

SSDAC ANNUAL REPORT 2022-2023

FINANCE COMMITTEE

SCIENCE STUDENTS' COUNCIL | WESTERN UNIVERSITY



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Introduction

In an effort to increase financial transparency and address student concerns about distribution of student funds, the Finance Committee creates an annual SSDAC report. It summarizes the allocation of the Science Donation fee for each school year. The report below summarizes the allocation of these funds for the 2022–2023 school year. It was created by the Science Student Council's Finance Committee, under the supervision of the Student Services Commissioner and Vice-President Finance

For the academic year of 2022/23, the Science Student Council (SSC) distributed a total of **\$406,628.98** across Science and Medical Science departments. The breakdown of these funds is stated below, sorted by department. All departments within the Faculty of Science were contacted and requested to submit a proposal to SSDAC for any, and all the necessary equipment. All departments which requested funds were either fully funded or partially funded; any departments within the Faculty of Science that are not included in this report did not submit any request for funding.

Funds were allocated based on necessity and impact on student learning experiences. This money was used to fund initiatives that are meant to enhance the learning experience of science students. The SSDAC Committee is made up of the Science Students' Council President, Vice-President Finance, Student Services Commissioner, and two other council members who are elected. The decisions for funding were evaluated based on necessity and scope of impact. Any debates among the five SSDAC voting members were resolved with a minimum vote of 3/5.

SSDAC Allocation 2022/2023



- Math
- Biology
- Physics and Astronomy
- Biochemistry
- Physiology and Pharmacology
- Statistical and Actuarial Sciences
- Computer Science
- Chemistry
- Interdisciplinary Medical Sciences
- Microbiology and Immunology

Figure.1(a): Distribution of Science Donation Fee by department within the Faculty of Science

Biology

Total Requested: \$73,243.52

Total Granted: \$52,875.79

Items Requested:

- 30 x CO₂ Wireless Sensor (\$11,057.05)
- 3 x Spectrophotometer (\$4,353.98)
- Absorbance Microplate Reader (\$7,535.97)
- 2 x Growth Chamber (\$41,183.67)
- 2 x Microcentrifuge (\$4,320.65)
- Chlorophyll Fluorometer (\$4,339.20)
- Magnetic Stirrer (\$453.00)

Items Approved:

- 30 x CO₂ Wireless Sensor (\$11,057.05)
- 3 x Spectrophotometer (\$4,353.98)
- Absorbance Microplate Reader (\$7,535.97)
- Growth Chamber (\$20,591.84)
- 2 x Microcentrifuge (\$4,320.65)
- Chlorophyll Fluorometer (\$4,339.20)

Reasoning:

The request for funding was partially approved for a total of \$52,875.79. The CO₂ Wireless Sensor will be used in the first-year labs, where they will replace outdated wired sensors. The new sensors will allow a wireless connection with students' laptops, smartphones, or tablets, thus eliminating the need for new lab laptops while providing a better student learning experience. In addition, the requested spectrophotometers will replace the three spectrophotometers used in the first-year biology course.

The second-year lab course has recently been updated to include two new class units, thereby necessitating the use of a Absorbance Microplate reader, which will help students gain an understanding of modern

instrumentation. Additionally, one of the older growth chambers will be replaced.

The centrifuge will be shared amongst biology courses. The addition of a centrifuge will eliminate the need to borrow from other teaching labs. Finally, the chlorophyll fluorometer will be added for the first time to expose upper year students to additional ways of managing plant stress. All the approved equipment will play a vital role in enhancing the overall student learning experience in the lab component of various biology courses.

Biochemistry

Total Requested: \$86,216.96

Total Approved: \$78,166.62

Items Requested:

- Centrifuge Service Contract (\$6,991)
- ComPAIR Software (\$1,058)
- Computing Infrastructure (\$78,166)

Items Approved:

- Computing Infrastructure (\$78,166)

Reasoning:

The funding request from the Department of Biochemistry was partially approved for a total of \$78,166.62. The department's requests for the Centrifuge Service Contract (\$6,991) and ComPAIR Software (\$1,058) were not approved. Funding for the Centrifuge Service Contracts was not granted as these contracts have not been utilized in past years. In addition, funding for the ComPAIR Software was not granted as this software is already free to use without the need for a separate server. Computing Infrastructure (\$78,166) was approved as this allows students to work with large datasets and software, thus enhancing the student learning experience.

