Report on UBC Biology Alumni

2020 Survey

CONTENTS

OBJECTIVE

The UBC Biology Program is working on a multi-year project to assess and re-evaluate the existing Program curriculum to ensure it is meeting the needs of our students.

As part of this process, the project team wanted to check in with alumni about their experiences in the UBC Biology Program and how their education has served them since graduating.

The team developed a survey asking these questions of alumni who graduated in the last ten years.

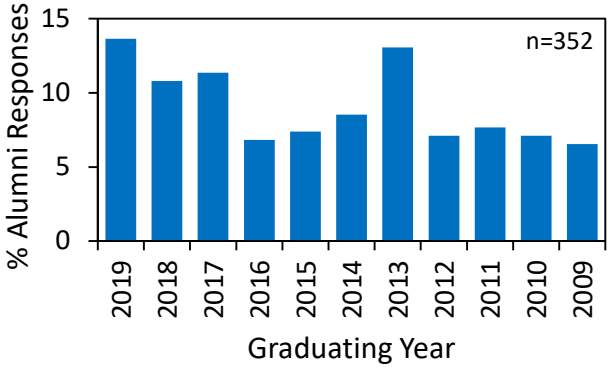
This report summarizes the findings of the survey so they can be shared with alumni, faculty, students and others.

SURVEY DETAILS

Survey Period
Jan 6 – Jan 20, 2020

Respondents
UBC Science alumni who attained a BSc with a major in Biology from 2009-2019 and with open email communication preferences.

Response Rate
13% (390 total respondents)



Histogram showing the graduating year of alumni responding to the survey.

TAKE-HOME MESSAGES

PART I: ABOUT OUR ALUMNI

Additional Education

76% of alumni sought further education after graduating.

Current Employment

44% of alumni work in healthcare and 19% work in biology research.

Other Areas of Life

UBC Biology helps alumni form opinions on important issues, and to appreciate the natural world.

PART II: ABOUT THE PROGRAM

Program Strengths

Alumni valued the amazing people and versatility of the Biology program.

Areas to Improve

Alumni highlighted career preparation, advising and building community as areas to improve.

Skill Training

Most alumni value communication and teamwork skills very highly.

PART I

ABOUT OUR ALUMNI

When we think about what the UBC Biology Program should look like, one thing to consider is what our students will go on to do when they leave the Program behind.

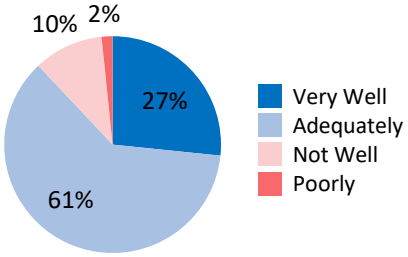
We asked alumni questions about what they have been doing since graduating, including information about additional education and careers.

ADDITIONAL EDUCATION

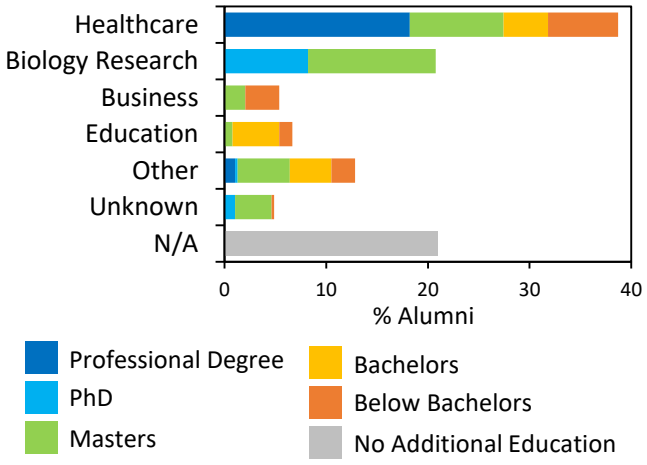
76% of alumni seek additional education after graduating from UBC Biology.

