

# UVic Medical Physics Student Information Package



## Welcome

Thank you for your interest in the UVic Medical Physics program! This document will present you with some useful information about moving and living in Victoria, our program, and UVic.

## Contents

<b>1</b>	<b>Living in Victoria</b>	<b>2</b>
1.1	Renting in Victoria	2
1.2	Activities around Victoria	2
1.2.1	Outdoors	2
1.2.2	Food	2
1.2.3	Beer and Drinks	3
1.2.4	Sports	3
<b>2</b>	<b>Stipend, Awards, and Tuition</b>	<b>3</b>
2.1	Stipend, Awards, and Scholarships	3
2.2	Tuition	3
<b>3</b>	<b>MSc in Medical Physics</b>	<b>4</b>
3.1	MSc Supervisory Committee	4
3.2	MSc Courses	4
3.3	MSc Research	5
3.4	Transfer to PhD	5
<b>4</b>	<b>PhD in Medical Physics</b>	<b>6</b>
4.1	PhD Supervisory Committee	6
4.2	PhD Courses	6
4.3	PhD Research	6
4.4	PhD Candidacy Exam	6
<b>5</b>	<b>Teaching Assistant and Quality Assurance Positions</b>	<b>6</b>
5.1	Teaching Assistant (TA) Positions	6
5.2	Quality Assurance (QA) Internship	7
<b>6</b>	<b>People</b>	<b>7</b>
6.1	Faculty	7
6.2	Graduate Students	8
6.3	Postdoctoral Fellows	9
6.4	Graduate Student Meeting	9
<b>7</b>	<b>Resources</b>	<b>9</b>

# 1 Living in Victoria

## 1.1 Renting in Victoria

Renting in Victoria is quite competitive and fairly expensive as well. We suggest living with roommates to make it more affordable. Other grad students in Medical Physics as well as those in the Physics and Astronomy department often have available rooms from people who are graduating. The Physics and Astronomy Grad Student Association ([PAGSA](#)) usually send out an email and Google Sheets document in the early summer to pair new students with available rooms. You can email them directly at [pagsa@uvic.ca](mailto:pagsa@uvic.ca) with any questions. They also have a [Housing](#) page with more renting information.

When you're looking for housing there are a number of different options. The first is UVic's [grad student housing](#). They operate under a lottery system since there is limited supply. You must apply through the previous link by **May 15** in order to be in the lottery. The other good options to find rentals are [Facebook Marketplace](#), [Used Victoria](#), or [Victoria craigslist](#). You can also check [Kijiji](#), although it is used far less than the other websites.

## 1.2 Activities around Victoria

Victoria and the surrounding area is full of diverse things to do, depending on your interests.

### 1.2.1 Outdoors

Victoria is conveniently located on the west coast, meaning exploration outdoors can be done on year-round. There are many beautiful hikes around the greater Victoria area, and many more located slightly farther out. Below are just a few of the best spots to hike in Victoria:

- Gowlland Todd
- Mount Work
- Goldstream Provincial Park
- Sooke Hills
- Mount Tolmie and Mount Douglas PKOLS nearby UVic

There are also a ton of beaches and lakes to go enjoy during the summer, such as Thetis Lake and Duran Lake. If you want to go on longer hikes, there's the West Coast Trail and the Juan de Fuca Marine Trail, among others. There is no end to the things you can do outside when going to UVic!

### 1.2.2 Food

The food scene in Victoria is great with lots of local and international options. Whether you enjoy high dining or getting a good burger, Victoria has lots of options. Some suggestions are listed below:

- Bin4, Deadbeetz, Burger Crush for burger joints

- Jam Cafe, Floyds Diner, Johns Place for brunch
- Il Terrazo, Brasserie L'Ecole, Cafe Brio for high dining

More food options can be found [here](#)!

### 1.2.3 Beer and Drinks

The craft beer scene is amazing in BC, and Victoria especially. And while the beer scene dominates, there are some great options for cocktails, wine, and cider as well.

- Beer: The Drake, Whistle Buoy, Phillips, Moon Under Water, Driftwood
- Cocktails: Saint Franks, Cenote, The Churchill

### 1.2.4 Sports

There are a ton of options for sports around Victoria, including on-campus. [PAGSA](#) hosts a bunch of team sports through the UVic intramurals, with information on how to participate. Further, the [Victoria Sports and Social club](#) also hosts many different leagues that you can join.

## 2 Stipend, Awards, and Tuition

### 2.1 Stipend, Awards, and Scholarships

As a graduate student, the Physics and Astronomy Department guarantees a minimum level of support during your graduate studies. The guaranteed level of support is \$23,760 per year for MSc students, and \$25,660 for PhD students. This level assumes 1 teaching (TA) position per year and does not include any potential donor awards or earned grants. However, most graduate students complete 2 TA positions per year (fall and spring terms), and potentially three if a TA position is held in the summer, so most graduate students' support is effectively greater than the minimum. See section [5.1](#) for more TA information.

