



THE UNIVERSITY OF BRITISH COLUMBIA

# Science Co-op Programs

Faculty of Science

## Annual Report 2018/19



science co-op







### Director's Message

Congratulations to Samantha Sam (Earth and Ocean Sciences) and Brandon Huntington (Biology) for jointly winning the Science Co-op Student of the Year Award. Brandon Huntington also won the Association for Co-operative Education and Work-Integrated Learning BC/Yukon University Co-op Student of the Year Award. Our students are our best asset and their accomplishments are a source of pride for the whole UBC community.

Science Co-op students completed 2,380 placements in Canada and abroad during the 2018-19 academic year. We started a co-op option for students enrolled in the Combined Honours Biochemistry and Forensic Science Program, offered jointly by the Department of Biochemistry and Molecular Biology at UBC and the Forensic Science and Technology Department at BCIT. We are also in the process of initiating a co-op option for graduate students in the Faculty of Science and anticipate obtaining Senate approval during the 2019-20 academic year.

The Life Sciences Co-op and the Business Development offices will move to the newly renovated Biological Sciences Complex this summer. The two offices will share a common space which will help us better serve our students and employers.

As always, I welcome your feedback and comments at [iqbal@phas.ubc.ca](mailto:iqbal@phas.ubc.ca).

**Javed Iqbal**  
Director, Faculty of Science  
Co-operative Education Programs



### Annual Placements

In the 2018/2019 fiscal year, UBC Science Co-op placed 2,380 students, a notable 8% increase compared to last year's 2,210 placements (see Fig. 1). To date, there are over 2217 active employers in the Science Co-op database and, during the past year, over 1404 organizations posted more than 5197 Co-op positions with our program. This report provides program statistics on growth trends, placement locations, student demographics, student and employer satisfaction summaries and graduation data.

### Discipline Trends

Of the 26 program disciplines administered by the UBC Science Co-op program, Computational Sciences & Mathematics achieved the most additional placements (+121) which made up 45% of the program's total placements. Reviewing individual disciplines, Statistics (114% increase), Cellular, Anatomical & Physiological Sciences (CAPS) (112% increase), Geographical Sciences (100% increase) and Pharmacology (84% increase) showed significant growth. There is a significant decline in work terms for Integrated Sciences and Environmental Sciences. (See Fig. 2a)

The Land & Food Systems group and Computational Sciences & Mathematics group increased by 17% and 13%, respectively. Natural Sciences experienced a decline of 13% whereas the other groups remained relatively steady. (See Fig. 2b)

Fig. 1 Annual Placements

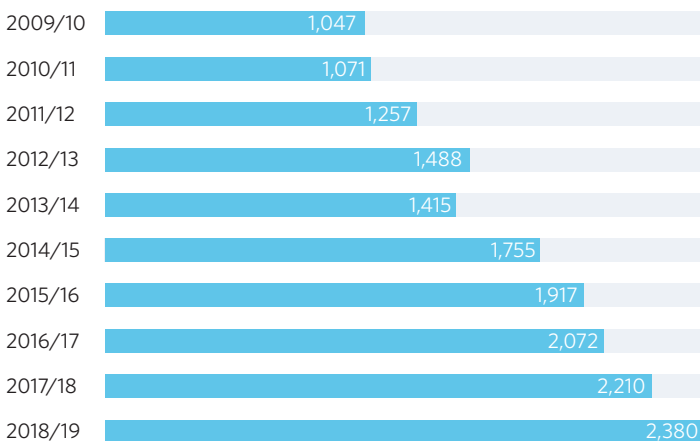


Fig. 2a Discipline Trends

Discipline	2016/17 Placements	2017/18 Placements	2018/19 Placements	% Change (2018/19 vs 2017/18)
Atmospheric Sciences	5	3	1	-67%
Bachelor of Computer Science	177	151	146	-3%
Biochemistry	134	141	135	-4%
Biology	168	175	191	9%
Biophysics	36	30	33	10%
Biotechnology	36	38	32	-16%
Biopsychology	10	19	22	16%
Cellular, Anatomical & Physiological Sciences	22	17	36	112%
Chemistry	64	92	96	4%
Combined Major in Science	24	46	43	-7%
Cognitive Systems	26	16	9	-44%
Computer Science	662	687	764	11%
Engineering Physics	198	197	200	2%
Environmental Sciences	58	53	43	-19%
Earth & Ocean Sciences	19	19	12	-37%
Geographical Sciences	5	8	16	100%
General Science	0	0	0	N/A
Integrated Sciences	55	89	68	-24%
Land & Food Systems	74	77	90	17%
Mathematics	31	53	74	40%
Microbiology	134	145	156	8%
Pharmacology	28	31	57	84%
Physics	67	84	82	-2%
Statistics	28	29	62	114%
Statistics (Graduate)	11	10	12	20%
<b>Total</b>	<b>2,072</b>	<b>2,210</b>	<b>2,380</b>	<b>8%</b>

