

LOUISIANA STATE UNIVERSITY and A&M COLLEGE

GRANTING RESOURCES AND AUTONOMIES FOR DIPLOMAS

GRAD ACT ANNUAL REPORT FOR 2014-2015

Point of Contact:

T. Gilmour Reeve
Associate Vice President for Institutional Effectiveness and Academic Planning
Louisiana State University Administration
3810 West Lakeshore Drive
Phone: (225) 578-6610

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Performance Objective 1: Student Success

The mission for Louisiana State University and A&M College (LSU) is that as the state's flagship university, LSU is committed to offering a broad array of undergraduate degree programs and extensive graduate research opportunities designed to attract and educate highly qualified undergraduate and graduate students; employing faculty who are excellent teacher-scholars, nationally competitive in research and creative activities, and who contribute to a world-class knowledge base that is transferable to educational, professional, cultural, and economic enterprises; and using its extensive resources to solve economic, environmental, and social challenges (Mission Statement, approved October 2012).

LSU is the state's leading institution in awarding baccalaureate, master's, and doctoral degrees. For Year 5 of the GRAD Act, a total of 4,593 program completers received the baccalaureate degrees.¹ This is an increase from Year 4 (4,443) and the highest number of baccalaureate completers since the baseline year (4,648). Due to economic conditions and decreases in state funding, a negative trend for program completers for the past 4 years had been projected. Although these numbers continue to be below the baseline year, the growth in the number of completers indicates that student support programs initiated over the past few years are having a positive impact on student success. The number of master's degree program completers (1,112) in Year 5 is 15.1% over the baseline year (966) and the doctoral degree completers (345) is a 43.8% increase over the baseline year (240). The number of doctoral degree completers was the highest ever.

The number of completers for the Doctor of Veterinary Medicine (DVM) in Year 5 was 78, which is a slight decrease from the previous 2 years in which 82 students graduated each year, but above the lowest number over the past 5 years of only 75 students. DVM graduates who take the professional licensure exam remain successful as in previous years with a 96.3% success rate in Year 5. Another professional program with a high success rate is teacher certification. Of the 323 students who took the Praxis II exam for teacher certification in Year 5, 320 passed (99.1%) the exam.

The baccalaureate graduation rate for LSU reached an all-time high in Year 5, exceeding the previous high established in Year 4. The IPEDS graduation rate for Year 5 was 69.1%, a 2.4 percentage point increase from the Year 4 rate of 66.7%, and an 8.4 percentage point increase from the Baseline Year 60.7%. The statewide graduation rate increased slightly to 73.7% from 73.0%. LSU's Year 5 1st to 2nd year retention rate was 84.6%, a 2 percentage point increase from Year 4 retention rate of 82.6%. This is LSU's highest institutional 1st to 2nd year retention rate and remains the highest among the state's 4-year institutions. Although the 1st to 3rd year retention rate for Year 5 was 73.1%, representing a slight increase from Year 4 (73.0%), this retention rate is below the benchmark (76.6%) set for Year 5. The retention rate stabilized over the past few years due, in part, to unexpected worsening of economic conditions within the country during that time period. These difficult economic conditions are now moderating. LSU continues to track students' academic performances and to provide support services to improve retention. Initiatives to counteract the academic conditions that negatively impact student retention are discussed below.

¹ Baseline Year, Year 1, Year 2, Year 3, Year 4, and Year 5 used in the report refer to data presented in the GRAD Act Annual Report Transaction Summary.

During summer 2014, LSU initiated the Call-Out program to follow up with students who had not registered for an upcoming semester. Over 2,200 students were called by advisors and volunteer students based on their registration status and their “potential to be retained” index. This score was calculated from analyses conducted by Beacon SSI and an algorithm from a study conducted by LSU professor, Dr. Shihadeh, of 40,000 LSU freshmen since 2006. These analyses provided an index of students who were most likely to have returned but had not yet registered. Individual phone calls allowed advisors to discuss options and plans with students. It is not possible to attribute the calls to students’ decisions on whether to return (register) for the upcoming semester, but the overall increase in 1st to 2nd retention rate supports the effort required to make these calls.

LSU’s highly successful IMPACT Workshop, conducted by the Center for Academic Success (CAS) each year, is designed to help first-year students regroup after their first semester. Students can sharpen their academic focus by developing more effective strategies for learning, as well as learning techniques for time and stress management. The workshop was made a mandatory requirement for first year students with less than a 2.0 GPA after their first semester. Over 1,100 students attended the workshop. Follow-up analyses of student performances showed that attendees saw an average improvement of .51 in their GPA. Although only a half point increase in GPA, this improvement can be sufficient to move a student from below to above a 2.0 GPA, a meaningful change in academic performance.

CAS, in conjunction with the College of Sciences, developed a program to improve student performance in MATH 1021, College Algebra. This support initiative allowed students in the math course who had performed poorly (grade lower than a C) to retake the exam after they had redone their homework assignments under CAS supervision and tutoring. Results demonstrated that students participating in this support program performed much better on their first exam and were more likely to complete the course with a satisfactory grade of C or better.

Another initiative, coordinated by the Division of Student Life and Enrollment Management, is the Tiger Transition Team (T3). In this program, T3 helps incoming students make the transition to LSU by pairing them with peer mentors. Mentors are upperclassmen with similar majors or career paths who have done well academically and who have been involved on campus. Mentors and mentees have at least one in-person meeting per month and stay in contact through texts, emails, and social media throughout the semester. Mentors help incoming students navigate LSU and provide advice on being a successful student.

The LSU Residential Colleges have now expanded to a total of 10 colleges including discipline-based residential colleges including agriculture, science, business, and engineering, among others. Interest-based colleges include career discovery, Herget Freshman Experience, and the Honors House. Residential colleges enjoy the same amenities and features of traditional residence halls, but they also maximize the on-campus living experience by creating smaller communities and fostering greater student–faculty interaction beyond the classroom. Residential colleges are for first-year students. First to second year retention is higher for students in Residential Colleges than for students in other residential facilities, and both forms of on-campus facilities have higher retention rates than the retention rates for students living off-campus.

