

**CREATING EDUCATIONAL FIELD STATIONS:  
A REMEDY AND A MODEL FOR DIVERSITY AND ACCESS  
IN HIGHER EDUCATION**

**Professors Hugh Mehan & Cecil Lytle**

**The Center for Research on Educational Equity, Access, and Teaching Excellence  
(CREATE)**

**University of California San Diego 92093-0036**

**Paper prepared for Warren Institute Conference, Proposition 209 10 Years Later,  
October 27-28, 2006**

**Abstract**

US colleges and universities, and especially UC, face a problem of massive under representation. Black and Latino/a students are not enrolled in colleges and universities in proportion to their percentages in high school or the general population. Understanding the causes of under representation, seeking remedies to this injustice, and ensuring a high-quality education for students from African American and Latino/a backgrounds is critical for the future of California and the nation. Future economic growth and maintenance of a civil society will be directly related to how well all segments of the population are educated.

CREATE and the Preuss School at UCSD operating as an “educational field station,” develop educational practices for the education of underrepresented youth, conduct basic and design research on the suitability of those practices, and assist other schools and universities adapt the Preuss model to their local circumstances. The Preuss School on the UCSD campus serves as a remedy and a model. It is a remedy in that it prepares 80-90 students a year from underrepresented backgrounds to enroll in competitive 4-year colleges. It is a model in that the principles developed at the school are available to be adapted in other contexts.

We suggest that the development of educational field stations associated with UC campuses is a model to consider for confronting the under representation problem in UC. Preparing under represented minority students to walk in the front door of our campuses is a more efficient and equitable model of outreach than current policies and practices.

Colleges and universities face a problem of massive under representation. Black and Latino/a students are not enrolled in colleges and universities in proportion to their percentages in high school or the general population. Whereas 66.9% of white students age 18-24 participated in college in 2000, only 61% of African American, and 53.1% of Latino/a students participated in college in that same year (Harvey, 2002). College

graduation rates unfortunately reflect this same pattern: 38% of African American, 46% of Hispanics, and 59% of whites ages 25-29 completed Division I colleges in 2000 (Harvey 2002).

The problem of under representation is especially evident at the University of California. In 1997, the year before the Regents and Proposition 209 eliminated Affirmative Action, 18.8% of the incoming freshmen on the 8 UC campuses were from underrepresented minority backgrounds. In Fall 1999, this percentage dipped to 16.9%. By Fall 2001, this figure increased to 18.6%, and by 2006 to 21.7% (UCOP, 2006a). Whereas the University can take some satisfaction from the fact that the percentage of under represented students has returned to the pre-Prop 209 levels, this statistic is misleading for two reasons.

First, under represented minority students are not evenly distributed throughout the UC system. Only 17.4% of the incoming class of 2006 at Berkeley, 15.2% of the incoming class of 2006 at UCLA, and 15.1% of the incoming class of 2006 at UCSD are underrepresented minorities. By contrast to these enrollment figures for the three most competitive campuses in the UC system, 27.4% of the class of 2006 at UC Riverside, 19.6% of the class of 2006 at UC Santa Cruz, and 24.1% of the class of 1006 at UC Merced are populated by underrepresented minority students (UCOP 2006a).

Second, the enrollment of underrepresented minority students in UC is still well below their proportion in high school and the general population. Whereas Chicano/Latino/a students comprised 35.9% of California Public High School Graduates in 2004, they comprised only 14.9% of new UC freshmen in that year—a gap of 21%. A similar gap exists for African American students: Whereas African American students comprised 7.3% of California Public High School Graduates in 2004, they comprised only 2.9% of new UC freshmen in that year—a gap of 4.4% (Studley 2004).

The problem of under representation in the student population is recapitulated in the faculty ranks. The percentage of African American faculty in UC has hovered around 2.5% and the percentage of Chicano/Latino/a faculty has hovered around 5% for the past decade. Translating these percentages into numbers we find only 147 African American faculty and 323 Chicano/Latino/a faculty members in the UC system in out of a total faculty of 5027 in 2004. Furthermore, most of these faculty members teach and conduct research in the Arts, Humanities, and Social Sciences, not in the natural sciences, engineering or computer science (UCOP 2006b) (See Table 1).

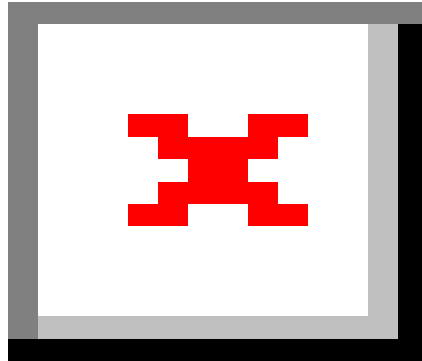


Table 1 (from UCOP 2006b)

The University has considered a variety of strategies to deal with the problem of under representation. Most of these involve changes in the admissions system. Here we refer to the shift from a strict consideration of students' GPAs and SAT scores to a comprehensive review of students' application files; "eligibility in the local context" plans; accepting the top 12% of students from high schools without extensive college-prep curricula. The Warren Institute, the sponsors of this symposium, are also considering various modifications of the UC admissions system. While we applaud these attempts to expand admissions criteria to be more meritocratic, we do not think, in and of themselves they will change the composition of the student bodies on our campuses—especially those that are more selective. No matter how we tinker with the admissions system, there are simply not enough underrepresented students presently on the pathway to college eligibility. We need to help the K-12 educational system prepare more students for college eligibility.

