Annual Report

Of the Office for Research & Economic Development’s

Five-Year Strategic Plan
(2019 – 2024)

Year 2: June 1, 2020 – May 31, 2021

August 16, 2021
Dear UA Community:

I am very pleased to present the Annual Report of the Office for Research & Economic Development’s (ORED) Five-Year Strategic Plan. This Year Two report summarizes our progress from June 1, 2020 to May 31, 2021. The report is not an exhaustive and comprehensive account of research and scholarly activities at UA. Rather, it informs and updates the UA Community on specific progress. The Plan fully supports ORED’s mission to facilitate the growth and impact of the UA research enterprise toward the overarching goal of becoming one of the premier comprehensive research institutions in the Southeast over the next few years, while translating research productivity and innovation into economic and societal development. Some noteworthy selected accomplishments include:

**Theme 1: Research Environment**
- The Research Professional Career Track was launched on September 15, 2020.
- Successfully recruited a director for the Office for Innovation & Commercialization.

**Theme 2: Alabama Research Institutes**
- ORED and Alabama Water Institute successfully recruited a joint hire with the College of Engineering to be a lead Principal Investigator for UA’s submission for a NOAA Water Cooperative Institute.
- ORED, College of Community Health Sciences, Office for Academic Affairs, and Alabama Life Research Institute partnered to recruit a faculty team to lead UA’s Convergent Bioscience and Medicine Initiative.
- Three new Board of Trustees-designated research centers were created, approved, and launched.
- Three Alabama Research Institutes launched multi-year strategic plans.

**Theme 3: Transformative Initiatives**
- ORED led a collaborative process to create the concept for the Tuscaloosa Innovation District, a $1.5 billion initiative tied heavily to the Alabama Research Institutes.
- UA, through Alabama Transportation Institute, established a major focus on electric vehicles, called the Alabama Mobility and Power Initiative.

**Theme 4: Translating Intellectual Property**
- ORED developed the new Tide Express License Agreement Option for UA-based start-up companies.

**Theme 5: Economic and Business Engagement**
- ORED partnered with the UA Career Center to create and execute a graduate retention plan in support of the Alabama Commission on Higher Education “Retain Alabama” initiative.
- ORED created an asset map to showcase UA’s signature research themes, faculty expertise and available workforce talent through aligned academic programs.

**Theme 6: Assessing Progress and Impact**
- For the 2020 fiscal year, sponsored awards at UA reached more than $168.4 million, an increase of more than 27% over the previous year. In the last two fiscal years, sponsored awards to UA increased by 70%.

Roll Tide!

Russell J Mumper, PhD
Vice President for Research & Economic Development
Annual Report

THE UNIVERSITY OF ALABAMA
Research & Economic Development

BY THE NUMBERS

SPONSORED AWARDS
(70% change FY 2018-2020)

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
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<tbody>
<tr>
<td>FY2018</td>
<td>$99.1M</td>
</tr>
<tr>
<td>FY2019</td>
<td>$132.5M</td>
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<tr>
<td>FY2020</td>
<td>$168.4M</td>
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#1 IN THE SEC FOR GROWTH RATE OF R&D EXPENDITURES BY NSF HERD SURVEY (FY 2020)

TOP 5 IN THE SEC FOR NATIONAL SCIENCE FOUNDATION (NSF) FUNDING BY NSF HERD SURVEY (FY 2020)

UA, THROUGH ATI, ESTABLISHED A MAJOR FOCUS ON ELECTRIC VEHICLES, CALLED THE ALABAMA MOBILITY AND POWER (AMP) INITIATIVE

PARTNERED WITH UA CAREER CENTER TO CREATE AND EXECUTE A GRADUATE RETENTION PLAN IN SUPPORT OF THE ALABAMA COMMISSION ON HIGHER EDUCATION “RETAIN ALABAMA” INITIATIVE

DEVELOPED THE TIDE EXPRESS LICENSE AGREEMENT FOR UA-BASED START-UP COMPANIES

THREE NEW BOARD OF TRUSTEES-DESIGNATED RESEARCH CENTERS WERE CREATED, APPROVED, AND LAUNCHED

325 STUDENTS PRESENTED AT THE 14TH ANNUAL UNDERGRADUATE RESEARCH AND CREATIVE ACTIVITY CONFERENCE

FACULTY

36 NSF CAREER AWARDS

52 RESEARCHERS INCLUDED IN THE NATIONAL ACADEMY OF INVENTORS

LAUNCHED THE RESEARCH PROFESSIONAL CAREER TRACK TO RECRUIT AND RETAIN WORLD-CLASS EMPLOYEES FOCUSED ON ALL THE DIFFERENT TYPES OF RESEARCH AND CREATIVE ACTIVITIES AT UA

493 EXTERNAL LIFETIME HONORIFIC AWARDS RECEIVED BY FACULTY

712 FACULTY INVOLVED IN NEW AND EXISTING EXTERNALLY FUNDED AWARDS (FY 2020)
1. RESEARCH ENVIRONMENT

ORED has the important role of creating and sustaining a strong research environment at The University of Alabama. The research environment is comprised of critical components including culture, facilitation, communication, trust, transparency, infrastructure and partnerships. Strategic Theme 1 has eight Strategic Objectives and key progress on each Objective is highlighted.

1.1 ORED will promote and enhance the university-wide culture for research, scholarship, and creative activities, and, especially for cross-disciplinary and collaborative efforts in these areas, commensurate with a Carnegie-designated R1 doctoral research university. In collaboration with faculty and staff, ORED will identify barriers to this culture and take a lead role in addressing these barriers.

YEAR TWO

- The Research Professional Career Track was successfully launched on September 15, 2020.
- The new “Policy for the Disclosure of External Activity by Faculty and Other Research Grant and Contract Eligible Employees” was approved by the UA System Office and launched on August 16, 2020.
- ORED entered into a Memorandum of Understanding for participation in Phase VII of the Federal Demonstration Partnership; a cooperative initiative among federal agencies and institutional recipients of federal funds.
- ORED launched a new educational video series, “Two Minute Tuesdays.” The series offers short videos answering current questions and educating researchers and staff about various high interest topics within ORED. The videos have reached over 1,100 researchers and staff since inception.
- ORED participated in a UA System Office audit of UA Export Control Activities, and policy and operational changes led by ORED are planned in AY 2021-2022.

YEAR ONE

- ORED developed criteria for Transformative Initiatives as listed in Strategic Objective 3.1.
- ORED is collaborating with UA Human Resources to develop a new Research Professional Career Track that will launch in fall 2020. This Career Track will enable UA to recruit and retain world-class employees focused on all the different types of research and creative activities at UA.
- ORED developed a draft policy titled “Policy for the Disclosure of External Activity by Faculty and Other Research Grant and Contract Eligible Employees.” The policy, planned for launch in fall 2020, is currently being reviewed by stakeholders and the UA System Office.
- The vice president for research and economic development led efforts in collaboration with the Colleges of Engineering, Business and Arts & Sciences to expand the partnership between The University of Alabama and NASA’s Marshall Space Flight Center (MSFC). UA and NASA’s MSFC signed a memorandum of understanding to further develop mutually beneficial areas relating to advanced and in-space manufacturing.
- Important current or planned on-campus collaborations were solidified:
  o United States Army Corps of Engineer Tribal Nations Technical Center of Expertise
  o United States Geological Survey’s Hydrologic Instrumentation Facility

1.2 The core mission of ORED is to facilitate the growth and impact of the UA research enterprise and to ensure compliance with university, UA System, state and federal
ORED’s policies, practices and procedures to facilitate pre-award, post-award, and compliance functions must be efficient, effective, and scalable. ORED will invest in personnel and resources to ensure it is meeting the needs of the research enterprise and provide professional development for all ORED personnel.

