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July 6, 2011

The Honorable Mark Leno
Chair, Joint Legislative Budget Committee
1020 N Street, Room 553
Sacramento, California 95814

Dear Senator Leno:

Pursuant to Section 66721.8 of the Education Code, enclosed is the University of California's interim progress report to the Legislature on *Implementing AB 2302 (Fong): Associate Degree Pathway to the University of California.*

If you have any questions regarding this report, Associate Vice President Debora Obley would be pleased to speak with you. She can be reached by telephone at (510) 987-9112, or by email at Debora.Obley@ucop.edu.

With best wishes, I am,

Sincerely yours,

Mark G. Yudof
President

Enclosure

cc: Mr. Gregory Schmidt, Secretary of the Senate
Ms. Jody Martin, Joint Legislative Budget Committee
Ms. Tina McGree, Legislative Analyst's Office
Ms. Sara Swan, Department of Finance
Mr. Dotson Wilson, Chief Clerk of the Assembly
Ms. Amy Leach, Office of the Chief Clerk of the Assembly
Ms. Diane Anderson, Legislative Counsel Bureau
Provost and Executive Vice President Lawrence Pitts
Executive Vice President Nathan Brostrom
Vice President Patrick Lenz
Vice President Judy Sakaki
Associate Vice President and Director Steve Juarez
Associate Vice President Debora Obley
Executive Director Jenny Kao

Interim Progress Report on Implementing AB 2302 (Fong): Associate Degree Pathway to the University of California

Legislative Report

June 2011

An investment in UC pays dividends far beyond what can be measured in dollars. An educated, high-achieving citizenry is priceless.

UNIVERSITY *of* CALIFORNIA

EXECUTIVE SUMMARY

In September of 2010, Governor Schwarzenegger signed into law two pieces of legislation on the California Community College (CCC) transfer function in California: Senate Bill 1440 (Padilla) and Assembly Bill 2302 (Fong). Together the bills create an associate degree pathway for transfer in California. The second bill – AB 2302 – requests UC participate in this path in order to guarantee eligibility for admission, as well as continue its work on the Transfer Admission Guarantee program and statewide articulation of community college courses (see Appendix 1). The University has been an enthusiastic supporter of both bills and of the smoothing of the transfer function in California.

Section 66721.8 of the California Education Code (Chapter 427, AB 2302, Statutes of 2010) reads in part:

> "(d) The University of California is requested to provide an interim progress report on its review of the various transfer pathways discussed in this section to the relevant policy and fiscal committees of the Legislature on or before June 30, 2011, and to provide a final report to those committees, with specific findings regarding the University of California's implementation of those transfer pathways, no later than December 31, 2011."

In compliance with AB 2302, this report outlines the University's progress in exploring the implementation of a systemwide policy on transfer admission that utilizes the associate degree pathway. Highlights of this progress include:

- **UC Common Core of Major Preparation**: UC identified a common core of major preparation that students should complete in seven disciplines in order to be both well-positioned to gain admission and well-prepared to complete a degree in a timely fashion.

- **Guarantee of Comprehensive Review for Admission:** AB 2302 requests UC guarantee eligibility for admission to students with approved associate degrees. The Board of Admissions and Relations with Schools (BOARS) is currently discussing a policy that would guarantee *a comprehensive review* of any transfer student's application for admission who has completed an approved associate degree for transfer (as outlined by SB 1440) in the major to which they are applying or who has completed the relevant UC common core with a grade point average above a specified level. This policy would parallel the admission policy at the freshmen level, which promises a comprehensive review of students' applications if they meet minimum criteria (see Appendix 2). BOARS also strongly endorses the Transfer Admission Guarantee (TAG) program as a way to advise transfer students to prepare for admission and timely degree completion.

- **Feedback Provided to California Community Colleges:** While the promise of a review currently under consideration (above) would apply to students who earn an associate degree approved under SB 1440, the University has shared its faculty's feedback on the Transfer Model Curricula that have been developed or are currently under development (see Appendix 3).

- **Improved Online Transfer Student Counseling Tools:** UC is planning to develop a dynamic website that provides students with advice tailored to their interests as well as their stage in the transfer preparation process.

- **Continued Improvement of Existing Transfer Efforts:** While the development of an associate degree pathway embodied in SB 1440 and AB 2302 is the newest feature of the transfer function, it is important to remember that the bill also asked UC to strengthen existing initiatives in transfer. The University has done so with its Transfer Admission Guarantee (TAG) Program, statewide articulation, and support for ASSIST. The TAG application was moved online, which provides instant feedback on basic eligibility and has the strong potential for an online counseling tool. All three segments of public higher education have committed funding and staff resources to the development of an improved and expanded ASSIST database (www.assist.org). Currently, completion of an associate degree is not an admission requirement at the University.

Given the specialized nature of UC's degrees, the rigor of the upper-division coursework, and the way in which degree requirements are tied closely to individual campus research priorities, the University's participation in the associate degree pathway will differ in some significant ways from the way in which the California State University will participate. Namely, while the University is aiming to guarantee a comprehensive review for admission to transfer students who have completed associate degrees for transfer in similar majors, it will not be able to guarantee selection for admission. Furthermore, it will not be able to guarantee that students will be able to graduate within 60 units after transfer in all majors on all campuses.

Finally, it is important to remember that UC currently is very successful in its support of transfer in California. In 2009-10, UC enrolled 30% more transfers (16,784) than it did ten years earlier (12,908). In fact, it has continued to increase the number of new transfers in the past two years at the same time that it has been forced to curtail the enrollment of new California freshmen.

Transfer students who come to UC perform well, persisting and graduating at rates similar to students who enter as freshmen. The average time-to-degree for transfer students is just over two years (2.4) after coming to the University (average time-to-degree for freshmen is 4.2 years). Transfer students continue to be a successful and valued part of the UC community.