As one part of LSU’s reaffirmation of SACSCOC accreditation, the university identified undergraduate research for the Quality Enhancement Plan, which is a significant activity to improve student

engagement and learning. This topic was selected because educational research has demonstrated that student engagement with faculty through activities such as research improves student learning and retention. The program called “LSU Discover: Undergraduate Research” includes four components: Faculty-Mentored Research, Curricular Transformation, Co-Curricular Activities, and Research Day (poster and performance presentations by students). LSU Discover was implemented in fall 2015 and will be a five-year effort to strengthen and showcase undergraduate students’ involvement in research.

LSU’s College Readiness Program offers dual enrollment courses to high school students to prepare them for success in post-secondary education. The dual enrollment courses are partnerships with high schools in which the high school teacher completes a summer workshop on teaching college-level courses, and works with LSU faculty during the year to ensure that the course materials require college-level mastery. The content, textbooks, and exams are the same as those used in on-campus LSU courses. In fall 2014 LSU expanded its dual enrollment offerings to include courses in math, chemistry, computer science, English, agriculture, geography, environmental science, and kinesiology. There were 626 high school students enrolled in 1,949 semester credit hours of college work. This is a substantial increase from the 1,301 semester credit hours that high school students were enrolled during the fall 2013 semester. In fall 2014 students completed 1,910 semester credit hours. In spring 2015 there are 611 high school students enrolled in 12 different courses for 2,107 semester credit hours of college work. Both the number enrolled and the total semester credit hours are substantial increases over spring 2014. The spring 2015 semester is not yet completed. LSU continues to expand on its partnerships with high schools through its course offerings and the number of students involved in its College Readiness Program.

Additional student support programs have also been initiated or expanded. LSU has increased the number of students enrolled in our various “boot camps” that prepare students for early success in specific courses and majors. The Academic Intervention Team (AIT) is now in the second year and is helping to assist students through an early alert system before it is too late to address a student’s academic problems.

Student learning is central to LSU’s mission. Every degree program participates in an annual assessment process to ensure that the expected student learning outcomes for the program are achieved, and appropriate improvements are made in curricula content and instructional methods to ensure quality educational experiences for all students. Evidence of our success in this endeavor is documented in our compliance with the SACSCOC Comprehensive Standard 3.3.1.1, which requires that the institution assess learning outcomes and use the results of those assessments to improve student learning. LSU continues to focus on each student’s learning opportunities and to constantly improve its programs of instruction to achieve higher retention and graduation rates.

Performance Objective 2: Articulation and Transfer

Louisiana State University and A&M College (LSU) works closely with Louisiana community colleges to recruit transfer students who will be successful at LSU. Of the 1,179 baccalaureate degree-seeking transfer students who entered LSU in the prior year, 965 students were retained in the second year, a retention rate of 81.8%. During the prior year, 103 of those transfer students had earned the associate degree from a 2-year college, an increase of 18 students over the year 4 data. Eighty-two of these transfer students were retained representing a 79.6% retention rate for this group of students. Also, in the prior year, 919 baccalaureate degree-completers began at LSU as transfer students. In the most recent year, LSU enrolled 1,284 students as a cohort group, which was 41 students more than the prior year. Of this cohort group, 159 were admitted by exception, a 12.34% exception rate for admission of transfer students².

In 2012, the Office of Undergraduate Admissions assigned a Transfer Recruiter/Evaluator who is responsible for recruiting and advising transfer students. This past year, the Transfer Recruiter (1/2 time recruiter and 1/2 time admissions counselor) logged more miles, conducted more visits, and hosted more on-campus Transfer Tours compared to the previous two years. Over a 55 day period at 30 transfer student recruiting events (16 transfer fairs and 14 campus visits) across 5 states (LA, TX, MS, AL, and IN), 469 transfer student prospect cards were collected.

The Office of Enrollment Management purchased a new Customer Relations Management platform that allowed for the development of a new and more user friendly admissions application for all applicant populations. The transfer application was updated to be more intuitive and responsive while the applicant is completing each section of the application. The new application platform also provides processing staff with instant access to email templates and student contact information so they can contact students when any additional information is required to complete the application. The Transfer Admissions and Programming and Communications Units continued to refine targeted communication to the transfer populations as applicants move through the admission and evaluation process. The Transfer Admissions student website was evaluated and updated to ensure that the information listed was user-friendly.

The Tiger Transfer Scholarship was awarded for the first time in the fall of 2014. This merit based scholarship program considers all summer or fall term transfer applicants with a 3.5+ GPA. In year one of the new scholarship program, a total of \$156,500 was awarded to 129 students out of 209 Tiger Transfer Scholarship offers that were accepted, a 61.72% yield. LSU's scholarship partnership with Phi Theta Kappa International Honor Society for two year colleges (PTK) has resulted in the designation of the Tiger Transfer Scholarship: PTK, which is specifically for PTK members who transfer to LSU. In 2015, LSU plans to award three PTK scholarships. PTK membership requirements specify that students must have earned an AA or AS degree with a 3.5 GPA, and LSU will continue to build on this relationship in order to attract high quality transfer students. The organization also offers students the

² The Board of Regents Master Plan requires that incoming transfer students admitted to the flagship have completed a minimum of 30 college-level hours including a college-level English and Math with a 2.5 GPA. Students with less than the 30 college-level hours must also meet freshman requirements. Transfer students not meeting those requirements fell into one of three categories: 1) did not have 30 hours, had very high transfer GPAs, and required courses but did not meet high school criteria; 2) were missing one of the required courses; or 3) were admitted by faculty committee based on departmental recommendation.

opportunity to engage in scholarly research and creative writing and LSU plans to reach out to our state community colleges who do not have a Phi Theta Kappa chapter on campus.

There was robust activity in the development of several 2+2 and 2+3 academic progressions between departments at LSU and individual community colleges. Ongoing collaborative efforts continued between LSU's College of Engineering and BRCC with the 2+3 Academic Progression in Engineering, as well as talks with BPCC for the development of a 2+3 Academic Progression in Engineering. Additional established collaborations between LSU and other institutions include The Tiger Bridge Program with BRCC, and the Bears to Tigers program. These programs are set up as specific course-to-course articulations where the students know exactly what courses to take at the community college and how they will transfer to LSU. On the other hand, only a few students from the AALT and the ASLT, the Louisiana Transfer Degree Program have transferred to LSU. This is due in part to how those degree programs are set up – students are given the choice of selecting courses in the broad general education areas such as English, Social Sciences, Natural Sciences and Humanities.

