



UNC CHARLOTTE
2015-2020 Strategic Plan Template

Research and Economic Development

I. EXECUTIVE SUMMARY

1-2 pages

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| <p>A. Mission statement:</p> | <p>Research & Economic Development at UNC Charlotte strives to advance the quality, diversity and growth of research at UNC Charlotte. We place a special value on the translation of research results that impact our social, cultural, and economic communities.</p> <p>To our faculty, we are committed to providing a sustaining environment where your research, creative, and service activities will flourish. We know that you have dedicated yourselves to discovery and that you work long and hard hours to be successful. We continue to place a very high priority on the creation and operation of quality research services.</p> <p>To our partners beyond the University, we are committed to the growth and economic development of the Charlotte region and the State of North Carolina. Our faculty members support this growth by competing globally in their research domains and making their results available for the benefit of society. We particularly welcome research and service partnerships that build on the expertise and interests of our faculty and staff.</p> |
| <p>B. Resource request:</p> | |



III. NEW STRATEGIC GOALS, ACTION PLANS AND PERFORMANCE OUTCOMES

A. Research and Economic Development Goal #1: RESEARCH

B. Relationship of goal/objective to next higher reporting unit goal: This goal supports Academic Affairs Goal #2: To expand the frontiers of knowledge and leverage discovery for the public benefit through innovative programs that span the disciplines in research, creative activities, and graduate education.

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| C. Unit, Dept. or College Objective: | Increase the quality, diversity, and growth of research at UNC Charlotte by: <ul style="list-style-type: none"> • Enabling large-scale, focused research areas and emerging research. |
| D. Actions/Tactics: | <ol style="list-style-type: none"> 1. Develop and support programs that enhance faculty scholarly activities and increase the number of research proposals and awards across all disciplines. 2. Increase the number of graduate fellowships and internships through corporate, foundation, and government funding mechanisms. 3. Identify emerging research areas and support their growth on campus. 4. Complete a study, in consultation with the College Deans and Academic Affairs, to create a process for strategic budget allocations for research growth. <i>Future Project.</i> |
| E. Assessment Methodology/Measures: | <ol style="list-style-type: none"> 1. Report on the number of research proposals and awards across disciplines. Track the number of Office of Proposal Development (OPD) and Charlotte Research Institute (CRI) programs that support faculty research. Examples include, but are not limited to, OPD workshops and seminars, CRI Distinguished Speaker Series, results from CRI Targeted Internal Research Seed Grant Program, faculty visits to program officers, and CRI membership in research consortia. 2. Report on the number of graduate fellowships, internships, and scholarships paid with sponsored funds. CRI will report on military academy engagement to attract paid graduate fellowships. 3. The VC for R&ED, OPD Director, and Director of Research for CRI will use their professional networks and contacts to identify emerging research areas. A database will be created to track the networks. CRI will also report on intelligence resulting from government and industry outreach efforts to identify emerging research areas. 4. <i>Future Project.</i> |
| F. Performance Target/Expected Outcomes: | <ol style="list-style-type: none"> 1. Our Long-range goal is to hit \$55 million in awards. OPD workshops and seminars will continue to address the needs of our research community. CRI will present at least eight Distinguished Speaker events each year. CRI will establish baseline data for the other measures listed above. 2. The number of fellowships, internships, and scholarships paid with sponsored funds will increase. CRI will establish baseline data for the number of visits to military academies. 3. It is expected that the network of contacts will increase each year and that the number of outreach efforts to government and industry will remain static or increase, but not decrease. 4. <i>Future Project.</i> |