BACKGROUND

In September 2010, Governor Schwarzenegger signed into law two pieces of legislation on the California Community College (CCC) transfer function in California: Senate Bill 1440 (Padilla) and Assembly Bill 2302 (Fong). The first bill requires that the California State University (CSU) guarantee admission and junior-level status to CCC students who complete an associate degree within a specified major. The second bill – AB 2302 (Fong) – requests UC design a similar path in order to guarantee eligibility for admission, as well as continue its work on the Transfer Admission Guarantee program and statewide articulation of community college courses (see Appendix 1). The University of California supports the development of the associate degree pathway for three reasons:

- The State has signaled its strong interest in developing a transparent pathway for transfer between the CCC and the public four-year institutions which facilitates students earning an associate degree along the way.
- To the extent that potential CCC students are unclear about which campus or segment of public higher education they are interested in transferring to, the associate degree pathway provides a clear roadmap early in their careers.
- To the extent that students choose the associate degree for transfer route – which includes at least 18 units of major preparation – the University may see better-prepared students in disciplines where major preparation is not currently a pre-requisite for admission. This could have the effect of reducing time-to-degree for transfer students in these majors, improving efficiency and saving money for both the students and the State.

As with all decisions on student transfer, in exploring UC participation in the associate degree for transfer pathway, the University focused on both simplifying the process for students before transfer while also ensuring adequate preparation for success in the major after transfer (see Principles below).

PRINCIPLES

The following principles guide UC's participation in developing transfer eligibility based upon the associate degree.

- **Faculty-driven:** Admission and curricular criteria are the purview of the faculty. As such, it is appropriate for the faculty, with staff support, to develop eligibility standards.
- **Preparation:** Transfer paths developed should be constructed so as to adequately prepare transfer students for upper-division coursework in their selected major.
- **Student-Centered:** The associate degree path to transfer admission must be designed to provide a simple, clear message to CCC students about what is required.
- **Extensible Participation:** The University should explore where it can participate in the Associate Degree pathway immediately, e.g., some majors or some campuses, and explore expanding participation over time.

- **Collaborative Approach:** UC faculty and staff should look for collaborative ways to develop the pathway with their CSU and CCC counterparts.

PROGRESS

Given that transfer students arrive mid-way through their degree, it is entirely appropriate UC begin consultation with faculty groups by discipline. Beginning in fall 2010, the University of California Office of the President convened faculty from all nine undergraduate campuses to discuss lower-division major preparation in five disciplines: mathematics, biology, history, psychology, and computer science; sociology and physics convened in spring 2011. The goal of the meetings was to identify whether a common core set of courses existed at UC campuses that could serve as the basis for an associate degree within the major. Major-specific summaries of these meetings are included in this report.

The University's strategy was to conduct this internal work before engaging with the CCC or CSU. At the same time, however, the CCC and CSU have been quickly developing Transfer Model Curricula (TMC) that will serve as the basis for associate degrees as mandated by SB 1440. Feedback from UC faculty has been summarized by the Office of the President for the faculty and administrators at the CCC.

Finally, the Board of Admissions and Relations with Schools (BOARS), the UC-wide faculty committee with responsibility for University admissions policy, is in the process of considering a systemwide policy to guarantee a comprehensive review of any application from a student who has earned an associate degree for transfer.

OUTCOMES

There are four specific outcomes of this work that are either in progress or completed.

1. **UC Common Core of Major Preparation** *(complete in convened majors)*: The first outcome of the meetings was to identify a common core of major preparation that students should complete to help them both be positioned to gain admission and complete a degree in a timely fashion. In most cases, students should still consult UC campus-specific lower-division requirements to be most competitive for admission and well-prepared for timely graduation. Nevertheless, the common core will serve as an effective roadmap for students early in their career.

2. **Guarantee of Comprehensive Review for Admission** *(under review)***:** AB 2302 requests the University to guarantee eligibility for admission to students with approved associate degrees. The UC Board of Admissions and Relations with Schools (BOARS) is currently discussing a potential policy that would guarantee *comprehensive review* of the application for admission of any transfer student who has completed a SB 1440 degree or who has completed the UC common core in a similar major (see Appendix 2 for draft discussion papers on this item).

Eligibility for review contemplates a comprehensive review of the application, but does not guarantee admission to the campus or major.

This policy would parallel the recent change in admission policy at the freshmen level, which promises a full review of students' applications if they meet minimum criteria. This policy allows students to use the associate degree path for course selection early in their career, although specialized advice may still be recommended in some degrees (see below).

3. **Feedback Provided to California Community Colleges** *(ongoing)***:** While the promise of a review currently under consideration (#2 above) would apply to students who earn an associate degree approved under SB 1440, the University has shared faculty feedback on the Transfer Model Curricula that have been developed or are currently under development. While UC feedback has been provided after the finalization of most of the TMC in the disciplines that convened, it is hoped that the input will inform future revisions of the TMC or local CCC districts as they develop their associate degrees. For example, UC mathematicians expressed their strong preference for Linear Algebra and Differential Equations courses over other math courses identified as options in the TMC. See Appendix 3 for sample feedback on the math TMC. This analysis will also provide a framework to inform students about variable requirements for a major at a particular UC campus.

4. **Improved Online Transfer Student Counseling Tools** *(planned)***:** Current UC advising tools on transfer preparation – the Statewide Transfer Preparation Paths – are static and extremely detailed. Following up on the UC faculty discipline meetings, it has become clear that transfer preparation paths have more similarities than differences, something obscured by the overwhelming level of detail on the existing tools.

   Therefore, the University is currently planning to develop a dynamic website that provides students with advice tailored to their interests as well as their stage in the transfer preparation process. For example, students who are just beginning community college could see the common core required for preparation across the UC system in a given major. As students narrow their focus, they could "drill down" to see detailed differences between campuses.