YEAR TWO

• Due to the significant increase in sponsored project activities, the Office for Sponsored Programs created and successfully recruited a new grants & contracts specialist position.
• ORED successfully recruited a director for the Office for Research & Technology Agreements to manage the office and ensure agreements related to the research enterprise are in alignment with ORED objectives, University policy, and applicable federal and state laws, rules, and regulations. This position oversees the implementation of a wide variety of agreements, including those related to unfunded research activity, activities funded with collaborating institutions, and intellectual property and technology commercialization.
• ORED successfully recruited a director for the Office for Innovation & Commercialization to lead the effort to protect University intellectual property, enter into relationships with industry, facilitate sponsored funding support through thoughtful intellectual property contract terms and practices, and serve and advise the University community on all areas related to intellectual property, including providing training and consulting assistance.
• ORED implemented new standard operating procedures for interaction with the Offices for Sponsored Programs, Research & Technology Agreements, Innovation & Commercialization, and Economic & Business Engagement to maximize efficiency and effectiveness in delivery of services and to ensure scalable growth.

YEAR ONE

• ORED restructured its organizational chart to facilitate its core missions and execute its Five-Year Strategic Plan.
• ORED hired an assistant vice president for research and executive director for the Offices of Sponsored Programs and Contract & Grant Accounting.
• ORED launched a campus-wide survey regarding the Institutional Review Board application, review and approval process (see Strategic Objective 6.1).
• ORED started to track and quantify workflow to efficiently and effectively fulfill our mission. This initiative is a work-in-progress.
• ORED established annual employee performance evaluations independent of the traditional human resources evaluation process at UA. This new approach of linking evaluations directly to employee position descriptions allows supervisors to standardize the evaluation process and ensures position descriptions currently and accurately define job duties and responsibilities. The new evaluation process is strategic for our long-term goal to attract and retain the best career professionals to the ORED team.

1.3 ORED will enhance strategic communications with campus and external stakeholders. ORED will proactively identify and make the campus community aware of significant emerging funding opportunities and effectively communicate ongoing research, scholarship and creative activities and their outcomes and impacts.
YEAR TWO

• ORED continued to partner with Strategic Communications on the 2020 UA Research Magazine and FY 2022 UA Federal Priorities.

YEAR ONE

• ORED created the Office for Marketing and Communications. This office serves as a partnership with UA’s Division of Strategic Communications and works collaboratively with all Alabama Research Institutes to advance global outreach and showcase research and innovation through websites, social media, news releases, newsletters, events and annual reports.

1.4 ORED will partner with campus deans and associate deans for research to ensure it is facilitating and meeting the needs of the research mission of all colleges and schools including faculty recruitment and retention.

YEAR TWO

• ORED continued to partner with associate deans for research on many policy and procedure matters, including most notably, the:
  o New Guidelines for Classification of Sponsored Projects;
  o New Procedure to Allocate Indirect Costs (IDCs) to Divisions;
  o New Policy for the Disclosure of External Activity by Faculty and Other Research Grant and Contract Eligible Employees.

YEAR ONE

• ORED expanded its recurring monthly meetings with associate deans for research to include all ORED leadership. The monthly meetings are held to discuss initiatives, address issues and improve information sharing.

1.5 ORED will collaborate with the Office for Academic Affairs, colleges and schools to develop a process to identify and nominate faculty for external honorific awards.

YEAR ONE AND YEAR TWO

• Brainstorming has started, but no defined action has been taken other than to develop a process through Academic Analytics that identifies UA faculty who have received external honorific awards and are eligible for awards.

1.6 ORED will provide world-class core analytical facilities.

1.6.1 ORED will explore alignment and coordination of the existing core facility, Central Analytical Facility (CAF), and center, the Materials for Information Technology (MINT), resources.

YEAR TWO

• AARC supported more than $10M of newly funded research activities in 2020.
• AARC assisted in the research and academic course work for more than 50 undergraduate and 150 graduate students.
AARC maintains a facility user base of more than 160 active users, from 13 departments and three colleges at UA, as well as users from UAB and UAH. While limited business operations were in place during the COVID-19 pandemic, AARC readily adapted to support and continue the UA research mission. Staff were able to complete 145 individual training sessions for specific instruments (remote and socially distanced in-person sessions) for its user base.

YEAR ONE
- ORED aligned these two existing entities to create a world-class core analytical facility, the Alabama Analytical Research Center (AARC), and have solidified plans and resources to move AARC into the North Engineering Research Center.
- ORED developed a proposal to make AARC a designated core facility for the UA System.

1.6.2 ORED will evaluate if other core analytical capabilities are needed.

YEAR ONE AND YEAR TWO
- ORED is considering investments as highlighted in Strategic Objective 1.6.3.

1.6.3 ORED will continue to invest in the analytical facilities and ensure the facilities have a sustainable business model.

YEAR TWO
- AARC staff coordinated an architectural space and instrument strategic partnership plans to position itself to emerge as a preeminent analytical research center in the nation.
- The AARC expansion project was put on hold as the bond funds were reprioritized.

YEAR ONE
- ORED is the recipient of $41 million of the $1.25 billion bond funds resulting from the May 2020 signing of the Public School and College Authority bond issued by Governor Kay Ivey. This funding will support two UA projects. One project will move AARC into the North Engineering Research Center and expand its capabilities to become the preeminent, multi-dimensional materials characterization facility in the United States. The second project is highlighted in Strategic Objective 2.1.

1.6.4 ORED will secure an endowment to support core facilities.

YEAR TWO
- ORED completed its Case Statement for UA’s capital campaign. The Case Statement included a naming opportunity for AARC.

YEAR ONE
- ORED is developing plans related to Strategic Objective 1.6.1 and 1.6.3.
1.7 ORED will work together with the Graduate School to develop programs and initiatives that support the missions of each.

YEAR ONE AND YEAR TWO
- ORED established baseline data for the number of graduate students supported by externally funded awards (see Strategic Objective 6.3).

1.8 ORED will, through the Office for Undergraduate Research, support significant expansion of undergraduate research, scholarship and creative opportunities at UA with a concurrent increase in associated outcomes. ORED will secure an endowment for this initiative.

YEAR TWO
- The plans for a full-time director for the Office for Undergraduate Research were delayed due to COVID-19.
- ORED collaborated with the Division of Advancement to establish The Office for Undergraduate Research Support Fund and secured its first multi-year gift to the fund.

YEAR ONE
- ORED plans for the director of the Office for Undergraduate Research to become a full-time position in FY 2021.
- ORED developed plans for the Alabama Research Institutes and the Honors College to collaborate on both academic and research initiatives.
2. ALABAMA RESEARCH INSTITUTES

Great research-intensive universities have strong campus-wide institutes that invite and coalesce faculty, staff and students from many different departments around a profound research topic or theme. Such institutes are a conduit for the institutions to address grand challenges and provide innovative solutions to an extent not possible in its absence. The University of Alabama’s existing (and future) research institutes serve as both signatures to distinguish UA and as an opportunity to maximize the impact of research, scholarship and creative activities through transformative cross-disciplinary initiatives. Strategic Theme 2 has four Strategic Objectives and key progress on each Objective is highlighted.

2.1 ORED will invest in and grow the Alabama Research Institutes and evaluate their success.

YEAR TWO
- ORED provided seed funding for the startup of the new Global Water Security Center under the Alabama Water Institute.
- The Alabama Transportation Center, a new home for ATI and its strategic partners, is now under construction in the former One North Building.
- For FY 2022, ORED put forward 17 projects as major Federal Priorities in the UA Redbook.