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| G. Resources Required: | |
| H. Analysis of Assessment Findings: | <ol style="list-style-type: none"> 1. For FY2017 to date, faculty across all disciplines submitted 663 proposals totaling \$219,730,910. The total awards received for the same time period equal 334 awards for a total amount of \$40,132,748. <ul style="list-style-type: none"> • OPD presented 24 seminars or workshops in support of faculty research efforts. <p>Distinguished Speaker Series / Seed Grant Program / Consortiums</p> <ul style="list-style-type: none"> • Distinguished Speaker Series – suspended due to a reduction in workforce. • Implemented Seed Grant Program with 12 awards totaling \$370,573 given to eight departments. • Award provided funding for acquisition of a new MX51 Olympus Industrial Inspection Microscope, directly impacting multiple conference proceeding publications, and helped to secure an additional \$550K in US Navy funding for the development of anti-reflective optics for very “High Energy Lasers” being developed by DoD. • Mark Clemens from Biological Sciences and Gloria Elliott from Mechanical Engineering used program funds, demonstrating their newly-developed solution for use in cold storage of organs for transplantation beyond “gold standard” solution currently in use. • Award allowed David Weggel and Matt Whelan from Civil and Environmental Engineering to demonstrate the capabilities of the Infrastructure Security and Emergency Responder Research and Training (ISERRT-M) Facility. • Acquired membership in four research consortia that are based on Other Transaction Agreements and Cooperative Agreements with government agencies: MSI STEM Research & Development Consortium (MSRDC); National Armaments Consortium – DoD Ordinance Technology Consortium (NAC-DOTC); Consortium for Command, Control and Communications in Cyberspace (C5); Consortium for Energy, Environment and Demilitarization (CEED). • Participated in C5ISR Summit in Charleston as guests of Dispersive Technologies. 2. West Point collaborations <ul style="list-style-type: none"> • Learned that it is a 3-5 year plan to recruit graduate students to UNC Charlotte. <p>UNC Charlotte Interns Engaged by University Business Partners: 45</p> 3. Information sharing/tracking <ul style="list-style-type: none"> • Development and acquisition of development database postponed due to lack of resources. • Identified process to collect and share intelligence across colleges. 4. <i>Future Project</i> |
| I. Use of assessment findings: | <ol style="list-style-type: none"> 1. Distinguished Speaker Series / Seed Grant Program / Consortiums <ul style="list-style-type: none"> • DSS program discontinued for FY16-17; reintroducing as Research Discovery Forum as human resources allows. • Continued Year 2 of Seed Grant Program rebranded as Targeted Research Internal Seed Program (TRISP) and improved the proposal evaluation process. |



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| | <ul style="list-style-type: none">• Continued to initiate and leverage targeted consortia memberships for more industry partnerships, creating opportunities to engage more than hundreds of R&D companies, more than 75 universities and many company visits. <ol style="list-style-type: none">2. Rework priorities for partnership to immediately implement senior design joint projects, and pursue joint research proposals, joint course development and faculty sabbaticals.3. Information sharing/tracking<ul style="list-style-type: none">• Due to staff cuts in CRI and a tight budget, the database has not been completed. Though this remains a future goal, CRI will make acquisition of database a priority for FY2017-18.• Establish CRI Emerging Research Fellows program to proactively influence future research opportunities.4. <i>Future Project</i> |
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III. NEW STRATEGIC GOALS, ACTION PLANS AND PERFORMANCE OUTCOMES

A. Research and Economic Development Goal #2: ENGAGEMENT

B. Relationship of goal/objective to next higher reporting unit goal: This goal supports Academic Affairs Goal #3: To engage community partners in mutually beneficial programs that enhance the economic, civic, and cultural vitality of the region.