In 2014, the Admissions, Standards and Honors Committee approved a new math placement policy for transfer students. Admitted transfer students who have a MACT or QSAT no more than 24 months old at the time of admission will receive credit in Math 1021 as long as they meet the eligibility requirements for the awarding of credit as set forth in the catalog. Credit in Math 1021 is a requirement for admission into many of the Senior Colleges at LSU and is also a prerequisite for the higher level coursework in math that is required for STEM majors. Previously, only incoming freshmen could take advantage of this placement policy, and transfer students who would have received credit had they initially attended LSU were penalized by having to take Math 1021. Additionally, the previous policy prevented a student from attaining admission into a Senior College and major degree program until Math 1021 was completed. The new more student friendly placement policy will give eligible transfer students the opportunity to take advantage of earning credit through their performance on the ACT/SAT.

The most common obstacle impeding seamless transfer involves the Transfer Credit Evaluation process. LSU purchased and implemented TES (Transfer Evaluation System) by CollegeSource to provide a systematic, electronic solution to the evaluation of transfer credit. The Office of Undergraduate Admissions was able to purchase this software with one time funding from the President's Office, which we hope to move to permanent funding. TES provides an electronic routing mechanism for the timely delivery of transfer credit evaluations from the admissions office to the faculty evaluators and back to admissions. This has already resulted in a more efficient and transparent evaluation process allowing students to finalize academic plans sooner and hopefully enroll at a higher rate. In just over 3 months of implementation, the use of TES to route coursework to faculty and back has resulted in 2,665 courses being evaluated during the spring 2015 semester, almost three times the 914 courses evaluated for the spring 2014 semester. The TES System also has a built in tracking system which allows the Transfer Admissions Staff to determine where the coursework is in the evaluation process. Admissions staff can then reach out to the faculty or college to inform them that they need to take action on the evaluation so that the student can be advised. This will prove invaluable as once the faculty have evaluated the coursework, it is routed back to Transfer Admissions where the correction is made to the student record and the newly evaluated course is added to the Tiger Transfer Tables. This will improve the efficacy and accuracy of the Tiger Transfer Tables.

LSU Transfer Admissions conducted its yearly survey to assess the transfer admissions process at LSU and collected responses from 37 admitted/non-enrolled (8.17% response rate) and 215 admitted/enrolled students (24.29% response rate). Survey data suggests that 43% of survey respondents only considered LSU when looking to transfer while 27% considered other in-state institutions and the remaining 30% considered transferring to out-of-state institutions. Given that an overwhelming majority of students (70%) reported narrowing their focus on transferring to an institution within Louisiana, LSU continues to work to ensure prospective students are aware of and consistently utilizing reliable resources.

Transfer Student Orientation was frequently cited as a challenge in the transfer process. Students have recommended that an earlier, online component could be offered upon admission to enable individualized advising and scheduling, and to allow time for resolution of unforeseen issues or problems. Academic advisors also feel an online orientation component would prove to be a convenient option and enable admitted students to move forward with the advising and scheduling process. Without the full burden of advising and scheduling falling on Transfer Orientation day, an online component could help transform the orientation program into an engaging, meaningful experience and set the stage for a successful transition.

LSU's Tiger Bridge Program saw the first cohort complete the mandatory year at BRCC and transfer to LSU. Students who initially applied to LSU as first-time freshman after high school but did not meet university standards are invited to participate in the Tiger Bridge Program. In fall 2014, 58 Tiger Bridge Program students enrolled at LSU, with a fall GPA of 2.3. The second Bridge cohort will complete the mandatory year at BRCC at the end of spring 2015. LSU has already started to send invitations for students to join the 2015-2016 Tiger Bridge Class. LSU's Transfer Admissions staff codes all Tiger Bridge students from the point of admission through transfer to LSU in order to capture the status of the student allowing for future analysis when the students return to LSU campus as transfer students upon completion of the program.

LSU provides the list of non-admitted freshmen applicants to LSU-E, LSU-A, RPCC and BRCC. All non-admitted students are sent the "Options" letter which directs them to LSU's transfer website. The Transfer Options page details the most current options for transfer to LSU. As part of LSU's efforts to collaborate in implementing articulation and transfer requirements, LSU departmental representatives attend all the Articulation Matrix yearly workshops where all crosswalk courses are evaluated for learning outcomes and transferability across all two and four year campuses. The Tiger Transfer Tables are then updated on the website so that they reflect the updated information. Links to all Board of Regents, Louisiana Transfer Degree and LSU 2+2 articulations are provided.

Performance Objective 3: Workforce and Economic Development

- a. Eliminate academic program offerings that have low student completion rates as identified by the Board of Regents or are not aligned with current or strategic workforce needs of the state, region, or both as identified by the Louisiana Workforce Commission and Louisiana Economic Development.**

Louisiana State University and A&M College (LSU) offers a broad array of educational programs to prepare students to meet workforce needs and to maintain a diversity of research programs to address complex problems facing the state and nation. LSU's educational and research programs, coupled with the institution's extensive engagement and service activities, contribute to the quality of life in Louisiana and to the advancement of knowledge, as well as to the development of new applications and technology critical to the economic development and the well-being of our citizens.

Nationally, educational certificates have emerged as an effective approach for universities to rapidly develop focused training programs that address workforce needs. Certificate programs may be completed within degree programs to provide additional training, or they may be completed as stand-alone programs that allow students to gain additional training without enrolling in degree programs. As the State's Flagship University, LSU has committed to developing graduate certificate programs that are aligned with workforce needs of the state and region. During 2014-2015 academic year, the Graduate School has received approval from the Board of Regents to offer the following Graduate Certificates: Behavior and Health, Econometrics, Life Span Studies, Fisheries Science and Assessment, Geographic Information Science, and Workforce Development.

In fall 2014, the Commission staff of the Board of Regents reviewed the number of program completers for all degrees at state-supported colleges and universities. Based on their review, institutions were provided with a list of low completer programs recommended for elimination. No LSU degree programs were identified in this review process and thus for this current reporting period, no low completer programs have been eliminated.

b. Increase use of technology for distance learning to expand educational offerings.

