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Annual Report, 2015-2016

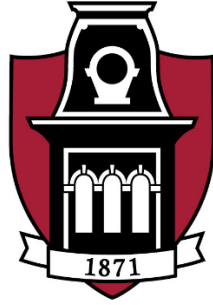
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UNIVERSITY OF ARKANSAS

**Vice Provost for
Research & Economic Development**

Annual Report 2015 – 2016



Table of Contents

EXECUTIVE SUMMARY 3
OFFICE OF THE VICE-PROVOST FOR RESEARCH AND ECONOMIC DEVELOPMENT 4
RESEARCH AND SPONSORED PROGRAMS 4
RESEARCH COMPLIANCE 5
TECHNOLOGY VENTURES/UATD 7
ENTREPRENEURSHIP 7
UNIVERSITY OF ARKANSAS PRESS 8
ARKANSAS HIGH PERFORMANCE COMPUTING CENTER..... 9
ARKANSAS CENTER FOR SPACE AND PLANETARY SCIENCES 9

Executive Summary

VPRED: The Office of the Vice-Provost along with members of the Research Council worked on implementation strategies and metrics for the RED Strategic Plan. The second annual Research Camp was held for new tenure-track faculty members to help orient them to the UA research enterprise. The Office of Undergraduate Research was started and a faculty director will be hired in FY17.

RSSP: The Office of Research Support and Sponsored Programs assisted with the development and submission of over 1,100 new proposals and received a total of 481 awards. The total dollar amount of administered by RSSP was \$85,588,864, an increase of over 34% over FY2015. With the Division of Agriculture receiving \$15,534,521 in external awards, the total external support for sponsored activities in FY2016 was \$101,153,385, an overall increase of 25% over the previous year.

Research Compliance: Institutional Review Board (IRB) handled 749 new protocols, 243 protocol modifications, and 294 protocol extensions. Institutional Animal Care and Use Committee (IACUC) handled 90 new protocols and had 75 protocol modifications. Biological Safety Committee (IBC) handled 43 new protocols, 36 protocol renewals, and 32 protocol modifications. Reviews (restricted party screening & clause critique) were performed for 20 international agreements. An additional 47 export control reviews were performed that included restricted party screening and technology evaluations.

Tech Ventures: TechVentures received 20 invention disclosures, filed 26 patent applications and received 10 issued patents. Licensing increased slightly with two new start-up companies as well as 11 negotiated licenses/options. Licensing revenues were \$146,413 and patent cost reimbursements were \$89,830. TechVentures held the 4th Annual Inventor Awards Banquet. Two special guests, Chancellor Steinmetz and Provost Saxena, were made with honorary National Academy of Inventors members.

Entrepreneurship: The Office of Entrepreneurship and Innovation hosted its fifth commercialization retreat, with 75 faculty and administrators from the UA, UAMS, ASU, UALR, and NCTR participating. OEI worked with the Texas Node of the NSF I-Corps program to develop and host a two-week regional training program. A Director of Social Innovation, Dr. Rogelio Garcia-Contreras, was hired. The 19 companies that started in our New Venture Development classes have raised over \$60 million.

Space Center: New Center funding in 2015 totaled \$1,088,000 from external grants (not counting cost sharing) and total external funding in place during 2015 was \$2,440,000. The faculty of the Center advised 5 undergraduate student researchers and 17 graduate students, with 5 of those graduate students completing degree requirements.

Arkansas Press: While net sales were slightly down (3%) from the previous year, the press finished the year at break-even on a cash basis. The Press continues its foray into digital book and rights platforms. E-book sales totaled \$33,426 for the year, up from \$22,876 in FY'15. The Press secured grants and subsidies (\$69k) to underwrite the publication of several book projects.

HPCC: The Arkansas High Performance Computing Center (AHPCC) provided **47.5M core hours** (a 55% increase over FY15) to **229 active users** (a 49% increase over FY15) across **five UA colleges and units and 9** other institutions. AHPCC- researchers received **\$25M** in extramural research grants and contracts.

