

Institut quantique

Driving the quantum revolution

A focus on student empowerment

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Program Manager – Science and Entrepreneurship

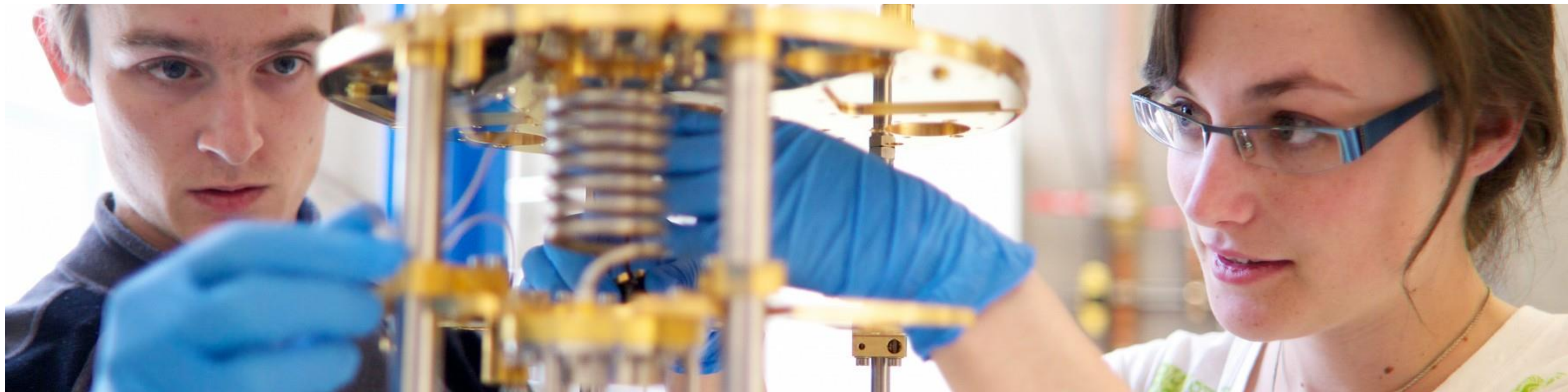
Le Lab Quantique Meetup – April 2, 2020

Our Mission



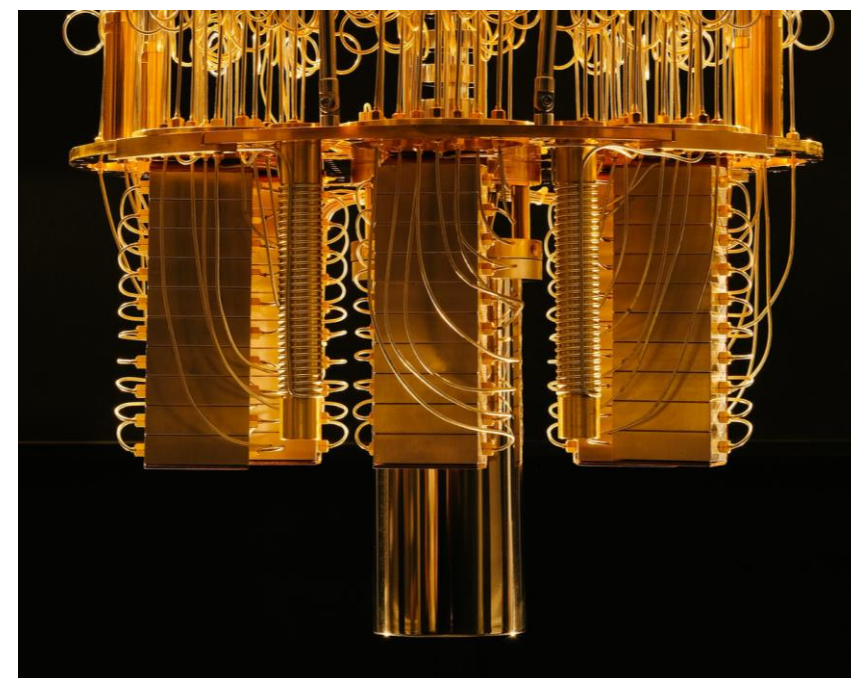
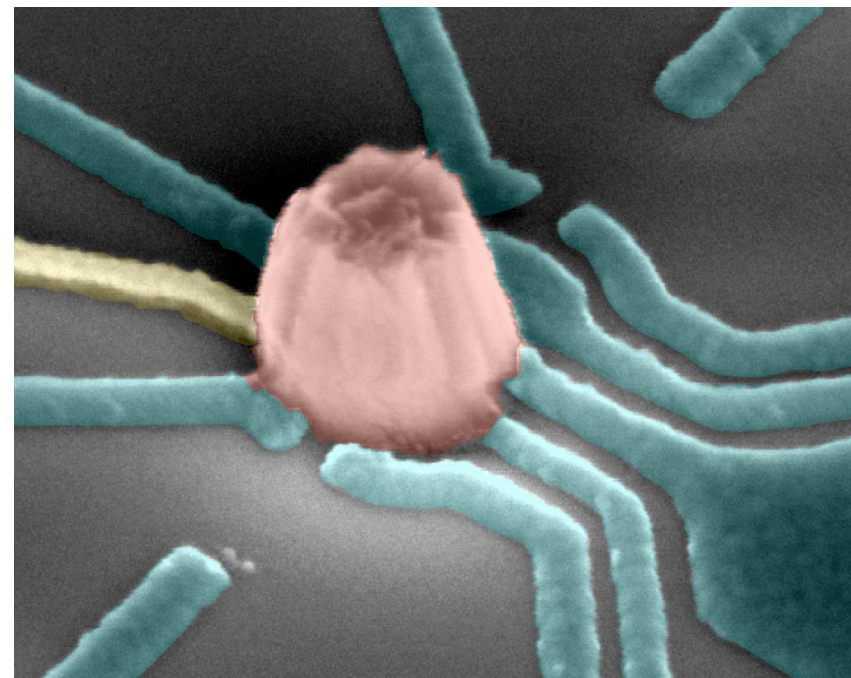
