

The background features a complex network of nodes and lines. The nodes are represented by small circles, and the lines are thin, connecting the nodes in a web-like structure. The color of the nodes and lines transitions from a light, golden-brown on the left to a dark, charcoal brown on the right. The overall effect is that of a digital or scientific network.

PHYSICS
INFO SESSION

- OVERVIEW OF THE DEPARTMENT
- PROGRAM OVERVIEW
- CO-OP PROGRAM AND C-EDGE
- AWARDS and RESEARCH OPPORTUNITIES
- CAREER OPPORTUNITIES
- USEFUL LINKS and RESOURCES
- DIVERSITY and INCLUSION
- BOOK AN APPOINTMENT WITH ACADEMIC ADVISOR
- Q&A



PEOPLE

Dr. Laszlo Kalman

Undergraduate and Co-op Program Director

Office: SP-365.10

laszlo.kalman@concordia.ca



Nata Zazubovits (M.Sc.)

BSc Coordinator and Academic Advisor

Office: SP-367.01

physics-advising@concordia.ca

- [BOOK a ZOOM meeting](#)
- [BOOK an IN-PERSON meeting](#)



PEOPLE

Dr. Valter Zazubovits

Department Chair

Office: SP-367.03

valter.zazubovits@concordia.ca



Patrick Doane

Teaching Lab Supervisor

Office: SP 265.01

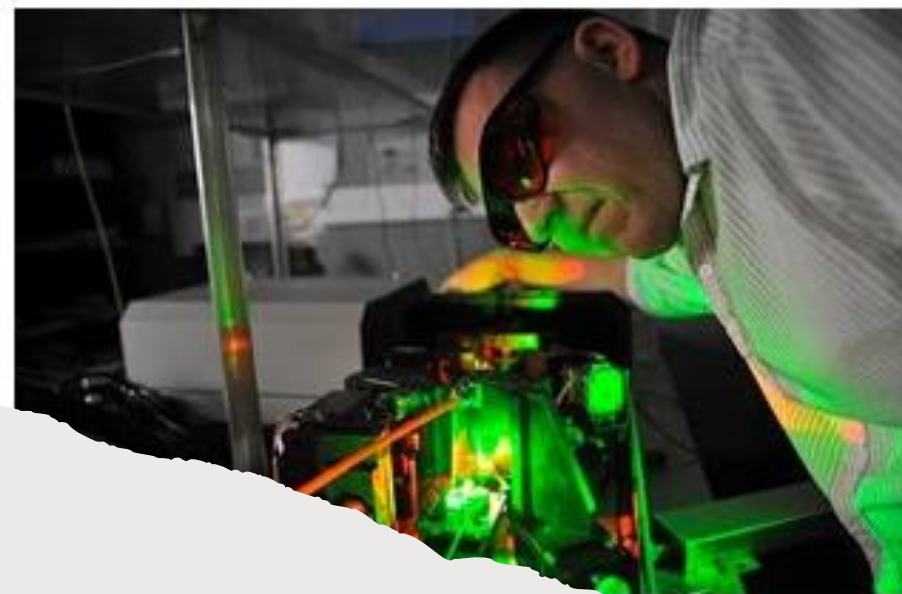
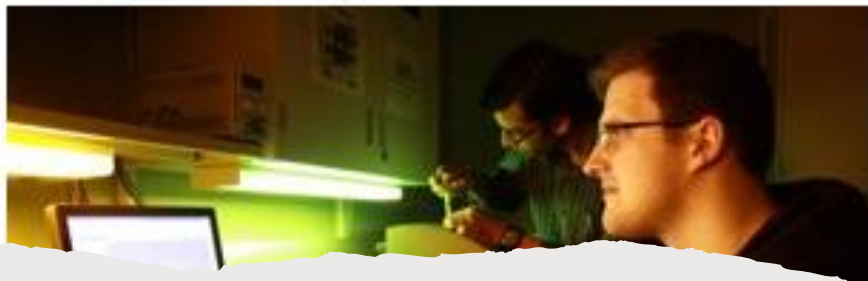
patrick.doane@concordia.ca

