SSDAC ANNUAL REPORT 2021-2022

FINANCE COMMITTEE

SCIENCE STUDENTS' COUNCIL | WESTERN UNIVERSITY

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Introduction

In an effort to increase financial transparency, communicate to Science Students, and address student concerns about the delegation of student funds, the Finance Committee creates an annual SSDAC report. This report summarizes the distribution of the Science Donation fee for each school year. The report below outlines the allocation of these funds for the 2021-2022 school year. This was created by the Finance Committee, under the supervision of the Vice-President Finance and the Student Services Commissioner.

For the academic year of 2021-2022, the Science Students' Council (SSC) distributed a total of **$384,304.80** across various Science or Medical Science departments. This money was used to fund new equipment that is meant to enhance the learning experience of students within each department. The precise breakdown of funds for each department is described below. All departments were contacted to submit a proposal detailing what equipment they would like to receive funding for. Each department was either fully or partially funded the amount that they requested. Any department missing from this report did not submit a request.

Funds were allocated based on necessity and impact on student learning experiences. The committee consists of the Science Students' Council's President, Vice-President Finance, Student Services Commissioner, and two elected members. Disputes involving the distribution of funds were resolved by a majority vote of at least three members on the committee.

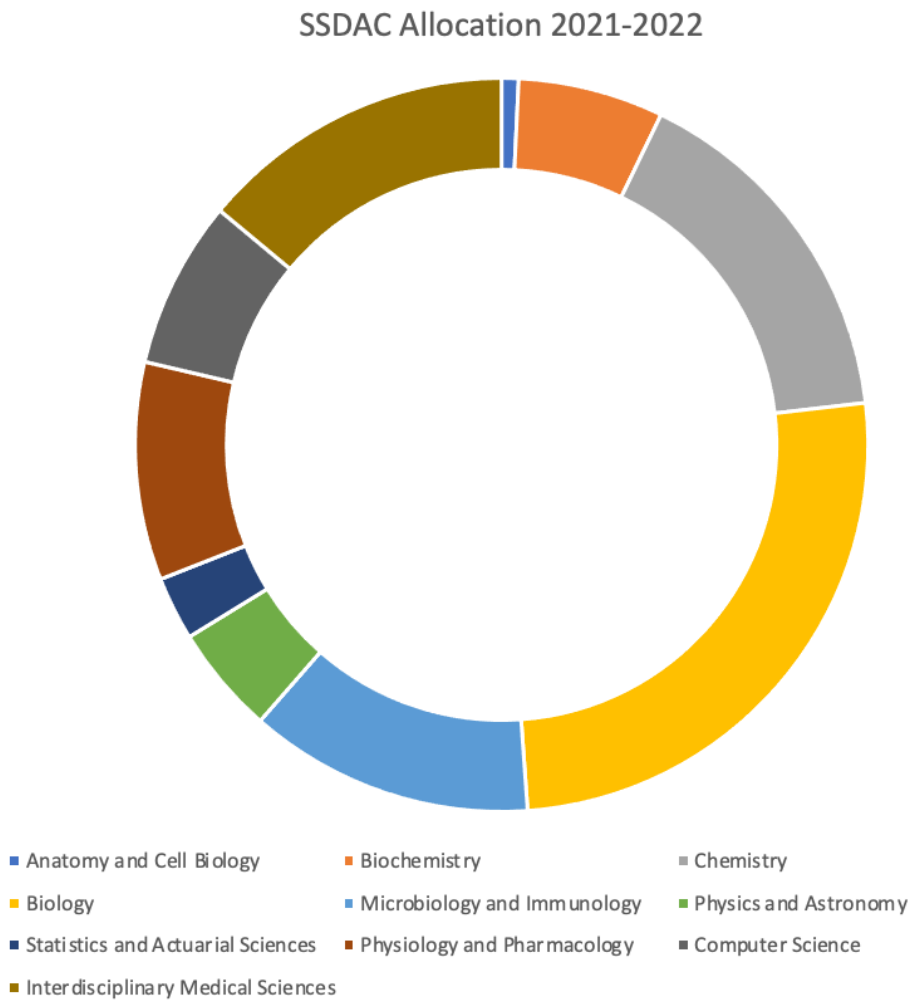

Figure.1(a): Distribution of Science Donation Fee by department within the Faculty of Science

