

Research and Creative Endeavors

Updated April 25, 2018

Goal: San Diego State University will continue to enhance its research and creative endeavors profile, with particular emphasis on building areas of excellence and addressing national and international challenges.

The university fulfills its mission to generate new knowledge and attains distinction through excellence in the research, scholarship and creative activity of its faculty. The pursuit of innovative and interdisciplinary exploration is vital to the university's long-term academic and economic prosperity.

Initiative 1: Foster the Development and Growth of Excellence in Research and Creative Endeavors

- Invest funds for tenured and tenure-track faculty to advance existing and future areas of scholarly excellence.

From 13-14 to 16-17, a campuswide process was conducted that identified seven multidisciplinary areas of research excellence: 1) Clinical and Cognitive Neurosciences; 2) Viromics; 3) Climate Change and Sustainability Studies; 4) Human Dynamics in a Mobile Age; 5) Blue Gold: Mitigating the Effects of Water Scarcity; 6) Digital Humanities and Global Diversity; 7) Smart Health Institute (SHI): Wearable Biomedical Sensors for Precision Medicine. The university has invested base funds to support faculty hiring in these areas and \$6,890,000 in one-time funding to support start-up costs and other seed funds for these areas.

For 16-17 AOE, we received a one-time allocation of \$1.2 million. To date, we have hired 24 of the 28 faculty members slated for the areas of excellence. Searches are underway for the remaining faculty slots.

- Build a research endowment through private sources (see Resource and Revenue Plan section).

The research endowment is now \$15.4 million.

- Invest funds for improvements in facilities and equipment essential to sustaining scholarly activity and productivity (See also Enhancing Campus Climate in Support of Faculty and Staff).

\$23.4 million in one-time funds was allocated to construct the new Engineering and Interdisciplinary Sciences Complex. The building was occupied in January 2018.

An additional \$6.2 million in one-time funds has been allocated to support the renovation of core facilities (e.g., classroom/lab renovations) and shared equipment.

Since 13-14, over \$2.68 million in one-time funds and \$300,000 in base funding have been allocated in support of the library. Funds have been used to support the purchase of additional electronic journal subscriptions, replace large physical collections with more accessible technology, allow for upgrades to the student computing lab, make significant purchases to meet teaching and research needs, as well as increase library seating capacity, including

outdoor seating.

- Foster interdisciplinary collaborative research and projects. (See also Areas of Excellence.)

Investments were made to help catalyze new areas with an emphasis on grant writing and development. \$200,000 in one-time funds have been allocated for assigned time since 15-16 to support cross-institutional grants or across units within SDSU. Examples include the Center for Research Excellence and Diversity in Team Science, Advanced Energy System interdisciplinary working group, the Bread and Roses Center in Women's Studies, the U54 Grant and the National Science Foundation Research Traineeship Program (see above description of areas of research excellence for further descriptions of investments in interdisciplinary collaboration).

- Invest funds to strengthen and build infrastructure essential to sustaining scholarly activity and productivity, including planned enhancements of research infrastructure envisioned in NCURA report.

\$207,000 in one-time funding and \$55,000 in base funding was invested in InfoEd as the platform to develop new electronic forms and to manage Institutional Review Board protocols. The Division of Research Affairs completed the launch of the new streamlined form and new submission process in September 2016. Despite a 10 percent increase in the total number of Institutional Research Board submissions, the IRB staff's streamlining of the current review process resulted in IRB-exempt and expedited protocol turnaround times that are now below the national average.

Since the hiring of a full-time export control officer for the university, educational outreach and training have been initiated to help provide clarity to faculty and staff relative to export control issues. Visual Compliance software for screening of all foreign nationals, as well as international companies doing business with the university, has been implemented to assess if any are named on U.S.-restricted party lists. In addition, the university is developing regulatory infrastructure for use of UAVs in educational settings to comply with new FAA regulations.

Institutional Biosafety: After last update six years ago, the Division of Research Affairs is streamlining the Institutional Biosafety application process. The first draft was completed near the end of 16-17, and final implementation is expected for 17-18.

Collaborative Institutional Training Initiative: New online offerings include refresher courses and the SB-NIH required Good Clinical Practice Modules DD.

- Invest funds for faculty career-long scholarly productivity, including peer-to-peer mentoring for junior and mid-career faculty, grant editing, external review of grants and summer support programs. (See also investments in building new facilities.)

Since 13-14, we have provided \$700,000 in one-time funds for matching grants and \$225,000 in one-time funds for faculty bridge funding. We have increased startup funding for our new hires (see information in Foster the Development and Growth of Excellence in Research and Creative Endeavors) and created a grant proposal pre-submission review by external experts.

