

# A Call for Equity

## Kicking the Computer Science Door Open for Girls

by Kathryn Brown

**Inside this Issue:**

- ✦ **Education funding**
- ✦ **College recruitment strategies**
- ✦ **Immigrant students' rights to attend school**



Sophia has been surfing the Internet since she was two years old. Now at five years old, “going online to pbs.org” is part of her regular vocabulary. She can easily guide anyone on how to click and hold the mouse in order to succeed at online interactive games. These games require more advanced higher-order thinking skills than were ever required of students 20 years ago, let alone her sophisticated ability to maneuver around a keyboard and mouse.

Transferring these skills to her Gameboy Advanced (notice the name “boy”) was easy for Sophia. No one showed this 5-year-old what buttons to press, how to make the character jump, or how to hold multiple buttons down in order to make the character do some rolls and tumbles to avoid being “eliminated.”

Her experiences with technology are not limited to the home. In both pre-kindergarten and kindergarten, she has had ample access to computers and other technologies. The school subscribes to several online libraries and interactive books that have helped

skyrocket her knowledge and lead her to more exploration, making her a successful reader before she turned five years old.

Sophia’s level of sophistication and ease of use of such technological tools is astounding to her mother who has a degree in mathematics and finds math and computer science wondrous puzzles to solve.

She wonders what the future holds for her Latina girl, growing up in world where those who have access to opportunities in computer science are mostly White males. At the same time, she is excited about the awesome discoveries that Sophia will create given the opportunity.

Sophia’s experiences are not isolated cases. Many girls have good experiences with computers and other technology tools throughout their elementary school years.

### Impact of Limited Opportunity

What is disheartening is that even though these girls are active users of technology and computers throughout their elementary school years, research

shows that girls begin to lose interest in computers by the time they reach puberty. This is through no fault of their own. One cannot say that boys are genetically more interested in technology than girls.

By the time girls have reached puberty, both genders have been conditioned by the world around them into boy-girl learning styles, and what “girl” toys and “boy” toys are. This thinking leads children to think that there are careers that are for girls only or for boys only (Swanson and Swanson, 2004). This attitude and conditioning is blatantly inequitable.

This problem initiates many questions about girls’ opportunities in computer science-related fields that are the doors to creating, developing, and inventing new technologies in this growing technological era.

- How can we all nurture and encourage girls to move from users to creators of technologies so that interest in computers continues to grow throughout puberty and adulthood?

## Even though the number of women earning degrees in science and engineering has steadily increased, the number receiving computer science degrees has steadily decreased from 37 percent in 1985 to 28 percent in 2001.

- How will experiences at home and school afford girls the opportunities of considering and being prepared for careers in computer science?
- How will stereotypes form girls’ thoughts about their place in society and what it means to be a computer scientist?
- What technological advances will be foregone and what dangers lie ahead if more girls do not enter these fields?
- How can schools, teachers, parents, and communities evaluate current programs and incorporate practices that knock down the door for girls to the many possibilities that come with being a computer scientist?

Computer science is “the study of computation and information processing, both in hardware and in

software” (Wordiq.com, 2004). It is the doorway to careers in software engineering, mathematics, computer architecture, computer networks, computer programming, operating systems, speech recognition systems, customer relationship management, computational biology, information systems, and more than 50 related fields.

It is a discipline where one moves from being the user of technology to being the creator of technologies. It is a discipline that has stereotypically been reserved for men.

Why is it important that girls be encouraged to be informed about opportunities in computer science? One reason is in what the future holds. According to the Bureau of Labor

Call for Equity – continued on Page 12

## In This Issue...

**3 Texas Continues to Slip in Education Funding**

**5 Effective Higher Education Recruitment**

**7 Did you know?**

**9 Why IDRA Prints the School “Opening Alert”**

**10 School Opening Alert**

**15 Highlights of Recent IDRA Activities**

*The Intercultural Development Research Association (IDRA)* is a non-profit organization with a 501(c)(3) tax exempt status. The purpose of the organization is to disseminate information concerning equality of educational opportunity.

The *IDRA Newsletter* (ISSN 1069-5672, © 2004) serves as a vehicle for communication with educators, school board members, decision-makers, parents, and the general public concerning the educational needs of all children in Texas and across the United States.

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Portions of the contents of this newsletter were developed under a grant from the U.S. Department of Education. However, those contents do not necessarily represent the policy of the Department of Education, and endorsement by the federal government should not be assumed.

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# Texas Continues to Slip in Education Funding Ranking

by Albert Cortez, Ph.D.

A recent report produced by the U.S. Census Bureau reveals that Texas continues to slip in rankings of per pupil expenditures among the 50 states and the District of Columbia. According to this latest report, Texas ranks 35 in per pupil expenditures for elementary and secondary education.

When compared to the most populous states, Texas' average \$6,746 per pupil expenditure ranks only above Florida's \$6,056 (which ranks 45) and falls well below expenditures in New York (\$11,546), New Jersey (\$11,436), Pennsylvania (\$8,841), Michigan (\$8,489), Ohio (\$8,100), Illinois (\$8,022), and California (\$7,511).

Among the 15 states that spend less per pupil on education, all except Florida are smaller and have fewer and smaller urban centers. In addition to North Dakota and South Dakota, these states include many southern states: Louisiana (\$6,519), North Carolina (\$6,511), Kentucky (\$6,493), Arkansas (\$6,119), Alabama (\$6,115), and Mississippi (\$5,382).

The data also include information on total revenues allocated to education, total expenditures, and total debt in the 50 states and the District of Columbia. While these vary widely, the

computation of per pupil amounts permits a more valid comparison of these data across the states.