Therefore, we endorse plans that engage the University directly in the academic preparation of underrepresented students. In the following sections, we describe one such plan—the development of CREATE and the Preuss School on the UCSD campus—and urge the University to build similar "Educational field stations" in the context of their local circumstances.

### **CREATE: An "Educational Field Station:"**

#### **Creating a Model System for School Improvement**

In an unprecedented move by a major research university, UCSD responded to the challenge of developing a diverse student body in the absence of affirmative action by

establishing the Center for Research in Educational Equity, Access, and Teaching Excellence (CREATE) and the Preuss School on the UCSD campus in 1997. CREATE was charged by (then) UCSD Chancellor Robert Dynes and the Academic Senate with: (1) coordinating campus outreach efforts; (2) establishing and implementing K-16 partnerships; (3) building and maintaining the on-campus Preuss School UCSD (<http://preuss.ucsd.edu>) as a model of excellence and equity for an urban public school system; (4) extending the model to neighborhood schools; and, (5) stimulating and conducting basic and design research on educational equity issues.

Our faculty has taken the position that UC campuses must do much more than the current outreach programs presently in existence. While commendable in intention, they have proven over the past forty years not to be enough to overcome the effects of intergenerational poverty and the debilitating scars of racism. Indeed, the problems of recruiting undergraduate and graduate students, as well as faculty of color, can easily be traced back to a national public education system that allows youngsters of color and low income to be left behind and disregarded. Therefore, much of the energy of the UCSD CREATE faculty and researchers have gone into understanding how to establish and sustain a healthy culture of learning in urban schools in exchange for their current culture of survival.

To help build college-going cultures in underserved schools, CREATE has established an "educational field station" (Duster et al 1992) in the San Diego region. Educational field stations are analogous to agricultural field stations. The Morrill Act of 1862 established land grant colleges, designed to propel social progress by educating the nation's youth for the farm, factories, and professions. Under the provisions of the Second Organic Act of 1868, the State of California sanctioned the formation of a new institution that enabled the state to claim the land granted by Morrill Act (Douglass 2000). While the idea of propelling the University in the direction of agricultural and mechanical arts and applied sciences was met with considerable opposition by those who preferred a more classical educational approach, faculty on the Berkeley campus developed major agricultural research programs accompanied by programs of instruction designed to inform practitioners how they could improve their products. UC agricultural field stations developed and disseminated research that has made agriculture one of the major industries in California. Based on the logic of the UC agricultural field station, other UC research programs, including those in space and ocean exploration, structural engineering, health care, and computer technology have been developed that contribute to economic development and the public good under the aegis of the university's broader public mission.

Just as the University has risen to the challenges confronting the state from previous *economic* and *industrial* shifts in our society, now the University must rise to the challenges facing us from the recent *cultural* and *demographic* shifts in our society. California is becoming an increasingly diverse society. At the beginning of the 20th century, the so-called "Anglo" population constituted the vast majority of the state's population; Latinos, African Americans and Asian Americans were in the minority. Now, at the beginning of the 21<sup>st</sup> century, California is becoming a "majority minority" state; that is, no ethnic group constitutes a majority of the population. And by 2020 the white population will be 30%, and the sum of all so-called "minority populations" will

be 70% (the black population will be 5%, the Hispanic 48% and the Asian/Pacific Islander population 15%).

The question facing us now is: How do we forge a Civil Society in the face of ethnic, cultural, and socio-economic diversity? That is a question for public debate to be sure; but more importantly, we think that diversity is a *research* question that our University, because it is a public university, has the obligation to confront seriously.

Just as the University of California has met its Land Grant social and economic obligations with deep penetrating research, teaching, and service initiatives in agriculture, and then industry, the San Diego campus has engaged with the public and private sectors to develop educational “petri dish” model schools serving Title 1 students. CREATE researchers conduct basic and design research at the Preuss School and other public schools and make the lessons we learn about how to build a college-going culture available to educators and policy makers in the educational field.

### **The Preuss School: A Remedy and a Model for Diversity and Access in Higher Education**

The Preuss School is a single-track, college-preparatory public charter school on the campus of the University of California, San Diego (UCSD). It was established for the express purpose of preparing students from low-income backgrounds for college and to serve as a model for public school improvement. The school serves students from low-income backgrounds whose parents or guardians have not graduated from a 4-year college or university. The faculty and staff select through a lottery low-income sixth grade students with high potential but under-developed skills. “Low income” is defined as a family income that is no more than twice the federal level for free and reduced lunch. In addition, neither parent nor guardian can be a graduate of a 4-year college or university. In the 2003/2004 school year, 58.1% of the student population was Latino, 13.3% African American, 20% Asian, 6% White, 2.2% Filipino and 0.4% is Pacific Islander (McClure et al 2006: 7).

The school opened Fall 1999 on the UCSD campus after a contentious public debate, in which not only the concept of the charter school, but also tacit definitions of community, equality, and the university itself became the object of contest and struggle. The initial 1997 proposal was rejected, when it failed to garner the full support of either the faculty or its new chancellor, Robert Dynes. Fueled by a public outcry, negative press (notably from the San Diego Union Tribune, the LA Times, and Sacramento Bee), and pressure from the UC Regents, a more comprehensive plan, which created CREATE was later approved by the Chancellor and the faculty (Rosen & Mehan 2003).

