



UNIVERSITY OF SASKATCHEWAN

# College of Medicine

MEDICINE.USASK.CA

2014–2019

## Research Productivity Report



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Vice-Dean Research, College of Medicine  
University of Saskatchewan  
2014–2019



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## Executive Summary

### Background

The Office of the Vice-Dean Research (OVDR) presents the 2018/2019 Research Productivity Report for the College of Medicine (CoM), using data from previous years for comparison. This internal report will serve as a baseline to aid in defining a range of criteria and benchmarks to measure our research productivity as a medical college.

Measuring our research productivity using bibliometrics and funding data, the report focuses on research-active faculty of the CoM and provides data broken down by College and then department/division/school. The data thus compiled are presented in descending order by number of faculty per department/division/school. All information is up to date as of May 1, 2019.

### CoM Research Productivity

The collected bibliometrics data signify that overall, the CoM research community is demonstrating improved research impact indicators, as well as an overall increase in funding awards (including dollar amounts as well as number of research projects awarded). See section 2. for details.

### CoM Research Funding and Research Projects Awarded

CoM researchers received a total of **\$28,701,019** in research funding in 2018/2019, an increase from **\$22,740,805** in 2015/2016. This increase is associated with higher number of new awards (**366** new awards in 2018/2019 versus **232** new awards in 2015/2016) and a higher number of individual faculty receiving awards (**269** individual faculty in 2018/2019 versus **128** in 2015/2016).

### Publications, Citations and H-index

CoM faculty published **1112** scholarly articles in the year ending 2018, an increase from **1015** at the beginning of the 5-year publication trend (2014). In 2018, the average number of publications per researcher per year increased to **3.6** publications compared to **3.3** in 2014.

Gathered data indicate an increase in total faculty citations from **35,959** in 2014 to **38,399** in 2018. The average number of citations per researcher per year also rose, from **116.4** in 2014 to **124.3** in 2018.

Ending the 2018 calendar year, CoM researchers had an aggregate 5-year h-index of **2911**, with a **9.4** 5-year average h-index per faculty.



# 1. Methodology and Descriptions

## 1.1 Research-Active Faculty

In May 2018, the OVDR requested that Department Heads determine the number of research-active faculty in their department/division/school based on three indicators: 1) research funding, 2) student/trainee research supervision and 3) research dissemination activities (peer-reviewed publications and presentations). Based on these criteria, Heads submitted a list of research-active faculty to the OVDR. Staff then confirmed that the submitted faculty held primary academic appointment at the College (using FileMaker and consulting the Dean's Office as necessary) and requested that research-active faculty submit a link to a current, public [Google Scholar](#) profile. Staff verified each Google Scholar profile as public, current and active.

Based on the information gathered, this report includes data from **309** identified research-active faculty from **17** departments, schools and divisions<sup>1</sup>.

## 1.2 Awarded Research Funding, Research Projects Awarded and Number of Faculty Awarded

The *Research Funding* and *Research Projects Awarded* data presented in this report were collected from the University of Saskatchewan Data Warehouse and [UView](#) Portal. Data are restricted to funding administered through the University of Saskatchewan and include fiscal years 2015/2016, 2016/2017, 2017/2018 and 2018/2019. Per the financial reporting standards used by the University of Saskatchewan, fiscal years run from May 1 to April 30.

*Research Funding* and *Research Projects Awarded* include sub-transfers, travel awards, and awards from other institutions where CoM faculty are a Co-Investigator. *Number of Projects Awarded* is the total number of new research projects awarded for a fiscal year, whereas *Number of Faculty Awarded* is the total number of faculty that received research awards. *Number of Faculty Awarded* are corrected to omit duplicates, as faculty often receive multiple awards in the same fiscal year.


## 1.3 Research Impact

Measuring research impact can be difficult because not all impacts are direct, and the time between the execution of research projects and the benefits of the research findings can be significant, unpredictable, and differ for different types of research.

For the purposes of this report, when the term *impact* is used, it is in reference to how health research at the CoM reaches and influences the wider academic community by articulating and distributing the research findings of faculty via publications, citations, h-indices (bibliometrics) and research projects

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<sup>1</sup>Departments of Medicine; Academic Family Medicine; Anesthesiology, Perioperative Medicine and Pain Management; Surgery; Anatomy, Physiology and Pharmacology; Biology, Microbiology and Immunology; Community Health and Epidemiology; Pathology and Laboratory Medicine; Pediatrics; Psychiatry; Medical Imaging; Emergency Medicine; Obstetrics and Gynecology; Ophthalmology; Physical Medicine and Rehabilitation; Division of Oncology and the School of Rehabilitation Science.



that have received funding from internal and/or external sources. This report uses bibliometrics (discussed in section 1.4) and research income and awards to determine impact.

## 1.4 Bibliometrics: Publications, Citations and H-index

[Bibliometrics](#) are research productivity indicators based on scientific publications, used to highlight research productivity and impact.

The OVDR recognizes that bibliometrics used in our analysis may not effectively measure important research output such as authentic community engagement, or the impact of altmetrics. Bibliometrics are employed in this inaugural report in order to set a baseline of data for the College and each department/school/division to measure against.

*Publications, Citations and H-index* findings presented throughout this report are derived from Google Scholar profiles submitted to the OVDR from verified research-active faculty. The report focuses on 5-year publications, citations and h-index data, quantified on an annual basis by calendar year: January 1 to December 31.

There is no mechanism at this time to acquire h-indices for a specific year.

### 1.4.1 Publications

The act of submitting research findings to scholarly journals and then having them published is a tangible researcher productivity output as publications per year are easily measurable. This report refers to [scholarly journal articles](#) vetted by a group of experts, academics (peers) or other scholars as *publications*. All publications information has been sourced from Google Scholar profiles submitted by research-active faculty in the CoM.

### 1.4.2 Citations

Measuring the number of [citations](#) a publication receives is a means to track and quantify the influence a publication has in its relevant academic field. The term *citation* applies to scientific articles that have been peer-reviewed and published in scholarly journals and then cited in the work of other researchers.

### 1.4.3 H-index

The [Hirsh index \(h-index\)](#) is an author-level metric that measures the impact of a researcher, rather than the scientific journal in which they are publishing. Both the productivity and citation impact of the publications of a particular scholar are taken into account to reach the h-index, and it is based on the set of the scientist's most cited published articles in congruency with the number of citations received by that researcher on other publications. For more information about h-index, please access the [University Library Research Guides](#).

## 1.5 Figures

Data figure scales in section 2. allow space for the maximum amount of funding dollars, number of research projects awarded, publications and citations as a College.



For consistency, data figures throughout the remainder of the report (section 3. onward) use an identical scale wherein the maximum of each axis per figure has been set using the greatest recorded value of each data set across each department/division/school.



## 2. College of Medicine

### 2.1 Introduction

Initial evidence suggests CoM researchers are increasing both dollar amounts and number of research projects funded through external and internal initiatives. In addition, gathered data show an increase in number of faculty receiving awards. Based on **309** identified research-active faculty in the College, bibliometrics convey accelerating research productivity since 2014.

### 2.2 Research Funding

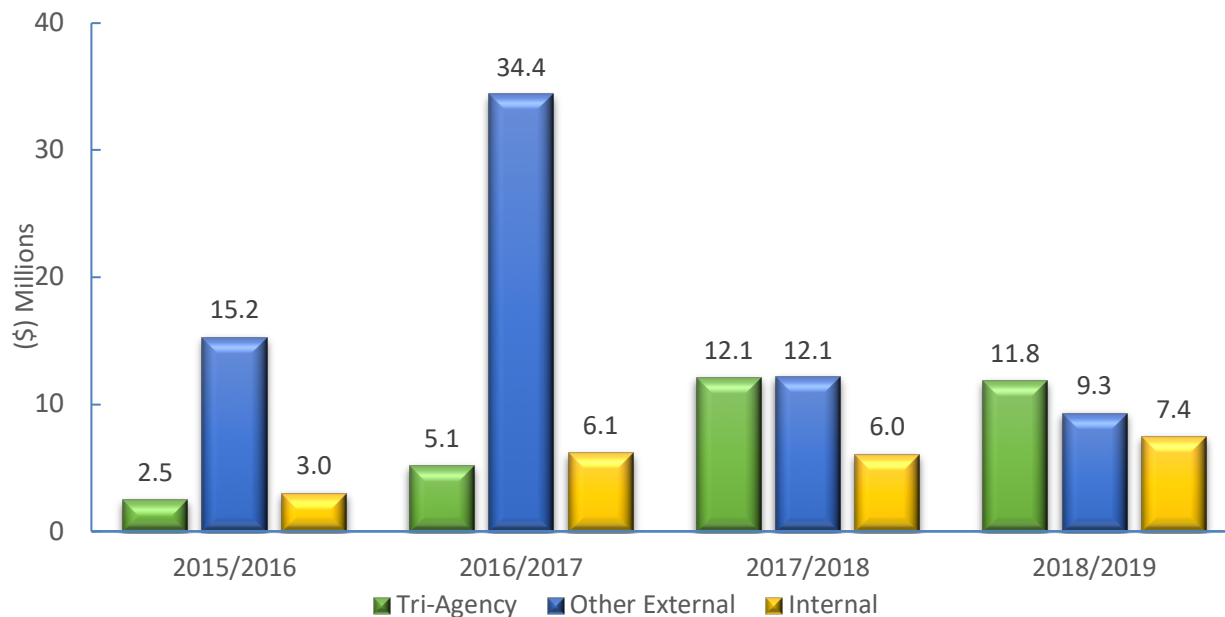
As demonstrated in Figure 2.2, researchers in the CoM received awards totaling **\$28,540,559** ending in the most recent fiscal year (2018/2019). Included in this total are **\$9,267,556** in Tri-Agency<sup>2</sup> funding, **\$12,136,839** in other external<sup>3</sup> funding and **\$7,427,800** in internal<sup>4</sup> funding.

#### 2.2.1 2016/2017 Funding

The significant increase in *Other External Funding* in 2016/2017 is a result of two predominant factors:

- 1) Dr. Nazeem Muhajarine was the recipient of a \$16.6M grant from Global Affairs Canada to support research focused on decreasing maternal and newborn deaths in childbirth and improving access to health care for Mozambican women.
- 2) The CoM received \$29M in Saskatchewan Centre for Patient-Oriented Research (SCPOR) funding, a joint initiative from the Federal and Provincial Ministries of Health.

FIGURE 2.2: COLLEGE OF MEDICINE AWARDED RESEARCH FUNDING



Based on **309** verified research-active faculty

<sup>2</sup> Tri-Agency funders include [CIHR](#), [NSERC](#), and [SSHRC](#).

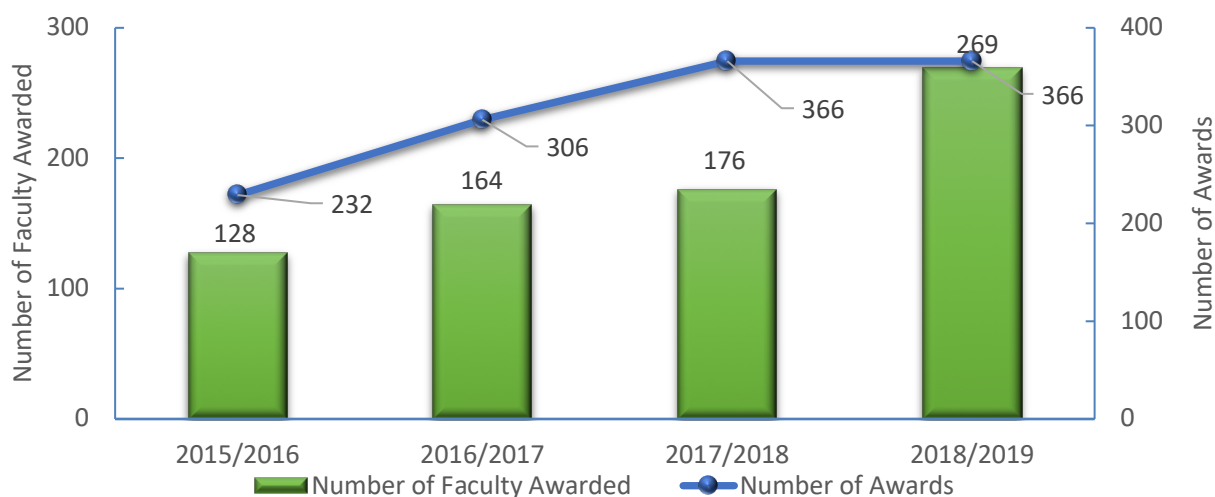
<sup>3</sup> Other External funders include provincial, industry, individual, other universities, and not-for-profit organizations.

<sup>4</sup> Internal funding includes any funding source within the University of Saskatchewan.

## 2.3 Research Projects Awarded

Figure 2.3 displays growth in both number of new research awards and number of faculty awarded over the past four fiscal years. This includes **366** new awards in 2018/2019 compared to **232** in 2016/2016. The number of CoM faculty receiving new awards is also increasing year over year, up to **269** in 2018/2019 from **128** in 2015/2016.

FIGURE 2.3: COLLEGE OF MEDICINE RESEARCH PROJECTS AWARDED

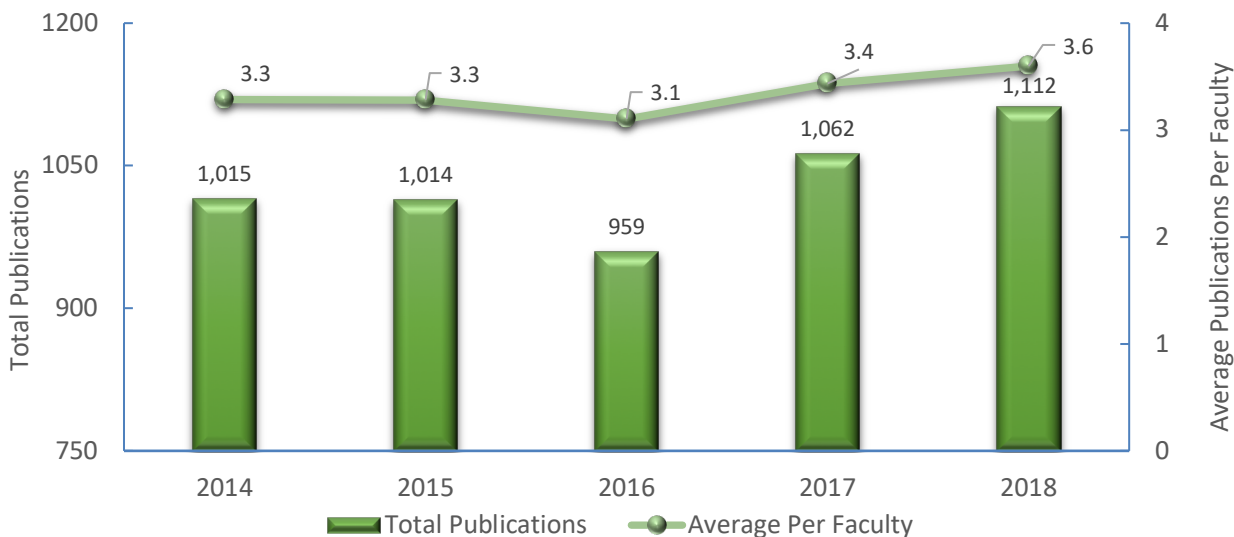


Based on **309** verified research-active faculty

## 2.4 Publications, Citations & H-index

Figure 2.4 exhibits the total number of publications per CoM faculty since 2014. In total, researchers in the CoM published **1,112** scholarly articles ending in the most recent calendar year (2018), 97 more than in 2014. Data also indicate an overall increase in *average* publications per calendar year. In 2018, the average number of publications per researcher per year increased to **3.6**, compared to **3.3** in 2014.

FIGURE 2.4: 5-YEAR COLLEGE OF MEDICINE PUBLICATIONS

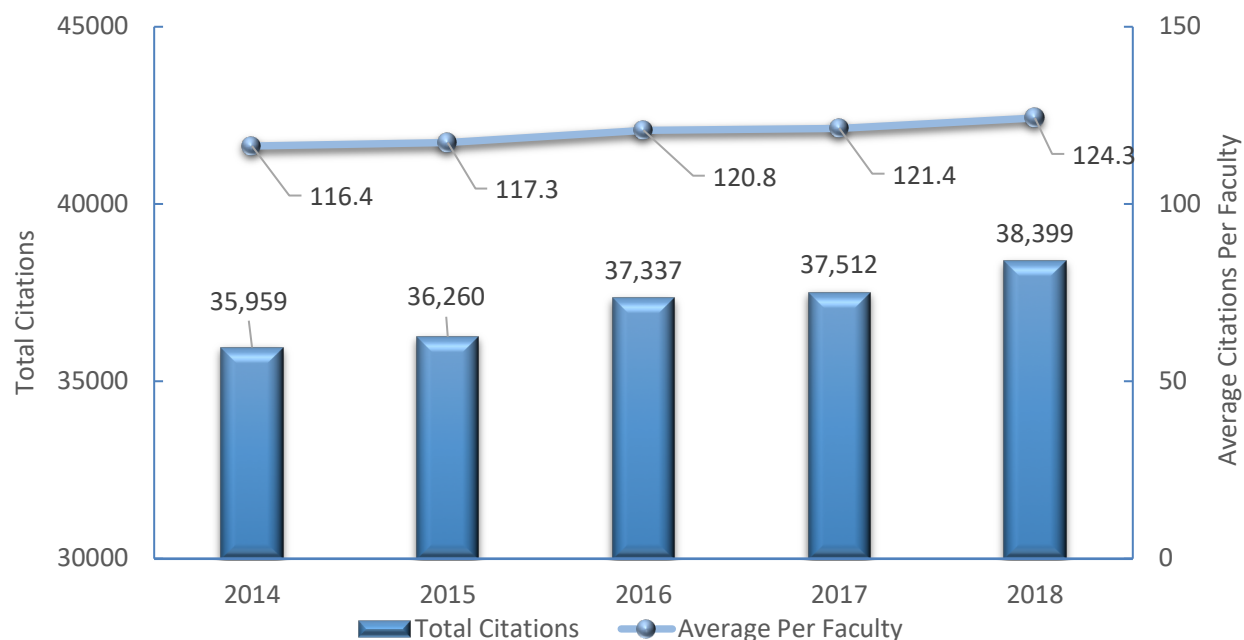


Based on **309** verified research-active faculty



Figure 2.5 indicates an increase in total citations from **35,959** in 2014 to **38,399** in 2018. The average number of citations per researcher per year also rose from **116.4** in 2014 to **124.3** in 2018.

**FIGURE 2.5: 5-YEAR COLLEGE OF MEDICINE CITATIONS**



Based on **309** verified research-active faculty

Ending in calendar year 2018, CoM researchers had an aggregate 5-year h-index of **2,911**, with a **9.4** 5-year average h-index per faculty.

## 2.5 CoM Summary

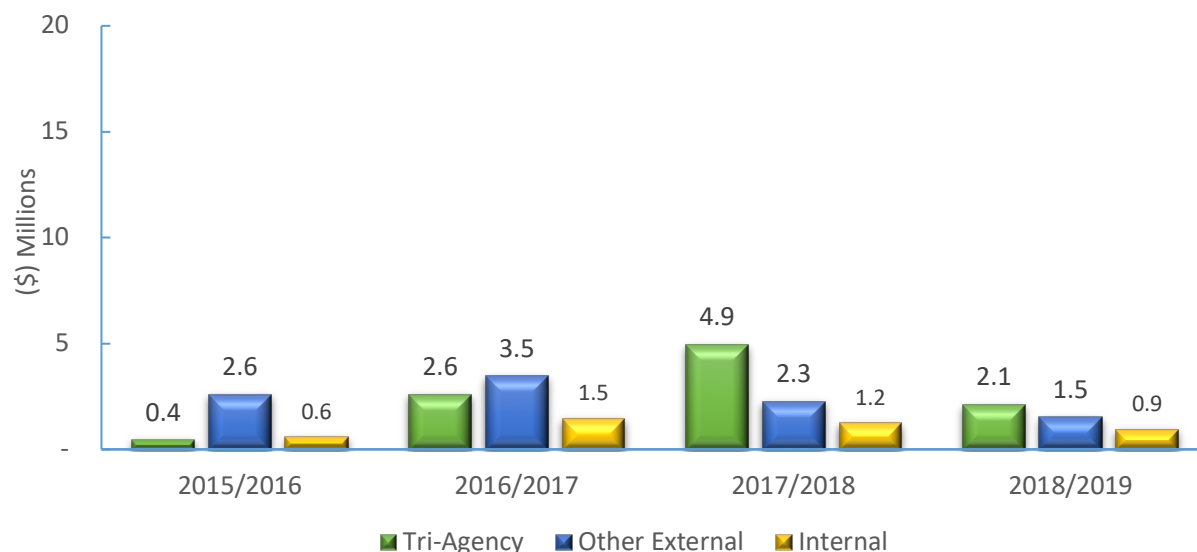
The data presented in the preceding section signify that overall CoM researchers are demonstrating upward consistent advancements in bibliometric indicators as well as overall increasing performance of funded research activities (dollar amounts and number of research projects awarded).

## 3. Department of Medicine

### 3.1 Research Funding

Ending in the most recent fiscal year, Department of Medicine (DoM) researchers acquired a total of **\$4,546,314.22**, an increase from **\$3,632,225** since 2015/2016.

FIGURE 3.1: DEPARTMENT OF MEDICINE RESEARCH FUNDING

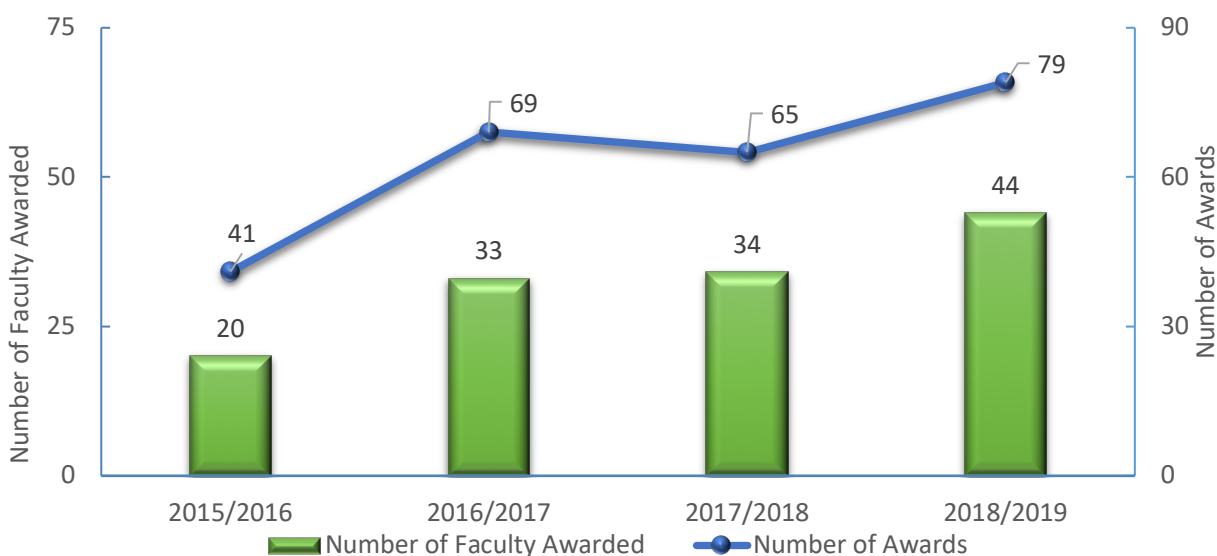


Based on 49 verified research-active faculty

### 3.2 Research Projects Awarded

As outlined in Figure 3.2, over the past four fiscal years DoM researchers have increased total awards received from **41** in 2015/2016 to **79** in 2018/2019. The number of faculty award recipients rose from **20** in 2015/2016 to **44** in 2018/2019.