For example, California leads all states in total expenditures for education (\$55 billion). However it also boasts the nation's largest public school (kindergarten through 12<sup>th</sup> grade) enrollments. New York's \$39 billion total expenditures likewise reflect its large k-12 population, as does Texas' \$35 billion total expenditure.

Only by dividing by the total number of pupils supported by that revenue is one able to make a valid comparison. A more refined analysis

would adjust for regional cost differences and consider differences in the populations of students that are served, but these data at least provide an opportunity for more gross comparisons.

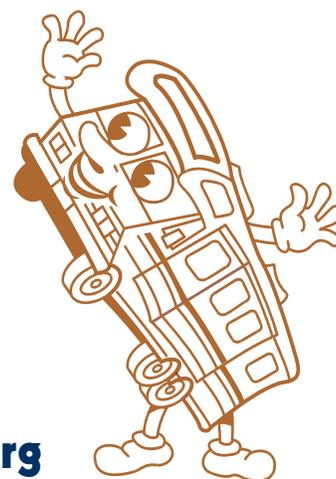
The U.S. Census data also reveal that Texas leads the country in its total school debt at more than \$28 billion – over \$8 billion more than its nearest competitor (New York with its more than \$20 billion debt level). This, in turn, may reflect these states' enrollments and historically-limited levels of support for local school construction.

*Texas Continues – continued on Page 4*

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### On IDRA's Web Site

- ✦ Read related *IDRA Newsletter* articles from 1996 to the present
- ✦ Access statistics, definitions, etc.
- ✦ Learn about Internet resources
- ✦ Find extensive useful Internet links
- ✦ Use IDRA's topical index to find what you are looking for



[www.idra.org](http://www.idra.org)

## Expenditures Per Student

State	Per Pupil Expenditure	Rank	State	Per Pupil Expenditure	Rank
DC	\$13,187	1	Iowa	\$7,305	27
New York	\$11,546	2	Hawaii	\$7,253	28
New Jersey	\$11,436	3	Kansas	\$7,052	29
Connecticut	\$10,001	4	Montana	\$7,027	30
Massachusetts	\$9,856	5	Missouri	\$7,018	31
Vermont	\$9,678	6	South Carolina	\$6,984	32
Alaska	\$9,586	7	Washington	\$6,894	33
Delaware	\$9,271	8	Colorado	\$6,884	34
Rhode Island	\$9,178	9	Texas	\$6,746	35
Pennsylvania	\$8,841	10	North Dakota	\$6,728	36
Wyoming	\$8,667	11	New Mexico	\$6,606	37
Wisconsin	\$8,574	12	Oklahoma	\$6,256	38
Maryland	\$8,507	13	Louisiana	\$6,519	39
Michigan	\$8,489	14	North Carolina	\$6,511	40
Maine	\$8,351	15	Kentucky	\$6,493	41
Ohio	\$8,100	16	South Dakota	\$6,319	42
Illinois	\$8,022	17	Arkansas	\$6,119	43
West Virginia	\$7,748	18	Alabama	\$6,115	44
New Hampshire	\$7,750	19	Florida	\$6,056	45
Minnesota	\$7,691	20	Nevada	\$6,034	46
Oregon	\$7,621	21	Tennessee	\$5,984	47
Indiana	\$7,580	22	Idaho	\$5,923	48
California	\$7,511	23	Arizona	\$5,524	49
Virginia	\$7,501	24	Mississippi	\$5,382	50
Nebraska	\$7,418	25	Utah	\$4,890	51
Georgia	\$7,340	26	<b>Average</b>	<b>\$7,701</b>	

Source: U.S. Census Bureau, 2004

*Texas Continues – continued from Page 3*

These data reflect Texas' decline in the amount of funding that has been provided to its public schools over the last four years. More importantly, the per pupil expenditure figure and its resulting sub-standard ranking suggests that maintaining the state's commitment to education funding has not been a top state priority.

No doubt the state's lukewarm commitment to maintaining its per pupil funding at a level that maintains or improves its relative investment in education has contributed to the recent decisions by local schools to once again

mount a legal challenge to the current school finance system. This latest challenge involves several distinct plaintiffs and interveners who have claimed that the system has become less equitable than the plan approved by the State Supreme Court in 1994.

These data suggest that these concerns may be well founded. Given

growing competition among the states for jobs and new industry, a rallying cry of "We're number 35" is cause for little excitement and even more concern.

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**[www.texans4fairfunding.org](http://www.texans4fairfunding.org)**

# Effective Higher Education Recruitment Strategies

## Findings from a Research Study of San Antonio College

by **Josie Danini Cortez, M.A.,** and **Albert Cortez, Ph.D.**

Hispanic students value a college education. Among high school graduates, Hispanic students are second only to Asian students in attendance at colleges and universities. Richard Fry of the Pew Hispanic Center summarizes, “There can be no doubt that Latino families are willing to invest in their children’s education” (2002).

Much of what accounts for the gap between enrollment and graduation is a lack of support systems that are available to other students. This, coupled with “underfunded, understaffed, and underperforming high schools,” sets up Hispanic students for failure rather than success (Fry, 2002).

Hispanic student enrollment in higher education has grown from 4 percent of the total student enrollment in 1976 to 9 percent two decades later in 1997 (NCES, 2000). Hispanics are also least likely to be enrolled in a degree-seeking program. Public community colleges account for over half of the total undergraduate enrollment in Texas.

With this as a backdrop, the Intercultural Development Research Association recently completed research

**“Affirmative action continues to be an essential tool to give qualified individuals equal access to opportunities in higher education.”**

– **Wade Henderson, general council, Leadership Conference on Civil Rights Fund in “Blend It, Don’t End It,” Mexican American Legal Defense and Educational Fund, 2004**

to identify effective strategies for recruiting Hispanic and low-income students to enroll in San Antonio College. Funded through the duPont Foundation, San Antonio College commissioned IDRA to identify best practices for recruiting Hispanic and low-income students. IDRA conducted focus group and individual interviews to gather insights on what the target groups perceived to be issues, concerns, and effective strategies.