Office of the Vice-Provost for Research and Economic Development

Office Structure: Dr. Ralph Davis was hired as the Associate Vice-Provost for Research and Development to replace the position vacated by Dr. Cynthia Sagers. Dr. Davis joins Bob Beitle as a second AVPRED. Dr. Davis was previously the Chair for the Department of Geosciences.

Strategic Planning: The five-year RED Strategic Plan was developed in FY15. The development of an implementation plan and metrics were in progress during FY2016.

Faculty development: The VPRED office initiated or continued several programs in FY15 to enhance the UA research enterprise. An Arts and Humanities Seed Funding program is in its fifth year and this year the program was maintained at \$25k.

The Office sponsored the “Top 15 in 2015” recognition ceremony for top funded researchers and the inventors’ banquet. This is part of ongoing efforts to recognize and promote research excellence from our faculty and students.

The second annual Research Camp was held in collaboration with the Vice-Provost for Faculty Development. The two-day program offered 1st, 2nd, and 3rd year tenure-track faculty an opportunity to learn more about conducting research at the University of Arkansas. A follow-up reception was held in the Spring semester to talk about the research progress made by each of the attendees.

Research and Sponsored Programs

The Office of Research Support and Sponsored Programs (RSSP) assisted with the development and submission of over 1,100 new proposals, exclusive of continuation requests and no-cost extensions, and received a total of 481 awards* from various sponsors during FY2016. The total dollar amount of new sponsored awards administered by RSSP for FY2016 was \$85,588,864. This represents an increase of over 34% or \$21,878,595 over FY2015. The Division of Agriculture administered new research support in the amount of \$15,534,521. As shown in Table 1, the total external support for sponsored activities was \$101,153,385, an overall increase of \$21,398,399, or 25%, over the previous year.

The composition of awards was \$58,964,181 (69%) from federal sources, \$14,261,833 (16.6%) from state sources, \$6,964,973 (8%) from foundations, \$3,898,643 (4.5%) from industry partners, and \$1,499,235 (1.7%) from other sources. This represents a 44% increase in funding by federal sources, a slight (.04%) increase in state funding, and a more than doubling of industry funding (1.6%). Combined, this represents an impressive increase in overall funding and is in accordance with our strategic plan to increase funding, specifically in the areas of federal and industry sponsors.

Decade Summary of Awards

Unit	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016
ADMIN	5,641,669	5,118,183	4,130,794	4,148,068	6,521,614	5,297,357	4,228,831	3,882,716	4,233,179	5,247,482	5,229,340
AFLS	14,931,201	13,696,441	1,635,858	2,650,574	3,257,783	3,529,599	4,406,029	2,611,206	54,536	19,628	244,072
ARDO	1,778,349	1,043,038	586,961	855,246	468,085	191,493	95,720	33,825	156,500	504,208	324,361
ARSC	19,886,493	17,220,638	19,891,658	21,308,726	21,858,369	18,666,359	14,662,942	13,438,270	17,553,592	13,730,043	15,565,593
DREX	-	-	14,295,088	17,357,118	18,032,980	22,044,008	21,212,954	18,346,099	22,521,867	17,595,242	17,643,386
EDUC	7,676,504	6,368,064	7,372,031	7,176,954	8,698,295	8,226,951	11,338,163	14,148,152	16,827,761	24,005,168	30,091,417
ENGR	20,994,561	10,992,697	17,935,215	8,755,641	19,326,484	15,474,529	10,528,923	9,981,270	16,905,877	17,302,497	28,721,763
GRAD	615,541	1,527,150	436,831	649,833	3,477,614	490,240	348,475	232,121	200,000	-	46,000
HNRC	-	-	-	-	-	-	-	-	-	-	-
LAW	46,510	117,853	87,529	11,000	39,744	39,412	39,744	50,000	528,025	315,601	2,144,098
MULN	-	-	-	-	-	-	5,590	152,399	70,000	83,160	86,066
VPRS	-	-	-	-	-	-	-	-	252,389	588,961	637,085
WCOB	775,381	1,004,007	918,644	1,197,457	618,478	640,988	1,868,823	466,686	463,465	362,996	420,204
Total	72,346,209	57,088,071	67,290,609	64,110,617	82,299,446	74,600,936	68,736,194	63,342,744	79,767,191	79,754,986	101,153,385