Fig. 2b Discipline Trends

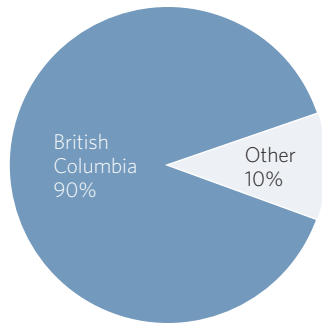
Group	2016/17 Placements	2017/18 Placements	2018/19 Placements	% Change (2018/19 vs 2017/18)
Computational Sciences & Mathematics	935	946	1067	13%
Engineering Physics	198	197	200	2%
Land & Food Systems	74	77	90	17%
Life Sciences	675	793	836	5%
Natural Sciences	87	83	72	-13%
Physical Sciences	103	114	115	1%
<b>Total</b>	<b>2,072</b>	<b>2,210</b>	<b>2380</b>	<b>17%</b>



### Canadian Placements by Province

Canadian employers remain the largest source of our placements, with 92% of total placements occurring within Canada. Most of our 2,196 Canadian placements occurred within British Columbia (90%), followed by Ontario (5%), Alberta (3%) and Quebec (2%). Together, Manitoba, New Brunswick, the Northwest Territories, Prince Edward Island and Saskatchewan contributed slightly less than 1% of total Canadian placements.

British Columbia	1,976
Ontario	105
Alberta	64
Quebec	36
Saskatchewan	8
Northwest Territories	3
Manitoba	2
New Brunswick	1
Prince Edward Island	1
Total	2,196



### International Placements

We had 184 international placements in total, down by 11% (from 206) last year, with most placements occurring in the USA and Germany at 29% each. Japan and Singapore remain our next highly placed locations at 13% and 10%, respectively. Placements also took place in China, France, Israel, Italy, Korea, the Netherlands, Poland, Saudi Arabia and Switzerland.

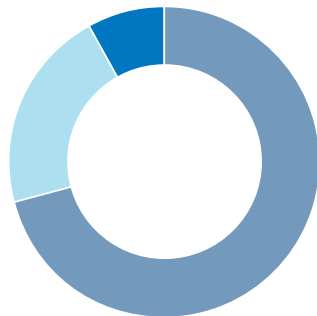
USA	54
Germany	53
Japan	23
China	12
Singapore	19
Switzerland	11
Saudi Arabia	5

France	2
Israel	1
Italy	1
Korea	1
Netherlands	1
Poland	1
Total	184

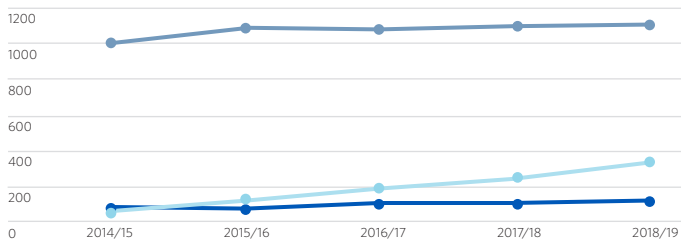
### Student Demographics

The 2,380 placements were held by 1,566 distinct students, a growth of 7% up from last year's total of 1,465. Of this total, 21% were international students, representing an increase of 36% from last year. From the information in the second table below, we can see that the International student population has been steadily increasing over the last five years.

Canadian Citizen	1,115
International Student	322
Permanent Resident	129
Total (distinct)	1,566



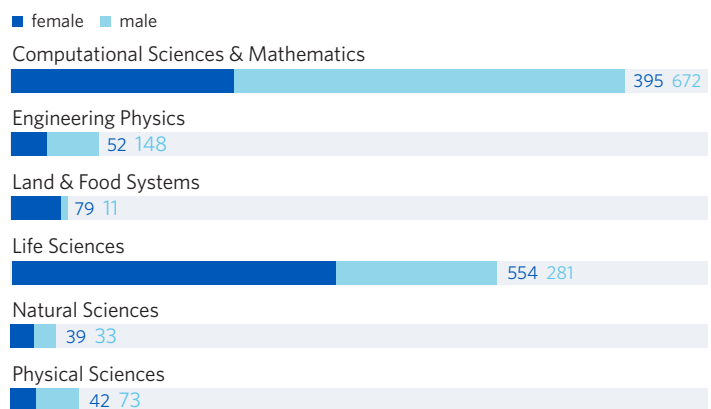
Canadian Citizen
International Student
Permanent Resident