5. **Continued Improvement of Existing Transfer Efforts** *(ongoing)***:** While the development of an associate degree pathway embodied in SB 1440 and AB 2302 is the newest feature of the transfer function, it is important to remember that the bill also asked UC to strengthen existing initiatives in transfer.

   a. In 2010, the UC campuses collaborated to create a systemwide online application for their Transfer Admission Guarantee (TAG) Program. The TAG tool allows students to secure a guarantee of admission to seven of the nine UC campuses (UCLA and Berkeley do not participate) and see an online summary of their coursework, grade point average, and transferrable college units. Community college transfer students can begin

entering their coursework into the tool in their freshmen year, creating the opportunity for early counselor intervention. As the tool develops in future years, more sophisticated logic will offer the potential for a fully online counseling tool and pre-populate the UC application for admission.

The implementation of the online TAG tool increased applications for the TAG program in 2011 two- to three-fold over the prior year. The ease of the new application and the popularity of the program among students nearly compromised some campuses' ability to accommodate the sheer number of guarantees that they issued. As a result, beginning in fall 2012 students will be asked to pick one campus for a guarantee, although they will still be able to apply for regular admission to all nine campuses.

The UC Board of Admissions and Relations with Schools (BOARS) has expressed strong support for the TAG program.

b. The University continues to maintain and expand its statewide articulation agreements. Beginning in 2005, the nine UC campuses set the goal to create articulation agreements with all 112 community colleges. This has been accomplished and articulation agreements are all publicly stored on the ASSIST web site.

c. UC, along with its funding partners – the CCC and CSU – has begun to reengineer the ASSIST database and website. Begun on the Irvine campus over twenty years ago, ASSIST (Articulation System Stimulating Interinstitutional Student Transfer) is one of the longest-running and most successful tools for transfer in California. Today, California's three segments of public higher education jointly fund and manage ASSIST and UC serves as the fiscal agent.

ASSIST is the official repository for all articulation between the public segments. It is both a database that provides the backbone for other transfer tools, e.g., the new online TAG tool and the UC application for admission, as well as a website for counselors and students: www.assist.org.

The reengineering of ASSIST is referred to as "ASSIST: Next Generation." A Request for Proposal (RFP) that all three segments jointly drafted was released on June 17, 2011. Full implementation of the chosen solution is scheduled for May 2013.

Next Generation will provide ASSIST with a more flexible and modern database to power campus systems and other transfer tools, as well as a work-flow feature that will create efficiencies on campuses. Most importantly, the new ASSIST website will be more user-friendly and offer features for students and counselors to compare articulation agreements across the state.

CHALLENGES AND NEXT STEPS

Given the specialized nature of UC's degrees, the rigor of the upper-division coursework, and the way in which degree requirements are tied closely to individual campus research priorities, the University's participation in the associate degree pathway will pose some challenges.

- **Uniformity Is Difficult in Some Majors:** The nature of some disciplines is such that uniformity across UC or between UC and CSU in the lower-division courses that best prepare students for work in the upper-division is difficult. A good example is in the popular field of psychology, which covers a broad range of approaches. Most, but not all, UC campuses focus on the biological basis of psychology. Therefore, natural science courses like biology and chemistry are much more useful for preparation for transfer to some campuses than additional social science courses. Preparation that focuses on social psychology, e.g., the current TMC in psychology, could leave students unprepared for coursework at most UC campuses.

- **General Education Versus Major Preparation:** In hard sciences, UC faculty were uniformly concerned about the focus in the associate degree structure of completing CSU Breadth Requirements or the Intersegmental General Education Transfer Curriculum (IGETC), which forces students to take a very large portion of their major requirements post-transfer. In some fields, this means a very heavy load of science and math, which can lead to more frequent scheduling problems and academic "burn out." It may be best for students who know that they wish to study a hard science to not complete an associate degree and instead focus on the lower-division major preparation for their intended discipline. Furthermore, for students seeking transfer to a highly selective campus, lack of lower-division major preparation may disqualify them from admission. These students can still complete a significant portion of their general education at community college.

- **IGETC Versus CSU Breadth:** It remains the preference of UC faculty that students complete IGETC rather than CSU Breadth. Therefore, it is hoped that students completing associate degrees will have the option to do so with IGETC at the base of their degrees.

- **60 Unit Goal Is Difficult in Some Disciplines:** While each faculty group strongly supported the goal of timely graduation, some disciplines were more confident that students transferring with the associate degree structured like the TMC could do so. For example, historians and sociologists were confident that students could complete a bachelor's degree within 60 units after transfer, while physicists were equally confident that transfer students with the preparation afforded by the TMC would need to plan on three years to graduation.

Next steps in this process include the following:

- Convene additional disciplines in fall 2011.
- Build strong connections with faculty groups from other segments for future disciplines earlier in the process in order to contribute UC perspectives on the development of TMC.

- Develop online tools for students that leverage the "UC Common Core" to more effectively advise students and counselors.
- Continue systemwide conversations about the admissions guarantee and implementation.

SUMMARY OF UC FACULTY MEETINGS

All seven disciplines agree that:

1. There already exists a common core of coursework in each discipline that allows students to simultaneously prepare for multiple campuses.
2. Some campus-specific requirements fall outside the common core, although this variability is generally limited to one or two courses.
3. Variation in lower-division requirements is sometimes the result of non-academic factors. For example, the Merced campus curricular decisions are sometimes constrained by the number and types of faculty available to teach.
4. All groups expressed support for streamlining the path to transfer, although in some disciplines there was concern expressed about difficulty in transitioning to the higher demands of UC curricula, both because of the rigor of UC courses and the concentrated timeframe for campuses on the quarter system. Interest was also expressed in a "summer before" transition term for transfers, i.e., encouraging transfer students to enroll at a UC campus prior to their first fall in order to get used to the rigor and pace of UC coursework.

Appendix 4 names the participants in each of the discipline meetings.