In-person (on campus): Tuesday-Friday

CAMPUS

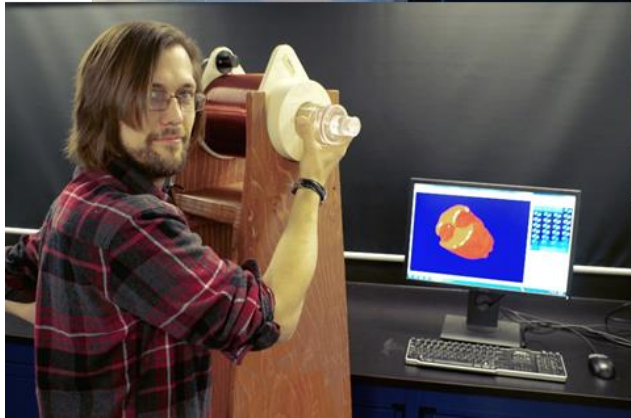
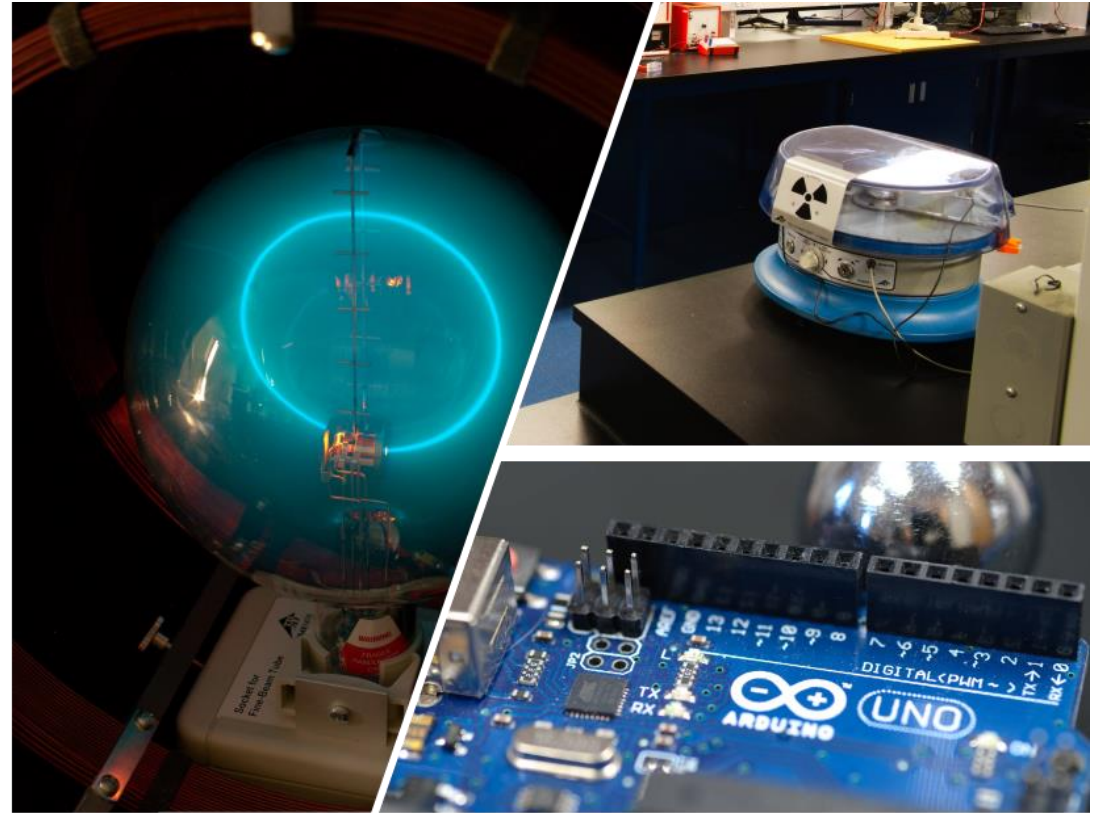


[Shuttle schedule](#)



[link](#)

DEPARTMENT OF PHYSICS SPACES



+ Kitchen
UGRD Student study room
UGRD Student social room (2d floor)

DEPARTMENT OF PHYSICS SPACES

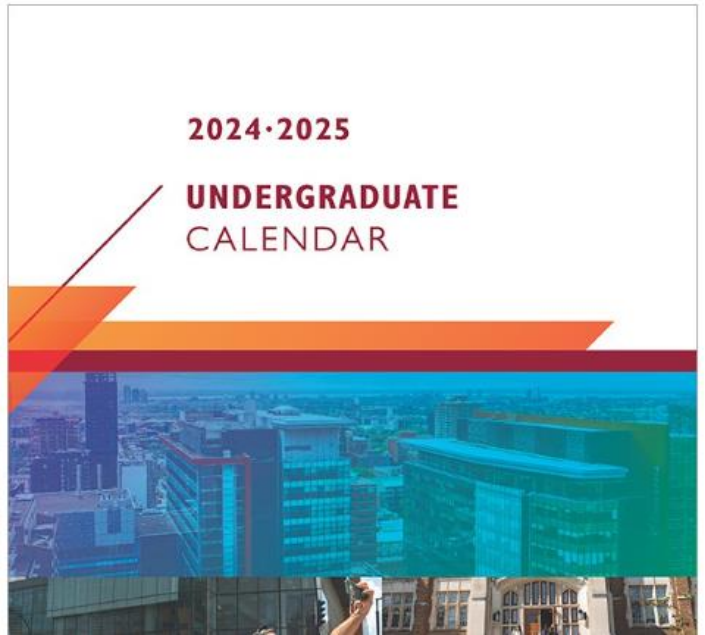
[link](#)

PROGRAMS

- [MAJOR IN PHYSICS](#) (45 credits + major in MATH possible)
- [SPECIALIZATION IN PHYSICS](#) (66 credits + minor in Comp Sci)
Quantum, nano, also pathway to astrophysics, particle physics
- [SPECIALIZATION IN BIOPHYSICS](#) (industry, multidisciplinary or interdisciplinary field (med phys, renewable energy) understanding complex bio systems from the phys point of view. Medical discoveries.



2024-2025 Undergraduate Calendar



View the 2024-2025 Undergraduate Calendar

Quick links to courses

Download the 2024-2025 Undergraduate Calendar (PDF, 10MB)

UNDERGRADUATE CALENDAR

Use the internal Concordia SEARCH option to search for the Undergraduate Calendar