YEAR ONE
- ORED placed a strong emphasis on how UA’s annual Federal Priorities were aligned to Alabama Research Institutes. For FY 2020 and FY 2021, 11 and 21 projects were put forward by UA as major Federal Priorities, respectively.
- Alabama Transportation Institute (ATI) assisted the state with the passage of the “Rebuild Alabama Act,” and spearheaded a successful $16.3 million grant from the U.S. Department of Transportation to support traffic management through technology development and deployment.
- ORED is the recipient of $41 million of the $1.25 billion bond funds resulting from the May 2020 signing of the Public School and College Authority bond issued by Governor Kay Ivey. This funding will support two UA projects. One project will renovate the One North Building and establish the Alabama Transportation Center, a new home for ATI and its strategic partners. The second project is highlighted in Strategic Objective 1.6.3.
- ORED coordinated and sponsored joint-Alabama Research Institute seed-funding related to future and current pandemics.

2.1.1 Have full-time executive directors and personnel that meet or exceed expectations.

YEAR TWO
- ATI restructured its leadership team to align with its new strategic plan, including four second-level directors corresponding to the four strategic pillars. One of these four second-level directors is an endowed chair in transportation at UA and designated as the deputy director.
YEAR ONE

- ORED successfully recruited executive directors for three of the Alabama Research Institutes: Alabama Life Research Institute (ALRI), Alabama Transportation Institute (ATI), and Alabama Water Institute (AWI).
- ORED appointed a UA Cyber Initiative chairperson.

2.1.2 Make existing discipline-related centers better and encourage effective collaboration between centers towards the expansion and development of new centers.

YEAR TWO

- ORED and AWI successfully recruited a joint hire with the College of Engineering to be a Lead Principal Investigator for UA’s submission for a NOAA Water Cooperative Institute.
- The UA Cyber Initiative sponsored a seed grant program focused on collaborations among Alabama Research Institutes.
- ATI developed research collaboratories that structure groups of centers around core strategic research themes and promote collaboration among those centers.
- AWI named its first senior and junior faculty fellows to promote AWI research initiatives.
- ORED, College of Community Health Sciences, Office for Academic Affairs, and ALRI partnered to recruit a team of biomedical scientists to lead UA’s Convergent Bioscience and Medicine Initiative with ALRI.
- Three new Board of Trustees-designated research centers were created, approved, and launched:
  - Center for Innovative Research in Autism, under the ALRI umbrella;
  - Global Water Security Center, within AWI. AWI successfully recruited a new director for the center.
  - Manufacturing at the Point of Need Center, within the College of Engineering.

YEAR ONE

- Activities are underway, such as collaborative pilot grants and collaborative grant applications. These activities are often led by the Alabama Research Institutes.

2.1.3 Have a sustainable business model.

YEAR TWO

- ATI launched a four-year (2020-2024) strategic plan focusing on Digital Transportation (Theme 1), Connected Vehicles and Infrastructure (Theme 2), Transportation Safety, Security, and Accessibility (Theme 3), Electric Vehicles and Fuel Economy (Theme 4), and Sustainable Transportation Infrastructure (Theme 5).
- AWI launched a five-year (2021-2026) strategic plan focusing on Modeling and Remote Sensing (Theme 1), Integrated Water Resource Assessment (Theme 2), Management of Water Hazards (Theme 3), and Water Security and Risk Communication (Theme 4).
- ALRI launched a four-year (2020-2024) strategic plan focusing on Rural Health and Health Disparities (Theme 1), Neuroscience (Theme 2), Biomedical Sciences (Theme 3), Environmental Sciences and Health (Theme 4), and Implementation Science (Theme 5), and named directors for four of the themes.
YEAR ONE
- All Alabama Research Institutes, including AARC, are in the process of developing strategic plans and concomitantly sustainable business models that align with ORED’s Five-Year Strategic Plan.

2.1.4 Have sufficient space to execute their mission.

YEAR TWO
- All additional spaces identified in Year One are being pursued at the time of this report, except for AARC, which has been paused.

YEAR ONE
- ORED identified additional space for ALRI in the AIME Building, ATI in One North Building, AWI in Cyber Hall and AARC in North Engineering Research Center.

2.1.5 Be named and endowed.

YEAR TWO
- ORED completed its Case Statement for UA’s capital campaign. The Case Statement included naming opportunities for ATI, AWI, ALRI and AARC.

YEAR ONE
- ORED developed plans and case statements aligned with UA’s planned public launch of its capital campaign.

2.1.6 Be evaluated at least annually on relevant criteria to ensure continued productivity and ability to facilitate and enhance university-wide research and impact, those not meeting the criteria will be sunset.

YEAR TWO
- The “Policy for Establishment and Periodic Review of Board of Trustee-Designated Research Institutes and Centers” was approved by the UA System Office and launched on November 18, 2020.

YEAR ONE
- ORED developed a draft policy titled “Policy for Establishment and Periodic Review of Board of Trustee-Designated Research Institutes and Centers,” currently being shared with numerous stakeholders. The draft policy requires annual reporting and a critical five-year review. The planned launch for the policy is fall 2020.
2.2 ORED will expand the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) accredited small animal research space on campus to facilitate and significantly expand opportunities for life research.

YEAR ONE AND YEAR TWO
- ORED currently has no action on this Strategic Objective.

2.3 ORED will shepherd cross-disciplinary foundational research, scholarship and creative initiatives that focus efforts on identifying, understanding and solving problems related to rural and underserved communities.

YEAR TWO
- In partnership, the College of Community Health Sciences and ORED were able to utilize external gifts to offer COVID-19 screening in 16 different rural locations in Alabama and were able to return to some multiple times during the height of the pandemic.
- As highlighted in Strategic Objective 2.1.3, ALRI launched a four-year (2020-2024) strategic plan, with Theme 1 focusing on Rural Health and Health Disparities.

YEAR ONE
- ALRI named its first faculty fellows to address rural and underserved communities.
- One of ALRI’s major research themes in its new draft strategic plan is titled “Rural Health and Health Disparities.”
- ORED personnel participated in collaborative efforts in COVID-19 screenings at 14 sites in four rural Alabama communities.

2.4 ORED will develop a university-wide process for proposing and establishing new Alabama Research Institute(s), as appropriate, and invest in their initial launch with new executive director(s) and personnel.

YEAR TWO
- ORED is in the early stages of exploring a potential new Alabama Research Institute that best aligns with current strengths, critical mass (of existing centers), and opportunity.

YEAR ONE
- See Strategic Objective 2.1.6.
3. TRANSFORMATIVE INITIATIVES

Consistent with our Guiding Principles, transformative ideas and initiatives, as well as their quality and impact, will be the primary determinants for investments by ORED. ORED will evaluate potential investments through a constructive and transparent process using defined criteria. Investments in these initiatives will be financial investments as well as targeted pilot and seed programs, which will have clear expectations and delineated outcomes. Strategic Theme 3 has five Strategic Objectives and key progress on each Objective is highlighted.

3.1 Working collaboratively with campus stakeholders, ORED will routinely evaluate the merits of investments in major research and creative initiatives, using the following criteria: transformative, cross-disciplinary, pathway to excellence, return on investment and societal impact.

