

AGENDA ITEM

A-2. Consideration of Targets David Powers

Situation: The Committees will establish necessary targets associated with goals and metrics.

Background: The Strategic Plan consists of five broad theme areas including: Access, Student Success, Affordability and Efficiency, Economic Impact and Community Engagement, and Excellent and Diverse Institutions. After several months of committee work, draft definitions, goals, and metrics were developed.

The next step is to establish targets. The following provides background information to aid in the decision making process.

Assessment: The Committees are to review information relevant to their goals and metrics to set targets for each.

Action: This item is for discussion and consent.

Economic Impact and Community Engagement Consideration of Targets

Goal #1: Critical Workforces

Background

This report shows the number of degrees awarded in each of the academic years from 2010-2015 in three critical workforce areas: health sciences,¹ STEM (science, technology, engineering, and math),² and K-12 education.³

Degrees, for the purpose of this report, include all credential levels that were awarded in each area (below bachelor's, bachelor's, post-baccalaureate certificate, master's, intermediate/specialist, and doctorate).

Analysis

Numerous reports have indicated strong demand for employees in these three critical workforce areas as described below.

Health Sciences: The need for healthcare workers is expected to expand by almost 30% by 2020 (Georgetown Center for Education and the Workforce, 2012).

STEM fields: There are mixed perspectives regarding demand for STEM credentials.

- Specific disciplines are increasing rapidly. For example, [McKinsey](#) predicts a 50-60% gap between supply and demand for data analytics talent by 2018.
- A 2012 US policy from President Obama's Council of Advisors called for 1 million additional STEM graduates to meet demand. There are several reports indicating the need for more STEM trained workers, but there are also some contradictory reports that argue that there is no shortage of STEM employees. A list of both is included in the Oct BOG working document.

K-12 education: US Department of Labor projects a 20% increase in jobs in the educational services sector, which includes K-12. Enrollment in education fields has been on the decline for years, so there is a clear need for more UNC-trained educators.

¹ Health Sciences degrees are those awarded in CIP code 51, "Health Professions and Related Programs."

² STEM is based on the Department of Homeland Security list of STEM designated degrees, from a variety of CIP codes. The list of these codes can be found at <https://www.ice.gov/sites/default/files/documents/Document/2016/stem-list.pdf>. The definition is modified by assigning all degrees with CIP code 51 to health sciences only so that the two areas are mutually exclusive.

³ Educator Preparation is based on UNC's dashboard definition, which is that Item 14 from the student data file has a value of Y or C.

To meet demand, UNC should increase the number of credentials awarded in these three fields. Table 1 summarizes the counts of degrees awarded in each area by year across all UNC institutions. Note that health sciences and STEM degree production has increased over this time period, while K-12 education degree production has decreased. The proposed target is to increase credentials in these three fields by an aggregate of 25%. As shown in Table 1, the greatest challenge will likely be related to K-12 education credentials, but with effective choice of interventions, the *aggregate* target is attainable.

Table 1. Degrees awarded in critical workforce areas by year, system-wide

	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	% change over 3 years	% change over 5 years
Health Sciences	5,154	5,431	5,799	6,058	6,349	9.5%	23.2%
STEM fields	9,869	10,487	11,038	11,612	11,977	8.5%	21.4%
K-12 Education	5,949	6,014	5,952	5,670	4,570	-23.2%	-23.2%
TOTAL	20,972	21,932	22,789	23,340	22,896	0.5%	9.2%
					25%	Additional Credentials Total Credentials	
					5,724		
					28,620		

Source: G:\Strategy and Policy\2016 Strategic Plan\Graduation Metric\critical workforce

Recommendation

Increase the number of credentials awarded in the fields of health sciences, STEM, and K-12 education by an aggregate of 25% by 2021-22.