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| C. Unit, Dept. or College Objective: | <p>Increase and support research engagement across and beyond UNC Charlotte by:</p> <ul style="list-style-type: none"> • Promoting collaboration and a culture of research. • Connecting and translating research for students, partners, and society. • Expanding business partnerships and economic development. |
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| D. Actions/Tactics: | <ol style="list-style-type: none"> 1. Steadily increase the number of community-based projects as defined by the Carnegie Foundation. 2. Develop, promote, and support initiatives that encourage collaboration across disciplines and academic units to steadily increase the number of joint proposals, partnerships, and projects. 3. Increase the number of university programs and resources dedicated to regional business community activities in support of startups, existing businesses, and business-related nonprofit organizations. |
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| E. Assessment Methodology/Measures: | <ol style="list-style-type: none"> 1. The Office of Proposal Development will monitor the number of community-based projects and joint proposals. 2. Report on the number of research proposals and awards across disciplines. Track the number of Office of Proposal Development (OPD) and Charlotte Research Institute (CRI) programs that support faculty research. Examples include, but are not limited to, OPD workshops and seminars, CRI Distinguished Speaker Series, results from CRI Targeted Internal Research Seed Grant Program, faculty visits to program officers, and CRI membership in research consortia. 3. CRI will continue to monitor the established metrics of programs offered through the Small Business and Technology Development Center (SBTDC), Ventureprise, and the Office of Technology Transfer (OTT); and build relationships with organizations responsible for recruiting and expanding businesses in the regional economy. |
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| F. Performance Target/Expected Outcomes: | <ol style="list-style-type: none"> 1. CRI and OPD will establish a baseline for community-based projects upon which future projects can be predicted. 2. CRI will establish a baseline for Interdisciplinary Targeted Internal Seed Grants with an initial target of funding at least \$150K (2-3 projects). 3. With new personnel in key positions, CRI Director of Research and Assistant Director of Corporate Partnerships, now filled, CRI will increase the number of outreach programming and successes in the areas of business, government, and academic engagement activities, as well as the existing business engagements through building space occupancy on the millennial campus and through programs that CRI sponsors through Ventureprise, SBTDC, and OTT. Baseline targets are being established this year. |
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| G. Resources | |
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| Required: | |
| H. Analysis of Assessment Findings: | <p>The plan assessment methodology/measures and performance target/expected outcomes provide a general outline for assessment; the broad and diverse missions of R&ED organizations complicate assessment.</p> <ol style="list-style-type: none"> 1. A baseline of community-based projects in FY2016 was defined as 255 proposals of which 117 were funded. FY2017 data will be available later in 2017. 2. A report of all research proposals and awards is not included in this year's report but will be included next year. Outcomes on the specific CRI programs listed in Section E. are: <ul style="list-style-type: none"> • Distinguished Speaker Series was suspended due to a reduction in workforce. • Internal Research Seed Grant Program—12 awards totaling \$370,573 were given to eight departments. • Membership in four research consortia: Minority Serving Institutions STEM Research & Development Consortium (MSRDC); National Armaments Consortium – DoD Ordinance Technology Consortium (NAC-DOTC); Consortium for Command, Control and Communications in Cyberspace (C5); Consortium for Energy, Environment and Demilitarization (CEED). • OPD presented 28 seminars or workshops to faculty, staff or students in FY17. 3. Office of Technology Transfer (OTT) and Ventureprise are responsible for research commercialization. Outcomes include: <ul style="list-style-type: none"> • Twenty-four faculty and students participated in NSF I-Corps customer discovery (FY17). • Forty-one new inventions. • Eighty-two patent filings, including provisional, and 17 patents issued (FY16). • Five startup companies based on university IP (FY16). The startups were: <ul style="list-style-type: none"> - Optomill Solutions LLC (M. Davies, et al) - XOONIX LLC (R. Hudson) - NuChemie (C. Ogle) - SupriView (V. Astratov) - Myomy labs (Wlodek, Kripa) <p>SBTDC and Ventureprise are responsible for community entrepreneurship engagement. Outcomes include:</p> <ul style="list-style-type: none"> • Ventureprise business incubator in PORTAL served 24 early stage commercial ventures employing over 100 people and 15 UNC Charlotte student teams. • Beginning in February 2017, six regional community teams participated in the initial 10-week Ventureprise Launch customer discovery program cohort supported by the NC IDEA Foundation. • SBTDC business counselors served 656 clients and an additional 255 training event participants. • CRI hosted 30 industry visits, plus engagement with regional economic development groups informing 200+ regional leaders about UNC Charlotte. |
| I. Use of assessment findings: | <ol style="list-style-type: none"> 2. CRI assessment findings related to Section H.2 include: <ul style="list-style-type: none"> • CRI discontinued the Distinguished Speaker Series due to workforce reduction. The Seed Grant Program was rebranded as Targeted Research Internal Seed Program (TRISP). |