Anatomy and Cell Biology

Total Requested: $2867.07

Total Approved: $2867.07

Items Requested:

- 14 x Netter's Atlas of Human Anatomy 8th Edition ($1595.86)
- 5 x Specimen Magnifiers ($307.50)
- 30 x Headlamps - rechargeable, LED ($719.70)

Items Approved:

- 14 x Netter's Atlas of Human Anatomy 8th Edition ($1595.86)
- 5 x Specimen Magnifiers ($307.50)
- 30 x Headlamps - rechargeable, LED ($719.70)

Reasoning:

The request from the Department of Anatomy & Cell Biology was fully approved for a total of **$2867.07.** These funds are designated for the purchase of fourteen *Netter's Atlas of Human Anatomy* (*8th Edition*), five specimen magnifiers, and thirty headlamps (rechargeable, LED). This funding will benefit students learning remotely, as well as provide course materials for classes.

The Department of Anatomy & Cell Biology requested fourteen *Netter's Atlas of Human Anatomy* (*8th Edition*). The SSDAC fully approved this request. In anatomy dissection labs, students frequently refer to textbooks for clarification of the structures they are examining, however, the lab environment is not suitable for students to bring their own resources in. The request for 14 copies of this book would provide each dissection group with their own copy. In the first offering of these

courses, the enrollment is approximately 30 students in each course; however, in future years, the enrollment is expected to increase to 70 students each.

The Department of Anatomy & Cell Biology requested five specimen magnifiers. The SSDAC fully approved this request. Anatomical specimens often contain details that would benefit from an enhanced view through magnification (when examining the details of a spinal cord in cross section, it is advantageous to view the details with a magnifying glass). Due to the requirement of gloves and the general nature of the anatomy lab, a hands-free and LED light design is preferable. Together, enrollment in these courses is over 250 students.

The Department of Anatomy & Cell Biology requested thirty headlamps (rechargeable, LED). The SSDAC fully approved this request. Anatomical dissection of small spaces is challenging due to low light which limits visibility. An effective, inexpensive alternative to surgical lamps is to use an individual headlamp. These headlamps have many features that make them suitable for an anatomy lab environment. The enrollment in these courses is expected to grow to 70 students in each course. Thirty of these units will allow at least 2 students from each laboratory group to use them.

Biochemistry

Total Requested: $23,469.08

Total Approved: $24,680.44

Items Requested:

- ComPAIR server
- Spectrophotometers (x5)
- Service contracts for centrifuges (x2)
- Lab waste recycling boxes (x2)

Items Approved:

- ComPAIR server
- Spectrophotometers (x5)
- Service contracts for centrifuges (x2)
- Lab waste recycling boxes (x6)

Reasoning:

The application from the Department of Biochemistry was approved in full for a total of $23,469.08, and an additional $1,211.36 was granted for four additional lab waste recycling boxes, totalling to $24,680.44. These items will improve the undergraduate Biochemistry student experience and further emphasize sustainability and environmental protection.

The Department of Biochemistry has requested $1,058.40 for the ComPAIR server. This was granted by the SSDAC as many students have benefited from the program and have expressed interest in continued use in the next year. Additionally, $15,255.00 was allocated for the visible range spectrophotometer - spectronic 200 to

keep up with current and future student demand. SSDAC has also allocated $6,550.00 for floor centrifuge service contracts to preserve and maintain the valuable teaching tools.

The committee has granted $1,817.04 for four extra lab waste recycling boxes, and the two originally requested to support the new Sustainability initiative. As gloves and plastics from undergraduate labs cannot be disposed into municipal recycling bins, special bins must be obtained. The six new bins will be used to accommodate plastic recycling as current bins are sent back to Terracycle, a company that specializes in recycling special materials not allowed by the municipal government. These boxes promoting environmental protection will remind students in the lab to sustainably conduct science moving forward.

