

Unit College of Science
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**COLLEGE OF SCIENCE (CLSC)
 BLOCKER 517, TEXAS A&M UNIVERSITY (TAMU 3257)**

We welcome and support individuals from all backgrounds, respecting and reflecting differences in discipline, national origin, race, ethnicity, age, ability, gender, sexual orientation, and religion. Our diversity spans five degree granting departments (Biology, Chemistry, Mathematics, Physics & Astronomy, and Statistics) and the Cyclotron research institute (Table 1).

Table 1: 2018 CLSC Groups and Demographics



Our leadership team includes two female assistant deans, a female director of the Cyclotron Institute, and five international or Hispanic faculty. All department heads are male and program leadership teams in some fields are nearly 75% men and fewer than 15% are black or Hispanic (STEM fields [9]). The CLSC Climate and Diversity Committee is comprised of tenured/tenure-track (T-TT) and academic professional track (APT) faculty, students, postdocs, staff and members from Multicultural Services and the ADVANCE Center. This group shares issues, ideas and best practices at monthly meetings that focus on CLSC goals (Table 2) and on, among other things, intervention, communication, accountability, and bias reduction. CLSC leadership and diversity committees work with unit stakeholders throughout the year to ensure issues of climate, diversity, equity and inclusion are discussed and addressed.

Table 2: College of Science Vision 2020 Goals

Vision 2020	College of Science Strategic Planning Goals
G1: Elevate Our Faculty and Their Teaching, Research, and Scholarship	Diversity in hiring; faculty mentoring; opportunities for professional development; fostering a positive and inclusive working environment
G2: Strengthen Our Graduate Programs	Faculty and graduate student recruiting and retention; fostering an inclusive environment where students are treated as scholars; professional development opportunities
G3: Enhance the Undergraduate Academic Experience	Retention efforts; undergraduate research (our QEP emphasis); student recruiting/retention/professional and leadership development opportunities
G4: Diversify and Globalize the A&M Community	Recruit and retain a more ethnically, culturally, and geographically diverse faculty, staff, and student body
G5: Meet Our Commitment to Texas	Student recruiting reflecting state demographics; retention; research training; professional and leadership development; STEM pipeline development

RECRUITMENT

The CLSC and its Climate and Diversity Office focuses attention on students and faculty recruitment and uses Human Resources (HR) guidelines in meeting goals for staff hiring.

Actions to achieve the goals, G1-G5 (Table 2)

- Posts job advertisements in areas of expertise, URM websites/listservs using diversity/EEO language.
- Nationwide searches for Dean and faculty, with dual career couples encouraged to apply.
- Two full-time, Hispanic recruiters visit career fairs, state high schools, and give presentations.
- “I am Science” videos with faculty and student presenters distributed electronically.
- Campus-based outreach activities draw diverse students to campus, including Math Circle, Math & Stat Fair, Chemistry Open House, Physics Festival, Chemistry Roadshow, Saturday Morning Physics, Physics Roadshow, Aggieland Saturday and Science Bowls.
- Underrepresented minority (URM) student outreach through national societies (NOBCCChE, SACNAS, ACS, ASA, ABRCMS, etc.).
- CLSC Summer Scholars program together with Research Experiences for Undergraduates (REU) programs in the Cyclotron, Physics & Astronomy and Statistics supplement URM experiences.
- University-wide and external diversity fellowships (NSF LSAMP & AGEP, GEM & OGAPS), Chemistry Fellowships help students bridge to the doctorate.
- DEEP program (Physics & Astronomy) aims to increase the flow of K-12 students through STEM pipeline to college.

- Honors Programs in Chemistry and Biology promote undergraduate scholarship.
- Increased online MS programs with the edition of MS in Microbiology.