*This count reflects a change in methodology that will be used going forward in which external funding that is awarded to the University and subsequently dispersed for individual projects is counted as one project.

Research Compliance

Fiscal year 2015-16 was an extremely busy and productive year for the Office of Research Compliance. A brief summary of activities is provided below.

Institutional Review Board (IRB) handled 749 new protocols, 243 protocol modifications, and 294 protocol extensions. There were no reportable Adverse Events in this fiscal year. There was one instance of serious noncompliance which required the IRB to halt the research project until significant steps were taken to comply with State of Arkansas regulatory requirements.

Radiation Safety Committee (RSC) met six (6) times during the year. Due to the exemplary compliance record of the University, the Arkansas Department of Health did not perform a site visit. The Radiation Safety Officer (RSO) resigned effective August 2016. A new RSO was hired.

Institutional Animal Care and Use Committee (IACUC) handled 90 new protocols and had 75 protocol modifications. Research Compliance successfully completed negotiations to renew our USDA Animal Welfare Assurance for a period of three years.

Biological Safety Committee (IBC) handled 43 new protocols, 36 protocol renewals, and 32 protocol modifications. Because of a laboratory accident that exposed a research assistant to potential blood borne pathogens, the Committee issued an immediate stop work order to investigate the incident. Upon completion of the investigation, the Committee required the research staff to undergo additional training. In addition, the Principal Investigator was required to modify and resubmit all protocols which require potential exposure to human bodily fluids and waste.

The Committee voted unanimously to recommend to Mr. Phillip Stafford that research park lease agreements require tenants to operate in a manner consistent with the UA Chemical Hygiene Plan and UA Biological Safety Manual and to register the use of all Biological Safety Level 2, or greater, pathogens with Environmental Health and Safety.

Toxic Substances Committee (TSC) met twice during FY16. An incident of serious non-compliance was addressed with a faculty member and a resolution reached to ensure that no further instances of the same nature will occur.

At the June 16, 2016 meeting, the Provost, Dr. Ashok Saxena addressed the committee to officially appoint new members and to introduce new guidelines and recommendations regarding the roles and responsibilities of the Committee and its members. The Provost set aside \$50,000 to be used by the TSC to improve laboratory safety and to develop appropriate practices and procedures. The committee voted unanimously to initiate a baseline study to determine the time, effort, and financial support necessary to create a campus-wide hazardous materials inventory. The committee also allotted a portion of the funds to purchase twenty-five (25) lab safety cabinets and two (2) spark proof refrigerators to replace damaged or outdated units.

US Export Controls and Sanctions Compliance.

- The Export Operations Committee met three times during FY16. An export control assessment was initiated and results were discussed. Break-out teams were formed to work on recommendations/requirements for screening, asset classification and management, international travel, technology controls and export clauses. Progress continues in those areas.
- Reviews (restricted party screening & clause critique) were performed for 20 international agreements. Export control reviews became part of the international agreement sign-off process routing. A standardized export control clause was added to the international agreement template.
- An additional 47 export control reviews were performed that included restricted party screening and technology evaluations/classifications. These included H-1B visas, J-1 visas, campus visitors, NDAs/CDAs, project sponsors, proposals, licenses and other prospective collaborations.
- Specific export control training was developed for research administrators and presented during the March 2016 RAP meeting. Specific export control training was also developed for individuals working on an ITAR controlled project and administered in October 2015.
- Assisted colleagues within the Division of Agriculture with preparation of a VSD and subsequent awareness training.

