his year, we continued to build upon the infrastructure to facilitate research for faculty and students alike. We have made strategic hires for our areas of research excellence with a focus on brain health, leveraging the resources of the UT System, and cybersecurity, as it evolves into a national security portfolio.

We continue to support and mentor researchers from all colleges. Our Office of Research Support (ORS) manages our internal grant funding programs, which support ideas and projects that have potential, and assist faculty in advancing their scholarly works to secure external funding. We help faculty find funding opportunities and guide them through the application process. With the overall number of proposals increasing, our office builds and assists multi-disciplinary teams consisting of faculty members from across colleges and departments who are collaborating to address national and international research questions and challenges. These efforts are resulting in major awards.

A key indicator of research productivity, our research expenditures continued to increase in fiscal year 2016. UTSA’s research expenditures grew to $56.8 million. Our Research Dashboard, created by our IT department last year, has facilitated the tracking of grant activity on campus. This has helped the VPR and the colleges track data in real-time and address any challenges as they arise. The Office of Commercialization and Innovation (OCI) is going strong, with a 23% increase in new invention disclosures this year. After being designated the first I-Corps™ site in Texas back in 2014, UTSA student-led teams were awarded an additional five I-Corps™ Innovations grants in FY 2016 for a total of $250,000, bringing our total up to seven, with more teams in the pipeline for 2016-2017.

This is only a fraction of the depth of the research being conducted on campus. The VPR is committed to facilitating and promoting the research interests of the UTSA community as we continue on our path as a Tier One institution.

“The VPR has developed a robust and vital internal research awards program that allow faculty to take their ideas and develop their research in new and exciting ways,”
UTSA faculty has been successful in securing 336 grants for an award value of $68,964,565, a 40.3% increase over last year. Not only are they being successful on their own merits, faculty are collaborating across campus to secure high profile prestigious awards.

» A collaboration between the Departments of History, Sociology and Bicultural-Bilingual Studies, RHONDA GONZALES, RAQUEL MARQUEZ AND PATRICIA SANCHEZ were awarded a $3.2 million grant from the U.S. Department of Education for PIVOT for Academic Success which is focused on supporting and retaining first-generation and Hispanic students.

» GREG WHITE received a $11 million grant from the Department of Education to develop Standards for Information Sharing and Analysis Organizations (ISAO) for the Department of Homeland Security.

» In brain health, CARLOS PALADINI of the UTSA Neurosciences Institute, was awarded $1,835,150 from the NIH to study dopamine levels to advance drug therapy.

» KRYSTEL CASTILLO VILLAR of the Department of Mechanical Engineering was awarded a $1 million grant from the U.S. Department of Agriculture for the BioEnergy and Water for Agriculture Research and Education (BE AWARE) Network, to increase the minority participation in pursuing advanced degrees in STEAM relating to sustainable energy and water for agriculture related fields.

» EDWIN BAREA-Rodriguez, program director of UTSA Maximizing Access to Research Careers (MARC), part of the Center for Research and Training in the Sciences (CRTS), received another $1,898,753 from the National Institutes of Health (NIH). MARC provides opportunities and funding for Honors undergraduate students to apply and be prepared for doctoral programs.

» GEORGE PERRY AND ANDREW TSON were also awarded a $1,101,680 NIH grant to enhance the research capacity and infrastructure for CRTS. With the CRTS, along with our Office of Undergraduate Research, UTSA continues to introduce students to research within their first year at UTSA and engage them throughout their academic career.

» JOANN BROWNING, professor and dean of the College of Engineering, was given a NSF Natural Hazards Engineering Research Infrastructure (NHERI) from Purdue University in the amount of $1,864,537. UTSA will lead in the strategic coordination of the project which will explore how to limit the damage done to engineering structures by natural disasters.

» CPRIT (Cancer Prevention and Research Institute of Texas) gave a $4.5 million grant to STAN MCHARDY, co-director of Center for Innovative Drug Discovery (CIDD), to support the discovery and development of new cancer therapeutics.

» The Institute of Economic Development was successful in securing a number of awards this year including $1,240,983 from the U.S. Department of Commerce for ROBERT VELASQUEZ, who leads Southwest Trade Adjustment Assistance Center which provides management and technical assistance to faltering manufacturers and service industry firms in TX, OK, LA, NM & AK.
EXPERIMENTAL SUMMARY

**Total Expenditures**

- **Research Expenditures**
  - $56,768,863
    - Restricted: $36,358,058
      - Federal: $25,813,054
      - Non-Federal: $10,545,004
    - Unrestricted: $20,410,805
      - General: $13,204,342
      - Designated: $7,204,463

- **Educational, Outreach, & Support Expenditures**
  - $27,888,120
    - Restricted: $15,210,528
      - Federal: $11,969,212
      - Non-Federal: $3,241,316
    - Unrestricted: $12,677,592
      - General: $9,775,631
      - Designated: $2,901,961