Progress in two or more years

- Increase in the female, ethnic minority and international leadership on college and departmental committees.
- Increase in first-time-in-college students admitted to CLSC (36% first-generation- with 11% increase among first-gens)
- Increased gender and minority inclusion (57% female and 42% URM).
- Increased number of students with financial need (24% household income \$40K or less).
- Increased acceptance rate of 28% for students in the top 20% of high-school class. However, acceptance rate for National Merit Scholars was lower (21%).
- Enhanced recruiting efforts for top scholars (including National Hispanic Scholars) with \$1,000 scholarships and personalized visits.
- Performs equally or better with regard to URM recruitment compared to TAMU overall (Figures 1-4).
- Increased Hispanic student body in Fall 2018 (Figure 2), but recruiting progress for black students remains weak, like national levels [8].
- Black and female staff counts increased comparing to TAMU (Figure 3). But, there was a 10% decrease in total staff count in from fiscal year 2016 to 2018, compared to a 4% increase at TAMU overall. This is a concern for CLSC.
- Established new undergraduate degree program in Statistics.
- Increased Mathematics and Statistics size and diversity of student advising teams.
- Posted two Cyclotron open staff positions in diverse job markets.
- Biology, Chemistry and Statistics were successful in hiring female, Hispanic or international faculty in the last year.
- A female postdoctoral fellow in the Cyclotron facilitates a consortium running the National Nuclear Security Administration.
- Mathematics and Statistics online certificate Master's programs ranked 2rd and 3nd nationally.

RETENTION

CLSC first female dean left TAMU for another Dean position in Canada, but the overall female and international leadership demographics in CLSC increased over last two years.

Actions to achieve the goals, G1-G5 (Table 2)

- Associate Dean for Research holds individual meetings with each junior faculty member to increase awareness of resources available and tools for proposal development.
- CLSC Advance Science Scholar program for junior female faculty started Fall 2017, with second cohort matching of scholars with internal and external mentors in Fall 2018.

- Strategic Transformative Research Program (STRP, including APT faculty) started in 2017-18 (one cycle each semester).
- Created Graduate Student Council and Graduate Advising Staff Council to facilitate communication of Graduate Studies Office with students and advisors.
- Review of mentoring programs in the college and also departments
- Increased help desks for nonmajor courses as supplemental instruction and programs for TAMU core courses (include Math 151/152/171, Stat 201, Chem 101/102....)
- Pilot programs: Science Leadership Scholars, RetainU, Biofirst, Statistics Scholars, Science2Medicine (S2M).

Progress in two or more years

- Increased number of female researchers with funded STRP proposal to 33%, relative to 15% of total number female faculty.
- Conducted leadership development program for new full professors (TAMU 101).
- Biology expanded mentoring program to include associate professors to ensure that they remain on track for promotion.
- Physics & Astronomy made significant financial commitments to retain one female and two Hispanic professors.
- RetainU program started Fall 2017 and extended to all 1,000 first-year students in the College of Science in Fall 2018.
- Reduced students on academic probation to 18% in first term (compared to previous 30%).
- Increased second-semester retention to 15% (compared to 7% for TAMU).
- Redesigned Math 171 to increase retention rates in served populations of students.
- Welcomed third cohort of Science Leadership Scholars (SLS) in Fall 2018 (82% URM).
- SLS students retained to CLSC and TAMU at significantly higher rates (20% and 10% in second and third years, respectively) than students not in initiative.
- Increase BioFirst program from 35 students in Fall 2017 to 65 students in Fall 2018.
- Increased retention rate of BioFirst students from 50% to 66% in first year of program.
- Created Statistics Scholarship program in Fall 2017 for at-risk undergraduates coming from low-income backgrounds.
- Guaranteed TAMU medical school admission for up to five high-achieving high-school seniors and five rising second-year CLSC students via S2M program. First cohort included five females, two National Hispanic Scholars, one First-Gen and one low income student.
- Piloted Peer Led Team Learning (PLTL) in several departments in Spring 2017, expanding offerings in 200- and 300-level courses.
- PLTL increased retention rate of Chemistry majors in year two (34%) and in year one (49%).
- Challenging for CLSC retention is workload operation, yearly raises, and professional development opportunities for faculty, graduate students, and staff.