Economic Impact and Community Engagement Consideration of Targets

Goal #2: Research Productivity

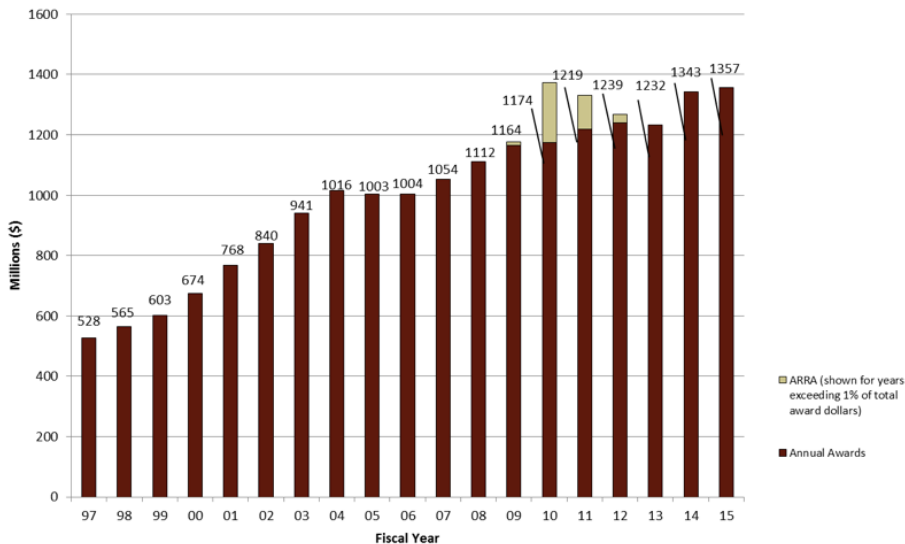
Background

This report describes recent performance in UNC research and in activities related to research commercialization. This background information will assist in target setting.

Analysis

Figure 1 demonstrates that from 2005 to 2010 R&D awards grew by approximately \$170 million, and from 2010 to 2015 awards grew by approximately \$185 million. If no intervention is implemented, R&D awards are estimated to increase by approximately \$185 million over the next five years. Thus, an aspirational goal may be to increase R&D awards by 5% more than the previous \$185M, meaning that R&D awards could be expected to increase by \$194 million over the next five years.

Figure 1. Trends in Sponsored Program Awards, FY97-FY15*



*To avoid double-counting, inter-institutional subagreements are not included in Annual Awards.

To determine an aspirational target that includes both R&D awards and licensing income, a target for licensing income must be added to the R&D target listed above. Table 1 (page 2) includes recent system-wide commercialization data and demonstrates that UNC commercialization activities have not always followed a clear upward trend.

Licensing income has averaged \$12M/year from FY12-FY15, and achieving increases in licensing income will take time even if interventions are put in place relatively quickly. With no intervention, UNC is expected to earn \$60M in licensing income over the next five years; a 5% increase would take UNC to \$63M. Thus, a reasonable combined target would be \$194M (see above) + \$63M = \$257M. This figure could be rounded up to \$275M to make the goal more ambitious and achieve a round number.

Table 1. Trends in Commercialization, FY12-FY15

	Invention Disclosures	US Patents Issued	Licenses or Options Executed	Start-ups	License Income
FY15 Totals	576	90	218	31	\$10,886,255
FY14 Totals	467	97	212	31	\$15,927,897
FY13 Totals	449	85	197	30	\$10,735,867
FY12 Totals	532	91	149	17	\$8,977,264

Recommendation

Increase combined revenue from research and development sponsored program awards and licensing income by \$275 million by 2021-22.

Economic Impact and Community Engagement Consideration of Targets

Goal #3: Community Engagement

Background

Upon approval of the UNC Strategic Plan, UNC General Administration will engage with NC legislators, the UNC Board of Governors, UNC institutions, and other stakeholders to identify two to three theme areas in which UNC can help North Carolina communities address the challenges that they are facing. In consultation with UNC General Administration, each UNC institution will select one theme area to address in its implementation plan.

Analysis

Fall 2018 is recommended as a reasonable date by which UNC institutions will have completed their implementation plans. Steps toward completing the implementation plans are likely to include, but are not limited to, the following:

- UNC General Administration works with stakeholders (see above) to identify two to three theme areas.
- Each UNC institution chooses a theme area.
- UNC institutions work with UNC General Administration to select appropriate metrics and targets.
- Each UNC institution drafts an implementation plan that describes the focus area (including any prior work that the institution has done in this area), outlines activities that will advance progress related to the focus area, proposes metrics and targets to monitor progress, and discusses how the plan will be implemented. Baseline data may be included if desired but is not a requirement for the implementation plan.

Recommendation

In consultation with UNC General Administration, the University's constituent institutions will each create an implementation plan to assist a North Carolina community in need by fall 2018.