- **Total**
  - $84,656,983
Expenditure Breakdown by Type

<table>
<thead>
<tr>
<th>Restricted Research</th>
<th>FY 2006</th>
<th>FY 2016</th>
<th>10 Year % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>$21,463,037</td>
<td>$25,813,054</td>
<td>20.27%</td>
</tr>
<tr>
<td>Non-Federal</td>
<td>$2,814,374</td>
<td>$10,545,004</td>
<td>274.68%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$24,277,411</strong></td>
<td><strong>$36,358,058</strong></td>
<td><strong>49.76%</strong></td>
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</table>
## Research Expenditure Breakdown by College/Unit

<table>
<thead>
<tr>
<th>College</th>
<th>AmountRequested</th>
<th>College</th>
<th>AmountRequested</th>
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<tbody>
<tr>
<td>Architecture, Construction, and Planning (CACP)</td>
<td>$384,867</td>
<td>Honors College</td>
<td>$12,487</td>
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<tr>
<td>Business (COB)</td>
<td>$3,383,998</td>
<td>University (UNIV)</td>
<td>$1,335,072</td>
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<tr>
<td>Education &amp; Human Development (COEHD)</td>
<td>$3,188,207</td>
<td>Vice President for Academic Affairs (VPAA)</td>
<td>$206,471</td>
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<tr>
<td>Engineering (COE)</td>
<td>$12,761,440</td>
<td>Vice President for Community Services (VPCS)</td>
<td>$387,549</td>
</tr>
<tr>
<td>Liberal &amp; Fine Arts (COLFA)</td>
<td>$3,732,035</td>
<td>Vice President for Research (VPR)</td>
<td>$3,264,723</td>
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<tr>
<td>Public Policy (COPP)</td>
<td>$1,960,627</td>
<td>Other</td>
<td>$29,498</td>
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<tr>
<td>Sciences (COS)</td>
<td>$26,122,651</td>
<td>Total</td>
<td>$56,768,863</td>
</tr>
</tbody>
</table>

### Expenditure Percentage by College

- **COS**: 46%
- **COE**: 22%
- **COLFA**: 22%
- **COPP**: 6%
- **COEHD**: 6.5%
- **UNIV**: 6%
- **VPCS**: 6%
- **VPR**: 6%
- **VPA**: 1%
- **OTHER**: 0.3%
- **HONORS**: 0.7%
## Educational, Outreach, and Support Expenditure Breakdown by College

<table>
<thead>
<tr>
<th>College</th>
<th>Amount Requested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture, Construction, and Planning (CACP)</td>
<td>$14,948</td>
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<tr>
<td>Business (COB)</td>
<td>$1,814,878</td>
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<tr>
<td>Education &amp; Human Development (COEHD)</td>
<td>$1,490,057</td>
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<td>Engineering (COE)</td>
<td>$864,390</td>
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<tr>
<td>Liberal &amp; Fine Arts (COLFA)</td>
<td>$281,392</td>
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<tr>
<td>Vice President for Community Services (VPCS)</td>
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<tr>
<td>Other</td>
<td>$289,573</td>
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<td><strong>Total</strong></td>
<td><strong>$27,888,120</strong></td>
</tr>
</tbody>
</table>

**EXPENDITURE BREAKDOWN BY COLLEGE**

- **VPCS**: 63%
- **COS**: 18%
- **COB**: 7%
- **COE**: 5%
- **COEHD**: 3%
- **COPP**: 2%
- **COLFA**: 1%
- **OTHER**: 0.8%
- **CACP**: 0.2%
- **Other**: 0.2%
## Proposal Submissions

### Submission by College

<table>
<thead>
<tr>
<th>College</th>
<th>Submitted</th>
<th>Amount Requested</th>
</tr>
</thead>
<tbody>
<tr>
<td>COS</td>
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<td>$151,614,440</td>
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<tr>
<td>COE</td>
<td>235</td>
<td>$99,579,868</td>
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<tr>
<td>VPCS</td>
<td>72</td>
<td>$40,864,922</td>
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<tr>
<td>COEHD</td>
<td>104</td>
<td>$39,014,218</td>
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<tr>
<td>COB</td>
<td>31</td>
<td>$21,705,711</td>
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<tr>
<td>COLFA</td>
<td>84</td>
<td>$12,756,043</td>
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<tr>
<td>COPP</td>
<td>35</td>
<td>$3,542,173</td>
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<tr>
<td>CACP</td>
<td>22</td>
<td>$602,589</td>
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<tr>
<td>VPR/OTHER</td>
<td>1</td>
<td>$14,544</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>852</strong></td>
<td><strong>$369,694,508</strong></td>
</tr>
</tbody>
</table>