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| | <ul style="list-style-type: none">• CRI will continue to initiate and leverage targeted consortia memberships for more industry partnerships and collaborations with other universities. There are more than 100 R&D companies and 75 universities to engage. <p>3. CRI assessment findings related to Section H.3 include:</p> <ul style="list-style-type: none">• CRI's outreach to industries and universities for collaboration will continue.• CRI will work with University City Partners to host two meetings and three meetings with the Charlotte Regional Partnership. CRI will continue to work with economic development partners, as needed, to connect with new businesses moving to the region. <p>Ventureprise modified its mission and organization structure, and will complete the transition by December 2017, to focus primarily on university entrepreneurship and innovation.</p> |
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II. NEW STRATEGIC GOALS, ACTION PLANS AND PERFORMANCE OUTCOMES

A. Research and Economic Development Goal #3: QUALITY

B. Relationship of goal/objective to next higher reporting unit goal: This goal supports Academic Affairs Goal #2: To expand the frontiers of knowledge and leverage discovery for the public benefit through innovative programs that span the disciplines in research, creative activities, and graduate education.

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| C. Unit, Dept. or College Objective: | <ul style="list-style-type: none"> • Foster and support research quality and integrity. • Consistently invest in employee development. |
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| D. Actions/Tactics: | <ol style="list-style-type: none"> 1. Enhance the Research and Economic Development (R&ED) employee experience through a comprehensive orientation plan that incorporates an ongoing professional development and mentoring program. 2. Maintain accredited compliance programs using the highest standards and nationally-recognized best practices by continually examining, improving, and reporting on the programs' growth and achievements. 3. Encourage R&ED employees to achieve certifications and accreditations in their areas of responsibility and expertise, and provide increased opportunities to recognize their achievements in supporting faculty research at UNC Charlotte. 4. Establish a Responsible Conduct of Research (RCR) Education Advisory Committee to provide institutional leadership for implementing and evaluating RCR instruction, and to explore ways to broaden RCR participation. <i>Future Project.</i> |
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| E. Assessment Methodology/Measures: | <ol style="list-style-type: none"> 1. Track/document the number of R&ED employees participating in professional development programs, both, on and off-campus (e.g., attending HR-sponsored sessions, business certificate programs, etc.) as well as attending regulatory conferences. Track the number of campus participants who attend training sessions or certificate programs sponsored by R&ED. 2. Track requirements and deadlines necessary for accreditation. Perform annual self-assessments of eligible programs to evaluate whether the program(s) meet the standards required for maintaining or achieving accreditation. 3. Ensure that all staff whose jobs require special certifications have opportunities to achieve/maintain those certifications. Track R&ED staff who receive certifications and recognize recipients monthly, as part of the R&ED Staff Recognition Program. 4. <i>Future Project.</i> |
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| F. Performance Target/Expected Outcomes: | <ol style="list-style-type: none"> 1. R&ED employees will be actively engaged in staying up-to-date on best practices and regulatory requirements in a heavily regulated environment. R&ED will develop and implement training opportunities and information sessions for campus participants to aid them in staying up-to-date with regulations and how those regulations impact their jobs. 2. Programs in R&ED that are or can be accredited will achieve or maintain accreditation status. 3. All staff whose jobs require special certifications will achieve/maintain those certifications. 4. <i>Future Project.</i> |
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| <p>G. Resources Required:</p> | |
| <p>H. Analysis of Assessment Findings:</p> | <p>1. Professional development opportunities are provided to all R&ED employees. These opportunities are tailored to fit each individual's job responsibilities and include attending professional conferences and workshops, webinars, and on-campus professional development programs. As a result of these professional development opportunities, our staff are subject matter experts, and relied upon by the research community at UNC Charlotte and our peer institutions.</p> <p>Training sessions and outreach programs developed or sponsored by R&ED are offered to campus participants and students. Training includes a structured in-person program for college and departmental research administrators and multiple compliance oriented training resources to faculty and students (both online and in-person). A vacant position has temporarily reduced the number of training programs offered by the Office of Research Services & Outreach (ORSO) this fiscal year.</p> <p>Examples of professional development opportunities include:</p> <ul style="list-style-type: none"> • ABSA Annual Biosafety Conference • AUECO Annual Export Control Conference • PRIM&R Annual Advancing Ethical Research Conference • PRIM&R IACUC Conference • American Association for Laboratory Animal Science National Meeting • Society of Research Administrators International Annual, Section and North Carolina Chapter Meetings • Council on Governmental Relations Meetings (3 per year) • NCURA Annual Regional Meeting • EDUCAUSE Annual Conference • Webfocus User Group Conference • Association of University Technology Managers Annual Conference • Global Consortium of Entrepreneurship Centers Annual Conference • National Council of Entrepreneurial Tech Transfer: University Startups Conference and Demo Day • SPARC Meetings held twice each year for all UNC System research administrators • NIH Grants Management Workshop • Ellucian (Banner) Live Annual Conference • Lexmark (Perceptive Content) Inspire Annual Conference • University Industry Demonstration Partnership Annual Conference • National Contract Management Association Training • Executive Women International Annual Leadership Meeting • NCSHRM State Conference • SACUBO CBMI Conference • Fred Pryor Training Courses <p>Examples of training and outreach offered to campus participants include:</p> |