FIGURE 3.2: DEPARTMENT OF MEDICINE RESEARCH PROJECTS AWARDED



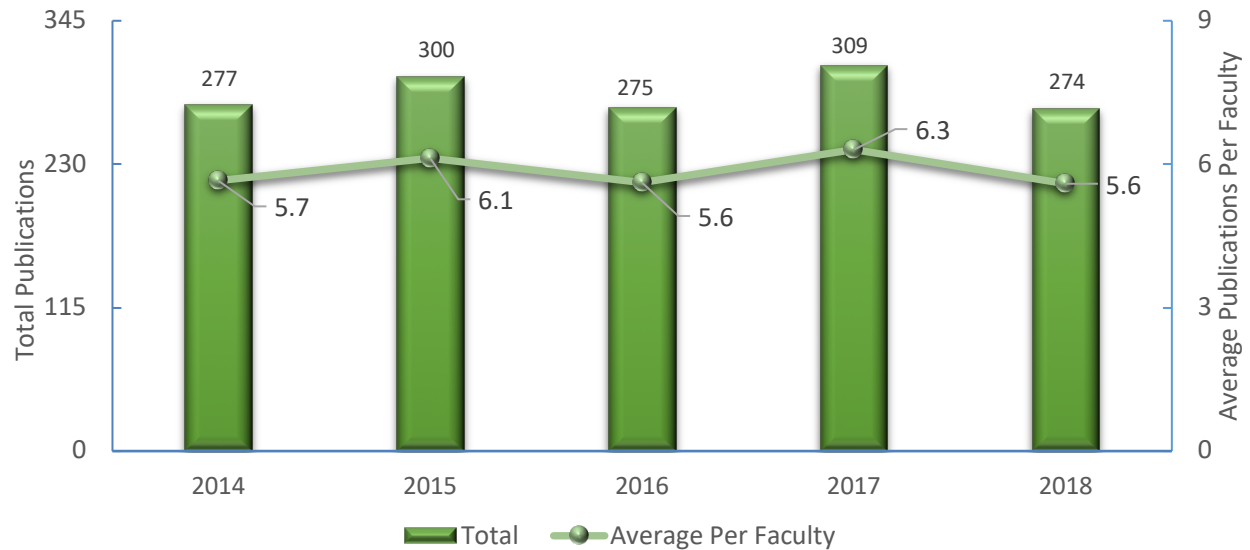
Based on 49 verified research-active faculty



### 3.3 Publications, Citations and H-index

Figure 3.3 displays total publications for the department, from **277** in 2014 to **274** in 2018. Average publications per faculty also declined slightly from **5.7** 2014 to **5.6** in 2018.

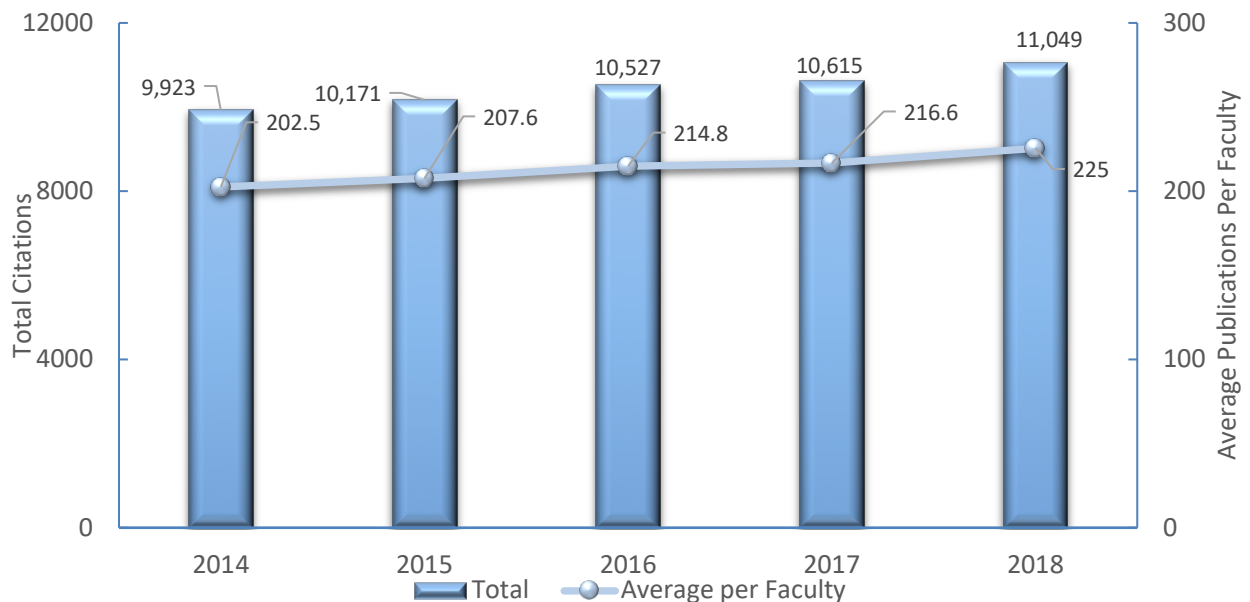
FIGURE 3.3: DEPARTMENT OF MEDICINE 5-YEAR PUBLICATIONS



Based on **49** verified research-active faculty

Figure 3.4 exhibits year-over-year ascending total and average citations for DoM researchers, from **9,923** total in 2014 to **11,049** in 2018, and average citations from **202.5** in 2014 to **225** in 2018.

FIGURE 3.4: DEPARTMENT OF MEDICINE 5-YEAR CITATIONS



Based on **49** verified research-active faculty

DoM faculty have a combined 5-year total h-index of **621**. The average 5-year total h-index per faculty is **12.7**.

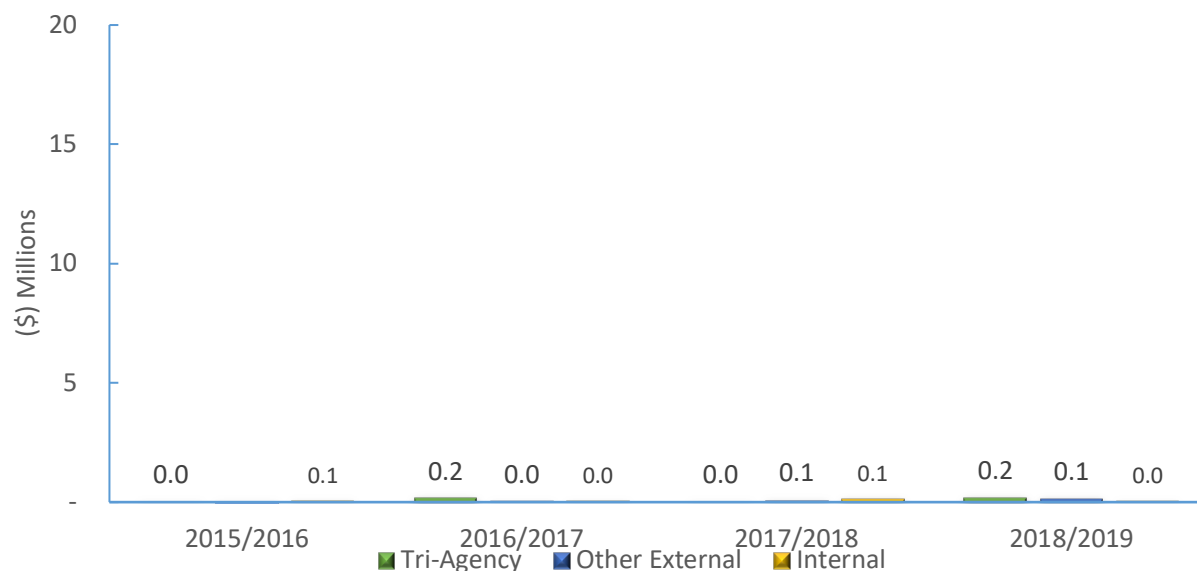


## 4. Department of Academic Family Medicine

### 4.1 Research Funding

Ending in fiscal year 2015/2016, the Department of Academic Family Medicine (DAFM) held a deficit of **\$2,692** in research funding and increased overall research funding dollars to **\$300,666** in 2018/2019.

FIGURE 4.2: DEPARTMENT OF ACADEMIC FAMILY MEDICINE RESEARCH FUNDING

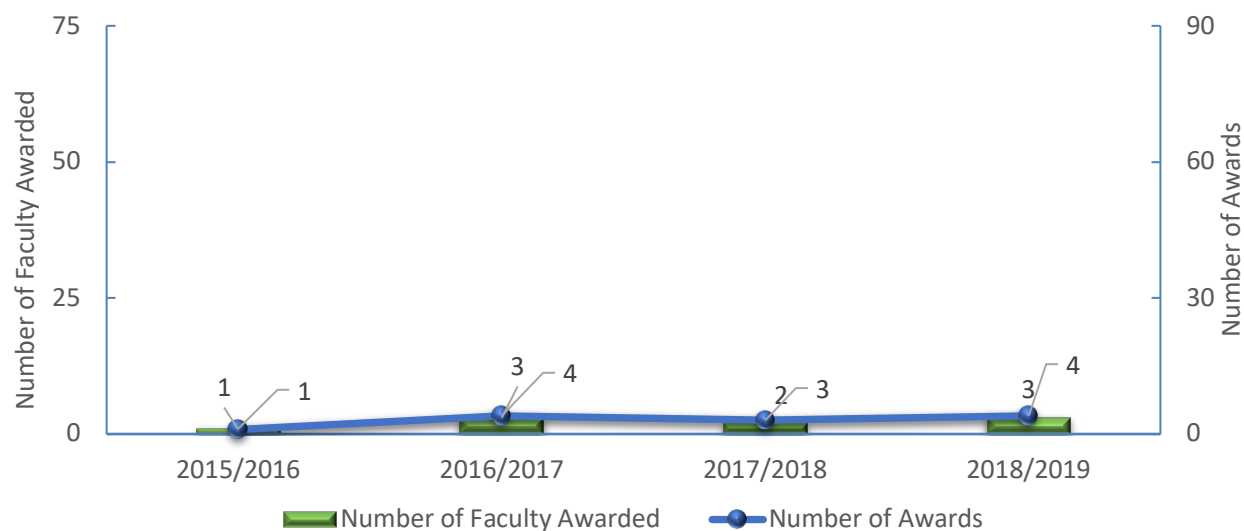


Based on **33** verified research-active faculty

### 4.2 Research Projects Awarded

As outlined in Figure 4.2, over the past four fiscal years DAFM researchers have demonstrated an overall increase from **1** to **4** research projects awarded, as well as faculty award recipients, from **1** in 2015/2016 to **3** in 2018/2019.

FIGURE 4.3: DEPARTMENT OF ACADEMIC FAMILY MEDICINE RESEARCH PROJECTS AWARDED

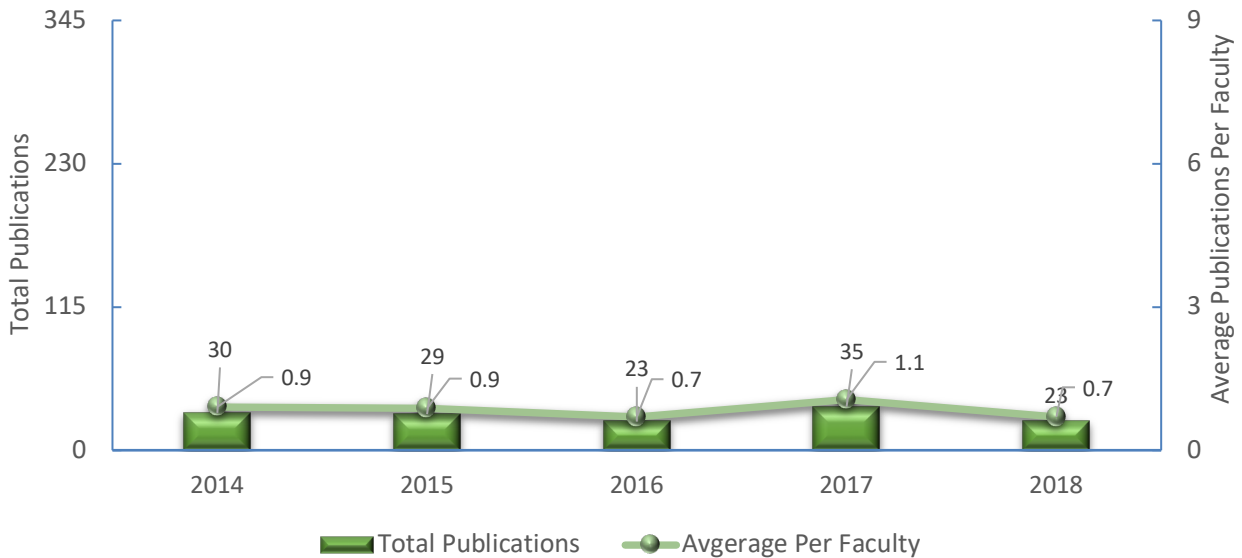


Based on **33** verified research-active faculty

### 4.3 Publications, Citations and H-index

Displayed in Figure 4.3, since 2014, the total number of publications for the department has fallen from **30** to **23** in 2018. Average publications per faculty also decreased slightly from **0.9** in 2014 to **0.7** in 2018.

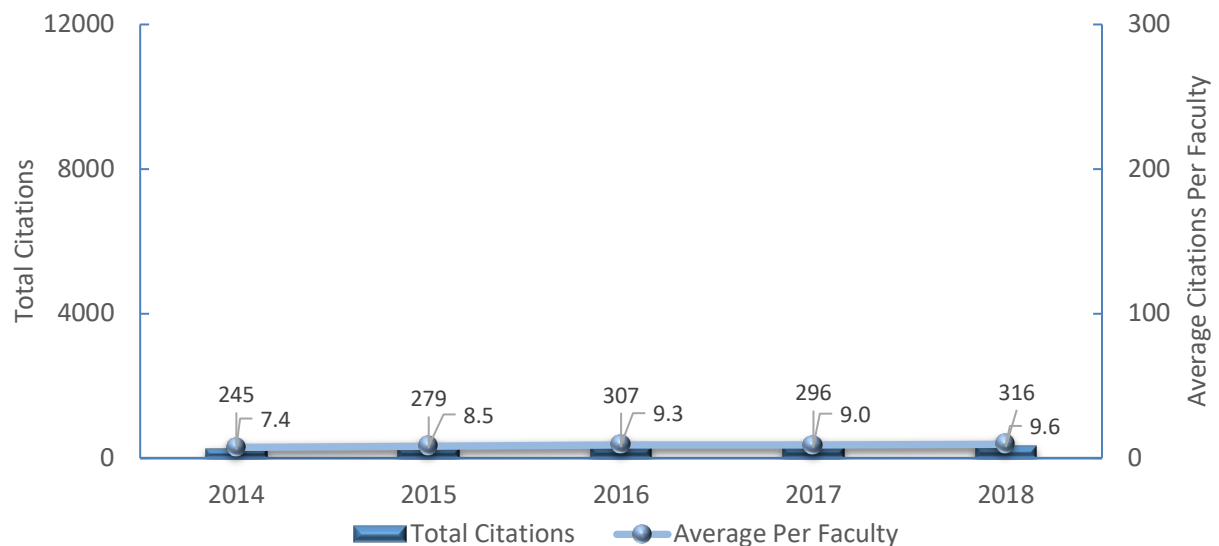
FIGURE 4.3: DEPARTMENT OF ACADEMIC FAMILY MEDICINE 5-YEAR PUBLICATIONS



Based on **33** verified research-active faculty

Figure 4.4 exhibits year-over-year ascending citations for DAFM researchers, up from **245** in 2014 to **316** in 2018, and average citations from **7.4** in 2014 to **9.6** in 2018.

FIGURE 4.4: DEPARTMENT OF ACADEMIC FAMILY MEDICINE 5-YEAR CITATIONS



Based on **33** verified research-active faculty.

DAFM faculty have a combined 5-year total h-index of **71**. The average 5-year total h-index per faculty is **2.2**.

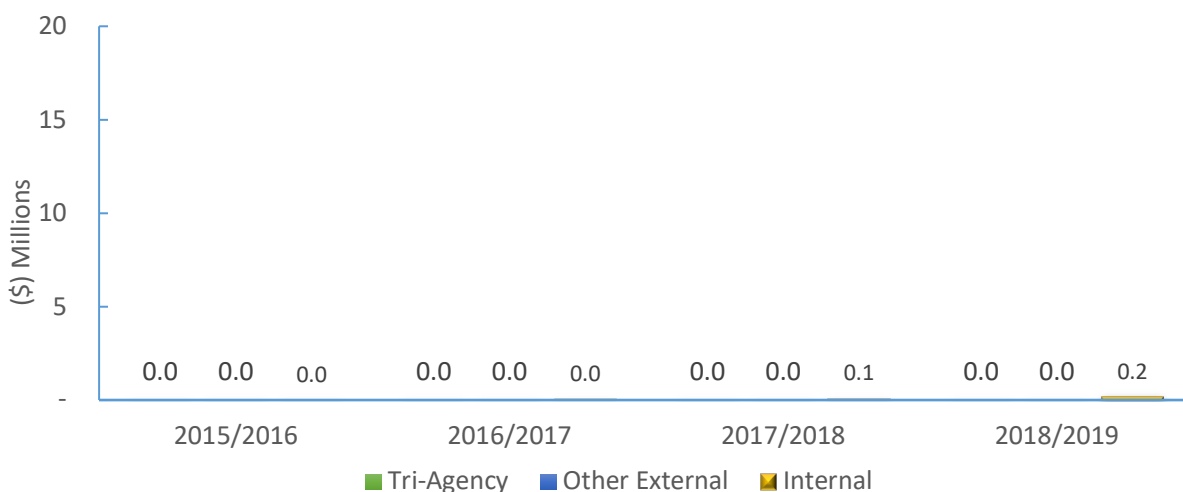


## 5. Department of Anesthesiology, Perioperative Medicine and Pain Management

### 5.1 Research Funding

Ending in fiscal year 2015/2016, the Department of Anesthesiology, Perioperative Medicine and Pain Management held a zero balance in research funding, increasing to **\$190,145** in 2018/2019.

FIGURE 5.1: DEPARTMENT OF ANESTHESIOLOGY, PERIOPERATIVE MEDICINE AND PAIN MANAGEMENT RESEARCH FUNDING

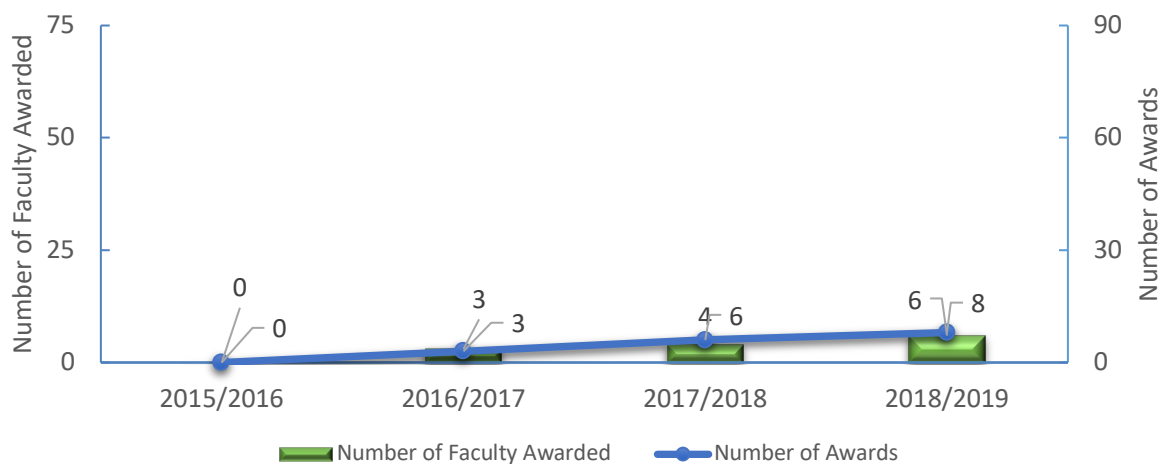


Based on **28** verified research-active faculty

### 5.2 Research Projects Awarded

As outlined in Figure 5.2, over the past four fiscal years researchers in the Department have increased total awards from **0** to **8** between 2015/2016 and 2018/2019, and from **0** faculty awarded in 2015/2016 to **6** in 2018/2019.

FIGURE 5.2: DEPARTMENT OF ANESTHESIOLOGY, PERIOPERATIVE MEDICINE AND PAIN MANAGEMENT RESEARCH PROJECTS AWARDED



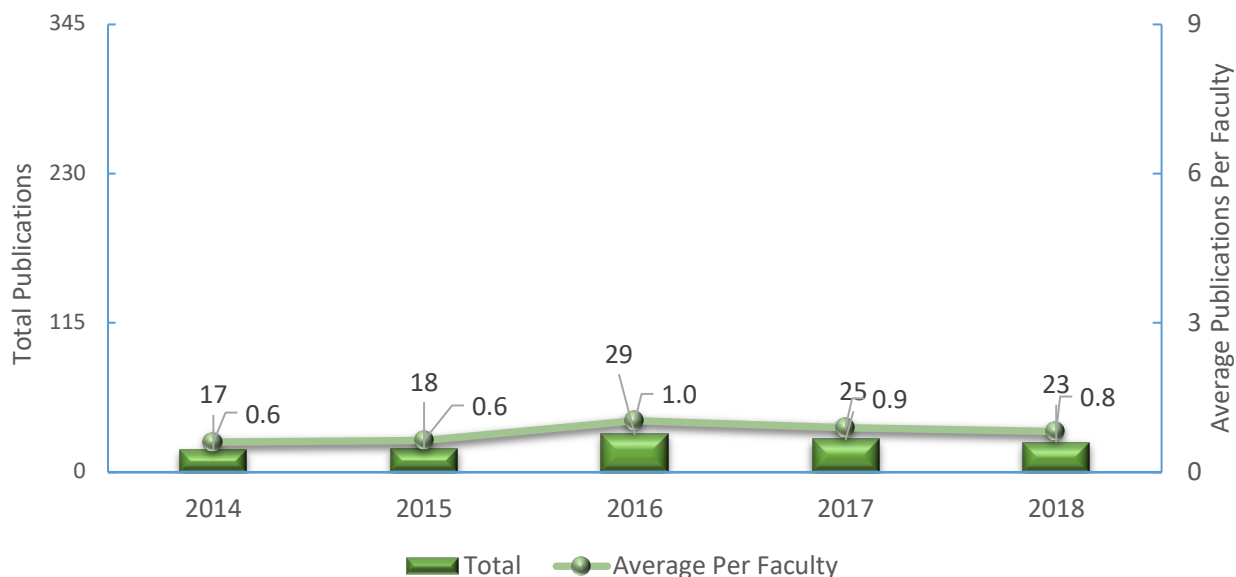
Based on **28** verified research-active faculty



### 5.3 Publications, Citations and H-index

Displayed in Figure 5.3, since 2014, the total number of publications for the Department has risen from **17** to **23** in 2018. Average publications per faculty also increased slightly from **0.6** in 2014 to **0.8** in 2018.

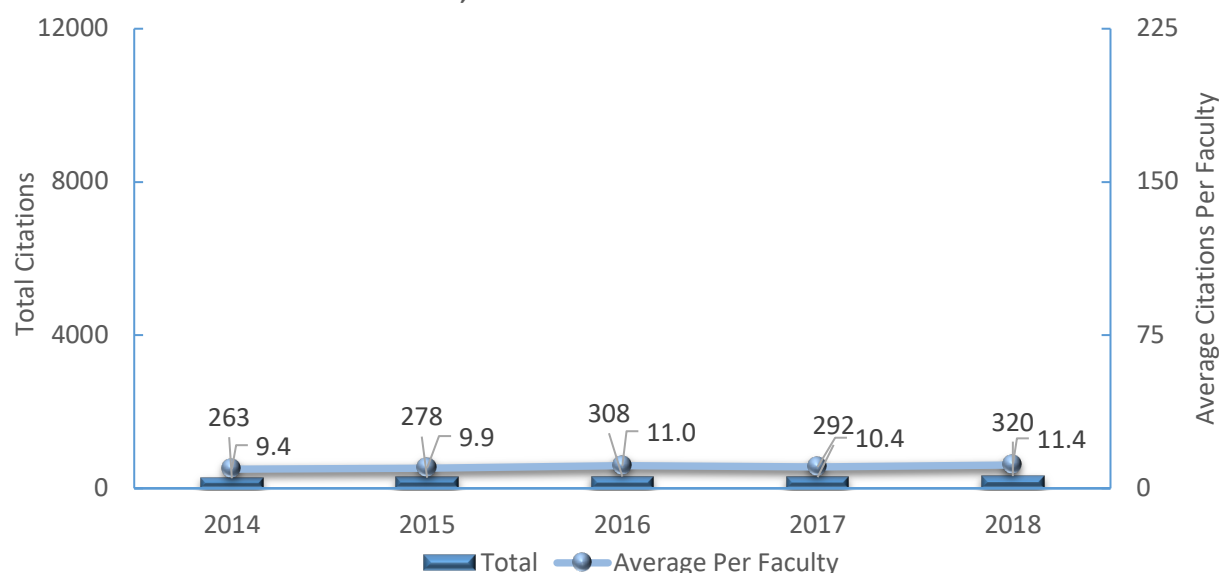
**FIGURE 5.3: DEPARTMENT OF ANESTHESIOLOGY, PERIOPERATIVE MEDICINE AND PAIN MANAGEMENT 5-YEAR PUBLICATIONS**



Based on **28** verified research-active faculty.

