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The presidents would like to give a special note of thanks to the thoughtful members of the three subcommittees and their very able chairs, who spent much time over the last year researching these issues and developing intelligent and relevant recommendations in each area of the report. The full report of each subcommittee is available upon request at the CSU system office. The Commission would also like to thank Beverly Young, our hard-working and talented expert on Teacher Education, whose insights were essential to the study.
**Subcommittees of the Presidents’ Commission on Secondary Teacher Education**

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*The Commission would like to recognize Michelle Aragón whose leadership was so valuable to the three committees and their chairs.*

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Chair’s Introductory Remarks

In fall 2001, California State University System Chancellor Charles Reed asked me to chair the Presidents’ Commission on Secondary Education. I chaired a similar Presidents’ Commission in 1996. The report resulting from that commission received substantial attention not only from other parts of our own nation, but also from other countries. We have implemented most, if not all, of what was recommended in that report, just as we intend to implement the recommendations in this report.

Those of us on the Commission have spent many years in higher education, and, as a result of our experience, carry with us the conviction that success with our own students is directly proportionate to the successes of their earlier years—not just in elementary school where the foundation is established—but also in middle and secondary school as well.

We should not forget the old adage that as the twig is bent, so grows the tree. As a result of California’s class size reduction mandate in 1996, we believe that elementary education has made great strides toward bending the twig in an improved direction or, at least, the bending goes on with more individual attention to each student. Last fall, Chancellor Reed indicated that it was time for us to turn our attention toward secondary teacher education.

The chancellor and the presidents are mindful that in California’s classrooms are some of the best secondary school teachers in America. We simply need more! It takes intellectual and emotional courage to be a teacher, particularly a public school teacher, and most particularly a secondary school teacher. Middle school students are boys and girls for the most part; secondary school students are fledgling men and women, and, as we all know, have much on their minds besides learning the curriculum we are trying so hard to teach them in school. For some, their social lives are the most important reason they come to school at all, aside from the fact that they are required to.

They are not wrong to place the process of socialization high on their lists—that is clearly part of what school attendance is designed to provide them. As we know, cultures work by agreement. It is easy to see the truth of that by observing what happens when cultural agreements are either ignored or flagrantly disobeyed. Part of growing up is to test the limits, not only of one’s own powers, but the powers of the culture we live in—to see how far we can go on our own will and brains, and how far our culture will let us go before it restrains us from harming ourselves or others. Of course, to some extent, we must all learn to get in the box—learn to drive on the right side of the road, for example—or civilized interaction breaks down. We cannot live together without agreements that remind us of the respect we owe not only to those around us, but also to ourselves.

Essentially, schools are designed to teach us to sail through the ABC’s and to acculturate us, and things are relatively smooth at the elementary level. As was the case with most of us, students enter choppy waters during the middle school years. Because of the students’ physical maturity, which sometimes outpaces intellectual maturity and certainly outpaces emotional maturity, they hit the storm in the secondary years. In that environment, it is often difficult to recruit secondary school teachers. Many prospective teachers who do not feel called to teach the very young skip the idea of secondary teaching and decide instead on higher education as a place to practice this fine craft and art.

Those who do choose to teach at the secondary level do good work, for the most part, against a sometimes tough audience. In addition to the more advanced ages of the students, a further obstruction to successful teaching at this level is the stance in our culture that urges parents not to be involved in their children’s school lives during these difficult years. Children, parents, and teachers all agree that parents should be involved in children’s education during the earlier years, but during the secondary years parental involvement is often too easily seen not as constructive participation but as bothersome interference. I have a professor friend who laughingly says his daughter used to demand that he let her out a block away from her high school so none of her friends would see that she even had parents. Teachers often share with their students the apparent conviction that good parents are neither to be seen nor heard.
The young must individuate, as Jung calls the process; they must, as they develop, become more and more like themselves, and less and less like their siblings and their parents who raised them. We all understand the importance of this process, but understanding the behavior of others, even our children—maybe especially our children—does not necessarily make that behavior—that process of individuation—any easier to deal with.

It is my perception that the status of public school teachers in our culture is honored more in proclamations than in observance. We do not put our dollars where we put our words. Even though for many of us a favorite high school teacher holds a place of great affection and influence in our hearts, for too many others, this is not so. As a community, we must learn to value those who contribute so greatly to society, and to be prepared to reward them for that contribution.

There are many impediments to choosing a career as a teacher—there is the sometimes less-than-stellar status in the community, low pay, long hours, hard work, uncertainty of success at such a difficult task, and so on. Therefore, as institutions of higher learning, the various campuses of the CSU must work diligently not to impede but to facilitate the educational process of those rare and wonderful students who do show a desire and an inclination toward becoming secondary school teachers. We need to encourage the establishment of high school chapters of Future Teachers of America. We cannot depend only on re-entry students or special credential teachers to form the California teacher brigade of tomorrow. We need to actively search out and recruit future teachers from our freshman classes. Since 60 to 70 percent of all California teachers study first in one of our fine community colleges, we need to prospect there more diligently as well.

Chancellor Reed charged us with the responsibility of identifying the problems we see in secondary teacher education in the CSU, of articulating them, and of proposing solutions to those problems. To those ends, the Presidents’ Commission on Secondary Education formed itself into three subcommittees to study the state of secondary education preparation in California and to make recommendations for its improvement.

Based on the six principles of the Statement of Purpose, the Presidents’ Commission charged each of the three subcommittees with a specific task:

Subcommittee I: Preparing Teachers in Standards-Based Instructional Programs
Subcommittee II: Structure of Secondary Teacher Preparation at CSU
Subcommittee III: Recruitment and Retention of Teachers in Areas Where Shortages Exist

What follows is a report that includes the Statement of Purpose of the CSU Presidents’ Commission, the issues addressed, the discoveries made, and the recommendations for action. The concluding appendix has a brief summary of best practices in teacher education found on the individual CSU campuses.