Mathematics

The Mathematics Transfer Streamlining Task Force convened on November 18, 2010. The task force identified a common core of coursework that would satisfy lower-division major requirements across the UC system. While not all these courses are required for admission, all are (at most campuses) required lower-division coursework for degree completion.

UC-Wide Mathematics Common Core **All Campuses**	Most Campuses
Calculus – Full Sequence (3 sem/4 qrts)	Discrete Mathematics
Linear Algebra	Computer Programming
Differential Equations	Additional Science (particularly physics)

Three examples of campus variation from the common core were identified. In all cases, the representatives agreed to take the concern about the variability back to their campus, but faculty also suggested that there are clear rationales for the requirements. Furthermore, given the limited nature of the variation, it was not deemed a significant barrier for transfer students.

1. Davis requires a proof-based advanced linear algebra class that has few articulated courses at community colleges. The Davis faculty feel strongly that lower-division proof-based work prepares students for the upper-division work required in the major.
2. UCLA requires its own C++ programming course to be taken post-transfer.
3. While most campuses that require additional science courses offer some flexibility, Santa Barbara requires that math majors take physics.

The math group expressed concern that transfer students are advised to complete their general education (i.e., IGETC) at community college since the best preparation for transferring as a math major would include a focus on major preparation, allowing transfer students to spread difficult math and science courses over four years rather than leaving substantial lower-division coursework to be done in the last two years along with upper-division requirements.

Biology

The Biology Transfer Streamlining Task Force convened on November 19, 2010, identifying a common core of coursework that would satisfy lower-division major requirements for degree completion, if not for admission.

UC-Wide Biology Common Core **All Campuses**
General Biology (full sequence w/lab)
General Chemistry (full sequence)
Organic Chemistry (full sequence)
Calculus (generally full sequence)
Calculus-based Physics
Statistics

Two examples of campus variation from the common core were identified. Irvine and UCLA both require lower-division genetics and molecular biology courses separate from the introductory biology sequence, though UCLA was interested in revisiting this structure.

In addition, it was noted that students who complete less than a full-year sequence of general biology at community college can run into challenges because the sequencing of topics during the year can vary from campus to campus. For this reason, most UC campuses articulate only full sequences of biology courses taken at a single community college to a full sequence at UC. The group concurred that advice to students should include taking the full sequence at the same college.

As with the math group, the biology group expressed concern that students are advised to complete their general education (i.e., IGETC) at community college. The group concurred that transfer students often are surprised by the level of rigor in UC biology classes, but that they adjust quickly. Finally, biology curricula at UC are driven in part by medical school requirements and changes must take this into account in order to not disadvantage graduates intending to apply to medical school.

History

The History Transfer Streamlining Task Force convened on December 9, 2010. The historians made a strong case that its requirements do not create significant barriers for transfer students. As one participant stated, history is a way of thinking and writing. Therefore, while each UC campus has a different emphasis on periods of history or the history of various regions, specific content is less important than understanding the historical method. Another participant characterized the apparent variation seen in lower-division major preparation as an outgrowth of their "catholic" approach to lower-division work.

While there did not appear to be a common core of courses required at all campuses, there were two sequences listed below that individually or together would meet some or all of the lower-division requirements across the system. Students taking these sequences could be assured that they would be accepted as part of the lower-division major preparation and set them on the right path in completing a history baccalaureate degree at any UC campus:

- One full-year of U.S. History
- One full-year of World History

The UCLA campus requires a lower-division historical methods class that must be taken post-transfer, and a similar requirement is under consideration at Riverside. However, given that the difference in requirements is only one course, there was no concern that this would negatively affect students' time-to-degree.

While supportive of streamlining transfer requirements, the group did express concerns that students are "shocked" by the rigor of history courses at the University, motivating the group to provide feedback to on course content and delivery through the community college common course numbering project (C-ID), which is in the process of developing statewide course descriptions. They are especially concerned with the greater emphasis on content in the community college courses and the corresponding de-emphasis of rigorous reading and writing skills.

Historians did not feel that IGETC completion was a barrier for students, and suggested intended history majors work to complete it before transferring.

Psychology

The Psychology Transfer Streamlining Task Force convened on December 10, 2010. This discipline was, in some ways, the most challenging. As the task force pointed out, the term "psychology" refers to a very broad set of topics and approaches. For example, the approach at the UC Santa Cruz campus has a more clinical focus, while the approach at the Davis campus focuses almost entirely on biological psychology. Furthermore, baccalaureate degrees at UC have a very strong experimental/biological focus, which is not necessarily matched by the approaches at the community colleges.

Nevertheless, the following common core was identified. Again, not all these courses are required for admission, but are (in general) required lower-division coursework for degree completion.

UC-Wide Psychology Common Core **All Campuses**	Most Campuses
General Psychology	Additional Social Science
Statistics	Additional Science (chemistry, biology, physics)
Biology (full-year sequence)	

Campus variation was more significant in psychology than in the other disciplines (refer to the Transfer Preparation Paths for details). However, this discipline also has strong rationales for the variation; psychology degrees at each UC campus are different from one-another, both in approach (clinical vs. biological) and in the research done by faculty.

The psychologists did not express concerns about IGETC completion by transfer students, but did express concern that transfer students in psychology do not fully understand the discipline as taught at UC. Specifically, students often expect more of a "social science approach" even at campuses with a heavy focus on biological psychology.

Computer Science
The Computer Science Transfer Streamlining Task Force convened on December 17, 2010, also to identify a common core of coursework that would satisfy lower-division major requirements across the UC system. While not all these courses are required for admission, they are required lower-division coursework for degree completion at most campuses.

UC-Wide Computer Science Common Core **All Campuses**	Most Campuses
Calculus – Full-year Sequence (2 sem/3 qrts)	Linear Algebra
Data Structures	Differential Equations
Machine Structures	Discrete Mathematics
	Calculus-based Physics
	Chemistry

The biggest challenge for students trying to prepare broadly for UC campuses in computer science is that some campuses prefer Java as a programming language and others prefer C++. However, the computer scientists agreed that depth of understanding and up-to-date of study in a programming language is critical to transfer preparation, and suggested establishing transition courses for students who need to learn another programming language.

