Syracuse University	43%	173	121
10.	George Mason University	42%	317	224

*excluding all computer science
Schools must have awarded at least 75 B.S. degrees in 2005. 215 schools met this criterion.

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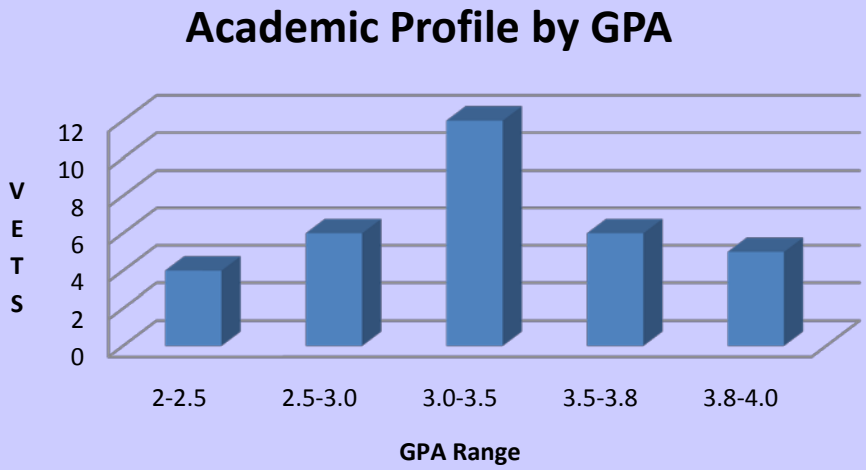
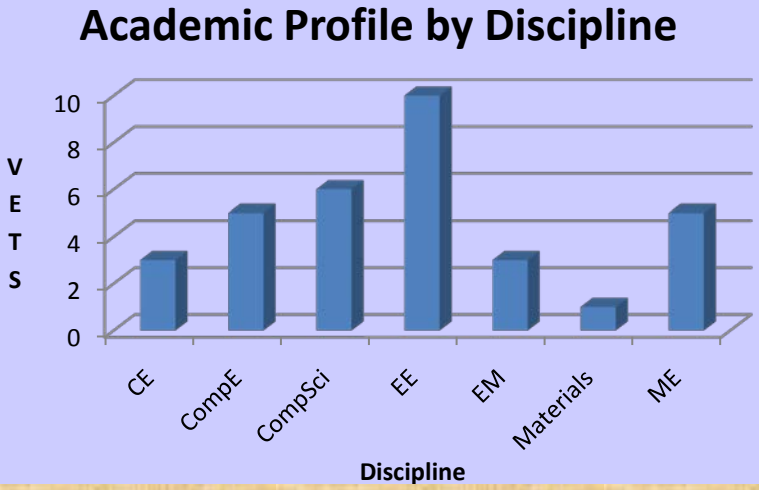
Student Profile (Veterans in CECS)





- Snapshot from Spring 2009:
- Veterans enrolled in engineering programs:
- Civil, Electrical, Computer, Mechanical, Materials, Engineering Management, and Computer Science
- Over two-thirds of the Veterans have cumulative GPA's of 3.0 or higher
- 18% of the Veterans are enrolled in Graduate programs

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Recruitment and Selection

- Campus Veterans Affairs Coordinator identifies all eligible students in the college
- Dean's office reviews Degree progress reports (DPR's) of all eligible students
- Students who match employer's apprenticeship requirements are invited to apply and submit a resume and letter of interest
- Responses are collected and submitted to EDD to schedule follow up interviews with employer

