

FY 2020/Institutional Effectiveness

Research and Economic Development

Start: 7/1/2019

End: 6/30/2020

Department/Unit Contact:

Francis Otuonye

Mission/Vision/Goal Statement

Vision: Tennessee Tech will emerge as a prominent technological university for research with national impact.

Mission: The Office of Research and Economic Development (ORED) provides support and assistance to administrators, faculty, staff, and students in their efforts to secure external funding for research and scholarly activities. ORED reviews, negotiates, approves, and provides administrative oversight of proposals and awards in compliance with applicable laws, policies, and regulations. Additionally, ORED facilitates the protection and commercialization of intellectual property developed by TTU, and supports activities that promote economic development.

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Goal

Goal 1: Develop and encourage activities to increase extramural funding.

Intended Outcomes/Objectives

Objective 1.1: Provide initiation grants for individual and interdisciplinary research projects.

Objective 1.2: Provide assistance with proposal preparation.

Objective 1.3: Offer proposal and faculty research development workshops and training.

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Goal 1 Assessment Tools

Goal 1: Develop and encourage activities to increase extramural funding.

- **Objective 1.1:** Provide initiation grants for individual and interdisciplinary research projects.
Method of Assessment: Amount of initiation grants/support provided for research growth from Faculty Research Grants and other Office of Research funds.
- **Objective 1.2:** Provide assistance with proposal preparation.
Method of Assessment: Track number of proposals submitted by faculty; administer satisfaction surveys; track value of all proposals submitted.
- **Objective 1.3:** Offer proposal and faculty research development workshops and training.
Method of Assessment: Track number of proposal development workshops; administer satisfaction surveys; track number of awards received; total value of awards received.

Targets

1. The Office of Research set the target for Objective 1.1 at \$130,000 for the 2019/20 fiscal year to align with its goal for providing Faculty Research Grants and some travel funds to faculty.
2. The target for Objective 1.2 will continue to be 3% above (or 256) the 2018/19 target of 249 proposals submitted with a corresponding 3% increase in value above (or \$73M) the \$70.7M target in 2018/19 because we did not hit our target for last year. This decline in number of proposals submitted was the result of more collaborative proposals, involving several different faculty, that should result in larger funding results in later fiscal years.
3. The target for the number of proposal development workshops (training) in Objective 1.3 will remain at seven for the 2019/20 reporting period. Although the target will remain the same, we are continuously increasing the amount of training we provide as we highlight areas of great importance to funding agencies.
4. To align with the University's five-year initiative that calls for the \$20.2M in externally sponsored research earned in 2018/19 to be doubled, the Office of Research will set its 2019/20 target at 15% above the number and value of awards received in the 2018/19 reporting period. Therefore, the 2019/20 target for number of awards received will be 171, and the target value of those awards will be \$22.7M. If the target is increased 15% each year, the \$39.4M goal for 2024 should be achieved.

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Goal 1 Results

Table 1 (attachment Goal 1 _Table 1_Appendix A) is a summary of external awards for each fiscal year within the last five years. Data for each year of funding are presented in the annual reports that are widely distributed to the University community and posted on the Research website at the link <https://www.tntech.edu/research/reports/annual-reports.php>. The value of initiation grants decreased this year and included only the amount of Faculty Research Grants. The Office of Research and Economic Development did not provide research-initiation funds this year due to budget restrictions. The number of awards received decreased this fiscal year, and the value of the activations also decreased by a small margin.

Results

Goal 1 and the corresponding objectives and targets are shown in Table 2.

Table 2. Goal 1--Develop and Encourage Activities to Increase Extramural Funding.

	Objective	Methods of Assessment	Frequency	2018/19 Targets	2018/19 Results	2019/20 Targets	2019/20 Results
1.1	Provide initiation grants for individual and interdisciplinary research projects	Amount of initiation grants/support provided for research growth	Annually	\$217K	\$263K	\$130K	\$105K
1.2	Provide assistance with proposal preparation	Track number of proposals submitted by faculty; administer satisfaction surveys	Annually	249	168	256	194
		Track value of proposals submitted	Annually	\$70.7M	\$49.3M	\$73M	\$40M
1.3	Offer proposal and faculty research development workshops and training	Track number of proposal development workshops; administer satisfaction surveys	Annually	7	3	7	4
		Track number of awards received	Annually	155	149	171	154
		Total value of awards received	Annually	\$14.9M	\$19.7M	\$22.7M	\$20.1M

During the 2019-2020 fiscal year, the Grant Development Manager made the following presentations regarding services provided by the Office of Research, identification of funding opportunities, and proposal development:

- June 4, 2020: EDU 7040 Class
- February 6, 2020: Research 101: Best Practices in Proposal Development
- November 5, 2019: EDU 7000 Class
- September 26, 2019: Research 101 Workshop: Sponsored Projects Overview
- October 31, 2019: Research 101: Identify Funding Opportunities

The 2020 Annual Office of Research survey was developed using Qualtrics. A link was sent to faculty via the faculty listserv on May 13th and also included in Tech Times. The link was also sent directly to any faculty and staff listed as PI or Co-PI on a proposal or activation in Fiscal Year 2020, as well as all Center fiscal clerks. Reminders were sent on May 20th (targeted list) and 25th via the faculty listserv. Faculty were given a two-week window of time to complete the survey. Eight-seven individuals started the survey and forty-eight completed it.