SPECIALIZATION COURSE LOAD/ COURSE SEQUENCE

Specialization, Opt A (66 credits) FALL ENTRY					
	FALL	PRE-RECS	CO-RECS		WINTER
YEAR 1	MAST 218 Multivariable Calculus I (3.00) PHYS 230 Experimental Physics I (3.00) PHYS 232 Methods of Theoretical Physics I (3.00) PHYS 252 Optics (3.00) Elective (3.00)	MATH 204, MATH 205 PHYS 204-206, PHYS 224-226; or equivalent PHYS 206	MAST 218	YEAR 1	MAST 219 Multivariable Calculus II (3.00) PHYS 236 Numerical Methods in Physics with Python (3.00) PHYS 245 Classical Mechanics (3.00) PHYS 330 Experimental Physics II (3.00) Elective (3.00) <i>PHYS 230 (3.00) can be taken during Fall, Winter or Summer terms</i>
	PHYS 253 Electricity and Magnetism I (3.00) PHYS 334 Thermodynamics (3.00) L PHYS 393 PHYS 345 Advanced Classical Mechanics (3.00) PHYS 355 Electronics (3.00) Elective (3.00)	PHYS 205 PHYS 204, MAST 218 PHYS 232, PHYS 245 MAST 219 PHYS 205	MAST 218 MAST 219	YEAR 2	PHYS 335 Methods of Theoretical Physics II (3.00) PHYS 354 Electricity and Magnetism II (3.00) PHYS 367 Modern Physics and Relativity (3.00) Elective (3.00) Elective (3.00)
	<i>PHYS 497 Specialization Research Project (3.00) can be taken during Fall, Winter or Summer terms</i> PHYS 377 Quantum Mechanics I (3.00) PHYS 379 Condensed Matter Physics I (3.00) Specialization Research Project (3.00) One course from List 1 (see below) OR Elective (3.00)	PHYS 206 PHYS 377		YEAR 3	PHYS 435 Statistical Physics (3.00) PHYS 468 Condensed Matter Physics II (3.00) PHYS 478 Quantum Mechanics II (3.00) One course from List 1 (see below) (if not taken during Fall/Winter) Elective (3.00)
	<i>PHYS 496 is a two-term course that is to be taken in Fall/Winter.</i>				
	total				
		PRE-RECS	CO-RECS		List 1 for WINTER only
		PHYS 236, PHYS 335, PHYS 377			PHYS 385 Astrophysics PHYS 445 Principles of Medical Imaging (3.00) PHYS 498 Advanced Topics in Physics (3.00)
		45 credits			
	CORE PHYSICS (42)				All courses except MAST 218. MAST 219, PHYS 230, PHYS 330 offered once per year
	6 credits				
	Multivariable Calculus I (3.00) Multivariable Calculus II (3.00)				
	36 credits:				
	Experimental Physics I (3.00) Methods of Theoretical Physics I (3.00) Numerical Methods in Physics with Python (3.00) Classical Mechanics (3.00)				
	Electricity and Magnetism I (3.00) Optics (3.00) Methods of Theoretical Physics II (3.00) Electricity and Magnetism II (3.00) Modern Physics and Relativity (3.00) Experimental Physics II (3.00)				
					66 BSc Specialization in Physics 42 Core Program 21 PHYS 330, 345, 355, 459, 468, 478, 497 3 Chosen from PHYS 370, 436, 440, 443, 445, 458, 498 Total: 90 credits program = 66 + 24 66 Spec in Physics 24 = electives outside of Physics (6 outside of Sciences) Sciences: Department of Biology, Department of Chemistry and Biochemistry Department of Health, Kinesiology, and Applied Physiology Department of Mathematics and Statistics Department of Physics

MAJOR (42+3 credits) FALL ENTRY

	FALL	PRE-RECS	CO-RECS		WINTER
YEAR 1	MAST 218 Multivariable Calculus I (3.00)	MATH 204 MATH 205		YEAR 1	MAST 219 Multivariable Calculus II (3.00)
	PHYS 230 Experimental Physics I (3.00)	PHYS 204-206, PHYS 224-226; or equivalent			PHYS 236 Numerical Methods in Physics with Python (3.00)
	PHYS 252 Optics (3.00)	PHYS 206			PHYS 245 Classical Mechanics (3.00)
	Elective (3:00)				Elective (3:00)
	Elective (3:00)				Elective (3:00)
	PHYS 232 Methods of Theoretical Physics I (3.00)		MAST 218	YEAR 2	<i>PHYS 230 (3.00) can be taken during Fall, Winter or Summer terms</i> PHYS 354 Electricity and Magnetism II (3.00)
	PHYS 253 Electricity and Magnetism I (3.00)	PHYS 205	MAST 218		PHYS 367 Modern Physics and Relativity (3.00)
	PHYS 334 Thermodynamics (3.00) L PHYS 393	PHYS 204, MAST 218	MAST 219		Elective (3:00)
	Elective (3:00)				Elective (3:00)
	Elective (3:00)				Elective (3:00)
	PHYS 377 Quantum Mechanics I (3.00)	PHYS 206		YEAR 3	<i>PHYS 230 (3.00) can be taken during Fall, Winter or Summer terms</i> PHYS 335 Methods of Theoretical Physics II (3.00)
	MAJOR 3 credit of PHYS, see recommendation (3:00)				PHYS 435 Statistical Physics (3.00)
	Elective (3:00)				Elective (3:00)
	Elective (3:00)				Elective (3:00)
	Elective (3:00)				Elective (3:00)

PHYS electives for FALL:	PRE-RECS	CO-RECS	Recommended PHYS electives for WINTER:
PHYS 260 Introductory Biophysics (3.00)	cannot go towards concentration		PHYS 260 Introductory Biophysics (3.00)
PHYS 330 Experimental Physics II (3.00)	PHYS 230		PHYS 330 Experimental Physics II (3.00)
PHYS 245 Classical Mechanics (3.00)	PHYS 232, PHYS 245, MAST 219		PHYS 385 Astrophysics
PHYS 252 Optics (3.00)	PHYS 205		PHYS 445 Principles of Medical Imaging (3.00)
PHYS 236 Numerical Methods in Physics with Python (3.00)	PHYS 236, PHYS 335, PHYS 377		PHYS 460 Chemical Aspects of Biophysics (3:0)
PHYS 334 Thermodynamics (3.00) L PHYS 393			PHYS 468 Condensed Matter and Nanophysics
PHYS 377 Quantum Mechanics I (3.00)	PHYS 377		PHYS 478 Quantum Mechanics II (3.00)
			PHYS 498 Advanced Topics in Physics (3.00)