The findings are informing strategies that the college will use to improve its recruitment of Hispanic, low-income students. This is the first in a series of three articles in the *IDRA Newsletter* presenting the results of this research study, with permission

from the community college, San Antonio College. This article summarizes briefly the methodology and outlines the results of the literature review and interviews with several “best practices” universities.

### Research Methodology Used

IDRA’s study in 2002-03 was guided by research questions based on the philosophical tenet that the Hispanic community has resources and assets that have yet to be tapped. The questions also are grounded on the fact that Hispanic families value education and want their children to achieve and succeed (Fry, 2002; Villarreal, 2001). From this valuing model, the research questions for this study included:

1. What strategies is San Antonio College using to recruit students both from the targeted group (minority and low-income in specific zip code areas) and the non-targeted group? How effective are the recruitment efforts (as evidenced by enrollment patterns)?
- How many, where, when and how are students recruited?
  - Who is involved in the recruitment process? What is the nature of their involvement?
2. What recruitment strategies worked for targeted students who enrolled at SAC?
- Who enrolled at SAC?

*Higher Education* – continued on Page 6

- Why did these students enroll at SAC? What factors contributed to their decision?
- From their perspective, what should SAC do to improve their recruitment process?

3. What institutional changes are needed at SAC to improve recruitment for targeted students?

IDRA’s methodology relied both on quantitative and qualitative approaches. IDRA conducted an in-depth analysis of archival data, including demographics of students, school staff (administrators, teachers and faculty) at SAC and the San

Antonio Independent School District included the college president and central office staff, representatives from the admissions and student recruitment offices, and directors of specialized outreach programs.

Parallel questions were developed for each of the surveys and interviews in order to triangulate responses. It is important to interpret these findings cautiously given the nature of focus group interviews. While the methodology provides an opportunity for in-depth probing and a greater understanding of the issues, the findings are not representative or generalizable for all colleges and universities. In the final analysis, additional studies should

income and minority students, already want to go to college;

- Informing low-income, minority parents of the “importance” of college and the long-term financial benefits of a college education when parents already value education and see it as a way for their children to have a better life (Fry, 2002; Villarreal, 2001); and
- An exclusive focus on “fixing” k-12-based functions without looking at any cross-institutional (k-16) barriers such as a lack of curriculum alignment, cross-level communication, or cross-level coordination that impact students’ post-secondary options.

Given the fact that the documented enrollment, retention, and graduation rates of Hispanic, African American and low-income students is still dramatically lower than their non-Hispanic White and Asian counterparts, it should be clear that a deficit approach has not worked.

What is needed is a radical shift from “business as usual” to a profound systemic, cross-institutional change that serves students’ needs and capitalizes on their strengths. The literature clearly shows that college recruitment is most successful when it is part of a process that begins with a child’s first entry into formal schooling. Inherent in this mindset is a universal assumption that all students will graduate and be prepared to enroll in a college or university. More and more studies are re-affirming this approach.

## Expanding Alignment and Access

The Stanford University’s Bridge Project, a six-year national study, analyzed high school exit-level policies and college entrance policies to learn if the standards were different. This research showed there were many gaps in knowledge and many misunderstandings between kindergarten through 12th

*Higher Education – continued on Page 7*

**“The Ten Percent Plan and other race-neutral measures cannot wholly replace the affirmative action policies and programs needed to achieve racial diversity.”**

**– “Blend It, Don’t End It,”**

**Mexican American Legal Defense and Educational Fund, 2004**

Antonio Independent School District feeder schools in targeted areas. Focus group and individual interviews targeted key stakeholders, including high school administrators, counselors, high school students, their parents, and current SAC students.

To help inform the best practices inventory, IDRA surveyed and interviewed Alianza directors (college and university representatives who were partners with IDRA in a k-16 effort). Alianza was funded by the W.K. Kellogg Foundation to recruit, enroll and graduate non-traditional Latino students. After five years of implementation, this program has a wealth of lessons learned that IDRA tapped specifically for the SAC research study.

The surveys, focus group interviews and individual interview questions were developed in partnership with the SAC advisory committee. This advisory group

be conducted to gain greater understanding of what has emerged from these interviews.

## Inventory of Best Practices – Literature Review

IDRA conducted an extensive literature review focusing on strategies that have proven effective in recruiting non-traditional students, i.e., low-income, minority students. Most research and lessons learned that are featured in the literature are unfortunately, but not surprisingly, deficit–focusing on “fixing” the student or family rather than strengthening or changing the institutions to better serve their clients.

Examples of deficit strategies include the following.

- Expanding efforts to increase student “motivation” to attend college when, in fact, the vast majority of students, including low-

grade (k-12) schools and colleges.

Given these gaps and misunderstandings and their serious implications for students and their parents, the study recommended three actions that would have the most immediate impact.

- Provide all students, their parents, and educators with accurate, high quality information about, and access to, courses that will help prepare students for college-level standards, and do this early in their middle or high school enrollment.
- Focus on the *institutions* that serve the majority of students, because such a focus has the potential of yielding the greatest benefit.
- Create awareness that getting into college is not the hardest part. This translates to expanding the focus of local, state, and federal programs from access to college to include success in college. “High school content, academic counseling, college outreach, and other programming need to reflect this so that students are clear about what it takes to succeed in college, including community college” (Venezia, et al., 2003).

More long-term recommendations include the following.