The use of technology to expand and support educational offerings at LSU continues to increase. The Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) defines distance education as “a formal educational process in which the majority of the instruction in a course occurs when the students and instructors are not in the same place.” The GRAD Act distinguishes between courses that are 50–99% delivered at a distance (hybrid courses) and those delivered 100% at a distance. For Year 5, LSU had 1,196 students enrolled in courses that were delivered with 50% to 99% distance education. This number represents an increase of 587 students enrolled in hybrid courses since last year (a 96.4% increase in enrollment). For courses that were delivered 100% by distance education, there were 6,197 students enrolled, which is an increase of 2,610 students (72.8%) over the past year. LSU is making significant strides in developing the use of technology to deliver course content.

LSU Online is the office that manages graduate programs that are delivered 100% online. This office ensures that the instructional methods that are used to deliver online programs meet the highest standards and are consistent with best practices in online learning. Over the past year, enrollment in these programs has increased from 230 students to 387 students (a 68% increase in student enrollment).

In Year 4, LSU reported offering 5 master’s degree programs online. During the past year, LSU has received approval from the Graduate School for new specializations within already approved programs. These additional specializations to the LSU Online programs include:

- Master of Science in Human Resource Education with a new concentration in Workforce Development
- New specializations in the Master of Business Administration:
 - Internal Auditing
 - Business Analytics

Programs that have been newly approved for 100% online delivery this year include:

- Master of Education in Educational Leadership
- Master of Arts in Education with a specialization in Higher Education Administration
- Master of Science in Kinesiology with a specialization in Sport Management

This year the Post-Baccalaureate Certificate in Construction Management was implemented with 100% online delivery, and the recently approved Graduate Certificate in Human Resource Education in Workforce Development will also be 100% delivered online. These certificate programs increase the total number of students receiving their educational programs 100% online.

LSU is committed to using technology to advance its educational programs in order to improve access and content delivery to its undergraduate and graduate programs.

c. Increase research productivity especially in key economic development industries and technology transfer at institutions to levels consistent with the institution's peers.

Scope Conditions for Reporting

Items i-v in Element C require data on research and instructional faculty holding active research and development grants or contracts, the dollar amounts for research and development expenditures, and a variety of intellectual property items. In the 2011 report, we explicated at length the methods to produce the following data. Due to space limitations we refer the reader back to that report for methodological details, but note that the exact same method is used here for a fifth year in a row, ensuring consistency over time.

Current and Prospective Research Productivity in Key Economic Development Industries

In terms of current and prospective research productivity, the percent of research/instructional faculty holding active R&D grants as of October 2013 is found in Element C, item i and is 46.9%. The percentage of instructional faculty holding R&D grants/contracts in Louisiana's key economic development industries as found in Element C, item ii is 41.8%. Proportionally speaking, 89.1% of faculty who have R&D funding at LSU are in disciplines closely associated with the targeted economic development industries. This indicates that the R&D activities taking place at LSU are closely aligned with current economic development emphases in the state of Louisiana.

Element C, item iii provides the total dollar amount of R&D expenditures based on the five year average for FY 2009-10 to FY 2013-2014, which is \$151,044,000. This is a change over the baseline 5 year average (FY2005-06 to 2009-10) of 3.9%. The total dollar amount of R&D expenditures in Louisiana's key economic development industries based on the five-year average for FY 2009-10 to FY 2013-2014 (Element C, item iv) is \$144,978,000, a change over the baseline 5 year average (FY2005-06 to 2009-10) of 4.2%, indicating no slippage in the proportional allotment of funding in the focal economic development areas in the LSU funding portfolio. Proportionately, 95.9% of R&D expenditures at LSU correspond to the broad economic development focal areas defined by FIRST Louisiana and the Blue Ocean Initiative.

In keeping with our GRAD Act agreement we also report a Targeted measure developed and reported for the second time last year, which is a 5 year average of research expenditures per FTE for FY10 to FY14. The value for this new measure is \$141,057.00 per FTE (data not reported in tabular form), compared to \$139,600 for FY08 to FY12.

To make comparisons with peer universities, it is appropriate to refer to data that are reported in a standardized format that other institutions use as a way of benchmarking. Using the combined data (LSU, LSU Law Center, LSU Agriculture Center, and Pennington Biomedical Research Center) that is supplied to the National Science Foundation for the Higher Education Research and Development Survey, the five-year average for research expenditures for FY 2009-10 to FY 2013-2014 is \$287,317,000 (Table 1). This represents a 3.5% increase over the baseline average (FY2005-06 to 2009-10). Focusing only on research expenditures in the Louisiana key economic development industries, the figure for the same time period is \$281,251,000 (see Table 2), a 3.7% increase over the baseline average (FY2005-06 to 2009-10).

Table 1: Dollar Amount of Research and Development Expenditures

LSU, Ag Center, Law Center & PBRC (As reported to NSF)

	<u>Federal</u>	<u>State</u>	<u>Industry</u>	<u>Institution</u>	<u>Other</u>	<u>Total</u>
2009-10*	\$97,407	\$75,500	\$20,507	\$95,424	\$1,034	\$289,872
2010-11	\$97,517	\$72,484	\$22,730	\$93,953	\$1,157	\$287,841
2011-12	\$92,551	\$74,045	\$23,141	\$95,007	\$651	\$285,395
2012-13	\$94,563	\$71,886	\$22,340	\$93,317	\$1,294	\$283,400
2013-14	\$94,701	\$72,062	\$19,559	\$102,390	\$1,364	\$290,076
5-year Avg.	\$95,348	\$73,195	\$21,655	\$96,018	\$1,100	\$287,317

*NSF modified its survey fields beginning FY 09-10; LSU reclassified R&D funding sources to appropriately reflect these changes

Table 2: Dollar Amount of Research and Development Expenditures in Louisiana's Key Economic Development Industries

LSU, Ag Center, Law Center & PBRC (As reported to NSF)

	<u>Federal</u>	<u>State</u>	<u>Industry</u>	<u>Institution</u>	<u>Other</u>	<u>Total</u>
2009-10*	\$94,621	\$74,624	\$20,110	\$92,394	\$1,008	\$282,757
2010-11	\$95,167	\$71,747	\$22,132	\$91,253	\$1,101	\$281,400
2011-12	\$90,001	\$73,461	\$22,572	\$92,396	\$647	\$279,077
2012-13	\$92,547	\$71,551	\$22,057	\$90,726	\$1,293	\$278,174
2013-14	\$92,751	\$71,588	\$19,427	\$99,727	\$1,352	\$284,845
5-year Avg.	\$93,017	\$72,594	\$21,260	\$93,299	\$1,080	\$281,251

*NSF modified its survey fields beginning FY 09-10; LSU reclassified R&D funding sources to appropriately reflect these changes

Current and Prospective Technology Transfers in Key Economic Development Industries

Element C, item v, provides the LSU technology transfer numbers. In FY 2013-2014 for example, there were 42 disclosures, 3 licenses and options awarded, 16 patents awarded, and 10 surviving start-ups which are documented.