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| | <ul style="list-style-type: none"> • Certificate Program in Grants & Contracts Administration (<i>15 participants</i>) • Fundamentals of Research Administration training (<i>to be resumed next year</i>) • Research Administrator’s Council meetings (<i>15 participants</i>) • CITI – various research compliance training modules (<i>approximately 2,000 training modules completed</i>) • Conflict of Interest online training (<i>325 individuals</i>) • IRB electronic system (IRBIS) training meetings (<i>~75 attendees</i>) • Biosafety training presentations for faculty and students (<i>~50 attendees</i>) • Autoclave training for faculty and students (<i>~55 attendees</i>) • Biosafety Cabinet training for students (<i>14 attendees</i>) • Export control training presentations (<i>~30 attendees</i>) • Monthly Conversations over Coffee with College Research Officers (<i>8 individuals</i>) • Individual Training upon request by college research teams (<i>10 teams</i>) <p>2. R&ED compliance programs that have achieved accreditation, have maintained accreditation over the past year. This includes maintaining AAALAC accreditation and having a successful USDA inspection. The accreditation process ensures that these programs function with the highest standards and nationally recognized best practices.</p> <p>3. R&ED’s previous and continued support of staff achievements/certifications helps our staff provide up-to-date information and guidance on best practices to UNC Charlotte researchers and department staff. All SBTDC staff must complete at least 40 hours of continuing professional education each year. Vivarium: Conducted 68 face-to-face training sessions to include anesthesia, euthanasia and handling and restraint proficiency. Worked with ORC to implement online, annual IACUC certification training.</p> <p>4. <i>Future Project.</i></p> |
| <p>I. Use of assessment findings:</p> | <ol style="list-style-type: none"> 1. Continue to support professional development of R&ED staff and training for campus participants in order to facilitate quality research, compliance with federal regulations, ensure that our staff remain subject matter experts, and provide the technological needs of R&ED and their customers. R&ED will support additional opportunities to ensure that employees maintain up-to-date knowledge of changes to federal regulations and provide additional workshops and training sessions for college and departmental administrators and faculty researchers. 2. Maintain accreditation through training, oversight and implementation of best practices. Continue to assess opportunities to achieve accreditation and strive to follow the standards set by accrediting organizations for our unaccredited compliance programs. 3. Provide continued support to staff to achieve/maintain certifications, thereby enabling best practices and overall quality research. Performance evaluations will be used to recommend specific continuing professional education. Pursue opportunities for obtaining new certifications that support R&ED’s objectives. |



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Biosafety Officer will apply for Registered Biosafety Professional and Certified Biological Safety Professional certification during the next fiscal year.

Vivarium: Increased involvement with faculty, staff, students and partners.

4. *Future Project, pending filling of vacant position.*



III. NEW STRATEGIC GOALS, ACTION PLANS AND PERFORMANCE OUTCOMES

A. Research and Economic Development Goal #4: SERVICE:

B. Relationship of goal/objective to next higher reporting unit goal: This goal supports Academic Affairs Goal #1: To educate a diverse student body through an integrated academic experience that positions graduates for personal success and civic responsibility in the global environment of the 21st century; and Academic Affairs Goal #2: To expand the frontiers of knowledge and leverage discovery for the public benefit through innovative programs that span the disciplines in research, creative activities, and graduate education.