- Ensure that colleges and universities clearly state, and widely publicize, their academic standards so that students, their parents, and educators have accurate college preparation information.
- Examine the relationship and alignment between the content of post-secondary education placement exams and k-12 exit-level standards and assessments to determine if more compatibility is necessary and possible.
- Review the post-secondary education placement exams for reliability, validity, efficacy, and the extent to which they promote teaching for understanding.

## Did You Know?

**Between 1990 and 1998, American's high-tech employment increased 21 percent while high-tech degrees awarded declined 5 percent.**

– Texas Higher Education Coordinating Board, 2001

**In the United States, 15.5 percent of people age 25 and up have at least a bachelor's degree. But only 6.7 percent of Hispanics and 9.5 percent of African Americans have a bachelor's degree.**

– American Demographics, 2002

**Hispanic undergraduates are much more likely to be enrolled in community colleges. Among young full-time undergraduates, one third of Hispanics and one fifth of Whites attend two-year colleges.**

– Pew Hispanic Center, 2004

**In Texas, less than half of the students who enter a public university will graduate with a bachelor's degree in six years.**

– Texas Higher Education Coordinating Board, 2001

**Over a decade, 4.4 million college-qualified high school graduates from low- and moderate-income families will not have access to attend a four-year college within two years, and 2 million students will not be able to attend any college at all.**

– Advisory Committee on Student Financial Assistance, 2002



**For more facts and statistics,  
go to the IDRA web site.**

**[www.idra.org](http://www.idra.org)**

- Allow students to take college placement exams in high school so that they can prepare, academically, for college and understand college-level expectations.
- Sequence undergraduate general education requirements so that appropriate high school senior-year courses are linked to post-secondary general education courses.
- Expand successful dual or concurrent enrollment programs between high schools and colleges so that they include all students, not just traditionally “college-bound” students.
- Collect and connect data from all education sectors, including high school graduation and dropout data and college attendance and persistence information.
- Provide technical support to states by having the federal government establish voluntary data collection standards.
- Expand federal grants to stimulate more state-level k-16 collaboration and integrated policymaking.

### K-16 Linkages

A study by the Institute for Higher Education Policy found that low-income and minority high school students are more likely to pursue higher education when given access to programs that provide college information early and persistently throughout their secondary level enrollment.

Higher Education – continued on Page 8

They found that access to financial aid alone was not enough for students who lack information about or those who do not expect to go to college. Other factors that play a critical role include adequate and appropriate academic preparation, college as a goal of students and their parents, and access to information about college and financial aid.

## Two- to Four-Year Transfers and the Role of Community Colleges

Since the inception of community colleges in 1901, more than 100 million students have attended community colleges “for everything from workforce retraining to English language acquisition to advanced mathematics for university-level credit” (Bueschel, 2003). While four-year college enrollment has doubled from 1960 to 1990, community college enrollment has increased five-fold.

Community colleges often serve as the point of entry for students who would not otherwise attend college. For many students, the two-year institution is the only way they can improve their chances for a better quality of life – it is their “second chance.”

Public community colleges account for over half of the total undergraduate enrollment in Texas. Cost may be a significant factor impacting selection, with an average community college tuition of \$910, compared to \$2,741 annual average for a public four-year tuition.

While two-year to four-year program transfers have long been considered one of the missions of Texas community colleges, “the state has hesitated to make baccalaureate transfer and degree attainment a specific goal for community college students, because policymakers believe that many students do not want or need

to obtain a degree” (Adelman, 1999).

Since 1997, however, as an attempt to facilitate transfers among Texas institutions, Texas has had a transfer “general education core curriculum” that allows individual institutions some flexibility in designating core courses. If a student completes an approved core curriculum, the receiving institution (be it a two- or four-year college) must accept those courses as a substitute for its own core requirements.

In 2001, Texas completed a study of the effectiveness of its statewide transfer policies. The task force’s recommendations for strengthening transfers included improvements in reporting student performance information from receiving to sending institutions, a feasibility study for a statewide electronic degree-audit system, and study of best practices in other states.

Perceived “disconnects” between two- and four-year institutions cause some students to delay enrollment at two-year colleges, which also decreases the probability that these students will transfer to and graduate from four-year institutions.

## Findings from Best Practices Institutions – Alianza Universities

In addition to the extensive literature review conducted, IDRA developed a survey for the eight university directors of IDRA’s Project Alianza, a five-year binational, bicultural program to develop teacher preparation models resulting in university graduates prepared and well-qualified to teach in diverse classrooms (<http://www.idra.org/alianza>). Following are the key findings shared by the Alianza university directors.

- **Use non-traditional avenues to recruit non-traditional students**
  - Spanish-speaking and English-speaking television stations can

be very effective in sending out messages to the community. Universities have experienced the greatest success from public service announcements.

- The k-12 university partnership with local school districts were highly effective for publicizing and recruiting non-traditional students.
- **Create and use inventories of non-traditional students to facilitate recruitment and outreach.** The non-traditional student list was developed through announcements made at workshops, such as with the local adult education program. Some non-traditional students were recruited at English as a second language classes.
- **Use nontraditional students as recruiters and mentors.** The non-traditional students were provided assistance and peer mentoring from the traditional students in the educational program.
- **Provide financial, social and academic support.** Funding support and peer assistance were the most important factors for the non-traditional students.
- **Adapt recruitment strategies in recognition of language and cultural attributes of prospective students.** The lack of Spanish proficiency at the universities was the greatest barrier for these non-traditional students (*normalistas* – graduates of *normal* schools in Mexico).
- **Ensure institutional advocacy and persistence for non-traditional student admissions.** Advocacy, building relationships with key stakeholders, and consistent follow-up were the most effective strategies.
- **Create flexibility in financial aid packaging.** Non-traditional students’ eligibility for financial support was a critical factor

Higher Education – continued on Page 16

## Why IDRA Prints the “School Opening Alert” Every Year

Many educators are not aware that the education of undocumented students is guaranteed by the *Plyler vs. Doe* decision or that certain procedures must be followed when registering immigrant children in school to avoid violating restrictions on obtaining personal information without obtaining prior parental consent.