Keep in mind that you are only guaranteed support for 2 years as an MSc student. For a PhD student you are guaranteed up to 5 years of funding total if you complete the MSc to PhD Transfer (including your time as an MSc), 3 years of funding if you complete your MSc at UVic and continue in a PhD program, or 4 years of funding if you complete your MSc at another university.

For more information on financial support, awards, and scholarships please see the UVic Physics and Astronomy [Financial support page](#), the UVic [scholarship's page](#), or the UVic [external scholarships page](#).

### 2.2 Tuition

Tuition is due at the beginning of every term, at the end of the first month of the term (September, January, and May). You can estimate tuition costs based on whether or not you are an international student [here](#). Keep in mind that the calculator gives an estimate for 2 terms, while Physics and Astronomy students generally have 3 terms of tuition payments. The fall terms tuition is usually

a few hundred dollars more than the following two terms since that is when yearly fees such as the Grad Student Health Plan are assessed.

There is an option for graduate students to apply for a payment plan that will split your tuition for the term into 4 payments that are paid on the last day of every month. The link to the graduate student tuition offset plan can be found [here](#). You can apply at the beginning of any term and the plan will remain in effect until the next fall term (the whole year if you apply in September). The application fee is \$25.

## 3 MSc in Medical Physics

### 3.1 MSc Supervisory Committee

In your offer letter, you have been assigned a supervisor or a provisional supervisor from BC Cancer as well an academic supervisor from UVic. If you have been assigned a supervisor, you will do your research with them. Note that if you have been assigned a provisional supervisor from BC Cancer, you may end up working with a different BC Cancer supervisor for your research. The selection of your supervisor will be done during the first four months of your degree.

Apart from your primary supervisor, you will have at least one other member on your MSc supervisory committee. They will most likely be from BC Cancer. You will have at least two committee meetings throughout your MSc degree, the first of which will happen in May, after courses have been completed. If progress is not deemed to be sufficient, committee meetings may be held more frequently.

### 3.2 MSc Courses

The first eight months (the first fall and spring term) of your degree will be spent in courses. You will have to take five courses in total in Medical Physics and one **elective** of 1.5 units. Students can take any graduate physics course as their elective, and the options can be found at the [Graduate course offerings page](#). Most students usually choose either PHYS 515 (Data Analysis) or PHYS 555 (Advanced Computing and Machine Learning) as the elective. PHYS 515, or other elective courses offered during the fall term can be taken in the first term of the first year along with the Fall term courses (listed below). For PHYS 555 and other elective courses offered during the spring, we recommend taking it in the spring term of your second year, as the spring term of the first year is already busy. Two additional Medical Physics courses will be taken in the summer term, which are not full courses. You will also register for PHYS 560 (Colloquium) every fall and spring term you are a graduate student at UVic and PHYS 599 (MSc Thesis) every term, including summer.

#### Fall term courses

- PHYS 534 - Radiotherapy I
  - An introduction to the physics of radiotherapy and the equipment involved.
- PHYS 540 - Medical Imaging
  - A discussion course that focuses on the physics of various medical imaging devices including ultrasound, CT, and MRI.

### Spring term courses

- PHYS 535 - Radiotherapy II
  - Techniques in dose calculation are explored, many of which are essential when calculating dose in the clinic today!
- PHYS 539 - Dosimetry
  - An introduction to many different dosimetric techniques, including programming of your very own Monte Carlo simulation.
- PHYS 544 - Radiobiology
  - A discussion course which delves into the effect radiation has on biology and how we quantify treatment.

### Summer term courses

- PHYS 545 - Anatomy and Physiology
  - A self-taught course which closely follows a textbook; each chapter is followed by a quiz.
- PHYS 546 - Clinical Shadowing
  - Involves following physicists and oncologists during their regular clinical duties. Only scheduled on a few days of the summer.

According to the Faculty of Graduate Studies (FGS), graduate students must maintain a cumulative GPA of at least 5.0 (B), with no individual grade below B, for all required courses (namely those specified by the student's supervisory committee as part of the program). Grades of B- or below trigger a memo from the Faculty of Graduate Studies and are automatically reviewed by the supervisory committee. Grades of B- or below are considered failures for required courses, with a subsequent recommendation for action by the supervisory committee.

## 3.3 MSc Research

Typically, you will start working on your MSc research in May after finishing the spring term exams. Your research will be led by your supervisor and potential collaborators and it is expected that you will defend your MSc within 24 months of your start date, i.e. by the end of August of the following year. Ideally, your MSc thesis will result in one peer-reviewed publication, but is not a requirement. Note that your MSc thesis needs to be handed in to your MSc committee approximately two months before your planned MSc defense (beginning of July). You and your supervisor will also secure an external examiner for your thesis defense.

