

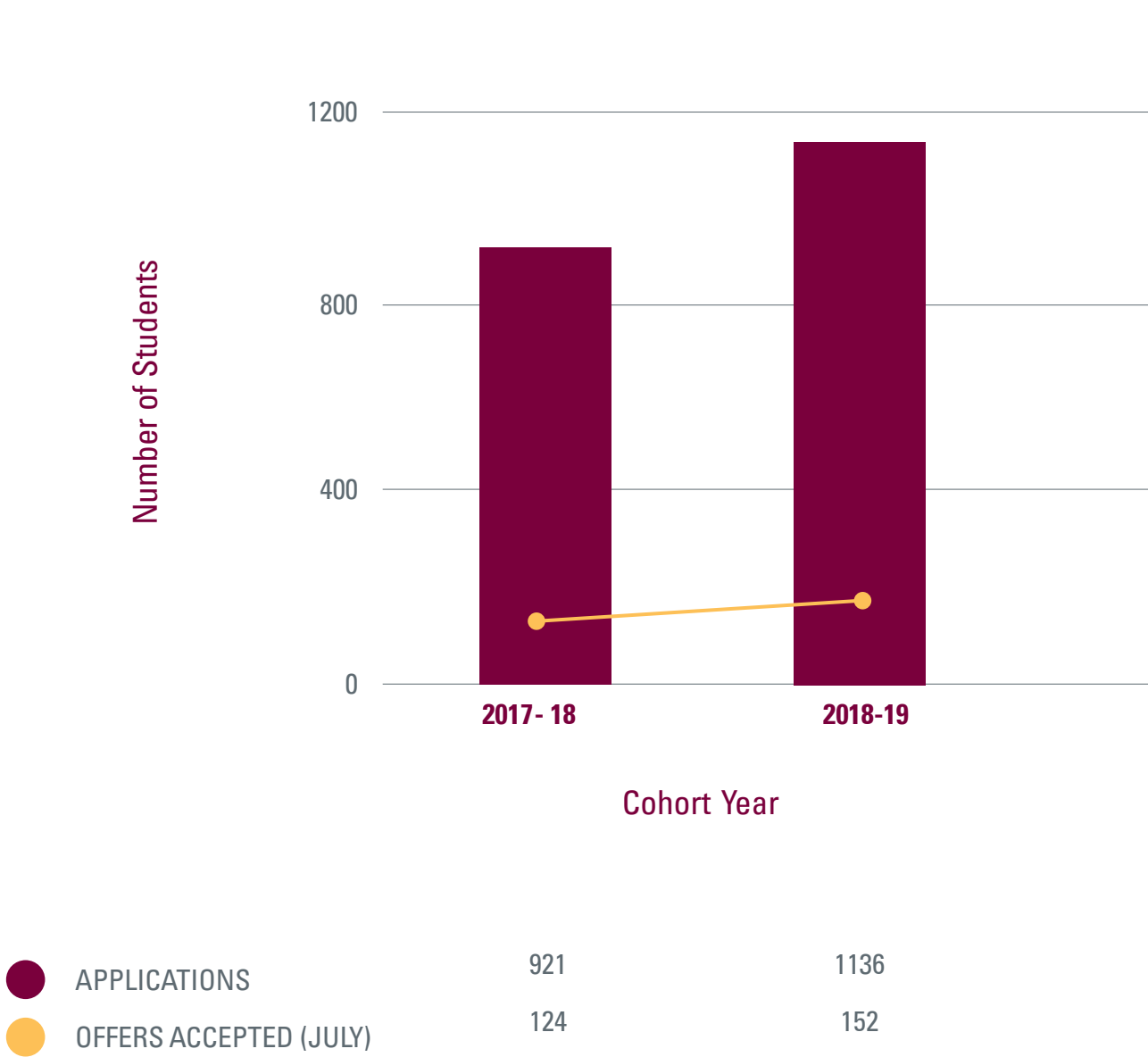
2018-19

# ANNUAL REPORT

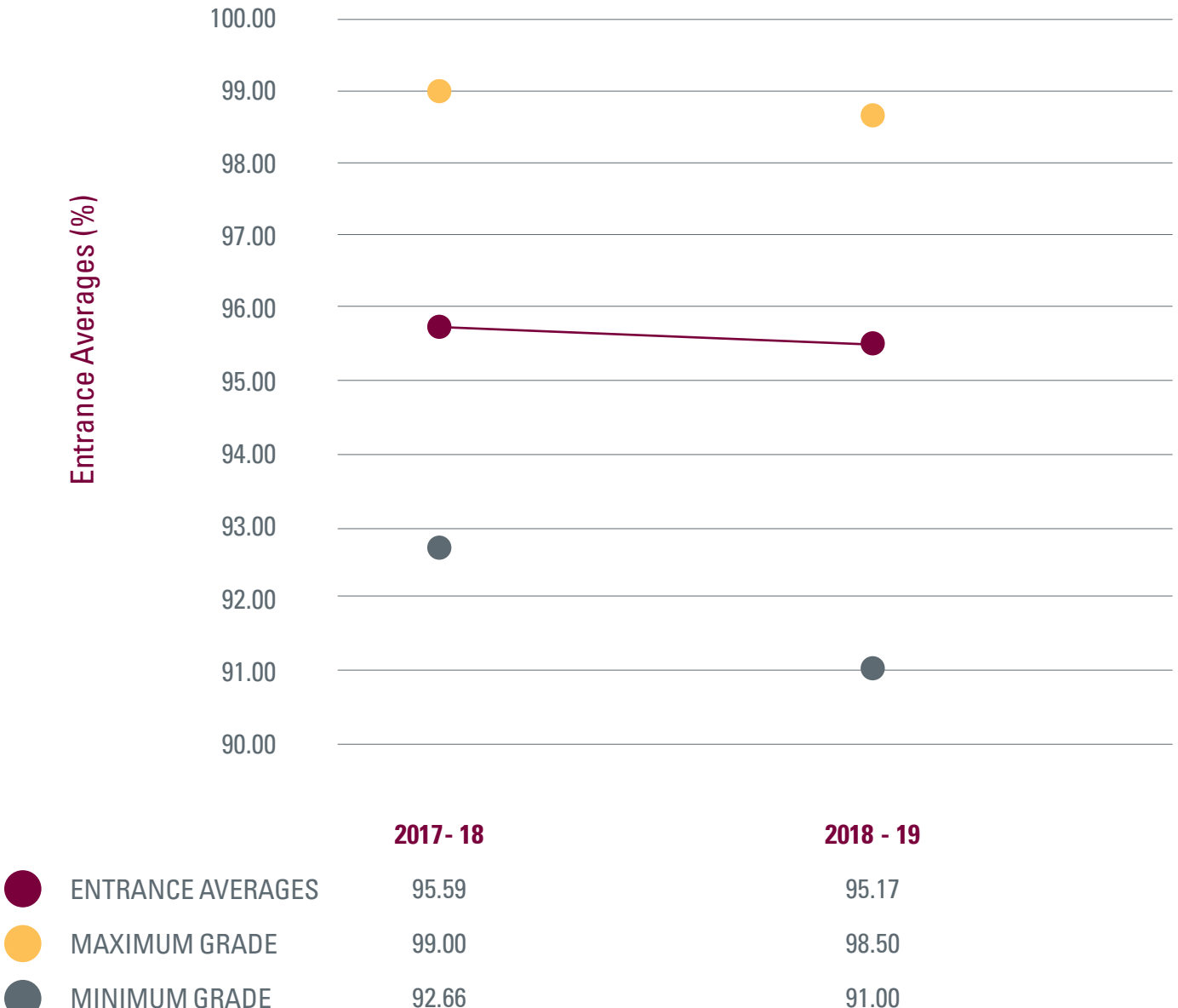
**BRIGHTER WORLD**

[mcmaster.ca](http://mcmaster.ca)