Recognition must go to Chancellor Charles Reed for his willingness to embrace teacher education as a CSU priority, indeed, for his eagerness to do so, as evidenced by his calling us back to the table to concentrate this time on secondary education; to our thoughtful and intelligent Board of Trustees who participate as true educators in our grand endeavor to teach and learn; to the Presidents of the CSU for their continued leadership in this adventure; and especially to all those who volunteered to serve at a task many would turn away from, intimidated by its complexity and sheer size.

There is nowhere in any of the charter documents founding this nation that I know of in which universal education is either mandated or even espoused. We took it upon ourselves as a self-evident good to pursue the education of all, regardless of status in the community. Where we failed early—in denying access to education of some because of race or gender, for example—we succeeded later. We have continued to work on our system of education to the point that, even though we are highly critical of it ourselves, people from all over the world wish to participate in it. As presidents, we have watched and read and listened as we and those around us have poked and prodded, thought and argued—all in the name of improving this educational system, which is the life blood of democracy and the hope of the future. Everything we can do to bring more dedicated people into the fold to study to be teachers, and then after graduation to go out into the wider community and carry the torch that was handed to them, the better it will be for them, the system, and—most of all—for our children.

Robert C. Maxson
President
California State University, Long Beach
Teach for Tomorrow

Statement of Purpose

We believe California's future will be determined in great part by the quality of the education it provides its citizens. Our social and economic prosperity is contingent upon a knowledgeable citizenry and a well-trained work force. Our ability to respond in a thoughtful and productive manner to change—whether it be to the revolutionary developments in information technology or the dramatic growth in cultural and linguistic diversity throughout California—depends to no small degree on our schools' ability to provide a dynamic curriculum, offer inspirational teaching, and engage in continuous renewal. Although these responsibilities rest with all segments of our educational system—preschool to post-baccalaureate—the challenges confronting our secondary schools are particularly compelling, given the large numbers of students who attend them and the wonderfully diverse range of the backgrounds and interests of those students.

It is our conviction, therefore, that the strengthening of secondary education is of critical importance and must be a primary strategic priority of the California State University (CSU). A strong public school system is not only of vital importance to our state's economy, but will also ensure that the California State University can focus its resources on appropriate college-level instruction, scholarly and creative activity, and service. We believe that the central mission of the CSU's relationship to secondary schools ought to be to continually improve the quality of preparation programs for school personnel and to ensure that the scholarly, pedagogical, and technological expertise of the CSU is made available to our schools on an ongoing basis.

In the pursuit of these goals, the CSU's initial focus will be on internal efforts to continue to improve our own school personnel preparation programs and on the relationship of those programs to secondary education. The objective, however, is to see that these reform efforts influence secondary and post-secondary institutions, and in so doing help to transform all educational practices, including state education policy.
The following principles will guide our work in strengthening education programs for teachers and other education professionals:

1. The education of teachers is a university-wide responsibility and is of such critical importance that it will influence key decisions regarding faculty recruitment, promotion, tenure, compensation, and workloads. Because prospective teachers are most influenced by the quality of teaching they encounter as students, all university faculty need to demonstrate effective instructional practices and to serve as good teaching role models.

2. Students contemplating teaching careers will have opportunities in their undergraduate years to participate in academic majors and other university courses which integrate subject matter and teacher education course work and provide multiple site-based clinical learning opportunities. Such approaches will provide better opportunities to identify high-potential students, recruit exemplary candidates for the teaching profession, and maximize the all-university nature of secondary teacher education and the creation of an integrated preparation program.

3. CSU Schools of Education will embody the principles of good professional practice by providing extensive clinical experiences and establishing standards to define the characteristics of a well-prepared teacher educated anywhere within the CSU system. In order to complete successfully a CSU preparation program, teacher candidates will be assessed on the basis of these established standards, which will include competencies in content areas as well as in appropriate instructional planning and presentation skills. This standards-based education will result in teachers who are prepared to offer the same high-quality education to their students once they graduate and take jobs.

4. Schools of Education, as well as other schools and departments within the CSU, will develop and maintain partnerships with secondary schools and community colleges to facilitate continuous renewal of all three entities alike. Regular faculty exchanges and other ongoing joint university/college/school activities will help achieve the simultaneous improvement of teacher education at all levels and of secondary schools.

5. Regular consultation and collaboration with leaders in secondary schools and community colleges are important campus-wide responsibilities throughout the CSU.
In addition, presidential involvement and action will be a high priority regarding recommendations made by other groups working to improve education in the state, such as the California Education Round Table, the University of California Outreach Task Force, and the SB 1422 Advisory Committee.

6. As campus leaders, all CSU presidents have a responsibility to promote the principles articulated above in their personnel practices, academic planning, budgeting, and public pronouncements. Indeed, for this effort to succeed, leaders throughout the CSU, including the Chancellor, the Board of Trustees, the Presidents, the Academic Vice Presidents, the Academic Deans, and the Academic Senates, must also assume this responsibility.

Summary and Recommendations of Subcommittee I: Preparing Teachers in Standards-Based Instructional Programs

Introduction
This subcommittee was charged with the task of reviewing and investigating the preparation of secondary teachers to teach in standards-based instructional programs. Within this broad charge, the committee probed 1) ways to strengthen future teachers’ subject matter preparation and knowledge of Academic Content Standards; 2) strategies to utilize assessment and accountability within standards-based instructional programs; and 3) ways to improve secondary students’ reading skills within this context.

The work of this committee was accomplished through the input of a variety of university community members: faculty, deans, and administration, as well as with the valuable input of K-12 teachers.

Recommendations and Discussion
1. Align baccalaureate curricula preparing students for teacher credential programs with appropriate state content standards and content informed by national standards.