68% of this additional education was in Biology or a related field.

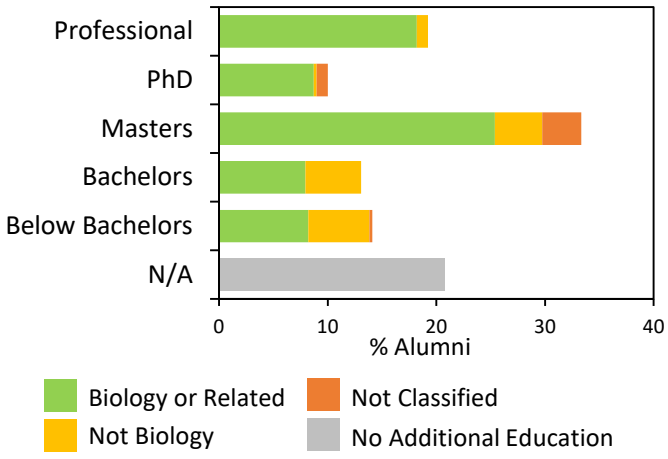
How well did your Bachelor's degree in Biology prepare you for your additional education?



FIELD OF EDUCATION



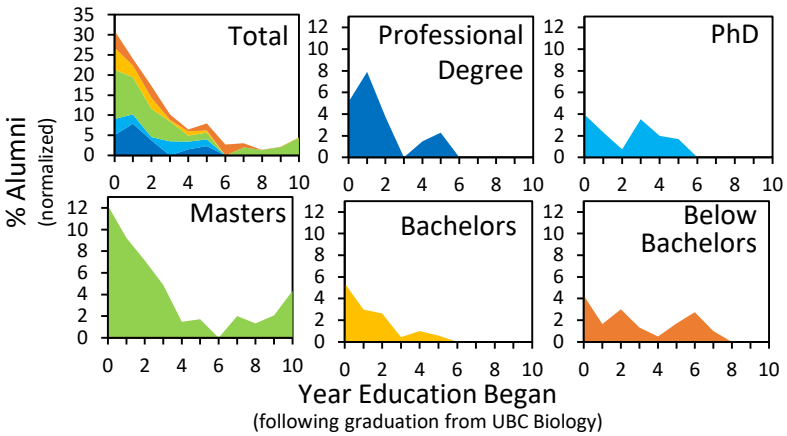
TYPE OF EDUCATION



TIMING OF EDUCATION

At what point do alumni begin their further education?

50% of alumni seeking additional training, began within 2 years of graduating from UBC Biology.



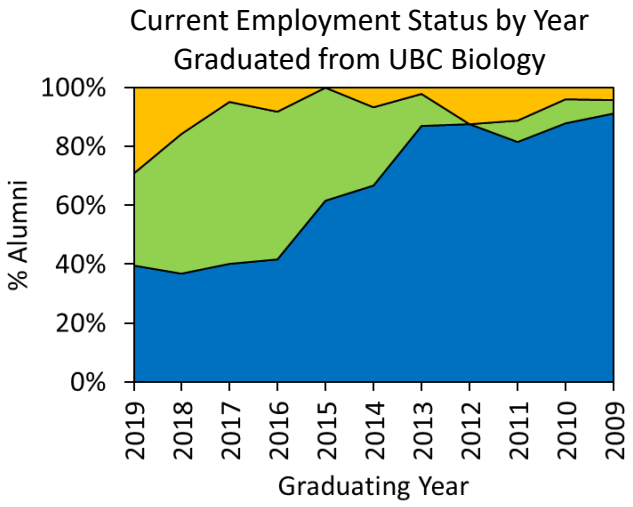
CURRENT EMPLOYMENT

To learn more about the careers of our alumni, we asked them what they are doing currently.