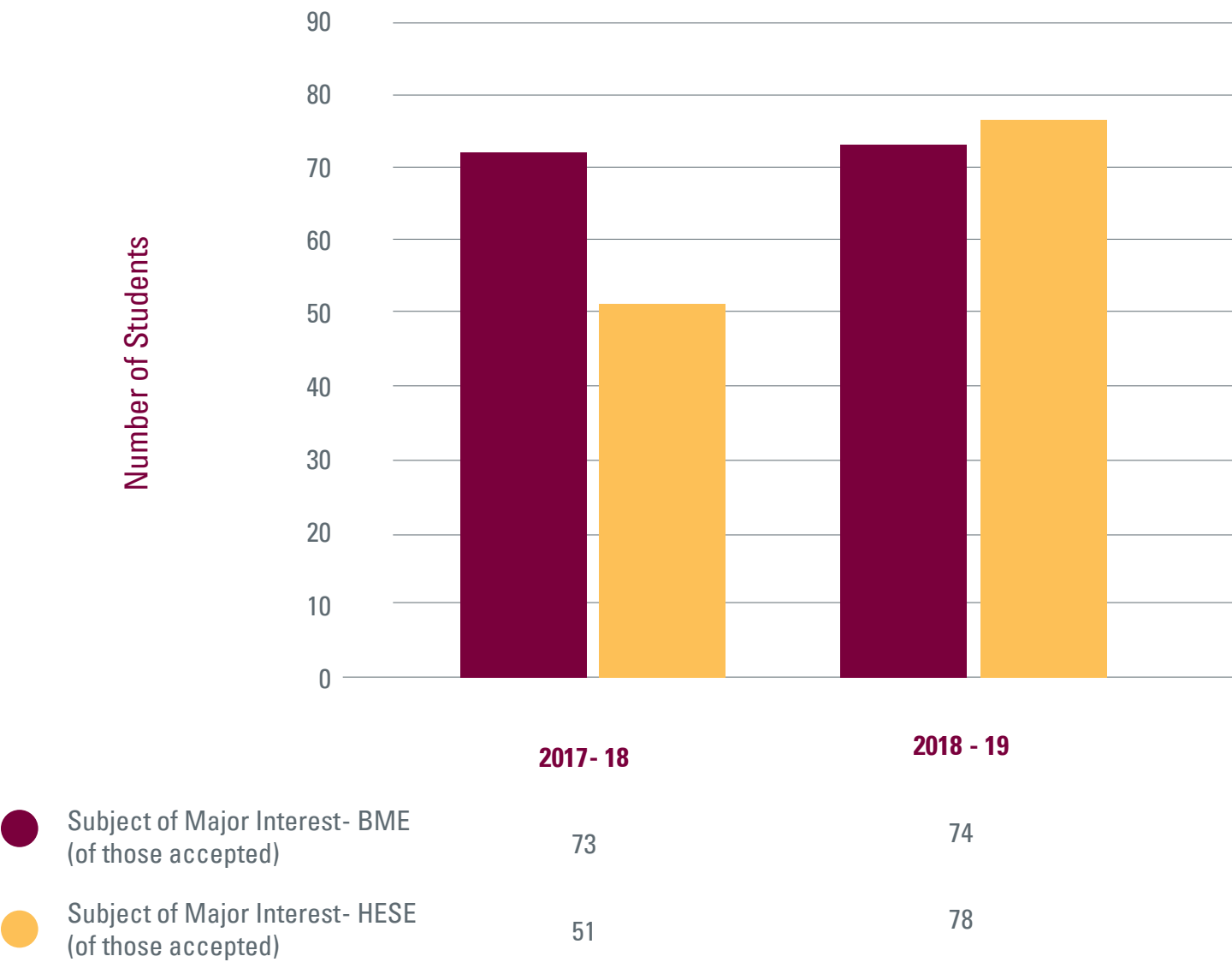
# Applications & Admissions



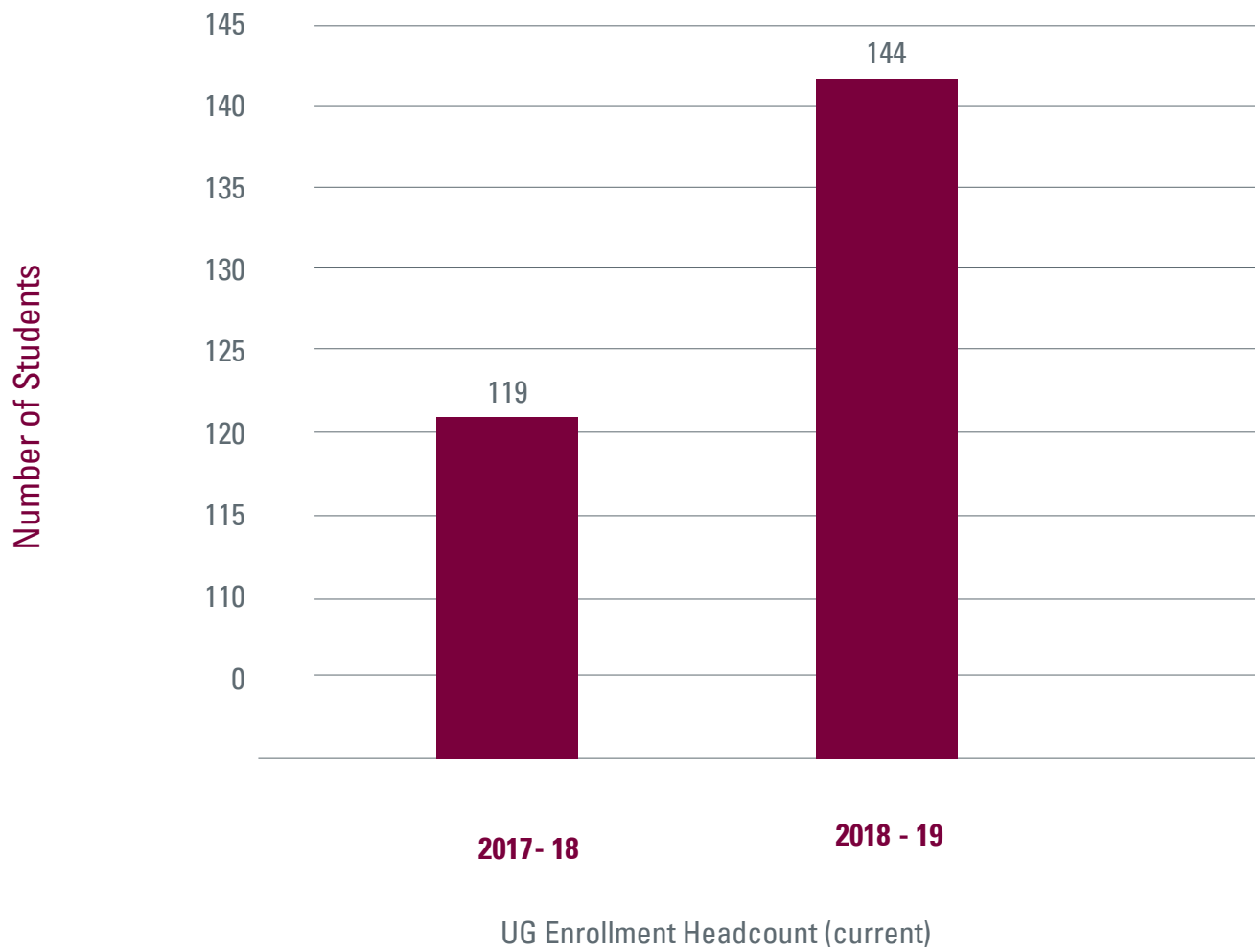
# Student Quality: Entrance Averages



# Subject of Major Interest Upon Entrance



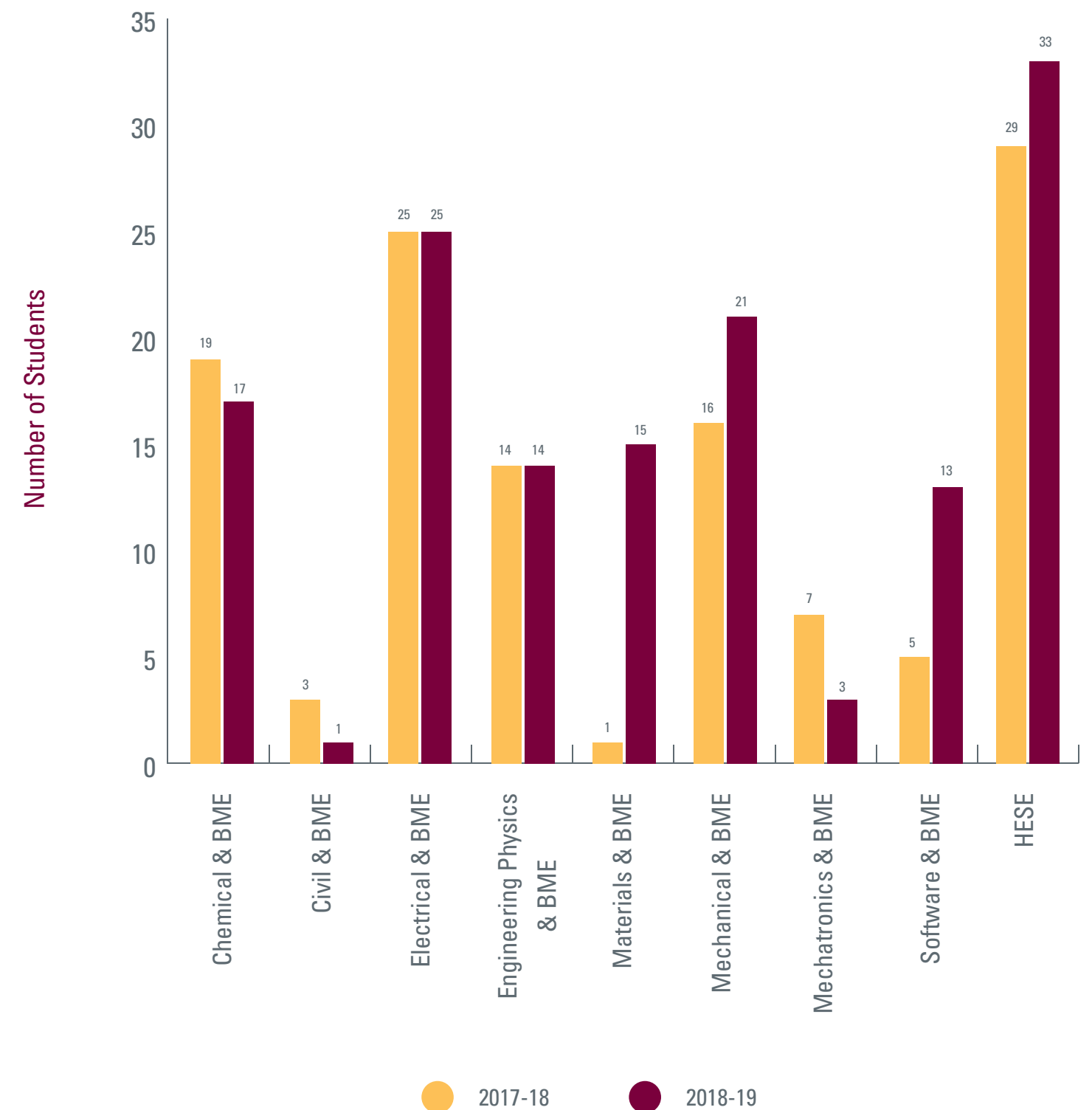
# Undergraduate Enrollment Headcounts



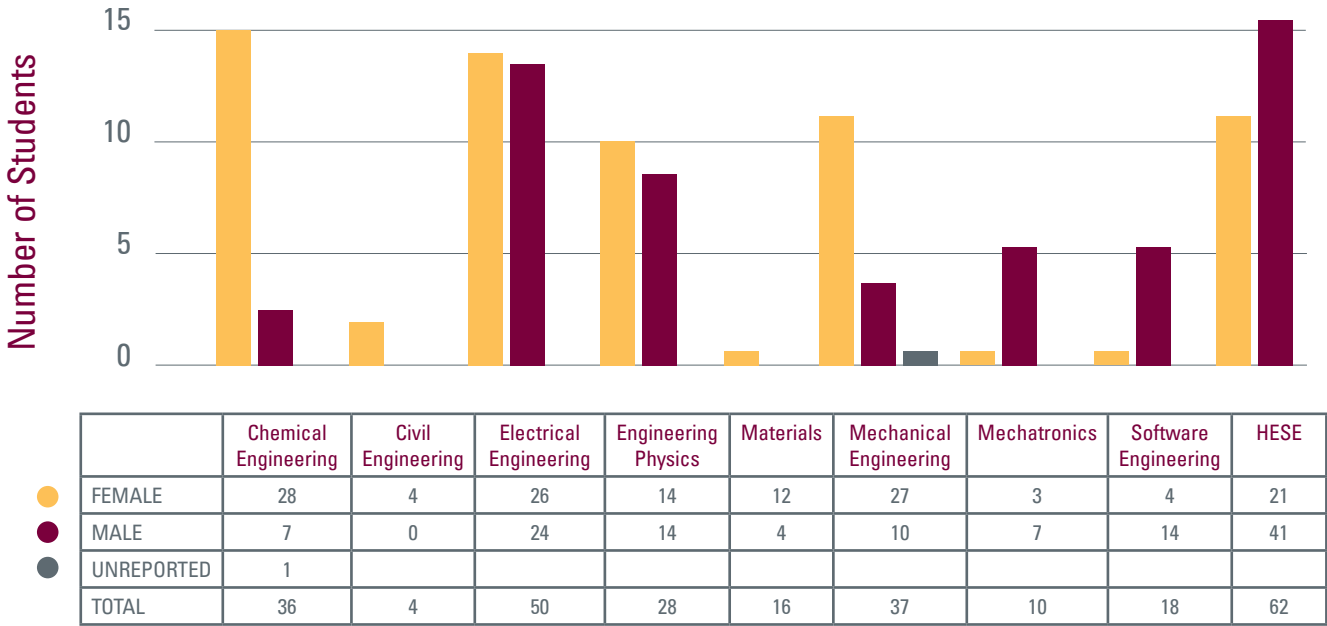
# Women in iBioMed



## Level II Program Allocation

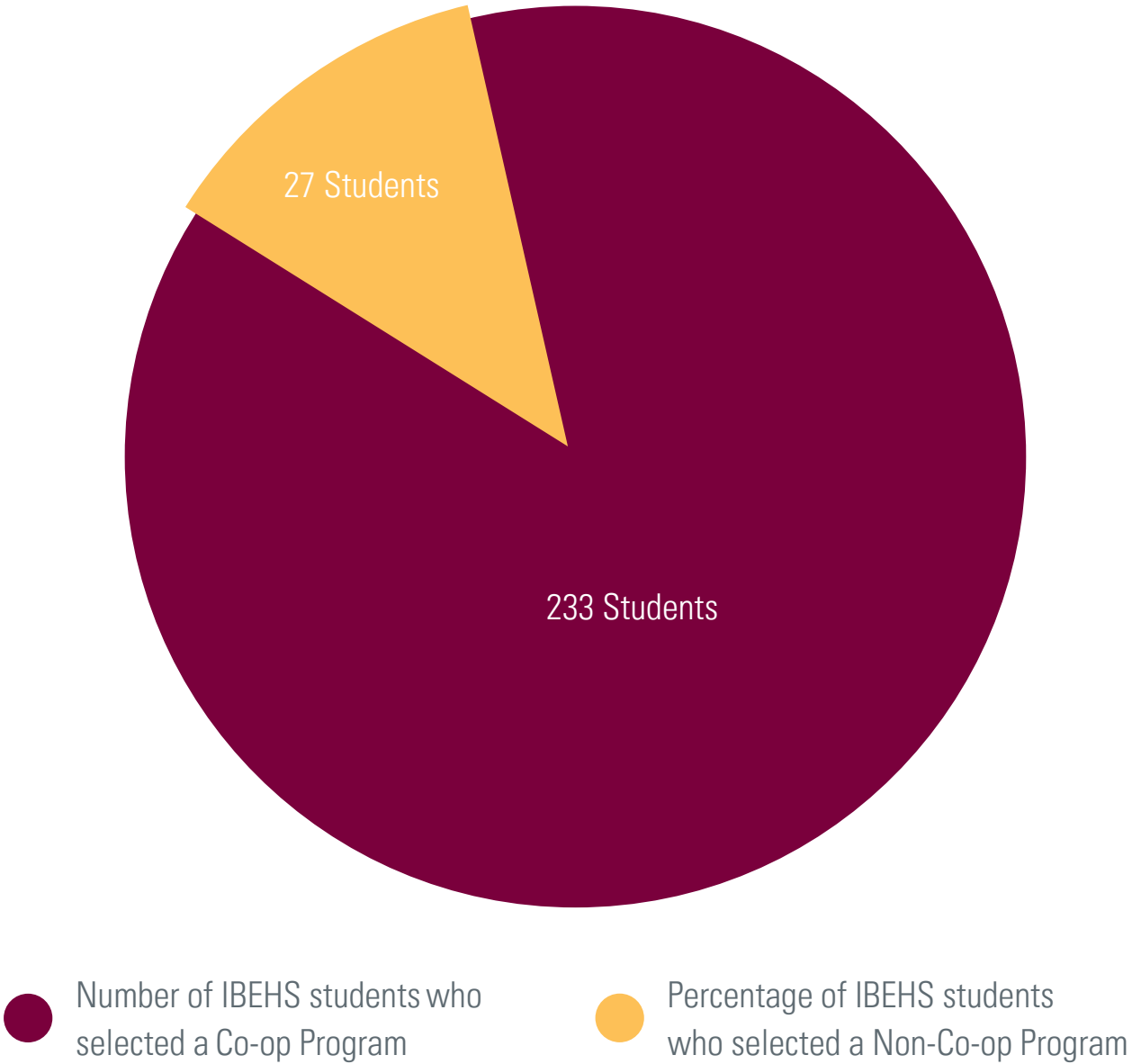


# Undergraduate Students Gender Ratio by Program



**NOTE:**  
This graph includes data from both the 2017-18 and 2018-19 academic terms.

# IBEHS Co-op Program Selection



**NOTE:**  
This chart includes data from both the 2017-18 and 2018-19 academic terms.



# Student Achievements

3