Collaborations

The Louisiana Business Technology Center has partnered with Louisiana Economic Development to operate the State of Louisiana office at the NASA Stennis Space Center. The LBTC is the founder and operator of the Louisiana Technology Transfer Office, which is funded by Louisiana Economic Development to assist Louisiana businesses in competing for and winning SBIR/STTR grants and to help Louisiana companies find solutions for technical problems through the federal labs. The LBTC is also the NASA interface for the Louisiana Research Consortium which is a blanket procurement instrument used by NASA to fund research through Louisiana universities. In the current fiscal year, (FY 2013-14), the LBTC has assisted over 150 companies, university faculty, and entrepreneurs compete for SBIR/STTR grants. During this time period, over \$6,000,000 in awards were made by federal agencies to Louisiana companies, most of which had a Louisiana university/research institution as a collaborative partner. The LBTC awarded \$30,000 in Phase Zero program grants to Louisiana companies, helping them offset the cost of preparing/submitting a SBIR or STTR proposal to a participating federal agency.

LSU Innovation Park / LBTC companies such as Enervana, Carver Scientific, ElectroChemical Materials, HFT Energy, and Inventerm have all won SBIR grants through the LBTC's program bringing in millions of dollars to the Baton Rouge region for payroll, purchases and equipment. The LBTC also worked with LED on having the LSU Innovation Park designated as a certified economic development site. The LBTC has also partnered with LED and the Louisiana Municipal Association to assist municipal governments, especially in rural Louisiana, access economic development assistance. This includes deploying the LBTC's Mobile Classroom to 20 rural communities annually to assist the local governments and small businesses in the area access the resources needed to develop, sustain and recruit businesses to their communities.

The LBTC through Charles D'Agostino served on the Board and various committees of the Louisiana Industrial Development Executives Association and LSU is providing the economic development courses to certify economic development professionals in the state. The LBTC provides speakers and course content for this program. About 150 economic developers are trained annually through this program.

The LBTC participates with the Louisiana Chemical Association, Louisiana Chemical Industry Alliance, LABI, BRAC, the Southwest Louisiana Economic Alliance, the South Louisiana Economic Council and other regional economic development organizations in educational and economic development programs annually. Through the ACCESS LSU program, the LBTC is a single point of contact for business and industry to find assistance and solutions to technical problems through LSU's faculty, researchers and students.

With the LBTC designated as one of the 31 NBIA Soft Landing Incubators in the world, we have developed partnerships with the World Trade Center of New Orleans, the New Orleans Citizen's Diplomacy Council, the US State Department and the US Department of Commerce – Import/Export Trade Assistance Agency in bringing in international businesses interested in tapping the resources of LSU and the LBTC and finding a "soft landing" home for their companies to do business in the US. This program has brought in visitors from China, France, Austria, Italy, Chile, Peru, Colombia, Mexico, Brazil, Honduras and Costa Rica. This program is giving LSU international exposure as well as bringing in commerce to the US and finding trade partners in those countries for our Louisiana businesses.

The LBTC is a partner with the Committee of 100, an organization that represents the 100 largest entities in Louisiana. This partnership consist of international and domestic trade programs, Louisiana innovation and entrepreneurship programs and networking resources for LSU faculty and LBTC incubator companies. This program has resulted in funding and in developing resource capabilities for the LBTC at LSU Innovation Park.

The Pennington BioTech Initiative and the LSU AgCenter Food Incubator through the LBTC's leadership is developing research and assisting businesses tap LSU resources. These programs are bringing research dollars into the university as well as income for operations. The LBTC's technology transfer component (LTTO) is sponsoring a workshop for Pennington in late spring 2015 with a focus on NIH R&D opportunities.

The LBTC's 35 incubator companies according to a recent survey have had the following impact: 35 businesses employ 185 direct employees and creating 462 jobs; \$44,130 average salary for a total

payroll of \$8,164,050; \$4,160,435 in investment; the average tenant company is growing at 23%; \$27,981,415 in total revenue from tenant companies.

The Louisiana Technology Transfer Office, through the LBTC, has facilitated activities such as meetings, briefings, workshops and presentations that encourage collaborative partnerships with university researchers and federal labs, such as NASA, Naval Research Lab, NOAA, and others. LTTO staff have conducted SBIR/STTR program workshops within the LSU system to include: AgCenter, LSUHSC, Children's Hospital (N.O.), and College of Engineering. Additional workshops are planned for Pennington Biomedical Research Center (NIH focus), and the School of Energy, Coast and the Environment (NASA focus). LBTC/LTTO has an extensive network of resource partners throughout Louisiana, such as the New Orleans Bio Innovation Center, the Coordination and Development Center, Shreveport, U.S. SBA Small Business Development Centers, LED, Louisiana Business Incubation Association. The LTTO through the LBTC has a contract with NASA for technology transfer/commercialization support services.

In 2013-14, the College of Engineering continued to make excellent progress in aligning academic and research programs with the state's focal economic development areas, including attending and participating in client recruitment efforts with LED, BRAC, GNO Inc. and the World Trade Center of New Orleans. In August 2014, LSU's College of Engineering play an integral role in recruiting the IT company Stixis to the capital region in partnership with BRAC. The LSU College of Engineering industry sponsored research revenues netted \$3,376,199 up from \$2,384,767 in 2012-13. Thirty-two companies engaged in industry-sponsored research, including Albemarle, Bascom Hunter, Borealis, BP America, CH2MHILL, Clarkston Aerospace, Entergy, Sasol North America, T Baker Smith, and US Synthetic. In addition, the College of Engineering is active partners with the Greater Baton Rouge Industry Alliance (GBRIA), New Orleans Regional Innovation Alliance (NORIA), the Louisiana Chemical Association (LCA), Louisiana Innovation Council (LIC), Louisiana Association of Business and Industry, (LABI), the Baton Rouge Area Digital Industries Consortium (BRADIC) and the Louisiana Technology Council (LTC). Over the past year, faculty and staff either participated on the governing boards of these organizations or have given presentations to their respective groups to further develop relationships and align the College with needs of industry.