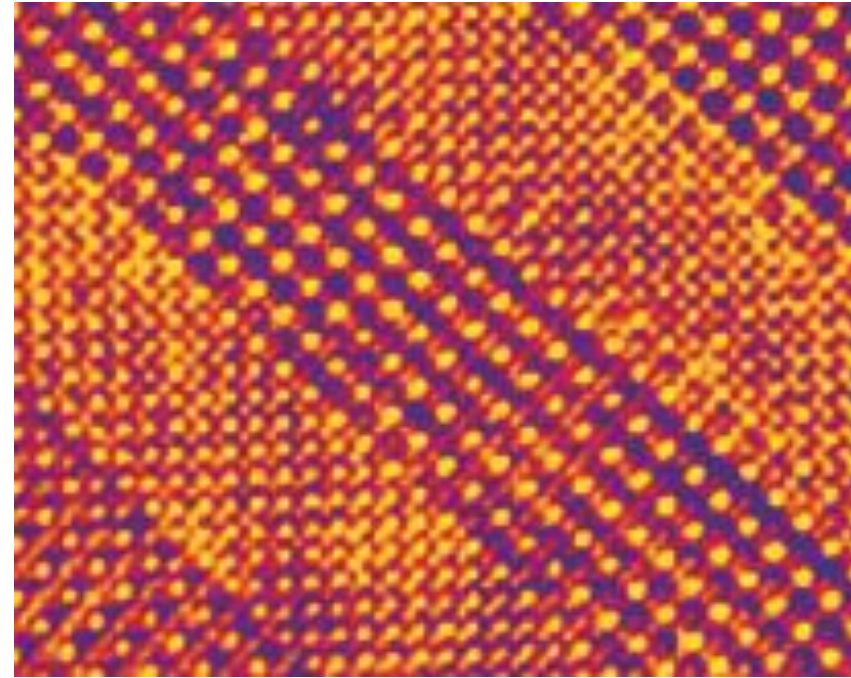
Place **students** at the centre of research in an open and collaborative environment to **accelerate** the transition **from science to quantum technologies**.

We **train leaders** who have the skills and critical thinking essential to creating knowledge relevant to a **changing society**.