### Submission Percentage by College

- **COS**: 41.01%
- **COE**: 26.94%
- **VPCS**: 11.05%
- **COEHD**: 10.55%
- **COLFA**: 5.87%
- **COB**: 3.45%
- **COPP**: 0.16%
- **CACP**: 0.01%
- **VPR/OTHER**: 0.96%

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ANNUAL REPORT 2016
## Proposal Submissions

### Submission by Sponsor Type

<table>
<thead>
<tr>
<th>Sponsor Type</th>
<th>Submitted Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Government</td>
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<tr>
<td>State Government</td>
<td>161</td>
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<tr>
<td>Private</td>
<td>100</td>
</tr>
<tr>
<td>Federal Pass Through</td>
<td>99</td>
</tr>
<tr>
<td>Foundation</td>
<td>69</td>
</tr>
<tr>
<td>Local Government</td>
<td>25</td>
</tr>
<tr>
<td>Other Government</td>
<td>15</td>
</tr>
<tr>
<td>Business</td>
<td>14</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>852</strong></td>
</tr>
</tbody>
</table>

### Proposal Submission By Sponsor Type

- **Federal Government**: 43.31%
- **State Government**: 18.90%
- **Private**: 11.74%
- **Federal Pass Through**: 11.62%
- **Foundation**: 8.10%
- **Local Government**: 2.93%
- **Other Government**: 1.64%
- **Business**: 1.76%
### Number of Awards by College

<table>
<thead>
<tr>
<th>College</th>
<th>FY 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>CACP</td>
<td>15</td>
</tr>
<tr>
<td>COB</td>
<td>17</td>
</tr>
<tr>
<td>COE</td>
<td>73</td>
</tr>
<tr>
<td>COEHD</td>
<td>28</td>
</tr>
<tr>
<td>COLFA</td>
<td>46</td>
</tr>
<tr>
<td>COPP</td>
<td>20</td>
</tr>
<tr>
<td>COS</td>
<td>82</td>
</tr>
<tr>
<td>OTHER</td>
<td>1</td>
</tr>
<tr>
<td>VPCS</td>
<td>54</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>336</strong></td>
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### Amount Awarded by College

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<thead>
<tr>
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<th>FY 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>CACP</td>
<td>$380,006</td>
</tr>
<tr>
<td>COB</td>
<td>$1,453,320</td>
</tr>
<tr>
<td>COE</td>
<td>$12,656,691</td>
</tr>
<tr>
<td>COEHD</td>
<td>$2,739,004</td>
</tr>
<tr>
<td>COLFA</td>
<td>$5,717,908</td>
</tr>
<tr>
<td>COPP</td>
<td>$1,610,300</td>
</tr>
<tr>
<td>COS</td>
<td>$33,434,389</td>
</tr>
<tr>
<td>OTHER</td>
<td>$14,544</td>
</tr>
<tr>
<td>VPCS</td>
<td>$10,958,404</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$68,964,565</strong></td>
</tr>
</tbody>
</table>

### Award Percentage by College

- **COS**: 48.48%
- **COE**: 18.35%
- **VPCS**: 15.89%
- **COLFA**: 8.29%
- **COEHD**: 3.97%
- **COPP**: 2.33%
- **COB**: 2.11%
- **CACP**: 0.55%
- **UNDERGRAD**: 0.02%
Office of Commercialization & Innovation

The Office of Commercialization and Innovation (OCI) promotes the creation and commercialization of intellectual property at UTSA by faculty, staff, and students. We manage the university’s portfolio of intellectual property, engage companies in research and commercialization partnerships, and provide intellectual property education and training. OCI also helps bridge the gap between basic research and applied innovation by operating a proof-of-concept fund, supporting commercialization development programs such as the NSF I-Corps™, and promoting entrepreneurship. Through the UTSA New Venture Incubator, we enable university start-ups and partner companies to grow our commercialization activities on campus.

MILESTONES / SUCCESSES

Entrepreneur in Residence Program

ESTABLISHED in 2016, The Entrepreneur-in-Residence Program (EIR) invites an experienced entrepreneur or executive to work closely with UTSA faculty inventors to do a deep-dive evaluation of technologies with start-up potential. A business model is created for each project, and those projects that are compelling enough may move forward. They may form a company or begin securing a management team to lead its formation. Working on a four-month contract, the EIR identifies technologies, assesses them, and picks the ones that have the best potential to commercialize. To date, there have been three entrepreneurs in the program, focused on (1) chemistry and gas storage, (2) cybersecurity, and (3) medical devices, verticals in which UTSA and the San Antonio entrepreneurship community have a wealth of experience.

