Comments on the ATE Draft Report:  
Response from Cal Poly SLO

“Workforce and Economic Development Needs,  
Accountability Measures and Strategies”

Cal Poly, San Luis Obispo  
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Introduction

The CSU ATE draft report highlights several important areas in which public higher education in California is falling short in meeting projected state workforce and economic development needs.

• The report notes that “California must double its current rate of college degree production in the next fifteen years” to meet the state’s projected need for college educated workers (p. 5).

• The report points to emerging shortages of graduates in disciplinary areas critical to the state’s economy, including “teaching, nursing, science, technology, engineering and mathematics (STEM) areas, and other professional fields” (p. 6).

• The report expresses concern regarding emerging shortages of “the research and development that will support economic growth” (p. 6).

Increasing production of baccalaureate degrees, expanding enrollments and degrees in strategically critical disciplines and expanding applied research are three critically important priorities for the CSU and for California. The CSU should consider amending its accountability indicators to establish bolder and more measurable benchmarks proportionate to the importance of these priorities. The CSU should also consider promulgating strategies that are sufficiently robust to provide a credible response to the priorities identified.

Increasing Baccalaureate Degrees

Establishing Measurable Benchmarks

The report proposes improving degree productivity as one of four accountability indicators for ATE goal #1: “Access and Success.” The CSU should be more explicit about its degree production goals – whether that amounts to a doubling of degree production in fifteen years or something less than that.
Strategies for Increasing Degree Production

The CSU will face significant challenges in increasing its rates of degree production, particularly if it intends to double the degrees it produces:

- Doubling of degrees in 15 years would require an annual rate of increase of nearly five percent, while the conservative projected average annual rate of enrollment increase for the CSU cited by the ATE draft is only about 2.5 percent.

- While the Department of Finance projects that the state population will grow from 34 million in 2000 to 44 million in 2020, over 70 percent of this growth will occur in the Hispanic population, which historically has had relatively low rates of educational participation and completion (State of California, Dept. of Finance, Population Projections for California and Its Counties 2000-2050, Sacramento, California July 2007).

- To achieve substantial increase in the production of baccalaureate degrees will require a robust set of P-16 educational strategies for attaining significant improvements in:
  - Student and parental awareness of educational opportunities and prerequisites for college success.
  - Rates of high school graduation.¹
  - Rates of university eligibility.²
  - Rates of college participation.³
  - Rates of graduation from college.⁴


² A 2005 CPEC study reported rates of UC and CSU eligibility for various racial and ethnic sub-groups for the class of 2001 and for the class of 2003. For the 2003 class, the rates of CSU eligibility were: Asian 78.9%; White 50.5%; American Indian 26.3%; African American 24.8%; and Latino 22.5% (CPEC. “University Eligibility Study for the Class of 2001,” Commission Report 05-09, September 2005.)

³ A 2006 CPEC working paper reported college-going rates for 2005 California public high school graduates. The combined rates of attendance at the UC/CSU for various sub-groups were as follows: Asian 35%; White 15%; African American 13.1%; Native American 11.7%; and Latino 10.9%. (CPEC “College-Going Rates of California Public High School Graduates: Statewide and Local Figures,” Working Paper WP/06-03, Sept. 2006.)

⁴ According to CSU’s Office of Analytic Studies, six-year graduation rates for first-time freshman students from the 2000 cohort were as follows for various sub-groups: White 53.7%; Asian or Pacific Islander 48.5%; American Indian 42.3%; Hispanic 42.0%; and. African American 31.8%. (Source: www.asd.edu/curse/tft/2005htm/sys.htm)
Consideration should be given to establishing quantitative targets for improvement in each of these areas and to providing detailed timelines and strategies for achieving these improvements, including more detailed proposals for engaging and collaborating with the University of California, California Community Colleges, the P-12 education system, and business and non-profit sector partners. Strategies should include provision for arriving at realistic estimates of physical, personnel and other resources required to achieve progress across the P-16 continuum and to expand the scale and the effectiveness of education in the CSU System.