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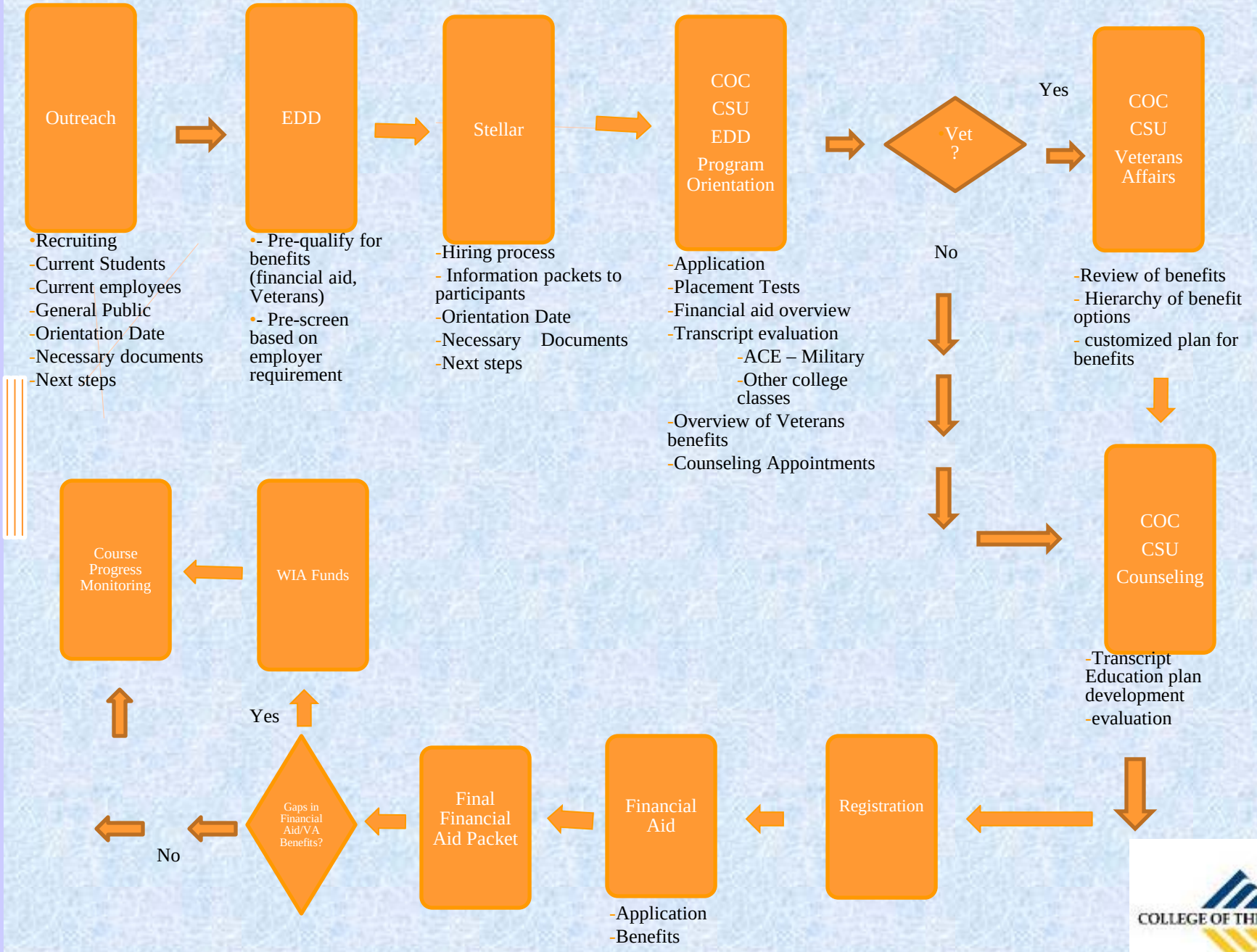
Apprenticeship Agreements

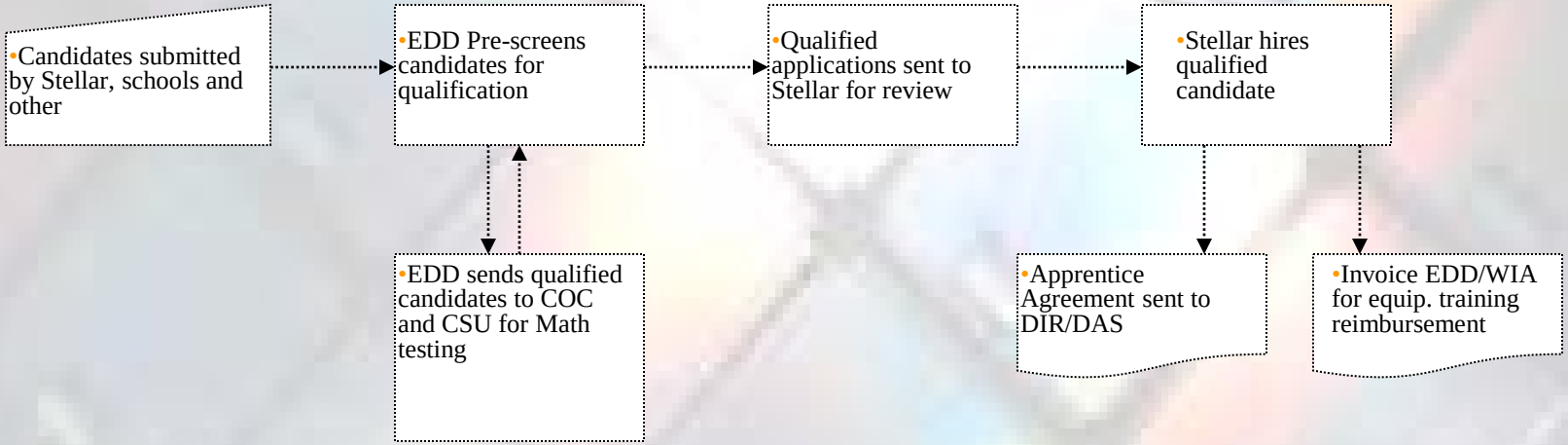
- CSUN has established agreements with:
  - Stellar Microelectronics
  - Boston Scientific
  - Advanced Bionics
  - Northrop Grumman

•Engineering Apprenticeship Program Process



COLLEGE OF THE CANYONS

STELLAR™
MICROELECTRONICS



Apprentice Flowchart

•Macro Ideas
•Micro Solutions

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For Additional Information..

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CECS Web URL:

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