As with the math and biology groups, the computer scientists expressed concern that students are advised to complete their general education (i.e., IGETC) at community college, as a strong background in mathematics is key for transfers interested in computer science at UC.

Sociology

The Sociology Task Force was convened on April 29, 2011. Like UC historians, the sociology task force agreed that the rigor of the courses and the opportunity for students to learn critical thinking and writing skills was more important than the specific content of the courses. Therefore, while some campuses require specific sociology courses (e.g., global issues, social problems), the group felt that good preparation involved a small core of courses – introductory sociology, statistics, and research methods. As one attendee later described it, he would "encourage courses that assist in writing skills and interpretation of social science articles and research along with some basic quantitative skills. This would be more important to success at UC than taking strictly taking sociology courses."

UC-Wide Sociology Common Core **All Campuses**	Most Campuses
Introductory Sociology	Additional sociology or social science courses
Statistics (most)	Global Issues
Research Methods (most)	Social Problems

Completion of IGETC was not deemed problematic for students preparing to transfer into sociology.

While not as pronounced as in psychology, the task force noted that the field of sociology has different philosophical viewpoints, one that is more qualitative and the other more quantitative. This is reflected somewhat in the emphasis on statistics and mathematics at UCLA, for example.

Physics

The Physics Task Force was convened on May 13, 2011, to identify a common core of coursework that would satisfy lower-division major requirements across the UC system. While not all these courses are required for admission, they are required lower-division coursework for degree completion at most campuses.

UC-Wide Physics Common Core **All Campuses**	Some Campuses
Calculus-based Physics	Computer programming (most)
Calculus	Modern Physics
Multivariate Calculus	Vector Analysis
General Chemistry	
Linear Algebra	
Differential Equations	

More than any other discipline that convened, the physicists were concerned with the ability of transfer students to adequately prepare for upper-division coursework at UC if they focus on completing their general education requirements at the community college (e.g., IGETC). The rigor of completing a physics degree at the University requires both a significant amount of lower-division major preparation

as well as the flexibility to spread less demanding general education requirements across all four years of a student's career. Furthermore, the sequential nature of courses required for completing a physics degree means that lower-division course selection focuses on the pre-requisites.

In reviewing the TMC in physics developed as part of the SB 1440 implementation, the task force felt that the courses selected were indeed the right ones. However, given that SB 1440 mandates the completion of either CSU Breadth or IGETC, the group concurred that it would set a student up to graduate with a degree in physics "after three years" at UC.

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APPENDIX 1: Assembly Bill 2302 (Chapter 427)

Assembly Bill No. 2302

CHAPTER 427

An act to add Sections 66721.4, 66721.8, and 66739.6 to the Education Code, relating to postsecondary education.

[Approved by Governor September 29, 2010. Filed with Secretary of State September 29, 2010.]

LEGISLATIVE COUNSEL'S DIGEST

AB 2302, Fong. Postsecondary education: student transfer.

(1) Existing law, the Donahoe Higher Education Act, establishes the 3 segments of public postsecondary education in this state. These segments include the California State University, administered by the Trustees of the California State University, the University of California, administered by the Regents of the University of California, and the California Community Colleges, administered by the Board of Governors of the California Community Colleges. A provision of the act applies to the University of California only to the extent that the regents, by resolution, make that provision applicable.

Existing provisions of the act require the governing bodies of the 3 public postsecondary segments, with appropriate consultation with the academic senates of the respective segments, to develop, maintain, and disseminate a common core curriculum in general education courses for the purposes of transfer. This provision requires that a person who has successfully completed the transfer core curriculum is to be deemed to have completed all lower division general education requirements for the University of California and the California State University.

Existing law requires the governing board of each community college district to direct the appropriate officials at their respective campuses to provide students with a copy of the current transfer core curriculum and to distribute and publish copies of the transfer core curriculum in a specified manner and in specified locations.

This bill would require the California State University and the Office of the Chancellor of the California Community Colleges to work together to establish the most effective methods to inform students, college advisers, and the general public about specified transfer pathways. The bill would require the final methods to be completed prior to the beginning of the fall term of the 2011–12 academic year and included as part of a specified report.

The bill would authorize community college districts to use the methods established by the California State University and the Office of the Chancellor of the California Community Colleges to inform community college students of the California State University majors that are considered

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APPENDIX 1: Assembly Bill 2302 (Chapter 427)

to be similar to community college majors or areas of emphasis required to obtain an associate degree for transfer.

(2) Existing law requests the University of California, among other things, to address deficiencies in the articulation of major preparation courses between the community colleges and University of California campuses, to identify commonalities and differences in similar majors across University of California campuses, to articulate courses and course sequences at each campus of the California Community Colleges for specified major degree programs for purposes of student transfer, and to conduct a specified review of transcripts of transfer students.

This bill would request the University of California to continue those efforts with a goal of working in collaboration with the California Community Colleges to design community college transfer degrees that provide students adequate preparation for entry into a major. The bill would also request the University of California to consider and implement other specified actions to increase transfer between the university and the California Community Colleges. The bill would request the University of California to provide an interim report on the university's review, and a final report on the university's implementation, of specified transfer pathways to the relevant policy and fiscal committees of the Legislature by specified dates.

(3) Existing law requires the Chancellor of the California State University to establish transfer student admissions requirements to give highest priority to certain transfer students, to specify lower division transfer curriculum for specified major degree programs, and to articulate courses at each campus of the California Community Colleges for specified major degree programs for purposes of student transfer. Existing law requires each campus of the California State University to identify nonelective course requirements beyond systemwide lower division transfer curriculum requirements for each major for purposes of student transfer, in accordance with prescribed requirements.