Institut quantique

From quantum science to quantum technology



Quantum materials

Material growth and deposition

Characterization

Large-scale facilities
High performance computing

Quantum information

Experimental and theoretical solid state qubits:
spin qubits, impurities and superconducting
Quantum error correction

Quantum engineering

Quantum sensors

Photonics

Cryogenic electronics

Ultrafast single-photon detectors

Institut quantique

From quantum science to quantum technology



26

Professors-Researchers



138

Graduate Students



37

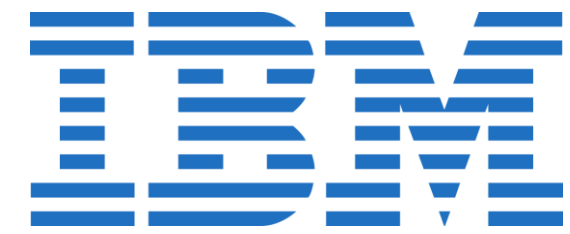
Postdocs



22

Research Staff

Partners



Emerging Eastern Townships ecosystem in quantum research and innovation



31 octobre 2019 | Nouvelle UdeS



Innovations technologiques


1QBit ouvre un bureau à Sherbrooke en partenariat avec l'UdeS



L'entreprise 1QBit, un des chefs de file mondiaux de l'optimisation d'équipement et de logiciels d'informatique quantique, étend ses activités au Canada en ouvrant un bureau à Sherbrooke afin

IBM Q

IBM Q Network: Mission



- Accelerate Research**
Collaborate with the most advanced academic and research organizations to advance quantum computing technology.
- Launch Commercial Applications**
Engage industry leaders to combine IBM's quantum computing expertise with industry specific expertise to accelerate development of the first commercial use cases.
- Educate and Prepare**
Expand and train the ecosystem of users, developers, and application specialists that will be essential to the adoption and scaling of quantum computing.

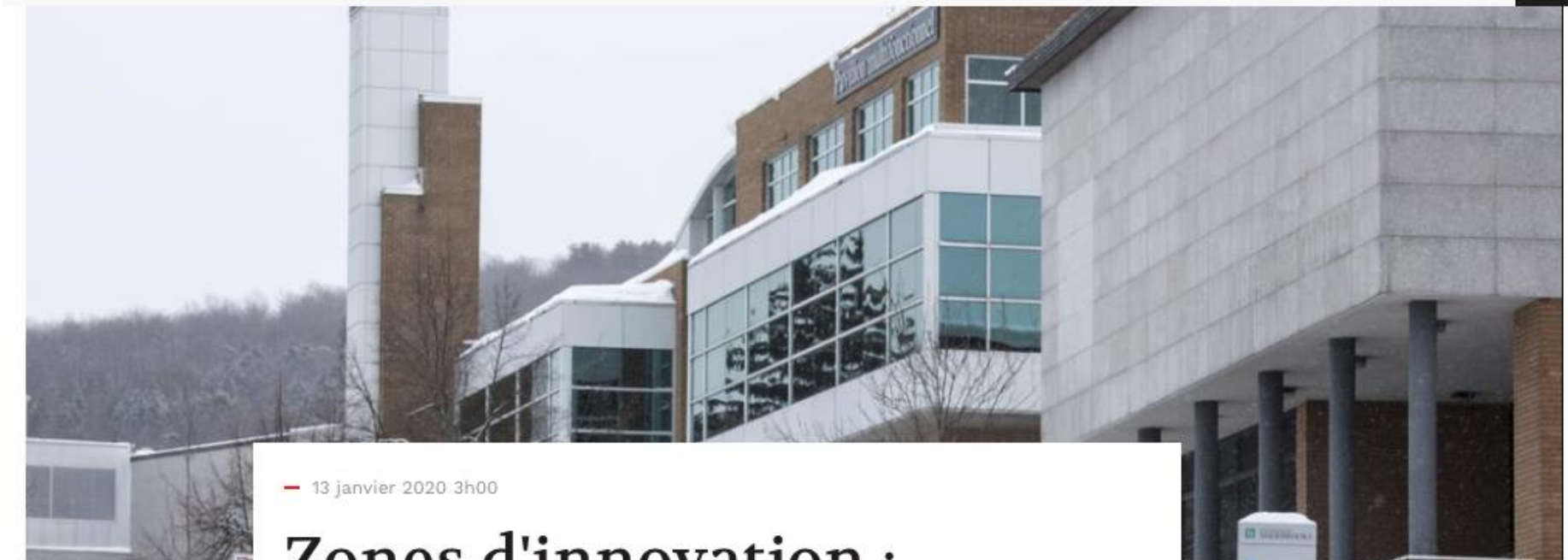
Innovation Zone



JE CONTRIBUE

Sherbrooke Ensoleillé -19°C

Recherche



13 janvier 2020 3h00
Zones d'innovation : Sherbrooke veut une désignation en science quantique



The New York Times

The Next Tech Talent Shortage: Quantum Computing Researchers

By some estimates, only 1,000 or so researchers can claim to understand the technology. Finding more could become

Oct. 21, 2018

'In a type of artificial intelligence called deep learning, for example, fewer than 25,000 people, by some estimates, can be considered genuine experts.'