CLIMATE

Climate improves when leaders, faculty and staff reduce implicit bias and embrace college diversity and inclusion. Our dean (& interim dean), many faculty and staff are trained as Stride, Aggie Ally, Green Dot, and QPR advocates. Gender diversity at more senior faculty levels still suffers as does some aspects of climate. Nonetheless, increase in ethnic or gender diversity in recent years is a hopeful trend.

Actions to achieve the goals, G1-G5 (Table 2) and progress in two or more years:

- Identified a lack of female faculty invitations for seminars/conferences and shared information and concern with units.
- Increased awareness of departments that more female faculty be nominated for awards.
- Biology, Chemistry and Statistics getting large lounge areas to encourage interaction among faculty, students, and staff.
- Developed learning communities and science scholars' programs to increase retention and inclusion.
- Expanded undergraduate student skill sets via socials, dinners, workshops, presentations by advisors.
- Increased sense of belonging via undergraduate and graduate student organizations offering social and professional events with speakers from the industry or university.
- Collected data via exit surveys of unit majors. In the most recent Math survey, 98% of responses indicated positive program satisfaction.
- Expanded CLSC public outreach activities (Horizon and Science Night programs at local schools), social events (Holiday potluck parties, fun runs, day outings, international day events).
- Ratified bylaws to govern the various CLSC and departmental operations
- Developed welcome packets for new employees (faculty, postdocs, and staff).
- Developed a Diversity and Equity grant program.
- Reviewed, updated and approved new unit bylaws and guidelines (appointments, promotion and annual review).
- Organized unit staff social events: ice cream socials; breakfasts with staff, challenge/fun events during staff appreciation week.
- Received "Staff Equity and Inclusion Events" grants in Chemistry and Statistics departments, which support holiday luncheons and international culture celebration events.
- Committed to increase positive work environment by building interpersonal relationships and mentoring especially for mental health challenges.

EQUITY

Equity among personnel in the CLSC, from salaries to opportunities to interrelationships, is essential to our missions and their success. As we achieve some of our equity goals, we continue to aspire to achieve others.

Actions to achieve the goals, G1-G5 (Table 2) and progress in two or more years:

- Climate surveys needed for specific units with respect to personnel ranks, job descriptions/distributions, equity of salary vs. responsibility.
- Disparities in salaries in some titles appear greater in 2017-2018, compared to 2016-2017; such disparities exist widely in some ranks [3].
- A serious equity pay challenge is that of graduate student stipends, with current salaries falling behind other STEM departments on campus and peer programs nationally.
- Increased inclusion of APT faculty in departmental teaching, awards, diversity and faculty advisory committees.
- Hiring of female and URM assistant professors continues to be a challenge for our departments, with only 2 female TT assistant professor hires in the last year, when women have earned approximately 50% of all STEM PhD in the US over the past 12 years.
- Developed the Advance Science Scholars program to enhance the mentoring, climate and retention of junior female faculty, as an oft cited factor influencing the poor retention of women in science is a lack of mentorship and role models. Similar programs for other research and APT faculty are needed.
- Organized luncheons and/or social gathering involving invited, outside successful female faculty are also need to support initiatives promoting dialogue.
- Increased leadership opportunities for students, including officer positions in Graduate Student Council, Math and Stat Clubs, Actuarial Club.
- Increased leadership opportunities in student organization of outreach events.
- Enhanced membership opportunities in societies, e.g., 4 to 5 female undergraduate students sponsored to the Association of Women Mathematicians (AWM).
- Increased diversity fellowships and equity award winners in Physics and Astronomy
- Incentives provided by department heads to encourage high performance, e.g. free university parking or extra hours of administrative leave.
- Fostered a supportive networks through numerous organizations for students (GSA, SUSA, PAC, NOBCCChE, OCDC, etc.).

REFLECTION

Changes in numbers/composition of awards, recognition, grants, funding in CLSC

Among the four university distinguished professorship (DP) awardees in the last three years, one was from Science each time. Two international DP recipients added to the large number of female DPs in CLSC.

Many faculty, students, and staff received recognitions, awards, honors in 2017-18 (Table 4). These important accomplishments increased visibility, as well as department ratings/perceptions. Research awards (in millions) increased from 132 in 2017 to 189 in 2018.