### Gender Distribution

Of the 2,380 placements for 2018/19, 49% were held by female students and 51% by male students. Atmospheric Sciences, Engineering Physics and Physics & Astronomy are male dominated (100%, 74% and 70% respectively), while Land & Food Systems, Behavioural Neuroscience & Cognitive Systems (Cognition & Brain) and Integrated Sciences are female dominated (88%, 86% and 82% respectively).

The graph below summarizes the male/female distribution by program clusters.



## Employer Evaluation Summary

Co-op employers are required to complete an online evaluation for each student hired. A summary of employers' evaluations of Co-op students, as well as the Co-op placement process, is provided in the following tables.

Employer Satisfaction with Student's Performance	Collected Responses	%
Excellent Performance	1,249	59%
Very Good Performance	713	33%
Average	149	7%
Needs Improvement	18	1%
Unsatisfactory/Failed Co-op Work Term	1	0%
<b>Total</b>	<b>2,130</b>	<b>100%</b>

Employer Satisfaction on Program's Placement Process	Collected Responses	%
Very Satisfied	1,736	83%
Somewhat Satisfied	283	14%
Neutral	63	3%
Somewhat Dissatisfied	10	0%
Very Dissatisfied	2	0%
<b>Total</b>	<b>2,094</b>	<b>100%</b>

## Co-op Graduation

For the BSc and BCS graduating class of May 2019, 475 of students have participated in Co-op. 304 Science Co-op graduates have completed all required work terms and will be receiving a Co-op designation on their official degree parchments.

	Number of Science Graduates*	Number of Co-op Graduates with Co-op Designation (completed the required work terms)	Number of Co-op Graduates who completed at least one work term
May 2019	1,329	304	475
Nov 2018	131	17	27

\*excluding EngPhys, LFS, MSc, BCOM, BA

## Student Evaluation Summary

Co-op students are also required to complete an online evaluation for each work term. A summary of students' evaluations of the Co-op placement and an assessment of the usefulness of the Co-op experience in determining a career path is provided in the tables below.

Student's Overall Satisfaction Level with Placement	Collected Responses	%
Extremely satisfied	1,017	46%
Very satisfied	873	39%
Neutral	254	11%
Not satisfied	51	2%
Extremely unsatisfied	16	1%
<b>Total</b>	<b>2,211</b>	<b>100%</b>

Usefulness of Experience Towards Future Career	Collected Responses	%
Very useful	1,246	56%
Useful	645	29%
Neutral	261	12%
Not very useful	40	2%
Not useful at all	14	1%
<b>Total</b>	<b>2,206</b>	<b>100%</b>

## 3 Year Summary At-A-Glance

	2016/17	2017/18	2018/19
Total BSc Graduate (May)	1,366	1,313	1,329
Total BSc Co-op Graduates with Co-op Designation (May)	304	338	304
Total BSc Co-op Graduates with at least one work term (May)	433	485	475

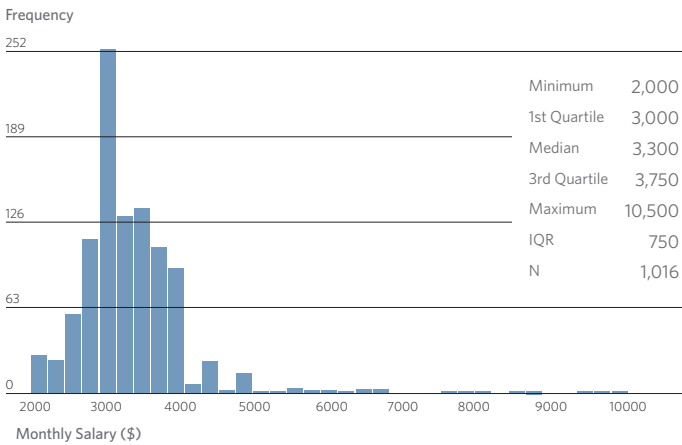


# Computational & Mathematical Sciences

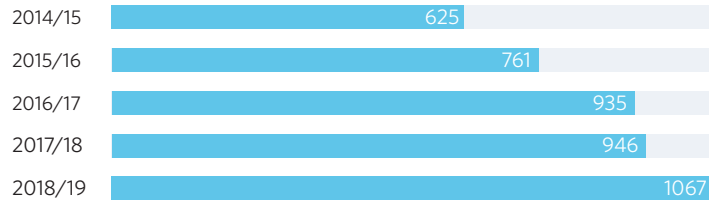
The following majors fall under Computational & Mathematical Sciences: Cognitive Systems (Computational Intelligence & Design), Computer Science (BA, BCOM, BCS, BSc), Mathematics, Statistics and Graduate Statistics.