Beyond the technology,
the biggest quantum
advantage today is
talent.



Photo: IQ

The IQ Experience

More opportunities, more perspectives



Seed funding program **open to students** (since 2016, 22 student-led projects)

Support **student-driven initiatives** and **student entrepreneurship**

New training opportunities in quantum science

1. CREATE program — **QSciTech**

- Training targeted to non-traditional careers
- Internship at one of our industrial partners

2. Master's microprogram in quantum science and technology

3. Undergraduate program in quantum science

Q2 initiative



Adam



Agustin



Alexandre



Benjamin



Karl



Marie-Eve



Maxime



Patrick



Udson



Vanessa

Premise

Deep tech physics startups and entrepreneurship are not part of the culture

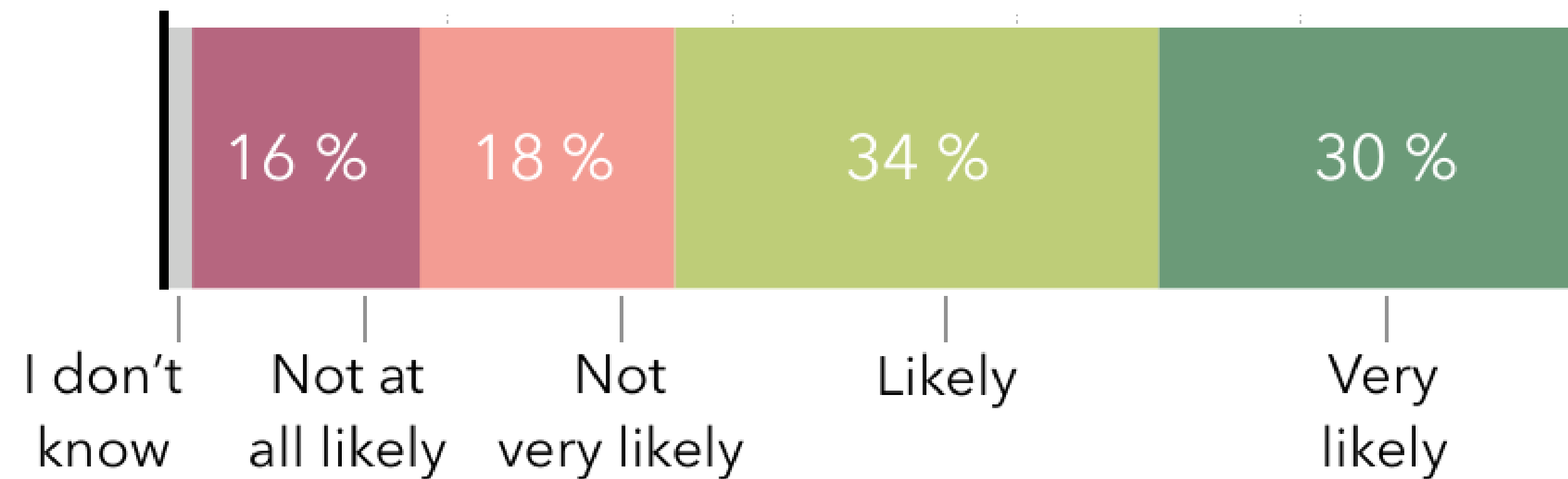
Project

Determine why and create a plan for the IQ to move forward

A 2015 *Nature* study



Q How likely are you to pursue an **academic** career after you finish your programme?