Standards-based education defines clearly both the academic content of a curriculum and the outcomes of the educational experience in terms of “what students should know and be able to do.” The state of California has mandated that college and university curricula preparing single-subject teachers be aligned with approved K-12 content standards so that teachers will be prepared to teach the material their students must learn.
Teachers for Tomorrow

In general, students pursuing single subject credentials in the CSU complete the requirements for graduation in traditional majors, including English, history, social sciences, mathematics, and the sciences. It is the responsibility of the CSU faculty and administration to design and deliver curricula that provide the breadth and depth of understanding and the skills that will enable students to enter graduate and professional schools, in addition to teaching. It is clear that the incorporation of subject matter requirements for teachers must be regarded as one of several demands on the undergraduate curriculum. The CSU, through the requirements of the major and the general education program, educates students for a lifetime of learning and problem solving. Students should receive an education that transcends current learning and prepares them to acquire and contribute to new knowledge. Future teachers, as much as any other group of students, benefit from that kind of educational experience.

It is clear that CSU faculty should know and understand the standards, not only to ensure that they are appropriately incorporated into the curriculum, but also to help mold and shape the standards as they evolve and to appreciate the strengths and limitations of a standards-based education. Since there are many commonalities, it is important to fit the implementation of standards-based reform efforts for teachers into the broader context of existing efforts within disciplines. Professional societies and other national organizations, such as the American Chemical Society (ACS), Project Kaleidoscope (PKAL), the National Commission for the Teaching of Mathematics (NCTM), and the American Historical Association, are deeply involved in defining and assessing improvements in teaching and learning.

Faculty development efforts will need to be directed at acquainting key CSU faculty with standards in their discipline and at implementing changes in the curriculum. K-16 partnerships are an excellent vantage point from which to assess curricula for teachers and to better inform CSU faculty about standards-based education in schools. In addition, professional societies have developed discipline-specific materials that can aid departments and programs.

Partnerships and K-16 collaboration can also build on resources that exist throughout California to improve teacher preparation programs and make them responsive to the needs of the schools and their students. Through collaboration, teacher education becomes not only an all-university responsibility, but an all-community responsibility as well.

Preparing secondary teachers to teach in standards-based instructional programs requires a coordinated system of teacher education that rests on a solid infrastructure guided by a fresh conceptualization of teacher education as an all-university responsibility. CSU campuses should identify existing elements that may be used to bring together subject matter faculty, education faculty, community college faculty, K-12 teachers, administrators, and the community. Strengthening the collaboration among these groups can be done through a variety of vehicles including teacher education councils, centers for pedagogy, K-16 partnerships, and Professional Development Schools.

Each campus should be encouraged to develop a plan whereby content and education faculty would have a stronger partnership, perhaps through holding more frequent meetings together, through increased written communication among all the parties involved, and through more vigorous efforts of the professors serving as liaisons between the School of Education and subject matter faculty. In addition, we encourage enhanced cooperation between undergraduate subject matter programs and education departments in the sharing of resources and in the coordination of school placements.

3. Recognize the vital role played by Letters, Arts, and Sciences faculty in the preparation of teachers through the Retention/Tenure/Promotion process.

The CSU can provide a national model for integrating education and research if a cohesive system of expectations and rewards is established. Faculty should be rewarded for their work in teacher education by acknowledging their scholarly contributions and recognizing their service efforts in support of teacher preparation. Collaboration among faculty at various levels and in diverse disciplines who share common interests in teaching and learning is a potent means to expand the knowledge base and improve educational practices. In addition, broadening the joint doctoral program cannot only provide faculty in areas of critical need, but also expand the capacity of the CSU to continually improve student learning.

2. Strengthen K-16 collaboration by bringing together subject matter faculty, education faculty, community college faculty, K-12 teachers, administrators, and the community.
Campuses should develop rewards systems embedded in the Retention-Tenure-Promotion and Merit Pay processes that evaluate and reward faculty contributions to teacher preparation, and to teaching and learning in general. Rewards structures should honor collaboration for curriculum development, research, scholarship, field-based teaching and research, external grants, and school reform efforts. Rewards for faculty at all levels, junior to senior, should be implemented.

Academic units can also emphasize teacher preparation by establishing appropriate sub-disciplines, especially in core areas (English, Mathematics, History/Social Science, Science, Foreign Language and the Arts) that are critical to teacher quality. CSU faculty in the Letters, Arts, and Sciences should be encouraged to contribute to the scholarship of teaching and learning, and to collaborate with education specialists, including colleagues in colleges of education and school districts. Campus reward systems should recognize contributions made by faculty to teacher preparation and campus funding should be adequate to support the tasks at hand.

Summary and Recommendations of Subcommittee II:
Structure of Secondary Teacher Preparation at the CSU

Introduction

Subcommittee II was charged with researching, discussing, and developing recommendations on the structure of secondary teacher preparation in the CSU. There was particular interest in models of collaboration that facilitate: 1) linkage of subject matter and professional preparation; 2) field experiences (e.g., professional development schools); 3) university faculty development; and 4) transfers from community colleges.

The work of the committee was completed through formation of three subgroups to address the proposed areas of emphasis. Faculty from K-12, community colleges, and the CSU were invited to each meeting to provide their perspectives on the issues and to critique the preliminary findings and emerging recommendations.

Recommendations and Discussion

1. Establish a mechanism to ensure coordination of subject matter and professional preparation content for each single subject program.

   The structure of single subject teacher preparation programs varies widely across the CSU, but on most campuses it is marked by disjuncture between undergraduate academic majors and post-baccalaureate credential programs; and between the subject-matter faculty who are responsible for content preparation and the education faculty who provide the professional credential courses. The administration and oversight of single subject programs is located in the college of education on some campuses and in content departments on others. Both arrangements can generate problems in communication and in the separation between content and pedagogical preparation. Faculty responsibilities for undergraduate and credential education are often not connected, and structures are frequently not in place to ensure that the education and content area faculty communicate regularly about single subject requirements and student progress.