CORE PHYSICS (42)

6 credits

- Multivariable Calculus I (3.00)
- Multivariable Calculus II (3.00)

36 credits:

- Experimental Physics I (3.00)
- Methods of Theoretical Physics I (3.00)
- Numerical Methods in Physics with Python (3.00)
- Classical Mechanics (3.00)
- Optics (3.00)
- Electricity and Magnetism I (3.00)

All courses except MAST 218, MAST 219, PHYS 230, PHYS 330 and offered once per year

45 BSc Major in Physics
42 Core Program
 3 Chosen from PHYS electives
Total: 90 credits program = 45 of BSc Major + (24 + 21) of Electives
24 = Electives outside of Physics, including 6 outside of Sciences
21 = Electives, can be Physics (if you are taking a lot of Physics electives consider switching to Specialization)
Sciences:

MAJOR COURSE LOAD/ COURSE SEQUENCE

66 BSc Specialization in Physics

42 Core Program

21 PHYS 330, 345, 355, 459, 468, 478, 497

3 Chosen from PHYS 370, 436, 440, 443, 445, 458, 498

Total: 90 credits program = **66 + 24**

66 Spec in Physics

24 = electives outside of Physics (**6** outside of **Sciences**)

Sciences:

Department of Biology,

Department of Chemistry and Biochemistry

Department of Health, Kinesiology, and Applied Physiology

Department of Mathematics and Statistics

Department of Physics

Department of Psychology

Science College

All courses except MAST 218, MAST 219, PHYS 230, PHYS 330 and PHYS 497 are offered once per year

CORE PHYSICS (42)

6 credits

MAST 218 Multivariable Calculus I (3.00)

MAST 219 Multivariable Calculus II (3.00)

36 credits:

PHYS 230 Experimental Physics I (3.00)

PHYS 232 Methods of Theoretical Physics I (3.00)

PHYS 236 Numerical Methods in Physics with Python (3.00)

PHYS 245 Classical Mechanics (3.00)

PHYS 252 Optics (3.00)

PHYS 253 Electricity and Magnetism I (3.00)

PHYS 334 Thermodynamics (3.00)

PHYS 335 Methods of Theoretical Physics II (3.00)

PHYS 354 Electricity and Magnetism II (3.00)

PHYS 367 Modern Physics and Relativity (3.00)

PHYS 377 Quantum Mechanics I (3.00)

PHYS 435 Statistical Physics (3.00)

COURSE LOAD / COURSE SEQUENCE

ELECTIVES

- ELECTIVE COURSES
- eConcordia ELECTIVE COURSES

ing



COMM 315
Business Law and Ethics



COMM 316
Business Law and Ethics



COMP 218
Fundamentals of Programming



ECON 201
Introduction to Microeconomics



ECON 203
Introduction to Macroeconomics



ECON 319
International Economic Policy and Institutions



ning and



EDUC 270
Educational Communication



EDUC 307
Integrating Digital Technologies and Social Media In Learning Environments



ELEC 321
Introduction to Semiconductor Materials and Devices

SHOULD I TAKE 5, 4 OR 3
COURSES PER TERM?

SUGGESTED
COURSE
SEQUENCES LINK

concordia.ca/artsci/physics/programs/undergraduate.html

Department of Physics

ABOUT THE DEPARTMENT PROGRAMS RESEARCH CURRENT STUDENTS CONTACT

Concordia University / Faculty of Science / [Undergraduate](#) / Department of Physics / Programs / Undergraduate

Graduate

Undergraduate programs

Interested in studying physics? Read the new book, "[Physics for the Curious: Why Study Physics](#)" of physicists including our own [Prof. Truong Vo-Van](#).

Academic Advising, Forms, and Student Requests

What order do I take my classes in?

Suggested Course Sequence for Fall Entry

3 courses per term
4 courses per term

CONSIDERING GOING TO GRADUATE SCHOOL?

66 BSc Specialization in Physics

42 Core Program

21 PHYS 330, 345, 355, 459, 468, 478, 497

3 Chosen from PHYS 370, 436, 440, 443, 445, 458, 498

Total: 90 credits program = **66 + 24**

66 Spec in Physics

24 = electives outside of Physics (**6** outside of **Sciences**)