The principles of the Preuss School are derived from current thinking about cognitive development and the social organization of schooling. Research on de-tracking and cognitive development suggests all normally functioning humans have the capacity to complete a rigorous course of study in high school that prepares them for college and the world of work if that course of study is accompanied by a system of social and academic supports (Cicourel & Mehan, 1983; LCHC, 1983; Bruner, 1986; Meier, 1995; Mehan et al 1996).

## Creating a College-Going Culture at the Preuss School [\[1\]](#)

Recent research (Oakes 2003) suggests that a college-going school culture is enhanced by safe and adequate school facilities, rigorous academic curriculum, qualified teachers, intensive academic and social supports, opportunities for students to develop a multi-cultural college-going identity, and strong family- neighborhood-school connections. Although Oakes' (2003) model was not explicitly used to build the academic plan of the Preuss School, it serves heuristically to organize a presentation of the school's structure and culture.

### A College-going School Culture

The educators at the Preuss School seek to establish a “college-going school culture”—a “conditio[n] that students in educationally disadvantaged communities require for learning and successful college preparation” (Oakes 2003: 2). All the other “critical conditions” for equity and excellence enacted at Preuss flow from this primary one. A college-going culture develops when “teachers, administrators, and students expect students to have all the experiences they need for high achievement and college preparation . . . . Students believe that college is for *them* and is not reserved for the exceptional few who triumph over adversity to rise above all others” (Oakes 2003). Elements of a college-going culture include a shared purpose shown through rituals, traditions, values, symbols, artifacts and relationships that characterize a school's personality. A school culture is important because it “shapes the way students, teachers, and administrators think feel and act” (Peterson & Deal, 2002: 9).

Some of the symbols that focus students on college are the school's dress code, the location of the school, and the daily presence of UCSD students as tutors. Preuss students wear uniforms to school, which are intended to symbolize explicitly their participation in a college preparatory school. The presence of the school on the university's campus is intended to orient students to many dimensions of college life. Preuss students take courses at the university and serve as interns in academic departments on campus which gives them access to professors and students, thereby increasing their knowledge of the college-going experience and connecting them to valuable social networks.

UCSD students serve as tutors at the Preuss School. In addition to assisting Preuss students with their academic work—which is their explicit purpose—they also serve as role models for the students they tutor. Preuss courses are taught in a block schedule, which means that students rotate through their eight classes on alternate days, mimicking the college MWF and TTH class schedules. Preuss graduates who return to campus for alumni days also provide insight into the college-going experience.

The middle school was built next to the high school to help foster a college-going culture. Doing so introduces students to the idea of preparing for college early and enables younger students to learn some aspects of the “hidden curriculum” from older students. Counselors and teachers often encourage students to explore different types of colleges and learn about requirements, costs, and potential sources of support. To this end, they tour the UCSD campus and interact with college tutors in their classrooms and after school. The college application process, including writing college essays, becomes a

regular part of the students' course of study. The school requires all students to apply to at least one University of California campus, one California State University campus, and one private college or university.

### **Safe and Adequate School Facilities**

The Preuss School is located on the UCSD campus on a mesa above the village of La Jolla, one of the most affluent neighborhoods in Southern California. Built in 1999, the school has up-to-date science, computer, music, and art facilities for 750+ middle school and high school students. Classrooms, built to accommodate 25 students each, have specially designed spaces for one-to-one and group tutoring.

The school's physical and cultural distance from the neighborhoods of the students who attend the school cuts two ways. On the one hand, the location of the school a considerable distance from the low-income neighborhoods in which the students reside, provides a safe environment for learning. Its location on a college campus provides a symbolic connection to the students' intended future as college students. On the other hand, that very distance causes both physical and cultural stress. The students must commute—often by bus and trolley—45-60 minutes to and from their homes to the school, a condition that induces fatigue and separation from neighborhood friends—and sometimes, even family members (Khalil et al 2006).

Students told CREATE researchers (Khalil et al., 2006) that it was difficult for their parents to understand the challenges posed by the time it took to travel the physical distance between school and home. Students also felt their parents did not understand the stress that difficult academic material, such as tests, AP classes, and homework associated with the college-going culture being cultivated at Preuss, placed on them.

Students also reported that subscribing to the school's college-going culture required them to make their academic responsibilities a top priority, a choice that at times conflicted with the desires of the family to spend more time together. One Preuss senior told CREATE researchers: "The whole point about coming here, with having to stay after school, you really don't have time for other stuff. It just has to be Preuss. Your whole life is Preuss. That is how it was for me."

These sentiments were echoed by other students interviewed. They said the college-going culture of Preuss required them to emphasize academic activities, often to the exclusion of non-academic activities: family, friends, and time for themselves. Whether it was the commute to and from school, taking college preparatory courses, participating in academically oriented student clubs, devoting one to two hours a day to homework, projects, or engaging in community service, Preuss school students worked on their "college bound" identity in some form or another on a daily basis during the academic year.

### **Rigorous Academic Curriculum**

Research shows that students enrolled in higher-level courses perform better than those in lower-level courses. Haycock (1997) reports that students who take fewer than 4

vocational education credits in high school score on average of 299 on NAEP reading tests, whereas students who take 8 or more vocational credits score an average of 269 on those tests. On the other hand, white, black, and Latino students who take precalculus or calculus courses score on the average of 40 points higher on NAEP mathematics tests than students who take only pre-algebra or general math courses.