Figure 5.4 exhibits year-over-year ascending citations for Department researchers from **263** in 2014 to **320** in 2018 and average citations from **9.4** in 2014 to **11.4** in 2018.

**FIGURE 5.4 DEPARTMENT OF ANESTHESIOLOGY, PERIOPERATIVE MEDICINE AND PAIN MANAGEMENT 5-YEAR CITATIONS**



Based on **28** verified research-active faculty.

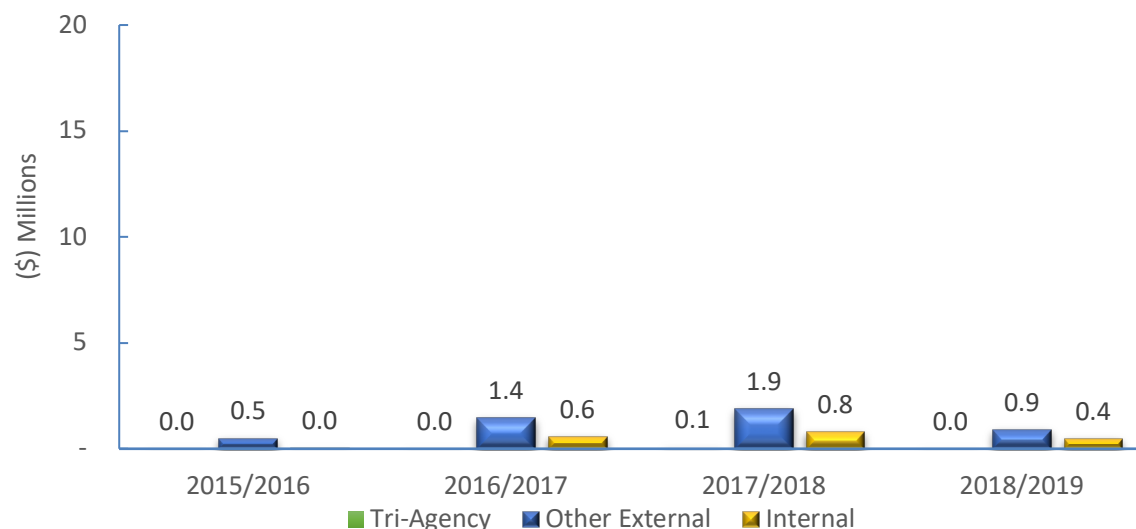
Faculty belonging to the Department have a combined 5-year total h-index of **78**. The average 5-year total h-index per faculty is **2.8**.

## 6. Department of Surgery

### 6.1 Research Funding

Ending in the fiscal year 2018/2019, the Department of Surgery held a total of **\$1,293,355** in research funding, up from **\$488,072** in 2015/2016.

FIGURE 6.1: DEPARTMENT OF SURGERY RESEARCH FUNDING

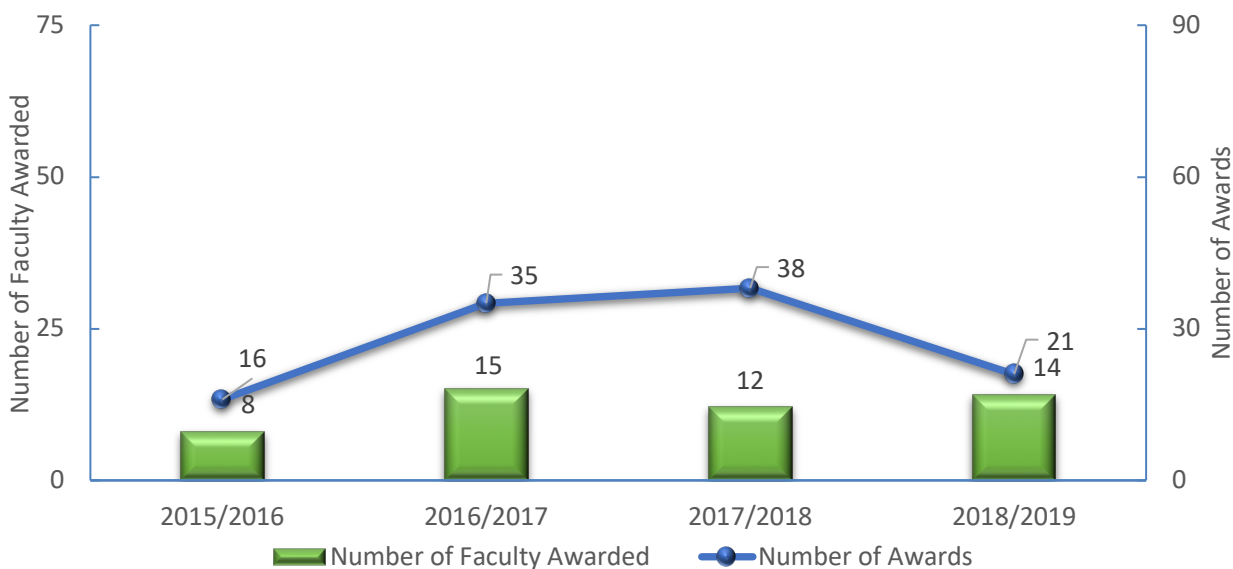


Based on **26** verified research-active faculty

### 6.2 Research Projects Awarded

As outlined on Figure 6.2, over the past four fiscal years researchers in the Department of Surgery have demonstrated an overall increase in research projects awarded, from **16** to **21** awards from 2015/2016 to 2018/2019. The number of faculty award recipients rose from **8** in 2015/2016 to **14** in 2018/2019.

FIGURE 6.2: DEPARTMENT OF SURGERY RESEARCH PROJECTS AWARDED

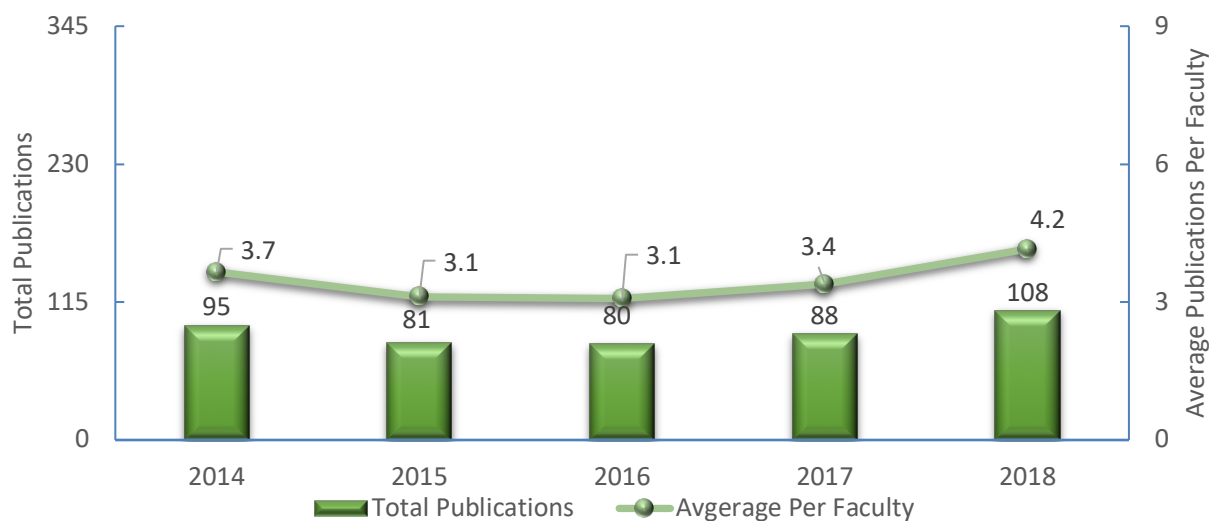


Based on **26** verified research-active faculty

## 6.3 Publications, Citations and H-index

Displayed in Figure 6.3, since 2014, the total number of publications for the Department of Surgery has risen from **95** to **108** in 2018. Average publications per faculty also increased from **3.7** in 2014 to **4.2** in 2018.

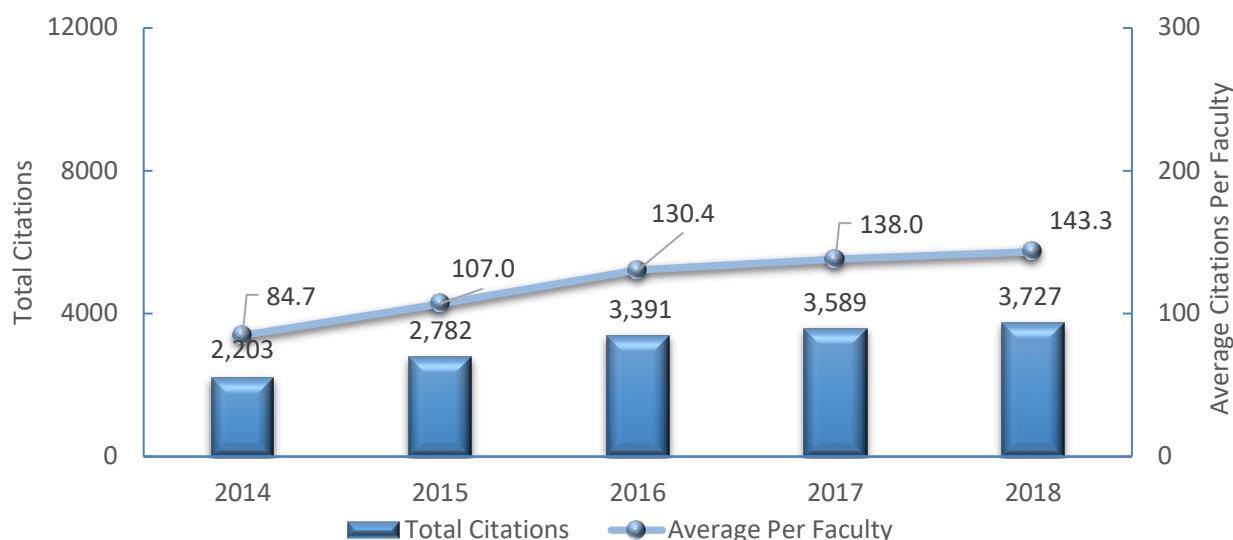
FIGURE 6.3: DEPARTMENT OF SURGERY 5-YEAR PUBLICATIONS



Based on **26** verified research-active faculty

Figure 6.4 exhibits year-over-year ascending citations for Department of Surgery researchers from **2,203** in 2014 to **3,727** in 2018 and average citations from **84.7** in 2014 to **143.3** in 2018.

FIGURE 6.4: DEPARTMENT OF SURGERY 5-YEAR CITATIONS



Based on **26** verified research-active faculty.

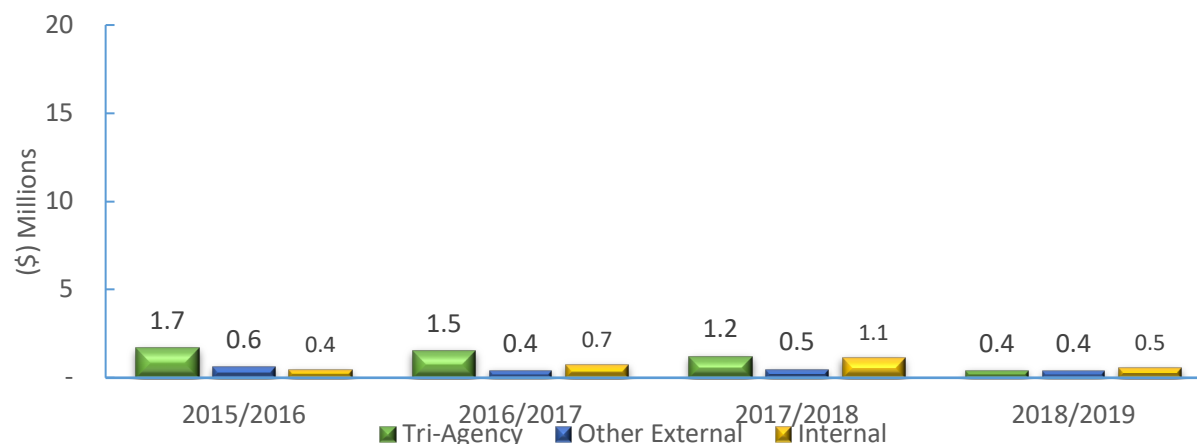
Faculty belonging to the Department of Surgery have a combined 5-year total h-index of **236**. The average 5-year total h-index per faculty is **9.1**.

## 7. Department of Anatomy, Physiology and Pharmacology

### 7.1 Research Funding

Ending in fiscal year 2015/2016, the Department of Anatomy, Physiology and Pharmacology (APP)<sup>5</sup> held a total of **\$2,701,998** in research funding, which increased to **\$1,306,668** in 2018/2019.

**FIGURE 7.2: DEPARTMENT OF ANATOMY, PHYSIOLOGY AND PHARMACOLOGY RESEARCH FUNDING**

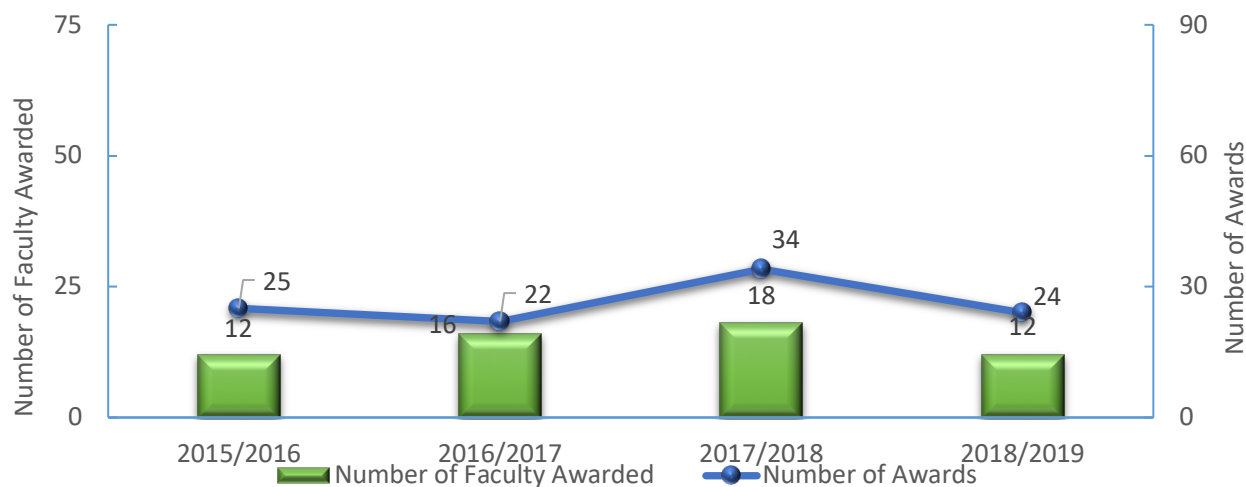


Based on **25** verified research-active faculty

### 7.2 Research Projects Awarded

As outlined in Figure 7.2, over the past four fiscal years researchers in the Department of APP received **25** awards in 2015/2016, which fell to **24** in 2018/2019, while the number of faculty award recipients remained at **12**.

**FIGURE 7.2: DEPARTMENT OF ANATOMY, PHYSIOLOGY AND PHARMACOLOGY RESEARCH PROJECTS AWARDED**



Based on **25** verified research-active faculty.

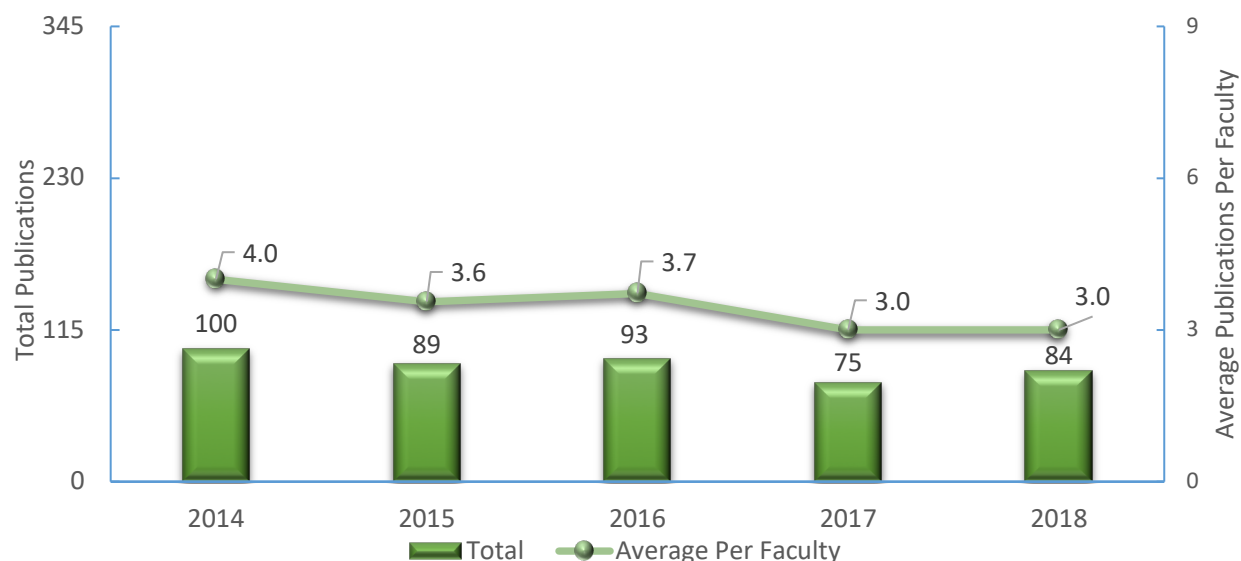
<sup>5</sup> Data for the Department of APP includes amalgamated data for years preceding the merger, including departments of Anatomy and Cell Biology; Physiology; and Pharmacology.



### 7.3 Publications, Citations and H-index

Displayed in Figure 7.3, since 2014, the total number of publications for the Department of APP has declined from **100** to **84** in 2018. Average publications per faculty also decreased from **4.0** in 2014 to **3.0** in 2018.

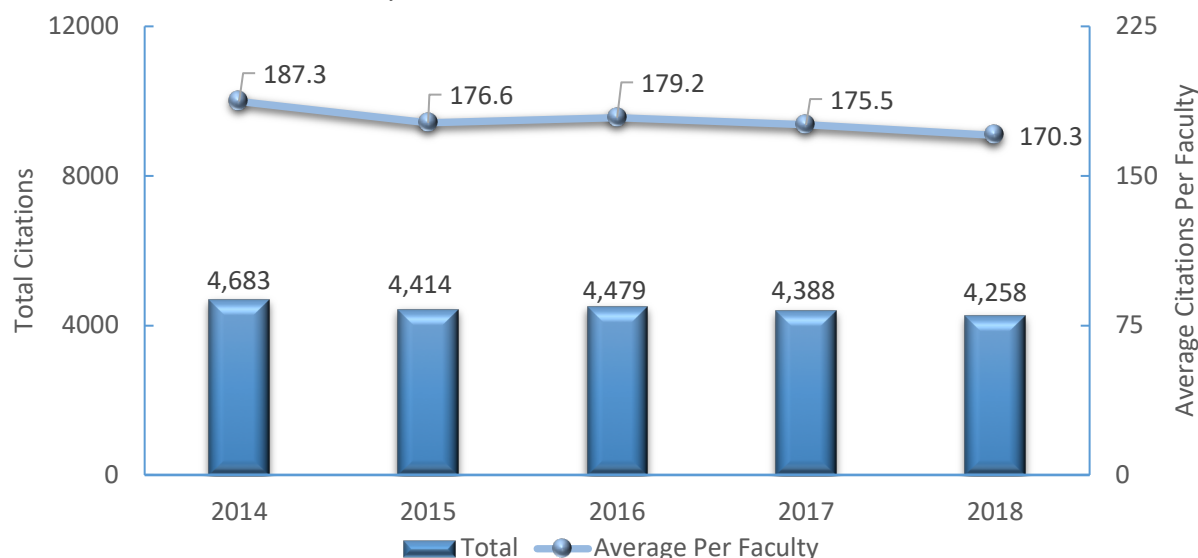
FIGURE 7.3: DEPARTMENT OF ANATOMY, PHYSIOLOGY AND PHARMACOLOGY 5-YEAR PUBLICATIONS



Based on **25** verified research-active faculty.

Figure 7.4 exhibits a decrease in year-over-year citations for Department of APP researchers, from **4,683** in 2014 to **4,258** in 2018 and average citations from **187.3** in 2014 to **170.3** in 2018.

FIGURE 7.4: DEPARTMENT OF ANATOMY, PHYSIOLOGY AND PHARMACOLOGY 5-YEAR CITATIONS



Based on **25** verified research-active faculty.

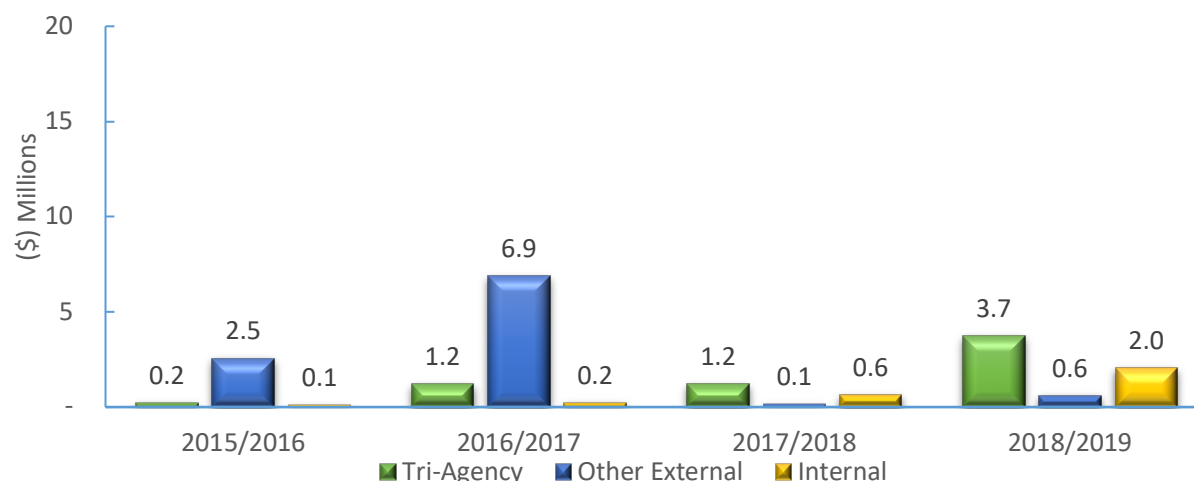
Faculty belonging to the Department of APP have a combined 5-year total h-index of **367**. The average 5-year total h-index per faculty is **14.7**.

## 8. Department of Biochemistry, Microbiology and Immunology

### 8.1 Research Funding

Ending fiscal year 2015/2016, the Department of Biochemistry, Microbiology and Immunology (BMI)<sup>6</sup> held a total of **\$2,868,028** in research funding, which rose to **\$6,314,213** in 2018/2019.