NSF I-CORPS UTSA Teams Accelerate

In 2014, UTSA was the first in Texas to be designated an I-Corps Site by the National Science Foundation. The following year (June 2015), UTSA was awarded its first I-Corps, Innovation Corps, Grant which provided business training to focus on the next steps to move one’s research closer to market. In 2016, UTSA’s participation accelerated, and to date, $272,254 has been awarded to six I-Corps Teams including Drs. Matthew Gdovin and Yusheng Feng from 2015, and in 2016, Drs. Sos Agaian, Firat Testik, Arturo Ayon, and Banglin Chen. Several more teams are in the pipeline. Dr. Banglin Chen’s I-Corps team has gone on to do further technology development with UTSA’s first EIR, Jeff Xu, CEO of Leau2409 LLC, a recent New Venture Incubator member.

New Venture Incubator Members

Leau2409 LLC, a company aimed at consulting and research in the energy space, took up residency at the UTSA New Venture Incubator in August 2016. The company has focused on collaborating with UTSA researchers to scale up to industry grade Metal-Organic Framework materials for the storage and separation of industrial gases. It joined Bioaffinity Technologies, led by CEO Maria Zannes. They are a privately held development-stage company advancing proprietary screening and early-stage diagnostic technology applicable to a broad range of cancers. Rochal Industries LLC, who specializes in biomedical materials primarily related to the wound care and eye care industries and had been a member of the incubator since 2011, graduated and moved on into a new larger space in San Antonio as they continue their rapid growth.
Commercialization Activity Summary

Technology innovation and commercialization are major focuses of the UT System and other Tier One universities throughout the state and nation. The office establishes UTSA procedures and policies for technology transfer and commercialization, and provides training to faculty, staff, and students. It also spearheads a commercialization council that connects UTSA with regional technology commercialization partners.

<table>
<thead>
<tr>
<th>Activity</th>
<th>FY 11</th>
<th>FY 12</th>
<th>FY 13</th>
<th>FY 14</th>
<th>FY 15</th>
<th>FY 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial Agreements (Contract, SRA, MOU, NDA, &amp; MTA)</td>
<td>50</td>
<td>49</td>
<td>52</td>
<td>84</td>
<td>105</td>
<td>143</td>
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<tr>
<td>New Invention Disclosures</td>
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<td>26</td>
<td>62</td>
<td>56</td>
<td>41</td>
<td>53</td>
</tr>
<tr>
<td>Patents Filed</td>
<td>36</td>
<td>46</td>
<td>76</td>
<td>75</td>
<td>69</td>
<td>71</td>
</tr>
<tr>
<td>Copyrights &amp; Trademarks</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>New License/Options Signed</td>
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<td>1</td>
<td>10</td>
<td>3</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>New Technologies Licensed/Optioned</td>
<td>5</td>
<td>3</td>
<td>10</td>
<td>8</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Entrepreneurs in UTSA $100K Competition</td>
<td>113</td>
<td>120</td>
<td>128</td>
<td>102</td>
<td>74</td>
<td>83</td>
</tr>
<tr>
<td>Companies in UTSA $100K Competition</td>
<td>20</td>
<td>20</td>
<td>19</td>
<td>16</td>
<td>14</td>
<td>18</td>
</tr>
<tr>
<td>Entrepreneurs Trained at Boot Camp</td>
<td>205</td>
<td>215</td>
<td>295</td>
<td>310</td>
<td>329</td>
<td>376</td>
</tr>
<tr>
<td>Companies Incubated</td>
<td>10</td>
<td>11</td>
<td>13</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
</tbody>
</table>

5-YEAR (‘12-’16) INVENTION DISCLOSURES

BY COLLEGE

- College of Engineering: 54%
- College of Sciences: 40%
- Other (All Other UTSA College Units): 6%

2016 INVENTION DISCLOSURES

BY COLLEGE

- College of Engineering: 47%
- College of Sciences: 45%
- Other (All Other UTSA College Units): 9%
Currently serving as the university’s interim provost, Agrawal joined UTSA in 2003 and was appointed the UTSA vice president for research (VPR) in 2013 until 2016. He also holds the Peter Flawn Professorship in Biomedical Engineering. Prior to his VPR role, he served as the dean for the UTSA College of Engineering. Before joining UTSA, he worked at the UT Health San Antonio and served on the faculty at Duke University. He obtained his Ph.D. from Duke University (1989), M.S. from Clemson University (1985) and a B. Tech. from IIT-Kanpur, India.

Agrawal’s research has led to many novel discoveries, and many of his patents have been licensed to commercial entities. His bio-engineering research group has been responsible for the launching of three companies in San Antonio. Additionally, he has served on the editorial boards of various scientific journals including the Journal of Biomedical Materials Research, Journal of Biomedical Materials Research (Applied Biomaterials), Tissue Engineering, Journal of System of Systems (IEEE), Journal of ASTM International, and the Journal of Tissue Engineering and Regenerative Medicine.

During his career, Agrawal has been the recipient of several honors and awards, including the Chancellor’s Entrepreneurship and Innovation Award from the University of Texas System, the Healthcare Hero Award for biomedical research from the San Antonio Business Journal, and the Julio Palmaz Award for Innovation in Healthcare and the Biosciences. He has authored more than 315 scientific publications and 28 patents (14 issued and 14 pending). His latest book, a textbook on biomaterials, was published in 2014.

