


UNIT REPORT

**Sponsored Research - Institutional  
Effectiveness Final Annual Report  
2019**

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## Definition of Unit

### Research and Economic Development

**Reporting Year:** 2018-2019

**Providing Department:** Sponsored Research

**Department/Unit Contact:** Francis Otuonye

**Mission/Vision/Goal Statement:**

**Vision:** Provide research support that will allow Tennessee Tech University to emerge as a leader in collaborative-interdisciplinary-innovative-creative-entrepreneurial research and development that will help solve societal and industrial problems that are of critical importance to workforce and economic development of the Upper Cumberland region and the State of Tennessee. **Mission:** Our mission is three-fold.

- Sponsored and scholastic research: support, inspire, provide incentives for faculty to pursue sponsored and scholastic research and grow a sponsored research program.
- Innovation: develop and inspire innovation and an entrepreneurial culture of students and faculty on campus.
- Economic development: support economic development of the Upper Cumberland region and the State through research developed at the University.

## Goal/Objective/Outcome

### Goal 1

**Define 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.

## Goal 2

### Define 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.

## Goal 3

### Define 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.

# Assessment Tools

## Goal 1 Assessment Tools

**Goal/ Outcome/ Objective:** Goal 1

**Type of Tool:** Tracking Spreadsheet

**Frequency of Assessment:** Annually

### Rationale:

**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.

The target of \$217K for objective 1.1 was established using the 2017/18 results to align with the trend in initiation grants funded and resources provided by the Office of Research.

As trends show a decline in faculty pursuit of externally funded research and creative activities, the target for objective 1.2 was lowered from five percent to three percent above (or 249) the 2017/2018 target of 242 proposals submitted with a corresponding three percent increase in value above (or \$70.7 M) the \$68.6 M target in 2017/18.

The target for the number of proposal development workshops (training) in objective 1.3 remained at seven for the 2018/19 reporting period. In addition, the targets for the number of awards received and the value of those awards were lowered from five percent to three percent above (or 155 awards) the 151 target awards in the 2017/18 reporting period. The target for proposal value was set at three percent above (or \$14.9M) the \$14.5M target in the 2017/18 year.

## Goal 2 Assessment Tools

**Goal/ Outcome/ Objective:** Goal 2

**Type of Tool:** Tracking Spreadsheet

**Frequency of Assessment:** Annually

### Rationale:

**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.

There will be a continuing effort in 2018/19 to convert invention disclosures to patent applications and to license the inventions in our portfolio. Since the target five percent increase was not met for the 2017/18 reporting period, the target for 2018/19 will remain at 11 (and the target percent increase would be only three percent, which would be a negligible change from last year's target) for the number of inventions disclosed.

### Goal 3 Assessment Tools

**Goal/ Outcome/ Objective:** Goal 3

**Type of Tool:** Tracking Spreadsheet

**Frequency of Assessment:** Annually

**Rationale:**

**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.

As the Method of Assessment is new for this year, the 2018/19 reporting period results will be used as a baseline to establish future targets.

## Results

### Goal 1 Results

**Goal/Objective/Outcome Number:** Goal 1

**Results:**

Table 1 (attachment Goal 1\_Table 1\_Appendix A\_2) 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 increase in the number of initiation grants is due to the increase in the amount of start-up packages funded to initiate faculty projects, and we have continued to include other amounts provided to faculty beyond just the Faculty Research Grants. The number of awards received decreased this fiscal year, but the increased value of activations caused the actual amount of the awards to increase.