In the whole survey population:

- **64%** Paid Employment
- **26%** School
- **10%** Other

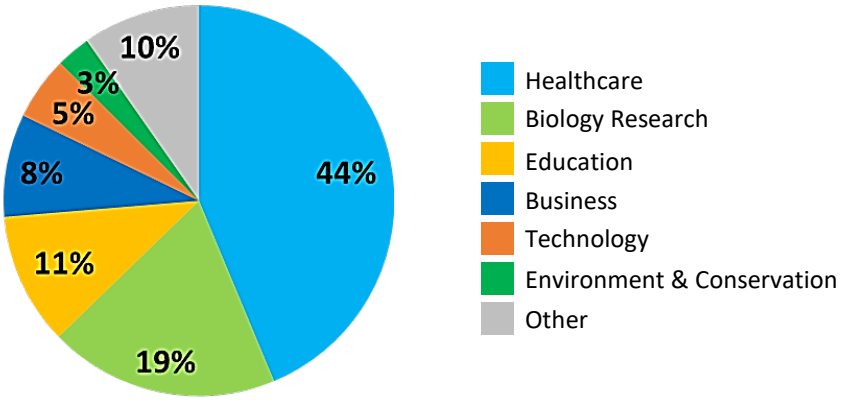
87% of alumni are in paid employment within 6 years of graduation.



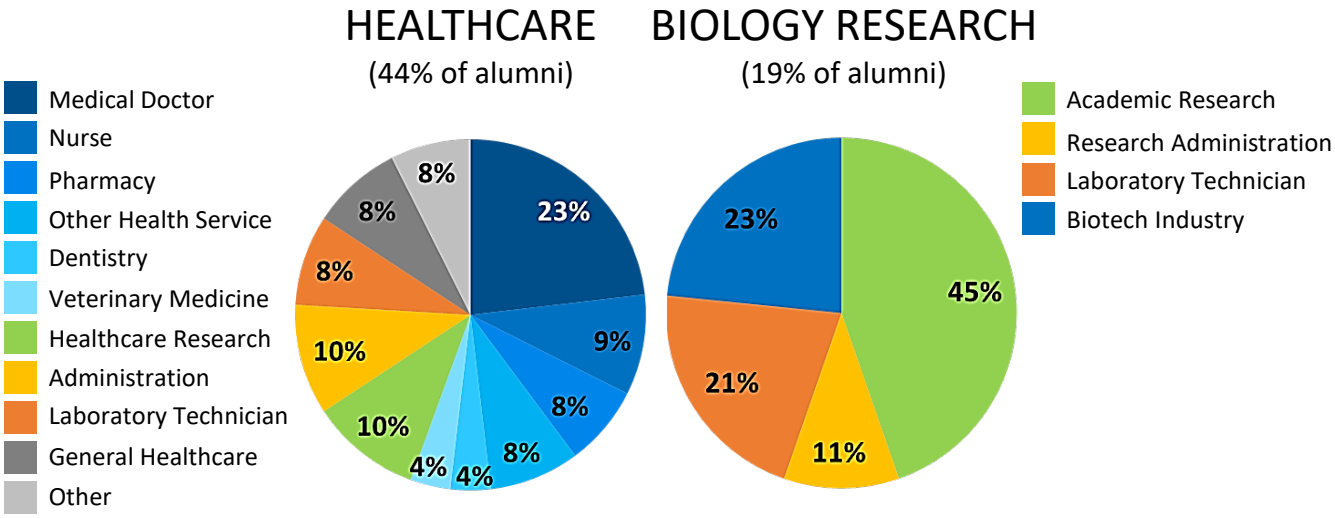
ALUMNI EMPLOYMENT BY FIELD

76%

of alumni are currently working in Biology or a related field.



BREAKING DOWN THE TOP FIELDS OF EMPLOYMENT



OTHER AREAS OF LIFE

How has your education in the UBC Biology Program affected your life in ways beyond schooling or employment?

We reviewed alumni responses to this question to identify the most common themes, with a selection highlighted here.