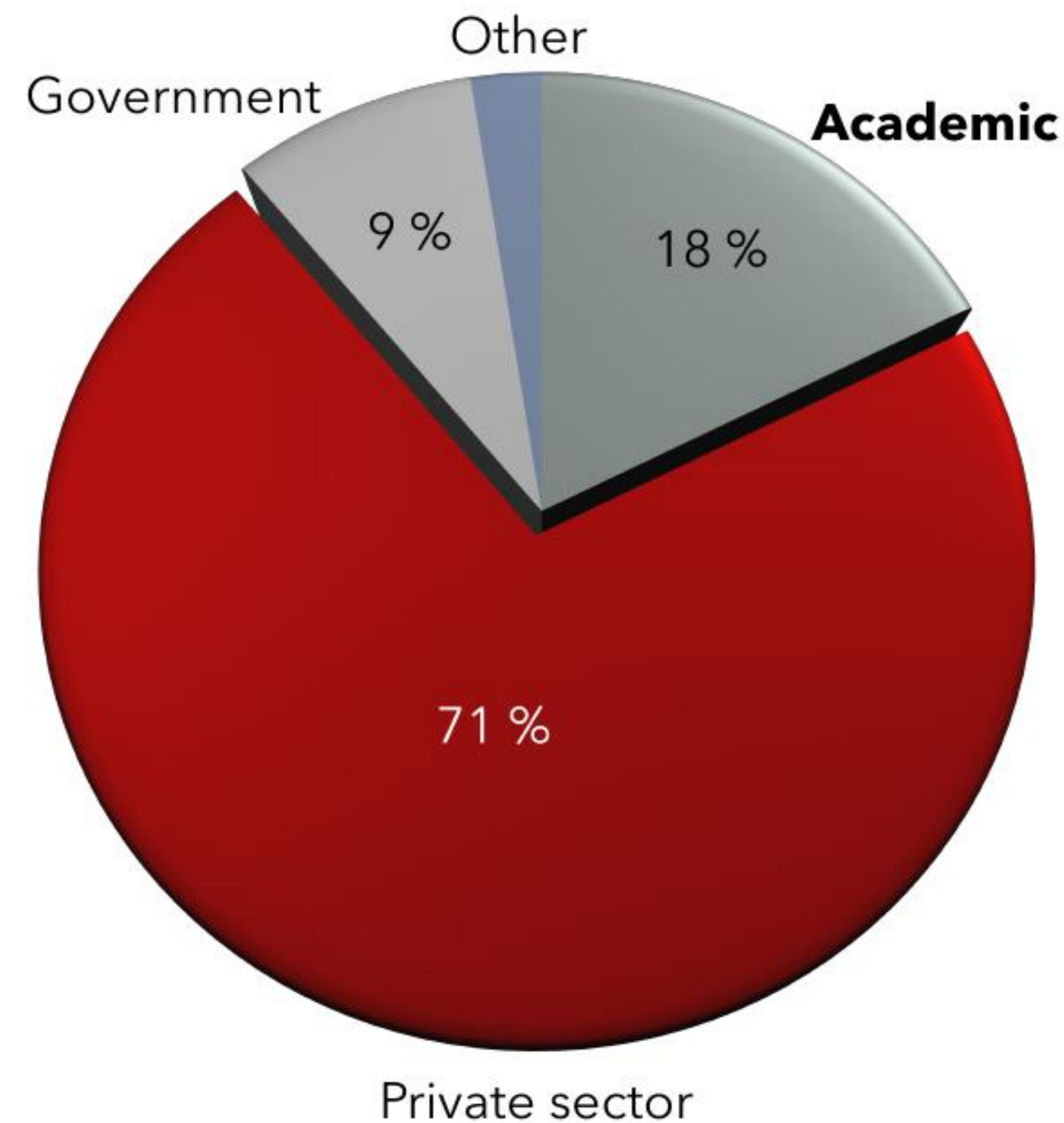