Computational & Mathematical Sciences contributed the greatest number of placements at 1,067 for 2018/19, an increase of 13% from 2017/18. The majority of these placements remain in Private Business (87%), while Provincial Agencies provided the second highest area of employment (7%). Most international placements were in the USA (14), with several others in Japan (12). Other international locations included China (3), Singapore (3), Switzerland (3) and Germany (2). Canadian placements were mostly in BC (954), while most out-of-province placements were in Ontario (64). There were also placements in Alberta (10) and Quebec (2). The gender distribution was 63% Male to 37% Female. The lowest monthly wage was \$2,000, the highest monthly wage was \$10,556 and the average monthly wage was \$3,439.

### Salary Distribution

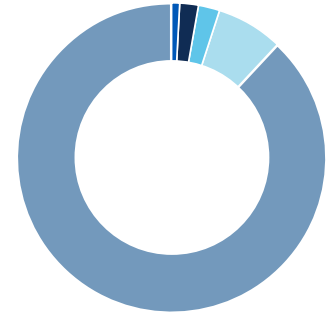


### Total Placements

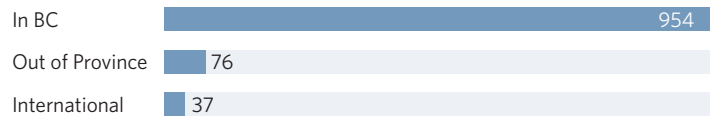


### Employer Type

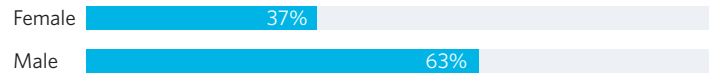
Federal Agency	1%
Non-Profit Organization	2%
Federal Government	2%
Provincial Agency	7%
Private Business	87%



### Placement Locations



### Gender Distribution



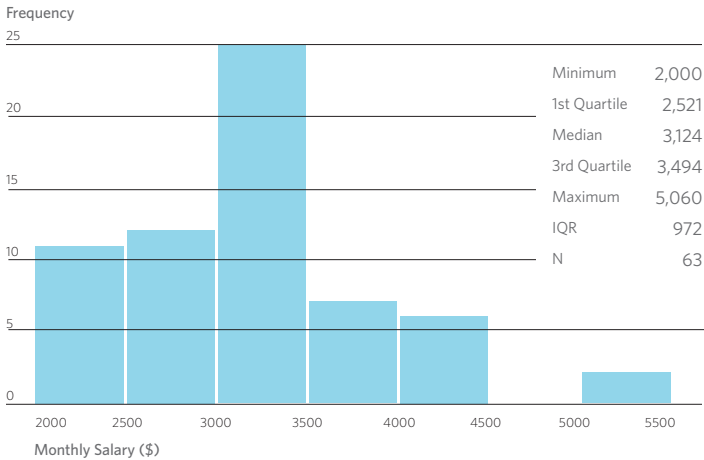


# Natural Sciences

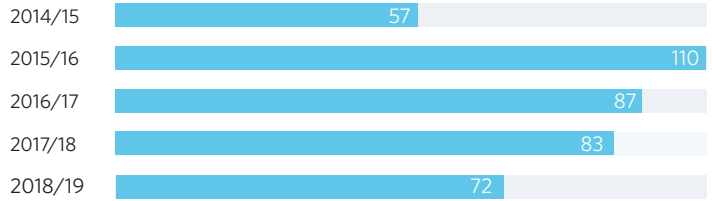
Natural Sciences Co-op is comprised of Atmospheric Sciences, Environmental Sciences, Earth & Ocean Sciences and Geographical Sciences.