56% INFORMED OPINIONS

"It has certainly helped shape my political views and social views as well, and determined in part what I prioritize in regards to those views."

29% ENVIRONMENT

"It has been very helpful in my opinions about environmental issues, thus it affects how I vote, my opinions, and how I spend my money."

27% HEALTH

"It helped me in making health decisions and understanding the research behind it."

33% BIOLOGY APPRECIATION

"The ways I view the world and the innate curiosity I hold for the reasons behind why things are the way they are."

"I remain very passionate about the environment and enjoy hobbies and recreation that reflects that. I consider my biology degree as something that has provided me with a life-enriching knowledge base."

26% CRITICAL THINKING

"I understand statistics better, I can critically analyze a narrative or data. Above all, I learned to actively engage with the material I read or listen to."

"The UBC Biology program gave me critical thinking skills and a solid biological sciences background that helped me to understand the world around me. This has made a difference in almost every aspect of my life, from my health to my political views."

% % Percentage of comments touching on each theme out of a total 201 comments.

DIVERSITY AND DEMOGRAPHICS

As part of our survey, we asked alumni to provide demographic information. These data serve multiple purposes:

- To provide a picture of the diversity of our current alumni and to assess whether the survey captures their different perspectives.
- To allow comparison of survey responses among alumni populations, to help characterize their different experiences.
- To help assess how our student population is changing.

Compared to a survey of current students, the alumni respondents had a similar gender distribution. However, the alumni respondents had a higher proportion of individuals with European ancestry and native English speakers.

The vast majority of alumni described the Biology Program as a positive and inclusive place. We want to ensure the Program continues to excel in supporting all students.

DEMOGRAPHICS

- Gender
  69% female
  29% male
- Ancestry
  40% European
  30% East Asian
  All others <10% each
- Language
  76% mainly spoke English at home when growing up
- Gender/Sexual Minorities
  11% identified as a member of a gender or sexual minority
- Disabilities
  5% identified as a person with a disability

PART II

ABOUT OUR PROGRAM

Our alumni have valuable perspectives about their time in the Biology Program, and we wanted to hear about what mattered the most to them as they look back.

We asked alumni questions about what they liked best and what could be improved, as well as specific questions about key skills and the support systems available to them.

PROGRAM STRENGTHS

What did you like most about the UBC Biology Program?

We reviewed alumni responses to this question to identify the most common themes, with a selection highlighted here.

% Percentage of comments touching on each theme out of a total 227 comments.

PEOPLE

22%

"How awesome the teachers were - they were excellent teachers and obviously enjoyed doing it."

"Very diverse faculty group with diverse research interests and everyone being genuinely eager to help."

"I loved the enthusiasm and knowledge from the lecturers and teaching assistants, they really fostered a scientific curiosity for me."

"I liked that most of the professors cared about making sure students participated, and that lectures were interactive."

PROGRAM STRUCTURE

18% VARIETY

"I really enjoyed the many courses that were available. It felt like there was a course for every interest, and I really appreciated that."

"I didn't appreciate it at the time but the requirement to get a basic understanding in all sciences. Learning this has helped me get [a] better grasp of things outside of uni."

12% FLEXIBILITY

"It was flexible and I could take a wide range of courses suited to my interests."

CONTENT

15% UPPER YEARS & LABS

"I love the smaller class sizes and labs in the later years of the program. As well as how specialized the course content got as you progressed in your degree."

12% LEARNING BIOLOGY

"It really helps me understand biology at a deeper level."

11% WORK EXPERIENCE

E.G. HONOURS, CO-OP, WORK LEARN

"The honours program. A lot of the knowledge and skills I have learned came from working in a lab."

AREAS FOR IMPROVEMENT

We wanted to get a sense of what areas of the UBC Biology Program alumni felt could be improved. To assess this, we asked two questions about what we should think about when considering changing the program.

In addition to specific areas for us to work on, several alumni highlighted a need for clarity on the goals of the UBC Biology Program.