Survey questions are included below:

- How can we improve the services and/or resources currently offered by the Office of Research?
- What additional services and/or resources can be offered to enhance and support your scholarship efforts?
- Within the guidelines provided by funding agencies and Tennessee Tech policies, what suggestions do you have regarding ways to streamline our processes?
- Please provide any additional feedback that you would like to share with the Office of Research staff

Additionally, a few optional demographic questions were asked to provide a breakdown of respondents.

The responses, comments, and recommendations will be used for modification and improvement of subsequent activities, and replication of the assessed event. The summary of the comments is presented as the attachment titled "Copy of Results_2020ResearchAnnualSurvey.xlsx."

Overall, faculty have been supported, encouraged, and provided incentives to increase the level of externally sponsored activities. It is anticipated that the impact of these investments will continue to increase and will enhance TTU's research posture regionally and nationally.

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Goal

Goal 2: Develop and encourage activities to enhance innovation.

Intended Outcomes/Objectives

Objective 2.1: Provide initiation grants for innovative ideas that might result in invention disclosures.

Objective 2.2: Provide funding for filing patents and copyrighted materials.

Objective 2.3: Seek opportunities to inform angel investors and venture capitalists of inventions in the University intellectual property portfolio.

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Goal 2 Assessment Tools

Goal 2: Develop and encourage activities to enhance innovation.

Objective 2.1: Provide initiation grants for innovative research projects that might result in invention disclosures. Method of Assessment: Track number of inventions disclosed.

Objective 2.2: Provide funding for filing patents and copyrighted materials.

Method of Assessment: Track number of inventions disclosed.

Objective 2.3: Seek opportunities to inform angel investors of intellectual property in TTU portfolio.

Method of Assessment: Track number of inventions disclosed.

Targets:

There will be a continuing effort in 2019/20 to convert invention disclosures to patent applications and to license the inventions in the University's portfolio. Since the target 5% increase was not met for the 2018/19 reporting period, the target for 2019/20 will remain at 11 for the number of inventions disclosed.

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Goal

Goal 3: Identify activities that could potentially improve the economic environment of the region.

Intended Outcomes/Objectives

Objective 3.1: Provide support to, and collaborate with, public and private sectors in economic development activities.

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Goal 3 Assessment Tools

Goal 3: Identify activities that could potentially improve the economic environment of the region. **Objective 3.1:** Provide support to and collaborate with public and private sectors in economic development activities. **Method of Assessment:** Track number of projects resulting from industry contacts and the total amount of the contracts.

During the 2018/19 reporting period, 69 projects valuing \$72,575 resulted from industry contacts. These projects came through the testing facilities of our Centers of Excellence. Since this is a relatively new assessment method, and trends cannot be seen yet, the targets for the 2019/20 reporting period will remain the same as the results from last year: 69 projects and \$72,575 in funding.

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Goal 3 Results

The ORED tracked progress toward Goal 3 in terms of number of projects resulting from industry contacts and the amount of funding earned from those projects, specifically by determining the number and amount of testing projects this fiscal year and the number of industry projects performed by students in their Capstone courses. The results are shown in the following table and the more-detailed attached PDF file.

Also, through economic development outreach provided by the University's Tennessee Center for Rural Innovation, 10 new jobs have been created within the project region this fiscal year.

Table 1. Goal 3--Number and Value of Projects Resulting from Industry Contacts.

	Objective	Methods of Assessment	Frequency	2019/20 Targets	2019/2020 Results
3.1	Provide support to and collaborate with public and private sectors in economic development activities	Track number of projects resulting from industry contacts	Annually	69	216
		Track total amount of the contracts resulting from industry contacts		\$72,575	\$98,043

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Improvements to Assessment Plan

For 2020-2021, the ORED will continue to follow the implemented changes in how Goal 1, Objective 1.1, and Goal 3, Objective 3.1, were assessed. This year's results for Goal 1, Objective 1.1, included amount of initiation grants/support provided from Office of Research funds as well as Faculty Research Grants. The results for Goal 3, Objective 3.1, showed the number of Capstone design projects done by students for industry sponsors and the number and monetary value of service testing projects by the Centers of Excellence for external entities. These numbers better show whether industry contacts lead to tangible funded projects.

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Modifications and Continuing Improvement to Goals/Objectives/Outcomes

The ORED conducts an annual qualitative survey to assess the level of interest and satisfaction in its resources and services. A summary of those results is in the Goal 1 results section.

The main themes of the 2019-2020 survey responses can be found in the attachment for Goal 1 (Copy of Results_2020ResearchAnnualSurvey.xlsx). The Provost's Office, in coordination with the Center for Innovation in Teaching and Learning, has been conducting training sessions for the faculty, and the ORED works with those offices to incorporate research-themed components. The ORED also plans to facilitate its own fall training workshops geared solely toward the research process.

The ORED plans to continue to produce its own email newsletter, featuring relevant information distributed to faculty and staff involved in the research process. Research-related announcements will also continue to be published in the *Tech Times*, which now features a research-only section.

These efforts will address comments in the survey to yield improved results in the 2020-2021 satisfaction survey. The ORED may consider revising the survey to provide more quantitative response and identify dominant themes.