Chemistry

Total Requested: \$87,462.04

Total Approved: \$69,556.53

Items Requested:

- 4 x Potentiostat Electrochemical Apparatus (\$30,447.96)
- 54 x Hotplate-stirrers and covers (\$44,082.36)
- 28 x Heating mantles and controllers (\$17,905.44)
- Cary 50 UV-Vis Spectrometer (\$13,740.96)

Items Approved:

- 4 x Potentiostat Electrochemical Apparatus (\$30,447.96)
- 54 x Hotplate-stirrers and covers (\$44,082.36)
- Cary 50 UV-Vis Spectrometer (\$13,740.96)

Reasoning:

The request for funding from the Department of Chemistry was partially approved for a total of \$69,556.53. The department's request for heating mantles and controllers was not approved since this equipment does not affect a large population of chemistry students and does not seem necessary. The hotplate-stirrers were approved because they are almost used in every lab and the current hotplates are old and in bad condition. In addition, the Cary 50 UV-Vis Spectrometer was approved because it is in heavy demand, which causes congestion during labs and scheduling issues. Lastly, the electrochemical apparatus was approved in order to better teach students electrochemistry in labs.

Computer Science

Total Requested: \$13,518

Total Approved: \$13,518

Items Requested:

- 25 x 3-year Mentimeter Software licenses (\$12,150)
- 24 x Affinity Photo licenses (\$1,368)

Items Approved:

- 25 x 3-year Mentimeter Software licenses (\$12,150)
- 24 x Affinity Photo licenses (\$1,368)

Reasoning:

The request for funding from the Department of Chemistry was approved for a total of \$13,518. SSDAC has decided to approve the request for Mentimeter licenses to be used by instructors. Mentimeter is a tool that helps boost classroom participation by allowing presenters to quickly interact with their audiences. This includes allowing the audience to answer multiple choice questions, answer questions with free text, and ask their own questions. In addition, it allows the students to ask questions anonymously which reduces student learning barriers, we requested the Department of Computer Science to collect data on the usage of Mentimeter for possible future funding or use by other departments.

The request for 24 Affinity Photo licenses was approved. Affinity Photo is an essential software for the course of COMPSCI 1033 (Introduction to Multimedia and Communications), which was taken by upwards of 1500 students over the Fall/Winter term in 2022/23. Adding another lab with Affinity Photo increases the availability of the software to students.

Interdisciplinary Medical Sciences

Total Requested: \$47,894.40

Total Granted: \$47,894.40

Items Requested:

- 1 x GelDoc Imaging System with Touchscreen (\$13,000)
- 1 x Inverted Fluorescent Microscope (IM-DGFL) and Brightfield Microscope (\$19,990)
- 2 x Cell Drop (\$5,490)

Approved Items:

- 1 x GelDoc Imaging System with Touchscreen (\$13,000)
- 1 x Inverted Fluorescent Microscope (IM-DGFL) and Brightfield Microscope (\$19,990)
- 2 x Cell Drop (\$5,490)

Reasoning:

The request for funding from the Department of Interdisciplinary Medical Sciences was approved for a total of \$47,894.40. The requested equipment will be used in many courses, targeting a total of about 400 students. Most of this equipment will be used in multiple courses and can also be used by other undergraduate labs.

The GelDoc Imaging System is used for electrophoresis, which allows students to visualize and quantify the results of their experiment. This system will be used in both third and fourth-year IMS laboratory courses and third-year Microbiology and Immunology. The department is borrowing a similar but outdated device from the Department of Physiology and Pharmacology, which will no longer be possible due to an increased number of students. The processing software is accessible to students, allowing them to analyze results outside of the lab.

The inverted fluorescent and brightfield microscope are used to magnify objects such as cells that cannot be seen with an unaided eye. These

are two of the most common types of microscopes, which also have different applications in a laboratory environment. Both microscopes have a built-in camera and a touchscreen Windows tablet included to visualize multiple proteins simultaneously and better analyze them. In addition to using these microscopes for student use, the IMS Department plans to create a library of images from these microscopes and share them with other departments for teaching and learning.

The Cell Drop cell counting device is used to count cell growth. The department is currently borrowing a cell counter from the Department of Microbiology, but with the high demand on these machines, they are not functioning at their peak capacity anymore. This machine is also a more sustainable and efficient machine than the current ones the Microbiology Department holds.

Mathematics

Total Requested: \$7237.92

Total Approved: \$7237.92

Items Requested:

- 6 x Lenovo ThinkCentre M70s Gen3 IIT8 Computer (\$6949.50)
- Brother Laser Printer (\$288.42)

Reasoning:

The Mathematics Department has requested funding of \$7236.92, which has been fully granted. Of the total requested amount, \$6949.50 will be allocated to six brand-new Lenovo ThinkCentre M70s Gen3 IIT8 computers to replace older ones. New computers will enable students to access advanced computing equipment for computer-assisted mathematical analysis. The new software will benefit modern math courses for math society members ranging from first-year linear algebra to fourth-year abstract algebra, overall improving the learning experience for students.