Technology Ventures/UATD

Technology Ventures received 20 invention disclosures, filed 26 patent applications and received 10 issued patents. Although the number of filed applications dropped slightly, invention disclosures and issued patents remained the same. It is worth noting that almost half of the patent applications were new provisional filings while the remaining applications were related to disclosures from previous years. About one third of the new inventions submitted to the office in fiscal year 2016 were related to the healthcare/medical field.

For fiscal year 2016, Technology Ventures saw a slight increase in licensing activity with the formation of two start-up companies as well as 11 negotiated licenses/options/agreements. Licensing revenues of \$146,413 and patent cost reimbursements of \$89,830 were realized.

Technology Ventures held the 4th Annual Inventor Awards Banquet and was honored to initiate new faculty into the National Academy of Inventors. Keynote speaker Provost Saxena provided insight about connecting academia to industry. Two special guests, Chancellor Steinmetz and Provost Saxena, were presented with honorary NAI memberships.

Building the Technology Ventures' brand is an important step to further improving researcher engagement. The office is focused on developing new interest from industry sponsors in fiscal year 2017. Technology Ventures is motivated to improve transparency. In support of this endeavor, the office is creating helpful checklists for faculty and will launch a satisfaction survey in Fall 2016 to gauge areas of interest and need.

Entrepreneurship

The Office of Entrepreneurship and Innovation led or participated in numerous successful events across the UA campus, with other universities in the state, and with external constituents in the 2015-2016 academic year. We hosted our fifth three-day commercialization retreat, with 75 faculty and administrators from the UA, UAMS, ASU, UALR, and NCTR participating. Over 250 faculty members have attended the retreats since 2012, and the networking opportunities there have led to several cross-university grant applications, research projects, and at least one startup company. We worked with the Texas Node of the NSF I-Corps program to develop and host a two-week regional training program. Eleven teams from the UA, UAMS, and UALR participated in the training, which the trainers said was the best they had been involved in. We anticipate at least two applications to the national I-Corps program will come from participants in this training.

Dr. Rogelio Garcia-Contreras was hired as the Director of Social Innovation in January 2016. Dr. Garcia has been recognized internationally for his expertise and was selected to serve as a member of the UNESCO Committee on a Plan of Action on a Culture of Peace. As part of this committee, he has participated in several international forums, bringing prestige to the UA. Dr. Garcia was heavily involved in planning and teaching a Fulbright program on social entrepreneurship that received outstanding reviews. Another important initiative he led is the development of a Social Innovation Hub, a joint effort with the Volunteer Action Center, Net Impact, the Center for Multicultural and Diversity Education, and the Honors and Fulbright Colleges. The **Hub** will be a multidisciplinary physical and online space where University of Arkansas students will have the opportunity to participate in social entrepreneurship

initiatives. Dr. Garcia has also worked with colleagues to develop innovative social entrepreneurship activities in schools in NWA and Little Rock.

Dr. Cynthia Sides continued to develop the IGNITE program, collaborating with numerous companies throughout the state to bring real-world problems into the classroom for STEM students to address. Her statewide visits with companies have led to significant goodwill in areas of the state that have not typically been involved with the University of Arkansas. The Emerging Technologies in Industry class taught by Dr. Sides had a record 21 STEM students participate in spring 2016.

Our efforts to build the entrepreneurship ecosystem in the region and the state continue to bear fruit. The 19 companies that started in our New Venture Development classes have grown at a rapid rate. They have raised over \$60 million in private equity and competitive federal grants, allowing them to hire dozens of UA graduates who would otherwise have left the state to pursue careers. We are looking forward to becoming an integral part of the entrepreneurship activities on the Fayetteville Square when we move into the Global Campus building in 2017.

University of Arkansas Press

While Fiscal Year 2016 was one of challenge for the press, the organizational and operational changes made over the last few years have positioned us well to adapt to changes in the market.