Natural Sciences Co-op is comprised of Atmospheric Sciences, Environmental Sciences, Earth & Ocean Sciences and Geographical Sciences. There were 72 placements for Natural Sciences students in 2018/19. The majority of these placements remain in Private Business (40%) and Federal Government (38%), followed by Provincial Agencies (14%). There were four international placements. China had three placements and the USA had one placement. The majority of Canadian placements took place within BC (48). Most of the out-of-province placements were in Alberta (10). Other Canadian placements took place in the Northwest Territories (3), Quebec (3), Ontario (2) and Saskatchewan (2). Gender distribution was 54% Female to 46% Male. The lowest monthly wage was \$2,000, the highest monthly wage was \$5,060 and the average monthly wage was \$3,149.

## Salary Distribution

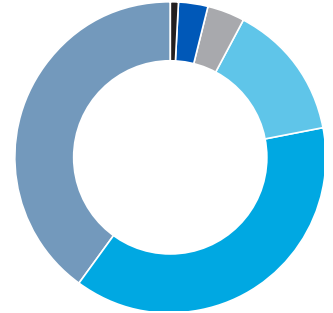


## Total Placements

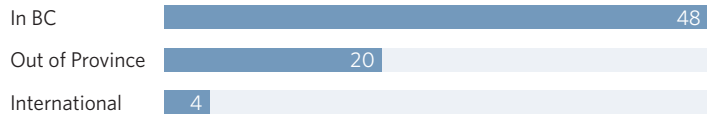


## Employer Type

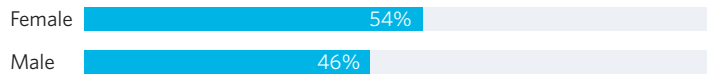
Federal Agency	1%
Non-Profit Organization	3%
Provincial Government	4%
Provincial Agency	14%
Federal Government	38%
Private Business	40%



## Placement Locations



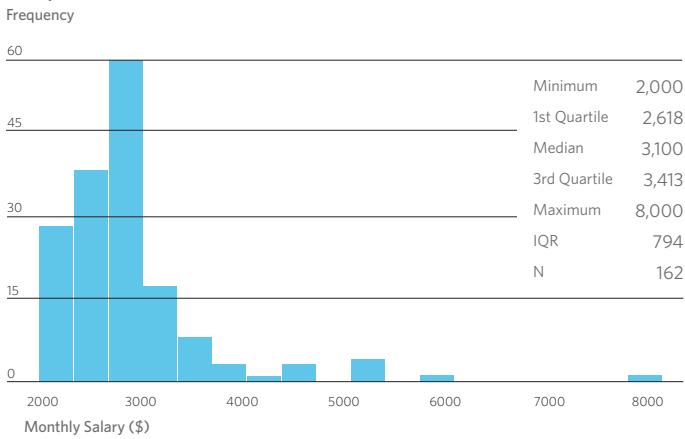
## Gender Distribution



# Engineering Physics

There were 200 total placements for Engineering Physics students in 2018/19. Private Business was again the greatest source of placements (67%), followed by Provincial Agencies (14%), and Federal Agencies (7%). Most international placements were in Germany (19), with several others in the USA (9) and Japan (6). Other international locations included Singapore (4), Switzerland (2), China (1) and Israel (1). Canadian placements were mostly in BC (143), while out-of-province placements occurred in Ontario (11), Alberta (3) and Quebec (1). Gender distribution was 74% Male to 26% Female. The lowest monthly wage was \$2,000, the highest monthly wage was \$10,600 and the average monthly wage was \$3,264.

### Salary Distribution

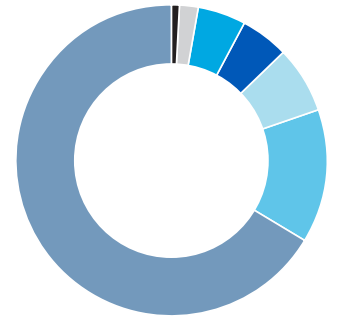


### Total Placements

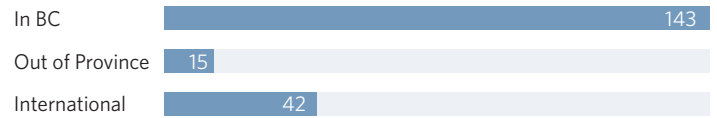


### Employer Type

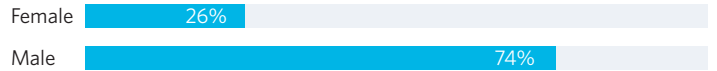
- Municipal Government 1%
- Other 2%
- Non-profit Organization 5%
- Federal Government 5%
- Federal Agency 7%
- Provincial Agency 14%
- Private Business 67%