Cognizant of data such as this, Preuss students are only enrolled in college-prep classes. The school's curriculum fulfills or exceeds the University of California and California State University entry requirements, operationalized as the "A-G" course requirements. Courses at Preuss are taught on a block schedule that resembles college; they include: 4 years of English; 4 years of math; 4 years of science, including 3 lab sciences; 4 years of a foreign language; and 1 year of a visual and performing art. The college-prep curriculum symbolizes the high expectations that the school has for each student, which in turn is intended to emphasize the college-going culture of learning being instantiated at the school.

The curriculum and pedagogy of the Preuss School is based on a belief in the value of a traditional liberal arts education that can be traced back to Dewey. The educators at the school want to have every graduating student to be capable of written and spoken expression (in both English and a foreign language), mathematical reasoning, understanding scientific procedures and results, and an appreciation of the diverse cultures that make up western and non-western civilizations. The fine and performing arts are not construed as *electives* but as well considered courses in the intellectual development of students. The senior year of the school is integrated with UCSD; seniors are expected to take at least one UCSD course during their final year.

Designed to prepare students for the types of evaluations they will encounter in college the evaluation practices adopted by the Preuss School can also be traced through the Coalition of Essential Schools (Sizer, 1992, 1994) to Dewey (1900, 1902 [1956]). In addition to taking the required regimen of State-mandated standardized tests and UC/CSU mandated college entrance exams, Preuss students are expected to present an exhibition of their work annually. This exhibition takes the form of a written and oral presentation to a panel of judges—ideally composed of a Preuss faculty member, a UCSD faculty member, and a parent or community member. A portfolio of measures—test scores, students' course work, grades, exhibitions--is intended to give a more comprehensive view of students' academic progress than high stakes tests alone afford.[\[2\]](#)

We have participated in these exhibitions as "judges." It appears to us that the experience helps develop students' confidence in speaking confidently to adults. That skill has been recognized as an important one among many that empowers students in the classroom and the workplace by helping them develop the very sense of confidence, ease, and familiarity with the dominant culture's norms, manners, and ways of speaking that promotes students' social and cultural capital, and in turn, opportunities to learn and advancement through the educational and economic systems (Lareau 2003).



## **Intensive Academic and Social Supports**

Preuss students are not typical of the private or affluent public school students who routinely apply to college, however. Some of the students speak English as a second language, some have not been successful in elementary or middle school and none of the students' parents has graduated from college or in some cases even high school.

Recognizing that the students who enroll at Preuss are differentially prepared, the educators at the school have instituted a variety of academic and social supports or "scaffolds," to assist students meet the challenges of the rigorous curriculum required for entering 4-year colleges and universities. Most notably, the school extends its year by 18 days, which gives students more opportunities to meet the academic demands of the school. UCSD students serve as tutors in class and after school. Students still in need of additional help are invited to participate in additional tutoring sessions during "Saturday Academies."

In this way, the Preuss School has reversed the conventional time-curriculum relationship. In the traditional arrangement, students are educated for the same length of time, but the curriculum to which they are exposed varies. This practice leads to tracking (Oakes 1985). By contrast, it can be said the school has been "detracked" (Alvarez & Mehan 2006) by establishing high instructional standards and presenting rigorous curriculum to all students, while at the same time, varying the academic and social supports needed to enable all students to meet high academic standards. The relationship between academic performance and the enactment of needed social supports is displayed in Figure 1. The greater the students' academic performance, the fewer scaffolds are needed; likewise, the greater the students' academic needs, the more academic and social supports are activated.

### **Figure 1: Dynamic Support of Academic Development**

Students have an advisory teacher who serves as advocate and counselor for the same group of students from grades 6-12. Modeled after the successful AVID program (Mehan et al., 1996), the advisory class is a regular feature in the student's schedule, thereby emphasizing its importance. This class enables students and teachers to develop trusting relationships (Noddings, 1994) and to ensure that student achievement is monitored closely (Meier, 1995; Sizer, 2004). In order to ensure that the advisory teacher has adequate time to do this "advisory work," the school provides teachers with 6 1/2 release days per year. A substitute teacher, trained on-site, rotates through the classes and provides quality instruction. During this time the advisory teachers observe their students in classes, communicate with parents, or conduct personal conferences.

Research on the college preparation practices of well-to-do students and elite schools (Cookson & Percell, 1985; McDonough, 1997) shows that parents and counselors invest a considerable energy in developing students' portfolios and connecting them to college admissions officers. Because the parents of Preuss School students have not graduated from college, they often lack the cultural and social capital needed to make these connections. The school's counselor has assumed these responsibilities on behalf of the

school's students. She ensures that they take requisite admissions tests, secure fee waivers, obtain letters of recommendation, and apply to colleges—at least one CSU, one UC, and one private college or university.

### **Quality Teachers**

Current federal and state policy demands that schools have “qualified teachers.” Unfortunately, the field does not have a commonly agreed upon definition of quality. Instead, ‘quality’ is measured technically, in terms of degrees earned, credentials held, and whether courses are taught by teachers with degrees or credentials. For example, to comply with federal law while at the same time supplying enough teachers for the state’s public schools, California now defines “practicing teachers who have demonstrated knowledge of subject matter and who have either a credential or a plan for getting one as ‘highly qualified,’ regardless of their actual capacity to teach” (Esch et al, 2005: 3). The 39 full-time teachers on staff at the Preuss School in 2005-06 averaged 6.74 years of experience compared to the San Diego County average of 12.8 years; 58% had earned a masters or PhD degree, compared to the county average of 44%. 100% of Preuss School teachers were fully credentialed (McClure et al., 2006).