FIGURE 8.1: DEPARTMENT OF BIOCHEMISTRY, MICROBIOLOGY AND IMMUNOLOGY RESEARCH FUNDING

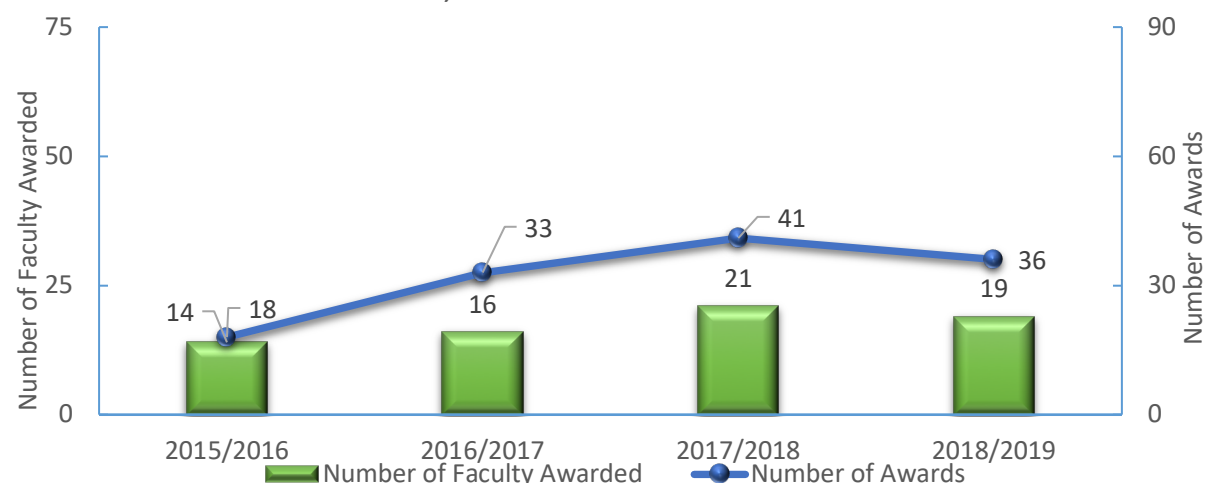


Based on **25** verified research-active faculty

### 8.2 Research Projects Awarded

As outlined in Figure 8.2, researchers in the Department of BMI have received an increase in awards from **18** to **36** between 2015/2016 and 2018/2019, and **18** to **19** faculty award recipients.

FIGURE 8.2: DEPARTMENT OF BIOCHEMISTRY, MICROBIOLOGY AND IMMUNOLOGY RESEARCH PROJECTS AWARDED



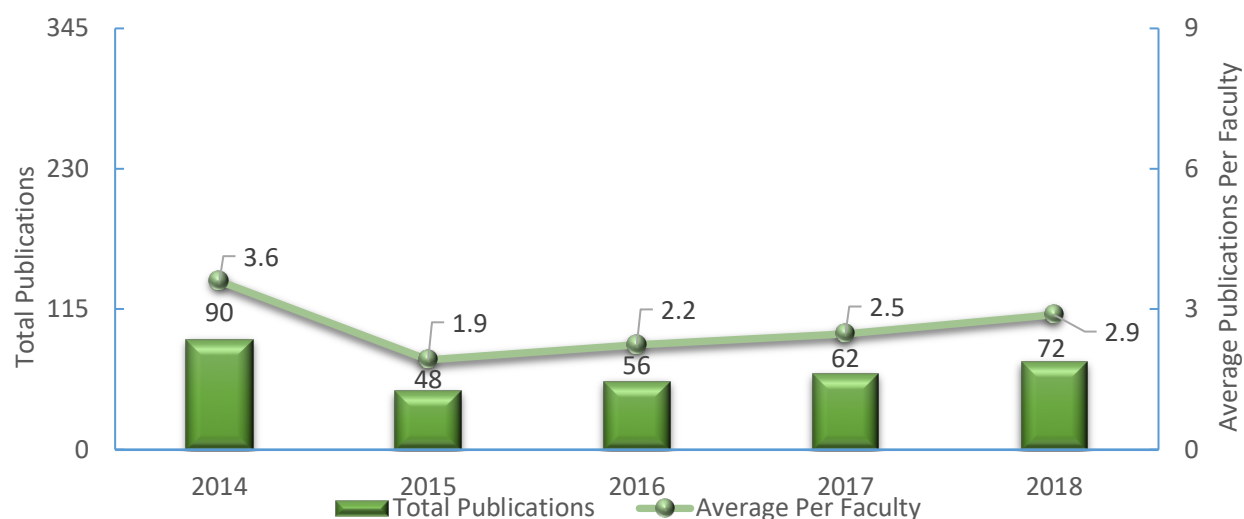
Based on **25** verified research-active faculty

<sup>6</sup> Data for the Department of BMI includes amalgamated data for years preceding the merger, including departments of Biochemistry; and Microbiology and Immunology.

### 8.3 Publications, Citations and H-index

Displayed in Figure 8.3, since 2014, the total number of publications for the Department of BMI has declined from **90** to **72** in 2018. Average publications per faculty also decreased slightly from **3.6** in 2014 to **2.9** in 2018.

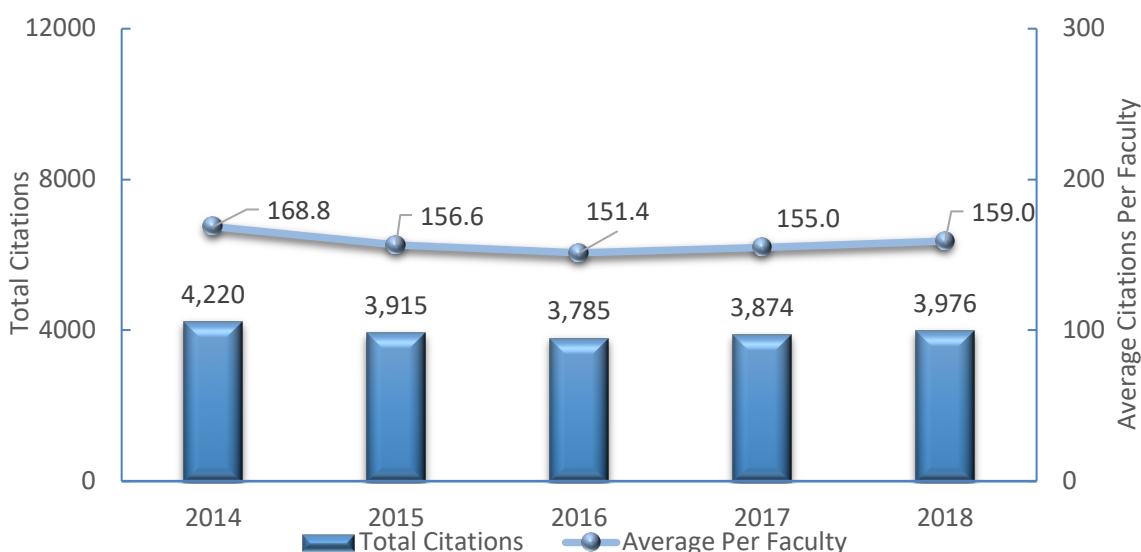
**FIGURE 8.3: DEPARTMENT OF BIOCHEMISTRY, MICROBIOLOGY AND IMMUNOLOGY 5-YEAR PUBLICATIONS**



Based on **25** verified research-active faculty.

Figure 7.4 exhibits a decrease in year-over-year citations for Department of BMI researchers, from **4,220** in 2014 to **3,376** in 2018 and average citations from **168.8** in 2014 to **159** in 2018.

**FIGURE 8.4: DEPARTMENT OF BIOCHEMISTRY, MICROBIOLOGY AND IMMUNOLOGY 5-YEAR CITATIONS**



Based on **25** verified research-active faculty.

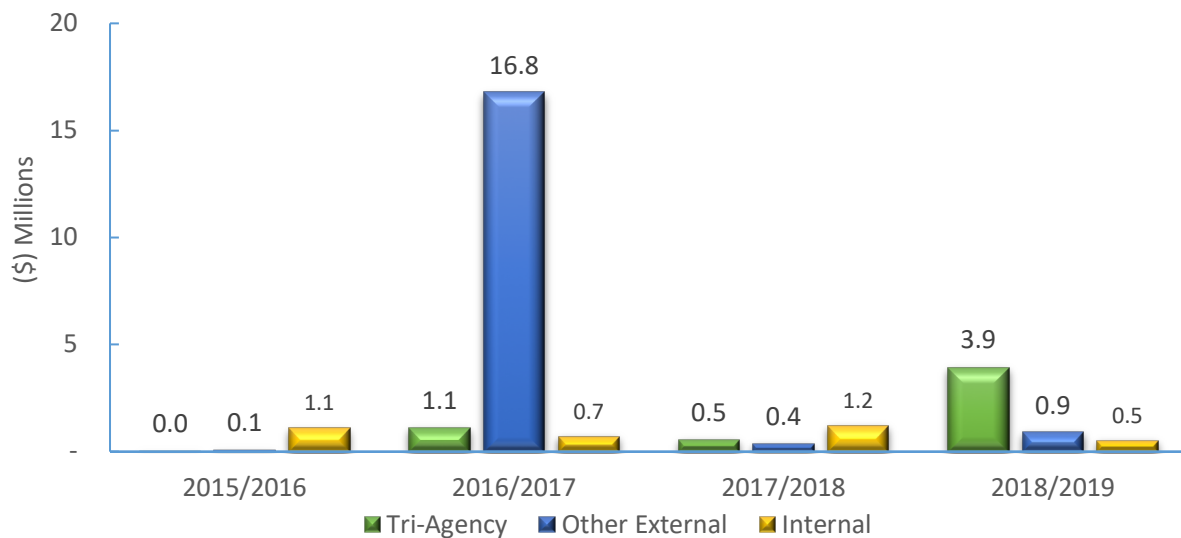
Faculty belonging to the Department of BMI have a combined 5-year total h-index of **335**. The average 5-year total h-index per faculty is **13.4**.

## 9. Department of Community Health and Epidemiology

### 9.1 Research Funding

In the fiscal year 2015/2016, the Department of Community Health and Epidemiology (CH&E) held a total of **\$1,163,188**, which rose to **\$5,305,357** in 2018/2019.

FIGURE 9.1: DEPARTMENT OF COMMUNITY HEALTH AND EPIDEMIOLOGY RESEARCH FUNDING

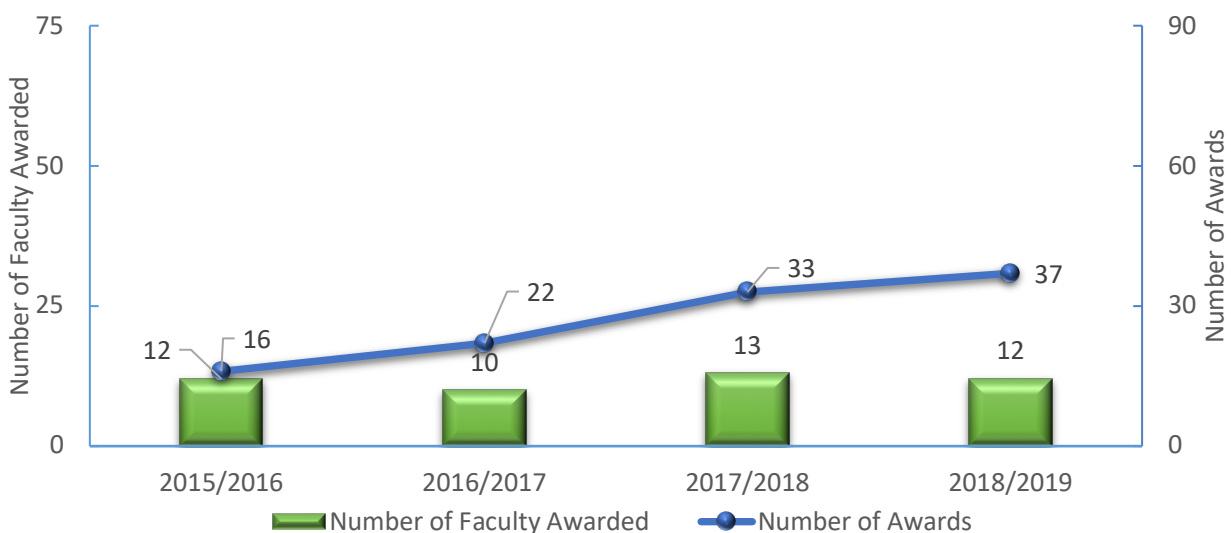


Based on **18** verified research-active faculty

### 9.2 Research Projects Awarded

As outlined in Figure 9.2, researchers in the Department of CH&E have increased total awards from **16** to **37** between 2015/2016 and 2018/2019, and faculty award recipients remained stable at **12** from 2015/2016 to 2018/2019.

FIGURE 9.2: DEPARTMENT OF COMMUNITY HEALTH AND EPIDEMIOLOGY RESEARCH PROJECTS AWARDED

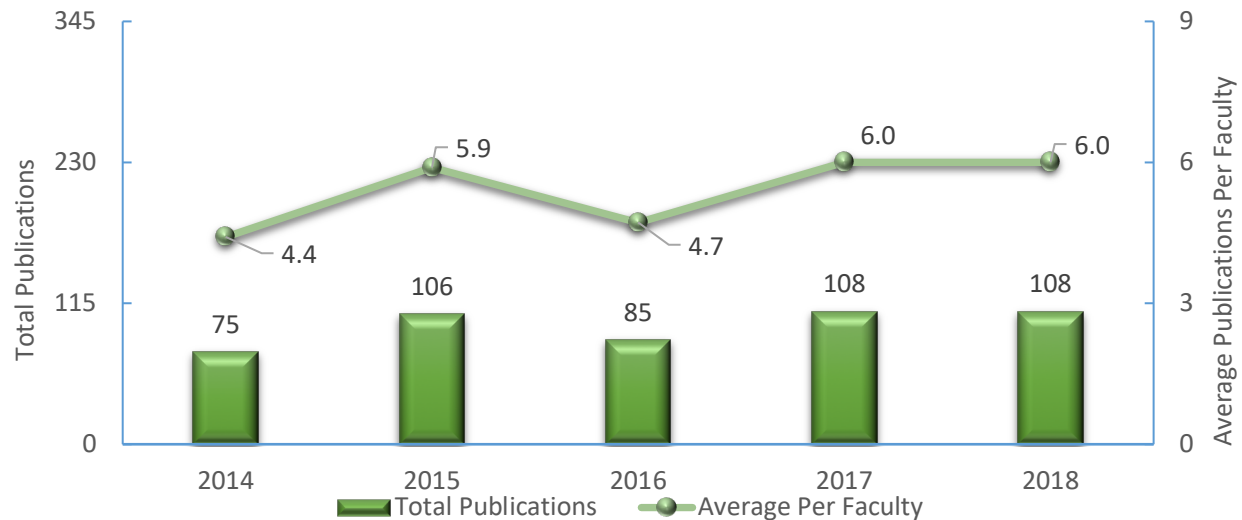


Based on **18** verified research-active faculty

### 9.3 Publications, Citations and H-index

Displayed in Figure 9.3, since 2014, the total number of publications for the Department of CH&E has increased from **75** to **108** in 2018. Average publications per faculty also risen from **4.4** in 2014 to **6.0** in 2018.

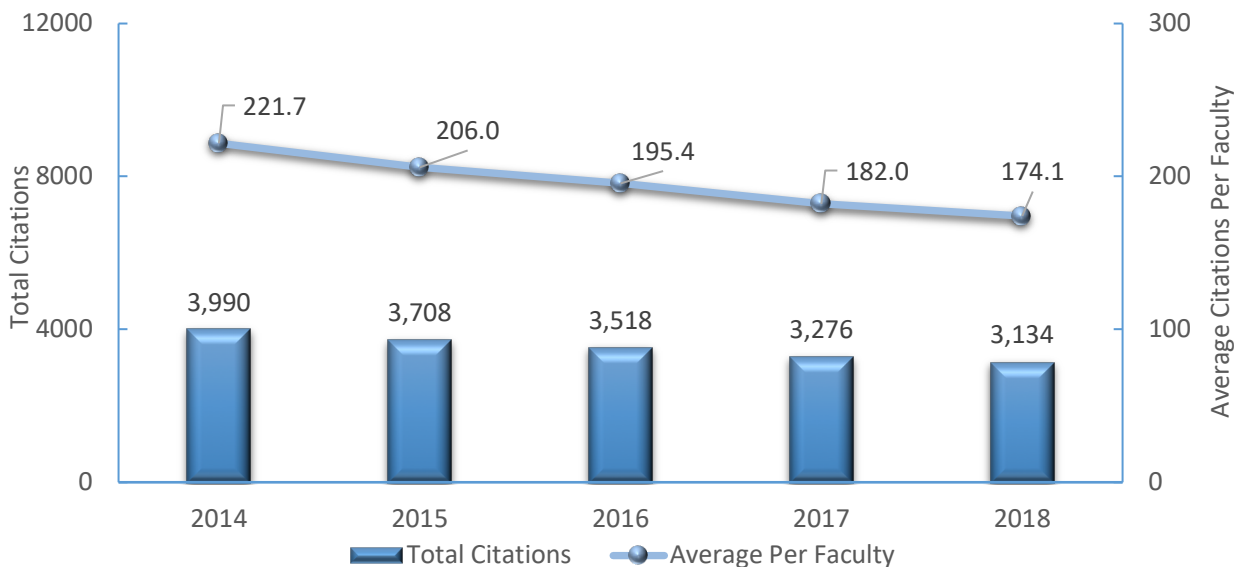
FIGURE 9.3: DEPARTMENT OF COMMUNITY HEALTH AND EPIDEMIOLOGY 5-YEAR PUBLICATIONS



Based on **18** verified research-active faculty

Figure 9.4 exhibits year-over-year citations for Department of CH&E researchers, from **3,990** in 2014 to **3,134** in 2018 and average citations from **221.7** in 2014 to **174.1** in 2018.

FIGURE 9.4: DEPARTMENT OF COMMUNITY HEALTH AND EPIDEMIOLOGY 5-YEAR CITATIONS



Based on **18** verified research-active faculty.

Faculty belonging to the Department of CH&E have a combined 5-year total h-index of **202**. The average 5-year total h-index per faculty is **11.2**.

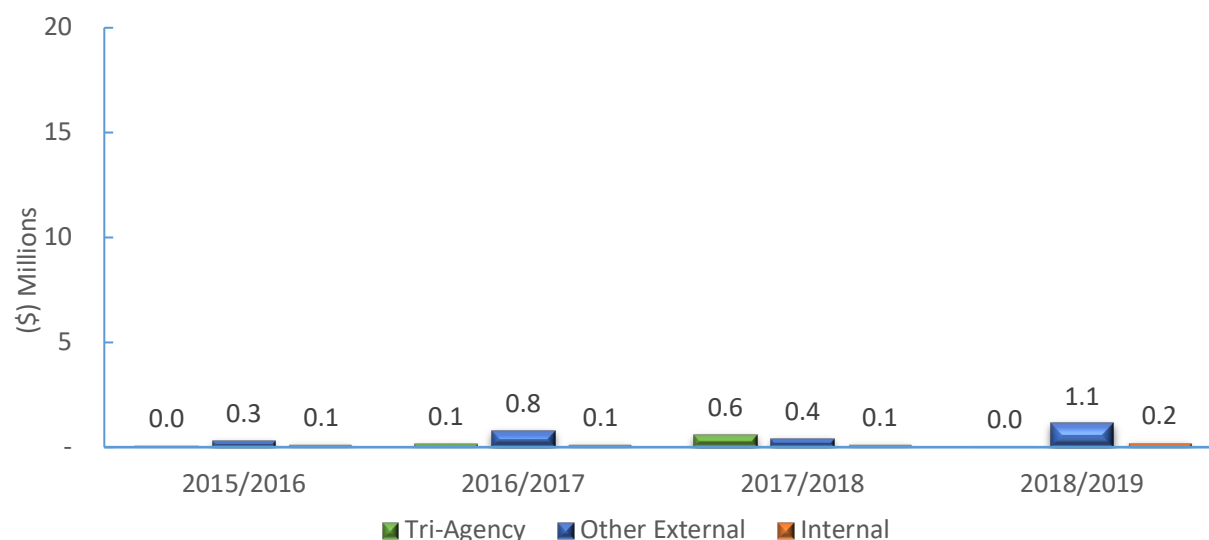


## 10. Department of Pathology and Laboratory Medicine

### 10.1 Research Funding

Ending fiscal year 2015/2016, the Department of Pathology and Laboratory Medicine held a total of **\$413,271** in research funding, which rose to **\$1,296,511** in 2018/2019.

**FIGURE 10.1: PATHOLOGY AND LABORATORY MEDICINE RESEARCH FUNDING**

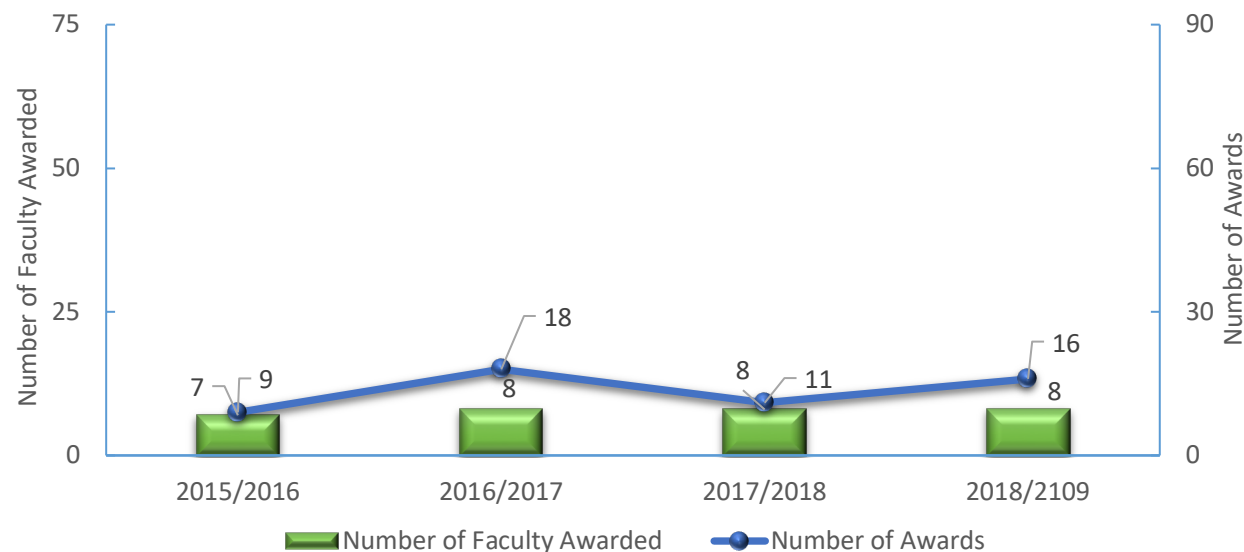


Based on **17** verified research-active faculty.

### 10.2 Research Projects Awarded

As outlined in Figure 10.2, researchers in the Department of Pathology and Laboratory Medicine have demonstrated an increase in total research projects awarded from **9** in 2015/2016 to **16** ending 2018/2019. The number of faculty award recipients rose from **7** in 2015/2016 to **8** in 2018/2019.

**FIGURE 10.3: DEPARTMENT OF PATHOLOGY AND LABORATORY MEDICINE RESEARCH PROJECTS AWARDED**

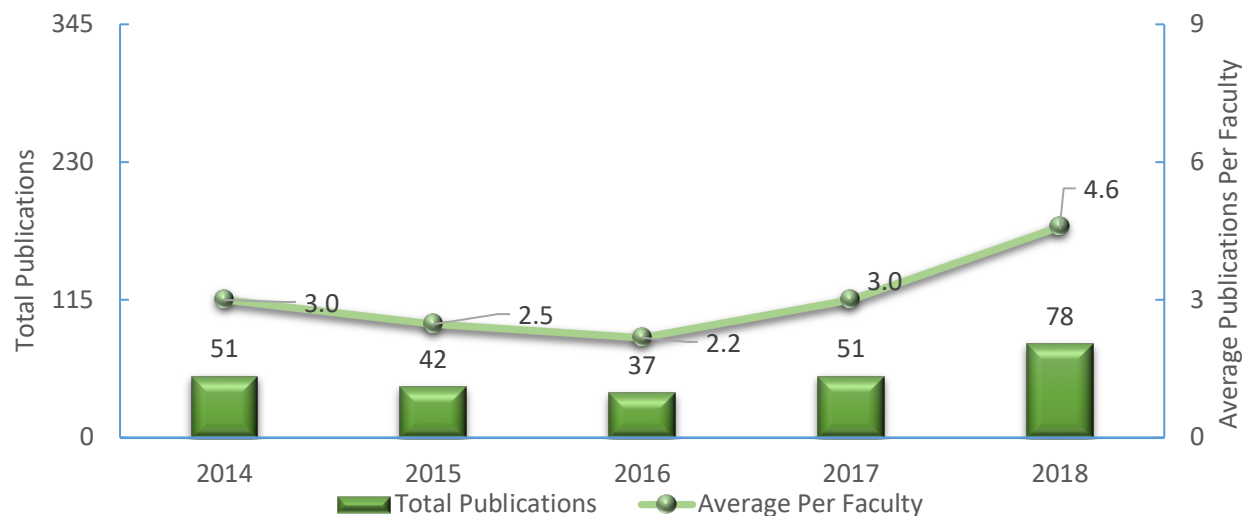


Based on **17** verified research-active faculty

### 10.3 Publications, Citations and H-index

Displayed in Figure 10.3, since 2014, the total number of publications for the Department of Pathology and Laboratory Medicine has increased from **51** to **78** in 2018. Average publications per faculty have also risen from **3.0** in 2014 to **4.6** in 2018.