### Placement Locations



### Gender Distribution





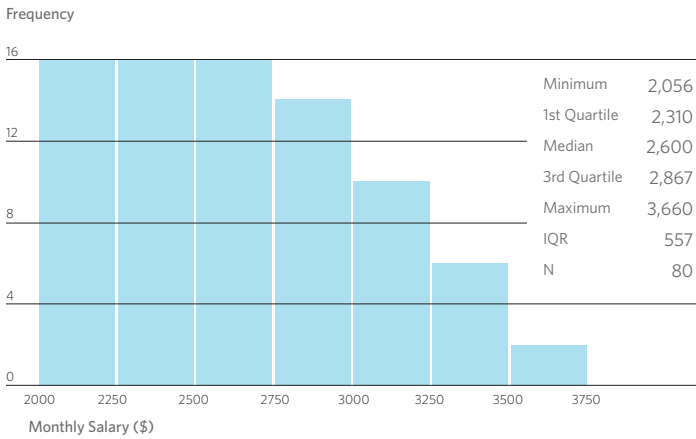
# Land and Food Systems

There were 90 placements for Land and Food Systems students in 2018/19, an increase of 17% from last year. Most were in Private Business (60%) and Federal Government (18%) followed by Provincial Agencies (17%). All but one of the placements took place in Canada, mostly in BC (75), while out-of-province placements took place in Alberta (8), Ontario (4), Prince Edward Island (1) and Quebec (1). There was one international placement in Germany. Gender distribution was 88% Female to 12% Male. The lowest monthly wage was \$2,056, the highest monthly wage was \$3,361 and the average monthly wage was \$2,641.

## Total Placements



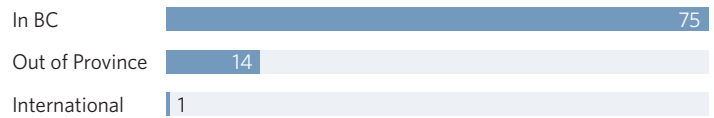
## Salary Distribution



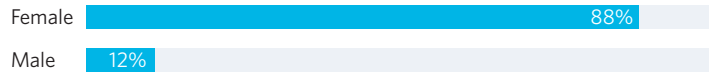
## Employer Type



## Placement Locations



## Gender Distribution

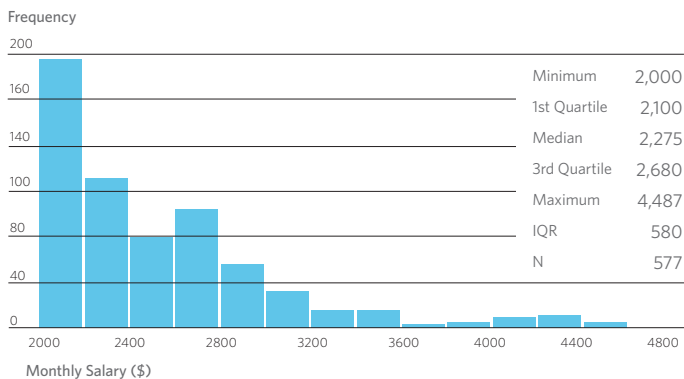


# Life Sciences

The majors within the Life Sciences Co-op program include **Biochemistry, Biology, Biotechnology, Behavioural Neuroscience & Cognitive Systems (Cognition & Brain Stream), Cellular, Anatomical & Physiological Sciences (CAPS), Chemistry, Combined Major in Science, Integrated Sciences, Microbiology & Immunology and Pharmacology.**

Life Sciences had 836 placements, an increase of 13% from 2017/18. Most placements occurred in Provincial Agencies (45%) and Private Business (44%) followed by Non-Profit Organizations (6%), Federal Government (4%) and Federal Agencies (1%). Life Sciences had the highest number of international placements (62), with the majority being in the USA (29), Germany (12) and Singapore (10). There were also placements in China (5), Saudi Arabia (3), Italy (1), Korea (1) and Switzerland (1). Life Sciences had 774 Canadian placements, most of which were in BC (688) and also Alberta (29), Quebec (26), Ontario (22), Saskatchewan (6), Manitoba (2) and New Brunswick (1). Gender distribution was 66% Female to 34% Male. The lowest monthly wage was \$2,000, the highest monthly wage was \$8,000 and the average monthly wage was \$2,481.