In an effort to increase the faculty’s teaching expertise in ways that go beyond tabulating degrees, credentials, and years of experience, teachers engage in professional development activities at the school site during the school day. Once a week, school starts late; this time is set aside for teacher professional development. Teachers meet in grade level or department teams to plan collaboratively, examine students’ work, and engage in “lesson study” (Lewis 2002; Alvarez & Mehan 2004).

### **Opportunities to Develop a Multi-Cultural College-Going School Identity**

When students see the acquisition of skills in the academic community and majority language and culture in an additive rather than a subtractive fashion, then it can be said that students develop a multi-cultural college going identity (Oakes 2003; cf. Gibson, 1987:189; Valenzuela, 1999). Students interviewed by Khalil et al (2006) described their education at Preuss as an additive not a subtractive process: “*Aunque la mona se vista de seda, mona se queda*” [3], was the response Khalil et al (2006) received from one student when asked if she felt comfortable expressing her cultural identity on campus. All students who this research team interviewed said they did not feel they had to forfeit their cultural identities in order to form their academic identities. Instead students felt that their academic identity complimented their cultural identity.

Students described the process of negotiating home and school identities as learning to express the appropriate behavior in each setting. While on campus, students understood that there was a certain way of talking required to interact properly, but when they returned home to their families and community, students did not hesitate to switch to the speech patterns and behavior expected there. When asked if she felt she needed to act differently when on campus, “Teresa” said:

Teresa: I probably interact differently, but I still act the same just probably here because the education levels, they're different here than they are at home. So I probably have to talk more like not ghetto, but like more at their level.

Researcher: At their level, as teachers or staff?

Teresa: Yeah, well, here probably I know more educational stuff than other seniors at other high schools do, like some words that aren't even that complicated they don't even know the definition of it.

Researcher: Have you ever been caught in that situation where you--

Teresa: I have. It's like, 'What's that?' I was like, 'You're my grade, you don't know that stuff?' I'm just like, 'Oh.' But then I have to explain and go more into detail and stuff. So I have to like watch out how I'm using the language kind of thing. Also in Spanish, even I got some classes--well, here, the teacher, not the teachers, but up until 8th grade, we're taught Spanish. Well, my mom and my dad, they at least finished high school so that they know their Spanish words very well. But like my uncles and stuff, they don't, so I need to like be careful how I talk and stuff, so I won't offend them.

Researcher: The academic Spanish?

Teresa: Yeah, the academic Spanish. Like *los acentos* [the accents] and all of that.

Teresa described the demands of maintaining two fully functioning identities. On the one hand, Teresa could maneuver through the challenges of the academic setting but still caught herself policing what she called her "ghetto" self. On the other hand, she tried to taper off her academic Spanish while talking to family members as well as toning down her "school girl" speech characteristics when talking with neighborhood friends.

Furthermore, Preuss students did not see the adoption of an academic identity as a culture stripping in which they were trying to "act white" while sacrificing their home-based cultural identity. Instead, they saw achieving in the academic setting as a normal progression. In the final analysis, students realized they were participating in two distinct worlds—one at home and the other at school. But on campus they felt as though both identities could live side by side.

In sum, students developed "dual identities"—academic identities for school and neighborhood identities for home. The development and maintenance of dual identities was facilitated by the students themselves—in large part because of the numerical density of "minority" students on campus.

### **Family-Neighborhood-School Connections**

Effective schools do not exist in isolation. They connect to neighborhood businesses, non-profit organizations such as YMCAs, churches, and Boys and Girls clubs. They value parents' strengths as a part of the education of students. Educators and community groups work together to ensure that families have access to knowledge about college going and the political strategies to act on that knowledge.

The geographic (and cultural) distance between students' homes and the Preuss School places a burden on parents as well as students. It is often difficult for parents from low-income neighborhoods to volunteer in classrooms, attend governance meetings, or supervise clubs. Because the Preuss School is so far away from students' neighborhoods, it is especially difficult for parents who have children attending Preuss to actively participate in school events. Nevertheless, parents are expected to participate in school activities, notably by volunteering to serve on governance committees, energizing phone banks, and supervising student clubs.

Perhaps the most intriguing way the school connects parents to the school is by appropriating their "funds of knowledge" (González, Moll, & Amanti, 2004; Roseberry, Warren, & Conant, 1992; Lee, 1995, 2000, 2001). Parents who are fluent speakers of languages other than English have been invited to converse with Preuss students in advanced language classes. In that way, students gain exposure to naturally occurring spoken Spanish Vietnamese, etc., and parents connect in meaningful ways to the life of the school. Appropriating community funds of knowledge for instructional purposes in this way has the additional benefit of demonstrating that the households and neighborhoods of even the poorest families are powerful sources of knowledge.

In addition, Doris Alvarez, school principal, has conducted parent education courses that earn community college credit in which parents are exposed to the expectations of the school, their students' course material, college requirements, costs, and sources of financial aid. The high school counselor and advisory teachers also conduct regular application and financial aid workshops for students and their parents, thereby attempting to reduce the mystery of the college-going process.