Three iBioMed students were part of a McMaster team that won first place in the lower division (1st year and 2nd year students in the UTSC Scinapse UG Science Case Competition: What the Frack is this?

1

One iBioMed student has been awarded the TD Scholarship Community Leadership Award, valued at \$70,000 over four years in 2018 / 19

1

One iBioMed student has been awarded a Loran Scholarship, valued at \$100,00 over four years in 2018 / 19.

1

One iBioMed student took first place in the Innovative Designs for Accessibility, IDea Competition, a national design competition that included eight entries from McMaster, all hailing from iBioMed.

1

One iBioMed student won an ArcelorMittal Dofasco FIRST Robotics Entrance Scholarship valued at \$15,000 in 2018 / 19.

7

Seven iBioMed students won the Dean's Excellence Entrance Awards in 2018 / 19.

1

One iBioMed student won SHAD Alumni Entrance Awards in 2018 / 19.

25

25 iBioMed students, consisting of first and second years, travelled to MedHacks at Johns Hopkins University (JHU) in Baltimore, Maryland. One second year HESE iBioMed student was part of the team that won first place and a prize of \$1500.



# iBioMed Society Highlights



## **IBIOBUDS MENTORSHIP PROGRAM**

In October 2018, the iBioMed Society officially launched its iBioBuds Mentorship Program. This is a peer-to-peer mentorship style program where upper-year iBioMed students pair up with lower-year iBioMed students and help them transition into university life and the iBioMed Program.



## **IBIOMED AND BACHELOR OF HEALTH SCIENCES SOCIETY (BHSS) EVENT**

The first-ever iBioMed and BHSS joint event took place in November. The iBioMed Society, along with BHSS, hosted a bowling event that gave students from both faculties a chance to network. This was a successful event with a great turnout!



## **SOLDERING WORKSHOP**

Along with IEEE McMaster Student Branch, the iBioMed Society hosted a heart board soldering workshop.



## Project Highlights:

Project: Strategically Hip- Investigating materials for joint replacement

Students: bottom left- Kristin Seymour, top left- Giselle Soares, bottom right- Griffin McLean, top right- Taha Tahan