YEAR TWO

- ORED led a collaborative process to create the concept for the Tuscaloosa Innovation District (TID), a $1.5 billion initiative, tied heavily to the Alabama Research Institutes, in partnership with industry. When completed and fully developed, the TID will have a total workforce of almost 4,700, including the Main Street Campus and five research-themed campuses. The TID will have a total area of almost 3.84 million square feet, comprising 3.24 million square feet of non-residential space and 595,200 square feet of residential space for 1,000 to 1,200 residents. Campus-based Incubators (one per campus) and campus-based Ready-Made spaces (three per campus) will be the collective home for more than 315 total companies within the TID.
- The United States Geological Survey Hydrologic Instrumentation Facility (USGS-HIF) will permanently relocate to UA’s campus and a ground-breaking ceremony is planned for fall 2021.
- UA expanded and strengthened research capabilities with a new MRI and planned UA MRI Center, now under construction.
- UA, through ATI, established a major focus on electric vehicles, called the Alabama Mobility and Power (AMP) Initiative. AMP will occupy a major footprint in the Alabama Transportation Center (formerly One North Building).
- ORED successfully retained a former NASA astronaut, also a former director of USGS, as UA’s lead on Advanced & In-Space Manufacturing.

YEAR ONE

- ORED supported a campus-wide collaborative proposal from six colleges, ALRI and the University Medical Center to create UA’s first Magnetic Resonance Imaging (MRI) Center, now underway. The center will be funded jointly by the Office for Academic Affairs and the Office for Research & Economic Development.

3.2 ORED will establish a program to support state-of-the-art research and creativity conferences on campus that explore and promote transformative initiatives and will secure an endowment to support the program.

YEAR TWO

- Due to COVID-19, the conference program and annual request for proposals was put on hold.
YEAR ONE
• ORED is developing an annual request for proposals to support the program.
• In the meantime, ORED has made four awards:
  o The Comic Renaissance in Italy
  o The International Conference on Medieval and Renaissance Scottish Literature and Language
  o MINT: Celebrating Our Past and Envisioning the Future Science
  o 52nd Annual Southeast Undergraduate Research Conference

3.3 ORED will launch pilot and seed-funding programs to facilitate research, scholarship and creative initiatives that are cross-disciplinary and transformative.

YEAR TWO
• For the FY 2021 ORED small grant program, ORED made two levels of small grants available: one at the $6,000 level and one up to the $12,000 level. ORED funded five grants at or below $6,000 and 11 up to the $12,000 level.

YEAR ONE
• ORED is in early planning stages to develop and launch these programs.

3.4 In an effort to facilitate their success while working collaboratively with campus stakeholders, ORED will seed potentially transformative projects that develop mutually beneficial research, scholarship and creative activity partnerships with other research universities, both domestic and international.

YEAR ONE AND YEAR TWO
• ORED currently has no action on this Strategic Objective.

3.5 ORED will establish an external advisory board and an internal advisory board comprised mainly of faculty to counsel ORED on emerging transformative opportunities and on its progress in executing its Strategic Plan.

YEAR TWO
• Establishing both boards was delayed due to COVID-19.

YEAR ONE
• ORED is in planning stages of establishing both boards.
4. TRANSLATING INTELLECTUAL PROPERTY

Consistent with the research mission of The University of Alabama and ORED’s mission, ORED must support and foster the initiatives and innovations of faculty, staff and students. Such support includes translating their tangible intellectual property to achieve maximum economic and societal impact. Intellectual property is defined broadly as creations of the mind including inventions, patentable material, socio-behavioral, literary and artistic works, as well as designs and models. As the University’s research enterprise grows, the value of its intellectual property will grow. The University’s intellectual property should return resources to the University so ORED can reinvest them into the research enterprise. The intellectual property will also help develop partnerships with industry for meaningful and impactful research. Strategic Theme 4 has five Strategic Objectives and key progress on each Objective is highlighted.

4.1 ORED will develop criteria and processes to inform faculty and students if UA-developed intellectual property is more suitable for licensing or a start-up venture.

YEARTWO
• As highlighted in Strategic Objective 1.2, ORED recruited and hired a director for the Office for Innovation & Commercialization. The new director will lead efforts to develop criteria and processes.

YEAREONE
• ORED created a working group for commercialization of UA innovations that do not meet patentability requirements.
• ORED hired an assistant vice president for research and technology agreements.
• ORED hired an intellectual property analyst.

4.2 ORED will develop a proposal to revise and advocate for changes to the systemwide patent policy to be consistent with best practices regarding faculty consulting and intellectual property.

YEARTWO
• ORED commenced discussions between UA, UAH and UAB intellectual property offices to analyze current practices and determine where changes are possible and warranted at this time.

YEAREONE
• ORED currently has no action on this Strategic Objective.

4.3 ORED will reimagine technology transfer at UA by identifying and securing a strategic outside organization to work with the University to facilitate technology transfer on its behalf.

YEARTWO
• ORED hired a marketing intern for promoting UA’s intellectual property portfolio.
• ORED has been in conversations with outside organizations to determine the value of outside facilitation.
YEAR ONE
- ORED completed a one-year pilot partnership with an outside firm. The pilot informed future types of partnerships ORED will pursue.
- ORED changed the name of the Office for Technology Transfer to the Office for Innovation & Commercialization and will hire a director.

4.4 ORED will promote industry-sponsored projects at the University and remove uncertainty and financial concerns by developing and instituting a suite of licensing options consistent with best practices.

YEAR TWO
- ORED developed and launched the Tide Research Partnership (TRP) Program. The TRP Program significantly promotes research partnerships with industry with the goal of growing the research enterprise and its impact while providing opportunities for UA students. The TRP Program allows a company the option to pre-pay a fee when executing a sponsored research agreement in exchange for 1% royalty fee for exclusive worldwide rights to all intellectual property resulting from the research.
- ORED created a working group to develop an express license to use with UA start-up companies.

4.5 ORED will launch a new seed fund to facilitate intellectual property development and licensing and will secure an endowment for the fund.

YEAR TWO
- No additional progress to report.

YEAR ONE
- ORED developed and launched the Tide Research Partnership (TRP) Program. The TRP Program significantly promotes research partnerships with industry with the goal of growing the research enterprise and its impact while providing opportunities for UA students. The TRP Program allows a company the option to pre-pay a fee when executing a sponsored research agreement in exchange for 1% royalty fee for exclusive worldwide rights to all intellectual property resulting from the research.
- ORED created a working group to develop an express license to use with UA start-up companies.

4.5 ORED will launch a new seed fund to facilitate intellectual property development and licensing and will secure an endowment for the fund.

YEAR TWO
- No additional progress to report.

YEAR ONE
- ORED developed and launched the new Intellectual Property (IP) Gap Fund to both enhance the value of intellectual property to the University and increase the likelihood for licensing and industry partnerships. The specific objectives of the IP Gap Fund are:
  - Further reduce an invention to practice
  - De-risk the technology
  - Increase the value of the IP
  - Increase the likelihood for licensing
  - Enhance the opportunity to parlay the IP into a long-term partnership with industry
- Through the IP Gap Fund, ORED made a joint investment with the College of Education for the commercialization of Body Composition Assessment Technology, developed within the college.
5. ECONOMIC AND BUSINESS ENGAGEMENT

Consistent with the research mission of The University of Alabama, ORED must facilitate and promote economic development. One of the critical assets of the University is our students. These students are the future workforce talent for our state, the nation and the world. ORED will develop strong partnerships with external stakeholders, especially industry, to increase the number of sponsored projects and, at the same time, create career opportunities for UA students. ORED’s ambition is for UA to be the go-to university for industry. Policies and processes mutually beneficial to maintaining sustainable partnerships and collaboratively offering solutions to solve complex problems are needed to accomplish this goal. Strategic Theme 5 has eight Strategic Objectives and key progress on each Objective is highlighted.

5.1 ORED will establish a university-wide Economic Development Council (EDC), chaired by the vice president for research and economic development. The EDC will prioritize, coordinate and align university-wide initiatives and opportunities for all initiatives relating to economic development at UA, except those relating to the academic mission or the research interests of faculty. ORED will contribute to the University’s priorities and strategic goals on economic development.