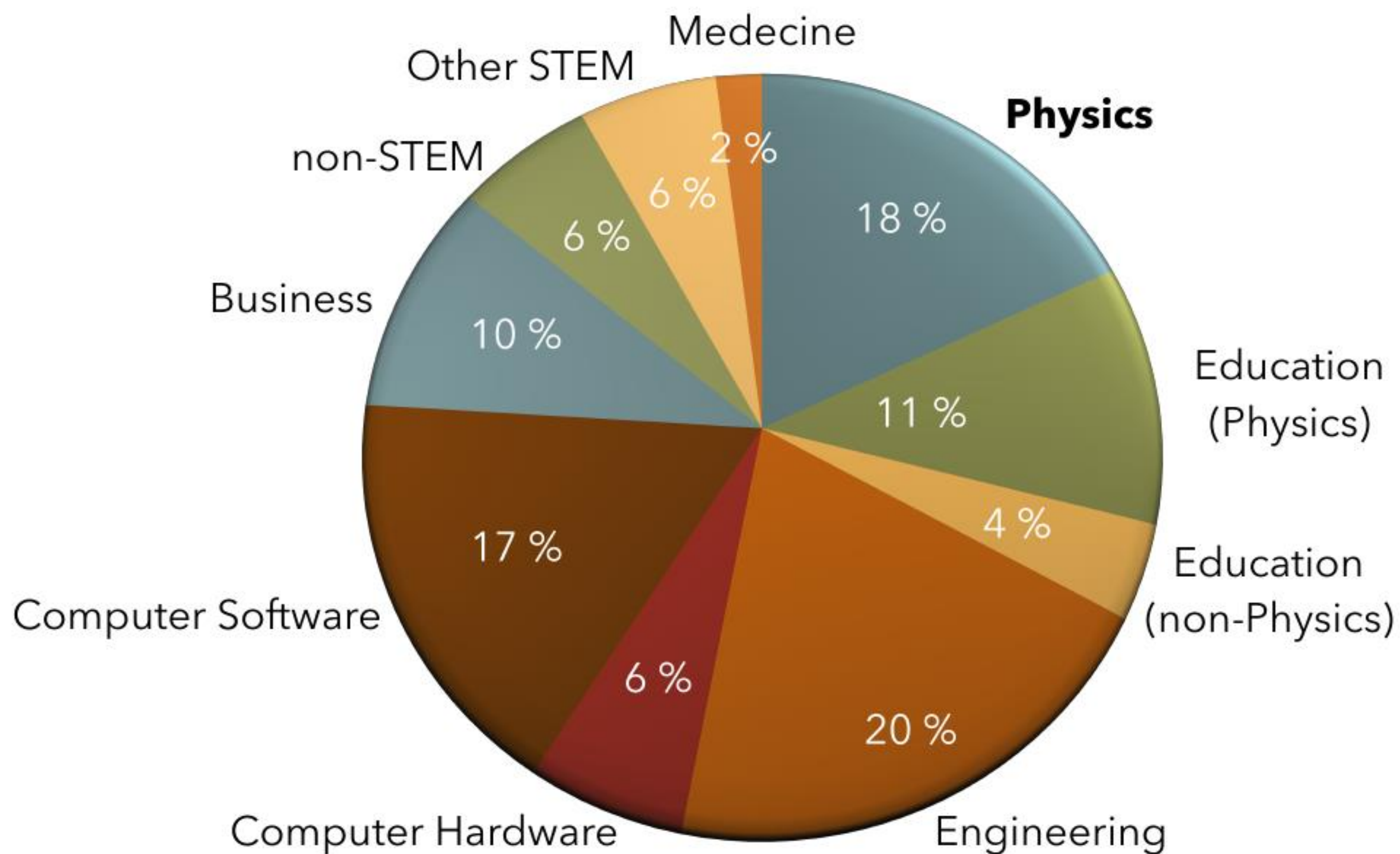