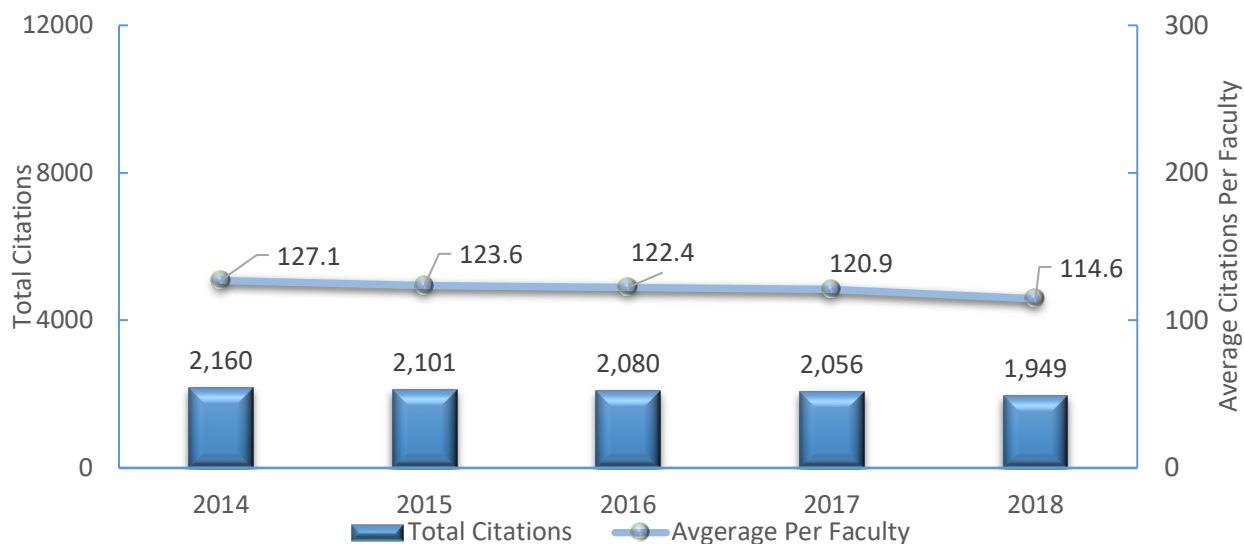
**FIGURE 10.4: DEPARTMENT OF PATHOLOGY AND LABORATORY MEDICINE 5-YEAR CITATIONS**



Based on **17** verified research-active faculty

Figure 10.4 exhibits year-over-year citations for Department of Pathology and Laboratory Medicine researchers, from **2,160** in 2014 to **1,949** in 2018, and average citations from **127.1** in 2014 to **114.6** in 2018.

**FIGURE 10.4: DEPARTMENT OF PATHOLOGY AND LABORATORY MEDICINE 5-YEAR CITATIONS**



Based on **17** verified research-active faculty

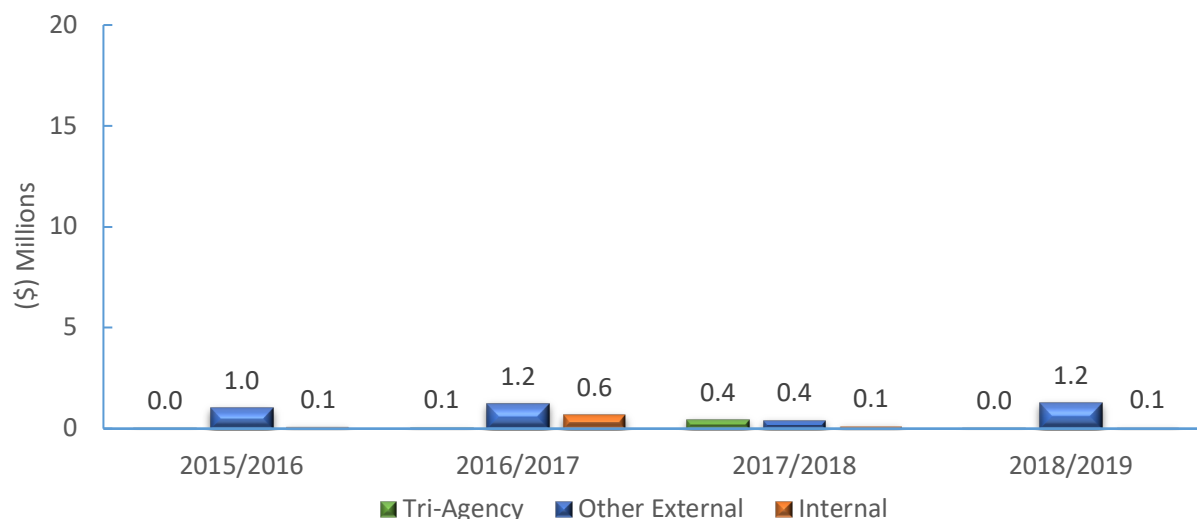
Faculty belonging to the Department of Pathology and Laboratory Medicine have a combined 5-year total h-index of **206**. The average 5-year total h-index per faculty is **12.1**.

## 11. Department of Pediatrics

### 11.1 Research Funding

In the fiscal year 2015/2016, the Department of Pediatrics held a total of **\$1,141,490** in research funding, which increased to **\$1,326,889** in 2018/2019.

FIGURE 11.1: DEPARTMENT OF PEDIATRICS RESEARCH FUNDING

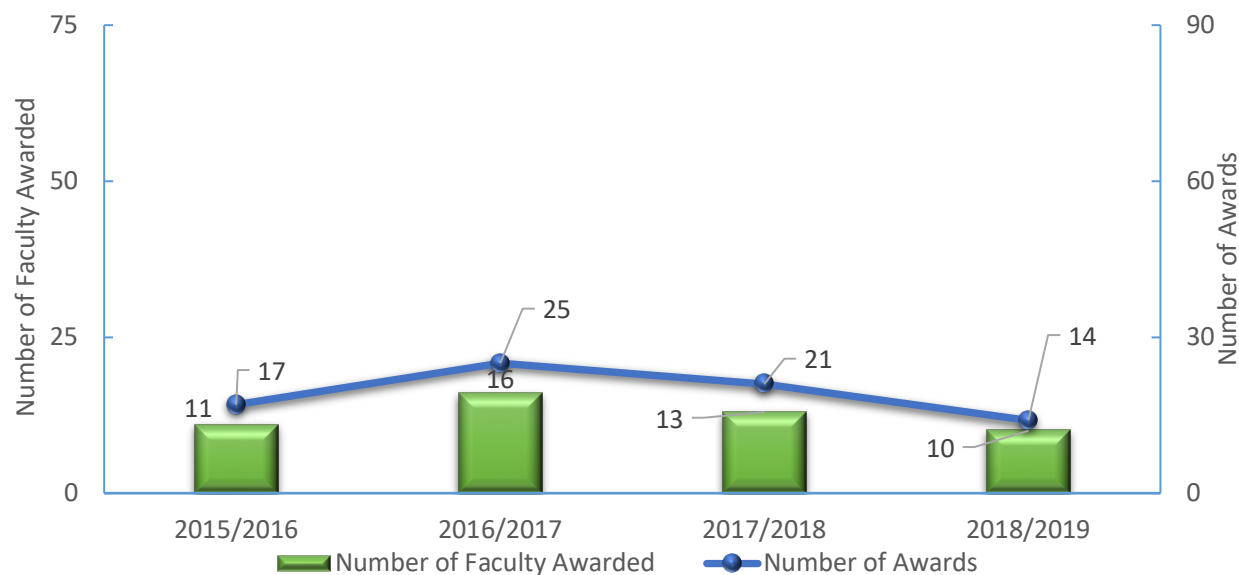


Based on 15 verified research-active faculty.

### 11.2 Research Projects Awarded

As outlined in Figure 11.2, researchers in the Department of Pediatrics held 17 awards in 2015/2016, decreasing to 14 in 2018/2019. The number of faculty award recipients declined from 11 in 2015/2016 to 10 in 2018/2019.

FIGURE 11.2: DEPARTMENT OF PEDIATRICS RESEARCH PROJECTS AWARDED



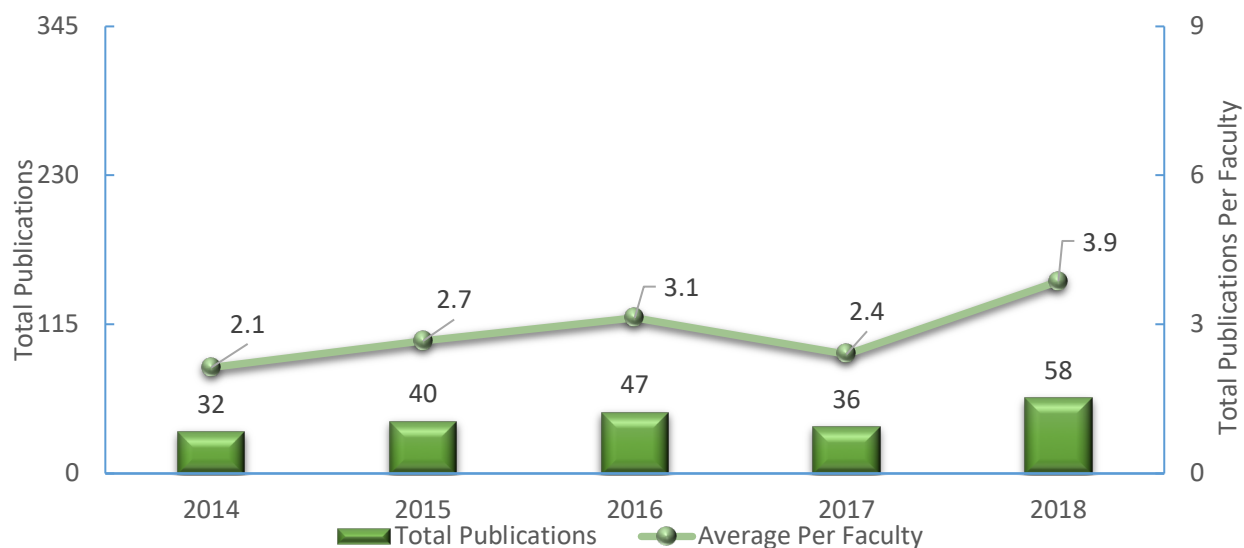
Based on 15 verified research-active faculty



### 11.3 Publications, Citations and H-index

Displayed in Figure 11.3, since 2014, the total number of publications for the Department of Pediatrics has increased from **32** to **58** in 2018. Average publications per faculty have also risen from **2.1** in 2014 to **3.9** in 2018.

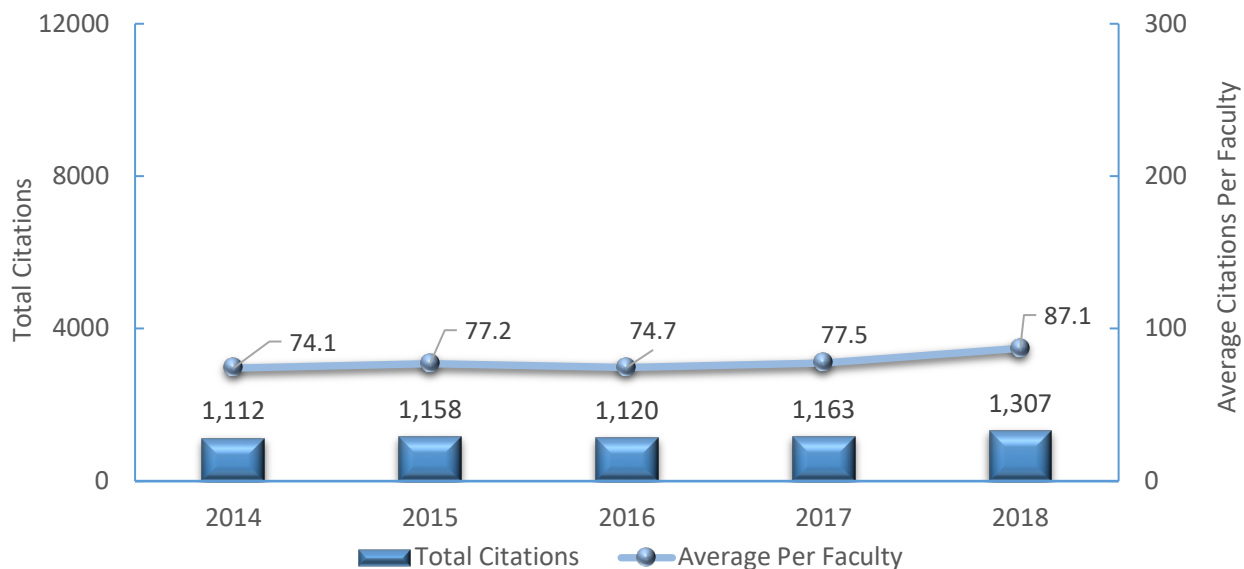
FIGURE 11.3: DEPARTMENT OF PEDIATRICS 5-YEAR PUBLICATIONS



Based on **15** verified research-active faculty.

Figure 11.4 exhibits year-over-year citations for Department of Pediatrics researchers, from **1,112** in 2014 to **1,307** in 2018 and average citations from **74.1** in 2014 to **87.1** in 2018.

FIGURE 11.4: DEPARTMENT OF PEDIATRICS 5-YEAR CITATIONS



Based on **15** verified research-active faculty

Faculty belonging to the Department of Pediatrics have a combined 5-year total h-index of **131**. The average 5-year total h-index per faculty is **8.7**.

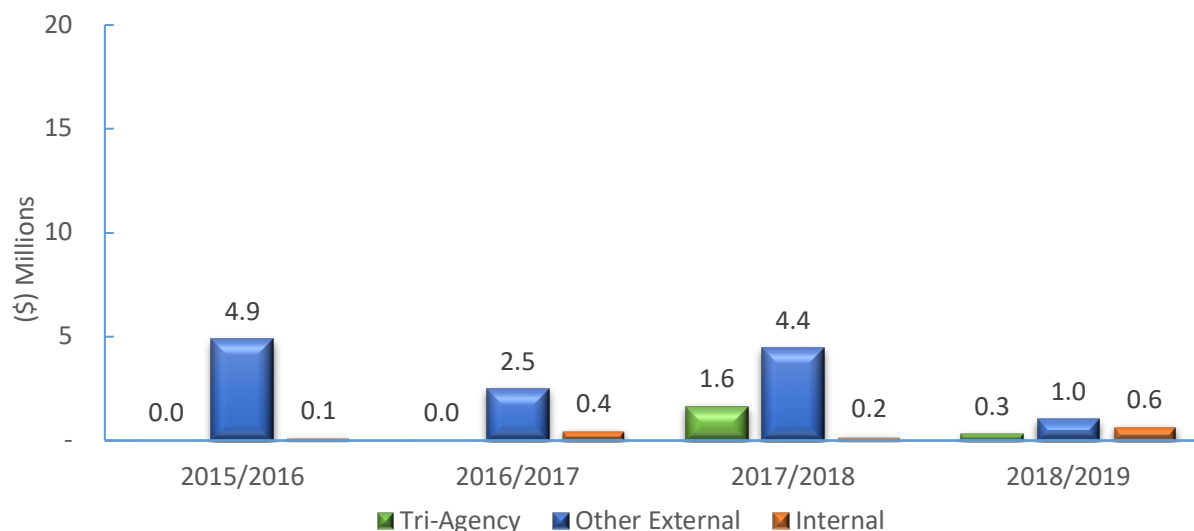


## 12. Division of Oncology

### 12.1 Research Funding

In the fiscal year 2015/2016, the Division of Oncology held a total of **\$4,983,985** in research funding, which decreased to **\$1,936,414** in 2018/2019.

FIGURE 12.1: DIVISION OF ONCOLOGY RESEARCH FUNDING

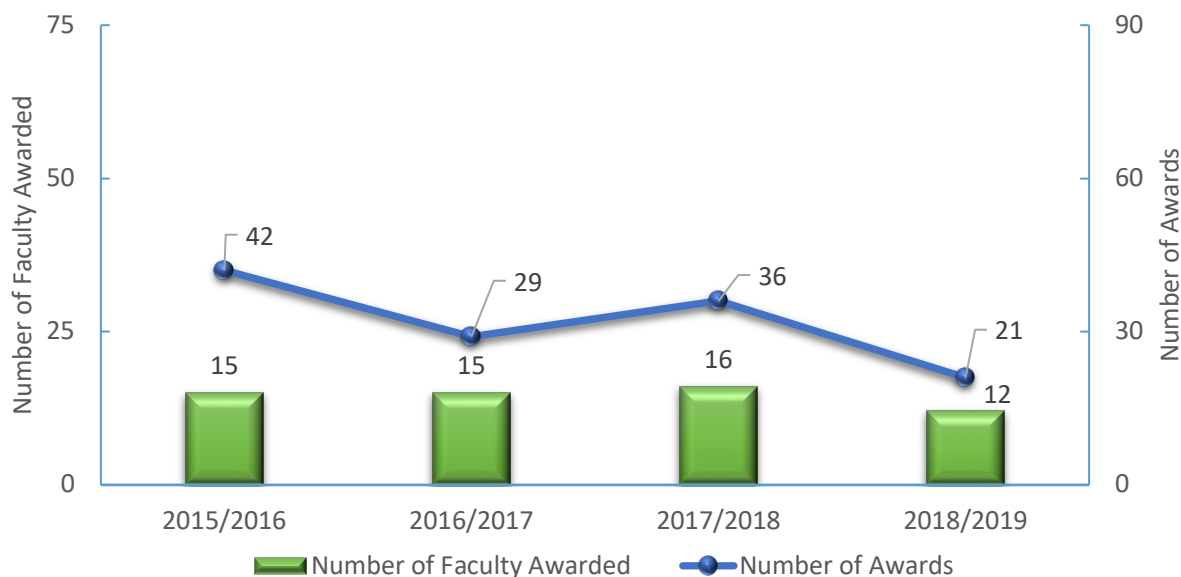


Based on **14** verified research-active faculty

### 12.2 Research Projects Awarded

As outlined in Figure 12.2, in 2015/2016, researchers in the Division of Oncology received **42** total awards, which declined to **21** in 2018/2019. The number of faculty award recipients fell from **15** in 2015/2016 to **12** in 2018/2019.

FIGURE 12.3: DIVISION OF ONCOLOGY RESEARCH PROJECTS AWARDED

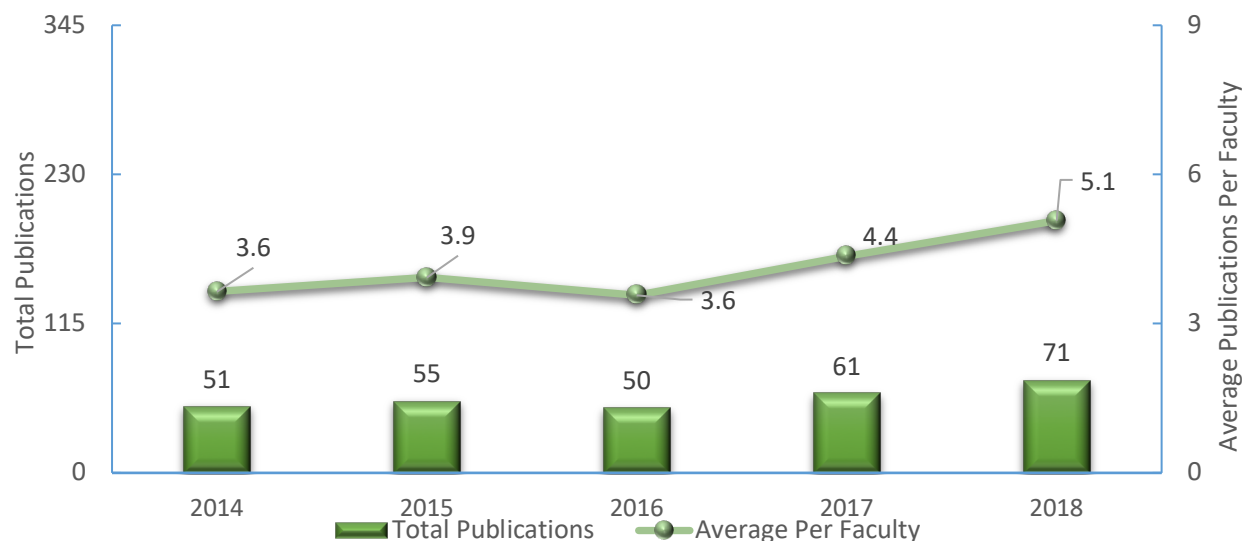


Based on **14** verified research-active faculty

## 12.3 Publications, Citations and H-index

Displayed in Figure 12.3, since 2014, the total number of publications for the Division of Oncology has increased from **51** to **71** in 2018. Average publications per faculty have also risen from **3.6** in 2014 to **5.1** in 2018.

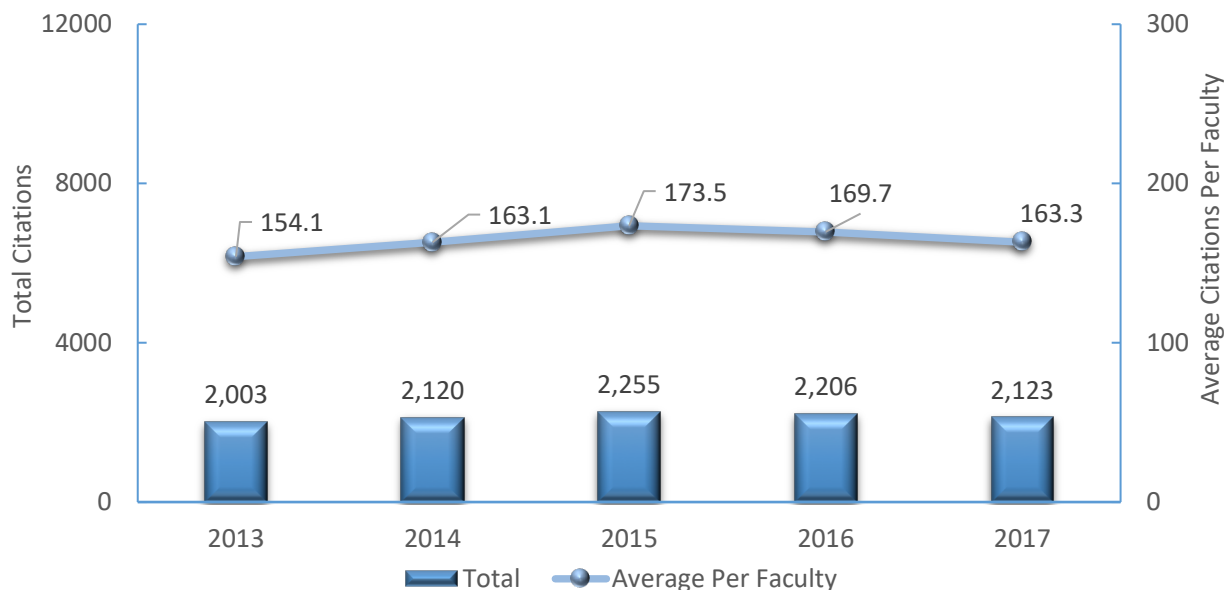
**FIGURE 12.3: DIVISION OF ONCOLOGY 5-YEAR PUBLICATIONS**



Based on **14** verified research-active faculty

Figure 12.4 exhibits year-over-year citations for Division of Oncology researchers, from **2,003** in 2014 to **2,123** in 2018, and average citations from **154.1** in 2014 to **163.3** in 2018.