YEAR TWO
• The Year One Annual Report for UA’s Five-Year Economic Development Priorities and Strategic Goals was published on September 24, 2020. The Year Two Annual Report will be published in September 2021.

YEAR ONE
• UA, led by the vice president for research and economic development, created the EDC.
• UA created the “Five-Year Economic Development Priorities and Strategic Goals for The University of Alabama, 2019-2024” endorsed by the UA System Board of Trustees. This guiding plan is meant to align all UA economic development assets and ensure the University meets its strategic goals in this area. As highlighted in this Annual Report, ORED made contributions to support UA’s economic development efforts across Alabama. A separate report on UA’s progress over this past year on this guiding plan will be completed in fall 2020.
• ORED relocated four economic development centers from the Culverhouse College of Business to the Office for Economic & Business Engagement. This includes the UA Center for Economic Development and the Business Outreach Centers: Alabama Small Business Development Center, Alabama International Trade Center and Alabama Procurement Technical Assistance Center.

5.2 ORED will establish an Office for Economic & Business Engagement (OEBE) within ORED and recruit an associate vice president to lead the office. The primary mission of the OEBE will be to engage external partners to develop robust funded partnerships. This will include recruitment of business engagement personnel, one based at GulfQuest in Mobile to develop partnerships in south Alabama, and others to do the same across the rest of the state.

YEAR TWO
• OEBE hosted virtual industry engagement events in partnership with the Alabama Water Institute and Department of Chemical and Biological Engineering that led to multiple funded partnership opportunities.
OEBE partnered with the UA Career Center to create and execute a graduate retention plan in support of the Alabama Commission on Higher Education “Retain Alabama” initiative, culminating in the 2nd annual “Hired in Alabama” virtual career fair attracting 69 Alabama-based businesses, 126 UA students, and resulting in 207 individual meetings.

OEBE identified, developed, and coordinated sponsored research agreements between industry partners, College of Engineering, Culverhouse College of Business, and College of Arts & Sciences totaling over $300,000 in new research funding.

YEAR ONE

- ORED developed OEBE and successfully recruited the associate vice president for economic and business engagement.
- ORED created a shared economic development incubator and industry outreach center located at GulfQuest in Mobile.
- ORED partnered with the Mobile Chapter of UA’s National Alumni Association to present Showcase Mobile: A Career Fair for students and recent graduates interested in employment opportunities.

5.3 OEBE will develop a plan to engage industry and other external partners around core research and service disciplines at UA and work closely with the Division of Advancement to execute this plan with the primary goal to increase the number of externally funded projects leading to demonstrable impacts and outcomes.

YEAR TWO

- ORED completed its Case Statement for UA’s capital campaign. The Case Statement included a naming opportunity for ALRI centrally focused on the UA Rural Health Commitment.

YEAR ONE

- ORED developed the UA Rural Health Commitment with the College of Community Health Sciences.

5.4 ORED will identify and secure a strategic corporate partner and join the Government-University-Industry Research Roundtable (GUIRR) with the shared goal to maintain a long-term mutually beneficial research and academic partnership. This partnership will serve as a model for similar partnerships.

YEAR ONE AND YEAR TWO

- ORED currently has no action on this Strategic Objective.

5.5 ORED will develop strategies and external proposals to build regional and state capacity to translate innovations into career opportunities for UA students through industry partnerships or commercialization assistance to The University of Alabama innovators and entrepreneurs.

YEAR TWO

- Dr. Mumper was one of three university representatives statewide to be appointed to the Alabama Innovation Commission, created by Governor Kay Ivey in July 2020. Dr. Mumper is advising the commission on the role of research institutions to contribute to innovation and entrepreneurship.
The commission’s charge is to inform public policy and financially backed initiatives to spur economic growth in Alabama for the next several decades.

- OEBE led efforts to formalize the partnership with Alabama Power and TechStars to support the creation of Techstars Alabama EnergyTech accelerator in Birmingham. These efforts led to internship and career opportunities for UA students, collaboration with UA faculty to enhance innovations, and created new jobs in Alabama.

- Center for Economic Development concentrated on rural workforce development, focusing on the cohesion of planning and program delivery for pre-K through higher education, and how to effectively prepare the current and future workforce in the 40 counties in Alabama that are designated as rural. Work was completed in 23 counties with over 40 community meetings.

YEAR ONE
- OEBE continues to work on this initiative.

5.6 ORED will develop a Workforce and Talent Retention plan that aligns with Accelerate Alabama 2.0/3.0 and partner with key stakeholders such as chambers of commerce, development authorities, and the Alabama Department of Commerce to increase the number and percentage of UA students remaining in the state after graduation.

YEAR TWO
- OEBE partnered with the UA Career Center to create and execute a graduate retention plan in support of the Alabama Commission on Higher Education “Retain Alabama” initiative.
- OEBE created an asset map to showcase UA’s signature research themes, faculty expertise and available workforce talent through aligned academic programs.

YEAR ONE
- ORED is in the planning stages of developing the Workforce and Talent Retention plan.
- OEBE, in partnership with the UA Career Center and over 20 Alabama-based company stakeholders, conducted the inaugural virtual Hired in Alabama Career Fair attended by over 100 students. The Alabama Secretary of Labor and the Workforce Development Councils were included to promote careers with company operations in the state.
- Funded by the Alabama Department of Commerce, and in collaboration with the Center for Business and Economic Research, the UA Center for Economic Development contributed to workforce development in 40 rural Alabama counties.

5.7 ORED will obtain an endowment to support workforce development and talent retention of UA students and UA-based start-up companies in Alabama.

YEAR TWO
- With support from the Alabama Power Endowed Innovation and Talent Retention Fund, OEBE partnered with the Alabama Entrepreneurship Institute to host the inaugural Faculty/Staff Innovation Pitch Competition attracting 15 faculty and staff participants.

YEAR ONE
- ORED partnered with the Division of Advancement to secure a $1.4 million endowment from the Alabama Power Foundation to support business innovation, entrepreneurship, small business
growth and talent retention in the state. The gift established the *Alabama Power Endowed Innovation and Talent Retention Fund*, managed by the vice president for research and economic development through the OEBE.

5.8 OEBE will ensure EDGE Labs, formerly the Bama Technology Incubator, meets or exceeds best practices as a university-based wet laboratory incubator facility. EDGE Labs will work closely with The EDGE to develop mutually beneficial and synergistic programs.

### YEAR TWO
- EDGE Labs, in partnership with Culverhouse College of Business, hosted NSF I-Corps Site producing three UA faculty-led teams that participated in the National I-Corps program. The UA I-Corps Site supported attainment of an additional $907,347 in NSF funding during this reporting period.
  - One NSF supplemental award to support a transition to virtual programming - $32,347
  - Three NSF I-Corps National Team awards - $150,000
  - Two NSF Partnerships for Innovation - Technology Transfer awards - $500,000
  - One NSF SBIR Phase I award - $225,000
- EDGE Labs partnered with the Alabama Entrepreneurship Institute and The EDGE to enhance several events in order to promote UA technology-based company formation.
  - Edward K. Aldag, Jr. Business Plan Competition
  - Faculty/Staff Innovation Pitch Competition
  - River Pitch Competition
  - Crimson Entrepreneurship Academy

### YEAR ONE
- ORED aligned EDGE Labs with The EDGE in partnership with the Culverhouse College of Business, which included its name change.
- ORED and the Culverhouse College of Business began co-management of the National Science Foundation Innovation Corps (I-Corps) program.
- ORED and the Culverhouse College of Business enhanced support of UA innovation and entrepreneurship by programmatically aligning EDGE Labs and The EDGE.
  - UA continues success in the national business start-up program
  - Two UA technologies are part of a national start-up program
  - The OEBE conducted the inaugural faculty and staff business pitch competition that attracted 15 participants in a new category called Innovative Technology
6. ASSESSING PROGRESS AND IMPACT

With the motivation of continuous quality improvement, ORED will track and assess its progress and impact in achieving its Strategic Objectives. Data to support key metrics and outcomes must be reliable, valid and readily available. The data should be qualitative and quantitative, and this data must reflect the impact and recognition of the University’s research efforts on others through, for example, number of citations of University research publications and the number of external honorific awards received by faculty. Strategic Theme 6 has three Strategic Objectives and key progress on each Objective is highlighted.