★ **Keep your GPA up (Honours)**

ONE CAN DO RESEARCH
DURING THE FIRST
YEAR

PHYS 289

(HONOURS RESEARCH PROJECT)
IS EXACTLY FOR THAT

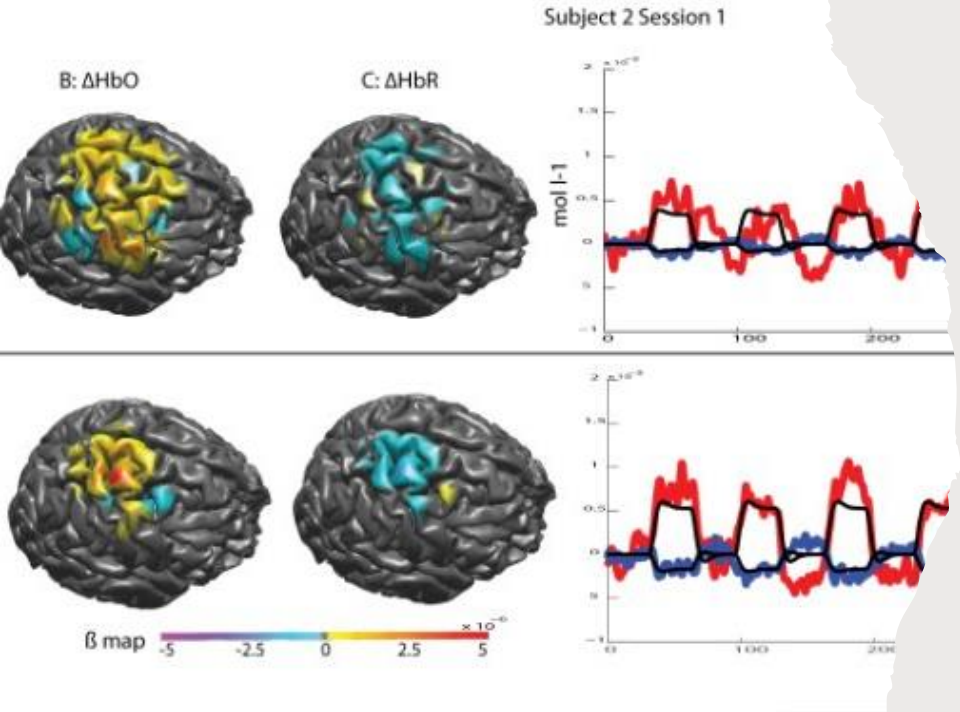
Coordinator/UPD Acceptance:

STUDENT INFORMATION (Checklist filled in by the Coordinator/Program Director)

- GPA requirements met** (GPA \geq 3.3)
- GPA requirements not met** (2 references needed from faculty members other than the supervisor)
- Not in honours program yet**, recommended to take the course (PHYS 289 only)