   Most campuses still offer “4+1” programs in which undergraduate content preparation is separated from credential courses. Moreover, on many CSU campuses, a sizable number of credential students do not complete their subject matter preparation at that institution. This places an extraordinary burden of evaluation and referral on single subject coordinators in various disciplines who must determine whether candidates can be certified for subject matter competence. It also creates difficulty for credential faculty who certify the quality of the subject matter preparation. At the same time, a large proportion of undergraduates completing subject matter preparation programs finish their credentials at universities outside the CSU. Because of these problems, our committee strongly recommends that structures be put in place to help subject matter faculty and education faculty coordinate the preparation of single subject teachers.

2. Evaluate the regional need and increase the number of blended programs in single subject shortage areas where necessary.

   To date, few campuses have implemented a blended option in single subject credential programs. This undergraduate route to a credential can be an important option for recruitment in shortage areas such as mathematics and science by providing early fieldwork opportunities to students who might not otherwise consider careers in teaching. The ability to provide multiple-year field placements with increasing levels of responsibility in the classroom is also a valuable outcome of a blended program.
3. Use tutoring and community service as a central feature for early field experience by connecting fieldwork in grades 7-12 with specific content areas.

There is a need to provide future teachers with more authentic field experiences that are strongly supported by everyone involved in the process, including university faculty, secondary teachers, field supervisors, and school administrators. The increasing complexity, challenges, and diversity of schools and classrooms require a strong commitment from all parties to strengthen the field experiences component of teacher preparation programs so that novice teachers will perform effectively after securing a teaching position.

This linkage may assist in providing greater coherence for candidates who are simultaneously learning about subject matter and about how to organize subject matter for classrooms in middle and secondary schools. Students enrolled in university courses could serve as tutors for grades 7-12 students in specific content areas. In addition, students should receive some of their placements in grades 7 and 8 to develop an understanding of middle school programs.

Each CSU campus should work with partnership schools to identify appropriate opportunities for university faculty to observe and participate in middle and high school classes in the subject matter closest to their own so they can understand, viscerally as well as intellectually, the challenging range of problems encountered at these educational levels. These partnership schools should be asked to develop opportunities for middle and high school teachers to visit each campus and meet with students in content as well as education classes—either through teacher-in-residence programs or as invited guests to classes. Whenever possible, mini-grants, release time, and other incentives should be offered to university and high school faculty members for participating in these important programs.

Consideration should be given to the possible rewards derived from field student tutoring and longer-term commitments to schools welcoming field students. This may be particularly important under the new professional preparation standards (CCTC, 2001) and with the advent of blended secondary programs due to the increasing number of undergraduates who will be seeking school placements for fieldwork.
4. Develop close collaboration between subject matter program coordinators, outreach staff, and appropriate discipline-based departments at the community colleges.

Community colleges may offer some of the best recruitment opportunities for teaching. Public schools are in great need of increasing the diversity of the teaching force, and our community colleges represent the true diversity of students in California’s public schools. Additionally, the great majority of CSU’s teacher education students begin their higher education in the community college system, so that it only makes sense to strengthen the articulation between the two levels of preparation.

Single subject preparation coordinators need to identify their counterparts in the appropriate discipline-based departments in the community colleges with the intent of informing them about the programs available on the CSU campuses and the entry requirements community college students will have to meet in order to transfer into the CSU. Such collaboration could very well lead to the identification of early admission students and create a pipeline to facilitate the transfer of these students to the CSU.

CSU campuses were surveyed to gather information on the current status of campus outreach efforts for early identification of potential students for single subject preparation programs, aimed at 1) increasing the number of students transferring into the CSU single subject preparation programs, and 2) providing these students with useful and timely information on transfer requirements, contact persons, and available programs.

The information gathered has demonstrated that there is still a need for a much greater collaborative effort to effect the seamless transfer of community college students into the CSU in traditional degree programs as well as in those that offer approved CCTC secondary subject matter preparation, including both blended and traditional 4+1 programs.
The subcommittee also found that community college students have some difficulty in identifying where to find information in campus catalogs about pre-credential single subject course requirements, service learning, and the practical experience needed for entry into the credential programs. Some campuses need more user-friendly web pages that clearly identify requirements for pre-credential course preparation or CCTC-authorized single-subject programs available on the CSU campuses. The committee recommends closer interaction among the schools of education, the discipline-based departments that have approved CCTC single-subject programs, and the campus outreach offices in order to create a coordinated effort to inform and recruit potential single subject community college students into the programs offered in the CSU. Early identification of potential candidates for single subject preparation is needed.

Summary and Recommendations of Subcommittee III:
Recruitment and Retention of Teachers in Areas Where Shortages Exist

Introduction
Subcommittee III addressed the challenge of recruitment and retention of middle and high school teachers. Particular attention was focused on those hard-to-hire fields where shortages exist. In addition, the committee investigated, scrutinized, and discussed potential impediments faced by candidates entering the teaching profession and current efforts to alleviate those obstacles.

By addressing the teacher shortage in hard-to-hire fields, Subcommittee III hopes to facilitate:

- An increase in the number of prospective teachers in those fields where shortages exist
- A decrease in the dependency on a large number of emergency permit holders in hard-to-hire areas
- An increase in teacher retention in hard-to-hire areas

In general, recruitment and retention of teachers are ongoing challenges. In this teacher-shortage environment, the problems are even more critical in the hard-to-hire areas. Some of the areas identified are:

- Mathematics
- Bilingual Education
- Science
- Special Education

California’s Commission on Teacher Credentialing (CCTC) reports statewide shortages in all of these hard-to-hire areas. In its First Annual Report, “Teachers Meeting Standards for Professional Certification in California,” dated 2000, the CCTC compiled and analyzed data on the qualifications of teachers certified in 1997-1998 and the first half of 1998-1999. According to that report, 9,928 waivers or Emergency Permits for the sciences, mathematics, and Special Education areas alone were issued for AY’s 1997-1999.