6.1 ORED will routinely survey the University community to ensure it is meeting the needs of the community and continually improving.

YEAR TWO

- ORED is preparing a survey for distribution for the Office for Innovation & Commercialization.
- OSP and ORTA began using an electronic signature platform to transform how grants and contracts are routed for review and approval. This approach streamlines the award set-up process and improves overall turnaround times for faculty conducting externally sponsored projects.
- ORED launched weekly training videos called “Two Minute Tuesdays” to provide education and support to faculty, staff and administrators on targeted subject matters.
- ORED will prioritize and develop additional surveys related to other core services.

YEAR ONE

- ORED launched the first University community survey specific to Institutional Review Board services and received 283 responses. Based on these responses, website enhancements are in progress and additional training programs will be developed for board members, staff and applicants.
- ORED will prioritize and develop additional surveys related to other core services.

6.2 ORED will track and assess both ORED’s and the University’s investment in research over the five-year period with the goal to more than double research awards through growing research awards by an average rate of 15% per year for the next five years.

YEAR ONE AND YEAR TWO

- The Carnegie Commission on Higher Education designated The University of Alabama as a Very High Research Activity doctoral university or R1.
- As shown in Table 1, externally sponsored awards have continued to grow and exceed the 15% per year growth goal.

Table 1. External Sponsored Awards to UA

<table>
<thead>
<tr>
<th>FY 2018</th>
<th>FY 2019</th>
<th>FY 2020</th>
<th>% Change FY 2018-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>$99.1M</td>
<td>$132.5M</td>
<td>$168.4M</td>
<td>70%</td>
</tr>
</tbody>
</table>
ORED will track and assess Key Research and Business Engagement Metrics and Outcomes, and make available to the campus recurring reports that indicate the University’s progress in:

- Increasing the number of grants and contracts submitted

**YEAR ONE AND YEAR TWO**

- Table 2. Dollar Amount and Number of External Grants and Contracts Submitted by UA

<table>
<thead>
<tr>
<th></th>
<th>FY 2018</th>
<th>FY 2019</th>
<th>FY 2020</th>
<th>% Change FY 2018-2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Amount</td>
<td>$349.1M</td>
<td>$425.6M</td>
<td>$449.6M</td>
<td>28.8%</td>
</tr>
<tr>
<td>Number of Submissions</td>
<td>984</td>
<td>1,080</td>
<td>1,087</td>
<td>10.5%</td>
</tr>
</tbody>
</table>

- Increasing the number of awarded grants and contracts

**YEAR TWO**

- UA research continues to surge. For the 2020 fiscal year, sponsored awards at UA reached more than $168.4 million, an increase of more than 27% over the previous year, which was also record breaking. In the last two fiscal years, sponsored awards increased by 70%.

**YEAR ONE**

- As noted in Table 1 above, the University has experienced growth in sponsored awards exceeding the goal of 15% per year.

- Increasing the percentage of faculty involved in new and existing externally funded awards

**YEAR ONE AND YEAR TWO**

- Table 3 shows the number of UA faculty engaged in research, defined as faculty effort charged directly to externally sponsored awards during the fiscal year. In FY 2019, there was an increase in the number and percent of faculty engaged in research. As of May 31, 2020, 553 faculty members were engaged in research with an expected increase as the fiscal year continues.
Table 3. UA Faculty Engagement in Research

<table>
<thead>
<tr>
<th></th>
<th>FY 2018</th>
<th>FY 2019</th>
<th>FY 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>UA Faculty</td>
<td>2,009</td>
<td>2,027</td>
<td>1,986</td>
</tr>
<tr>
<td>UA Faculty Engaged in Research</td>
<td>647</td>
<td>709</td>
<td>712</td>
</tr>
<tr>
<td>Percent of UA Faculty Engaged in Research</td>
<td>32.2%</td>
<td>35.0%</td>
<td>35.9%</td>
</tr>
</tbody>
</table>

- Increasing the number of graduate students supported by externally funded awards

YEÁR ONE AND YEAR TWO

- Table 4 shows the number of UA graduate students engaged in research, defined as students with the role of Graduate Research Assistant who have effort charged directly to sponsored awards during the fiscal year. FY 2019 showed a slight decrease in the number and percent of graduate students engaged in research. As of May 31, 2020, graduate student participation in research reached a total of 462 with an expected increase as the fiscal year continues.

Table 4. UA Graduate Student Engagement in Research

<table>
<thead>
<tr>
<th></th>
<th>FY 2018</th>
<th>FY 2019</th>
<th>FY 2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>UA Graduate Students</td>
<td>4,916</td>
<td>4,868</td>
<td>5,730</td>
</tr>
<tr>
<td>UA Graduate Students Engaged in Research</td>
<td>918</td>
<td>858</td>
<td>646</td>
</tr>
<tr>
<td>Percent of UA Graduate Students Engaged in Research</td>
<td>18.7%</td>
<td>17.6%</td>
<td>11.3%</td>
</tr>
</tbody>
</table>

The reduction in the percent of UA Graduate Students Engaged in Research during FY 2020 was concluded to be mostly related to limited research activity as a result of COVID-19.

- Increasing research and other sponsored project awards

YEÁR ONE AND YEAR TWO

- As reported in Strategic Objective 6.2 (see Table 1), the University has experienced growth in sponsored awards that exceeds the goal of 15% per year.
Increasing research and development expenditures as defined by NSF HERD Table 21

- From federal, state and local government
- From business and non-profit organizations

YEAR ONE AND YEAR TWO

- The annual National Science Foundation (NSF) Higher Education Research and Development (HERD) Survey is the primary source of information on R&D expenditures within U.S. higher education institutions. The self-reported data gathered by the NSF is used to rank institutions based on R&D expenditures, which excludes instruction and other sponsored activities.

As shown in Table 5, R&D expenditures continue to increase each fiscal year thereby increasing the total NSF ranking. The University’s total ranking improved from #179 to #168 in FY 2019, placing UA’s R&D expenditure growth rate from 2017-2019 of 31.66% at:

- #1 in the Southeastern Conference (SEC)
- #11 of all institutions with R&D Expenditures >$41M (top 200)
- #9 out of 131 for all R1 universities, public or private
- #10 for all public research universities with R&D Expenditures >$41M

Table 5. UA Research and Development Expenditures as Reported in the NSF HERD Survey

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal</td>
<td>$27.7</td>
<td>$30.4</td>
<td>$37.9</td>
<td>$43.0</td>
</tr>
<tr>
<td>State &amp; Local</td>
<td>$9.6</td>
<td>$9.6</td>
<td>$9.8</td>
<td>$16.0</td>
</tr>
<tr>
<td>Institution</td>
<td>$22.6</td>
<td>$27.1</td>
<td>$30.8</td>
<td>$32.1</td>
</tr>
<tr>
<td>Business</td>
<td>$1.9</td>
<td>$2.9</td>
<td>$2.8</td>
<td>$2.5</td>
</tr>
<tr>
<td>Non-Profit</td>
<td>$1.1</td>
<td>$0.9</td>
<td>$1.0</td>
<td>$1.1</td>
</tr>
<tr>
<td>Other</td>
<td>$0.4</td>
<td>$1.1</td>
<td>$1.0</td>
<td>$0.5</td>
</tr>
<tr>
<td>Total R&amp;D Expenditures</td>
<td>$63.3</td>
<td>$72.0</td>
<td>$83.3</td>
<td>$95.2</td>
</tr>
<tr>
<td>NSF Survey Rank - Total</td>
<td>#179</td>
<td>#172</td>
<td>#168</td>
<td>TBD</td>
</tr>
</tbody>
</table>
ORED developed an NSF HERD Comparator Set of institutions most like UA (public, non-land grant, no 4-year medical school, comprehensive academic offerings, student enrollment >14,000, and with Carnegie R1 designation). R&D expenditures and Academic Analytics Productivity Metrics are compared to this Comparator Set in Table 6 and Table 7, respectively.