Table 4: Sample list of faculty, students, and staff recognitions, awards, honors

Year	Recognition/Awards/Honor	Recipient(s)
2019	Fred Basolo Medal	DP Dr Kim Dunbar
2018	First TAMU SEC Professor	DP Dr. Marcetta Darensbourg
2018	National Academies Education Fellows	Drs. Andy Tag and Asha Rao
2018	Ronald Hocking endowed lecture	Drs Merlise Clyde & Annie Qu
2018	Presidential impact fellow award	Drs Saskia Mioduszhewski, Wenshe Liu, Eric Rowell
2018	ACE diversity service award	Dr. Sherry Yennello
2018	Ethel Ashworth-Tsutsui lecture and Early Career Development Award	Dr. Anne Shiu
2018	CLSC Undergraduate Research Mentoring	Lee Alcorn, Dr. Maurice Rojas
2018	CLSC faculty leadership in equity and diversity award	Dr. Derya Akleman
2018	CLSC outstanding staff achievement award	George Kim, Shana Hutchinson and Steve Shoemake
2018	CLSC student leadership in equity and diversity award	SUPA, Ananya Dasgupta
2018	ASA Byar Young Investigators Award.	Dr. Irina Gaynanova
2018	Noether Young Scholar	Dr. Anirban Bhattacharya
2018	ASA early investigator award	Dr. Huiyan Sang
2018	First Statistics Undergraduate Diversity Award	Jose Alfaro and Israel Guerra
2017	National Academy in Science fellow	DP Dr. Marcetta Darensbourg
2017	National Academy in Science fellow	DP Dr. Ronald A. DeVore
2017	Ethel Ashworth-Tsutsui Award	Sasha Zhdanova (Graduate student)
2017	Young Researcher Award	Dr. Debdeep Pati
2017	Expert witness in state of Texas V. Lee Harvey Oswald Mock Trial	Cliff Spiegelman
2017	Noether Young Scholar	Matthias Katzfuss
2017	First BS in Statistics Graduate	Tessa Johnson

Actions to achieve the goals, G1-G5 (Table 2) and progress in two or more years:

- Working to establish Clare Luce Booth Professorship to recruit outstanding junior female chemist.
- Leading a faculty effort to attract NSF-NRT and NSF INCLUDE funding, aiming to instill computational literacy in diverse cohorts of graduate students.
- Led 2017-2018 NOBCCChE Chapter support to be recognized as a foundational chapter in the SW (2018 conference) and discussed as being a future site for a SW regional NOBCCChE meeting in 2020.
- The Organization for Cultural Diversity in Chemistry (OCDC) leading effort to bring Young Researchers Conference (YRC) to Aggieland.
- Provided opportunity for five Physics & Astronomy students to attend 2018 Conference for Undergraduate Women in Physics (CUWiP) meeting.

Challenges CLSC has faced and plans in place to address the challenges

The CLSC is updating (overhauling) our websites, in part, to present the full and accurate perspective of the inclusion nature and welcoming climate of Science.

Severe restrictions on hiring and infrastructure investments in recent years have created a backlog of progressive initiatives with regard to enhancing the diversity of our faculty and staff. For example, Physics & Astronomy has not had an open faculty search over the past two years.

CLSC, its departments and student support groups are addressing the significant and growing problem of anxiety and depression among undergraduate and graduate students, and emerging problems of faculty and staff mental health. A need for organized seminars or brown bags about academic anxiety and depression are needed.

With regard to hiring and annual performance evaluation of faculty and staff, the overall functionality of Workday is inefficient, time consuming and does not seem to be conducive to needs, particularly in the sciences. This challenge is actively being addressed by deans, heads and business administrators.

Innovative strategies have been implemented in CLSC

BioFirst program, targeting first-generation students, provides a scalable model for at-risk student success that could be useful to other units.

Physics & Astronomy's new undergraduate women's study group is useful for units wishing to create expert women's STEM study groups.