In addition, the total number of requests for special teaching authorizations (not credentials) has increased to 42,000, or about 14 percent of the work force in 2000-2001, and includes teachers who are teaching with no credential (first time), teachers who have another type of credential and are teaching out of their subject areas (new type), or teachers who are taking course work toward credentials (reissue). The data reflect not only the shortage of fully prepared teachers in these areas, but also underscore a lack of preparation in the disciplines of those who are teaching. Further, a large proportion of those individuals teaching on Emergency Permits are doing so in low-achieving schools.

Recommendations and Discussion
1. Explore “future teachers” connections extended to high schools and community colleges with a discipline-specific emphasis (e.g., Science Teachers of Tomorrow, Mathematics Teachers of Tomorrow, Bilingual Teachers of Tomorrow, etc.).

There are a number of factors affecting students’ willingness to teach in hard-to-hire areas. First, the committee found that university students are not always adequately prepared in the hard-to-hire disciplines. Further, students appear to be unclear about what it takes to become a teacher and, in particular, about the subject matter requirements for teacher preparation. Students also point out that the length of time it takes to complete teacher training, particularly if one is a “late decider,” is a deterrent. This also is the case with those students wanting to become fluent enough in a second language to qualify as bilingual teachers. In addition, some students have developed long-term fear of mathematics and the sciences due to negative early experiences and, consequently, feel that these subject areas are “too hard.” Another important variable not to be overlooked is the significant number of students entering the CSU requiring remediation (approximately 46 percent in both English and mathematics). Strong connections with or sponsorship of high school and community college student organizations can serve as a means for providing accurate information and early success with tutoring and mentoring opportunities.
2. Promote teaching as a career option to all students in mathematics, science, and other shortage areas, through faculty advisors and course instructors.

Many first-year students are often undecided in their career choices and many have not yet selected majors. Perception of the possibilities teaching offers can readily determine if students choose to enter the profession. For prospective teachers, important considerations include expectations regarding salaries, working conditions, demands from parents, students and the general community, and status. The comparatively lower starting salaries for teachers particularly appear to affect science and mathematics majors who view themselves as having more lucrative options in other societal segments. In addition, mathematics and science majors, already saddled with very demanding programs of study, are not inclined to spend an additional year in a credential program.

Faculty members and student advisors should be encouraging all students, particularly in shortage fields, to at least consider teaching as a career option. Students who are undecided can make connections with credential students and others who can talk to them about the rewards of a teaching career. Career changers, who may have initially chosen another route but return to teaching, could exemplify for students the importance of other career rewards besides the financial, and of the importance of intrinsic rewards and satisfaction in one’s job choice.

3. Develop models of mathematics/science teaching excellence to provide opportunities and incentives for faculty to promote teaching.

Campuses should be encouraged, individually or by regions, to develop and share models of exemplary mathematics and science teaching. These models could provide professional development to education and subject-matter faculty thereby improving the education of students in these secondary teacher preparation programs. Such models could also provide faculty incentives for additional professional development and for creating these models of excellence.

Since required subject matter content preparation is partially imbedded in the general education curriculum, professional development directed toward general education instruction should incorporate information about the pedagogical as well as content needs of prospective teachers. Whenever possible, K-12 teachers should be included in designing and participating in professional development for university faculty.
APPENDIX

A Snapshot of Exemplary Secondary Education Programs Across the CSU

California State University, Bakersfield
LEA and IHE Collaboration: The Kern County Initiative for Recruiting, Preparing, and Retaining Highly Qualified and Effective Teachers proved to be an effective tool for secondary teacher education recruitment in the Bakersfield region. This year-long project was sponsored by the Center for the Future of Teaching and Learning, CSUB, Kern County Superintendent of Schools (KCSOS), the community colleges, the private IHEs, and the majority of the Local Education Agencies (LEAs) in Kern County. The research committee provided hard data on issues related to teacher preparation, professional development, hard-to-staff schools, and a pipeline to the committee chairs of the respective working groups.

The LEA and IHE Collaboration Initiative confirmed the fundamental and critical nature of collaboration between LEAs and IHEs for teacher recruitment, preparation, and retention reform. A well-attended symposium in April provided the participants in the initiative with more community input from their colleagues around the county to refine action plans for implementation in 2003. The James Irvine Foundation and the Stuart Foundation provided funding.

California State University, Chico
Developed by the CSU, Chico departments of Physical Education and Education, the Blended Physical Education/Single Subject Credential Program integrates subject matter preparation and professional teacher preparation. Providing a bachelor’s degree in physical education and the Single Subject Credential in nine semesters, the program is aimed at early deciders who are CSU, Chico students or transfer students. Candidates also have an opportunity to earn a Specialist Credential in Adapted Physical Education. The Blended Physical Education/Single Subject Credential Program draws many elements from the highly successful Integrated Teacher CORE Program for the degree in Liberal Studies and the Multiple Subject Credential, including the strong democratic education rationale. The program will be one of the first applications of the new flexible block system for delivery of teacher education programs developed at CSU, Chico to meet SB 2042 standards, and will serve as a template for developing additional Single Subject blended programs.
California State University, Dominguez Hills

Project MASTER (Mathematics and Science Teacher Education Readiness) is a collaboration between CSUDH School of Education, the Los Angeles Educational Partnership and the Los Angeles Unified School District (Local Districts G and I). The program received initial funding from the U.S. Department of Education Transition to Teaching Program and has received additional funding from Boeing Corporation.

The purpose of the grant is to identify career-transition people who want to become secondary mathematics and science teachers and to put them through an accelerated program to complete their preliminary single subject teaching credential in one year.

The participants take their classes at the LAUSD 52nd St. School Professional Development Center during the mornings and observe and participate in classrooms in Local Districts G and I in the afternoons. In addition, they participate in reflective inquiry groups and receive coaching.

All of the participants have been guaranteed employment in LAUSD beginning fall 2002. The second cohort of participants began June 2002.