Additionally, Agrawal serves on the Board of Trustees of the Southwest Research Institute and as a member of Clemson’s College of Engineering Advisory Board. He also serves on the Boards of the following local organizations: United Way’s Master’s Leadership Program, Biomed SA, Texas Research Park Foundation and the San Antonio Medical Foundation.

Election to NAI Fellow status is a high professional distinction given to academic inventors who have demonstrated a prolific spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on quality of life, economic development, and the welfare of society.

The 168 Fellows named in 2015 brought the total number of NAI Fellows to 582, representing more than 190 prestigious research universities and governmental and non-profit research institutions. The 2015 Fellows account for more than 5,300 issued U.S. patents, bringing the collective patents held by all NAI Fellows to more than 20,000. These academic luminaries have made a significant impact to the economy through innovative discoveries, creating startup companies, and enhancing the culture of academic invention.

Dr. Agrawal was inducted on April 15, 2016, as part of the Fifth Annual Conference of the National Academy of Inventors at the United States Patent and Trademark Office (USPTO) in Alexandria, VA.
innovation at The University of Texas at San Antonio (UTSA) has helped the University of Texas System earn a top spot among on the Top 100 Worldwide Universities Granted U.S. Utility Patent Ranking for 2015.

The report, which is published by the National Academy of Inventors (NAI) and Intellectual Property Owners Association (IPO), analyzes data acquired from the U.S. Patent and Trademark Office to highlight the important role patents play in university research and innovation.

“Patents are key building blocks of UTSA’s growing innovation ecosystem,” said Christine Burke, director of the UTSA Office of Commercialization and Innovation. “The university’s investment in them allows these innovations to be transferred into startups and companies, and developed into commercial products that can help society.”

One of UTSA’s patents, No. 9,173,562, was for technology developed by Andrew Tsin and Dhiraj Sardar, biology and physics professors, respectively. Tsin and Sardar devised a method to detect progressive eye diseases from an early stage and track them non-invasively and quantitatively. The technology applies to diseases such as diabetic retinopathy, which affects up to 80 percent of all patients who have had diabetes for 20 years or more, and wet macular degeneration, which affects mostly those over the age of 65. The researchers’ method uses the intensity and polarization shifts of scattered light to find anomalies.

In 2015, UT System researchers were granted 191 patents from the U.S. Patent and Trademark Office. UTSA received nine of those patents and filed an additional 69 patent applications.

UTSA’s patents and patent applications are managed by the Office of Commercialization and Innovation (OCI), which oversees the university’s portfolio of intellectual property, engages companies in research and commercialization partnerships, and provides intellectual property education and training. The OCI also helps bridge the gap between basic research and applied innovation by operating a proof-of-concept fund, supporting commercialization development programs such as the NSF I-Corps™ and promoting entrepreneurship through the UTSA New Venture Incubator.

The NAI and IPO’s worldwide rankings are compiled by calculating the number of utility patents granted by the U.S. Patent and Trademark Office, which lists a university as the first assignee on the printed patent.

**OTHER UTSA PATENTS ISSUED IN 2016 INCLUDE:**

- An automated antifungal drug candidate testing system that works 10 times faster than current methods
- A method to generate and assess parallel random number streams, applicable in high performance computing, simulation and cybersecurity
- A method to detect, enhance and accelerate mesenchymal stem cell functions using alternating electric current, needed for biomedical engineering
- A new and robust metal-organic framework constructed from pentanuclear clusters for selective absorption of gas molecules
- A carbon nanotube crossbar-based nano-architecture
- Remediation of cybersecurity vulnerabilities

**SOURCE:** UTSA TODAY, JULY 2016
The Office of the Vice President for Research (VPR) offers a variety of internal awards to encourage faculty to seek out new research ideas and expand scholarly works.

**FY 2016 AWARD TOTALS**

<table>
<thead>
<tr>
<th>Program</th>
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</thead>
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</tbody>
</table>

Total: $759,066

In Fiscal Year 2015, the VPR awarded:

- **SEED GRANT AWARDS**
  - 45 awards totaling $1,107,093

VPR tracks two years of research output. Return on seeding research for FY2015 Awardees generated:

- **GRANT SUBMISSIONS**: 38
- **AWARDS**: 20
- **SUBMITTED PUBLICATIONS**: 52
- **UNDERGRADUATE STUDENTS**: 30
- **GRADUATE STUDENTS**: 60
- **PATENTS/COPYRIGHTS FILED**: 04
- **OTHER SCHOLARLY WORKS**: 33
- **GRANT SUBMISSIONS**: 38
- **AWARDS**: 20

Resulted in a return on investment totaling:

$6,000,402
The GREAT program provides seed grants to support new areas of research for faculty at UTSA, to assemble preliminary data that can be used to seek extramural funding and advance UTSA’s goal of reaching Tier One status.

