

Date: February 2nd, 2018

To: WPI Board of Trustees Budget and Finance Committee

From: Committee on Financial and Administrative Policy (FAP)

Members: Nancy Burnham (Secretary), Tanja Dominko (Chair), Tahar El-Korchi, Fabienne Miller, Jeffrey Solomon - Executive Vice President/CFO, Kristopher Sullivan - Assistant Vice President for Academic Affairs

Re: Analysis of WPI's Institutional Administrative vs. Instructional Spending FY2010-FY2015

Introduction and Rationale

The relationship between administrative and instructional spending is central to institutional efficiency and reflective of institutional priorities. Institutions risk signaling misplaced priorities, which can have adverse effects on their ability to grow in areas pertinent to their academic missions, including attracting and retaining prominent faculty members. In addition, it raises issues of appearance, public image, and institutional morale.

FAP has completed an analysis of WPI's institutional administrative vs. instructional spending following The Guide to Controlling Administrative Costs through Effective Oversight that was issued in July 2017 by –the American Council of Trustees and Alumni's (ACTA) Institute for Effective Governance (<https://www.goacta.org/publications/controlling-administrative-costs>).

ACTA cautions that based on the broad definition of instructional cost and narrow definition of administrative cost used in this guide, the ratios reported likely underestimate the amount institutions spend on administration.

Methodology

The financial data from FY2010 through FY2015 that institutions reported to the U.S. Department of Education's National Center for Education Statistics (NCES), through its Integrated Postsecondary Education Data System (IPEDS) was compared between WPI and a group of its institutional peers:

FAP used ACTA recommendations and the following definitions for data analyses:

- The NCES definition of instructional cost = expenses reported in IPEDS as “**instruction**”, less the instruction subcategories of operations and maintenance of plant, depreciation, and interest, added to expenses reported in IPEDS as “**academic support**,” less the academic support categories of operation and maintenance of plant, depreciation, and interest.
NCES classifies as academic support “expenses for the support services that are an integral part of the institution's primary missions of instruction, research, and public service” and includes “expenses for museums, libraries, galleries, audio/visual services, ancillary support, academic administration, personnel development, and course and curriculum development,” as well as expenses for “academic administration where the primary function is administration (e.g., academic deans).”
- The NCES definition of administrative cost = expenses reported in IPEDS as “**institutional support**,” less the institutional support subcategories of operation and maintenance of plant, depreciation, and interest.
- The NCES definition of administrative/instructional cost ratio is defined as (administrative cost)/(instructional cost).

Findings

Table 1. Changes in Administrative vs. Instructional spending ratios for WPI and its peers between academic year 2009/2010 and 2014/2015

Administrative vs. Instructional Spending Ratios - 5 year change

| Institution Name | Carnegie | Control | Number Under graduates 1415 | Size | Group Median | Deviation from Group median 1415 | Ratio 1415 | Ratio 1314 | Ratio 1213 | Ratio 1112 | Ratio 1011 | Ratio 0910 | 5 year Change 0910 to 1415 | % Change from 0910 to 1415 |
|---------------------------------------|----------|---------|-----------------------------|------|--------------|----------------------------------|------------|------------|------------|------------|------------|------------|----------------------------|----------------------------|
| Rensselaer Polytechnic Institute | R2 | pr | 5618 | M | 0.32 | 0.00 | 0.32 | 0.32 | 0.38 | 0.36 | 0.47 | 0.44 | -0.12 | -27% |
| Rochester Institute of Technology | R3 | pr | 13460 | L | 0.33 | -0.18 | 0.15 | 0.18 | 0.20 | 0.20 | 0.21 | 0.20 | -0.05 | -24% |
| Illinois Institute of Technology | R2 | pr | 3099 | S | 0.28 | 0.14 | 0.42 | 0.48 | 0.41 | 0.36 | 0.28 | 0.45 | -0.03 | -6% |
| Case Western Reserve University | R1 | pr | 4911 | S | 0.27 | 0.00 | 0.27 | 0.27 | 0.27 | 0.28 | 0.27 | 0.28 | -0.01 | -3% |
| Stevens Institute of Technology | R2 | pr | 2892 | S | 0.28 | 0.00 | 0.28 | 0.27 | 0.38 | 0.31 | 0.28 | 0.27 | 0.01 | 2% |
| Clarkson University | R3 | pr | 3247 | M | 0.39 | -0.13 | 0.26 | 0.26 | 0.25 | 0.26 | 0.27 | 0.25 | 0.01 | 4% |
| Drexel University | R2 | pr | 16896 | L | 0.24 | 0.04 | 0.28 | 0.25 | 0.24 | 0.27 | 0.25 | 0.24 | 0.05 | 19% |
| Carnegie Mellon University | R1 | pr | 5888 | S | 0.27 | 0.00 | 0.27 | 0.25 | 0.25 | 0.23 | 0.24 | 0.22 | 0.05 | 20% |
| Tufts University | R1 | pr | 5177 | S | 0.27 | 0.02 | 0.29 | 0.29 | 0.23 | 0.22 | 0.22 | 0.23 | 0.06 | 28% |
| Worcester Polytechnic Institute | R2 | pr | 4235 | S | 0.28 | 0.05 | 0.33 | 0.25 | 0.31 | 0.28 | 0.18 | 0.19 | 0.14 | 74% |
| | | | | | | | | | | | | | | |
| California Institute of Technology | R1 | pr | 983 | S | 0.27 | 0.09 | 0.36 | 0.39 | 0.38 | 0.38 | 0.36 | 0.36 | 0.01 | 2% |
| Massachusetts Institute of Technology | R1 | pr | 4512 | S | 0.27 | 0.11 | 0.38 | 0.36 | 0.35 | 0.29 | 0.33 | 0.33 | 0.05 | 15% |