Physics & Astronomy, Chemistry and Statistics' mental health work with peers and support groups to improve the mental health among students would help other units with this gathering storm.

Undergraduate Diversity Scholarships established by Statistics targeting first generation and URM students with significant need may benefit other programs with like challenges.

Departmental Graduate Faculty or Research Faculty Retreats (last several years in Statistics, Chemistry and Biology) discuss program strengths, opportunities and aspirations with breakout sessions.

The Advance Science Scholars program pairs junior female faculty with internal advocates and external eminent scholars, combined with regular gathering of administrators, mentors and scholar to increased opportunity for exchange of experiences.

The Climate and Diversity Committees in each department report Department Heads and college committee, sharing best practices in enhancing diversity, equity and inclusion.

How Diversity Plan funding and awards supports and advances CLSC's recruitment, retention, climate, and equity goals.

- Supported the junior female mentoring activities and related travel.
- Enhanced lunch and learn seminars, diversity proposals, diversity awards for staff, postdoc/student and faculty.
- Increased departmental climate and diversity reporting efforts to college.
- In Chemistry, funded recruiting efforts at the annual ABRCMS meeting and NOBCChE, OCDC, PAC activities and support of staff committee meetings.
- In Physics & Astronomy and Statistics, supported attendance at major conferences for staff, students, postdocs and female faculty as well as supporting their attendance at WISE (Women in Science and Engineering) events.
- Established the requirement of diversity statements for various CLSC and departmental awards.
- In Statistics, supported celebration of international women day in 2018.
- Established Undergraduate Diversity Scholarship given to two students per year in Statistics.

FIGURES

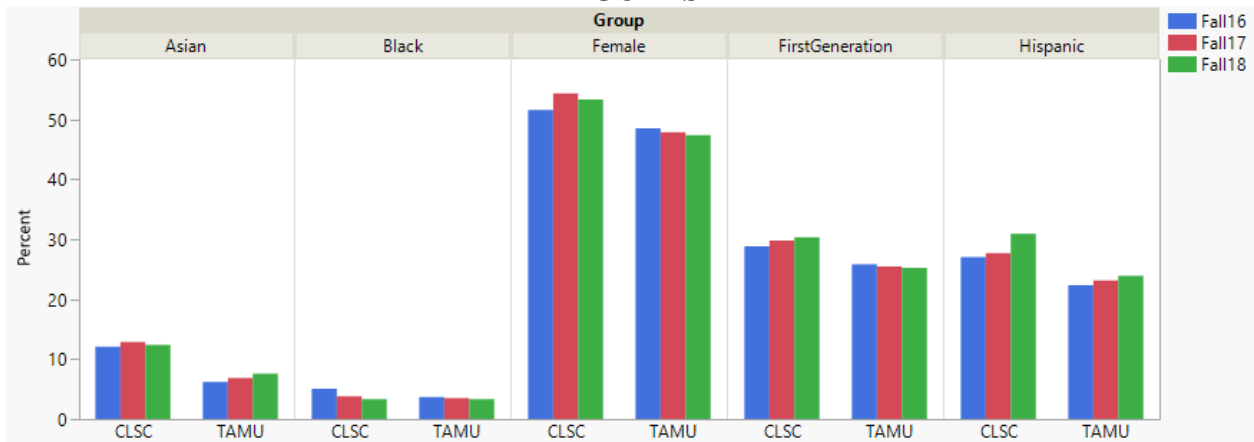


Figure 1: CLSC undergraduate student diversity and change last two years comparing to TAMU