Table 6. Comparison of R&D expenditures ($ in Thousands) for UA’s NSF HERD Comparator Set for FY 2019

<table>
<thead>
<tr>
<th>UA Comparator Rank</th>
<th>Comparator Institution</th>
<th>NSF Rank</th>
<th>All R&amp;D expenditures</th>
<th>Federal government</th>
<th>State and local government</th>
<th>Institution funds</th>
<th>Business</th>
<th>Nonprofit organizations</th>
<th>All other sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Arizona State University</td>
<td>43</td>
<td>639,637</td>
<td>267,067</td>
<td>36,266</td>
<td>233,959</td>
<td>17,112</td>
<td>61,749</td>
<td>23,466</td>
</tr>
<tr>
<td>2</td>
<td>Stony Brook University, SUNY</td>
<td>94</td>
<td>260,813</td>
<td>144,618</td>
<td>12,674</td>
<td>85,067</td>
<td>5,738</td>
<td>9,305</td>
<td>3,415</td>
</tr>
<tr>
<td>3</td>
<td>Georgia State University</td>
<td>116</td>
<td>195,572</td>
<td>70,185</td>
<td>12,443</td>
<td>99,468</td>
<td>603</td>
<td>12,367</td>
<td>506</td>
</tr>
<tr>
<td>4</td>
<td>George Mason University</td>
<td>122</td>
<td>186,267</td>
<td>96,307</td>
<td>3,370</td>
<td>41,291</td>
<td>9,900</td>
<td>35,852</td>
<td>547</td>
</tr>
<tr>
<td>5</td>
<td>University at Albany, SUNY</td>
<td>126</td>
<td>181,531</td>
<td>92,709</td>
<td>8,784</td>
<td>65,357</td>
<td>708</td>
<td>1,990</td>
<td>11,963</td>
</tr>
<tr>
<td>6</td>
<td>University of Texas at Dallas</td>
<td>149</td>
<td>126,667</td>
<td>49,492</td>
<td>12,133</td>
<td>38,469</td>
<td>4,762</td>
<td>22,831</td>
<td>2,609</td>
</tr>
<tr>
<td>7</td>
<td>University of Texas at Arlington</td>
<td>150</td>
<td>123,207</td>
<td>41,764</td>
<td>16,970</td>
<td>51,329</td>
<td>5,018</td>
<td>6,057</td>
<td>2,069</td>
</tr>
<tr>
<td>8</td>
<td>Binghamton University, SUNY</td>
<td>158</td>
<td>104,297</td>
<td>24,213</td>
<td>6,085</td>
<td>68,519</td>
<td>3,508</td>
<td>1,243</td>
<td>729</td>
</tr>
<tr>
<td>9</td>
<td>The University of Alabama</td>
<td>166</td>
<td>83,317</td>
<td>37,916</td>
<td>9,791</td>
<td>30,801</td>
<td>2,799</td>
<td>977</td>
<td>1,033</td>
</tr>
<tr>
<td>10</td>
<td>University of Southern Mississippi</td>
<td>174</td>
<td>76,464</td>
<td>46,624</td>
<td>11,862</td>
<td>10,344</td>
<td>6,073</td>
<td>1,144</td>
<td>97</td>
</tr>
</tbody>
</table>

Table 7. Comparison of Academic Analytics Productivity Metrics for UA’s NSF HERD Comparator Set for FY 2019

<table>
<thead>
<tr>
<th>UA Comparator Rank</th>
<th>Comparator Institution</th>
<th>Scholarly Research Index (SRI)</th>
<th># Faculty</th>
<th># Articles (prior 4-year period)</th>
<th># Books (prior 10-year period)</th>
<th># Citations (prior 5-year period)</th>
<th># Awards (lifetime)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tied 1</td>
<td>Arizona State University</td>
<td>0.3</td>
<td>1,988</td>
<td>14,727</td>
<td>1,639</td>
<td>270,121</td>
<td>1,988</td>
</tr>
<tr>
<td>Tied 1</td>
<td>University of Texas at Dallas</td>
<td>0.3</td>
<td>561</td>
<td>5,654</td>
<td>421</td>
<td>109,249</td>
<td>477</td>
</tr>
<tr>
<td>3</td>
<td>Georgia State University</td>
<td>0.2</td>
<td>761</td>
<td>5,378</td>
<td>455</td>
<td>81,613</td>
<td>439</td>
</tr>
<tr>
<td>4</td>
<td>Stony Brook University, SUNY</td>
<td>0.1</td>
<td>820</td>
<td>7,140</td>
<td>467</td>
<td>171,430</td>
<td>1,047</td>
</tr>
<tr>
<td>Tied 5</td>
<td>The University of Alabama</td>
<td>0.0</td>
<td>971</td>
<td>6,575</td>
<td>495</td>
<td>95,568</td>
<td>496</td>
</tr>
<tr>
<td>Tied 5</td>
<td>University at Albany, SUNY</td>
<td>0.0</td>
<td>602</td>
<td>4,224</td>
<td>340</td>
<td>87,294</td>
<td>399</td>
</tr>
<tr>
<td>7</td>
<td>University of Texas at Arlington</td>
<td>-0.1</td>
<td>614</td>
<td>4,688</td>
<td>235</td>
<td>76,135</td>
<td>354</td>
</tr>
<tr>
<td>Tied 8</td>
<td>George Mason University</td>
<td>-0.3</td>
<td>1,186</td>
<td>5,456</td>
<td>788</td>
<td>103,786</td>
<td>592</td>
</tr>
<tr>
<td>Tied 8</td>
<td>Binghamton University, SUNY</td>
<td>-0.3</td>
<td>654</td>
<td>2,956</td>
<td>334</td>
<td>45,292</td>
<td>369</td>
</tr>
<tr>
<td>10</td>
<td>University of Southern Mississippi</td>
<td>-0.5</td>
<td>379</td>
<td>1,419</td>
<td>126</td>
<td>15,507</td>
<td>108</td>
</tr>
</tbody>
</table>

- ORED is evaluating strategies to better account for existing investments in research, consistent with defined criteria for reporting R&D expenditures to the NSF HERD Survey.

YEAR TWO
- ORED systemically evaluated all accounts and identified R&D expenditures that had previously been omitted.
- ORED launched an initiative to separately identify and account for non-sponsored faculty R&D effort. This is an ongoing initiative that will continue into year three of the strategic plan.
Increasing key outcomes for scholarly endeavors, namely:

- Number of juried exhibitions and performances by faculty

**YEAR ONE AND YEAR TWO**

- UA faculty representing art, music, theatre and dance reported exhibitions and performances in their venue in the last three academic years as shown in Table 8.