Most physics graduates believe they can get a job in academia.

The same is true in Sherbrooke.

Employment **fields** for new physics PhD recipients
in *potentially permanent positions*,
classes of 2011 through 2016

Employment **sectors** for new physics PhD recipients
in *potentially permanent positions*,
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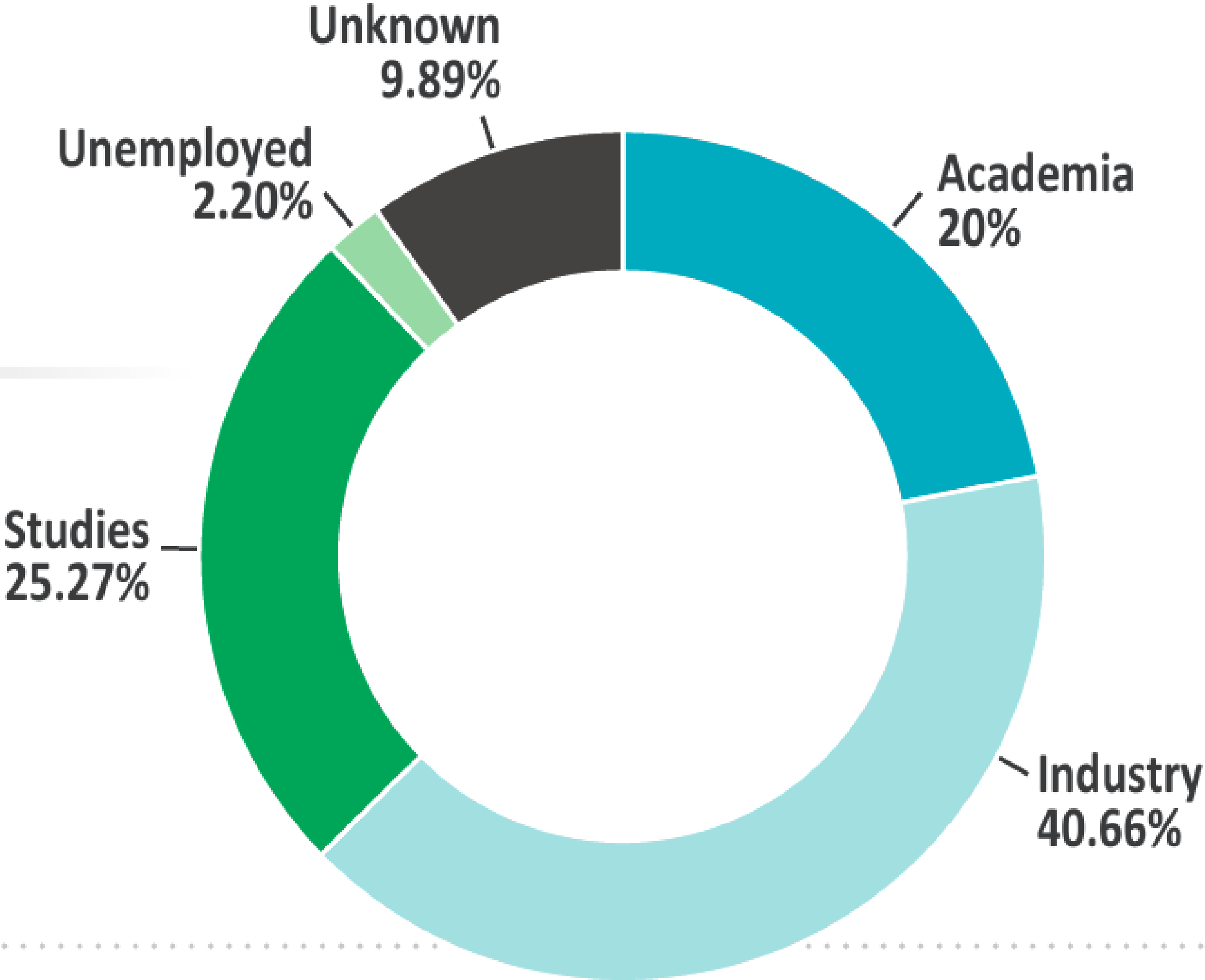


Source: AIP Statistical Research Center, Initial Employment Survey, Classes 2011 through 2016.