Name: _____ Signature: _____

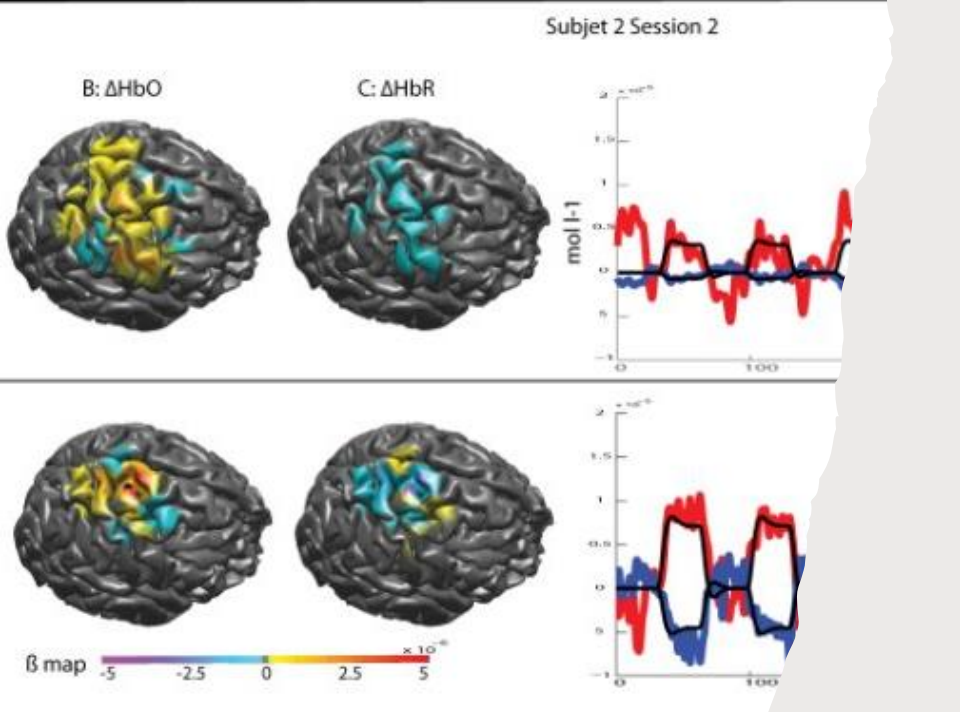
Date: _____



RESEARCH OPPORTUNITIES

AWARDS and more AWARDS

SUMMER RESEARCH OPPORTUNITIES



RESEARCH OPPORTUNITIES

SCIENCE COLLEGE



CO-OP PROGRAM AND C-EDGE

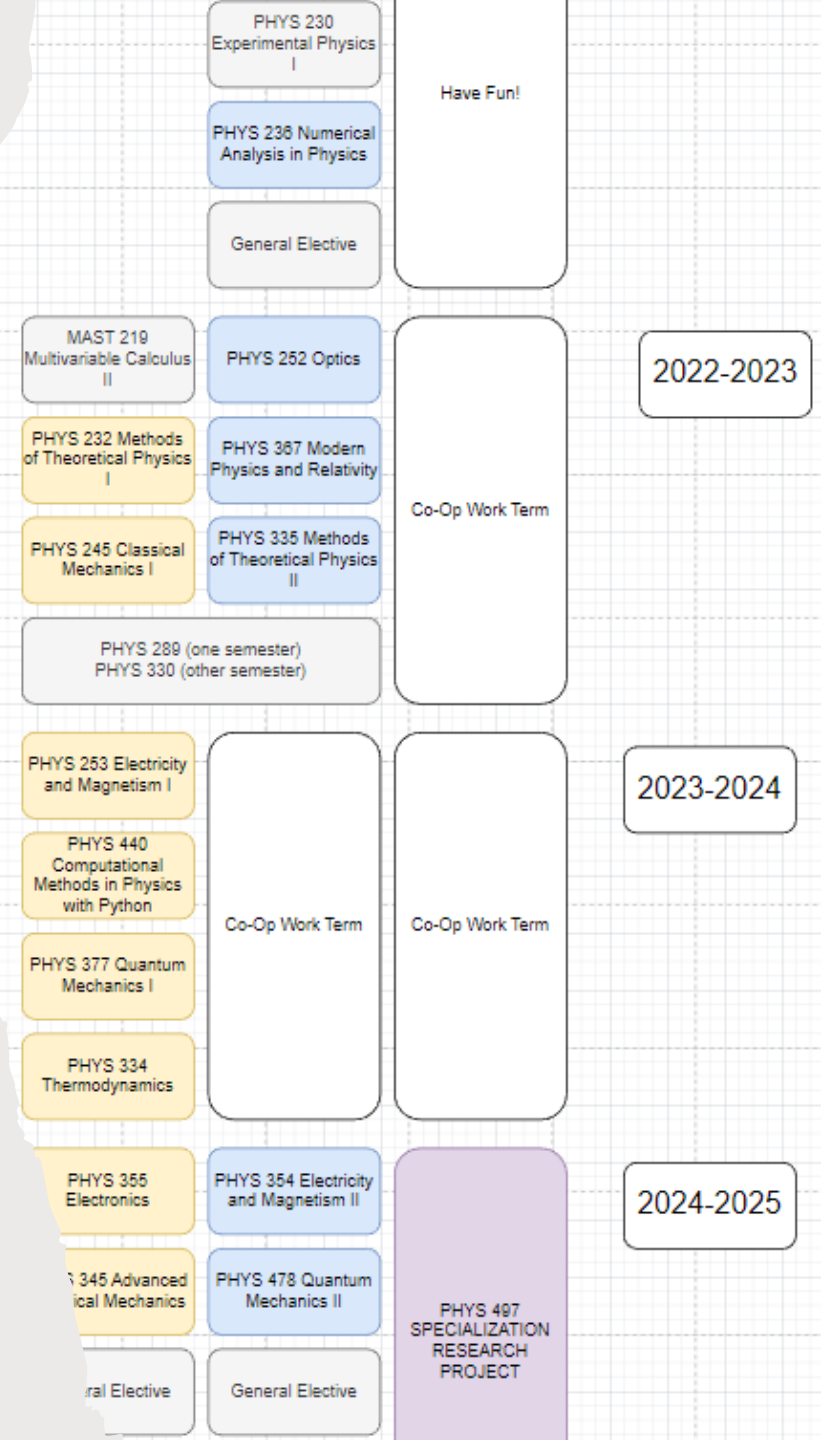
- Co-op program overview
- Co-op sequence
- A couple of examples
- C-Edge program overview

CO-OP PROGRAM

COMBINING STUDY WITH WORK EXPERIENCE

- Three paid work terms as part of your degree
- Training in CV writing and job application
- Must be a FULL-TIME student (>12 credits)
- GPA 2.8
- Contact Laszlo Kalman for details
- Requires detailed planning with Academic Advisor
- Visit [Institute for Co-operative Education](#)

CO-OP PROGRAM



CO-OP PROGRAM

Mariya Krasteva:

Co-op Internships:

McGill Space Institute

Presto Heinrich-Heine-Universität

European Space Agency

<https://nl.linkedin.com/in/mariya-krasteva>

NOW: CNES PhD Optics for Planetary Sciences

Anastasia Kolokotronis:

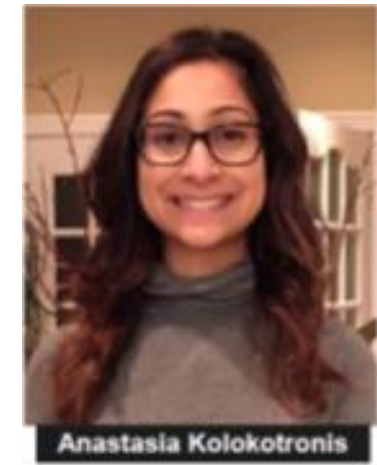
Coop Internships:

PERFORM Research Center,

Agilent Technologies (twice)

<https://ca.linkedin.com/in/anastasia-kolokotronis-649747a8>

NOW: Medical Physicist at Hôpital Maisonneuve-Rosemont



C - E D G E

ONE OR TWO TERMS OF WORK EXPERIENCE

- Less restrictive
- One or two work terms whenever, as long not the last term
- Training in CV writing and job application
- Contact Laszlo Kalman for details
- Visit [Institute for Co-operative Education](#)

COMMUNITY

- ADVISING
- Monthly Tea for women and LGBTQ+ community members
- Monthly UGRD meeting
- Monthly GOPHER (Physics Club)
- Mentorship (students mentoring students)
- Mentoring events (Medical Physics, Microsoft, Astrophysics and more)
- [SPACE Concordia](#)
- [CUBCAPS](#) (Physics Students [DISCORD](#) is a MUST!)