Table 8. Exhibitions and Performances by UA Faculty in Art, Music, Theatre and Dance in the Last Four Academic Years

<table>
<thead>
<tr>
<th>Academic Year/Venue</th>
<th>State &amp; Local</th>
<th>Regional</th>
<th>National</th>
<th>International</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017-2018</td>
<td>469</td>
<td>85</td>
<td>168</td>
<td>81</td>
<td>803</td>
</tr>
<tr>
<td>2018-2019</td>
<td>390</td>
<td>120</td>
<td>191</td>
<td>81</td>
<td>782</td>
</tr>
<tr>
<td>2019-2020</td>
<td>406</td>
<td>115</td>
<td>148</td>
<td>104</td>
<td>773</td>
</tr>
<tr>
<td>2020-2021</td>
<td>74</td>
<td>113</td>
<td>127</td>
<td>90</td>
<td>404</td>
</tr>
</tbody>
</table>

The reduction in exhibitions and performance by UA faculty in FY 2020-2021 were concluded to be mostly related to reduced research and scholarly activity during COVID-19.

- Number of peer-reviewed publications by UA faculty
- Number of published books written or edited by UA faculty
- Number of citations of University publications
- Number of faculty who receive external honorific awards

**YEAR ONE AND YEAR TWO**

- The following key outcomes are reported based on data from Academic Analytics, a third-party database that aggregates information on scholarly research activities. For comparison purposes, data for UA from the 2014-2019 Comparative Databases and is presented in Table 9.
Table 9. UA Faculty Productivity Metrics as Captured by Academic Analytics Comparative Databases for 2014-2019 (for UA Department database)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td># of UA faculty in the AA database</td>
<td>803</td>
<td>877</td>
<td>896</td>
<td>911</td>
<td>947</td>
<td>971</td>
<td>20.9%</td>
</tr>
<tr>
<td># of peer-reviewed publications by UA faculty (prior 4-year period)</td>
<td>4,075</td>
<td>4,533</td>
<td>4,889</td>
<td>5,380</td>
<td>6,069</td>
<td>6,573</td>
<td>61.3%</td>
</tr>
<tr>
<td># of published books (prior 10-year period)</td>
<td>438</td>
<td>491</td>
<td>516</td>
<td>496</td>
<td>498</td>
<td>494</td>
<td>12.8%</td>
</tr>
<tr>
<td># of citations of University publications (prior 5-year period)</td>
<td>49,335</td>
<td>59,679</td>
<td>68,024</td>
<td>68,702</td>
<td>84,487</td>
<td>95,491</td>
<td>93.6%</td>
</tr>
<tr>
<td># of UA faculty who received external honorific awards (lifetime)</td>
<td>277</td>
<td>317</td>
<td>377</td>
<td>416</td>
<td>447</td>
<td>493</td>
<td>78.0%</td>
</tr>
</tbody>
</table>

- Increasing key outcomes for technology transfer, business engagement and talent retention in the state, namely:

  - Number of submitted invention disclosures

    **YEAR TWO**
    - The number of submitted invention disclosures in FY 2020 was 41. The University submitted 44 patent applications and had 13 patents awarded. There was a significant increase in the number of outside groups signing Non-Disclosure Agreements (NDAs) with UA to get more information about UA intellectual property. In total, there were 59 NDAs executed, which represents a 68% increase over the previous year.

    **YEAR ONE**
    - The University had a slight decrease in the number of submitted invention disclosures from 50 in FY 2018 to 46 in FY 2019. To date, 22 invention disclosures have been submitted for FY 2020 with an expected increase as the fiscal year continues.

  - Number of license agreements

    **YEAR TWO**
    - The number of license agreements increased to seven in FY 2020.

    **YEAR ONE**
    - The number of license agreements held steady between FY 2018 and FY 2019 at two per year. To date, no license agreements have been executed in FY 2020.
□ Annual revenue from license agreements will equal or exceed annual patent expenses

YEAR TWO
- License income declined during FY 2020 to $6,104; patent revenue totaled $76,573.11; patent costs were lower during FY 2020 at $329,262. These reductions were concluded to be mostly related to reduced business activity during COVID-19.

YEAR ONE
- License income increased by 42.6% from $48,000 in FY 2018 to $68,450 in FY 2019. License income for FY 2020 will be evaluated at the end of the fiscal year.
- Patent revenue also increased 44% from $58,872 in FY 2018 to $84,762 in FY 2019 while patent costs for each respective year decreased 11.2% from $448,884 to $398,436. Patent reimbursements and costs for FY 2020 will be evaluated at the end of the fiscal year.

□ Number of UA-based start-up companies in and graduating from the EDGE Labs (formerly Bama Technology Incubator)

YEAR TWO
- EDGE Labs is incubating a new start-up company, Next Printed Solar, LLC.

YEAR ONE
- In 2019, EDGE Labs incubated five high-tech start-up companies: 525 Solutions, ThruPore Technologies, JAQ Energy, ForeSense Technologies and Sand Spirit. Within the last year, four companies graduated, and another start-up company moved into EDGE Labs.

□ Demonstrable impact and outcomes to external partners and project sponsors

YEAR TWO
- Alabama International Trade Center (AITC), Procurement Technical Assistance Center (PTAC) and Alabama Small Business Development Center (ASBDC) provided management and technical assistance to over 3,300 small businesses in all 67 counties in Alabama for projects in international trade, capital access, government procurement, and business start-up. These efforts supported:
  o 2,599 jobs created and retained
  o $214.8 million in capital access
  o Start-up of 204 new small businesses
  o $500 million in government contract awards for the procurement of Alabama goods and services
- ASBDC secured CARES Act funding from the US Small Business Administration program to assist pandemic-impacted small businesses. These efforts helped to secure over $117 million in needed capital for impacted small businesses. ASBDC developed new projects in collaboration with UA on-campus units from Cares Act funding.
  o ASBDC Capital Access Team - conducted over 60 webinars on PPP and EIDL disaster funding during the pandemic with over 6,600 attendees
  o UA Alabama Productivity Center – technical assistance to AITC clients (manufacturers)
  o UA Safe State – workshops on indoor air quality and ventilation for ASBDC
Center for Economic Development partnered with the School of Social Work to address programming needs for substance abuse and mental health interventions in all of Alabama’s 67 counties.

YEAR ONE

University business outreach centers such as the Alabama Small Business Development Center, Alabama International Trade Center and Alabama Procurement Technical Assistance Center conducted 187 workshops with over 4,000 attendees and assisted with the start-up of 219 new small businesses. Clients also reported the following outcomes as a result of UA assistance:
- 2,115 jobs created and retained
- $94.7 million secured capital

- $183 million government contracts for the procurement of Alabama goods and services.
- In response to the COVID-19 pandemic, the Alabama Small Business Development Center (ASBDC) delivered 55 Small Business Association Economic Injury Disaster Loans (EIDL) and Paycheck Protection Program (PPP) training events with 5,500 participants. Funding in the amount of $117 million was issued to small businesses as a result of ASBDC assistance.
  - EIDL advances awarded to 434 businesses
  - EIDL awarded to 106 businesses
  - PPP awarded to 773 businesses

- Additionally, the University continued building partnerships with industry sponsors related to grants and contracts. As a result, industry-sponsored awards increased 59.2% from $4.1 million in FY 2018 to $6.6 million in FY 2019 and accounts for almost 5% of sponsored awards. As of May 31, 2020, the University was awarded over $3.5 million industry-sponsored contracts with an expected increase as the fiscal year continues.

- Number and percentage of UA students remaining in the State after graduation

YEAR ONE AND YEAR TWO

- OEBE is collaborating with the Center for Business and Economic Research and the Office of Institutional Research and Assessment to develop a more quantitative method for collecting and measuring student retention data.