Chemistry

Total Requested: $61,849.11

Total Approved: $61,849.11

Items Requested:

- Cary 60 UV-Visible Spectrometers (x3)
- Mini Desktop Computers (x8)
- Mettler Balances (x8)
- Temperature Controllers for Hotplates (x24)

Items Approved:

- Cary 60 UV-Visible Spectrometers (x3)
- Mini Desktop Computers (x8)
- Mettler Balances (x8)
- Temperature Controllers for Hotplates (x24)

Reasoning:

The application from the Department of Chemistry was fully approved for a total of **$61.849.11**, as all of the items will provide an improved laboratory and course experiences for Chemistry students in future years.

The specific breakdown for allocating the funds will be **$38,115.94** for 3 units of Cary 60 UV-Visible Spectrometers. **$8056.46** for 8 units of Mini Desktop Computers, **$8942.31** for 8 units of Mettler Balances and finally, **$6734.30** for 24 units of Temperature Controllers for Hotplates. This funding of all the requested items will benefit students in all Chemistry classes in their understanding of course content.

Microbiology & Immunology

Total Requested: $48,337.45

Total Approved: $48,337.45

Items Requested:

- Beckman Coulter Allegra 25R centrifuge; service contract - 1 year ($2,363.40)
- Optika IM-DGFL; Complete Inverted fluorescence imaging system ($30,165.35)
- DeNovix DS-11; Microvolume Spectrophotometer ($15,808.70)

Items Approved:

- Beckman Coulter Allegra 25R centrifuge; service contract - 1 year ($2,363.40)
- Optika IM-DGFL; Complete Inverted fluorescence imaging system ($30,165.35)
- DeNovix DS-11; Microvolume Spectrophotometer ($15,808.70)

Reasoning:

The request from the Department of Microbiology & Immunology was fully approved for a total of **$48,337.45 .** These funds are designated for the purchase of a 1-year service contract for Beckman Coulter Allegra 25R centrifuge, Optika IM-DGFL; Complete Inverted fluorescence imaging system, and DeNovix DS-11; Microvolume Spectrophotometer. This funding will benefit students learning remotely, as well as provide course materials for classes.

The Department of Microbiology & Immunology requested **$2,363.40** for a 1-year service contract for Beckman Coulter Allegra 25R centrifuge. The SSDAC decided to approve this request. The Beckman Coulter Allegra 25R

centrifuge enables interactive class participation during lectures and tutorials. The use of this instrument will impact approximately 601 students throughout various courses.

The Department of Microbiology & Immunology also requested **$30,165.35** for Optika IM-DGFL; Complete Inverted fluorescence imaging system. The SSDAC decided to approve this request. Optika IM-DGFL system enables interactive class participation during lectures and tutorials. The use of this instrument will impact approximately 487 students throughout various courses.

The Department of Microbiology & Immunology also requested **$15,808.70** for DeNovix DS-11; Microvolume Spectrophotometer. The SSDAC decided to approve this request. The Microvolume Spectrophotometer enables interactive class participation during lectures and tutorials. The use of this instrument will impact approximately 601 students throughout various courses.

Biology

Total Requested: $138,743.15

Total Granted: $98,763.15

Items Requested:

- Qubit Systems CO2 Analyzer System (including components) ($33,686.99)
- Inverted fluorescence imaging system with digital microscope ($19,990.00 x 5 = $99,950.00)
- Dissolved oxygen and temperature meter ($4,536.64)
- Large display pH meter ($569.52)

Approved Items:

- Qubit Systems CO2 Analyzer System (including components) ($33,686.99)
- Inverted fluorescence imaging system with digital microscope ($19,990.00 x 3 = $59,970.00)
- Dissolved oxygen and temperature meter ($4,536.64)
- Large display pH meter ($569.52)

Reasoning:

The request for SDF allocations from the Department of Biology was partially approved. The department requested 5 Inverted fluorescence imaging systems with digital microscopes ($19,990.00 x 5= $99,950.00). The number of systems was reduced from 5 to 3. Five systems would have benefited only 40 students, with a high cost outweighing potential benefits. It was suggested that the number be reduced to 3 or 4. There would need to be no less than 3 systems in order for full benefits to be exercised. Otherwise, there would have been too many people using one machine. This could have resulted in problems such as increased wear and damages. Thus, 3 inverted fluorescence imaging systems were funded. The remaining requested items were approved.