The GREW (Grant Writing Enterprise Workshop) was created to support faculty in their efforts to secure outside funding. Since its inception, this program has assisted 83 faculty across all ranks and colleges in both the self-assessment components of preparing for a research career,

as well as more concrete, practical exercises and cohort building to help identify and build relationships with potential mentors, collaborators and federal program officers. GREW fellows have reported success in number of proposals submitted, success of proposals, total amount of funded proposals, as well as higher funding per capita, when compared to new hires who did not participate in GREW during the same time period.

Thirty-two faculty participated in GREW workshops in 16-17 from the \$133,000 investment, with a cohort in fall 2016 and two cohorts in spring 2017. Two cohorts were expected for 17-18.

- Invest funds in support of the University Grants Program.

The university continued to invest in funding of faculty scholarship with investments from the California State University system, SDSU and the Research Foundation for a total investment of \$442,00 in 17-18. Selected for funding were 45 faculty, with representation from all colleges and the SDSU-IV campus.

- Invest funds for competitive graduate stipends.

Following a \$500,000 base budget allocation and an additional \$500,000 in one-time funding, the campus launched the University Graduate Fellowship that included competitive nominations and selections in the summer of 2017. Committing the entire funding over the course of two years, 14 fellowships were awarded for 17-18, with an additional 17 graduate fellows selected and deferred to 18-19. Each fellowship provides a \$25,000 annual stipend and employee health insurance. This investment represents a significant campus investment in the recruitment and retention of graduate students into highly competitive graduate programs. Matching of campus funds with external funding was required from individual principal investigators to leverage campus investments. To maximize program flexibility, PI commitments were allowed for either the first or the second year of the University Graduate Fellowship.

The second round of UGF selections will take place in spring 2018. Goals include increased participation and competitiveness of nominations as we approach a steady state of 30 fellows per academic year (subject to continuation of current funding level).

A new graduate funding pilot program was initiated in 2015 and actualized in 16-17 to provide additional support to highly competitive graduate students applying to master's and Ph.D. programs. A total of \$250,000 was established to provide \$5,000 per year for two years to all successful nominations following a campuswide competitive process. All funds were allocated to individuals to "top off" the funding regularly provided to incoming students to make SDSU offers more competitive on a national scale.

The President's Graduate Research Fellowship was developed in 14-15. The PGRF is a universitywide competitive fellowship program designed to recruit nonresident graduate students who demonstrate outstanding potential for achievement in research or creative activity. This improved the recruiting strategy for the use of nonresident tuition waivers (NRTWs). With the endorsement of the Graduate Council, Graduate and Research Affairs was allowed to manage 30 percent of the NRTWs directly, as opposed to the historical practice of departments allocating all NRTWs through their own priority system. The goals include targeting highly competitive graduate students early in the admission process, with the expectation of increasing acceptance rates. In 2017, 40 PGRFs were offered to prospective graduate students with 14 accepting the offers. The average GPA of NRTW and PGRF students was 3.5 for 16-17.

Graduate Student Travel Funds: In 16-17, a total of \$40,000 was provided from the Student

Success Fund and Associated Students. Two hundred and thirty-one applications were received with 51 graduate students selected for funding.

- Build web-based resources to assist grant writers in incorporating SDSU diversity metrics into impact statements.

Goals for 17-18 include development of a more integrated student database system that can aid both campus units and individual faculty with development of grants.

Initiative 2. Enhance Creative Arts on Campus

- Promote and leverage the visibility of the arts on campus and beyond the university by investing funds for “mini” arts events on campus, utilizing the Open Air Theatre, Conrad Prebys Aztec Student Union, Aztec Green and Love Library as appropriate.

Since 13-14, \$107,000 in base budget funding and \$236,500 in one-time funding has been invested in promoting and leveraging the visibility of arts on the campus and beyond the university. A faculty member was hired to lead this initiative in 13-14, with a primary focus of increasing access and visibility of the performing and visual arts at SDSU. There are a range of over 350 artistic experiences annually, including “pop-up” performing art events and visual art exhibitions at a variety of venues on the campus, as well as weekly interactive art-making opportunities at the Farmer’s Market and the Performing Arts Plaza. In addition, public art has been created throughout the campus, including the creation of over 50 art benches. A number of major theatrical productions have been brought to the campus. In 16-17, The Campanile Foundation introduced the TCF Arts Alive SDSU Advisory Committee made up of Campanile Foundation members and other community stakeholders interested in serving as ambassadors on behalf of Arts Alive SDSU. These ambassadors also provide expert knowledge of SDSU’s arts programs and help bring SDSU arts events to the larger San Diego area.