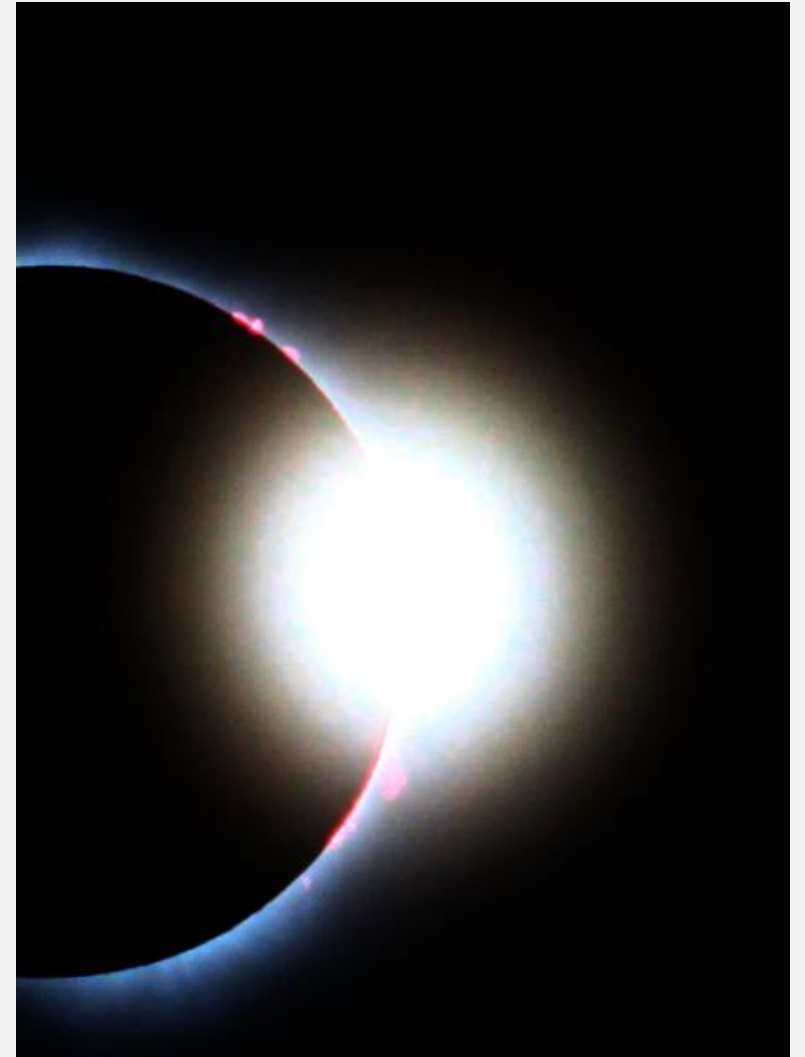


Photo taken by Professor Laszlo Kalman



CAREER OPPORTUNITIES

- **MUST WATCH:**

2019 Career Trajectories Keynote:
The Real Story About
Employment for Physics Graduates
- YouTube

CAREER OPPORTUNITIES

(LINK)

- Simulations, predictions, creating models (Finances, Insurance companies)
- Working with big data.
- Astrophysics.
- Gaming industry
- Aerospace Flight simulators.
- Medical devices – creating, developing, consulting.
- High TECH – knowing the background of things and processes.
- Medical physics

image

Grafoid

Group NanoXplore

- Raymor

Medical/Healthcare

- Hexoskin

- Muse

- Verily

Optics and Photonics

- ASEA Brown Boveri (ABB)

- Avalon Holographics

- IBM

- Google

- Huawei Canada

- Microsoft

- Nuance Communications

- Optiwave Systems

- Ranovus

Telecommunication

- Bell Canada

- Ciena

- EXFO

- Keysight Technologies

- MPB Communications

Technology

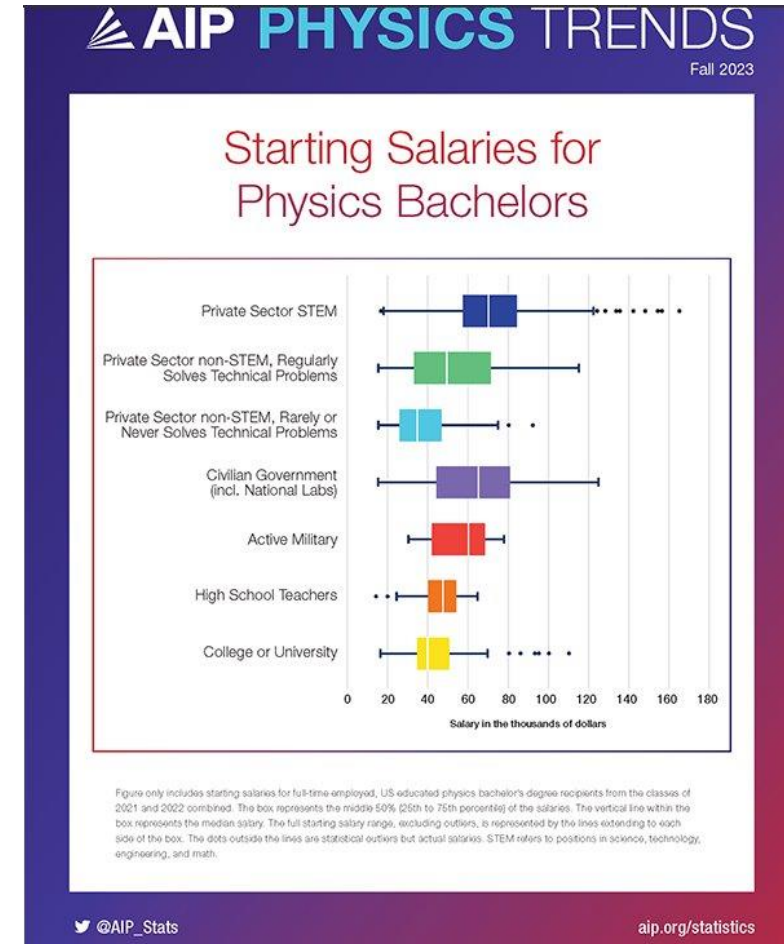
CAREER OPPORTUNITIES

During studies:

Tutoring Physics and Math

Working (paid or volunteer) on a project in a physics research lab

- [LINK](#)
- <https://www.aps.org/careers/physicists/data.cfm>
- <https://www.aip.org/statistics/multiple>