This bill would require the Office of the Chancellor of the California Community Colleges, in a manner that is consistent with the general common course numbering system used by community college districts, to establish a process to facilitate the identification of courses that satisfy lower division preparation requirements throughout the California Community Colleges system, which would be required to be included as part of a specified report.

(4) This bill would provide that it would not become operative unless SB 1440 of the 2010–11 Regular Session is chaptered.

The people of the State of California do enact as follows:

SECTION 1. Section 66721.4 is added to the Education Code, to read:

66721.4. (a) The California State University and the Office of the Chancellor of the California Community Colleges shall work together to establish the most effective methods to inform students, college advisers,

APPENDIX 1: Assembly Bill 2302 (Chapter 427)

and the general public about the associate degree for transfer and specific details that help students navigate this transfer pathway, as successfully as possible, pursuant to Article 3 (commencing with Section 66745). The methods established by the California State University and the Office of the Chancellor of the California Community Colleges shall include, but not be limited to, Internet notification. The final methods determined by the two segments shall be completed prior to the beginning of the fall term of the 2011–12 academic year and included as part of the report required by subdivision (a) of Section 66749.

(b) It is the intent of the Legislature that community college students be informed of the California State University majors that are considered to be similar to community college majors or areas of emphasis required to obtain an associate degree for transfer pursuant to Article 3 (commencing with Section 66745).

(c) A community college district may use the methods established by the California State University and the Office of the Chancellor of the California Community Colleges, pursuant to subdivision (a), or a community college district may use other methods to inform community college students of the California State University majors that are considered to be similar to community college majors or areas of emphasis required to obtain an associate degree for transfer pursuant to Article 3 (commencing with Section 66745).

(d) It is the intent of the Legislature that the Office of the Chancellor of the California Community Colleges not mandate community college districts to perform any new state reimbursable activity or program for purposes of implementing this section.

SEC. 2. Section 66721.8 is added to the Education Code, to read:

66721.8. (a) The Legislature finds and declares that a transparent process for transfer that is designed to assist students in identifying and taking the community college courses that will prepare them for success in specific University of California majors is a state priority.

(b) The Legislature recognizes that, pursuant to Section 66721.7, the University of California has been working with the California Community Colleges to examine and seek improvements to the transfer process. It is the intent of the Legislature that, as part of this ongoing effort, the creation of various viable pathways to transfer, including the development of an associate degree for transfer granted by community college districts, be considered by the University of California as it endeavors to enhance the transfer process.

(c) The University of California is requested to continue its examination of articulation of lower division major prerequisites in high-demand transfer majors with a goal of working in collaboration with the California Community Colleges to design community college transfer degrees that provide students adequate preparation for entry into a major. The University of California is also requested to consider offering guaranteed eligibility for admission into a University of California campus that accepts a designated community college transfer degree for admission into a designated

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University of California major. Further, the University of California is requested to implement pathways to qualify community college transfer courses for a designated University of California major by designating a series of community college courses that provide sufficient lower division preparation for a designated University of California major and that will be accepted by the University of California.

(d) The University of California is requested to provide an interim progress report on its review of the various transfer pathways discussed in this section to the relevant policy and fiscal committees of the Legislature on or before June 30, 2011, and to provide a final report to those committees, with specific findings regarding the University of California's implementation of those transfer pathways, no later than December 31, 2011.

SEC. 3. Section 66739.6 is added to the Education Code, to read:

66739.6. In a manner that is consistent with Section 71027, the Office of the Chancellor of the California Community Colleges shall establish a process to facilitate the identification of courses that satisfy lower division preparation requirements throughout the California Community College system.

(b) A description of the process established by the Office of the Chancellor of the California Community Colleges to comply with subdivision (a) shall be included as part of the report required by subdivision (a) of Section 66749.

(c) It is the intent of the Legislature that community college districts accept credits from other community college districts toward an associate degree for transfer.

(d) This section shall become operative on July 1, 2011.

SEC. 4. This act shall become operative only if Senate Bill 1440 of the 2010–11 Regular Session is chaptered.

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BOARS Transfer Discussions During 2010-2011

Note: The ideas contained here have been developed by the UC Board of Admissions and Relations with Schools (BOARS) and are under discussion by the Academic Senate of UC. It is emphasized that it has *not* been approved but that BOARS hopes the Senate will make a decision on some version of this proposal during 2011-12

Summary: BOARS is developing a proposal for major-based transfer admission that parallels the new Freshman Admission Policy taking effect for fall 2012. UC transfer applicants would be entitled to a review (though not guaranteed admission) if they complete any one of three proposed pathway options: completion of an SB 1440 AA Degree for Transfer with a minimum GPA to be set by each campus; completion of a yet to be developed UC TMC with a minimum GPA set by each campus; or the current pathway specified in UC Senate Regulation 476 with IGETC as an option. BOARS wants to communicate to community college students that if they pick a major, prepare for it, and show a strong case for being able to complete their declared majors in two years, they will be fully considered for transfer to UC. Moreover UC will include flexibility in the process to ensure no minor requirement derails an application for admission.

The BOARS transfer admission proposal specifies that students who complete one of three paths will be entitled to a Comprehensive Review of their application for admission to UC with advanced standing. This review will not guarantee admission to UC, however existing Transfer Admission Guarantees (TAG) will remain in place. Each pathway requires 60 (90 quarter) transferrable units, and a minimum overall GPA established by the campus to which they are applying. This minimum GPA will be at least 2.4 but not greater than 3.0. Further, the GPA minimum set by a campus should never serve as the dividing line between admission and non-admission and should allow for a substantial range of applicants to be considered via Comprehensive Review. All applicants must specify an intended major or possible majors in their application. The three paths are:

(1) Students who complete the UC Transfer Curricula for their chosen major along with 60 (90 quarter) transferrable units and attain a minimum overall GPA established by the campus to which they are applying.