California State University, Fresno

The Kremen School of Education and Human Development (KSOEHD) at California State University, Fresno and McLane High School in Fresno Unified School District collaboratively operate an on-campus academy for 10th grade students. The primary purposes of the project are to provide a setting for identifying, researching, evaluating, modeling, and disseminating best practice with regard to educating diverse secondary students, and to increase college attendance among the 140 primarily minority students who attend the academy each year. Project objectives include:

- To provide a setting in which KSOEHD students can observe exemplary teaching practices, with special emphasis on effective instruction of diverse students
- To make available a teaching methods laboratory for use by the university faculty in charge of the professional preparation of future secondary teachers and by local high school faculty
- To increase the number of students from the participating high school who begin to take the steps necessary to meet college entrance requirements and who ultimately enroll in college.
Academy students represent a cross-section of McLane’s population, not just the college bound. Due to the ethnic and linguistic diversity of its students, McLane is an ideal target for recruitment of underrepresented students. These factors, combined with McLane’s high percentage of low socioeconomic status students, high dropout rate, and high rate of teen pregnancy, make the high school representative of the challenges faced by many of California’s teachers, and thus an excellent population for use in teacher training.

A team of four teachers provided by McLane staffs the academy. They represent the core academic disciplines for 10th grade (mathematics, science, English, and social science) and function as an interdisciplinary team. Following a flexible schedule, they offer a model curriculum using innovative teaching strategies. Students attend the academy five days per week from 8:00 a.m. to 3:00 p.m. for a full semester. In addition to their core studies, academy students earn credit along with regular university students in physical education classes taught by university faculty. Students can select two classes from a varied menu ranging from karate and strength training to bowling and golf. They also earn credit in an interdisciplinary arts class taught by a faculty member from the Theatre Arts Department, and an “academic language” class which prepares them for the language challenges of the college classroom.

This project has been a benefit to the university, the Kremen School of Education and Human Development, and the nearly 1,000 student participants from McLane High School who have attended the academy.

California State University, Fullerton
Reflecting the complex contexts of the secondary classroom and modeling a learning community where learning is interactive and dynamic, Single Subject candidates at California State University, Fullerton are divided into Professional Development Districts (PDDs) in which four major strategies are emphasized:

- Preparing prospective teachers
- Providing professional growth opportunities for secondary school educators
- Providing opportunities for research and collaboration for university faculty
- Enhancing learning opportunities for 7th through 12th grade students

This comprehensive structure of collaboration and cooperation between multiple levels of educators provides a dynamic and interactive learning environment that effectively prepares teachers for a rapidly changing and complex society.

The Single Subject Credential Program faculty is committed to a model of teacher education where university and secondary school faculty and administrators collaborate to provide each other and pre-service teachers opportunities for professional development. Activities within the PDDs illustrate this multilayered approach:

- District staff grow professionally as they lead student teacher seminars and teach school-site courses in “EDSC 110, The Teaching Experience: Exploration” to high school juniors and seniors.
- Credential students participate in a weekly seminar at district offices and two semesters of student teaching. They also are employed by districts to substitute teach for their master teachers.
- Undergraduate students engage in early field experiences and are employed as district tutors and instructional aides.
- High school juniors and seniors receive college counseling and university credit for completing the teaching survey course taught at their school site.
- University faculty establish positive relationships with secondary school faculty and administrators through program development, grant writing, and research.
- The Department of Secondary Education collaborates with districts in Paraprofessional Training, Pre-Intern, Intern, and BTSA programs.

The Professional Development District has evolved since the secondary education teaching credential was first offered at Cal State Fullerton. Major program revisions involve consultation, cooperation, and collaboration with constituent districts. A member of the faculty of the Department of Secondary Education is assigned as Professional Development District Coordinator and represents the university in the district, conducts on-site seminar classes, and provides counseling and advisory services to candidates. Included in each Professional Development District is a district staff member who is designated Resident Instructor. This person represents the district in the program, acts as a liaison between the district and the university, assists in candidate placement in the district, and participates in on-site seminar classes for candidates.
California State University, Hayward

California State University, Hayward’s Department of Teacher Education and the New Haven Unified School District have enjoyed a long history of innovative partnering beginning with Teacher Corps in the late 1970s. In 1994, a team of CSUH professors involved in that early work met with district administrators and teacher leaders to craft an alternative credential model that would provide a bridge between educational theory and practice. The New Haven/CSU Hayward Single Subject Partnership Program provides:

- Joint planning and collaboration between the university and the district
- Co-teaching of academic course work by university instructors and exemplary district staff
- A district-based, integrated, developmental approach to work rather than a series of discrete classes taken at the university
- Yearlong placement in a single school site with alternative short placements at other sites within a single district to promote a sense of identification and belonging
- District-based academic course work in a mixed cohort of candidates and content methods classes at the university
- Individualized coaching by trained support providers (master and partner teachers) alongside university supervisor assessors leading to three-way conferences twice a year.

District instructors in the program include several National Board Certified teachers as well as teachers honored as Teacher of the Year at the district, county, and state level. Also, interns from the program have twice been honored by the California Educational Placement Association as “First Year Teacher of the Year for Northern California.” The New Haven/CSUH SSP was cited as a model of excellence by the National Commission on Teaching and America’s Future (NCTAF) in its report, “Doing What Matters Most: Investing in Quality Teaching.” In addition, the program has been featured on the Jim Lehrer News Hour, the California Teacher Association’s Quest for Excellence Radio broadcast, and National Public Radio discussions of high quality teacher preparation and induction.

The integrated model has evolved beyond the New Haven SSP Program to become a second, legitimate pathway for single subject candidates at CSUH. The Single Subject Integrated Pathway is currently one of the programs selected to apply for early adoption of the new SB 2042 credential standards.

Humboldt State University

Humboldt State’s Secondary Education program has instituted a new service learning requirement in conjunction with its Multicultural Foundations of Education course. Candidates are placed in community and school settings with diverse students and work on individual education projects to enhance the students’ performance in school. The candidates also write a reflective journal and then complete a service learning gallery exhibit explaining the connection between the course and the educational experiences. Many candidates are placed in courts and community schools for this service learning experience.