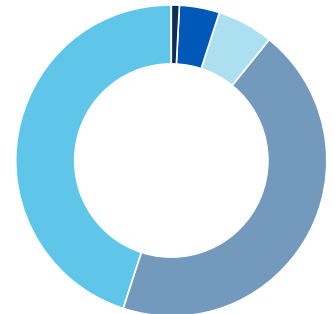
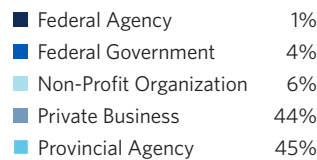
## Salary Distribution



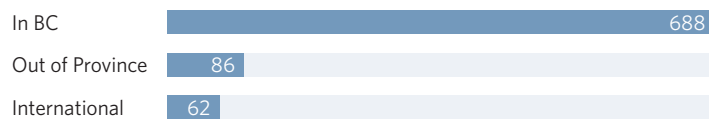
## Total Placements



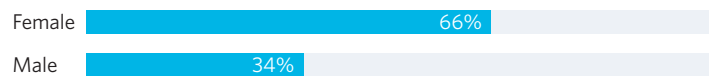
## Employer Type



## Placement Locations



## Gender Distribution

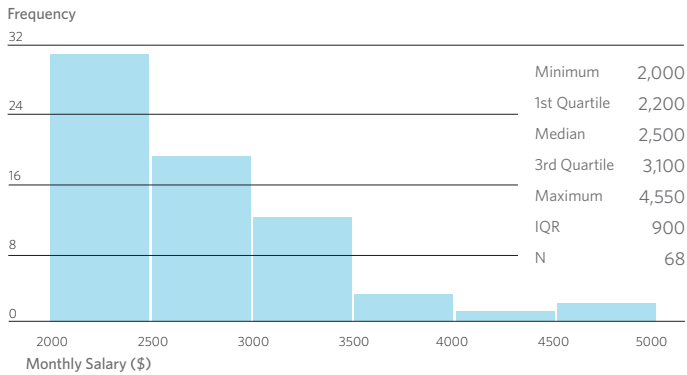




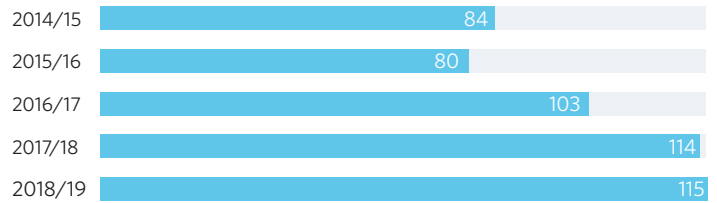
# Physics & Biophysics

Physics and Biophysics had 115 placements, an increase of 1% from 2017/18. Most of these placements were in Private Business (37%), Provincial Agencies (30%) and Federal Agencies (17%), followed by Non-Profit Organizations (6%). Most of the international placements took place in Germany (19), followed by Japan (5), Switzerland (5), France (2), Saudi Arabia (2), Singapore (2), the Netherlands (1), Poland (1) and the USA (1). Canadian placements were mostly in BC (68), while Alberta provided the most out-of-province placements (4), followed by Quebec (3) and Ontario (2). Gender distribution was 63% Male to 37% Female. The lowest monthly wage was \$2,000, the highest monthly wage was \$4,550 and the average monthly wage was \$2,704.