## Hip Implant Session

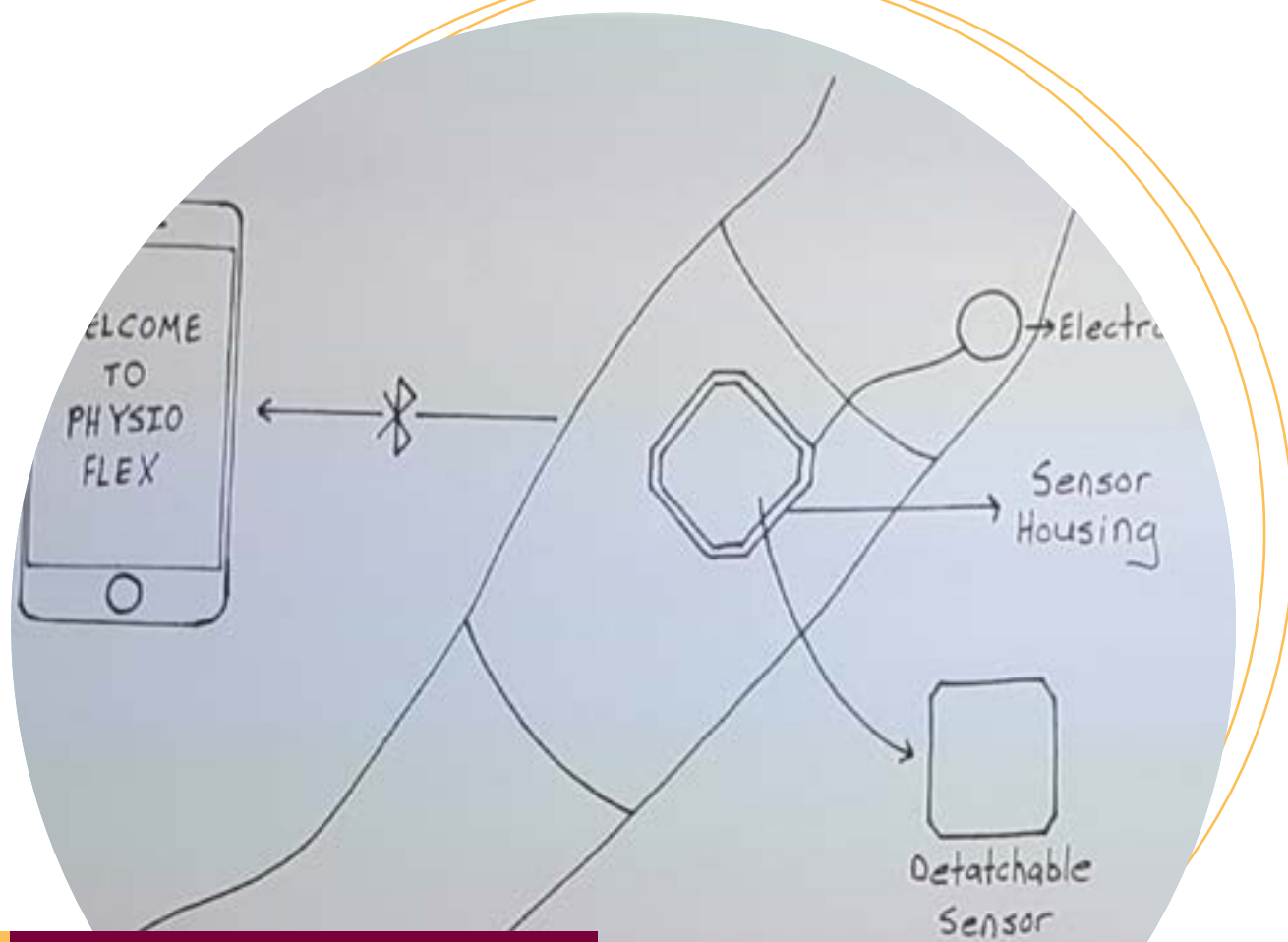
INVESTIGATING HIP ARTHROPLASTY AND CONCEPTUAL DESIGN

Students investigated materials suited for joint replacement. They explored conceptual and preliminary design phases to generate a 3D-printed prototype of an implant.

Project: Space-Hip- Investigating materials for joint replacement

Students (from left): Megan Innes, Sophie Mansfield and Albert Wang





# Track and Sensor Elevator Pitches

## INVESTIGATING HEALTH, ACTIVITY LEVELS & COMMERCIALIZATION

Students designed a wearable device that inputs data from a sensor to provide meaningful output to a user using a Raspberry Pi. Students fabricated a physical prototype worn by a user.

Project pictured: PhysioFlex- Physiotherapy Made Fun, an app that guides the user through various physiotherapy movements

Designed by: Ethan Dhanraj, Emily Fehr, Evan Gintonis and Karina Regimbal



## Client-Based Project Showcase

### DEVELOPING HEALTH SOLUTIONS FOR THE COMMUNITY

Students applied the concepts taught in this course to propose and develop a solution that addresses a need for a member of the local community. Students used thoughtful assessment of the client's needs to deliver a well thought out solution.





## The Life-Emulating Emotion Linked Assistant (LEELA)

LEELA is a stress-observing wrist band that monitors and detects stress-induced changes in the user's vitals. Once these changes are detected, LEELA emits light vibrations on certain pressure points on the user's wrist to decrease stress and anxiety.

Students: (from left) Carrie Men and Emma Lippert (not pictured); Shammo Rahman and Albert Wang



## CardioSafe- Early Onset Coronary Artery Disease Detection

This device detects early signs of a heart attack by identifying irregular heartbeats and changes in body temperature and blood-oxygen levels.

Students: (from left) Varun Jain, Mithil Venkateshkumar, Mariam Dawood and Gurleen Dulai



# iBioMed Enhancements

1.

**Temporary hosting and testing a website platform for supplementary learning modules and postings - Currently working on configuring the website.**

- Online learning modules (in the form of videos, practice problems etc.) are intended to serve as supplementary materials for students to access for the purpose of developing and refining their skills with Computer-Aided Design and computing in Python
- The online supplementary learning modules could help students to revisit any of their course modules that they missed or wanted to review at their own time
- Over time, we hope to integrate interactive quizzes and other testing modules that will allow students to assess their progress.

2.

**Connecting and monitoring of 3D printers online-Testing phase**

- Students can send their 3D printing job files online for approval and printing, rather than the traditional approach to manually transferring SD cards between the printer and a computer
- Students will also be able to monitor and status of their prints on a mobile app- not fully tested yet. We are also trying to analyze if we can get students to access it.

3.

**3D printing surveillance setup using two Raspberry Pi's and a webcam per printer**

- Will be helpful to students to setup and create time-lapse videos of their 3D prints-Testing phase
- Possible online live stream setup for 3D prints- Evaluation phase

4.