Careers Toolbox

Undergraduate Physics Students & their M



CAREER IN PHYSICS



CAREER TOOLBOX

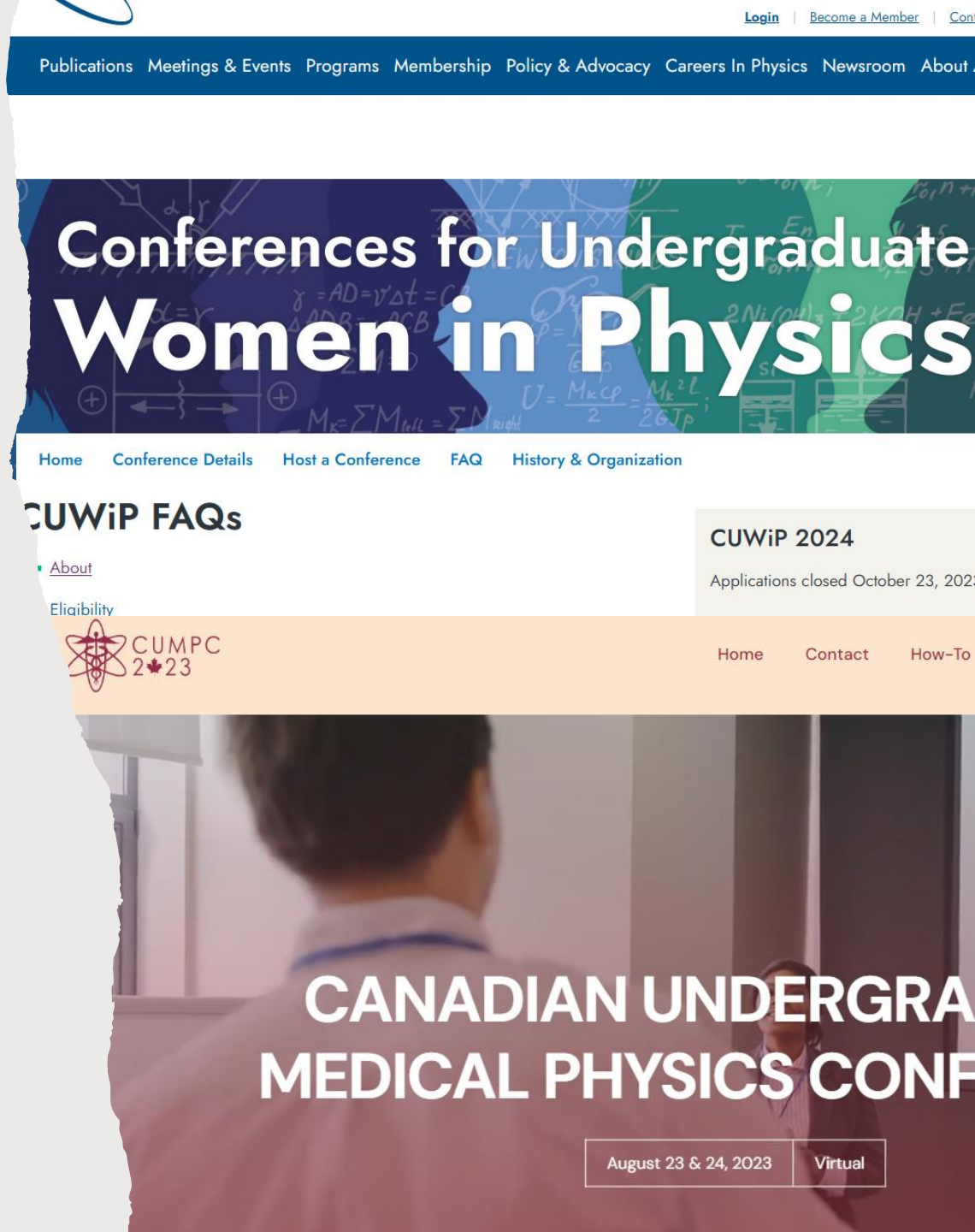
! Connect with a career counsellor

NETWORKING

CONFERENCES
ONLINE

(FREE OR NOT EXPENSIVE)

PARTICIPATE IN
ORGANIZING!



HAVE A BALANCED LIFE

[STUDENT SUCCESS CENTRE](#)

[STUDENT HUB](#)

[STUDENTS SERVICES](#)

[ZEN DENS](#)

[FUTURE BOUNDS](#)





USEFUL LINKS RESOURCES

- [Career Planning Services](#)
- [CU Off-Campus Housing](#)
- [Concordia Student Union / CUBCAPS](#)
- [Counselling & Psychological Services](#)
- [Women in Physics Canada](#)
- [Queer Concordia](#)
- [Aboriginal Student Resource Centre](#)
- [Multi-Faith and Spirituality Centre](#)
- [Access Centre for Students with Disabilities](#)
- [French courses](#)
- [LIVE Centre \(volunteering\)](#)
- [Multi-faith and Spirituality Centre](#)
- [Navigator Program/Welcome Crew](#)
- [Health Services](#)
- [Recreation and Athletics](#)

DIVERSITY AND INCLUSION

Our statement:

“Our Department of Physics at Concordia University is a rapidly diversifying environment. We embrace this diversity by a firm commitment to inclusiveness. Everyone who dedicates their time and passion to physics belongs here and deserves to feel equally valued and respected no matter their gender, sexual orientation, ethnicity, religion, age, or disability”.

PRESENTATION
DOWNLOAD OR
BOOK AN
APPOINTMENT

arrefour

MY CU ACCOUNT

SERVICES & RESOURCES



physics advising|

unt

THANK YOU

Q&A