**Increasing Enrollments and Degrees in Disciplinary Areas Critical to the State’s Economy**

**Establishing Measurable Benchmarks**

The draft ATE report proposes expanding enrollments and degrees in a number of disciplinary areas critical to the state’s economy:

- Nursing
- Engineering
- Professional Science Programs
- Other STEM Disciplines and Professional Degree Programs (based on ongoing assessment of employer needs)

The CSU has already established numeric targets for increasing the annual production of science and mathematics teachers. This has provided a powerful stimulus to science and mathematics teacher preparation program innovation and expansion. Consideration should be given to establishing similar targets for enrollments and degrees in other disciplinary areas identified as critical to the state’s economy, including those noted above and potentially others as well, such as: agriculture, architecture and environmental design, business/technology management, and teaching. (Teacher production targets should include but not be limited to science and mathematics, recognizing that helping to ensure that the state has qualified teachers in every classroom is perhaps the single most important thing the CSU can do to promote increased rates of educational participation and success).

**Strategies for Increasing Enrollments and Degrees in Disciplinary Areas Critical to the State’s Economy**

The CSU should build into its strategies for expansion in overall degree production detailed subsidiary strategies for promoting student awareness of and preparation for educational and career paths in disciplinary areas critical to the state’s economy. These strategies should be developed across the full P-16 educational continuum and should specify the nature of collaboration with other educational segments as well as other private and public-sector partners.
The unique resource challenges associated with expanding program offerings in STEM and professional disciplines should be identified. The insufficiency of present marginal cost formulas for funding enrollment growth in these disciplines should be noted. Strategies should be proposed for funding the specialized modes of instruction (undergraduate research, field work, clinical training, etc.) and for providing the associated instructional spaces and other resources (laboratories, specialized classrooms, agriculture and other field environments, specialized equipment, etc.). These funding strategies should include both public and private sources.

**Expanding Applied Research**

*Establishing Measurable Benchmarks*

The draft ATE report proposes expanding “funding for research and development and . . . applied research” in the CSU. The CSU has already identified applied research areas in which it seeks to make special contributions: agriculture, marine science and biotechnology. The ATE draft should make more explicit reference to these and other specific areas of applied research (e.g. environmental sustainability) and reference the future vision for each area, making clear the contribution this research is making (and will make) to California and its economy. The report might also describe the current scope of applied research (as measured, for example, by government and sponsored research funding) and propose targets for its expansion.

*Strategies for Expanding Applied Research*

The educational value and role of applied research should be acknowledged more explicitly. Strategies for strengthening the role of research in education should be proposed, including the wider adoption of project-based learning in CSU curricula.

Similarly, the importance of a robust research climate to faculty recruitment and development should be emphasized as should its role in sustaining the California economy.

The CSU should build into its strategies for expanding applied research by faculty and students, with specific attention to the policies and resources required to achieve this important objective. Currently, for example, State capital funding models for the CSU do not recognize adequately the need for dedicated research and project space. Moreover, the state’s general fund budget formulas for the CSU do not acknowledge sufficiently the funding required to support faculty and student research in labs and other settings and to allow faculty dedicated time for scholarly and creative activity.
Institutional Missions

Institutional Differences

For many reasons, the universities comprising the CSU must maintain individual characters and cultures. For example, the polytechnics educate a large fraction of the California science and engineering professionals. Because of this polytechnic focus, they have, necessarily, many characteristics that differ from universities with other foci.

Polytechnic Universities

In today’s competitive global economy, the State’s economic success depends on its ability to remain a leader in scientific and technological innovation. This in turn requires a world class science and technology workforce and an educated, technologically literate citizenry with an appreciation of the challenges of remaining competitive in a rapidly changing global environment.

From Cal Poly’s inception in 1901, it has had a special responsibility to support the economic welfare and progress of the State of California. In this broad context, Cal Poly has a special role to play, as a polytechnic, comprehensive university. It is important that the CSU System continue to recognize and support Cal Poly’s distinctive mission, the special resource needs associated with it, and their implications for funding formulae, space formulae and workload formulae.

Concluding Remarks

The ATE draft identifies critically important challenges that California must address if we are to sustain and improve the skill levels of our workforce, the competitiveness of our economy and the standard of living and welfare of our population. The goals, accountability measures and strategies proposed by the CSU should be sufficiently explicit, bold and robust to offer a credible response to these challenges. By outlining more explicit and ambitious goals and benchmarks proportionate to the state’s needs and priorities, the Access to Excellence strategic plan will communicate more effectively to policymakers and the general public the benefits to be gained from investment in the growth, expansion and qualitative improvement of the CSU System.