Physics and Astronomy

Total Requested: $25,041.60

Total Granted: $18,401.36

Items Requested:

- 1st Year Labs: Human Eye Experiment ($13,892.17)
- Lecture Pilot Project: Pearl Mini ($6,640.24)
- Upper Year Labs: Arduino Kits ($2,328.29)
- Upper Year Labs: Radiation Sources ($2,180.90)

Items Approved:

- 1st Year Labs: Human Eye Experiment ($13,892.17)
- Upper Year Labs: Arduino Kits ($2,328.29)
- Upper Year Labs: Radiation Sources ($2,180.90)

Reasoning:

Items requested from the department of Physics and Astronomy were partially approved. The item not approved, the Lecture Pilot Project: Pearl Mini ($6,640.24), was deemed beneficial primarily for absent students and would not be needed for in-person learning. As this device is dedicated to the minority of students not present in class, the limited benefit is not enough to justify the use of the SDF fund. Given that classes have now resumed to be in-person, the allocation of the budget should be dedicated to resources that would benefit in-person learning and the majority of students.

Statistics and Actuarial Sciences

Total Requested: $10,762.69

Total Granted: $10,762.69

Items Requested:

- Windows server licenses (x2)
- Windows desktop VM licenses (x40)
- 1T 2.5" WD red nas disks (x16)
- 2.5" disk caddies (x16)
- 4T 3.5" WD red nas disks (x3)
- Epson Brightlink Projector

Items Approved:

- Windows server licenses (x2)
- Windows desktop VM licenses (x40)
- 1T 2.5" WD red nas disks (x16)
- 2.5" disk caddies (x16)
- 4T 3.5" WD red nas disks (x3)
- Epson Brightlink Projector

Reasoning:

The Department of Statistical and Actuarial Sciences is requesting a total of $10,762.69 from the SDF to purchase software licenses, local hard disks and caddies and a new smart touch data projector. The upgraded server and new technology are projected to affect more than 2769 students who are enrolled in selected courses throughout the department. Their request for funding was approved in full by the SSDAC. The software licenses for the Windows Server, costing $2,400.00 , will be used to completely replace almost all functions of the 24 PCs in the computing lab. The

local hard disks and caddies requested and approved, costing $2,433.21, will allow for more storage and better compatibility with the current equipment. Finally, the epson brightlink smart projector, costing $3216.00, is multifunctional and will allow the room to be converted into a multipurpose classroom that can enhance online computing services usage.

Physiology and Pharmacology

Total Requested: $36,927.08

Total Approved: $36,927.08

Items Requested:

- Dissection Microscope ($12,620)
- WiFi Camera ($1,835.64)
- Teaching Compound Microscope ($13,420.36)
- Repeater Pipettor ($3,068)
- Multi-channel Pipettor ($5,983.08)

Items Approved:

- Dissection Microscope ($12,620)
- WiFi Camera ($1,835.64)
- Teaching Compound Microscope ($13,420.36)
- Repeater Pipettor ($3,068)
- Multi-channel Pipettor ($5,983.08)

Reasoning:

All of the funding requested by the Physiology and Pharmacology department was approved. These resources will be beneficial for upwards of 300 students within the lab courses Phys/Pharm 3000E and 9550. The SSDAC believes that the funding and prioritization of the material will be decidedly advantageous for student success as well as a unique and differentiated experience for Science students.

Interdisciplinary Medical Sciences

Total Requested: $53,646.45

Total Granted: $53,646.45

Items Requested:

- Agilent BioTek Synergy LX Multi-Mode Reader ($25,310.25)
- Agilent BioTek Filter Cube for Green Fluorescence ($1,836.20)
- CFX Opus 96 Real-Time PCR ($26,500)

Items Approved:

- Agilent BioTek Synergy LX Multi-Mode Reader ($25,310.25)
- Agilent BioTek Filter Cube for Green Fluorescence ($1,836.20)
- CFX Opus 96 Real-Time PCR ($26,500)

Reasoning:

The request from the Department of Interdisciplinary Medical Sciences was fully approved for a total of **$53,646.45**. The funds are designated towards the purchase of Agilent BioTek Synergy LX Multi-Mode Reader and Filter Cube for Green Fluorescence and CFX Opus 96 Real-Time PCR. This funding will help update laboratory courses as well as provide more equipment for students of the department.