2013-14 College of Engineering highlights include:

- Industry sponsored research funding: \$3,376,199
- Economic development organization assists: 19
- Companies engaged in recruitment: 183
- Companies engaged in research: 32
- Number of patents awarded: 5

The Division of Economic Development in the E. J. Ourso College of Business worked on a number of research studies about workforce development in Louisiana. In particular the division conducted funded research on the economic impact of jobs, earnings and tax revenues that can be expected from major economic development initiatives; worked on funded research from the Louisiana Workforce Commission to provide a forecast of demand for employees by industry and occupation in order to better align education and training in Louisiana with the needs of Louisiana's employers; helped create and update the star rating system providing a concise measure of employment opportunities and wages for each occupation in Louisiana; worked to create the Workforce Longitudinal Database in an effort to

provide the tools for a market-based evaluation of a broad array of training and education programs; provided research for the Louisiana Department of Revenue on how to capture information needed to compute measures of return on investment required by Act 191 of the Legislature; conducted research to quantify the economic impact of coastal erosion for the Coastal Protection and Restoration Authority of Louisiana.

The Highway Safety Research Group (HSRG) in the E. J. Ourso College of Business worked on research projects relating to the reduction of cost associated with crashes on Louisiana roads and highways. Including developing technologies for the efficient collection of crash data, the study of crash patterns, the investigation of human factors in crashes such as impaired driving (alcohol and drugs), seat belt use and distracted driving and in general using advanced analytics and business intelligence for problem identification. The ISDS Department's funded transportation projects also includes an investigation of intermodal freight transportation in Louisiana to better understand constraints and bottlenecks in the State's freight movement and to improve freight flow efficiency and therefore support economic development.

The Stephenson Entrepreneurship Institute (SEI) in the E. J. Ourso College of Business has worked with LED to offer the LA Economic Development Certification Program. This program is a collaborative effort between LED, SEI, Executive Education, and the LA Industrial Development Executives Association. The program's enrollment was 68 in 2014 and 91 in 2013.

The Public Administration Institute within the E. J. Ourso College of Business worked on several funded research projects that affect economic development, including: a grant from Louisiana Housing Corporation (HNA) to conduct a Housing Needs Assessment; the Port Priority Program that provides an economic assessment of various projects developed by Louisiana ports to assist the state in documenting benefits and costs of suggested projects; and the Short Rail Project which provides estimates of the value of short rail lines to Louisiana's economy.

From the College of Veterinary Medicine, Tesa Medical, Inc. is the company founded by the Louisiana Fund around the GraftGrab technology (developed by one faculty) and for which LSU holds the patent. Currently, one patent has been awarded and one approved in the US. Another has been approved in Canada. Another provisional US patent is in progress. A LIFT grant supports continued development of the technology. One faculty has a \$150K project with Oleander, Inc (a Louisiana-based start-up company) and is also involved in collaborative research with the Georgia Research Foundation. A LIFT grant supports development of a genital herpes vaccine. One faculty is co-founder of a start-up – Requisite Biomedical, LLC. An NIH STTR Phase I grant currently funds the project with the aim to develop drug eluting stents and drug coated balloons as therapies for arterial blockages.

In the College of Science and the Center for Advanced Microstructures and Devices, a startup company (The Grating Factory) uses CAMD X-rays to produce gratings for phase-contrast X-ray imaging. The company won an LSU LIFT2 award in the first round of competition.

Business Innovations and Startups

LSU retains an active and expanding portfolio of business innovations and startups. Element C, item v documents the number of surviving companies is 11.

Peer Comparisons

National Science Foundation data for total and federal research expenditures are used to compare LSU to the SREB 4 Year 1 Peer Institutions. In this context, LSU ranked 16th out of 38 with \$94,563,000 in federal research expenditures, and 12th out of 38 with \$283,400,000 in total research expenditures (Table 3). In short, these data indicate LSU compares very favorably to its peers in research expenditures, and thus research productivity.

Table 3: Total and Federal Research Expenditures LSU vs. SREB 4 Year 1 Peer Institutions				
2012-2013 Research Expenditures				
Institution	Total	Rank	Federal	Rank
Auburn University	\$147,229,000		\$57,253,000	
The University of Alabama	\$55,443,000		\$28,375,000	
University of Arkansas	\$125,501,000		\$30,625,000	
University of Delaware	\$179,967,000		\$119,756,000	
Florida International University	\$128,070,000		\$72,357,000	
Florida State University	\$250,877,000		\$148,413,000	
University of Central Florida	\$126,681,000		\$76,533,000	
University of Florida	\$695,063,000		\$296,199,000	
University of South Florida	\$459,409,000		\$225,414,000	
Georgia State University	\$111,999,000		\$37,521,000	
University of Georgia	\$350,225,000		\$131,824,000	
University of Kentucky	\$339,764,000		\$150,468,000	
University of Louisville	\$186,772,000		\$78,144,000	
Louisiana State University	\$283,400,000	(12/38)	\$94,563,000	(16/38)
University of Maryland-College Park	\$491,998,000		\$342,778,000	
Mississippi State University	\$206,424,000		\$74,075,000	
University of Southern Mississippi	\$51,962,000		\$28,694,000	
North Carolina State University at Raleigh	\$417,468,000		\$177,118,000	
University of North Carolina at Chapel Hill	\$973,007,000		\$623,237,000	
University of North Carolina at Greensboro	\$16,590,000		\$13,658,000	
Oklahoma State University	\$134,500,000		\$44,200,000	
University of Oklahoma Norman Campus	\$255,674,000		\$132,456,000	
Clemson University	\$152,444,000		\$52,002,000	
University of South Carolina-Columbia	\$203,365,000		\$91,612,000	
The University of Tennessee	\$193,054,000		\$117,836,000	
University of Memphis	\$48,141,000		\$18,619,000	
Texas A & M University-College Station	\$820,015,000		\$314,104,000	
Texas Tech University	\$142,676,000		\$28,827,000	
The University of Texas at Arlington	\$86,735,000		\$30,815,000	
The University of Texas at Austin	\$634,132,000		\$372,633,000	
The University of Texas at Dallas	\$98,842,000		\$33,920,000	
University of Houston	\$130,844,000		\$61,038,000	
University of North Texas	\$49,518,000		\$16,515,000	
George Mason University	\$95,913,000		\$65,096,000	
Old Dominion University	\$99,138,000		\$39,963,000	
University of Virginia	\$385,828,000		\$225,567,000	
Virginia Polytechnic Institute and State University	\$496,169,000		\$201,646,000	
West Virginia University	\$167,144,000		\$74,704,000	
Average	\$257,684,000		\$124,436,000	
Source & Notes:				
Source=National Science Foundation				
Note: LSU includes LSU Agricultural Center, Hebert Law Center, and Pennington Biomedical Research Center				