"Is the goal of the program to offer unaided exploration for academic [curiosity], or is the goal of the program to prepare students for careers in biology, or academia? The way the program is setup does not directly correspond to any identifiable goal."

WHAT IS THE MOST IMPORTANT CHANGE TO MAKE?

42% EMPLOYABILITY

GENERAL COMMENTS

"Focus on employability. A Bio degree on its own isn't very employable. So get students thinking about what to do with their degree and what options they have."

LAB SKILLS

"More activities and programs that are applicable to research and biotech. I had very few skills from general courses. Most of my experiences and skill sets were from volunteering."

COMPUTER SKILLS

"Computer science is becoming more and more important even in the life sciences. Please consider adding more training in how to code, etc. for students in biology."

21% ADVISING

"Help students find their interest within the program, it seems there were many peers without a direction."

"Helping students who are totally lost. Someone like me would have benefited from a forced one-on-one interaction with someone to talk about my options and what I needed to do to get there."

"I think the program could have offered more guidance to students, by providing more contact between students and potential mentors as well as facilitating peer to peer interactions."

15% COMMUNITY

"Biology is the largest program within the science faculty, so it can sometimes be difficult to find continuous connections with peers and with faculty. However, lack of connections with others is often cited as a major reason for mental health challenges in post-secondary students."

"I didn't feel like I was part of a community while in the program. There were many people in the cohort. It would be nice to [have] felt like I was part of a bigger group that loved biology."

% Percentage of comments touching on each theme out of a total 452 comments across two questions.

SKILL TRAINING

As part of our evaluation of the Biology Program Curriculum, we are looking closely at the 'transferable skills' that are important for our students to acquire.