(2) Students who complete an SB 1440 Associate Degree for Transfer and attain a minimum overall GPA established by the campus to which they are applying.

(3) Students who complete the minimum criteria of seven courses specified in SR 476 C along with 60 (90 quarter) transferrable units and attain a minimum overall GPA established by the campus to which they are applying. (Note that students who complete IGETC will have these seven courses.)

Applicants who have credentials indicating the strongest likelihood of completing their major in approximately two years will be selected for admission first. Space permitting, campuses may then select applicants for admission using non major-based criteria, provided the applicants meet the criteria in Pathway (3) and do not displace comparable applicants who met the criteria in Pathway (1). Further,

the comprehensive review of applicants will be structured to ensure that no student is denied admission for missing a "minor" requirement if a full file review provides solid evidence of their ability to complete their chosen major in two years. Campuses must view academic accomplishments in the context of opportunity when applying Comprehensive Review in the selection of transfer students, as they do with freshman applicants.

To clarify, the proposed change in policy assumes (incorporates) the following.

- All existing Transfer Admission Guarantee programs (TAGs) will remain in place, and campuses will be encouraged to continue developing new TAGs.
- The pathways stipulated in Senate Regulations 476 A, B, and D will remain in place. (SR 476 A and B address applicants who met freshmen admission requirements and seek transfer admission on that basis. 476 D deals with applicants who would have been eligible for freshman admission except for missing "a-g" or test scores that they subsequently make up.)

Discussion. The purpose of Pathway (2) is to ensure that Community College students initially targeting CSU who complete an SB 1440 Associate Degree for Transfer but who subsequently decide to consider UC are not locked out of the opportunity to attend UC. However, unlike the guarantee of admission to CSU they receive for completing the Transfer AA, UC would offer no such guarantee. Applicants will have to compete on the basis of their accomplishments and potential to complete their proposed major.

Pathway (1) is the preferred option for UC-intending transfer students. It should streamline graduation in majors with lower division requirements that are barriers to upper division courses. Some majors (particularly in STEM disciplines) will require a specific list of lower division courses while other majors will expect general education preparation and IGETC.

The policy sets the primary selection criteria as a preference for applicants with the *strongest credentials for completing their major in approximately two years*. This key selection criterion will be clearly spelled out in greater detail by BOARS as the process moves forward.

The policy stipulates that failure to complete a "minor" requirement will not derail an application for transfer admission, thereby addressing the concern that a complex set of rules is a major obstacle to transfer. As the proposal is filled out general guidelines will be set, but implementation details will be left to campuses.

Because nearly all students completing Pathway (1) or (2) will likely satisfy Pathway (3), this proposal does not change policy as much as it communicates new major-based emphases and increases flexibility. In doing so UC and CSU will deliver a common message to community college students about the importance of major preparation.

Benefits. There are three main benefits to this approach.

1. First, this proposal will streamline transfer by providing a single message for CCC students interested in preparing for both CSU and UC that aligns with the goals of SB 1440: "*Choose a major and prepare thoroughly for it, and if you meet the basic requirements (a Transfer AA or a*

UC identified Transfer Curricula for your chosen major along with 60 transferrable units and attain the campus minimum GPA), your application will be given a comprehensive review. The applicants with the strongest credentials for completing their major will be selected for admission."

2. Second, to the extent that students choose to complete Transfer AA Degrees, the proposal will encourage them to better prepare for majors that do not currently use the completion of major preparation in selecting students for admission.

3. Finally, by guaranteeing a review to students with baseline preparation, it parallels changes made to UC freshmen admissions standards taking effect next year that are intended to remove barriers and expand opportunities. Moreover, all students currently eligible to for transfer to UC will remain so.

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OFFICE OF THE PROVOST AND EXECUTIVE VICE PRESIDENT -- ACADEMIC AFFAIRS

OFFICE OF THE PRESIDENT
1111 Franklin Street, 12th Floor
Oakland, California 94607-5200

May 13, 2011

ACADEMIC SENATE CHAIR PATTON
ACADEMIC SENATE VICE CHAIR PILATI

Dear Colleagues:

As you know, the University of California has been engaged in internal discussions intended to smooth the transfer pathway for students interested in completing their degree at one of our nine undergraduate campuses. These conversations have been driven by our own commitment to the transfer function in California, but also to be responsive to the legislation passed last year establishing an associate degree pathway for students at one of the state's community colleges.

In fall of 2010 and again in spring of 2011, the UC Office of the President convened discipline faculty groups to discuss the lower-division major requirements at each campus. While the campuses continue to have some local variation – variation that is based on the preparation required for the upper-division coursework and research at the respective campuses – each of the disciplines that met identified a core set of common requirements. We hope that this common core will help students plan for transferring and completing a degree in the given majors across the UC system. Student Affairs at the UC Office of the President is strategizing about the best way to share this advice with your students.

Furthermore, the common core in each major serves as the starting point for our conversations with you about the Transfer Model Curricula (TMC). We are in the process of consulting with each group about the similarities and differences between the requirements at our campuses and the Transfer Model Curricula. Below is the feedback from our math faculty on your TMC for an Associate Degree for Transfer in Mathematics.

We understand that the TMC in math has been finalized recently and recognize that is not likely to change. However, we do hope that this feedback can be shared with individual community college districts as they develop their associate degree programs. To the extent that students complete associate degrees structured in this way, they will be well-prepared for study and timely degree completion at any UC campus.

We would also like to take this opportunity to reiterate our support for the development of the associate degree pathway. To the extent that students complete the TMC-based associate degrees, we anticipate better-prepared students applying to the University, especially in majors where some campuses do not currently demand lower-division major preparation as a requirement for admission. Furthermore, to the extent that new community college freshmen are unsure of the segment or campus to which they will transfer, the associate degrees will

provide an early and clear road map. While conversations are ongoing at the University, we anticipate that we will respond to Assembly Bill 2302 by identifying several areas where UC can guarantee eligibility for a comprehensive review of admission. As UC faculty committees do their work, we will continue to update you.