Humboldt’s secondary education has developed a partnership with Century Hall, a learning community within Fortuna High School in Humboldt County. Sixteen credential candidates complete their fall fieldwork placement at Century Hall and concurrently enroll in a course, Teaching and Learning in Secondary Schools. The themes, concepts and assignments from the university course are articulated with the integrated curriculum in Century Hall. High school teachers, credential candidates and the university professor jointly prepare learning sequences and collaborate to provide appropriate project-based experiences for high school students and credential candidates. To ensure that credential candidates connect with local community groups in this remote rural region of California, a service learning component is part of the field experience.

California State University, Long Beach

CSULB’s College of Education has partnered with five middle schools and five high schools to help increase the number of underrepresented youth in college. The Gaining Early Awareness and Readiness for Undergraduate Programs (GEAR UP) Inland Empire project works with 7th through 11th grade students and their parents on needs such as systematic training and effective parenting, parenting styles, academic tutoring, extracurricular activities, mentoring, and college and career preparation. The program also helps teachers and counselors with increasing cultural awareness, learning styles, multiple intelligences, technology, and working with the gifted and talented.

The Department of Educational Psychology and Counseling works with the partners and provides training and support for the above-mentioned goals through a service learning model. For example, counseling students and their instructor have worked with the parents of pupils
who have been referred for behavioral problems, while school psychology students and their instructor have worked with the parents’ children. Parents have indicated that these workshops help improve their children’s self-esteem as well as their own relationships with their children. CSULB has also instituted an innovative Teacher Warranty Program, which allows newly graduated students to return to school to take classes in areas in which they feel deficient after their first classroom teaching experiences. Most beginning teachers feel uncertain when they face their classes for the first time, and having this “safety net” option helps boost their confidence.

California State University, Los Angeles
The secondary education faculty of the Charter College of Education and the faculty in the natural sciences department at Cal State L.A. have created the only undergraduate blended single subject science major in the state. This program, BEST (Better Educated Science Teachers), permits undergraduate students to complete simultaneously a B.S. in Natural Science (with an emphasis in biology, chemistry, geoscience, or physics) and a preliminary single subject with CLAD emphasis credential. BEST features a new lower division course, “Exploring Science in Classroom, School, and Community,” which enables students to complete early field experiences in local high schools. The program has been designed and implemented with the full collaboration of the science teachers in two Los Angeles high schools as partners.

California State University, Monterey Bay
The Single Subject teacher preparation program at CSUMB is grounded on the principle that successful completion of a single subject credential requires dutiful attention to advisement for each and every applicant. CSUMB provides two pathways to the single subject credential: a traditional program and an internship option. Applicants who inquire about the program receive individual consultations and advisement regarding their qualifications for either of these programs. Dr. Beverly Carter, coordinator of the program, discusses program requirements and applicant qualifications with each student who submits an application. These consultations are focused on the applicant’s experiences, qualifications, and interests rather than program requirements. As a result of this approach, each applicant leaves initial advisement with a plan for successful matriculation, rather than a simple list of requirements yet to be fulfilled. Often, applicants are guided into a pre-profes-
sional phase of experiences that provide them with the qualifications needed for formal program admission. The advisement that takes place during each applicant’s enrollment in pre-professional experiences is intended to help students meet formal requirements for program admission. Through this intensive, personal approach, each candidate perceives herself or himself to be a future student in the single subject credential program, rather than an applicant in the traditional sense who is waiting to be judged as adequate or inadequate for admission, with no opportunity to shape the ultimate decision regarding program entry. The dedication of the single subject program to individualized advisement and prospect development leads ultimately to most applicants meeting program admission requirements. This practice has resulted in a high rate of yield from initial contacts. Applicants are typically enrolled in courses and experiences that lead to their ultimate admission, rather than being assigned to a file and merely told to wait until an admission decision is made.

California State University, Northridge
The Polytechnic/CSUN Professional Development Center (PDC) is home to CSUN’s Accelerated Collaborative Teacher (ACT) Preparation Program and the Single Subject University Intern Program. ACT is a pre-service, cohorted program for credential candidates seeking single subject, multiple subject, and specialist preliminary credentials. Single subject candidates complete the program in a single year as a cohort, taking team-taught common core courses, specialization courses, and field experiences, primarily at the PDC and its associated middle schools. The PDC is housed at Francis Polytechnic High School (Los Angeles Unified School District, Area B) and was initially developed through the DELTA (Design for Excellence: Linking Teaching and Achievement) Collaborative, an initiative of the Los Angeles Annenberg Metropolitan Project (LAAMP), and supported by a five-year grant from the Weingart and Ford Foundations.

Developed for college-ready freshmen, the Four-Year Integrated (FYI) Teacher Credential Program with options in English and mathematics allows students to complete a B.A. and earn a preliminary credential in English or mathematics in four years. Features of the program include early and ongoing field experiences, an emphasis on urban schools and on adolescents, paired and blended courses, and a rigorous curriculum in both the subject area and pedagogy.
San Diego State University
San Diego State University’s City Heights K-12 Educational Pilot is a community/school/university partnership operating an urban elementary, middle, and high school. Goals focus on improving student outcomes and professional development. At the middle school, the partnership offers a continuum of professional development beginning with student teachers, extending to new teachers, and continuing with master teachers. The school enrollment is highly diverse: 48 percent are English learners; 100 percent qualify for free or reduced lunch. Previously one of the lowest performing middle schools in the state, it has met state-established literacy accountability targets since the first two years of the partnership’s inception. Early success has been attributed to restructuring consistent with NCATE PDS standards, including establishing a learning community and grounding instruction in research and practitioner knowledge. Based on action research, the school developed a literacy plan with core instructional methods implemented in all classrooms and pre-service teacher preparation. The pre-service program’s on-site supervision model provides a higher degree of support than traditional university-based supervision.