**College of Sciences**

**David Jaffe, Ph.D., Department of Biology**

» Intensified hippocampal circuits contributing to the symptoms of post-traumatic stress disorder

**Hongjie Xie, Ph.D., Department of Geological Sciences**

» Reconstruct paleo-lake shorelines and monsoon variability over the Tibetan Plateau since late Pleistocene

**College of Engineering**

**Hai-Chao Han, Ph.D., Department of Mechanical Engineering**

Computational modeling of trabeculae cutting as a novel approach to treat patients with diastolic heart failure

**Arturo Montoya, Ph.D., Department of Civil and Environmental Engineering**

» Efficient Structural Health Management and Prognosis through a Novel Fracture Mechanics Approach

**Hatim Sharif, Ph.D., Department of Civil and Environmental Engineering**

» Air Pollution and Weather Controls on Childhood Asthma in Texas

The CONNECT Program is a joint effort between The UTSA and the Southwest Research Institute (SwRI). The program encourages interaction between investigators in support of the acquisitions of established extramural, peer-reviewed research funding. This agreement provides unprecedented opportunities for researchers to work together in addressing issues of mutual interest and need.

The Connect program was founded to enhance scientific collaboration between SwRI and UTSA and increase their research funding base.

**College of Sciences**

**Neal Guentzel, Ph.D., UTSA and Xingguo Cheng, Ph.D., SwRI**

» Enhancing the Efficacy of a Chlamydia Subunit Vaccine Through Encapsulation

**College of Engineering**

**Krystel Castillo, Ph.D., UTSA and Jimell Erwin, Ph.D., SwRI**

» An Efficient Circulating Fluidized Reactor Technology Integrated into a Stochastic Model with Biomass Quality Variables for Sustainable Biofuels and Biobased Products
When we leverage the research expertise of both institutions and cross-pollinate efforts through the Connect program, we can spark innovation and progress.

— Dr. Bernard Arulanandam, UTSA Interim Vice President for Research

“Our funding selection committee is looking to fund research that finds solutions for specific challenges. This year, with the two chosen projects — precision medicine and pipe corrosion in the petroleum industry — the research we fund can have a systemic impact on the people, and the industries, of Texas.”

The Internal Research Awards (INTRA) program is part of the UTSA Vice President for Research’s coordinated efforts to promote research and scholarship of the highest quality. This program offers experience in identifying and submitting applications to potential funding sources, provides preliminary data to support applications for extramural funding, and enhances scholarly and creative activities. The program is awarding approximately 20 grants of $5,000 each to winning applications.

Victor De Oliveira, Ph.D., Department of Management Science & Statistics » A Non-stationary Non-Gaussian Hedonic Spatial Model for House Selling Prices

David Han, Ph.D., Department of Management Science and Statistics » Development of the cost efficient dynamic load sharing policy by managing the residual life of a multi-core system based on complex stochastic degradation processes

Pamela Smith, Ph.D., Department of Accounting » An Exploration of Nonprofit Hospital Executive Compensation

Crystal Colombini, Ph.D., Department of English » Constructing the Market: Risk, Rhetoric, and American Homeownership

Matthew Brogdon, Ph.D., Department of Political Science and Geography » The Judges’ Bill, Discretionary Jurisdiction, and Incorporation of the Bill of Rights: An Institutional and Historical Analysis

Daniel Engster, Ph.D., Department of Political Science and Geography » A Philosopher Guide to Parenting in the 21st Century

Ethan Wickman, Ph.D., Department of Philosophy and Classics » Ethics of Torture

James McDonald, Ph.D., Department of Communications » The Experiences of International Faculty in U.S. Academia

Catherine Kasper, Ph.D., Department of English » Aesthetics in Bio Technologies

Victor De Oliveira, Ph.D., Department of Management Science & Statistics » A Non-stationary Non-Gaussian Hedonic Spatial Model for House Selling Prices

David Han, Ph.D., Department of Management Science and Statistics » Development of the cost efficient dynamic load sharing policy by managing the residual life of a multi-core system based on complex stochastic degradation processes

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Ethan Wickman, Ph.D., Department of Philosophy and Classics » Ethics of Torture

James McDonald, Ph.D., Department of Communications » The Experiences of International Faculty in U.S. Academia

Catherine Kasper, Ph.D., Department of English » Aesthetics in Bio Technologies
San Antonio Life Sciences Institute (SALSI)’s Clusters in Research Excellence & Innovation Challenge

SALSI, a collaborative partnership established between the UT Health SA and UTSA by the Texas Legislature in 2003, has strengthened research in the life sciences. The global issues and challenges that research institutions are working to address are complex and occur at the intersection of disciplines.