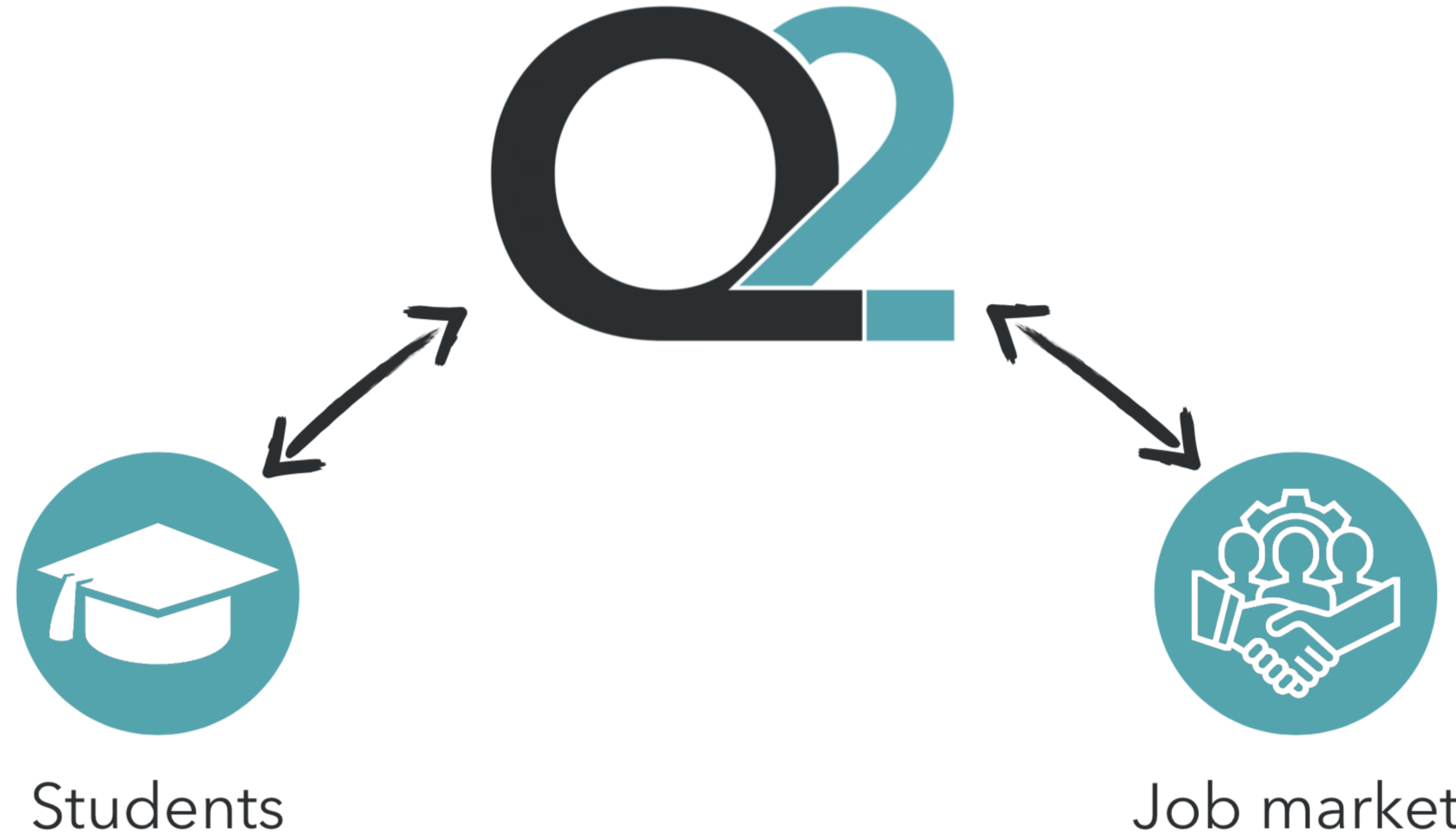


Alumni occupation

(166 students in 3 years)



Q2 initiative



A students-for-students IQ initiative aiming to steer the graduate training towards a better student-job-market fit.

Providing assistance, support and information on employment in the quantum technology sector in Quebec and elsewhere by creating links with the industry and promoting entrepreneurship.

Horizon IQ – by students for students



Alan Aspuru-Guzik
October 8th 2019



Pierre-Luc Dallaire-Demers
November 19th 2019



Nick Farina
December 12th 2019



Christophe Jurczak
January 14th 2020



DiPhUS - Workshop on conflict resolution
and available help resources at UdeS
February 25th 2020



- Canceled – March 26th 2020
- CDL Toronto + alumnis
 - Quebec quantum incubators consortium



Entrepreneurship and tech transfer

Tech Transfer

- 17 patents since 2015
- Quantum Numbers Corp.

Students Startups

SB Technologies
Quantum Sensing



Nord Quantique
Quantum Computing



Qubic
Quantum Sensing



Quentelechy
Quantum Information
Processing



Entrepreneur in residence – pilot program



**Accélérateur
entrepreneurial
Desjardins**



The team



Agustin



Alexandre



Karl



Patrick



Camille



Zhiren



@Q2atIQ

Q2@USherbrooke.ca

Thank you for your time!



@Q2atIQ

Q2@USherbrooke.ca

Horizon IQ activities :

<https://www.usherbrooke.ca/iq/evenements-iq/series-de-seminaires/horizon-iq/>

<https://www.usherbrooke.ca/iq/en/events/series-of-seminars/horizon-iq/>

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