### **The Preuss School: A Remedy and a Model**

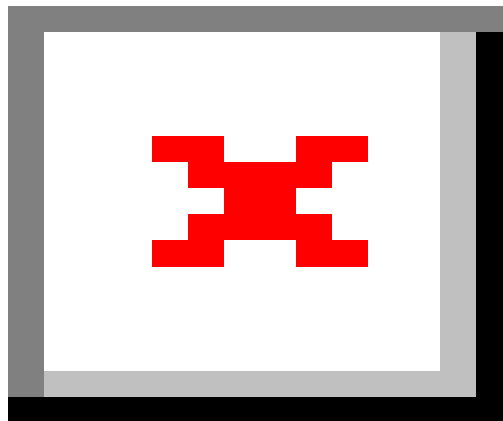
The Preuss School UCSD is both a remedy and a model. It is a *remedy* in that the school is successful in preparing students from under represented backgrounds for college: 80% of students in the first graduating class (2004) and 87% of the class of 2005 and 78% of the class of 2006 have enrolled in colleges such as Berkeley, UCLA, UCSD, Harvard, MIT, Dartmouth, and Claremont. The distribution of students in UC, CSU, private and community colleges is shown in Table 2.

	2004		2005		2006	
	N	%	N	%	N	%
UC	25	44%	33	44%	39	45%
CSU	9	16%	20	27%	20	23%
Private	10	20%	12	16%	9	10%
CCC*	11	20%	9	13%	19	22%
Totals	55	100%	75	100%	87	100%

\*Students attending California Community Colleges (CCC) were offered dual admission or Guaranteed Transfer in which students enter the UC as juniors after completing 2 years of community college course work. All students from the classes of 2004 and 2005 enrolled in community colleges accepted these options, while 16% of the class of 2006 did and 6% did not accept these options.

### **Table 2. Preuss School Students' College Enrollment, 2004, 2005, 2006**

For the first time in 2004-05, there were enough students who applied but were not accepted to the school through the lottery to construct a “comparison” group. CREATE researchers interviewed students in both groups. Whereas 90% of the students interviewed graduating from Preuss in the class of 2004 who had been at the school since 6<sup>th</sup> grade were attending 4-year colleges in Fall 2005, CREATE researchers estimate that between 42.1% and 78.9% of students in the “comparison group” were accepted in 4-year colleges in Fall 2005[4] (McClure et al., 2006). See Figure 2.



In sum, we have an “existence proof” that underrepresented minority youth can achieve college eligibility when the critical conditions for their success-- safe and adequate school facilities, rigorous academic curriculum, qualified teachers, intensive academic and social supports, opportunities for students to develop a multi-cultural college-going identity, and strong family- neighborhood-school connections—are put in place. The success of the Preuss School recommends that it be seriously considered as a model for the UC system in order to address the overwhelming lack of diversity on our campuses.

#### **Extending the Model**

The question of replicability is often raised in discussions about CREATE and the Preuss School. Colleagues ask: “The circumstances surrounding the school are so unique—how could they ever be duplicated anywhere else?” We have two answers to this question. While it is commendable for UCSD to help prepare 90-100 under represented minority students a year to enroll in college, that practice is not the sole purpose of the school. The

Preuss School is also a *model* in that the principles developed at the school are available to be adapted in other contexts.

One way in which the model has been extended involves the development of research centers and K-12 schools that have taken the UCSD model into account. This adaptation is occurring at colleges and universities such as UC Berkeley, the University of Arizona, Arizona State University, University of Chicago, University of Pennsylvania, Stanford University, and Brooklyn College. Of course none of these are exact replicas of the Preuss School or CREATE; instead, our work is assisting those universities plan to develop equivalent research-based school-university partnerships in their local contexts.

A second way in which the UCSD model has been extended involves its adaptation by other K-12 schools. Gompers Charter Middle School (GCMS) that opened Fall 2005, is extending the model in this way. The original Gompers Secondary School had been an urban 7-12 school in South East San Diego for over fifty years in a community with a high crime rate and a lengthy history of gang-related violence. This school, unable to meet its *No Child Left Behind* (NCLB) performance targets for six consecutive years, was required to restructure. After months of deliberation, a working group of parents, teachers, administrators and community leaders (notably from the San Diego Chicano Federation and the San Diego Urban League) recommended that the school be reconstituted as an independent charter school in partnership with UCSD CREATE.

Indeed, UCSD's involvement was provoked by aroused parents who pointed out that there were seventy-seven families living in South East San Diego with at least one child attending Gompers and at least one child attending Preuss School UCSD. Their awareness of the difference a school could make in the lives of their children helped to create an aroused and informed community. Charter schools remain a controversial issue, and it is not our view that such a device is the only way to improve schools. However, 75% of Gompers' parents and 58% of the school's full-time, unionized teachers voted for the proposal to establish Gompers Charter Middle School. On March 1, 2005, the SDCS Board of Education unanimously approved the GCMS charter. The school, which opened its doors to students on September 6, 2005, enrolls 841 students and employs 45 teachers (<http://www.gomperscharter.org>).

The school is engaged in an elaborate restructuring and reculturing effort. Adapting a practice from the Preuss School, the school day has been extended to 8 hours and 10 minutes four days a week; on Wednesdays, school starts 90 minutes later to enable teachers to participate in on-site professional development. Students and teachers are organized into learning teams, which consist of an interdisciplinary groups of teachers who work with a specific group of students throughout the year to encourage the development of strong, supportive relationships between adults and students. To reinforce symbolically the college-going culture of learning at GCMS, each team is named after a campus of the University of California.