In *Plyler vs. Doe*, the U.S. Supreme Court ruled that undocumented children and young adults have the same right to attend public primary and secondary schools as do U.S. citizens and permanent residents. Like other children, undocumented students in fact are required under state law to attend school until they reach a mandated age. As a result of the *Plyler* ruling, public schools may not deny admission to a student on the basis of undocumented status, treat a student differently to determine residency, or require students or parents to disclose or document their immigration status.

The Supreme Court arrived at this decision because such practices:

- **Victimize innocent children** – Children of undocumented workers do not choose the conditions under which they enter the United States. They should not be punished for circumstances they do not control. Children have the right to learn and be useful members of society.
- **Hurt more than they claim to help** – Denying children access to education will not eliminate illegal immigration. Instead, it ensures the creation of an underclass. Without public education for children, illiteracy rates will increase, and opportunities for workforce and community participation will decrease. Research has proven that for every \$1 spent on the education of children, at least \$9 is returned.
- **Turn public school teachers and officials into INS agents** – Rather than teaching students, school officials could spend their time asking our 47.4 million school children about their citizenship status. States would be forced to spend millions of dollars to do the work of the INS.
- **Promote misinformation** – Incorrect assumptions and inappropriate figures have been used to blame immigrants and their children for economic problems.
- **Support racism and discrimination** – Historically, financially troubled times breed increased racism. Children of undocumented workers should not be the scapegoats.

At IDRA, we are working to create schools that work for all children, families and communities. Help us make this goal a reality for every child; we simply cannot afford the alternatives. Denying children of undocumented workers access to an education is unconstitutional and against the law.

Excerpted in part from: *Lessons Learned, Lessons Shared: Texas Immigrant Education Collaborative* (San Antonio, Texas: Intercultural Development Research Association, December 1998).

# Immigrant Students' Rights to Attend Public Schools

The National Coalition of Advocates for Students (NCAS) has launched its annual *School Opening Alert* campaign to reaffirm the legal rights of all children who reside in the United States to attend public schools, regardless of immigration status. The fliers provide information for immigrant parents about the rights of their children to attend local public schools this fall. IDRA is working with NCAS to make this alert available. NCAS can also provide a camera-ready copy of the alert in English and Spanish to be reproduced and distributed by schools and community groups. The copy of the alert below and on the following page may be reproduced and used as well.

## School Opening Alert

In 1982, the U.S. Supreme Court ruled in *Plyler vs. Doe* [457 U.S. 202 (1982)] that undocumented children and young adults have the same right to attend public primary and secondary schools as do U.S. citizens and permanent residents. Like other children, undocumented students are required under state laws to attend school until they reach a legally mandated age.

As a result of the *Plyler* ruling, public schools *may not*:

- deny admission to a student during initial enrollment or at any other time on the basis of undocumented status;
- treat a student differently to determine residency;
- engage in any practices to “chill” the right of access to school;
- require students or parents to disclose or document their immigration status;
- make inquiries of students or parents that may expose their undocumented status; or
- require social security numbers from all students, as this may expose undocumented status.

Students without social security numbers should be assigned a number generated by the school. Adults without

social security numbers who are applying for a free lunch and/or breakfast program for a student need only state on the application that they do not have a social security number.

Recent changes in the F-1 (student) Visa Program *do not* change the *Plyler* rights of undocumented children. These changes apply only to students who apply for a student visa from outside the United States and are currently in the United States on an F-1 visa.

Also, the Family Education Rights and Privacy Act (FERPA) prohibits schools from providing any outside agency – *including the Immigration and Naturalization Service* – with any information from a child’s school file that would expose the student’s undocumented status without first getting permission from the student’s parents. The only exception is if an agency gets a court order (subpoena) that parents can then challenge. Schools should note that even requesting such permission from parents might act to “chill” a student’s *Plyler* rights.

Finally, school personnel – especially building principals and those involved with student intake activities – should be aware that they have no legal obligation to enforce U.S. immigration laws.

For more information or to report incidents of school exclusion or delay, call:

NCAS	Nationwide	(617) 746-9995	(English/Spanish/French/German)
META	Nationwide	(617) 628-2226	(English/Spanish)
META	West Coast	(415) 546-6382	(English)
NY Immigration Hotline	Nationwide	(212) 419-3737	(English/Spanish/Chinese/French/Korean/Polish/Urdu/Haitian Creole/Hindu/Japanese/Russian)
MALDEF – Los Angeles	Southwest/ Southeast	(213) 629-2512	(English/Spanish)
MALDEF – Chicago	Illinois	(312) 782-1422	(English/Spanish)
MALDEF – San Antonio	Southwest	(210) 224-5476	(English/Spanish)
MALDEF – Washington D.C.	Nationwide	(202) 293-2828	(English/Spanish)

**Please copy and distribute this flier.**

*This flier is available in English, Spanish, Haitian Creole, Portuguese, Vietnamese, and Hmong at 1-866-603-8507 or <http://www.ncasboston.org>*

*National Coalition of Advocates for Students 100 Boylston Street, Suite 737, Boston, MA 02116*

## Llamada Urgente al Comienzo del Curso Escolar

En 1982, El Tribunal Supremo de los Estados Unidos dictaminó en el caso *Plyler vs. Doe* [457 U.S. 202] que los niños y los jóvenes indocumentados tienen el mismo derecho de asistir a las escuelas públicas primarias y secundarias que tienen sus contrapartes de nacionalidad estadounidense. Al igual que los demás niños, los estudiantes indocumentados están obligados a asistir a la escuela hasta que llegan a la edad exigida por la ley.