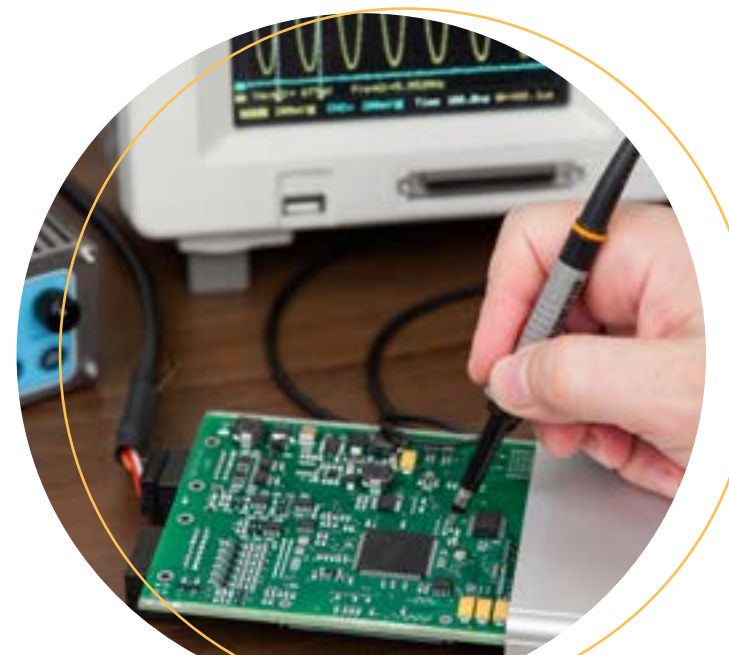
**Inventory database management system- Planning phase**

5.

**New lab and lab equipment for iBioMed course 2P03 coming in September 2019**

## Oscilloscopes

- To allow students to visualize and better understand the electronic signals coming out of sensor modules
- Useful for students to evaluate different types of electronic components and the process of picking appropriate components for what they are planning to build such as a wearable device





# • Furniture and Equipment

**NEW DESIGN  
STUDIO COMING  
FALL 2019!**

We're purchasing additional furniture in the anticipation of moving into our new design studio in EIT in September 2019







# Recruitment

- Collaboration with Engineering Recruitment, Central Recruitment and FHS PR to plan and **host events throughout the academic year**
- Specialized tours tailored to prospective iBioMed students
- New **thinkibiomed@mcmaster.ca** alias directed to Engineering Recruitment for admission inquiries
- **Ambassadors and the iBioMed Society** spearhead and act as the main sources of information at recruitment events such as OUF, Fall Preview, Information Nights, May@Mac, the iBioMed Webinar etc.



# Recruitment Events

## SEPTEMBER

Ontario Universities Fair (OUF)

## OCTOBER

Fall Preview #1

## NOVEMBER

Fall Preview #2

## FEBRUARY / MARCH

Engineering 1 / iBioMed Info Fair  
iBioMed Info Night

## MAY

May@Mac  
Scholars Reception  
iBioMed Webinar

# Marketing & Communications

## iBioMed Ambassador Program

### OUR AMBASSADOR PROGRAM IS GROWING!

The iBioMed program started with just 5 ambassadors for the 2017-18 academic term. We had 16 ambassadors for 2018-19, and we'll be welcoming 29 ambassadors for 2019-2020!

### WHERE YOU CAN SEE OUR AMBASSADORS

iBioMed Ambassadors can be found at various campus and program recruitment events: May@Mac, Fall Preview, Ontario Universities Fair, iBioMed Info Nights and more!



### NEW!

In 2018-19, iBioMed and the Faculty of Engineering launched a Pen Pal-style program which gives prospective students an opportunity to connect with current iBioMed students!

## iBioMed Video Library- 2018 / 19

- Day in the Life Video Series showcasing student life
- How to Get Involved- a look at our Ambassador Program and the iBioMed Society
- Final Project and Student Showcase highlighting the student experience within the learning environments
- iBioMed Engineering Stream Options
- The iBioMed Co-op Experience
- The iBioMed Design Studio
- The HESE Stream

### WE'RE FAMOUS! (sort of)

Throughout 2018-19 and into 2019-20, we are working on a series of videos that highlight various aspects of the iBioMed and the student experience. Some of these videos can already be seen on [our YouTube channel!](#)

## Building Relationships

### BRIDGING THE GAP

This year we started a regular series of communications meetings with teams within the Faculties of Engineering and Health Sciences. This helps us ensure our messaging to the McMaster and outside community is consistent and representative of the goals of the iBioMed program. We also strengthened our ties with Engineering Co-op & Career Services; this collaborative relationship means we can create even more opportunities for personal and professional growth for all of our students.







## NEW WORKSHOP SERIES

iBioMed Connect is a week-long workshop series that will be taking place August 2019. iBioMed students will have an opportunity to attend workshops in:

- MATLAB
- Python
- Raspberry Pi
- CAD & 3D Printing
- How to Prepare and Give Presentations
- How to Conduct Research- An Orientation of Thode Library

## IBIOMED INFO NIGHT

iBioMed's Info Night was a huge success this year. With over 100 in attendance, first year iBioMed students had an opportunity to interact with a student panel and watch faculty presentations on the various stream options for second year. Students also had a chance to network with their peers as well as iBioMed faculty and staff.