Carnegie – Research Classification; Control – pr = private; Size – defined by number of undergraduate students and research classification; Median – calculated median of Administrative vs. Instructional spending ratios of the entire group of universities within the same research classification, control and size; 1415 – Academic year 2014/2015; Green - the institution with median ratio in the peer group.

The ratio for WPI has fluctuated significantly around the median over the past 5 years. The 74% increase of Administrative/Instructional ratios at WPI during the 5-year period (the highest in the peer group) and significant year-to-year fluctuations deserve a closer review (Table 1).

Table 2. Administrative vs. Instructional spending ratios for WPI and its peers in 2014/2015 – lowest to highest

Administrative vs. Instructional Spending Ratios - sorted by ratio in 1415

| Institution Name | Carnegie | Control | Number Under graduates 1415 | Size | Group Median | Deviation from Group median 1415 | Ratio 1415 | Ratio 1314 | Ratio 1213 | Ratio 1112 | Ratio 1011 | Ratio 0910 | 5 year Change 0910 to 1415 | % Change from 0910 to 1415 |
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| Case Western Reserve University | R1 | pr | 4911 | S | 0.27 | 0.00 | 0.27 | 0.27 | 0.27 | 0.28 | 0.27 | 0.28 | -0.01 | -3% |
| Stevens Institute of Technology | R2 | pr | 2892 | S | 0.28 | 0.00 | 0.28 | 0.27 | 0.38 | 0.31 | 0.28 | 0.27 | 0.01 | 2% |
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| Rensselaer Polytechnic Institute | R2 | pr | 5618 | M | 0.32 | 0.00 | 0.32 | 0.32 | 0.38 | 0.36 | 0.47 | 0.44 | -0.12 | -27% |
| Worcester Polytechnic Institute | R2 | pr | 4235 | S | 0.28 | 0.05 | 0.33 | 0.25 | 0.31 | 0.28 | 0.18 | 0.19 | 0.14 | 74% |
| Illinois Institute of Technology | R2 | pr | 3099 | S | 0.28 | 0.14 | 0.42 | 0.48 | 0.41 | 0.36 | 0.28 | 0.45 | -0.03 | -6% |
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| Massachusetts Institute of Technology | R1 | pr | 4512 | S | 0.27 | 0.11 | 0.38 | 0.36 | 0.35 | 0.29 | 0.33 | 0.33 | 0.05 | 15% |

Carnegie – Research Classification; Control – pr = private; Size – defined by number of undergraduate students and research classification; Median – calculated median of Administrative vs. Instructional spending ratios of the entire group of universities within the same research classification, control and size; 1415 – Academic year 2014/2015; Green - the institution with median ratio in the peer group.