The following programs develop sustainable strategic research clusters bridging the two institutions over a 12-month period through capacity building and collaborative interdisciplinary research. Clusters fosters cutting-edge research of national and global impact in areas of major significance. This year, the focus was on research on technology solutions in health care and brain health, both initiatives being system-wide priorities for the UT System, per Chancellor McRaven’s Quantum Leaps.

SALSI Clusters in Research Excellence:

BRAIN HEALTH

SALSI solicited participation in the Clusters in Research Excellence program, with the aims to develop two new strategic research clusters that bridge UTSA and UT Health SA through capacity building and collaborative, interdisciplinary research. To this end, SALSI established and supported two institutionally driven clusters in the area of Brain Health.

06.01.2016-04.30.2017
$200,000 awarded: $100,000 per team ($50,000 per PI)

**Stephen Bach, Ph.D., UTSA and Bess Frost, Ph.D., UT Health SA**
» Utilizing Imaging Mass Spectrometry and Electron Microscopy to Investigate Nucleoplasmic Reticulum Expansion in Alzheimer’s Disease

**DR. BESS FROST**’s expertise is in nucleoplasmic reticulum, the tubular invaginations of the nuclear envelope at the cellular level and the role it plays in Alzheimer’s disease. **DR. STEPHAN BACH** is spearheading the implementation of imaging mass spectrometry at UTSA with the goal of developing a platform for the direct molecular analysis of tissue. This would provide a breakthrough technology leading to unbiased tissue dissection and thus enable the opening of a new world of insights to disease processes by adding a layer of understanding at the molecular level.

**Todd Troyer, Ph.D., UTSA and Hye Young Lee, Ph.D., UT Health SA**
» Elucidating social communication deficits in autism

**DR. HYE YOUNG LEE**’s expertise is in using molecular techniques to study neurodevelopmental disorders while **DR. TODD TROYER** is an expert in behavior and brain circuits and studies songbird vocalizations. They have teamed up to study ultrasonic vocal communication in mice with fragile X syndrome. Fragile X is the most common genetic form of autism spectrum disorder and is caused by a single genetic point mutation. Making the same mutation in mouse genes reduces ultrasonic vocalizations when males court females. With one out of every 68 children affected with autism or a related disorder, the SALSI grant will enable both to collaborate on a new line of research inquiry.

SALSI INNOVATION CHALLENGE

Creating Technology Solutions in Health Care

The SALSI Innovation Challenge was an initiative to fund high risk, high reward studies that have the potential to create groundbreaking research directions in targeted disease areas which impact the south Texas region. The grants awarded through the Innovation Challenge are high-risk, high-reward studies that have the potential to create groundbreaking research directions in health informatics and bioinformatics.

05.01.2016-04.30.2017
$200,000 awarded: $100,000 per team ($50,000 per PI)

**David Akopian, Ph.D., UTSA and Amelie Ramirez, Dr. P.H., UT Health SA**
» An Interactive Automated Mobile Messaging Service for Mobile Health Promotion Interventions

A key area of the mobile technology study is the possibility of allowing non-technical project organizers to program multistage automated protocols though a low-cost, user-friendly, non-technical interface that would allow health promotion researchers to communicate with patients and health care providers participating in health studies.

**Yufei Huang, Ph.D., UTSA and Yidong Chen, Ph.D., UT Health SA**
» A Cloud Computing Pipeline for Precision Medicine

An innovative component of their study is the exploration of integrating electronic medical record data from health care providers in the San Antonio area with linked genomics data.
The Proposal Enhancement Program (PEP) provides funding for faculty to continue current research programs at UTSA that demonstrate a high likelihood of successfully competing for future federal funding.

In FY 2016, 13 faculty members were selected to receive this funding opportunity, for a value of $204,066.
UTSA Ranked Among World’s Top 400 Universities by Times Higher Education

The University of Texas at San Antonio has been ranked one of the top 400 universities in the world, according to the 2015-2016 Times Higher Education World University Ranking.

The ranking measures the core mission of world-class universities including teaching, research, international outlook and contribution to industry.

There are more than 20,000 universities worldwide. The Times Higher Education list includes universities in 70 countries. The World University Ranking assesses globally competitive research-intensive universities using 13 performance indicators in five categories: Teaching (30 percent) | Research (30 percent) and Citations (30 percent); International outlook (7.5 percent), and Industry income (2.5 percent).

This year, UTSA scored particularly strong in the citations category, an assessment that quantifies the number of times UTSA’s scholarly work is cited in global publications. The top-tier research and scholarly work underway by our faculty was critical to our inclusion on this year’s list. The views of more than 11,000 academics across the world were also factored into the results.

UTSA is one of six Texas universities to be included on this year’s top 400 list. They are:

- #46
- UT-AUSTIN
- #101
- RICE UNIVERSITY
- #193
- TEXAS A&M UNIVERSITY
- #201-250
- UT-DALLAS
- #351-400
- UTSA
- #351-400
- UNIVERSITY OF HOUSTON

UTSA One of Just Five U.S. Universities Recognized in Prestigious International Ranking of Young Universities

UTSA has been ranked as one of the best young universities in the nation, as well as a global leader, according to the 150 Under 50 Rankings released by Times Higher Education (THE).