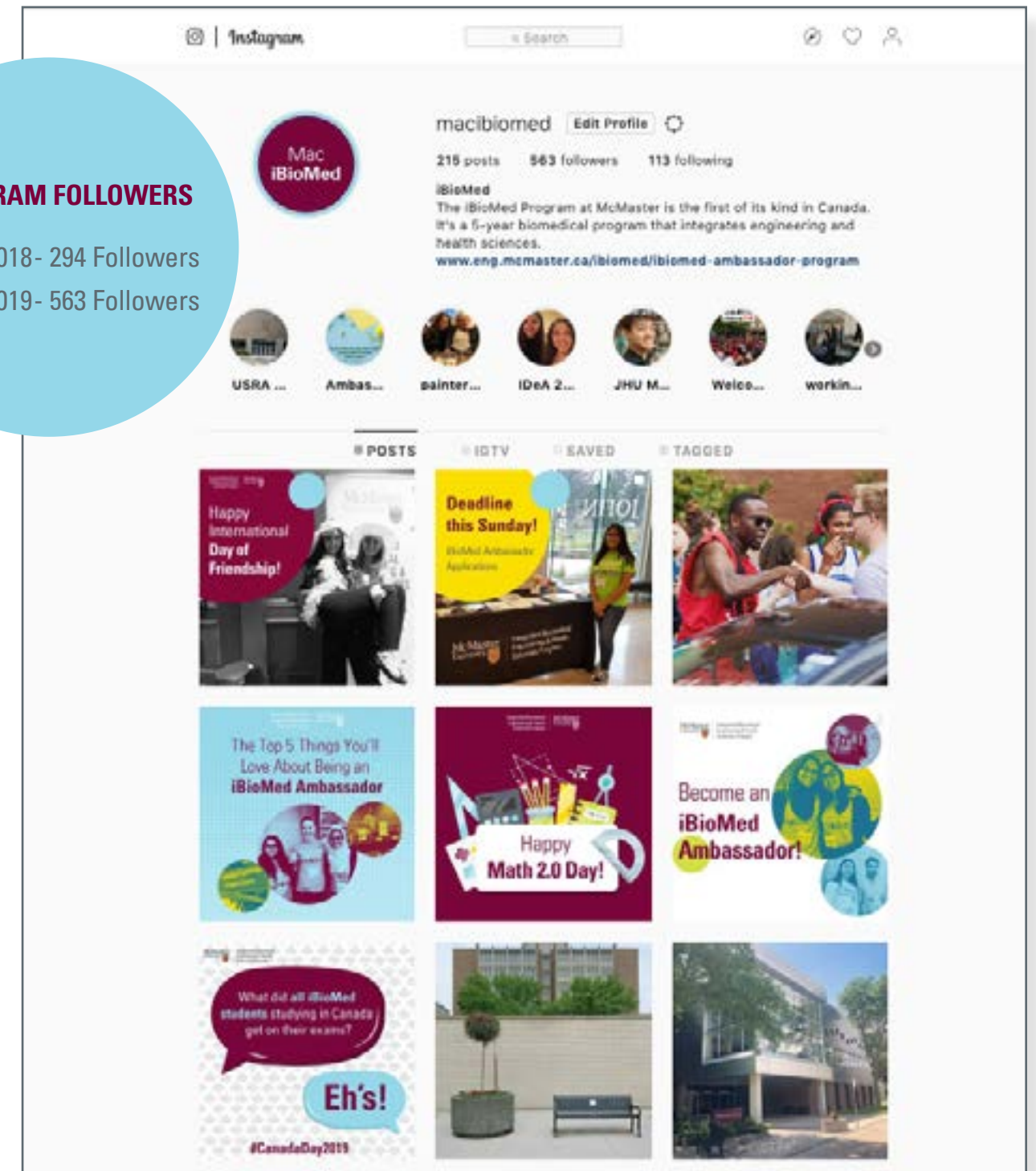
## MARK YOUR CALENDARS!

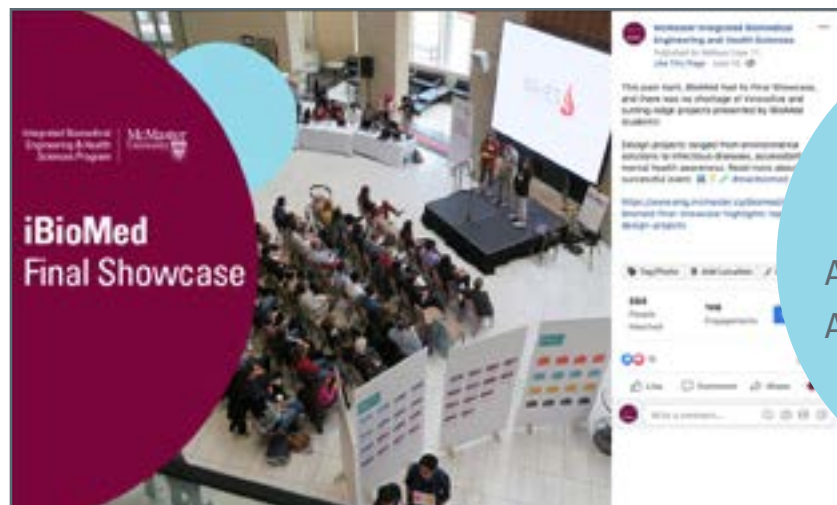
iBioMed's Info Night for 2019-2020 will be taking place Friday March 13, 2020 in Wilson Concert Hall. See you there!

# Social Media

## INSTAGRAM FOLLOWERS

August 2018- 294 Followers  
August 2019- 563 Followers





### FACEBOOK FOLLOWERS

August 2018- 385 Followers

August 2019- 610 Followers



Integrated Biomedical  
Engineering & Health  
Sciences Program



### NEW FOR FALL 2019!

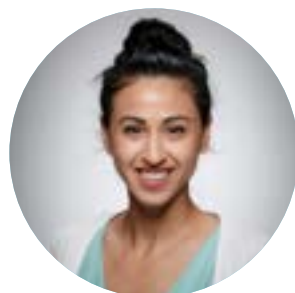
iBioMed LinkedIn is set to  
roll-out for September 2019.

## Recent Staff Appointments



**PARMVEER (PARM) BOLA**

Instructional Assistant



**ALESSANDRA DIBIASE**

Administrative Assistant



**MELISSA WELDON**

Communications &  
Engagement Coordinator



[ibiomed.mcmaster.ca](http://ibiomed.mcmaster.ca)