The department requested **$27,146.45** for the Agilent BioTek Synergy LX Multi-Mode Reader and Agilent BioTek Filter Cube for Green Fluorescence. The SSDAC approved this request. These two equipment provide more functionality than the current borrowed older microplate reader. This equipment will be used in third and fourth year laboratory courses and will be used many times a week throughout the academic year. This equipment will also benefit the students from the Department of Microbiology and Immunology and Biochemistry.

The department also requested **$26,500** for the CFX Opus 96 Real-Time PCR. This instrument is an essential technique in students' learning. Students in fourth year HSP IMS will spend an entire semester learning and operating on this machine. This machine will allow IMS students to have the most updated equipment while allowing them to not have to borrow from other departments. This will allow students to have more frequent hands-on practice.

Computer Science

Total Requested: $28,430.00

Total Approved: $28,430.00

Items Requested:

- 5 eGPU Systems ($20,500)
- 2 Collaboration Pods ($7,280)
- VMWare ($650)

Items Approved:

- 5 eGPU Systems ($20,500)
- 2 Collaboration Pods ($7,280)
- VMWare ($650)

Reasoning:

The request from the Department of Computer Science was fully approved for a total of **$28,430.** These funds are designated for the purchase of five eGPU systems, two collaboration pods, and VMWare. This funding will benefit students learning remotely, and provide course materials for classes.

The Department of Computer Science requested **$20,500** for five eGPU systems. The SSDAC decided to approve this request. These eGPUs provide a way for students to have additional access for certain programming tasks, as student computers frequently do not have sufficiently powerful GPUs to do cutting-edge programming tasks. The use of these hardware components will impact approximately 750 students throughout various Computer Science courses.

The department also requested **$7,820** for two collaboration pods. The SSDAC decided to approve this request as well. The collaboration pods will be

situated in Middlesex College Room 325, equipped with 55” TVs and Mersive Solstice units, which let students wirelessly connect to the TV using any device. The pods will enhance the existing collaboration space to improve group project work and overall collaboration. This installation will impact over 930 students registered in the Department of Computer Science.

Finally, the department requested **$650** for a VMWare subscription. The SSDAC decided to approve this request. The software is essential for students to access systems or software their computer may not have. However, because the software is so important, the faculty budget may consider funding this item in the future and increasing access to more than the approved subscription of 405 users.

Sustainability Initiative

The Science Students' Donation Allocation Committee (SSDAC) decided to increase funding for certain initiatives which align with the Science Students' Council's mission to improve environmental well-being and sustainability across campus. This year, the committee decided to fund four (4) additional lab waste recycling boxes for the Department of Biochemistry, which will be used to allow for the recycling of items which cannot be collected under municipal guidelines, such as certain plastic equipment. These recycling bins will be situated in heavily utilized labs, and will primarily affect 2nd and 3rd year Biochemistry courses. As mentioned in the Biochemistry section of this report, the waste will be sent to Terracycle, which is a firm specializing in recycling in a sustainable, ethical fashion.

As the climate crisis continues to worsen, the SSDAC believes in funding initiatives which will not only benefit and improve the student experience, but also accelerate environmental and social goals to create a more sustainable campus overall. This co-branded initiative is the first step taken towards this goal, and the SSC will be continuing to prioritize sustainability through all funding decisions going forward.

Summary

Between the nine science departments that applied for the funding, the full requested amount totals $429,713.68. Taking necessity and impact on student learning experiences into careful consideration, the funds of the science donation fee are allocated as follows, with the distributed funds totalling $384,304.80. The remaining funds will be allocated towards the endowment fund in addition to the original 15%.

DEPARTMENT	REQUESTED	DISTRIBUTED
Anatomy and Cell Biology	$2,867.07	$2,867.00
Biochemistry	$23,469.08	$24,680.44
Chemistry	$61,489.11	$61,489.11
Biology	$138,743.15	$98,763.15
Microbiology and Immunology	$48,337.45	$48,337.45
Physics and Astronomy	$25,041.60	$18,401.36
Statistics and Actuarial Sciences	$10,762.69	$10,762.69
Physiology and Pharmacology	$36,927.08	$36,927.08
Computer Science	$28,430.00	$28,430.00
Interdisciplinary Medical Sciences	$53,646.45	$53,646.45
Total	**$429,713.68**	**$384,304.80**

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