**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	2017/18 Targets	2017/18 Results	2018/19 Targets	2018/19 Results
1.1	Provide initiation grants for individual and interdisciplinary research projects	Amount of initiation grants/support provided for research growth	Annually	\$93K	\$217K	\$217K	\$263K
1.2	Provide assistance with proposal preparation	Track number of proposals submitted by faculty; administer satisfaction surveys	Annually	242	185	249	168
		Track value of proposals submitted	Annually	\$68.6M	\$52.3M	\$70.7M	\$49.3M
1.3	Offer proposal and faculty research development workshops and training	Track number of proposal development workshops; administer satisfaction surveys	Annually	7	8	7	3
		Track number of awards received	Annually	151	173	155	149
		Total value of awards received	Annually	\$14.5M	\$16.3M	\$14.9M	\$19.7M

During the 2018-2019 fiscal year, the Grant Development Manager made presentations to the following classes regarding services provided by the Office of Research, identification of funding opportunities, and proposal development.

- November 6, 2018: EDU 7000: Finding Funding: Where to Start – presentation on SPIN, grants.gov, and best practices in proposal development
- February 18, 2019: EVS 7900: Finding Funding: Where to Start - presentation on SPIN, grants.gov, and best practices in proposal development
- June 6, 2019: EDU 7040: Introduction to Sponsored Projects, Funding Sources, Proposals, and the Office of Research

The 2019 Annual Office of Research survey was developed using Qualtrics. A link was sent to faculty via the faculty listserv on April 16. Reminders were sent on April 23 and April 30. Faculty were given a two-week window of time to complete the survey. One hundred twenty-three individuals opened the survey and 50 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?
- Additional feedback that you would like to share with the Office of Research staff.

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 “AnnualSurveySummary2019\_Results Goal 1.”

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.

**Attachments:** Attached Files

- [AnnualSurveySummary2019\\_Results Goal 1.pdf](#)
- [Goal 1 Table 1 Appendix A 2.pdf](#)

**Goal 2 Results**

**Goal/Objective/Outcome Number:** Goal 2

**Results:**

Results of intellectual property activity since 2014/15 are provided in Table 1. During the 2018/19 academic year, the number of disclosures was three.

Table 1. Historical Intellectual Property Activity.

	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19
Invention Disclosures	4	15	8	7	3

The following table shows the performance toward the individual objectives of Goal 2.

Table 2. Goal 2 -- Develop and Encourage Activities to Enhance Innovation.

	Objective	Methods of Assessment	Frequency	2018/2019 Targets	2018/2019 Results
2.1	Provide initiation grants for innovative research projects that might result in invention disclosures.	Track number of inventions disclosed.	Annually	11	3
2.2	Provide funding for filing patents and copyrighted materials.	Track number of inventions disclosed.	Annually	11	3
2.3	Seek opportunities to inform angel investors of intellectual property in TTU portfolio.	Track number of inventions disclosed.	Annually	11	3

Attachments:

### Goal 3 Results

Goal/Objective/Outcome Number: Goal 3

**Results:**

This year, it was planned to track progress toward Goal 3 in terms of number of projects resulting from industry contacts and the amount of funding earned from those projects. The Office of Research has tracked that goal 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, eight new jobs have been created within the project region since its inception in June 2017.

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

	Objective	Methods of Assessment	Frequency	2018/2019 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
		Track total amount of the contracts resulting from industry contacts		\$72,575

Attachments: Attached Files

[Goal 3 Detailed List.pdf](#)

## Modifications and Continuing Improvement to Goals/Objectives/Outcomes

### Modifications and Continuing Improvement to Goals/Objectives/Outcomes

Goal/Objective/Outcome Number:

**Program Changes and Actions due to Results:**

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 theme of the 2018-2019 survey responses centered on the need to improve communication and training. Since the Provost's Office had already begun planning fall training for faculty, the ORED coordinated with that office and requested incorporating 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 2019-2020 satisfaction survey. The ORED may consider revising the survey to provide more quantitative responses and identify dominant themes.

**Link to Assessment:**

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**Link to 'Tech Tomorrow' Strategic Plan:** Research, Scholar, Intellect, and Creativity  
Economic Development

## Improvement to Assessment Plan

### Improvement to Assessment Plan

**Improvements to Assessment Plan:**

Last fiscal year, the ORED 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/supported 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.