The school day has been restructured into 7 periods of variable length, starting with a 20-minute "learning team" meeting each morning. All students receive 90 minutes of instruction in English (literacy, literature, oral development, and writing) and math each morning in classes that are team-taught by two teachers. All students participate in a

25-minute advisory class four days per week that focus on organizational and study skills, career exploration and college preparation. After lunch, students participate in 90-minute blocks of instruction in science, history, foreign language, physical education and elective courses. Students who are not meeting expectations in math and English are placed into enrichment activities as needed in these afternoon blocks. The school day closes with an “encore” period that consists of electives, enrichment activities, sports, clubs and community activities.

UCSD CREATE provides a wide range of intellectual, material, and research resources to the partnership with GCMS, including:

- Membership on the Board of Directors, where evidence-based advice is provided
- Professional development experts in Math, Science, Reading, Writing, ESL, History/Social Studies, especially for students learning English as a second language
- A bus service between GCMS and UCSD for UCSD students who serve as tutors in class, before school, and after school and Gompers parents and students who wish to visit the UCSD campus.
- Teaching interns in math, science and English/ESL.
- Parent education opportunities to inform parents about higher educational options for their students after high school, concrete advice on how to achieve higher educational goals and obtain funding for college.
- Research advice on data collection and data analysis that is useful for gauging the progress of Gompers’ students toward mutually defined educational goals.

Information from both ways of extending the model can have long-term effects. It will inform the public debate about the possible combinations of instructional, cultural, political, and structural arrangements that are needed to provide an equitable education for all students.

### **Conclusions**

Understanding the causes of under representation and seeking remedies to this injustice, ensuring a high-quality education for students from African American and Latino/a backgrounds is critical for the future of California and the nation. California is rapidly becoming the most populated as well as the most racially and ethnically diverse state in the union. As a result, future economic growth and maintenance of a civil society will be directly related to how well all segments of the population are educated. The continued absence of historically disenfranchised populations from the University of California means that there will be fewer African American and Latino/a doctors, scientists, lawyers and teachers. Continuing uninterrupted, this pattern will produce an Apartheid condition within California in which the numerically largest cultural populations are governed, taught, and administered by an ever-shrinking minority elite.

It is clear that no UC campus, especially those with elevated admission indices, will recruit, enroll, or graduate sufficient numbers of Latino/a and African American students until there is a critical mass of competitively eligible students from these communities

graduating from high school each year. We suggest the development of a string of UC model schools—"educational field stations"—as the functional equivalent of the historically successful agricultural field stations that have directly helped the state of California to become the seventh largest economy in the world. With the re-segregation of public schools in recent years, this effort should be limited to campus-based *models* and their adapted partnership school in Title 1 neighborhoods. Further, it is our view that the tools of research, teaching, and service be applied to study the best practices inherent in these model s and adapt the lessons learned to selected local k-12 schools in areas with high URM populations. Such an undertaking needs to be coordinated through a statewide MRU with federal, State legislative, and UCOP support.

### References

- Alvarez, Doris & Hugh Mehan. 2004. Providing Educational Opportunities for Underrepresented Students. In: D. Lapp (Ed), *Teaching All The Children*. New York: Guilford Publications.
- Alvarez, Doris & Hugh Mehan, 2006. Whole School Detracking: A Strategy for Equity and Excellence. *Theory into Practice* 45 (1): 82-89.
- Bruner, Jerome. 1986. *Actual Minds, Possible Worlds*. Cambridge: Harvard University Press.
- Cicourel, Aaron V. & Hugh. Mehan. 1983. Universal Development, Stratifying Practices and Status Attainment. *Research in Social Stratification and Mobility*, 4: 3-27.
- Cookson, Peter W., Jr., & Caroline Hodges Persell. 1985. *Preparing for Power: America's Elite Boarding Schools*. New York: Basic Books.
- Deal, T. & Peterson, K. 2000. Eight roles of symbolic leaders. *Educational Leadership* 202-212).
- Dewey, John. 1956. *The Child and the Curriculum/The School and Society*. Chicago: University of Chicago Press. Originally published in 1902 and 1900 respectively.
- Douglass, John A. 2000. *The California Idea and American Higher Education*. Stanford: Stanford University Press.
- Duster, Troy, Aaron V. Cicourel, Eugene H. Cota Robles, Winston C. Doby, Russell Ellis, Jr., Hardy T. Frye, Jacquelyn Haywood, Joyce B. Justus, Edmond J. Keller, Jean C. Lave, Horace Mitchell, Gloria J. Powell, Rodney Reed, Jonathan H. Sandoval, John A. Watson, Joseph W. Watson. 1990. *Making the Future Different: Report of the Task Force on Black Student Eligibility*. Oakland: Office of the President of the University of California.
- Esch, C. E., Chang-Ross, C. M., Guha, R., Humphrey, D. C., Shields, P. M., Tiffany-Morales, J. D., Wechsler, M. E., and Woodworth, K. R. 2005. *The status of the teaching profession 2005: Summary and fact sheets*. Santa Cruz, CA: The Center for the Future of Teaching and Learning.