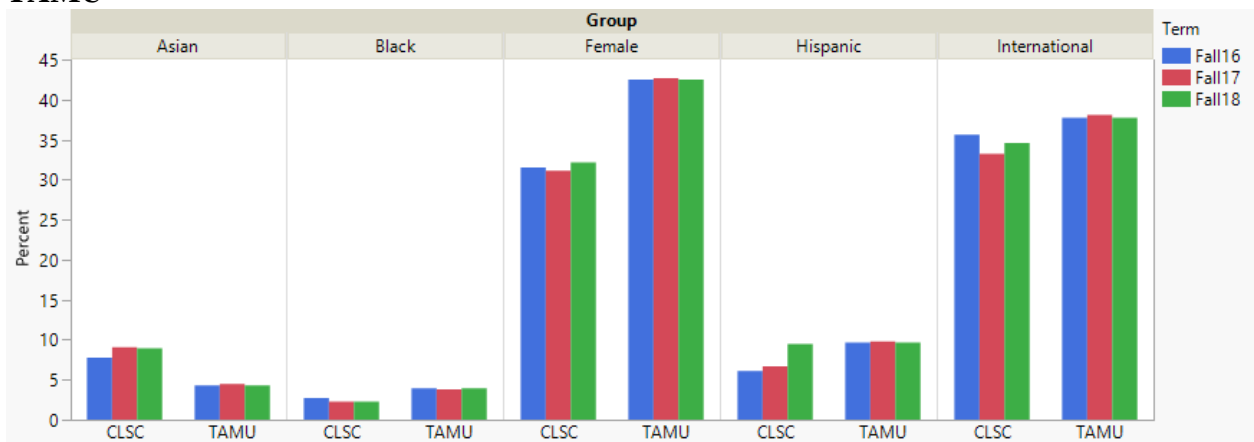


Figure 2: Percent CLSC Graduate student diversity and change last two years comparing to TAMU