UTSA is listed No. 4 in the United States and No. 77 internationally in the annual rankings, which assess universities less than 50 years old. The rankings are based on excellence in teaching, research, citations, international outlook and economic contributions. Only 150 universities globally are selected for recognition.

Times Higher Education’s World University Rankings are considered one of the most widely respected measures of university excellence.

In addition to UTSA, just four other U.S. universities made this year’s 150 Under 50 list. They are Rush University, UT-Dallas, George Mason University and the University of Maryland, Baltimore County. This is the fourth year of five that UTSA has been included in Times Higher Education’s young university rankings. The university also was included in THE’s 2012, 2013 and 2014 rankings.

As in years past, UTSA scored particularly well in THE’s citation category, a metric designed to quantify the creation of knowledge through research influence. To measure success in citations, THE examined more than 51 million citations to 11.3 million journal articles published around the world between 2010 and 2014. Citations to these papers were also evaluated.

SOURCE: UTSA TODAY, OCTOBER 2015
The University of Texas at San Antonio (UTSA) has been ranked as one of the top two graduate cybersecurity programs in the United States, according to an analysis of 70 programs by Universities.com. The ranking highlights UTSA’s success in generating a pipeline of talented students with the knowledge and practical skills to excel in cybersecurity careers.

The Ponemon Institute has previously ranked UTSA’s overall cybersecurity programs No. 1 in the nation, based on a survey of IT executives, and the university’s academic and research programs are recognized for excellence by the National Security Agency and Department of Homeland Security.

“This ranking for graduate programs is another validation that UTSA’s cybersecurity programs are the best of the best,” said Bernard Arulanandam, UTSA interim vice president for research. “It is rewarding to see UTSA’s graduate programs in cybersecurity recognized alongside such esteemed universities.”

In the ranking, Carnegie Mellon was ranked as the top graduate program, followed by UTSA. Cybersecurity is one of UTSA’s five core research strengths. The university offers undergraduate and graduate programs in security through four colleges to meet the public and private sectors’ need for new and highly qualified cybersecurity professionals. Alumni of UTSA have secured jobs with industry, government and military employers such as Rackspace, USAA, Raytheon, Booz Allen, the NSA and the U.S. Army.

UTSA is also home to research centers such as the Institute for Cyber Security, the Center for Infrastructure Assurance and Security and the Center for Education and Research in Information and Infrastructure Assurance and Security, which are focused on solving global security challenges in today’s increasingly technological world. They also give UTSA students the opportunity to conduct research alongside some of the nation’s most respected cybersecurity faculty members in the nation.

“Many programs produce either skilled cyber security practitioners or people knowledgeable about cybersecurity, but few achieve both. UTSA does,” said Nicole Beebe, Melvin Lachman Distinguished Professor in Entrepreneurship and associate professor in the UTSA Department of Information Systems and Cyber Security.

In 2015, UTSA was selected by the Department of Homeland Security to develop national cybersecurity standards for information sharing.

In 2005, UTSA founded the National Collegiate Cyber Defense Competition, the nation’s largest cybersecurity competition for college students. The competition has become such a popular training ground for talent that prospective employers are now barred from making job offers to competitors until the three-day challenge is completed.
Military Times Ranks UTSA a “Best for Vets” University for 2016

The Best for Vets rankings consider the factors that make an organization a good academic fit for service members, military veterans and their families including an array of services, special rules, accommodations and financial incentives offered, along with a description of veteran culture on a university’s campuses.

Military Times also factors in data from the Department of Veterans Affairs and U.S. Defense Departments, along with data from the Institute of Education Sciences Data Center, College Scorecard and the Cohort Default Rate Database.

“We award the Best for Vets designation to the very best – the colleges that are setting the example,” said Amanda Miller, editor of Military Times’ Best for Vets rankings and special editions.

About 10 percent of UTSA’s enrollment is military affiliated. These include military veterans, active duty military or military dependents. The university provides numerous services and programs for its military community, including the Veterans Certification Office, the VetSuccess on Campus program, which provides two full-time vocational counselors from the Department of Veterans Affairs, the Student Veterans Association and the Veteran Services Advisory Committee.

From 2009 to 2013, UTSA certified more individuals with Post-9/11 GI Bill benefits than any other public, four-year university in Texas, according to the Veterans Administration.

UTSA has been recognized consistently for its veterans outreach services. In 2014, the university was designated one of the nation’s top Military Friendly Schools for the fifth consecutive year by G.I. Jobs Magazine. That same year, Military Advanced Education awarded UTSA the designation of a Top School in its 2015 Guide to Colleges & Universities.