San Francisco State University
San Francisco State University, through the College of Education’s Secondary Education Program, has an established history of creating programs with local school districts and private schools. The faculty is committed to working to create credential programs in local school communities. Elk Grove School District and Lick-Wilmerding High School are examples of their efforts. Over the last two years, the Secondary Education faculty under the leadership of Drs. Jacob Perea and Vera Lane and Cañada Community College President Rosa Perez have been actively engaged in developing a jointly sponsored program at Cañada Community College in Redwood City. The intent of this program is to provide career changers, those in the pipeline at the community college, and recent undergraduates with an opportunity to pursue their secondary education credentials in the most expedient manner possible.
San José State University

In spring 2002, the San José State University Secondary Education Department and two local workforce development agencies, NOVA and Silicon Valley Workforce Investment Board, entered into a grant-supported partnership to prepare 50 to 100 displaced technology professionals to enter public school secondary math and science classrooms. The initial phase of the program included screening and interviewing, a week of shadowing a credentialed math or science teacher, and informational and debriefing seminars. The credential program curriculum will be completed both in regular credential courses and in specially designed workshops to meet the needs of the Tech to Teach candidates. Qualified candidates who are hired by local districts will participate as interns. Screening for a second cohort group, which will include all subject areas, will take place fall 2002.

California Polytechnic University, San Luis Obispo

Cal Poly's single subject program exhibits exemplary practice in three ways:

- The program partners with the Lucia Mar Unified School District on a professional development school model based on the National Network for Educational Renewal, linking single subject faculty and credential candidates to master teachers in four middle schools and one high school. Candidates locate themselves in the district and develop close ties to their university faculty, master teachers, and secondary students.

- The single subject English program is structured so that a distinguished teacher in residence (TIR) team teaches methods with the university professor and co-supervises English student teachers. The TIR also has an opportunity to teach undergraduate classes such as composition and adolescent literature, allowing the teacher to return to the secondary school with a better sense of how the secondary and university English curricula articulate.

- Single subject faculty collaborate across colleges at Cal Poly, with teacher educators in subject matter departments offering methods and subject matter content courses linked to the core professional education curriculum delivered by education faculty.

The teacher education faculty team consists of education faculty and faculty from the Colleges of Agriculture, Liberal Arts, and Science and Math.
California State University, San Marcos

The Cal State San Marcos Secondary Program is committed to training teachers in the critical skills necessary to support teachers in their efforts to both create democratic classrooms and to work on interdisciplinary teams. The program begins each year with a two-day interactive workshop for candidates targeting the following goals:

- Development of communication and conflict resolution skills necessary to become a successful member of an interdisciplinary team
- Development of an understanding of group dynamics and teamwork as a way to lead and train others in cooperative group work
- Development of strategies which assist teachers in giving all members of their own classes an active voice in decision-making and problem solving.

The Single Subject Credential Program at CSU San Marcos attempts through student assignments to link theory to practice and, at the same time, to involve collaborative efforts between the master teachers in-service and the pre-service teachers from the program. One example is a technology project that assigns four single subject pre-service teachers as instructors with a middle school language arts teacher in GEAR UP, an afterschool program implemented at San Marcos Middle School. In this program the teachers were all pre-trained in a course called “MovieCamp—Enhancing Academic Skills through the use of Digital Cameras” (a number of other pre-service teachers also took this course). The master teacher and four student teachers used skills gained in the graduate course to teach a four-week afterschool class to enhance the academic skills of the GEAR UP middle school students by using digital movie making. Their involvement included leading whole group discussions, monitoring small production teams of students making movies, and leading specific seminars on acting, writing, editing, and marketing. They also were involved in the overall assessment of the program by designing an action research project on the effectiveness of the project, and are currently involved in writing a teacher’s manual on MovieCamp. All four students have recently been hired by local school districts where they hope to implement MovieCamp within their own disciplines.

Sonoma State University

One of the critical assessment and evaluation events in the Single Subject program at Sonoma State University is Portfolio Day. Before candidates can advance to student teaching, they must create portfolios, a collection of their work augmented by their own synthesis and reflection. Candidates present their portfolios to a team of university faculty, P-12 teachers, and administrators, organizing the portfolios according to the California Standards for the Teaching Profession and university expectations for working with English learners and the use of technology.

Portfolio entries include the candidate’s work in academic courses and fieldwork such as observation notes, classroom management plans, unit plans, daily lesson plans, videotapes and audiotapes, assessments, student work, conferences, and analytical and reflective writing. Many candidates create electronic portfolios that serve as the foundation for their professional portfolios that they complete during student teaching and carry forward into their careers.

California State University, Stanislaus

CSU Stanislaus’ Single Subject Credential Program is offered off-campus at field site centers in Modesto, Ceres, and Manteca. All of the education courses, except for the reading class, “Secondary Education in a Global Society,” and technology courses, are taught by a field site director, who is a Department of Teacher Education faculty member. A strong relationship exists between the SSCP Director, the student cohort, and the school site teachers, administrators, and staff. The field site aspect of the program guarantees that the curriculum is “reality based” and applied in actual classrooms. The course work and field experiences are designed to complement each other. A major goal of this teacher preparation program is the integration of theory and practice. Field sites have changed over the years in response to local needs for secondary teachers. Plans to open a Merced Field Center are under development.
THE CALIFORNIA STATE UNIVERSITY

BAKERSFIELD

CHANNEL ISLANDS

CHICO

DOMINGUEZ HILLS

FRESNO

FULLERTON

HAYWARD

HUMBOLDT

LONG BEACH

LOS ANGELES

MARITIME ACADEMY

MONTEREY BAY

NORTHRIDGE

POMONA

SACRAMENTO

SAN BERNARDINO

SAN DIEGO

SAN FRANCISCO

SAN JOSE

SAN LUIS OBISPO

SAN MARCOS

SONOMA

STANISLAUS