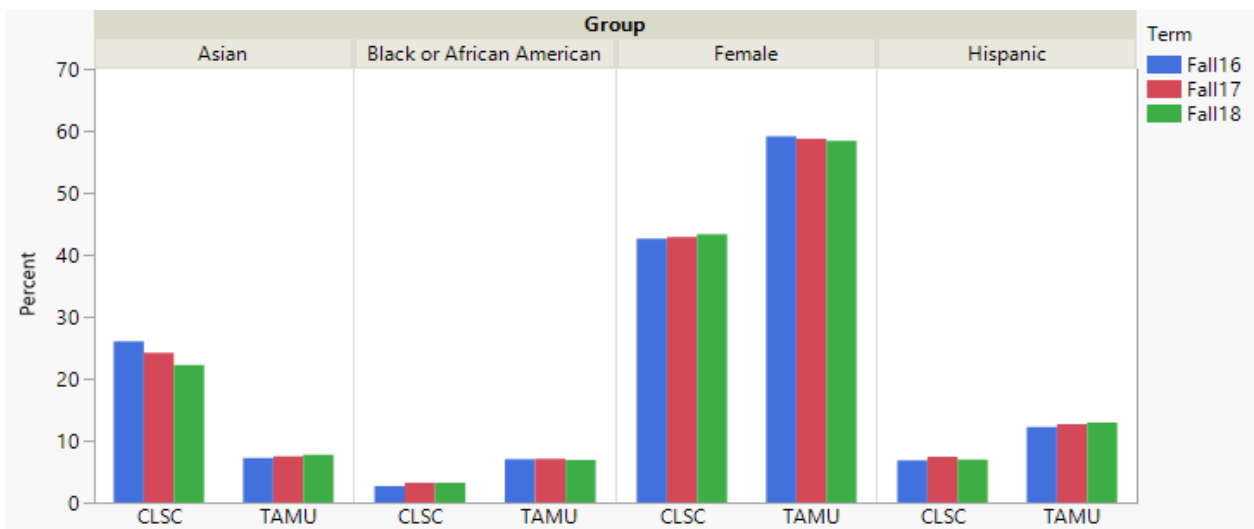


Figure 3: CLSC Staff diversity and change last two years comparing to TAMU

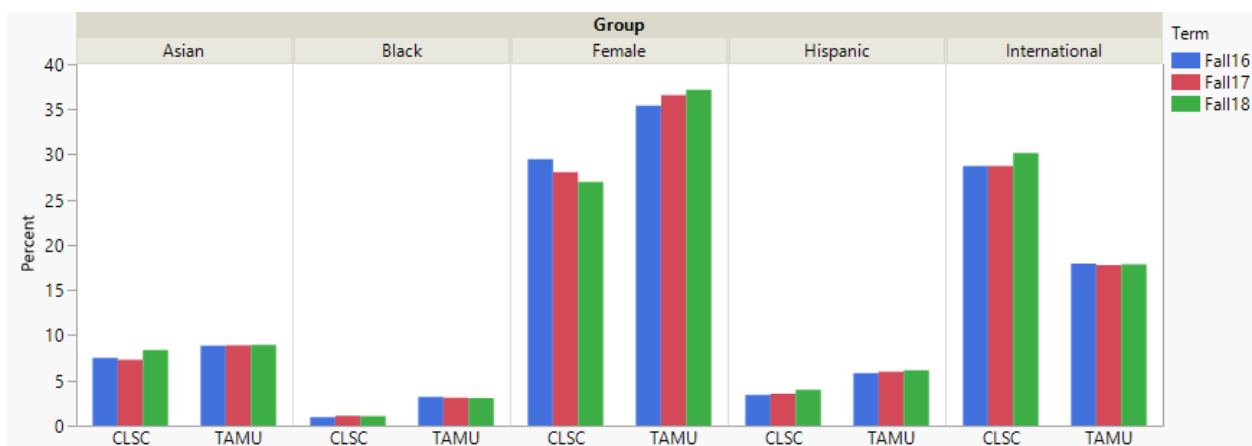


Figure 4: CLSC Faculty diversity and change last two years comparing to TAMU

WEBSITES or REFERENCES [number]

1. Biology, Chemistry, Cyclotron, Mathematics, Physics & Astronomy, and Statistics departmental accountability reports
2. CLSC Leadership Reports
3. Data and Research services - dars.tamu.edu
4. Accountability - accountability.tamu.edu
5. Institutional Effectiveness and Evaluation - assessment.tamu.edu
6. Alliance for Diversity in Science and Engineering - <http://www.allianceinscience.org>
7. NSF data - <https://www.nsf.gov>
8. <https://www.statschat.org.nz/wp-content/uploads/2013/11/reth-stats.png>
9. <https://hbr.org/2018/03/5-things-we-learned-about-creating-a-successful-workplace-diversity-program>
10. <https://www.forbes.com/sites/metabrown/2016/04/27/women-prominent-in-data-analytics-but-not-on-conference-agendas/#3bdf6f322c72>

ABBREVIATIONS

ABRCMS	Annual Biomedical Research Conference for Minority Students
ACE	Accountability, Climate and Equity
ACS	American Chemical Society
ADSE	Alliance for Diversity in Science and Engineering
AWM	Association of Women in Mathematics
EEO	Equal Employment Opportunity
CUWiP	Conferences for Undergraduate Women in Physics
DACC	Diversity and College Climate
DEEP Program-	Discover, Explore and Enjoy Physics and Engineering
DNP	Division of Nuclear Physics

NOBCChE	National Organization for the Professional Advancement of Black Chemists and Chemical Engineers)
OCDC	Organization for Cultural Diversity in Chemistry
PAC	Postdoctoral Association of Chemistry
PLTL	Peer Led Team Learning
QPR	Question Persuade Refer
RetainU	Retain Undergraduates; one mandatory group meeting at the start of the semester on "survival" topics (such as time management and study skills), another mandatory meeting to review mid-term grades, and weekly one-on-one meetings with a peer mentor.
SACNAS	Society for Advancing Chicanos/Hispanics and Native Americans in Science
SGSA	Statistics Graduate Student Association
SLS	Science Leadership Scholars: high-achieving students from very low-income households. They receive a scholarship over four years, personalized advising, and bi-weekly group meetings.
SUPA	Supporting all Underrepresented populations in Physics and Astronomy
STEM	Science, Technology, Engineering, and Math
STRP	Strategic Transformative Research Program. STRP dovetails into the T3 program and X-grants initiative, by providing support for interdisciplinary research that is beyond the initial stages, but has yet to have been selected for external federal funding.
SW	South West
URM	Under Represented Minority
TAMU	Texas A&M University
WISE	Women in Science and Engineering
YRC	Young Researchers Conference