A raíz de la decisión *Plyler*, las escuelas públicas **no pueden:**

- negarle la matrícula a un estudiante basándose en su situación legal y/o inmigratoria, ya sea a principios del curso o durante cualquier otro momento del año escolar;
- tratar a un estudiante en forma desigual para verificar su situación de residencia;
- efectuar prácticas cuyo resultado sea obstruir el derecho de acceso a los servicios escolares;
- requerir que un estudiante o sus padres revelen o documenten su situación inmigratoria;
- hacer interrogatorios a estudiantes o padres que pudieran revelar su situación de indocumentados;
- exigir que un estudiante obtenga un número de seguro social como requisito de admisión a la escuela.

La escuela debe de asignar un número de identificación a los estudiantes que no tienen tarjeta de seguro social. Los adultos sin números de seguro social quienes están solicitando que a un estudiante lo admitan

a un programa de almuerzo y/o desayuno gratis, sólo tienen que indicar que no tienen seguro social en el formulario.

Los últimos cambios del Programa de Visado F-1 (de estudiantes) **no cambiarán** las obligaciones antedichas en cuanto a los niños indocumentados. Se aplican sólo a los estudiantes que solicitan del extranjero un visado de estudiantes y que están actualmente en los Estados Unidos en un Visado F-1.

Además, el Acta Familiar de Derechos y Privacidad Escolar (*Family Education Rights and Privacy Act - FERPA*) le prohíbe a las escuelas proveerle a cualquier agencia externa – **incluyendo el Servicio de Inmigración y Naturalización** (*Immigration and Naturalization Service - INS*) – cualquier información del archivo personal de un estudiante que pudiera revelar su estado legal sin haber obtenido permiso de los padres del estudiante. La única excepción es si una agencia obtiene una orden judicial – conocida como una citación o subpoena – que los padres pueden retar. Los oficiales escolares deben estar conscientes de que el mero hecho de pedirle tal permiso a los padres podría impedir los derechos *Plyler* de un estudiante.

Finalmente, el personal escolar – especialmente los directores de las escuelas y los secretarios generales – deben saber que no están bajo ninguna obligación legal de poner en vigor las leyes de inmigración de los EE.UU.

Para más información, o para denunciar incidentes de exclusión escolar o retraso en la admisión a clases, favor de llamar a:

NCAS	Nacional	(617) 746-9995	(Inglés/Español/Francés/Alemán)
META	Nacional	(617) 628-2226	(Inglés/Español)
META	Costa Oeste	(415) 546-6382	(Inglés)
NY Línea de Urgencia de Inmigración	Nacional	(212) 419-3737	(Inglés/Español/Chino/Francés/Coreano/Polaco/Urdu/Haitiano Criollo/Hindú/Japonés/Ruso)
MALDEF – Los Angeles	Sudoeste/ Sudeste	(213) 629-2512	(Inglés/Español)
MALDEF – Chicago	Illinois	(312) 782-1422	(Inglés/Español)
MALDEF – San Antonio	Suroeste	(210) 224-5476	(Inglés/Español)
MALDEF – Washington D.C.	Nacional	(202) 293-2828	(Inglés/Español)

### Favor de copiar y distribuir esta hoja informativa.

Esta información está disponible en inglés, español, haitiano criollo, portugués, vietnamita, y hmong al 1-866-603-8507 o (<http://www.ncasboston.org>).

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Call for Equity – continued from Page 2

Statistics, Office of Employment Projections, for the time period 2002 to 2012, nationally, five of the top 20 fastest-growing occupations are in computer science-related fields. During this same time period in Texas, eight

out of the top 10 fastest-growing occupations are in computer science-related fields. Employment in Texas is expected to increase anywhere from 48 to 85 percent in each of these fields from 2000 to 2010.

What does this mean regarding

earning potential? Take, for example, computer software engineering, the median annual salary is \$74,000 nationally and \$70,000 in Texas (America's Career InfoNet, 2004).

Even though the future is bright for those wanting to enter the computer science arena, the future is not so bright for girls, especially for minority girls. High school girls only make up 17 percent of the advance placement computer science test takers (AAUW, 2000). During 2000-01, the overall number of computer science degrees awarded by degree-granting institutions was 41,954, of which 11,607 (27.7 percent) were earned by women and 30,347 (72.3 percent) were earned by men.

What is even more disconcerting is that only 656 (1.6 percent) computer science degrees were earned by Latinas and 2,045 (4.9 percent) were earned by female African Americans (NCES, 2002).

These numbers are a far cry from being proportional to population statistics, where women make up 48.8 percent of the population, and Latinas make up 6.1 percent (U.S. Census Bureau, 2004). Even though the number of women earning degrees in science and engineering has steadily increased, the number receiving computer science degrees has steadily decreased from 37 percent in 1985 to 28 percent in 2001 (Everett-Haynes, 2004).

## Society Would Gain by Making a Change

The gains to society, our community, our family, and our children from undoing this blatant inequity would be tremendous. First, earning potential and career possibilities that were formerly unknown to this population would become present for our daughters and their families.

Second, the many innovative computer technologies our society,

Call for Equity – continued on Page 13

## Resources for Helping Girls Succeed

### Publications

*Does Jane Compute? Preserving Our Daughters' Place in the Cyber Revolution*, by Roberta Furger (Warner Books, 1998). A persuasive look at the tech gap between boys and girls.

*Coming Into Her Own*, edited by Sara Davis, Mary Crawford, and Jadwiga Sebrechts (Jossey-Bass, 1999). Offers innovative strategies for improving the educational experience of girls and women.