Attendance at and participation in arts events has increased from 74,418 in 13-14 to over 133,000 in 17-18, surpassing the 100,000 internal attendance goal. A part-time staff position was added in 17-18, which increased social media efforts. As of March 2018, Arts Alive SDSU had 1,175 followers on Facebook, 1,229 on Twitter, 847 on Snapchat and 1,248 on Instagram -- an average 14 percent growth rate over the previous 12 months. Arts Alive SDSU’s Twitter posts have had a reach of up to 97,819 views on its top tweets.

- Support faculty efforts to build art events into the university curriculum framework (e.g. integrate plays, art, and/or music into course content across disciplines).

Arts Alive SDSU annually engages INFUSE: an arts awareness-building strategy that supports non-arts faculty in the integration of arts opportunities into core curriculum syllabi. Over 200 students have participated in courses that include Assessing and Teaching Writing in Elementary Schools; Connection and Commitment: Self, Service and Society; Typography III and Design as a Social Process; as well as annual collaborations with One SDSU. The more in-depth curriculum development program, Interdisciplinary Collaborative Teaching Exchange, engages selected faculty in semester-long team-teaching experiences among arts and non-arts disciplines. The collaborative teaching program has supported 14 faculty to date, and over 1,000 students have participated in collaborative courses. In 17-18, Arts Alive SDSU and the Lavin Entrepreneurship Center partnered on a pilot course in business graphic design; faculty met alongside the Collaborative Teaching Exchange cohort to develop their syllabi.

- Develop a self-support youth summer arts camp.

Arts Alive SDSU supports the marketing of the nine camps offered through the School of Music and Dance during the summer months, including Bravo! an international music academy; Drum Major Camp; Westwind Brass Summer Brass Workshop; and Summer Music Institute.

Initiative 3: Reinforce the Value of Research for Student Success

- Invest funds to expand and support the Student Research and Scholarship Symposium as a signature SDSU program. (See Enhance Transformational Educational Experiences section.)
- Expand opportunities for undergraduate scholarship across our diverse student population through innovative courses, experiences, and engagement. (See also Enhance Transformational Educational Experiences, Student Success Fee information, mini-grant program and summer grant program.)

In 14-15, through an investment of \$20,000 in one-time funds, The Aztec Research Fellows program was created as a partnership between the College of Education and Student Affairs. Fellows engage in research focused on improving outcomes for underserved populations. The culminating experience of the program is to produce a peer-reviewed publication. In 16-17 and 17-18, \$20,000 was again provided annually to support the program. Fellows presented their research at the SDSU Student Research Symposium, the annual conference of the American Association of Hispanics in Higher Education and the annual meeting of the National Association of Student Affairs Professionals.

In 16-17, the campus invested in hiring a director of Undergraduate Research within Graduate and Research Affairs.

- Measure undergraduate scholarship engagement of our diverse student population and establish a goal to increase participation.

The Director of Undergraduate Research will be developing both the methodology and baseline datasets for understanding student participation by both majority and under-represented student populations.

- Integrate faculty scholarship with internship and practicum experiences for our diverse student population.
- Improve student preparation for an innovation-based economy by fostering entrepreneurial experiences. (See information on entrepreneurial centers herein.)
- Prioritize support for student research and scholarly activity, scholarships, and fellowships through philanthropy. (See information on Honors College endowment and Research Endowment herein.)
- Develop methods to match student and faculty scholarly activities using web or social media (e.g., a campuswide internship model).

The Director of Undergraduate Research is exploring this model.

- Publicize SDSU's identity as a top research university that serves a diverse student body.

In 13-14, the Strategic Plan Working Group on Branding and Marketing began a major national campaign using low-cost social media to raise awareness of the university's academic excellence. Through the use of Facebook, Twitter, YouTube, Instagram and Google AdWords, messages regarding our academic achievements reach over 500,000 students, alumni, faculty, staff and prospective students every year.

National marketing and branding efforts also expanded to include in-flight placement in Southwest and Alaska Airlines magazines. Locally, marketing and branding efforts include TV commercial campaigns, year-round placement in San Diego Magazine and Performances Magazine as well as billboard and airport advertising campaigns when appropriate.

Performance Analysis Measures for Research and Creative Endeavors Goal:

Research Expenditures have increased 6.6 percent, from \$108,364,049 in 12-13 to \$115,485,493 in 16-17.

Research Grants increased 16 percent from \$115,708,473 in 12-13 to \$134,264,146 in 16-17.

The Research Endowment has increased 488 percent from \$2,617,270 to \$15.4 million.

Average Number of Years to Master's Degree: declined from 2.59 years in 2014 to 2.44 years in 2017.

Average Number of Years to Doctoral Degrees: declined from 5.4 years in 2014 to 5.38 years in 2017.

Average GPA for Incoming Master's Students: remained the same at 3.32 in 2013 as in 2017.

Average GPA for Incoming Doctoral Students: increased from 3.38 in 2013 to 3.40 in 2017.