Physics Department Orientation For Graduate Students

Valter Zazubovits

- Introduction to Our Department
- Break: Group Discussion: managing your research, teaching and courses; communicating, getting to know each other, department and campus
- Rules of our Graduate Program and Available Resources
Please turn on your video; we want to see you.

Click on upward arrow to change settings, e.g. background.

Send questions and comments through chat.

In case of losing connection / exiting by mistake, please rejoin our meeting via link provided in the e-mail.

For exercise we will assign you to breakout rooms. Leave breakout room brings one back to general meeting. Leave Meeting takes one out of the whole meeting. In the end of the exercise everyone will be returned from the breakout rooms anyway.
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Online student/office hours on Tuesday and Thursday 9-11AM at https://concordia.ca.zoom.us/j/3592021294

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Other Important Events

Physics Department Teaching Assistant Training and Orientation. Link will be provided.

Concordia Graduate Orientation: Tuesday, January the 12th, at 9AM (please register at https://www.concordia.ca/students/success/new/orientation.html)

First Colloquium, Wednesday January 13, 3:00 - 4:00 pm, https://concordia-ca.zoom.us/j/84395836869 password: Winter2021.

Colloquiums will occur every week, same time, same place.
Diversity and Inclusion

Our Department of Physics at Concordia University is a rapidly diversifying environment. 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, country of origin, age or disability.

Our Diversity Statement
- Concordia is located in Montreal
- Two campuses
Science Pavilion – Home of (most of) the Physics Department

Inside and outside of SP building
Physics Department Spaces

SP Building 2nd Floor (West Broadway side)
- Physics Teaching Labs, some offices

SP Building 3rd Floor
- Offices of Chair, GPD, UPD, Graduate Program assistant
- Offices for (most of) Physics Faculty and TAs
- Physics Department Kitchen

SP Building 5th Floor
- Offices for some TAs, faculty and visitors

Research Labs
Basement, 3rd & 5th floor, PERFORM (see faculty webpages)
Mid-Sized and Close-Knit Department... 
...in a Big Multidisciplinary University

~180 undergraduate physics students
- Physics Major
- Biophysics specialization
- Physics specialization
- Honours program
- Biophysics minor

~2000 students in service courses and elective courses

~45 graduate students
- MSc in Physics
- PhD in Physics
- Masters in Nanoscience and Nanotechnology (starting)
Research:
• Condensed Matter Physics / Nano (Theory and Experiment)
• Photonics
• Theoretical Particle Physics
• Physics Education
• Biomedical Physics
• Molecular Biophysics
• Computational Biophysics

http://www.concordia.ca/artsci/physics.html

Dr. Tabassom Hamidfar, PhD 2019
Postdoctoral Fellow
Northwestern University

Dr. Joshua Island, MSc 2011
Assistant Professor
University of Nevada, Las Vegas
Equipment and Facilities

- Medical MRI equipment (PERFORM)
- Laser spectroscopy and photonics equipment
- Cryostat for transport measurements
- UV-VIS-NIR spectrometer
Research Topics: Physics

Nanoscale mechanical break junctions

Graphene and other 2D materials © graphenomenon.com

Whispering Gallery modes in optical micro-resonators © M. Gomilsek

Particle Physics – CMS experiment © CERN
Research Topics: Biophysics and Medical Physics

- Brain imaging
  - resting state functional MRI
  - quantitative T1 map
  - quantitative R2⁺ map
diffusion-weighted MRI

- Ultrasound-driven microbubbles
  (Helfield et al. PNAS 113(36) 2016)

- Charge transfer in Photosynthetic Reaction Centers of purple bacteria

- Protein energy landscapes

- Imaging and spectroscopy of single (bio)molecules and complexes

- Wavelength
Questions?
Group Exercise

Let’s discuss the following:

− Strategies for managing your research, TA, courses and the rest of your life.
− Strategies for making connections with other students and colleagues despite COVID-related limitations.
− Have you been to campus? What do you expect?
• Please discuss the choice of your courses with your supervisor.
• Please register for courses as soon as possible. Registration instructions
• Three 3-credit courses required while being in either MSc or PhD programs.
• At least one of the three courses has to be from our department.
• To get authorization for taking courses at other universities please use AEHE: https://www.bci-qc.ca/en/students/aehe/
• One “bonus” / free course.
• If you drop a course after DNE (“Did Not Enter”) deadline (January 26 this semester) the course will still be counted for financial purposes. So if you want to change your mind for free – do it before January 26th.
Research and Teaching

• Your primary contact on matters related to your research is your supervisor.
• Submit to the GPD a brief (one page) summary of your research project.
• Form (together with supervisor) a supervisory committee.
• Seek feedback also from your supervisory committee members and from other faculty members who may know something useful.
• Research Assistantship (RA) versus Bursary
• On matters pertaining to Teaching Assistantships (TA) please contact the professor teaching the course, then Laszlo Kalman or Valter Zazubovits.
Key Department/Program Rules: Links

- Our Graduate Program Policies
- Graduate Calendar (general)
- Graduate Calendar (Physics PhD)
- Graduate Calendar (physics MSc)
- School of Graduate Studies
- Academic Dates
International Students

- International tuition fee waiver will be applied towards the tuition fees of the student as per normal.
- Scholarships or fellowships will be deposited in the student’s internal account. The student will be able to withdraw the balance once arrived in Montreal.
- Teaching Assistantships (salary for teaching duties) and Bursaries (from supervisor’s grant) will be deposited into your internal university account. You will get access to these funds after you physically arrive to Montreal.
- TA and bursary contracts for online international students will be prepared a bit later (on separate “Group B” forms)

COVID-19 FAQ for International Students
• At the moment all regulations are implying that the Summer semester is going to be “real”. This may change, but at the moment we do not know. DO NOT postpone your physical arrival beyond the end of the Winter semester – the rules will likely get tougher after that point.
• Upload the necessary documents (Quebec Acceptance Certificate and Canadian Study Permit) as soon as possible.
• [COVID-19 FAQ for International Students]
Useful Resources and Links

Administrative:
- International Students Office (ISO)
- Student Accounts
- Office of Rights and Responsibilities
- Birks Student Service Centre

Library and Bookstore:
- Concordia Library
- Concordia Book Stop (Bookstore)

Physical and mental health:
- Health Services
- Counselling and Psychological Services

Student association:
- Physics Graduate Student Association
More Useful Resources and Links

• Access Centre for Students with Disabilities
• Campus Security and Emergency Services
• Career and Planning Services (CAPS)
• Concordia Student Union Off-Campus Housing (data bank)
• French courses, etc: Réussir en français (Département d’études françaises)
• Graduate Awards Office
• GradProSkills (useful professional development workshops)
• LIVE Centre (volunteering)
• Multi-faith and Spirituality Centre
• Navigator Program / Welcome Crew (help for new students)
• Ombuds Office
• Recreation and Athletics
• Services for New Students
• Sexual Assault Resource Centre
• Student Advocacy Office
• Student Learning Services
• TRAC (TA/RA labour union, for the purposes of work conditions, salaries, etc)
• 4TH SPACE
GradProSkills – Free Workshops for Graduate Students
(General) Teaching Assistant Training and Orientation,
Friday January 15, 10:30 am - 12:30 pm;
https://www.concordia.ca/students/gradproskills/workshops/details.html?subject_area=GPTK&catalog_number=722
Questions?
Nanophysics / Condensed Matter Physics

Sushil Misra
Ingo Salzmann
Panagiotis Vasilopoulos

Alexandre Champagne
Pablo Bianucci
Saurabh Maiti

http://www.concordia.ca/artsci/physics.html
Biophysics and Medical Physics

http://www.concordia.ca/artsci/physics.html

Rachael Mansbach  Brandon Helfield  Claudine Gauthier

Christophe Grova  Valter Zazubovits  Laszlo Kalman
http://www.concordia.ca/artsci/physics.html