*How Schools Can Stop Shortchanging Girls (and Boys): Gender-Equity Strategies*, by Kathryn Wheeler (Wellesley College Center for Research on Women, 1993). Advice for parents and educators.

*Minority Women in Science: Forging the Way*

By Keiko E. Suda, Oanh H. Maroney, Bradley Scott, and María Aurora Yáñez (IDRA, 2000). Student-centered curriculum tool to support equity in math and science education. Includes profiles of women scientists, science lessons, and life skills lessons. See Page 13.

### Web Sites

Women's Educational Equity Act (WEAA) Resource Center. Offers an interactive, online course, "Engaging Girls in Math and Science."  
[www.edc.org/WomensEquity/](http://www.edc.org/WomensEquity/)

*G.I.R.L.* Helps students connect with girls around the world.  
[www.davelash.com/amber/girlpage.html](http://www.davelash.com/amber/girlpage.html)

*A Girl's World*. An online clubhouse for girls, with activities in math, science, technology, and creative writing. [www.agirlsworld.com](http://www.agirlsworld.com)

### Materials and Events

*Science by Mail*. Connects children in grades four through nine with pen-pal scientists. 1-800-729-3300.

*Space Day 2000*. Celebrate space with your class on May 4. For information, visit [www.spaceday.com](http://www.spaceday.com).

"Women in Science Rule" kits. Experiments introduce kids to prominent female scientists. Delta Education. 1-800-442-5444 or [www.delta-ed.com](http://www.delta-ed.com).

# Minority Women in Science

## Forging the Way

by Keiko E. Suda, Oanh H. Maroney, M.A., Bradley Scott, M.A.,  
and María Aurora Yáñez, M.A.

### A great student-centered tool to support equity in math and science education!

We must ensure that minority girls are not left behind as progress is made toward narrowing gender and racial gaps in math and science education. This is an innovative resource that can be used with all students – girls and boys – to help break down gender stereotypes about scientists.

#### Inside, you will find:

- ◆ **Profiles of seven minority women scientists** who have surmounted barriers to forge the way for themselves and future scientists.
- ◆ **Science lessons** for the classroom that cover such topics as acid/base chemistry, earth science, wildlife and environmental science, and biology.
- ◆ **Life skills lessons** for the classroom that cover topics such as getting college information from the school counselor, identifying a support system, reaching goals, knowing self-worth, having community pride, overcoming stereotypes, and linking hobbies with career choices.



**“Being a scientist can open doors to opportunities that you may never have dreamt of or even considered.”**

– Patricia Hall, M.S., one of the scientists featured in *Minority Women in Science: Forging the Way*

**Student Workbook \$6.50 • Teacher’s Guide \$25.00**

(Student Workbook ISBN 1-878550-67-5; 2000; 32 pgs; paperback; \$6.50) (Teacher’s Guide ISBN 1-878550-68-3; 2000; 94 pgs; paperback; \$25) Developed and distributed by the Intercultural Development Research Association, 5835 Callaghan Road, Suite 350, San Antonio, Texas 78228 • Phone 210-444-1710 • Fax 210-444-1714 • contact@idra.org • www.idra.org. Shipping and handling is 10 percent of the total price of the order. Orders must be prepaid. Purchase orders for orders totaling more than \$30 are accepted.

*Call for Equity – continued from Page 12*

community, and families would have access to would increase and add to what is currently available – technologies that have been created by mostly males from their perspectives. This would, in turn, lead to products that girls are interested in (i.e., games, web sites, technology tools) and would create interest within to use, create and invent new technologies.

Third, the number of female role models and mentors who are practitioners in computer science fields, teachers at various levels in a child’s education, and professors in institutions of higher education would vastly increase.

Fourth, all our children would benefit from the breakdown of stereotypes that limit both girls’ and boys’ views about computer science. Girls would see computer science in a

new light – one that is not made up of endless hours hacking at a keyboard in a cubicle, but one that is closer to reality that requires teamwork, collaboration, and creative development. Boys would gain access as well – access to new perspectives that are made up of those from women and multicultural experiences, valuing what others bring to the solution.

Last, the community and society would see the value that all the aforementioned bring. Imagine a Latino community integrating computer technologies that were created from a daughter of the community that quickly analyzed and produced solutions to reducing the occurrence of diabetes among its members. Very powerful.

Knowing what the future holds and what the past shows, how can we all kick open the door so that more girls move from being users to creators and

inventors of computer technologies? Knowing that there is a significant equity issue involved at all levels is a primary conclusion to move to enhancing what is being done in the home, schools, and within our own communities.

### What Parents Can Do

Parents are the first educators of children. This includes educating our daughters about the possibilities that are available to them. Specifically, parents can do the following.

- Provide access to computers whether in the home or in a library.
- Purchase computer software and search for web sites that promote female interests and use.
- Review and ask questions about your child’s school curriculum, access and use of computers, and

*Call for Equity – continued on Page 14*

programs that promote, recruit, and retain girls in their computer science courses.

- Expose your child (female or male) to female role models and technology centers in your city.
- Mothers can be role models by being users and investigators of technologies alongside their daughters – encouraging daughters to be anything they want to be.
- Encourage your son to use software that does not promote the traditional violent competitive theme.
- Be informed and inform your daughter about computer science courses and college credits available in high school.
- Be informed and inform your daughter about career opportunities in computer science fields.

### What Teachers and Schools Can Do

Teachers and schools play an integral part in encouraging and guiding students, developing their self-esteem, and helping students see themselves in the world. Teachers and schools can do the following.