Table 3. Deviation from the median Administrative vs. Instructional spending in 2014/2015 – lowest to highest

Administrative vs. Instructional Spending Ratios - sorted by distance from peer median

| Institution Name | Carnegie | Control | Number Under graduates 1415 | Size | Group Median | Deviation from Group median 1415 | Ratio 1415 | Ratio 1314 | Ratio 1213 | Ratio 1112 | Ratio 1011 | Ratio 0910 | 5 year Change 0910 to 1415 | % Change from 0910 to 1415 |
|---------------------------------------|----------|---------|-----------------------------|------|--------------|----------------------------------|------------|------------|------------|------------|------------|------------|----------------------------|----------------------------|
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| Case Western Reserve University | R1 | pr | 4911 | S | 0.27 | 0.00 | 0.27 | 0.27 | 0.27 | 0.28 | 0.27 | 0.28 | -0.01 | -3% |
| Stevens Institute of Technology | R2 | pr | 2892 | S | 0.28 | 0.00 | 0.28 | 0.27 | 0.38 | 0.31 | 0.28 | 0.27 | 0.01 | 2% |
| Rensselaer Polytechnic Institute | R2 | pr | 5618 | M | 0.32 | 0.00 | 0.32 | 0.32 | 0.38 | 0.36 | 0.47 | 0.44 | -0.12 | -27% |
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| Massachusetts Institute of Technology | R1 | pr | 4512 | S | 0.27 | 0.11 | 0.38 | 0.36 | 0.35 | 0.29 | 0.33 | 0.33 | 0.05 | 15% |

Carnegie – Research Classification; Control – pr = private; Size – defined by number of undergraduate students and research classification; Median – calculated median of Administrative vs. Instructional spending ratios of the entire group of universities within the same research classification, control and size; 1415 – Academic year 2014/2015; Green - the institution with median ratio in the peer group.

Deviation of the WPI ratio from the median represents approximately \$3.8M dollars. If WPI’s intent was to bring the ratio to the group median, \$3.8M dollars less should be dedicated to the institutional support and \$3.8M dollars more to instruction and academic support.

For the Academic year 2015/2016, IPEDS changed recommendations for reporting of institutional spending and calculations of Administrative/Instructional ratios as recommended by ACTA is no longer possible. Instead, FAP used the available reported amounts (Totals only) for Instruction, Academic Support and Institutional support for calculating the ratios (Table 4).

Table 4. Administrative vs. Instructional spending ratios for WPI and its peers in 2015/2016 – lowest to highest

Administrative vs. Instructional Spending Ratios - 1516

| Institution Name | A Instruction-Total amount (F1516_F2) | B Academic support-Total amount (F1516_F2) | C Institutional support-Total amount (F1516_F2) | C/A+B Ratio 1516 |
|---------------------------------------|--|--|---|------------------------|
| Rochester Institute of Technology | \$ 257,188,000 | \$ 56,118,000 | \$ 50,373,000 | 0.16 |
| Carnegie Mellon University | \$ 401,775,222 | \$ 128,881,442 | \$ 117,747,687 | 0.22 |
| Stevens Institute of Technology | \$ 78,194,000 | \$ 29,596,000 | \$ 25,727,000 | 0.24 |
| Tufts University | \$ 253,254,075 | \$ 213,577,349 | \$ 116,316,216 | 0.25 |
| Clarkson University | \$ 57,979,595 | \$ 12,358,622 | \$ 18,468,394 | 0.26 |
| Drexel University | \$ 362,951,025 | \$ 173,304,398 | \$ 150,884,103 | 0.28 |
| Rensselaer Polytechnic Institute | \$ 131,705,000 | \$ 24,241,000 | \$ 46,064,000 | 0.30 |
| Worcester Polytechnic Institute | \$ 106,640,000 | \$ 16,011,000 | \$ 38,820,000 | 0.32 |
| Case Western Reserve University | \$ 311,880,106 | \$ 21,875,899 | \$ 110,751,144 | 0.33 |
| Illinois Institute of Technology | \$ 86,898,000 | \$ 19,447,000 | \$ 57,225,000 | 0.54 |
| | | | | |
| California Institute of Technology | \$ 220,440,000 | \$ 48,434,000 | \$ 82,168,000 | 0.31 |
| Massachusetts Institute of Technology | \$ 805,883,000 | \$ 352,224,000 | \$ 530,758,000 | 0.46 |

Summary and Recommendations

In addition to other benchmarking measures currently being presented, the Budget and Finance Committee of the Board of Trustees may want to consider ACTA Guidelines in its assessment of the institution's cost structure. This may include:

- Yearly review of the institution's administrative/instructional cost ratio
- Further consideration of ways to reallocate costs to achieve strategic goals and objectives in an efficient manner.

The Board's Audit Committee may want to monitor whether implementation of Institutional Research and Workday is resulting in improved and consistent reporting of institutional data so that year over year comparisons are more meaningful.