**FIGURE 12.4: DIVISION OF ONCOLOGY 5-YEAR CITATIONS**



Based on **14** verified research-active faculty

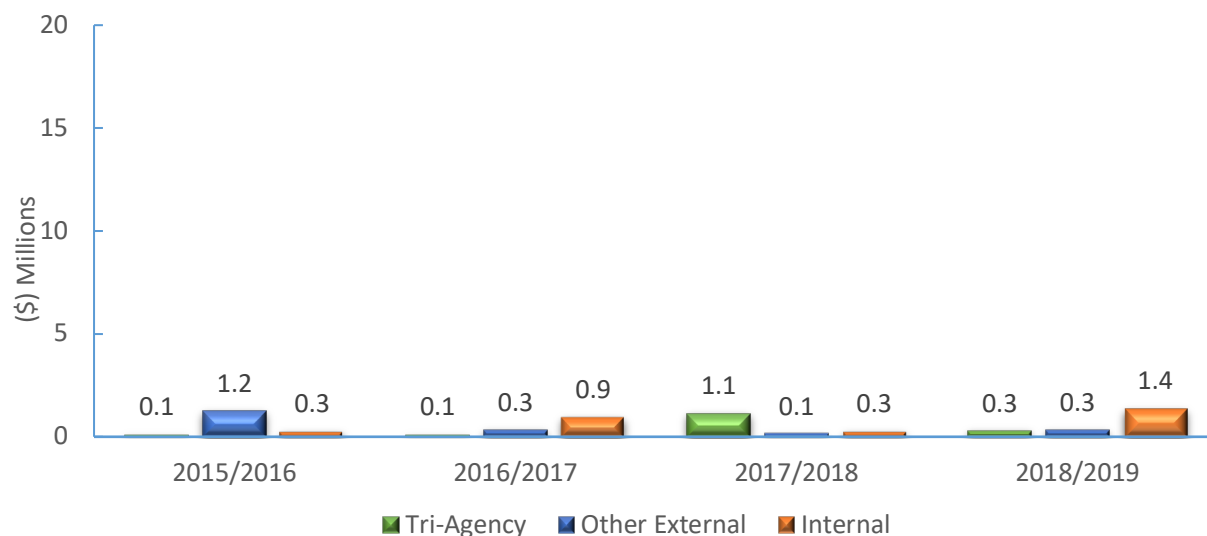
Faculty belonging to the Division of Oncology have a combined 5-year total h-index of **149**. The average 5-year total h-index per faculty is **10.6**.

## 13. Department of Psychiatry

### 13.1 Research Funding

In the fiscal year 2015/2016, the Department of Psychiatry held a total of **\$1,615,484** in research funding, which increased to **\$1,974,275** in 2018/2019.

FIGURE 13.1: DEPARTMENT OF PSYCHIATRY RESEARCH FUNDING

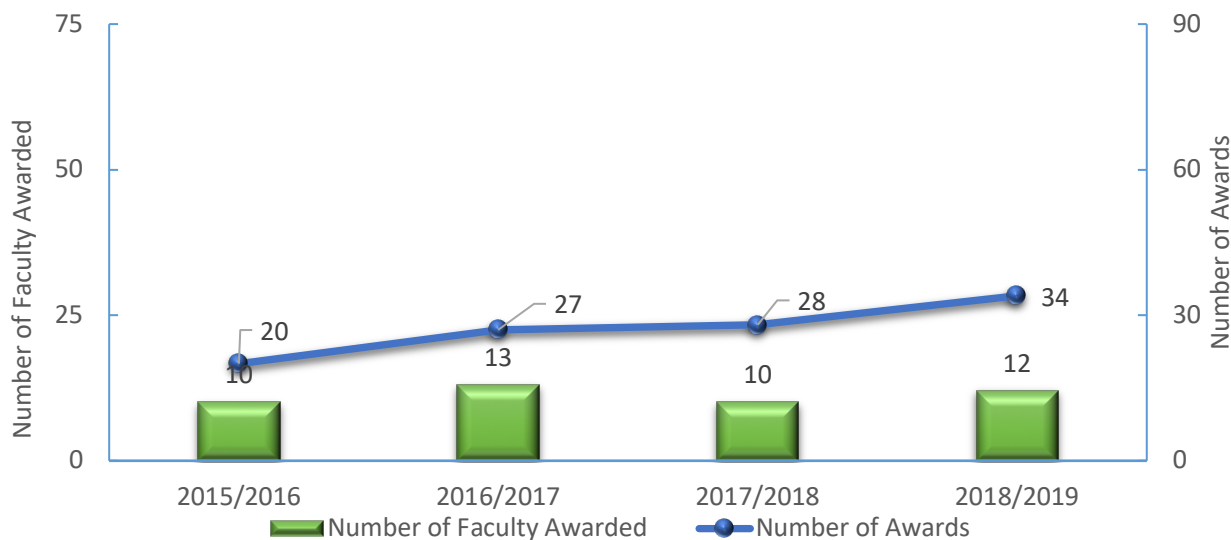


Based on **14** verified research-active faculty

### 13.2 Research Projects Awarded

As outlined in Figure 13.2, researchers in the Department of Psychiatry have demonstrated increasing research projects awarded, from **20** in 2015/2016 to **34** in 2018/2019. The number of faculty award recipients rose from **10** in 2015/2016 to **12** in 2018/2019.

FIGURE 13.2: DEPARTMENT OF PSYCHIATRY RESEARCH PROJECTS AWARDED

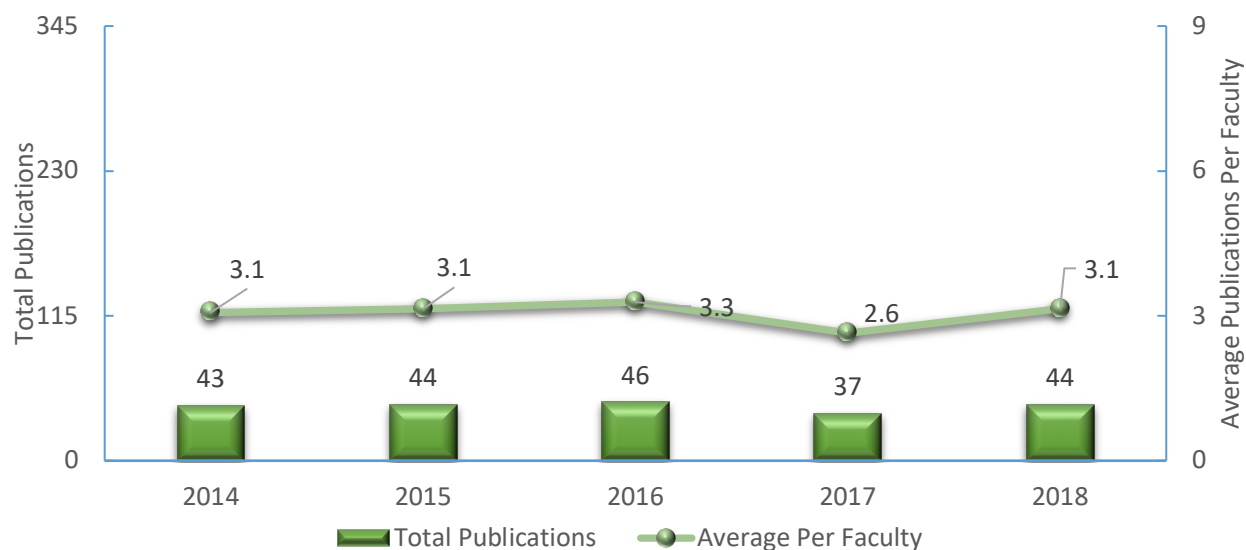


Based on **14** verified research-active faculty

### 13.3 Publications, Citations and H-index

Displayed in Figure 13.3, since 2014, the total number of publications for the Department of Psychiatry has increased from **43** to **44** in 2018. Average publications per faculty have remained constant at **3.1** per faculty between 2014 and 2018.

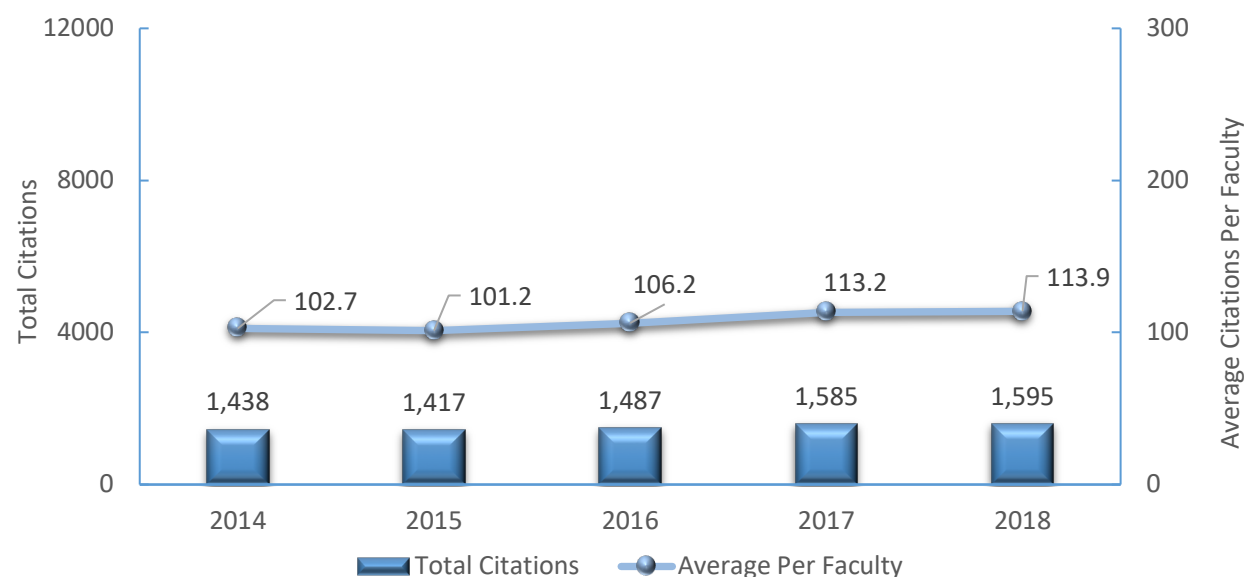
FIGURE 13.4: DEPARTMENT OF PSYCHIATRY 5-YEAR PUBLICATIONS



Based on **14** verified research-active faculty

Figure 13.4 exhibits year-over-year citations for Department of Psychiatry researchers, from **1,438** in 2014 to **1,595** in 2018, and average citations from **102.7** in 2014 to **113.9** in 2018.

FIGURE 13.4: DEPARTMENT OF PSYCHIATRY 5-YEAR CITATIONS



Based on **14** verified research-active faculty

Faculty belonging to the Department of Psychiatry have a combined 5-year total h-index of **151**. The average 5-year total h-index per faculty is **10.8**.

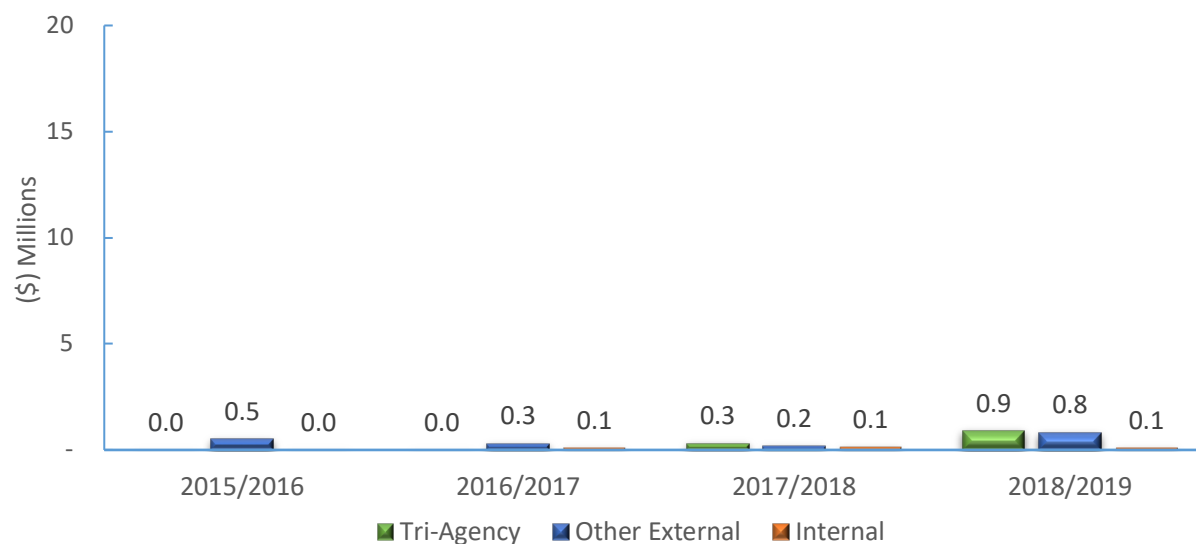


## 14. Department of Medical Imaging

### 14.1 Research Funding

In the fiscal year 2015/2016, the Department of Medical Imaging held a total of **\$492,285** in research funding, which increased to **\$1,803,794** in 2018/2019.

**FIGURE 14.1: DEPARTMENT OF MEDICAL IMAGING RESEARCH FUNDING**

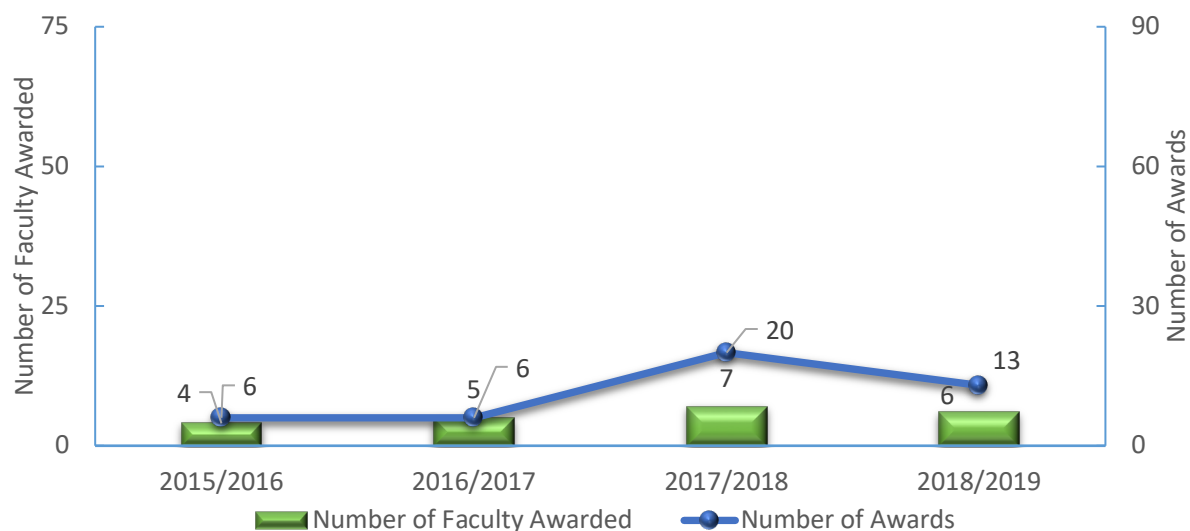


Based on **11** verified research-active faculty

### 14.2 Research Projects Awarded

As outlined in Figure 14.2, researchers in the Department of Medical Imaging have received increasing numbers of research projects awarded between 2015/2016 and 2018/2019, from **6** to **13**. The number of faculty awarded also rose, from **4** to **6**.

**FIGURE 14.2: DEPARTMENT OF MEDICAL IMAGING RESEARCH PROJECTS AWARDED**

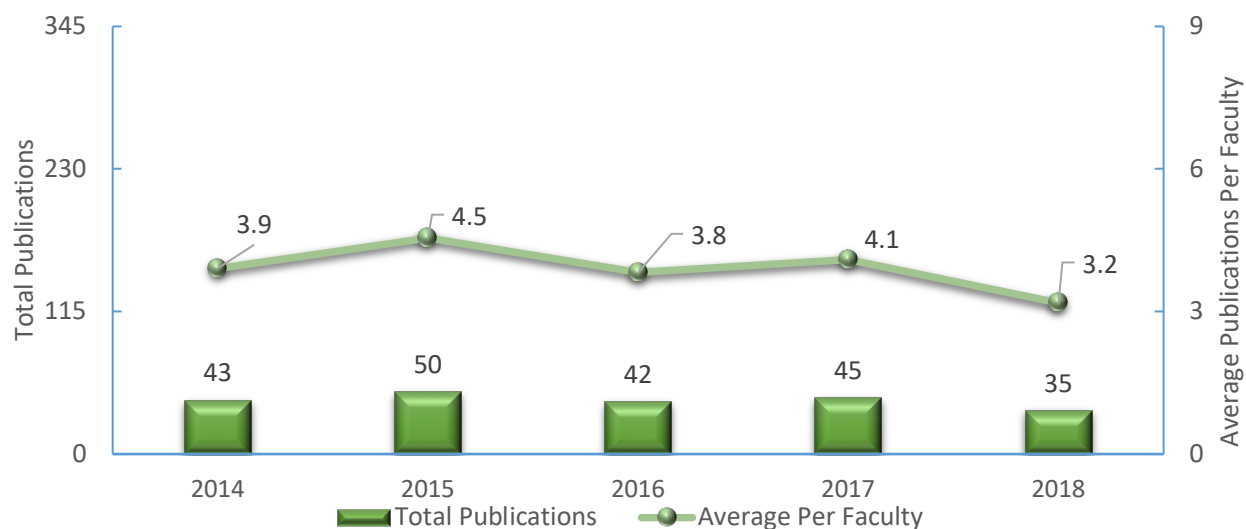


Based on **11** verified research-active faculty

### 14.3 Publications, Citations and H-index

Displayed in Figure 14.3, since 2014, the total number of publications for the Department of Medical Imaging has decreased from **43** to **35** in 2018. Average publications per faculty have also decreased slightly from **3.9** in 2014 to **3.2** in 2018.

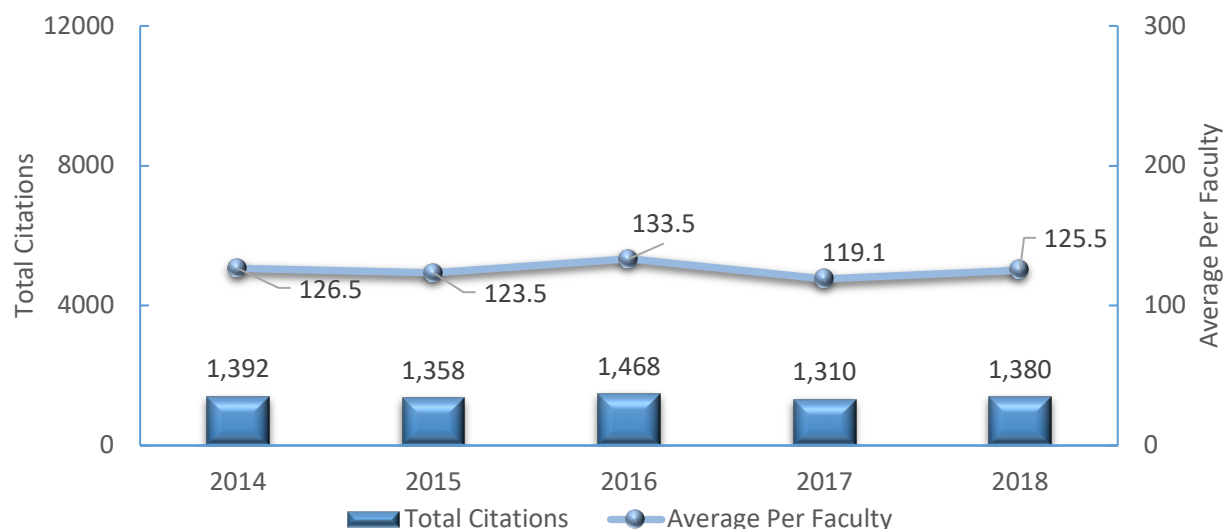
FIGURE 14.3: DEPARTMENT OF MEDICAL IMAGING 5-YEAR PUBLICATIONS



Based on **11** verified research-active faculty

Figure 14.4 exhibits year-over-year citations for Department of Medical Imaging researchers, from **1,392** in 2014 to **1,380** in 2018 and average citations from **126.5** in 2014 to **125.5** in 2018.

FIGURE 14.4: DEPARTMENT OF MEDICAL IMAGING 5-YEAR CITATIONS



Based on **11** verified research-active faculty

Faculty belonging to the Department of Medical Imaging have a combined 5-year total h-index of **109**. The average 5-year total h-index per faculty is **9.9**.

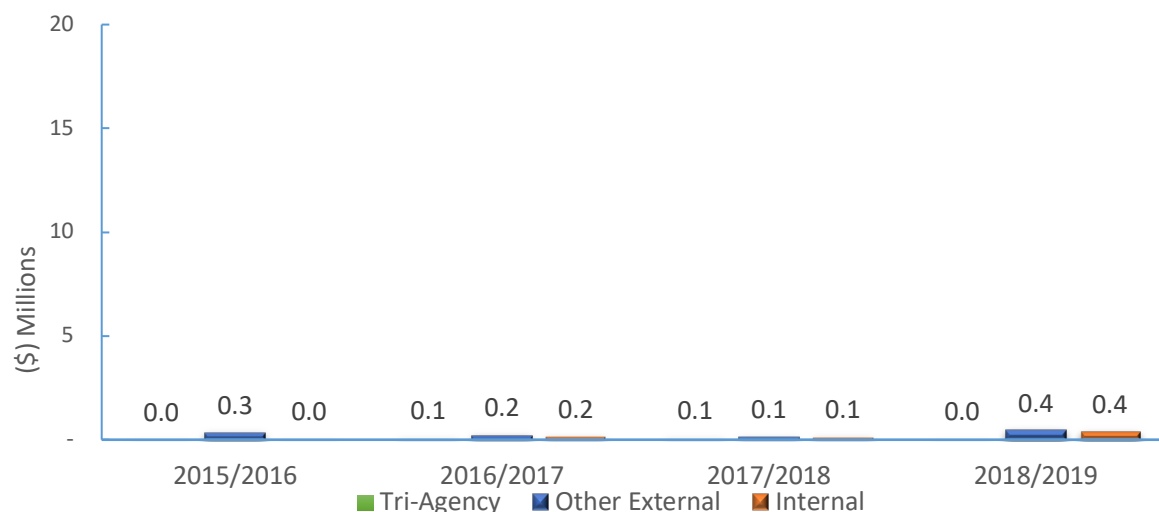


## 15. School of Rehabilitation Science

### 15.1 Research Funding

In the fiscal year 2015/2016, the School of Rehabilitation Science held a total of **\$318,478** in research funding, which increased to **\$815,846** in 2018/2019.

FIGURE 15.1: SCHOOL OF REHABILITATION SCIENCE RESEARCH FUNDING

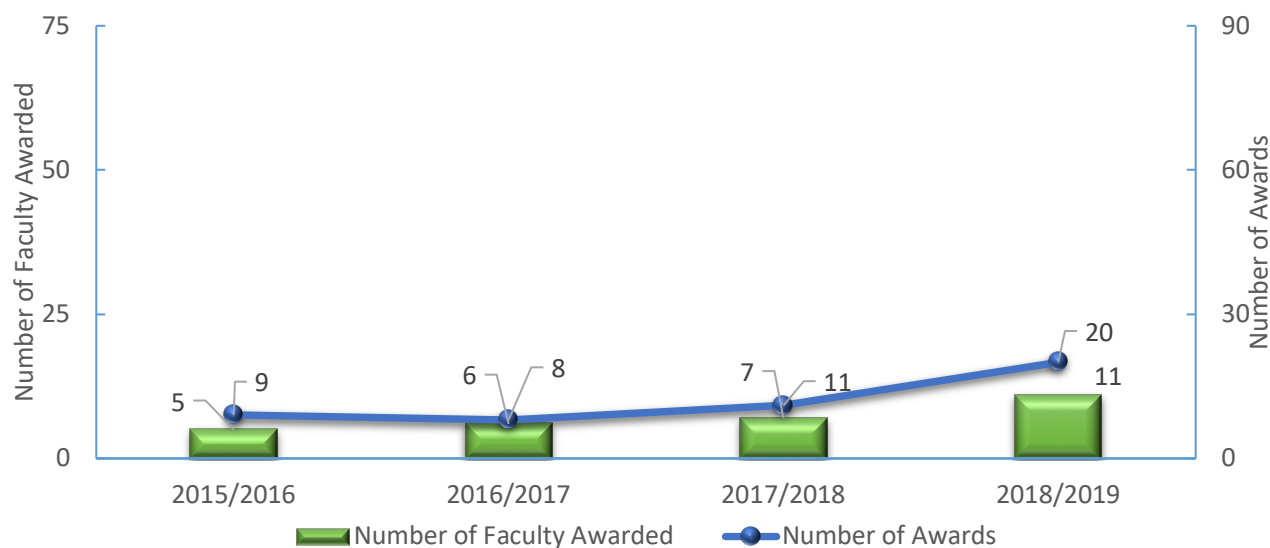


Based on **11** verified research-active faculty

### 15.2 Research Projects Awarded

As outlined in Figure 15.2, researchers in the School of Rehabilitation Science have demonstrated overall increasing total research projects awarded between 2015/2016 and 2018/2019, from **9** to **20**, and faculty award recipients rose from **5** to **11**.