C. Unit, Dept. or College Objective:

- Be known by all stakeholders for excellent customer service by:
- Being highly responsive to the needs of faculty, students, and partners.
 - Communicating well.

D. Actions/Tactics:

1. Provide tools and resources to improve communication between Research & Economic Development (R&ED) and its customers.
2. Increase coordination between central office personnel and college research administrators in order to provide improved service to Principal Investigators.
3. Improve customer service by R&ED staff by improving response and turnaround times for all R&ED initiatives supporting faculty research.
4. Complete a study, in consultation with the College Deans and Academic Affairs, to develop a process for identifying, creating, operating, and decommissioning core laboratory facilities. *Future Project.*

E. Assessment Methodology/Measures:

1. The Advancement of University Research (AURA) team will identify new communication tools, such as social media, to improve communication between R&ED and its customers.
2. The Office of Research Services & Outreach (ORSO) Director will increase involvement with CCI, COED, and the UI.
3. The Office of Conflict of Interest (COI) will collect baseline data on the implementation of management plans and determine if there are opportunities to improve the process, particularly in cases where funding was delayed.
3. R&ED will capture metrics, which measure customer service by function from the Office of Research and Economic Development and make these metrics transparent to the university community. These include:
 - response time for fund set-up
 - turnaround time for proposal approvals
 - contracting office turnaround time
4. Study: *Future Project*

F. Performance Target/Expected Outcomes:

1. AURA: Additional communication tools will continue to be explored.
2. ORSO: At least one formal meeting per year will occur between ORSO and the college-based research officers. Interactions via Lite Bites, RAC, etc. will be encouraged.
3. Customer Service Metrics
 - COI: Performance Target will not unduly delay funding or research.
 - GCA: The team will complete award set-up in no more than five business days.
4. Study: *Future Project*



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| <p>G. Resources Required:</p> | |
| <p>H. Analysis of Assessment Findings:</p> | <ol style="list-style-type: none"> 1. AURA: The use of the Facebook pages is popular with CRI business partners and local government entities, such as the Charlotte Chamber of Commerce. The CRI business partners often repost articles that are posted on the R&ED sites. The traffic has increased on the pages as the businesses that follow R&ED increases. 2. ORSO: Proposal submission data from the past year shows all proposals were submitted on time to meet sponsor deadlines. For some, the internal approval process still shows some proposals moving through the process on the day they are due, but implementing a proposal approval process policy with a designated number of days for all approvals to be acquired will cut down on the number of delays. 3. COI: Data from the past year shows that no funding or research was unnecessarily delayed due to the implementation of management plans. On average, management plans took 60 days to implement, with the COI Manager responsible for approximately 12 percent of that timeframe. GCA: The team has maintained the commitment to setup grant funds within five business days based upon the setup report. OTT: The analysis of the metrics kept on presentations given, identified groups on campus that required more knowledge about the services offered by OTT. 4. Study: <i>Future Project</i> |
| <p>I. Use of assessment findings:</p> | <ol style="list-style-type: none"> 1. AURA: Communication will continue on Facebook but will now expand to include YouTube. Videos have begun to be produced to showcase CRI business partners and research faculty and will be published on the UNC Charlotte YouTube site, R&ED Facebook pages and websites. The videos will also be accessible via a link to faculty and CRI business partners to use as marketing material. 2. ORSO: Continue to ensure that proposals are submitted by the deadline and encourage the college-based research offices to improve internal approval times where needed. 3. COI: Continue to ensure that funding or research are not unnecessarily delayed. While the current process makes it possible to implement a management plan within 7–10 days, additional measures shall be taken to improve responsiveness of those involved in the review and approval process and significantly reduce the average implementation time. GCA: The team will continue to use the setup report to track and maintain compliance with completing fund setup in five business days. OTT: The analysis of the metrics found there was an opportunity to improve the interaction with the College of Arts & Architecture. OTT staff will approach the Dean and various faculty in the College to determine if services can be provided to them. 4. Study: <i>Future Project</i> |