Microbiology and Immunology

Total Requested: \$32,057.21

Total Approved: \$29,697.20

Items Requested:

- 1 x Beckman Coulter Allegra 25R Centrifuge Service Contract (\$2306.01)
- 1 x CFX Opus 96 Real-Time PCR -(\$27,222.50)
- 6 x Horizontal Mini-Gel Electrophoresis System (\$2474.70)

Items Approved:

- 1 x CFX Opus 96 Real-Time PCR -(\$27,222.50)
- 6 x Horizontal Mini-Gel Electrophoresis System (\$2474.70)

Reasoning:

The Department of Microbiology and Immunology requested a total of \$32,057.21 which has been partially approved for a total of \$29,697.20. The CFX Opus 96 Real-Time PCR will be used in 5 courses, allowing 460 students to do quantitative PCR techniques. The Horizontal Mini-Gel Electrophoresis Systems will replace less efficient electrophoresis machines. This allows 320 students to load own their own samples and process. The service contract was not approved due to lack of use of previous service contracts.

Physiology and Pharmacology

Total Requested: \$53,372.50

Total Approved: \$53,372.50

Items Requested:

- 5 x Byony Small Plate Reader (\$25,150.00)
- 1 x BioRad Real-Time PCR System (\$27,222.50)

Items Approved:

- 5 x Byony Small Plate Reader (\$25,150.00)
- 1 x BioRad Real-Time PCR System (\$27,222.50)

Reasoning:

The Department of Physiology and Pharmacology had requested \$53,372.50, which was granted in full. All items enable advanced laboratory experience and provide hands-on opportunities to reinforce learning. All items are projected to have over 10 years of useful lifespan with minor repairs. They will benefit upwards of 300 students in full year lab courses. The new BioRad Real-Time PCR system replaces the outdated system that was previously shared with both the BMSUE and Physiology and Pharmacology programs. The new plate readers will improve bottlenecks in labs due to limited supply.

Physics and Astronomy

Total Requested: \$39,282.42

Total Approved: \$39,282.42

Items Requested:

- 26 x Magnetic forces experiment kits (\$33,130.06)
- 2 x Scintillation detectors (\$4406.50)
- 3 x Thallium radiation sources (\$1745.85)

Items Approved:

- 26 x Magnetic forces experiment kits (\$33,130.06)
- 2 x Scintillation detectors (\$4406.50)
- 3 x Thallium radiation sources (\$1745.85)

Reasoning:

The request for \$39,282.42 was granted in full. All three items were deemed beneficial to students in the Physics and Astronomy Department, with over 15 years of usable life. The new magnetic forces experiment equipment allows more variables (applied current, conductor length, number of magnets, angle of applied force) to be adjusted in experiments, which augments students' learning experience. The scintillation detectors will replace aging ones in specialized upper year courses. The Department's current thallium radiation sources required replacement as they have become faulty and less productive over time.

Statistics and Actuarial Sciences

Total Requested: \$15,027.60

Total Approved: \$15,027.60

Items Requested:

- 10 x Micro Dell Desktop PCs – OptiPlex 7000 Micro Form Factor (\$15,027.60)

Items Approved:

- 10 x Micro Dell Desktop PCs – OptiPlex 7000 Micro Form Factor (\$15,027.60)

Reasoning:

The request for funding from the Department of Statistical and Actuarial Sciences was fully approved for a total of \$15,027.60. The funds were allocated to purchasing 10 Dell Micro Desktop PCs to support undergraduate teacher and student research. Six of these PCs will be used in multi-purpose room WSC 256 and the remaining four in Help Center WSC 250. They will impact a total of 4,766 students within the department.

Summary

Between the ten science departments that applied for the funding, the full requested amount totalled \$455,312.57. Taking necessity and impact on student learning experiences into careful consideration, the funds of the science donation fee were allocated as described, with the distributed funds totalling \$406,628.98. The remaining funds will be allocated towards the endowment fund in addition to the original 15%.

Department	Requested	Distributed
Math	\$7,237.92	\$7,237.92
Biology	\$73,243.52	\$52,875.79
Physics and Astronomy	\$39,282.42	\$39,282.42
Biochemistry	\$86,216.96	\$78,166.62
Physiology and Pharmacology	\$53,372.50	\$53,372.50
Statistical and Actuarial Sciences	\$15,027.60	\$15,027.6
Computer Science	\$13,518.00	\$13,518.00
Chemistry	\$87,462.04	\$69,556.53
Interdisciplinary Medical Sciences	\$47,894.40	\$47,894.40
Microbiology and Immunology	\$32,057.21	\$29,697.20
Total	\$455,312.57	\$406,628.98

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