Top Skills Alumni Value

- Communication (All Types)
- Learning on Your Own
- Interpersonal Skills

Top Skills the Biology Program Develops

- Science and Data Skills
- Appreciation of Biology
- Written Communication

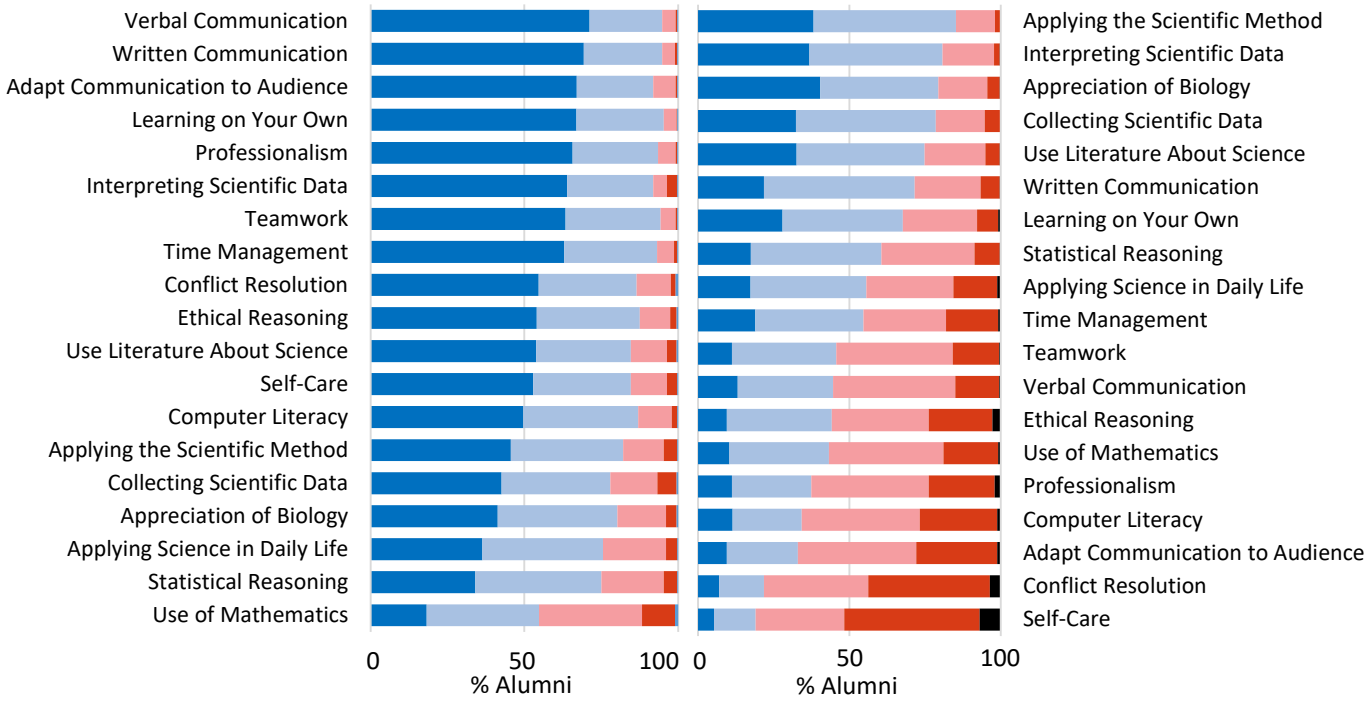
RANKING OF SKILLS

How important are these skills to you?

Very Important
Important
A little Important
Not Important
N/A

Very Helpful
Helpful
A Little Helpful
Not Helpful
N/A

How helpful was the UBC Biology program in helping you develop these skills?



TOP SKILLS FOR THE PROGRAM TO IMPROVE

What is ONE very important skill that you feel should have been better addressed by UBC Biology?

% Percentage of alumni selecting this skill

15%	**Self-Care**	Monitoring and maintaining your physical, mental and social health.
11%	**Verbal Communication**	Communicating ideas, data and findings with others clearly and accurately in a verbal form.
10%	**Communication with Different Audiences**	Tailoring communication for audiences ranging from disciplinary experts to the general public.
9%	**Computer Literacy**	Operate basic software to carry out data entry, generate figures, or search databases.

MENTORSHIP

We want the Biology Program to be a place where our students can connect with mentors who can help them succeed.

To help us better connect students with mentors, we asked alumni about who their mentors were while in the Biology Program, and how their mentors helped them.

We defined mentors as people who are experienced, that you trust, and that provide you with guidance or advice. For example helping with course selection, applying for jobs or schools, maintaining a work-life balance, etc.

ROLE OF MENTORING IN UBC BIOLOGY

89% Alumni who had one or more mentors in the Biology Program.

- 46% Lecture Instructor
- 40% Lab Instructor
- 29% Teaching Assistant
- 27% Research Supervisor
- 10% Other

86% Alumni who would have liked more opportunities to connect with mentors.

IMPORTANCE OF MENTORS

71% **SUCCESS IN THE PROGRAM**
Alumni indicated that their mentors were important for this

56% **SUCCESS AFTER GRADUATION**
Alumni indicated that their mentors were important for this

HOW HAVE MENTORS HELPED YOU?

24% CAREER ADVICE

"Told me their experiences and what they feel they did well or could have done differently. Gave me a better understanding of employment opportunities after graduation and other potential career paths."

19% REFERENCE LETTERS

"I had two research supervisors who gave me good advice. In particular, I worked in the lab of one of them in the summer between second and third year. She wrote my reference letter for medical school and I got in on my first try!"

18% RESEARCH EXPERIENCE

"A couple of my mentors made my learning experience a dynamic two-way interaction. We would have some ideas or questions about some topic and we would just have a logical/ brainstorming discussion about it. There are really no answers but these discussions are exactly the reason why I continue to do research today."