## Salary Distribution

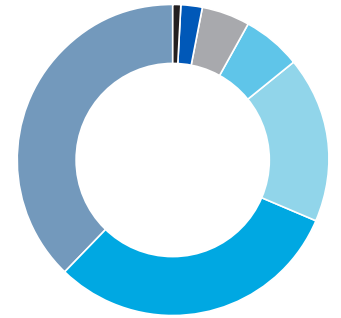


## Total Placements

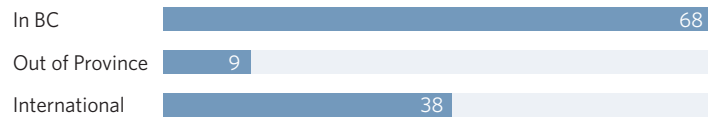


## Employer Type

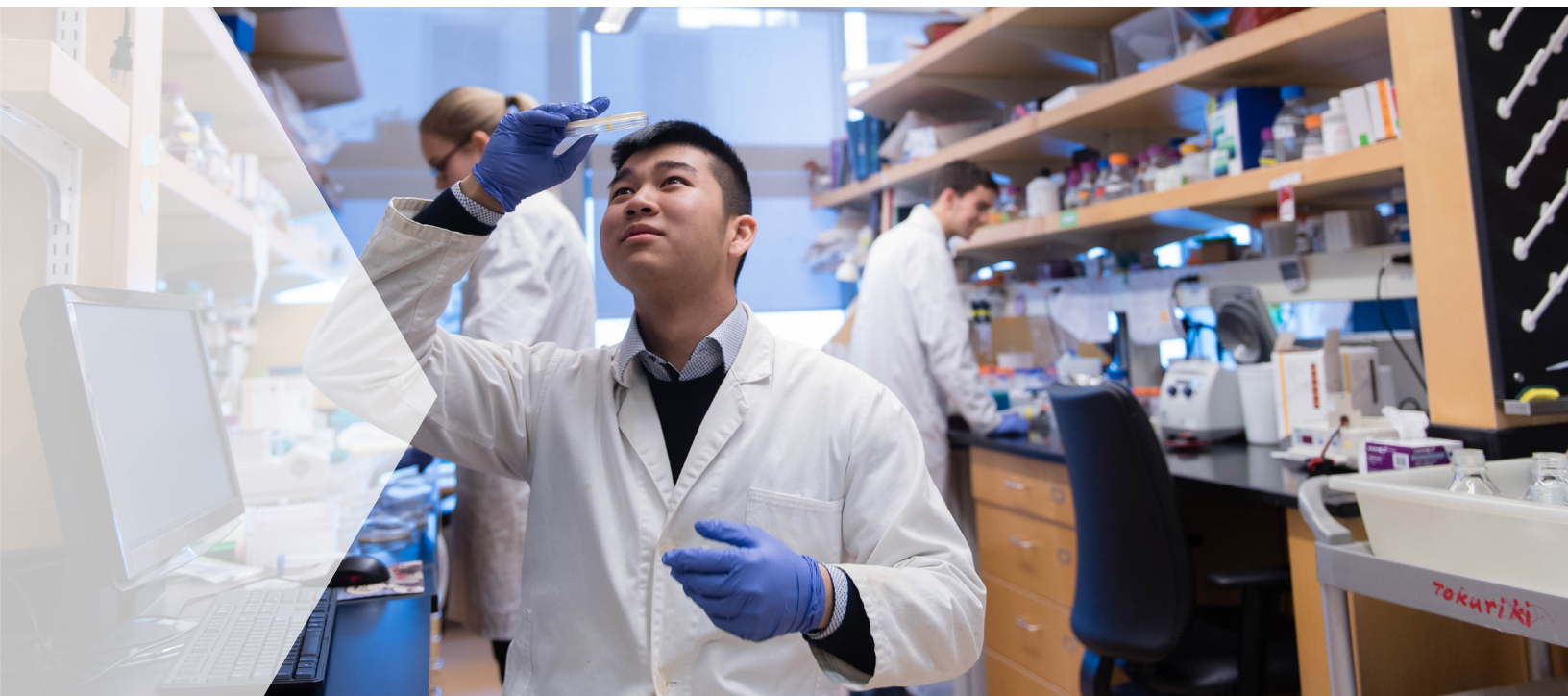
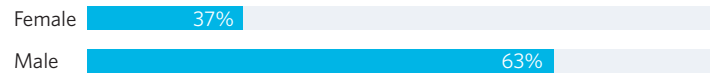
- Provincial Government 1%
- Federal Government 3%
- Other 5%
- Non-Profit Organization 6%
- Federal Agency 17%
- Provincial Agency 30%
- Private Business 37%



## Placement Locations



## Gender Distribution



Atmospheric Science  
Biochemistry & Molecular Biology  
Biology  
Behavioural Neurosciences  
Biopsychology  
Biotechnology  
Cellular, Anatomical & Physiological Sciences  
Chemistry  
Cognitive Systems  
Combined Major in Science/General Sciences  
Computer Science/Bachelor of Computer Science  
Earth & Ocean Sciences  
Engineering Physics (BASc)  
Environmental Sciences  
Geographical Sciences  
Integrated Sciences  
Land & Food Systems  
Mathematics  
Mathematical Sciences  
Microbiology & Immunology  
Pharmacology  
Physics & Astronomy  
Statistics (undergraduate & graduate)

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Chem/Phys 170-6221 University Blvd  
Vancouver, BC  
Canada V6T 1Z1  
604.822.9677  
science.coop@ubc.ca

[www.sciencecoop.ubc.ca](http://www.sciencecoop.ubc.ca)

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