The technology transfer activity at LSU compared to its peer institutions is provided in Table 4. These data were secured from the AUTM U.S. Licensing Survey: FY 2013. These data may be different from NSF reported data for a number of reasons, such as the data reported for LSU to NSF includes all the LSU System’s Baton Rouge campuses. In addition, some of the institutions provided in this table do not report to the AUTM survey, and for others it is ambiguous what the scope of the reporting unit actually is. Nevertheless, the raw number of inventions disclosed, patents issued, licenses and options issued, and startups are provided in the table. As we have noted in prior reports, the meaningfulness of these comparisons is unclear given the questionable comparability of data sources across the reporting units.

Table 4: Comparison of LSU Technology Transfer Metrics with Peer Institutions

	Total Research Expenditures	Federally Funded Research Expenditures	Industry Funded Research Expenditures	Invention Disclosures	Patents Issued	Licenses/Options Executed	Start-ups Formed	Total License Income	Full Time Licensing Staff
Colorado State University	\$313,238,032	\$219,855,563	\$19,039,791	113	21	26	7	\$1,153,043	4
Iowa State University	300,829,796	154,900,333	17,883,552	98	24	79	2	9,108,374	6.25
Mississippi State University	\$206,424,000	\$74,075,000	\$11,504,000	35	4	6	4	\$175,153	2
North Carolina State University	\$417,468,000	\$177,118,000	\$46,415,000	238	40	111	8	\$6,788,262	9
Purdue University	\$613,652,000	\$278,295,000	\$39,574,000	314	66	87	8	\$6,305,827	7
Texas A&M University System	\$820,015,000	\$314,104,000	\$52,299,000	159	50	55	3	\$12,826,461	10
University of Arkansas Fayetteville	\$125,501,000	\$30,625,000	\$10,194,000	44	15	40	2	\$925,153	3.2
Louisiana State University System	\$363,148,000	\$143,753,000	\$20,224,000	112	17	24	3	\$10,148,412	7.5
University of Georgia	\$350,225,000	\$131,824,000	\$5,260,000	140	43	151	3	\$8,260,195	5.95
University of Illinois Chicago Urbana	\$1,111,335,000	\$691,364,000	\$47,934,000	344	99	96	11	\$24,178,517	23
University of Maryland	NA	NA	NA	NA	NA	NA	NA	NA	NA
University of Nebraska	\$394,448,464	\$178,984,508	\$17,386,171	200	23	65	14	\$9,027,315	10.5
University of Tennessee	\$341,108,175	\$179,658,008	\$30,068,077	145	32	22	4	\$788,874	6
Virginia Polytechnic Institute and State University	\$496,169,000	\$201,646,000	\$26,129,000	174	20	25	6	\$2,368,556	3.25

- d. To the extent that information can be obtained, demonstrate progress in increasing the number of students placed in jobs and in increasing the performance of associate degree recipients who transfer to institutions that offer academic undergraduate degrees at the baccalaureate level or higher.**

Louisiana State University and A&M College (LSU) is a nationally recognized, comprehensive research institution. As such, LSU recruits and enrolls students from throughout the United States and employers from Louisiana and other states actively recruit our graduates to work for their companies. Our students are successful in gaining employment in their chosen fields or in being admitted to graduate schools and professional education programs.

The Board of Regents provided each institution with summary data from the most recent *Employment Outcomes Report*, so that the institution would have these data from this study to use in this report. The data provided in the tables below are from the *Employment Outcomes Report*. One limitation of the data is that only graduates who are employed in the State of Louisiana are included in any of these analyses. The employment success of our undergraduate and graduate program completers is underestimated when only data from within the State of Louisiana are available.

Using the data from the *Employment Outcomes Report*, the number and percent of program completers found employed in the state six months after graduation are presented in the two tables below. Table 5 presents these results for graduates who were enrolled as Louisiana residents. In other words, these are the students who stayed in their home state after graduation. The percent of Louisiana completers employed ranged from 40.4% for completers of professional programs to 72.5% for completers of Master’s programs. Nearly two-thirds of the baccalaureate completers (61.6%) were employed in state. Table 6 presents the results for all completers (resident and non-resident completers) with the percent completers employed in state ranging from 32.9% for professionals to 60.4% for Master’s programs. For all baccalaureate completers, the percent employed in the state was 55.2%. The decrease in completers when resident and non-resident completers are combined (Table 5 compared to Table 6) reflects the combined effects of non-residents returning to their home states for employment and residents being recruited by out-of-state employers. Overall, LSU program completers are successful in gaining employment. The most recent results (2011-2012) reflect a consistent pattern for employment for completers across the years.