Please let us know if you have any questions or would like to discuss in greater detail either the response from the UC mathematics faculty or the University's plans for participating in this historic transfer structural reform.

Sincerely,

Lawrence H. Pitts
Provost and Executive Vice President
Academic Affairs

Daniel L. Simmons, Chair
Academic Council

Cc: Provosts and Executive Vice Chancellors
Academic Council Vice Chair Anderson
Academic Senate Division Chairs
Chairs of the Departments of Mathematics
Vice President for Student Affairs Sakaki
Vice Provost for Academic Personnel Carlson
Transfer Streamlining Task Force in Mathematics
Academic Senate Executive Director Martha Winnacker
Interim Director of Undergraduate Admissions Burnett
Associate Director of Undergraduate Admissions Brick

Enclosure

Transfer Streamlining Task Force in Mathematics
Recommendations on the Development of Associate Degrees for Transfer in Mathematics

In fall of 2010, the University of California convened faculty workgroups in five of the most popular academic disciplines, including mathematics, to discuss the lower-division major preparation required to complete a degree at each of the nine undergraduate campuses.

The Task Force members were identified by the department chairs at each UC campus. The feedback of the Task Force on the Transfer Model Curriculum (TMC) in Mathematics below therefore represents the input of all nine campuses. Additional consultation, however, with appropriate faculty committees and administrators both systemwide and on each campus will continue as the University develops its plan to participate in the associate degree for transfer pathway.

Task Force Feedback on the Transfer Model Curriculum for an Associate Degree in Math

- The three-semester or four-quarter sequence of calculus courses, including one in multivariable calculus, matches the expectations of UC faculty[1]. *(12 Semester Units)*

- The Task Force expressed a strong preference for Differential Equations and Linear Algebra courses in order to complete the 18 units of major preparation. *(6 Semester Units)*
  - This is a preference over the combined *Introduction to Differential Equations and Introduction to Linear Algebra* in Group A.
  - This is also a preference over all courses listed in Group B.

- While some UC campuses do require courses listed in Group B of the TMC (e.g., Statistics, Discrete Math), the Task Force agreed that these courses are of much lower priority than Calculus, Differential Equations, and Linear Algebra.

In addition to the feedback on the development of the curriculum in math, the Task Force identified some additional advice for students interested in transferring to UC.

- Discrete Math is a valuable additional course, particularly for students interested in Berkeley, Santa Barbara, or some of the major concentrations at UCLA.

- Likewise, Statistics is valuable for students interested in UC Santa Cruz.

- Additional science courses (particularly calculus-based physics) and computer programming courses are also recommended (e.g., at UC Irvine). Details of campus-specific recommendations are available online in the statewide UC Transfer Preparation Paths: http://www.universityofcalifornia.edu/admissions/transfer/files/uc_statewide_math.pdf

- UC summer courses taken prior to transfer are a valuable way to acclimate to the campus. Several UC campuses strongly recommend that students attend summer session prior to transfer.

[1] It was noted, however, that the four-quarter "Single Variable Calculus Sequence" seems to be mislabeled as the fourth quarter (CAN MATH 23) includes the same topics as the multi-variable course above (TCSU MATH 230).

APPENDIX 4: UC Transfer Streamlining Task Force Meeting Participants

Mathematics
Berkeley: Professor Craig Evans
Davis: Professor Andrew Waldron
Irvine: Professor Alessandra Pantano
Los Angeles: Professor Chris Anderson
Merced: Professor Arnold D. Kim
Riverside: Professor Gerhard Gierz
San Diego: Professor Laura Stevens
Santa Barbara: Professor Carlos Garcia-Cervera
Santa Cruz: Professor Martin Weissman
Santa Cruz: Professor Andrea Gilovich

Biology
Berkeley: Professor George Brooks
Berkeley: Ms. Nancy Finkle
Davis: Professor Jeanette Natzle
Davis: Professor Susan Keen
Irvine: Professor Michael Leon
Los Angeles: Professor Debra Pires
Riverside: Professor Richard Cardullo
San Diego: Professor Gabriele Wienhausen
Santa Barbara: Professor Stephen Poole
Santa Cruz: Professor Barry Bowman

History
Berkeley: Professor M.E. Berry
Davis: Professor Sally McKee
Irvine: Professor Lynn Mally
Los Angeles: Professor Joan Waugh
Merced: Professor Sean Malloy
Riverside: Professor Randolph Head
San Diego: Professor Sarah Schneewind
Santa Barbara: Professor John Majewski
Santa Cruz: Professor Charles Hedrick

Psychology
Berkeley: Professor Christina Maslach
Davis: Professor Matthew Traxler
Irvine: Professor Angela Lukowski
Riverside: Professor David Funder
Riverside: Professor Glenn Stanley
San Diego: Professor Victor Ferreira
Santa Cruz: Professor Eileen Zurbriggen

Computer Science
Berkeley: Professor David Wagner
Davis: Professor Dipak Ghosal
Irvine: Professor Richard Pattis
Los Angeles: Professor David Smallberg
Merced: Professor Kelvin Lwin
Riverside: Professor Neal Young
Santa Barbara: Professor Chandra Krintz
Santa Cruz: Professor Charlie McDowell

Sociology
Berkeley: Kristi Bedolla
Davis: Drew Halfmann
Irvine: Stan Bailey
Los Angeles: Jennie Brand
Merced: Paul Ameida
San Diego: Jeff Haydu
Santa Cruz: Craig Reinarman

Physics
Davis: Maxwell Chertok
Irvine: Manoj Kaplinghat
Los Angeles: Michael Jura
Riverside: Bill Gary
San Diego: Michael Anderson, Barbara Lowe, Catherine McConney, Hans Paar
Santa Barbara: Everett Lipman
Santa Cruz: David Smith

Facilitator
Professor Keith Williams

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