10% SUPPORT

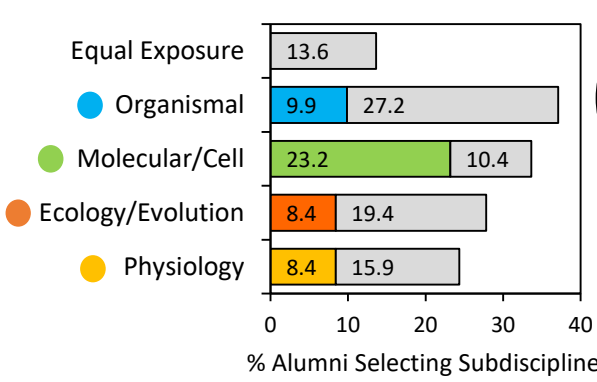
"To hear from your friends and family that you are capable is not the same as to hear it from a mentor in the field you aspire to be in one day. You know that they have endured the journey that you are soon to take, and that makes all the difference."

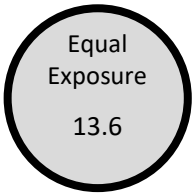
% Percentage of comments touching on each theme out of a total 185 alumni comments.

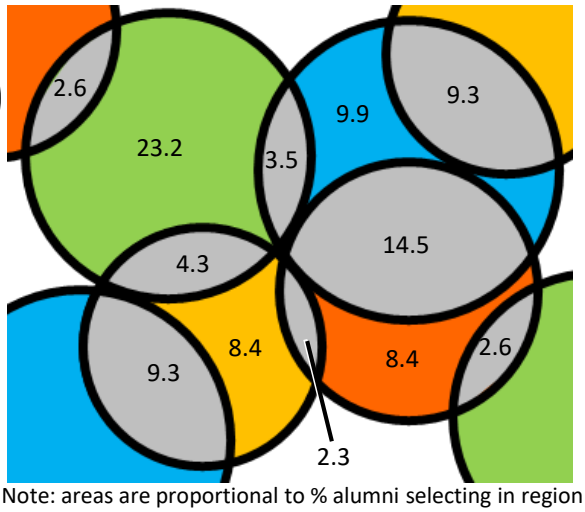
SPECIALIZATIONS

Prior to 2012, the Biology Program offered the option for students to specialize in different subdisciplines in Biology. After 2012, all students were part of a single Biology Major, or in an Honour's Specialization. As such, the students in the Biology Program now have substantial freedom to select their courses according to their interests. To gauge alumni interest in the different areas of biology, we asked alumni from both time periods to select up to two subdisciplines in which they took the most courses.

ALUMNI INTEREST IN BIOLOGY SUBDISCIPLINES







Note: areas are proportional to % alumni selecting in region

Colours A single subdiscipline was selected
Grey A second subdiscipline was selected/equal exposure

BROAD INTERESTS

There was little clustering of alumni in specific combinations of 'streams', and many alumni indicated they had equal exposure to all subdisciplines (13.6%), or selected multiple subdisciplines (36.5%). This reflects the flexibility that alumni reported they valued highly in the Biology Program.

INTEREST IN ORGANISMAL BIOLOGY

A focus on Organismal courses (●) was most common (total = 37.1%), often taken together with Physiology (●), or Ecology/Evolution (●) courses.

INTEREST IN CELL BIOLOGY

Alternatively, while focusing on Molecular/Cell Biology courses (●) was also common (total = 33.6%), alumni often selected this as a single subdiscipline (23.2%).

NEXT STEPS

This alumni survey is one piece of a broader consultation with faculty, students, employers, and other stake-holders in the UBC Biology Program. The information we collect will be used to help faculty make decisions about what the UBC Biology Program should look like, and how to make this happen.

The project team is also consulting the education literature, and experts in the field at UBC and beyond, to guide these decisions and provide recommendations and tools for effective change.

To stay up-to-date with our progress, please visit the project webpage at:

https://bioskillsproject.wordpress.com/

Apr 30, 2020

Undergraduate Program Evaluation and Renewal Project

Meents MJ, Dee J, Goedhart C, O'Neill A, Schulte T, Chowrira S

Biology Program, Faculty of Science, University of British Columbia