

# Students: Maybe you don't have to choose your discipline

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For university of British Columbia English professor Miranda Burgess, the advantages of interdisciplinary studies might be summed up in the career path of just one of her Arts One program students. After completing a double major degree in English literature and engineering, she said, "he went on into the startup world, helping design an app that optimizes user experience while walking through a city. The possibilities are really wonderful."

Prospective university students not yet sure which profession, vocation, or field of study is right for them, could consider interdisciplinary studies programs.

For those who recognize that combining disparate disciplines can enrich their learning, such programs are also a great option.

What is more, academic research has found that interdisciplinary studies can advance cognitive ability, increasing a student's capacity to understand multiple viewpoints on a given topic.

Dr. Burgess spent two years seconded to UBC's Arts One program, which combines English, history and philosophy into a single degree program.

Another bonus: the program's focus on collaborative skills, "which is one of the soft skills most in demand in the 21st-century world," she said.

"Arts One is a transformative program for students. They grow so much as a consequence of being part of it."

Concordia University in Montreal also offers interdisciplinary studies, at the graduate level. The goal of its two-year-old FOYER program, said Dean of Fine Arts Rebecca Duclos, is supporting and encouraging all kinds of cross-disciplinary activity.

"The program brings together graduate students from across the entire university for social events," she explained, "to talk about the kind of work they are interested in, and to form temporary research clusters."

There are also grants available for travel, supplies, or to bring in experts with whom students want to work. "The idea is to just work with each other and, more specifically, have access to each other's spaces."

James Charbonneau, professor of theoretical physics at UBC and associate director of its Science One and Coordinated Science programs, has conducted research surveys assessing whether or not programs like Science One – which includes mathematics, chemistry, biology and physics – can break down the pre-existing silos of knowledge students may have.

So far, he said, he is finding more positive attitudes toward interdisciplinary thinking among students who pick interdisciplinary studies over conventional science programs.

"They start to see the connections between the subjects," he said.

"They see more value."

Science One "is an honours program, so it's for students who want to work hard," he explained. "But the training and experiences we have to offer, the special projects and mentoring by faculty members, are stuff that very few first-year students get. It's an experience that is really valuable, and that a lot of students miss out on otherwise."

Recommended by UBC's medical school, the program is one he feels all science students should consider.

According to Carolyn Eyles, program advisor for the honours Integrated Science Program at Hamilton's McMaster University, feedback from program alumni has also been highly positive.

"They're finding that the kind of skills that we're helping the students develop are absolutely invaluable in their future careers," she said.

Students enrolled in iSci, as it's often known, "learn all their sciences together, in one course," she said. That includes mathematics, physics, chemistry, biology, psychology, earth sciences and science literacy.

"And they learn it through research projects," she added, "on finding answers to the various questions posed in these projects. It's very much a training in self-directed learning.

"Students who have been really successful [in the program] are the ones who are not particularly stuck on one science, but who like all of the sciences," she pointed out, "and want to explore and see where the possibilities are, where these sciences can take them."

A lot of time is also dedicated to communicating science findings to different audiences, with students doing presentation practice, producing podcasts and writing blogs.

"They find that is very valuable to them," she said. "They also enjoy just the sheer discovery, the excitement they get from discovering these things in science and some of the possibilities that are ahead of them."

Like other young scholars who take interdisciplinary studies, McMaster's iSci students do not feel constrained by any single discipline boundary. "They feel confident to move across discipline boundaries," said Dr. Eyles, "and use some of their maths in earth sciences, or their biological concepts when approaching chemistry."

Another benefit of interdisciplinary programs is their small size.

As a result, said Dr. Burgess, Arts One undergrads, for example, "have the opportunity to work very closely with the same group over the course of the year. So it's wonderful for building their community and their social relationships."

For Dr. Duclos, interdisciplinary studies, such as the program offered at Concordia, are modelling where the future is going. "It's fantastic because there are some very urgent problems we are facing, some very exciting challenges.

And the next generation of students are really having to learn how the world works from another person's perspective."