- Implement teaching practices that minimize the notion of learning style differences among girls and boys. Initially boys and girls show the same levels of interest in various disciplines, but through teaching practices, they begin to develop different learning styles that support the gender career track stereotypes that have been almost set in stone (Swanson and Swanson, 2004).
- Attend gender-equity and technology-integration training.
- Employ recruitment strategies in computer science courses that defy stereotypical images of males in computer-related fields.
- Bring in guest speakers who are in computer science-related fields and attend field trips that show women in these fields.

- Bridge the gap to female role models in computer science fields. For example, have students talk to a female computer science professor via the Internet and a digital video camera.
- Develop and seek out curriculum that puts students in the role as inventors.
- Create a technology club for girls that gives them hands-on activities and builds a support system.
- Provide visuals throughout the school, for parents, and on the school web site that depict females in computer science fields and using computer technologies.
- Review your own school's programs by going to the National Women's Law Center web site to see if the school is fair for women and girls (<http://www.nwlc.org>).

### What Institutions of Higher Education Can Do

Colleges and universities play a key role in the number of female computer scientists who are ultimately in society. The recruitment and retention practices that they employ are two of many key ingredients in making this vision a possibility. In addition to what is listed above, institutions of higher education can do the following.

- Look at the numbers of your own female role models and professors who are teaching computer science courses.
- Make pedagogical improvements and support positive faculty-student relationships by keeping class sizes small, providing multiple levels of course instruction to increase student experiences, and valuing the female's potential and perspective she brings to the solution.
- Provide support systems and guidance once the recruitment of students has occurred.
- Denounce any negative behaviors by other students that imply the only

reason a female is in the computer science program is to meet quotas. Halt behaviors and that are not conducive to the learning environment.



### What Communities Can Do

The community can help develop a young person's sense of purpose in life. If there are certain issues within a community (i.e., a high diabetes occurrence), this can create a person's will to find solutions for such a problem that occurs so close to home. Also, what a community makes available, displays, and values will make the difference in this vision of including more girls in computer science. Communities and businesses can do the following.

- Make technology available by supporting efforts that provide increased access to community members and by encouraging the use of such technologies by girls.
- Employ female computer scientists to bring a new and fresh perspective in technologies that are being developed.
- Create and make available non-traditional software with respect to women and girls.
- Display ads that are non-traditional and depict females in positive, technology situations.
- Investigate and employ management styles in your own company or organization that promote cooperation and collaboration along with an investigation of uses of technology within your own organization.
- Support efforts and encourage women to pursue computer-related fields.

Technology advances have increased exponentially within the last decade. And the possibilities for our daughters, communities, and society

A Call for Equity – continued from Page 14

would thus increase exponentially if we employ practices that break down the blatant inequities that exist in the computer-science field. Girls like Sophia would no longer be fighting these inequities, but would be exploring possibilities that lay before them without hesitation.

## Resources

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## Highlights of Recent IDRA Activities

In May, IDRA worked with **10,965** teachers, administrators, parents, and higher education personnel through **70** training and technical assistance activities and **168** program sites in **nine** states plus Mexico and Brazil. Topics included:

- ◆ Title VI Discrimination Awareness Session
- ◆ Family Literacy: How to Help My Child with Reading
- ◆ TAKS Strategies for LEP Students
- ◆ *Brown Plus Fifty: A Renewed Agenda for Social Justice*

Participating agencies and school districts included:

- ◆ Iberville Parish School Board, Louisiana
- ◆ Marlboro Learning Center, Massachusetts
- ◆ Riviera Independent School District, Texas
- ◆ U.S. Department of Education, Washington, D.C.

### Activity Snapshot

As a result of assistance from the IDRA South Central Collaborative for Equity, the community-school task force of an Oklahoma school district created strategies to improve race relations among students. Before IDRA's assistance, the district experienced racial tension and conflict that grew from reactions to increasing student diversity. The Office for Civil Rights cited the district for racial incidents and violations under Title VI of the *Civil Rights Act*. As a part of its settlement, the district worked with IDRA to address some of the problem areas. IDRA worked with a multicultural task force to monitor race relations throughout the district and provided staff development on topics concerning learning styles, embracing cultural differences in the classroom, and racial attitudes and perceptions. The task force and strategies have improved the district's race relations. The IDRA SCCE is the equity assistance center that serves Arkansas, Louisiana, New Mexico, Oklahoma and Texas.

Regularly, IDRA staff provides services to:

- ◆ public school teachers
- ◆ parents
- ◆ administrators
- ◆ other decision makers in public education

Services include:

- ◆ training and technical assistance
- ◆ evaluation
- ◆ serving as expert witnesses in policy settings and court cases
- ◆ publishing research and professional papers, books, videos and curricula

For information on IDRA services for your school district or other group, contact IDRA at 210-444-1710.

considering all costs: tuition, fees, and books.

• **Recommendations for recruiting non-traditional students include:**

- Build strong relationships with partner school districts.
- Establish a memorandum of understanding with the school districts to clarify roles and responsibilities and regularly exchanging information, knowledge, resources, and staff.
- Be inclusive and far-reaching in developing collaborations with other individuals and entities. This strategy develops exposure for the effort and provides insights to others and access for students to potential employment opportunities.
- Ensure that students take courses as a cohort.
- Coordinate with key faculty who are the cohort instructors, sharing information about the group (such as the group's academic preparation). Also, keep lines of communication open throughout each semester.
- Incorporate a faculty or staff

person to serve as an active and vocal advocate of the students who consistently meets with key administrators in an effort to find solutions to barriers. The result is greater respect for the students' academic preparation and a program reputation of being innovative and progressive.

### Summary

The next installment in this series will present the major findings from a review of the archival data and enrollment trends at San Antonio College as well as their recruitment strategies. The third and final installment will reveal the factors that contribute to or hinder low-income minority students from enrolling, achieving, and succeeding in college as told by current and former students and educators during individual and focus group interviews.

### Resources

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