FIGURE 15.2: SCHOOL OF REHABILITATION SCIENCE RESEARCH PROJECTS AWARDED



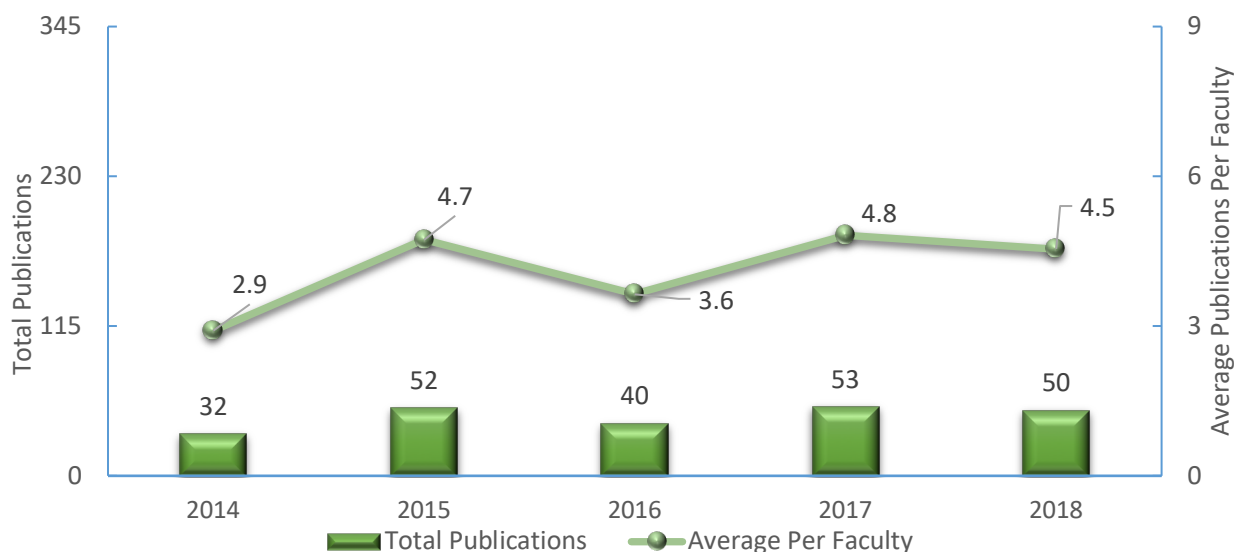
Based on **11** verified research-active faculty



### 15.3 Publications, Citations and H-index

Displayed in Figure 15.3, since 2014, the total number of publications for the School of Rehabilitation Science has increased from **32** to **50** in 2018. Average publications per faculty have also increased, from **2.9** in 2014 to **4.5** in 2018.

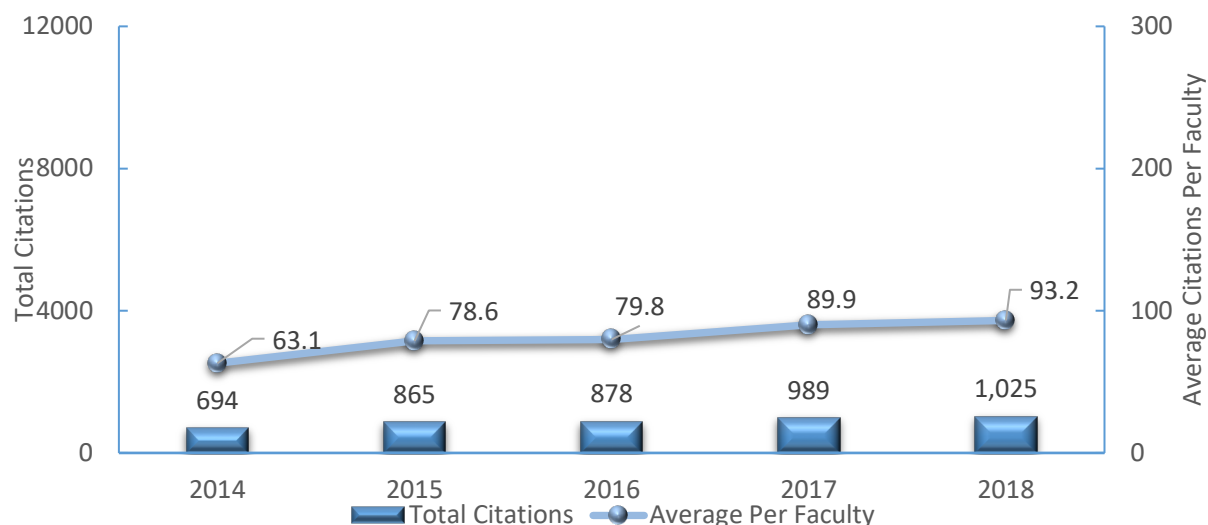
FIGURE 15.3: SCHOOL OF REHABILITATION SCIENCE 5-YEAR PUBLICATIONS



Based on **11** verified research-active faculty

Figure 15.4 exhibits year-over-year citations for School of Rehabilitation Science researchers, from **694** in 2014 to **1,025** in 2018 and average citations from **63.1** in 2014 to **93.2** in 2018.

FIGURE 15.4: SCHOOL OF REHABILITATION SCIENCE 5-YEAR CITATIONS



Based on **11** verified research-active faculty

Faculty belonging to the School of Rehabilitation Science have a combined 5-year total h-index of **102**. The average 5-year total h-index per faculty is **9.3**.

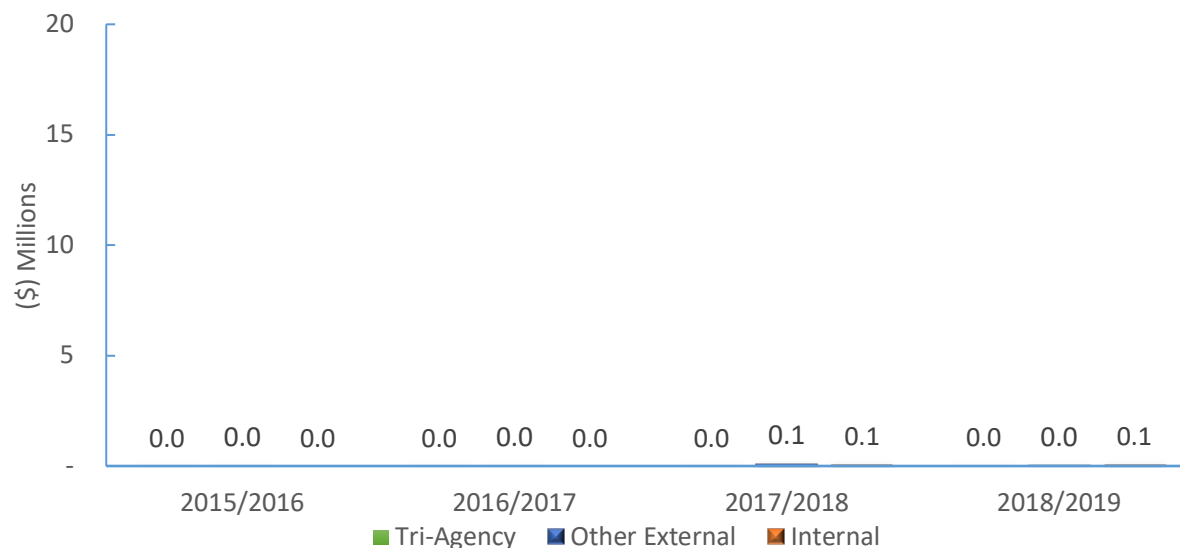


## 16. Department of Emergency Medicine

### 16.1 Research Funding

In 2015/2016, the Department of Emergency Medicine held a balance of zero research funding, which increased to **\$107,655** in 2018/2019.

FIGURE 16.1: DEPARTMENT OF EMERGENCY MEDICINE RESEARCH FUNDING

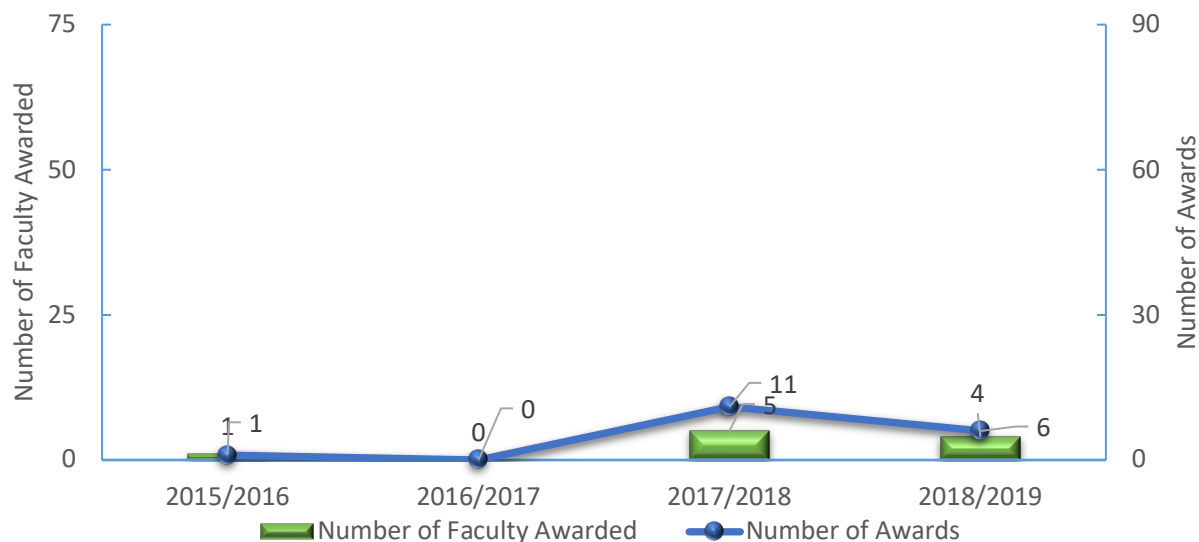


Based on **10** verified research-active faculty

### 16.2 Research Projects Awarded

As outlined in Figure 16.2, the Department of Emergency Medicine showed an increase in number of awards from **1** in 2015/2016 to **6** ending 2018/2019. The number of faculty award recipients rose from **1** in 2015/2016 to **4** ending 2018/2019.

FIGURE 16.2: DEPARTMENT OF EMERGENCY MEDICINE RESEARCH PROJECTS AWARDED

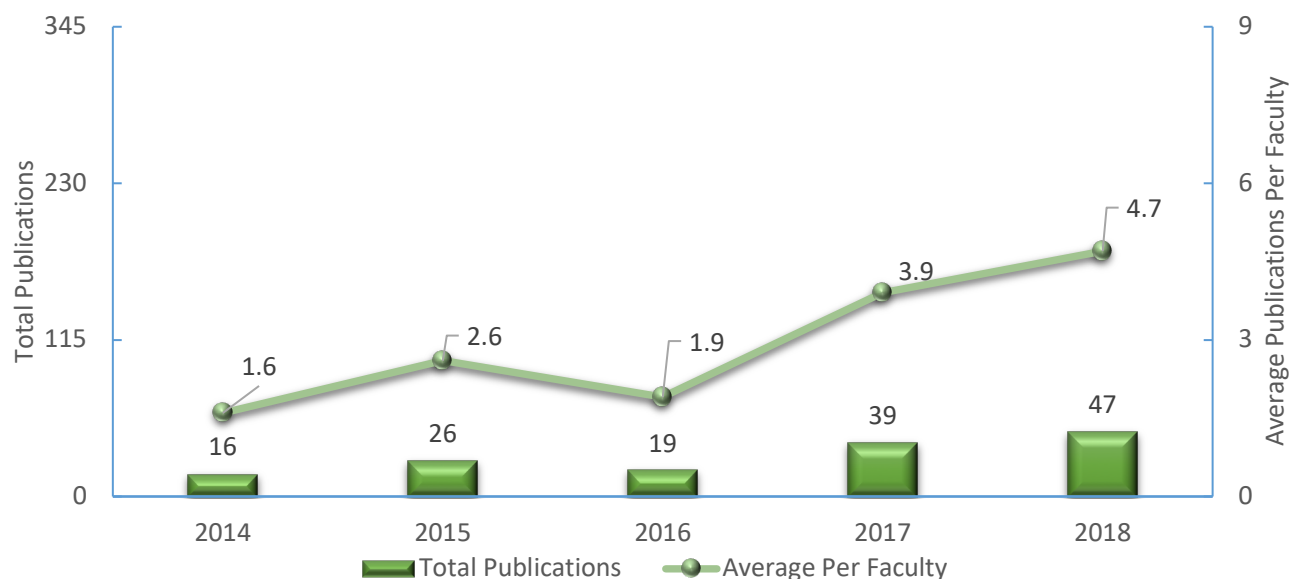


Based on **10** verified research-active faculty

### 16.3 Publications, Citations and H-index

Displayed in Figure 16.3, since 2014, the total number of publications for the Department of Emergency Medicine has increased from **16**, to **47** in 2018. Average publications per faculty have also increased from **1.6** in 2014 to **4.7** in 2018.

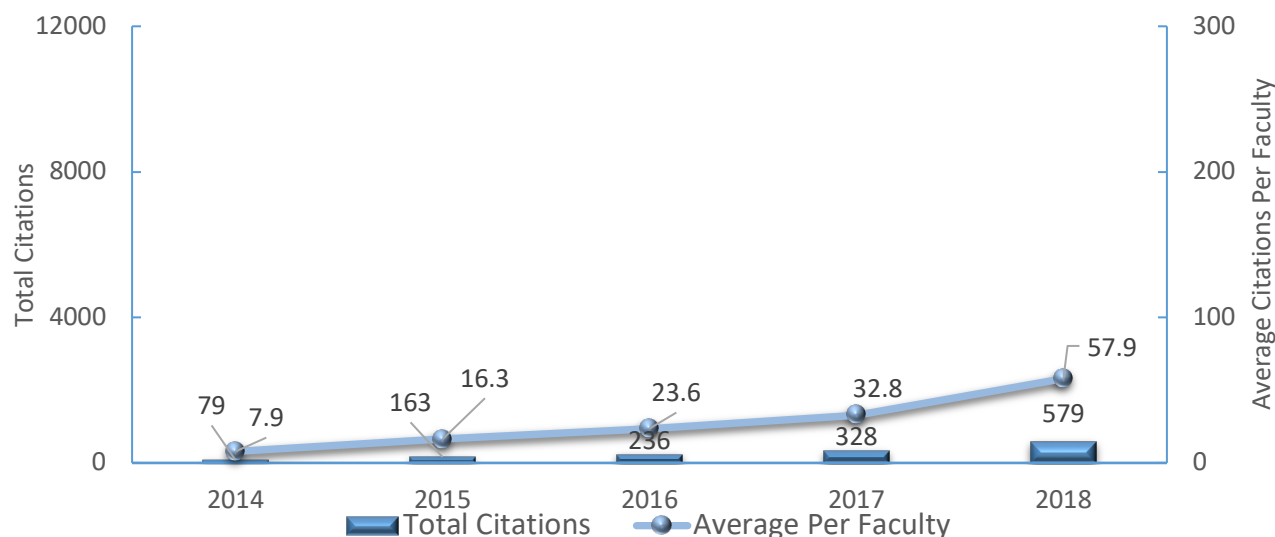
**FIGURE 16.3: DEPARTMENT OF EMERGENCY MEDICINE 5-YEAR PUBLICATIONS**



Based on **10** verified research-active faculty

Figure 16.4 exhibits year-over-year citations for Department of Emergency Medicine researchers from **79** in 2014 to **579** in 2018, and average citations from **7.9** in 2014 to **57.9** in 2018.

**FIGURE 16.4: DEPARTMENT OF EMERGENCY MEDICINE 5-YEAR CITATIONS**



Based on **10** verified research-active faculty

Faculty belonging to the Department of Emergency Medicine have a combined 5-year total h-index of **44**. The average 5-year total h-index per faculty is **4.4**.

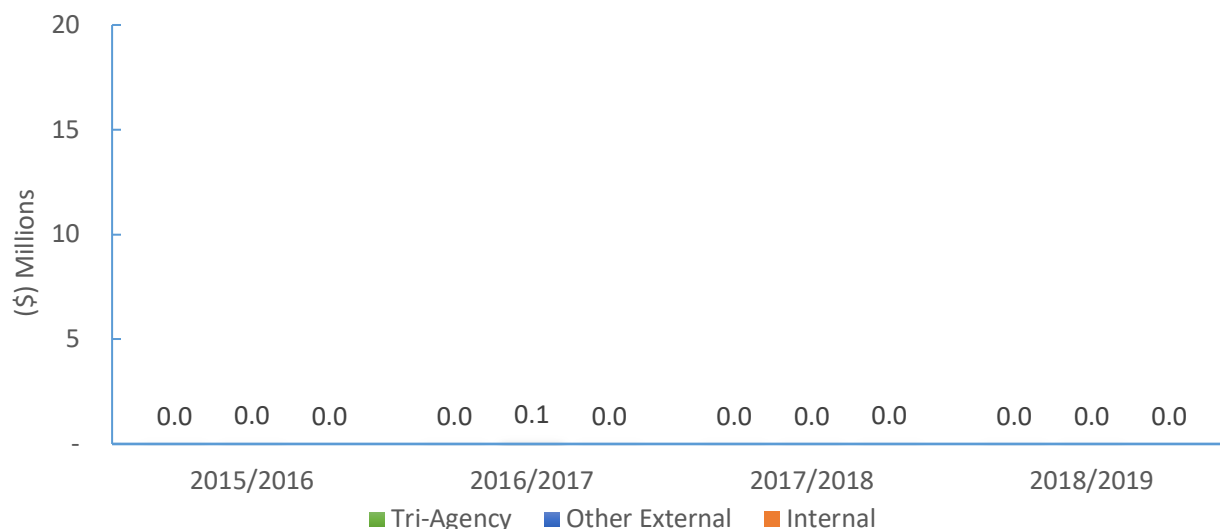


## 17. Department of Obstetrics and Gynecology

### 17.1 Research Funding

In the fiscal year 2015/2016, the Department of Obstetrics and Gynecology had **\$25,495** in research funding, and in 2018/2019 held a balance of zero research funding.

FIGURE 17.1: DEPARTMENT OF OBSTETRICS AND GYNECOLOGY RESEARCH FUNDING

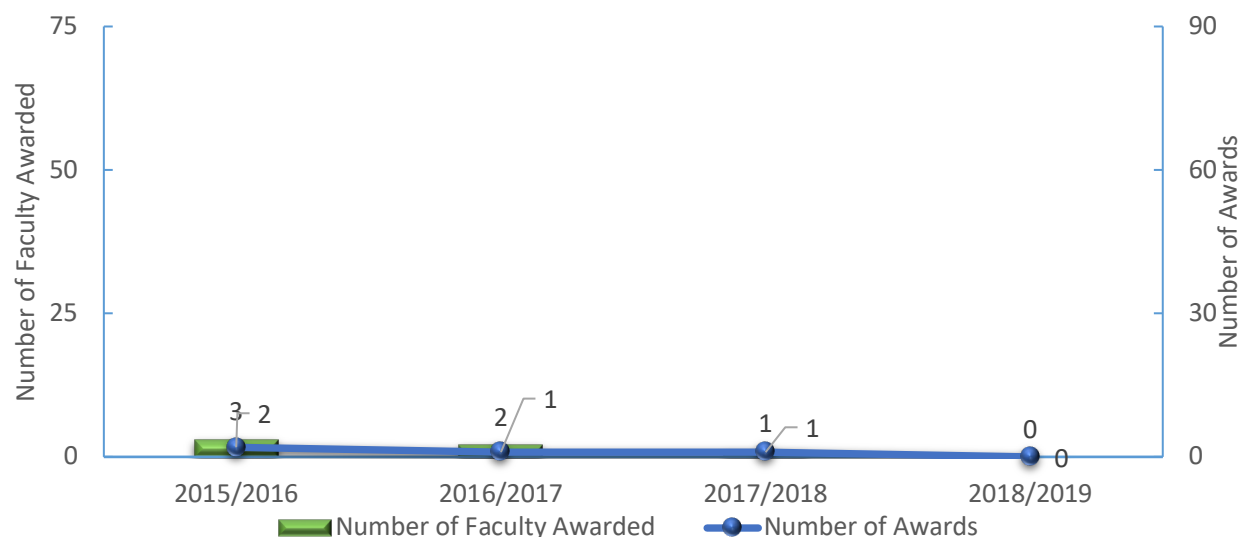


Based on 6 verified research-active faculty

### 17.2 Research Projects Awarded

As outlined in Figure 17.2, the Department Obstetrics and Gynecology showed a decrease in number of awards from 2 in 2015/2016 to 0 ending 2018/2019. The number of faculty award recipients declined from 2 in 2015/2016 to 0 ending 2018/2019.

FIGURE 17.2: DEPARTMENT OF OBSTETRICS AND GYNECOLOGY RESEARCH PROJECTS AWARDED

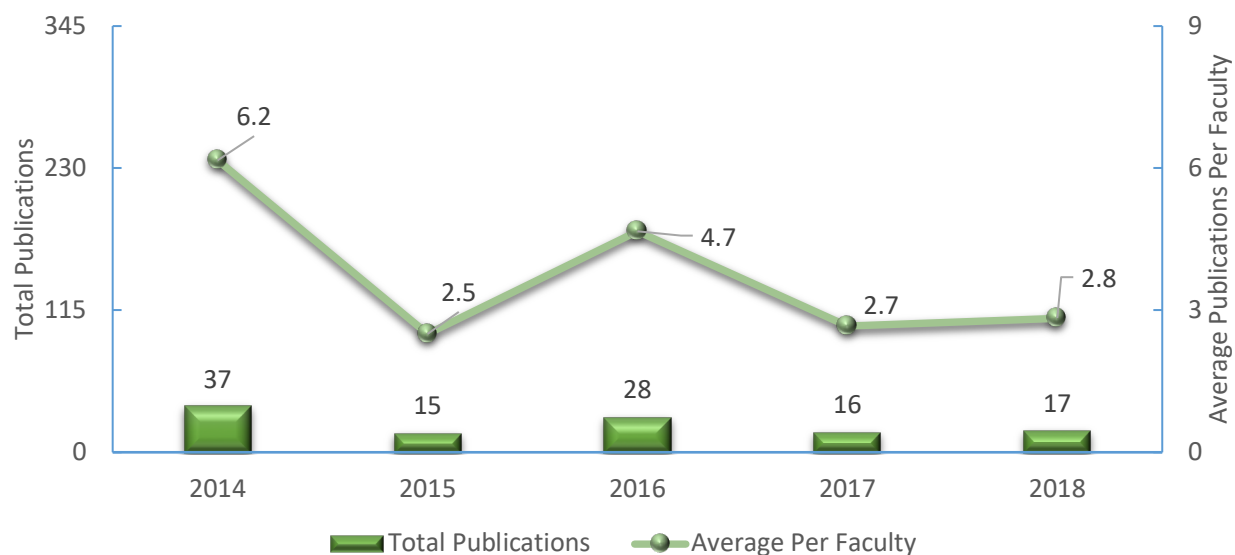


Based on 6 verified research-active faculty

### 17.3 Publications, Citations and H-index

Displayed in Figure 17.3, since 2014, the total number of publications for the Department of Obstetrics and Gynecology decreased from **37** to **17** in 2018. Average publications per faculty have also declined from **6.2** in 2014 to **2.8** in 2018.