**Table 5. Employment Rate by Degree Level
Six Months After Graduation For Louisiana Resident Completers Only**

Degree Level	Number of Completers			Percent Found Employed		
	2009-2010	2010-2011	2011-2012	2009-2010	2010-2011	2011-2012
Baccalaureate	3,716	3,724	3,721	62.1%	60.6%	61.6%
Masters	686	689	817	71.9%	70.4%	72.5%
Doctorate	111	85	106	55.9%	48.2%	57.5%
Professional	54	50	52	38.9%	46.0%	40.4%
Ed. Specialist	18	20	11	94.4%	95.0%	63.6%

**Table 6. Employment Rate by Degree Level
Six Months After Graduation For All Completers**

Degree Level	Number of Completers			Percent Found Employed		
	2009-2010	2010-2011	2011-2012	2009-2010	2010-2011	2011-2012
Baccalaureate	4,378	4,425	4,583	57.5%	55.7%	55.2%
Masters	1,042	1,089	1,233	59.7%	57.3%	60.4%
Doctorate	300	255	322	34.0%	32.9%	36.6%
Professional	81	75	82	27.2%	33.3%	32.9%
Ed. Specialist	18	21	12	94.4%	90.5%	58.3%

The average salaries for all program completers employed in the state within 6 months and after 18 months are presented in Table 7. With the exception of the Educational Specialist completers, all other program completers show a higher average salary after six months in the most recent analysis (2011-2012) compared to the previous two years. Again, these results don't reflect the average salary comparisons across years for those completers who are employed out of state.

Table 7. Average Calculated Salary by Degree Level For All Employed Completers

Degree Level	Wages Six Months after Graduation			Wages Eighteen Months after Graduation
	2009-2010	2010-2011	2011-2012	2009-2010
Baccalaureate	\$23,976	\$24,166	\$26,277	\$31,039
Masters	\$41,299	\$43,133	\$44,279	\$47,026
Doctorate	\$49,235	\$44,684	\$45,817	\$54,146
Professional	\$55,398	\$51,327	\$62,355	\$58,997
Educational Specialist	\$49,443	\$44,369	\$42,833	\$52,532

For the current reporting year, 919 baccalaureate completers began at LSU as transfer students. The number of transfer students who completed baccalaureate programs at LSU decreased over the past year from 996 to 919. This decrease in completers may reflect that in Year 4, 15.2% of the transfer students were admitted by exception, which was the highest number of exceptions made for transfer students over the previous 3 years. Only 12.3% of transfer students were admitted by exception for Year 5 and the total number of transfer students enrolled increased from 1,105 to 1,179 over the past year. LSU continues to develop support services and student activities for transfer students to improve the academic success of our transfer students.

Performance Objective 4: Institutional Efficiency and Accountability

In July 2010, the LSU Board of Supervisors authorized the LSU System President to increase the total nonresident tuition and mandatory fees of each campus up to 15% per year beginning with the 2010 fall semester. These increases were implemented to assure that within no more than a five year period, the total nonresident tuition and mandatory fees are not less than the average total tuition and mandatory fee amount charged to Louisiana residents (as nonresidents) attending peer institutions in other Southern Regional Education Board states. This policy mirrors the language of Objective 4 (c) of the Grad Act. As described below, Louisiana State University and A&M College (LSU) is accomplishing the objective of charging nonresident students the rates charged at peer institutions.

In fall 2011, correspondence between the LSU campus, the LSU System, and the Board of Regents clarified that Southern Regional Education Board (SREB) Four-Year 1 institutions are to be used as the LSU peer group for Grad Act tuition comparison purposes. The latest preliminary SREB data (2013-2014) for LSU (\$25,790) and the average of the peer group, excluding LSU (\$24,268) showed LSU was \$1,522 (6.3%) above its SREB peers. For 2014-2015, LSU increased the total nonresident tuition and fees by 2.6% resulting in a total charge of \$26,467 for nonresident undergraduates. The average rate of increase over the past four reported periods for SREB Four-Year 1 institutions is 5.24%. Increasing the reported 2013-2014 SREB Four-Year 1 peer average by this rate would place the peer charge at \$25,540 for the 2014-2015 data year (released in 2015-2016). This peer rate would result in LSU nonresident tuition and fees being more than \$900 above the SREB median. At this time, LSU is projecting increasing 2015-2016 full-time (15 hours/semester) undergraduate nonresident tuition and fees by 1.55% (\$206/semester) to keep LSU at the projected SREB average. For the 2016-2017 year, it is estimated LSU would charge nonresident undergraduates 5.24% (\$704/semester) more than 2015-2016 to remain at the projected SREB average amount. It is anticipated LSU will continue to adjust the nonresident charges in future years, as appropriate, to not exceed the SREB average.

Academic Year	LSU	SREB 4-Yr. 1 Peers	
		Amount	Difference from LSU
<u>Actual</u>			
2012-2013	\$22,265	\$23,551	-\$1,286
2013-2014	\$25,790	\$24,268	\$1,522
2014-2015	\$26,467	\$25,540	\$927 (projected)
<u>Projected:</u>			
2015-2016	\$26,878	\$26,878	\$0
2016-2017	\$28,286	\$28,286	\$0

Impact on enrollment and revenue:

Over the past 25 years, changes in LSU’s admission criteria appear to have had a greater impact on the number of new freshmen enrolled at LSU than have increases in tuition and fees. LSU’s traditional lower than average nonresident tuition and fees compared to peer institutions has been a significant factor in maintaining nonresident enrollment. However, as LSU began the plan to increase nonresident

tuition and fees to the average of its peers, the large price increases negatively impacted nonresident enrollment. In fall 2010 the new freshman class consisted of over 25% nonresident students, while in fall 2013, the percentage had dropped to 17%. In order to alleviate the declining nonresident student population, the LSU Board of Supervisors approved nonresident fee exemption adjustments beginning in FY 2014-2015 that will make LSU more competitive for high-quality nonresident students. These changes produced an immediate impact with the percent nonresident new freshmen increasing from 17% (925 students) in fall 2013 to 18% (1,005) in fall 2014. While these changes to financial aid programs have been effective, LSU must continue to evaluate and adjust nonresident student aid programs to ensure LSU has a diverse geographic population and competitive scholarship programs. Institutional capacity should be taken into consideration as well. With available capacity, the marginal revenue generated from enrolling a nonresident student is great. At full capacity, the marginal cost of enrolling more students, whether resident or nonresident, is large.

Tuition revenue available to an institution is dependent on enrollment and the amount of tuition and fees exempted. For next fiscal year (FY 2015-2016), LSU projects that a \$206/semester increase in nonresident tuition and fees would generate an additional \$2.1 million in assessed (gross) revenue and a net revenue increase (after exemptions) of \$1.5 million. LSU expects any planned increases in nonresident tuition and fees will generate additional net revenue, but at a diminishing rate as fewer nonresident students enroll and adjustments are made to the financial aid, scholarship, and exemption programs.