- Gibson, Margaret. 1988. *Accommodation without Assimilation: Sikh Immigrants in an American High School*. New York: Cornell University Press.
- González, Norma, & Moll, Luis C., & Amanti, C. (Eds). 2004. *Theorizing practices: Funds of knowledge in households and classrooms*. Cresskill, NJ: Hampton.
- Laboratory of Comparative Human Cognition [LCHC]. 1983. Culture and Cognitive Development. In William Kessen (Ed.), *Mussen's Handbook of Child Psychology: Vol. 1 History, Theory and Method* (4th Ed., pp. 295-356.) New York: Wiley.
- Gibson, Margaret. 1988. *Accommodation without Assimilation: Sikh Immigrants in an American High School*. New York: Cornell University Press.
- Haycock, Kati. 1997. *Closing the Achievement Gap*. Washington DC: The Education Trust.
- Khalil, Nadia, J. César Morales, and Hugh Mehan. 2006. Going the distance: The challenges of traveling cultural and geographical space. Unpublished paper. La Jolla: UCSD CREATE
- Lareau, Annette. 2003. *Unequal Childhoods: Class, Race and Family Life*. Berkeley: UC Press.
- Lee, Carol. D. 1995. A culturally based cognitive apprenticeship: Teaching African American high school students' skills in literary interpretation. *Reading Research Quarterly* 50 (4): 608-630.
- Lee, Carol. D. 2000. Signifying in the zone of proximal development. *Vygotskian perspectives on literacy research: Constructing Meaning through Collaborative Inquiry*. pp. 191-225 In: C. D. Lee and P. Smagorinsky. New York: Cambridge University Press.
- Lee, Carol. D. 2001. Is October Brown Chinese: A cultural modeling activity system for underachieving students." *American Educational Research Journal* 38(1): 97-142.
- Lewis, Catherine. 2002. *Lesson Study: A Handbook of Teacher-led Instructional Change*. Philadelphia: Research for Better, Inc.
- McClure, Larry. J. Cesar Morales, Betsy Strick & Raquel Jacob-Almeida. 2006. The Preuss School at UCSD: School Characteristics and Students' Achievement. UCSD: CREATE. <http://create.ucsd.edu/evaluation>.
- McDonough, Patricia. 1997. *Choosing Colleges: How Social Class and Schools Structure Opportunity*.
- Meier, Deborah. 1995. *The Power of Their Ideas: Lessons for America from a Small School in Harlem*. Boston: Beacon Press.
- Mehan, Hugh. 1992. Understanding Inequality in Schools: The Contribution of Interpretive Studies. *Sociology of Education*, 65 (1): 1-20.

Mehan, Hugh, Irene Villanueva, Lea Hubbard and Angela Lintz. 1996. *Constructing School Success: The Consequences of Untracking Low Achieving Students*. Cambridge: Cambridge University Press.

Noddings, Nel. 1984. *Caring: A Feminine Approach to Ethics and Moral Education*. Berkeley: University of California Press.

Oakes, Jeannie 1985 [2005]. *Keeping Track: How Schools Structure Inequality*. 2<sup>nd</sup>. Edition. New Haven, CT: Yale University Press.

Oakes, Jeannie. 2003. Critical Conditions for Equity and Diversity in College Access: Informing Policy and Monitoring Results. UC Accord, February.

Roseberry, Ann. S., Warren, Beth, & Conant, Faith. R. 1992. Appropriating scientific discourse: Findings from language minority classrooms (Working Paper #1). Cambridge, MA: Technical Educational Research Center.

Rosen, Lisa and Hugh Mehan. 2003. Reconstructing Equality on New Political Ground: The Politics of Representation in the Charter School Debate at the University of California, San Diego. *American Educational Research Journal*. 40 (3): 655-682

Sizer, Theodore R. 1984. *Horace's Compromise: The Dilemma of the American High School*. New York: Houghton Mifflin.

Sizer, Theodore R. 1992. *Horace's School: Redesigning the American High School*. New York: Houghton Mifflin.

Sizer, Theodore R. 2004. *The Red Pencil: Convictions from Experience in Education*. New Haven: Yale University Press.

Studley, Roger. 2004. UCOP/SAS: Admissions Research. Oakland: UCOP. UCOP 2006a. OA&SA (f04/pread-m-Cal Fr-f06)

Valenzuela, Angela. 1999. *Subtractive Schooling: U.S.-Mexican Youth and the Politics of Caring*. New York: State University of New York Press.

---

[1] This section is adapted from a paper written by Hugh Mehan for the “multiple pathways project” coordinated by Jeannie Oakes for the Irvine Foundation

[2] This is the position advocated by the Civil Rights Project, the New York Performance Standards Consortium, the Coalition for Authentic Reform in Massachusetts, the American Evaluation Association, and the American Educational Research Association. For example, the American Evaluation Association (2002: 1) said: “High-stakes testing leads to under-serving or mis-serving all students, especially the most needy and vulnerable, thereby violating the principle of “do no harm.” AERA (2000: 1) based its position on the 1999 *Standards for Educational and Psychological Testing*: “Decisions that affect individual students’ life chances or educational opportunities should not be made on the basis of test scores alone.”

[3] “Even if you dress a doll in silk, she remains a doll.”

[4] CREATE researchers could report only a range among the comparison group because not all 19 students were available for interview. Of the comparison group students who agreed to be interviewed, only two-thirds, or

66.67%, reported that they would be attending a 4-year college (for details see McClure et al, 2006). See full report at: [http://create.ucsd.edu/Research\\_Evaluation/PreussReportDecember2005.pdf](http://create.ucsd.edu/Research_Evaluation/PreussReportDecember2005.pdf)