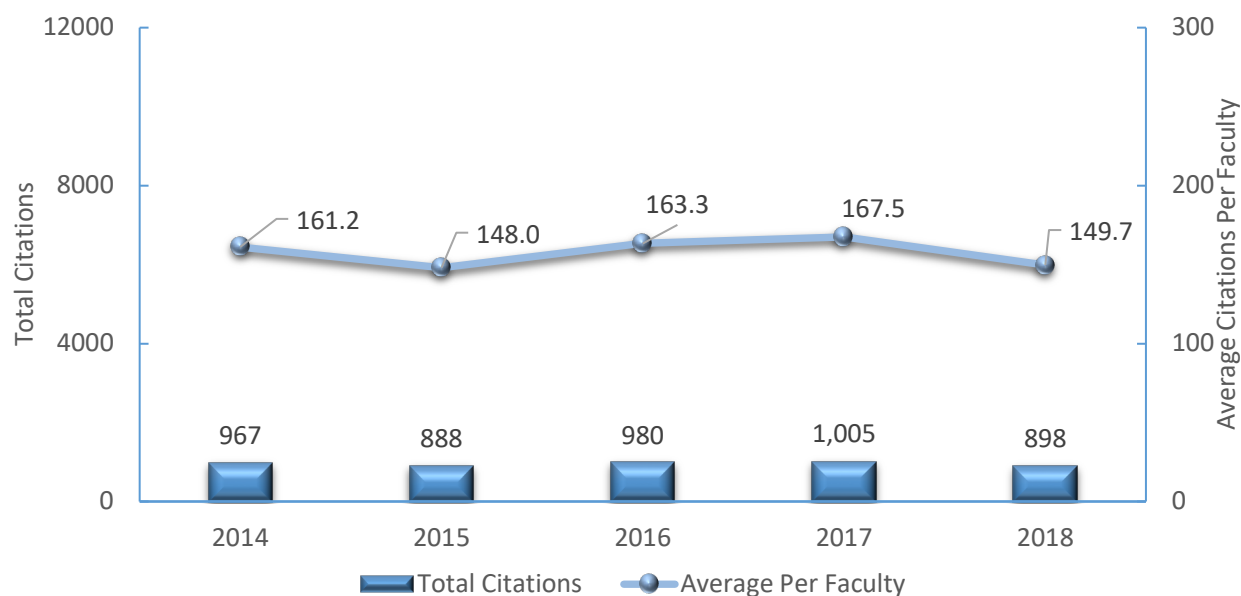
**FIGURE 17.3: DEPARTMENT OF OBSTETRICS AND GYNECOLOGY 5-YEAR PUBLICATIONS**



Based on 6 verified research-active faculty

Figure 17.4 exhibits year-over-year citations for Department of Obstetrics and Gynecology researchers from **961** in 2014 to **898** in 2018 and average citations from **161.2** in 2014 to **149.7** in 2018.

**FIGURE 17.4: DEPARTMENT OF OBSTETRICS AND GYNECOLOGY 5-YEAR CITATIONS**



Based on 6 verified research-active faculty

Faculty belonging to the Department of Obstetrics and Gynecology have a combined 5-year total h-index of **75**. The average 5-year total h-index per faculty is **12.5**.

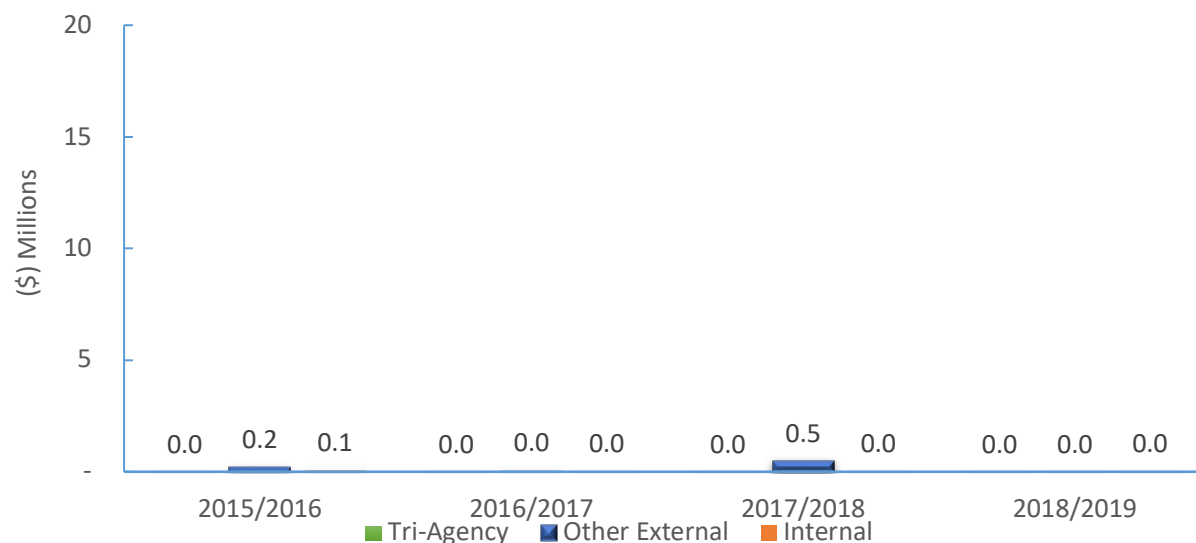


## 18. Department of Physical Medicine and Rehabilitation

### 18.1 Research Funding

In the fiscal year 2015/2016, the Department of Physical Medicine and Rehabilitation held a research funding balance of **\$237,822**, which decreased to **\$23,250** ending 2018/2019.

FIGURE 18.1: DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION RESEARCH FUNDING

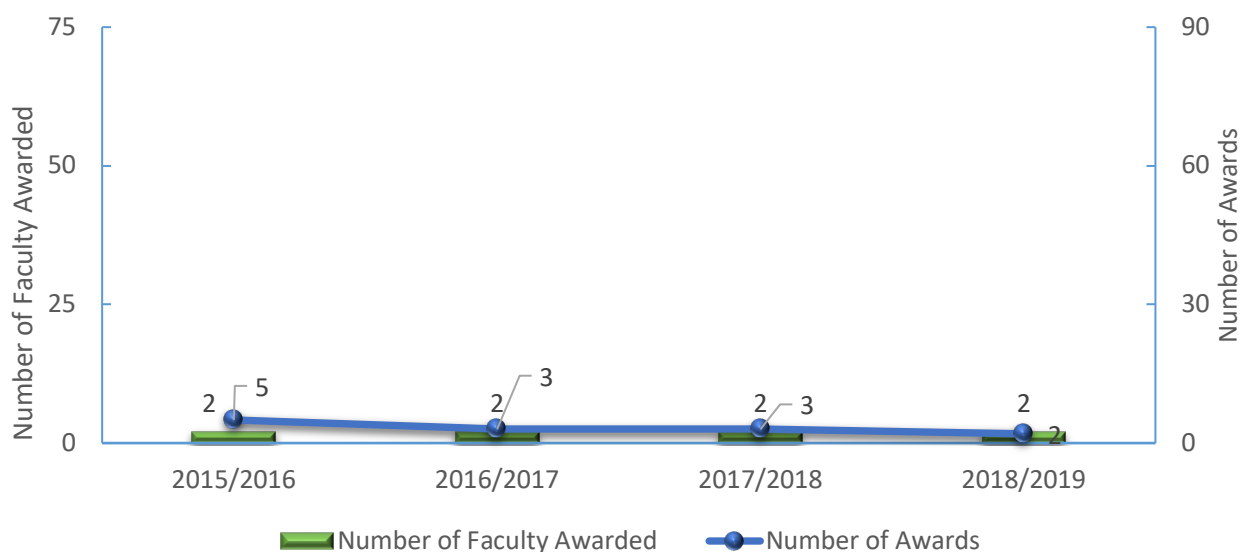


Based on 5 verified research-active faculty

### 18.2 Research Projects Awarded

As outlined in Figure 18.2, the Department of Physical Medicine and Rehabilitation showed a decrease in number of awards from 5 in 2015/2016 to 2 ending 2018/2019. The number of faculty award recipients remained constant at 2 from 2015/2016 to 2018/2019.

FIGURE 18.2: DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION RESEARCH PROJECTS AWARDED

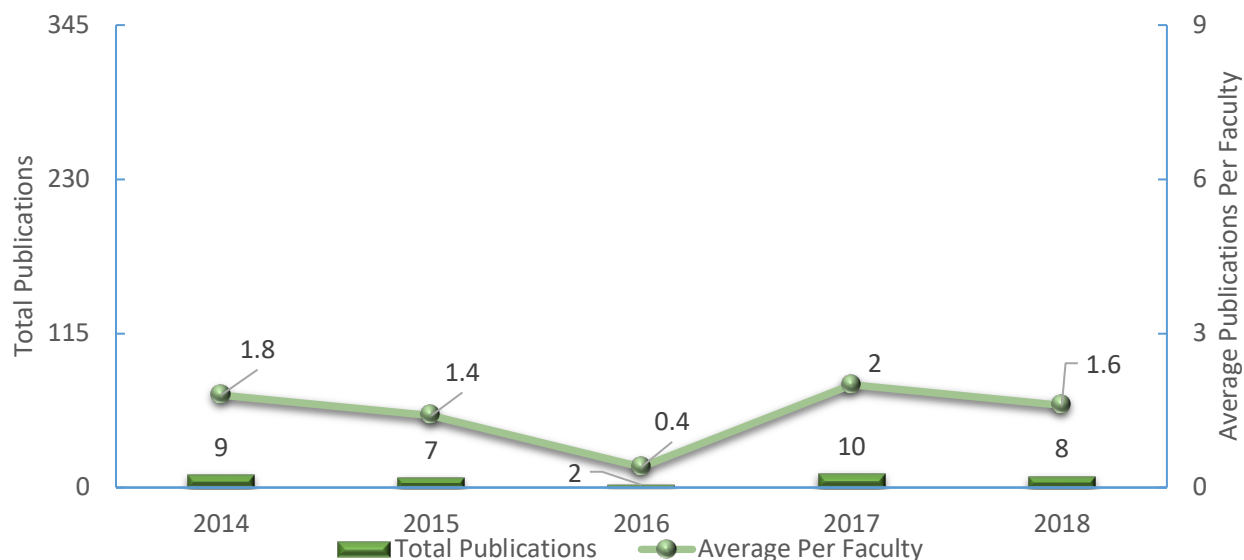


Based on 5 verified research-active faculty

### 18.3 Publications, Citations and H-index

Displayed on Figure 18.3, since 2014, the total number of publications for the Department of Physical Medicine and Rehabilitation has decreased from **9** to **8** in 2018. Average publications per faculty have also declined from **1.8** in 2014 to **1.6** in 2018.

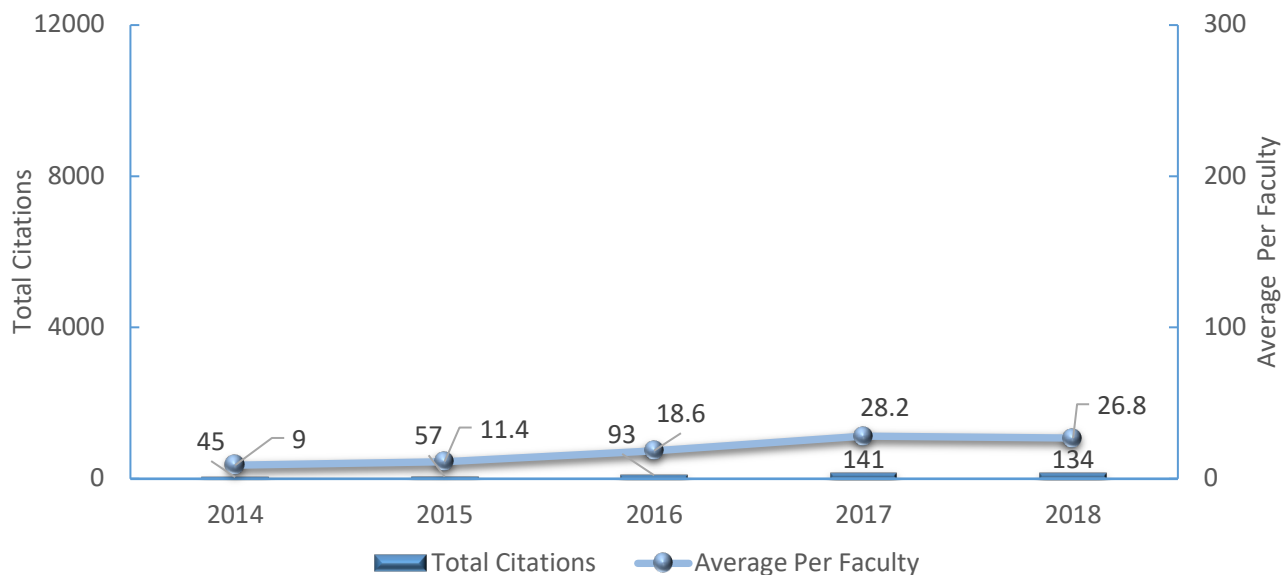
**FIGURE 18.4: DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION 5-YEAR PUBLICATIONS**



Based on 5 verified research-active faculty.

Figure 18.4 exhibits year-over-year citations for Department of Physical Medicine and Rehabilitation researchers, from **45** in 2014 to **134** in 2018 and average citations from **9.0** in 2014 to **26.8** in 2018.

**FIGURE 18.4: DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION 5-YEAR CITATIONS**



Based on 5 verified research-active faculty

Faculty belonging to the Department of Physical Medicine and Rehabilitation have a combined 5-year total h-index of **17**. The average 5-year total h-index per faculty is **3.4**.

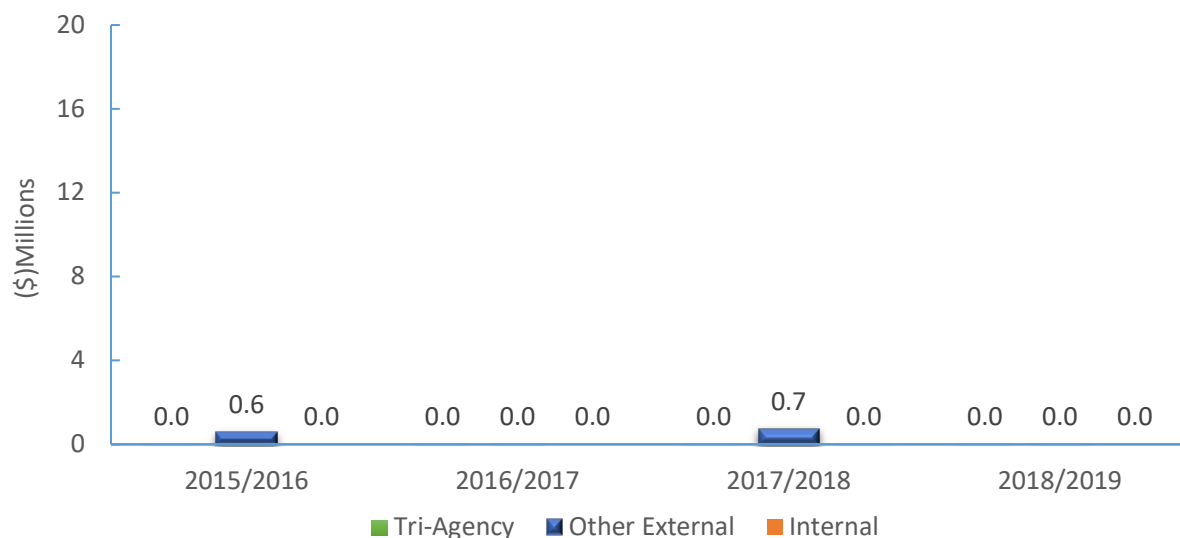


## 19. Department of Ophthalmology

### 19.1 Research Funding

In the fiscal year 2015/2016, the Department of Ophthalmology held a research funding balance of **\$570,848**, which decreased to zero ending 2018/2019.

FIGURE 19.1: DEPARTMENT OF OPHTHALMOLOGY RESEARCH FUNDING

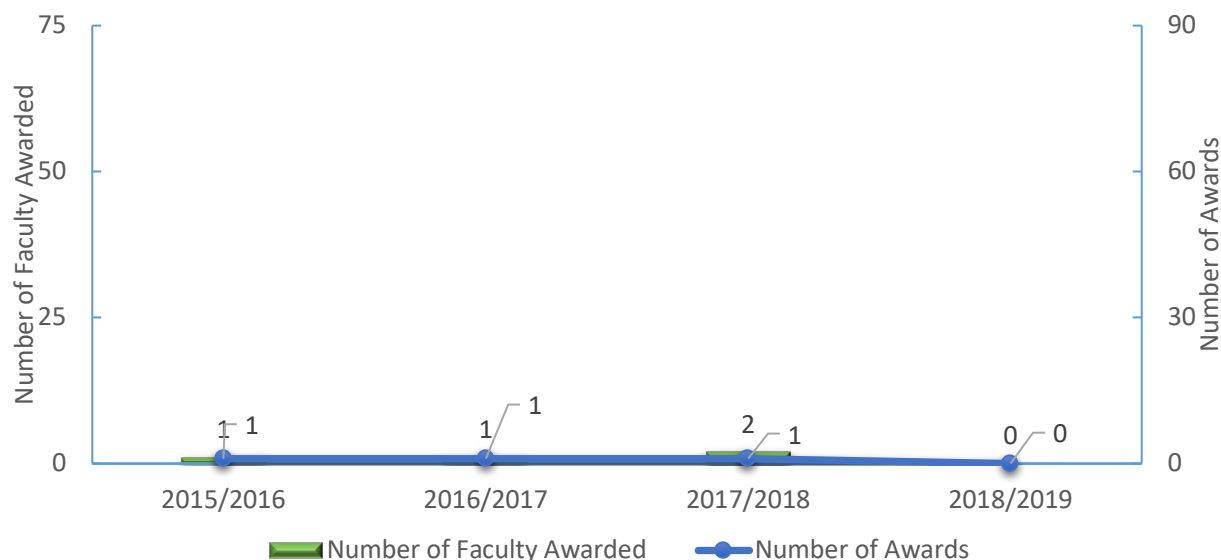


Based on 2 verified research-active faculty

### 19.2 Research Projects Awarded

As outlined in Figure 19.2, the Department of Ophthalmology showed a decrease in number of awards from 2015/2016 to 2018/2019, from 1 to 0. The number of faculty award recipients also fell from 1 from to 0 in 2018/2019.

FIGURE 19.2: DEPARTMENT OF OPHTHALMOLOGY RESEARCH PROJECTS AWARDED



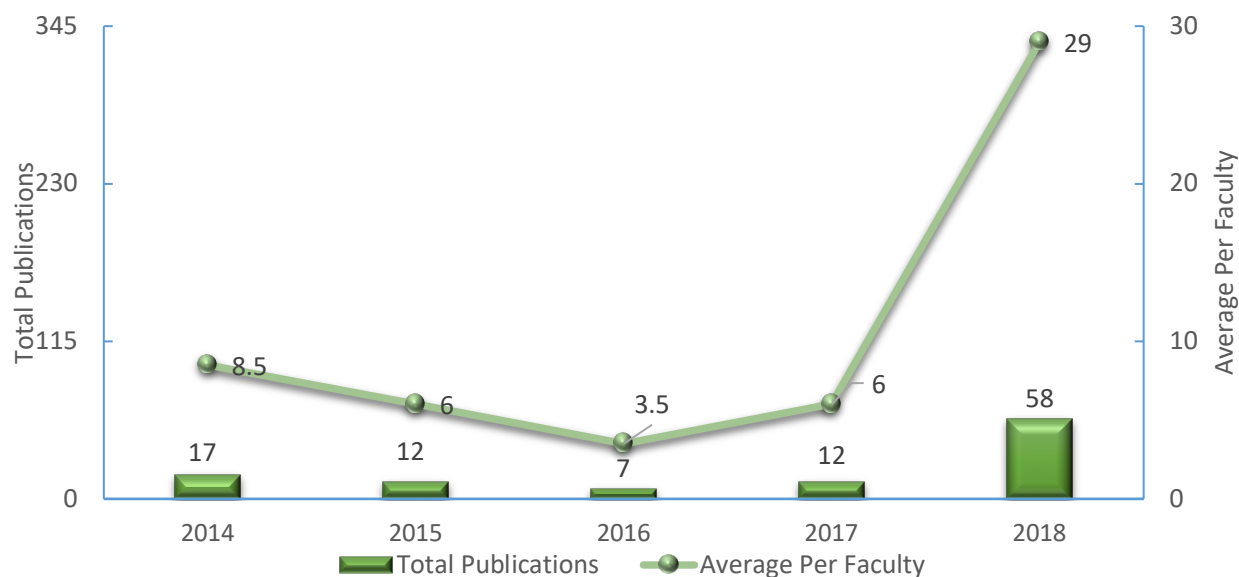
Based on 2 verified research-active faculty



### 19.3 Publications, Citations and H-index

Displayed on Figure 19.3, since 2014, the total number of publications for the Department of Ophthalmology has increased from **17** to **58** in 2018. Average publications per faculty have also increased from **8.5** in 2014 to **29** in 2018.

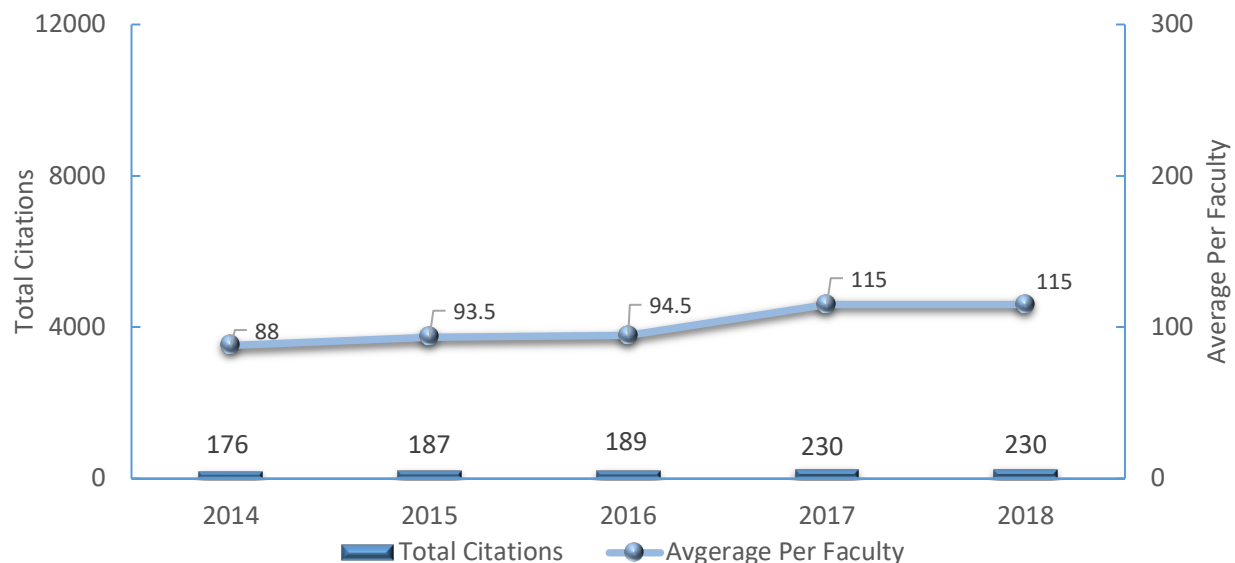
**FIGURE 19.3: DEPARTMENT OF OPHTHALMOLOGY 5-YEAR PUBLICATIONS**



Based on **2** verified research-active faculty.

Figure 19.4 exhibits year-over-year citations for Department of Ophthalmology researchers, from **176** in 2014 to **230** in 2018, and average citations from **88** in 2014 to **115** in 2018.

**FIGURE 19.4: DEPARTMENT OF OPHTHALMOLOGY 5-YEAR CITATIONS**



Based on **2** verified research-active faculty

Faculty belonging to the Department of Ophthalmology have a combined 5-year total h-index of **17**. The average 5-year total h-index per faculty is **8.5**.



## 20. Conclusion and Looking Forward

This is the first in-depth analysis of research productivity in the history of CoM. For this analysis, we used verified and conventional methods, tracking bibliometrics and funding data as the primary mechanisms for measuring researcher productivity. While these types of metrics can be effective for demonstrating the impact of research that has progressed to the level of publishing, and the economic influence of research awards for the University, they may overlook the value of community-engaged research or the significance of forging collaborative working relationships.

The [OVDR Task Force on Research Metrics](#) is working to compile research discipline-specific metrics to measure and recognize all of the distinct genres of health research that are performed in the CoM. This report serves as a baseline for benchmarking research productivity at the CoM, and some indices proposed and verified by our task force will be used to prepare future reports of CoM research output to reflect the diversity of health research.

In this report, the OVDR has outlined and highlighted research successes using bibliometrics and research funding dollars and awards. Looking forward, in order to maintain momentum it will be imperative to continue to invest in internal funding initiatives to engage and empower our students and faculty, creating increased accessibility to external awards and fostering a culture of research success and equity.