Operational highlights and achievements are as follows:

- *Mourner's Bench*: sales totaled 1,605 copies and \$17,290
- *True Faith, True Light*: sales totaled 800 copies and \$17,798
- While net sales were slightly down (3%) from the previous year, the press finished the year at break-even on a cash basis. The decrease in sales was consistent, or slightly better, than the performance reported by presses in our cohort.
- UAP books garnered a number of awards in Fiscal 2016. Some highlights include:
 - *Minion* K.C. Morrison – Aaron Henry of Mississippi – 2016 Lillian Smith Book Award
 - Sanderia Faye – *Mourner's Bench* – Nominated for the Hurston/Wright Legacy Award
 - Chris Elzey and David Wiggins – *DC Sports* – Winner of the 2016 NASSH Book Award for best edited collection.
 - Geoff Winningham – *Of the Soil* – Winner of the 2015 Ned Shank Award for Outstanding Preservation Publication from the Historic Preservation Alliance of Arkansas.
 - Steve Scafidi – *To the Bramble and the Briar* – Finalist for the 2015 Housatonic Award
- The Press continues its foray into digital book and rights platforms. Two of the most significant e-book platforms joined in 2016 include JStor Books and China National Publications. E-book sales totaled \$33,426 for the year, up from \$22,876 in FY'15.
- The Press secured grants and subsidies to underwrite the publication of several book projects. Grants and subsidies awarded for the year exceeded \$69K.

Arkansas High Performance Computing Center

As a Core Research Facility under the Vice Provost for Research Office, the Arkansas High Performance Computing Center (AHPCC) continues to provide leading edge support for computationally intensive research to the campus, UA system, and the State of Arkansas. In FY16, the AHPCC was joined with the Center for Advanced Spatial Technology (CAST) to create Arkansas Research Computing Collaboratory. Dr. Jack Cothren serves as the Director of the Collaboratory. David Chaffin and Jeff Pummill serve as co-directors of AHPCC, reporting both to Dr. Cothren and the Vice-Provost.

The computing center provided 47.5M core hours (a 55% increase over FY15) to 229 active users (a 49% increase over FY15) across five UA colleges and units (ENGR, ARSC, AFLS, GRAD, & VPRED). The active users consist of 51 UAF project leaders in 32 departments, researchers from UALR, ASU, St. Jude Children's Hospital, West Virginia University, and collaborators from 9 other external institutions. AHPCC computing, storage and networking resources along with support efforts through training, workshops and online help resources support more than \$25M in active extramural research grants and contracts.

By far the most impactful addition to AHPCC in FY15 was the acquisition of the Trestles HPC Cluster from San Diego Supercomputer Center. This system cost \$2.5M when deployed in 2011 by SDSC. The agreement among AHPCC, SDSC, and NSF allowed 85% of this national resource to be relocated to AHPCC in 2015. The addition of these resources more than doubled our existing compute capabilities.

Arkansas Center for Space and Planetary Sciences

The faculty of the Center are drawn from two colleges (J. William Fulbright College of Arts and Sciences and the College of Engineering), including the departments of Mechanical and Electrical Engineering, Biological Sciences, Geosciences, and Physics. Collectively, these faculty advised 5 undergraduate student and 17 graduate students, with 5 of those graduate students completing degree requirements. This resulted in a reduction in students in the SPAC degree program by the end of the calendar year. The size of the student cohort will return to its former size in the 2016/17 academic year. In addition to SPAC students, the Center supported the research of two graduate students in PHYS.

The graduate students supported by Center research work closely with the faculty on research projects funded principally by NASA, with lower levels of funding provided by the Arkansas Space Grant Consortium and small collaborative programs with other universities. New Center funding in 2015 totaled \$1,088,000 from external grants. The research endeavors of the faculty and their graduate students resulted in the publication of 70 journal articles, book chapters, and conference presentations. Graduate students published 7 refereed journal articles based on their research and gave 14 oral conference presentations.