## 3.4 Transfer to PhD

At UVic, a graduate student in an MSc program may request to transfer to a PhD program, following discussions with their supervisor. To be eligible for a transfer the student must have completed at least all but 3.0 units of the MSc program courses, have a graduate GPA of at least 7.0, submit a Transfer Report, and pass a Transfer Exam. Students who do not transfer within 16 months of their entry into the MSc program are normally expected to complete an MSc degree. For more information please refer to the UVic Physics and Astronomy [MSc to PhD Transfer page](#).

## 4 PhD in Medical Physics

### 4.1 PhD Supervisory Committee

In your offer letter, you have been assigned a single supervisor, or a supervisor from BC Cancer and an academic supervisor. Apart from your primary supervisor(s), your PhD committee will have a total of at least three members, including a member from outside of the Department of Physics and Astronomy. You will have at least one committee meeting per year. If PhD progress is not deemed to be sufficient, committee meetings may be held more frequently.

### 4.2 PhD Courses

Students are expected to complete 11.5 course units beyond those done in your BSc, including at least one PHYS 500-level course as well as the MSc requirements. You will register for PHYS 560 (Colloquium) in every fall and spring term and PHYS 699 (PhD Dissertation) in every term (including summer) of your PhD. Before your PhD candidacy exam, you will register for PHYS 693 (PhD Candidacy Examinations) in every term. After your candidacy exam, you will register for PHYS 662 (Research Seminar) and give a one seminar at some point during your remaining time at UVic. For more information on PhD requirements see the UVic Physics and Astronomy [PhD requirements](#).

### 4.3 PhD Research

You will start working on your PhD research immediately upon joining UVic or transferring from your MSc. Your research will be lead by your supervisor and potential collaborators and it is expected that you will defend your PhD within 3 years (or 5 years from the beginning of your first term if you completed the MSc to PhD transfer). Ideally, your PhD thesis will result in one peer-reviewed publication, but it is not a requirement.

Note that your PhD thesis will have to be handed in to your PhD committee approximately two months before your planned PhD defense. You and your supervisor will also secure an external examiner for your PhD thesis defense.

### 4.4 PhD Candidacy Exam

The candidacy exam (PHYS 693) is required of all PhD students and is normally taken within the first 18 months of, and no later than two years after, a student's first registration in the PhD program. For students who transfer from MSc to PhD, the candidacy exam is to be taken no later than three years after the student first registers in the MSc program.

## 5 Teaching Assistant and Quality Assurance Positions

### 5.1 Teaching Assistant (TA) Positions

Physics and Astronomy graduate students usually complete at least 1 TA position per year, i.e. one term. Most graduate students TA for 2 terms (fall and spring terms). There are three types of TA positions. The first type is as a Physics lab instructor; you will be responsible for running the students through the week's lab and grading for your lab(s). The position generally is for 2 lab

sections which meet every other week, i.e. you will teach the same lab twice over a 2 week period. The second TA type is as a marker for another Physics class in which you will be responsible for grading all or a portion of the assignments of the class over the course of the terms. The last TA position type is for the Physics Aid Service (PAS), which is a help center for students in any undergraduate Physics course to come for help, though the vast majority of students are from first year Physics. As a TA for PAS you will hold two 3-hour sessions per week. The TA application form, as well as the form detailing your top three choices for position or lab section will be sent via email a couple of months in advance. You will also see a number of emails reminding you to turn it in.

One term of TA pay is included in the guaranteed minimum funding for Physics graduate students, so to meet that level of funding requires at least one term of TAing. See section 2.1 for more pay details.

## 5.2 Quality Assurance (QA) Internship

As a Medical Physics grad student you will also have to opportunity to gain clinical experience at BC Cancer through the QA Internship, which is done instead of a TA position for a duration of three or six months. During the internship you will be responsible for the monthly or annual QA tests of three Varian Truebeam linacs as well as one CT scanner or the brachytherapy system. Dr. Bazalova-Carter sends out notifications when there are positions open and positions are filled on the basis of seniority and whether you have completed previous QA terms. So if you are about the graduate and haven't done QA, you would have the first opportunity available.

# 6 People

We currently have two medical physics faculty at UVic, six adjunct professors at BC Cancer, 12 graduate students and 1 postdoctoral fellow.

## 6.1 Faculty

The Director of the program is Wayne Beckham (WBeckham@bccancer.bc.ca). Devika Chithrani (devikac@uvic.ca) and Magdalena Bazalova-Carter (bazalova@uvic.ca), the program Assistant Director, are the medical physics faculty at UVic. The full list of faculty and their expertise are listed in Table 1.

Staff	Expertise
<a href="#">Magdalena Bazalova-Carter</a>	Color CT, XFCT, MV CBCT, FLASH, Microbeam therapy, Small animal radiotherapy, Plastic scintillator dosimetry
Wayne Beckham	Technology and patient outcome improvement
<a href="#">Devika Chithrani</a>	Synthesis and characterization of nanoparticles, nanoparticle based radiosensitizers and systems for multimodal imaging and therapeutics
Dominique Fortin	Automation, Adaptive Therapy
Isabelle Gagne	Monte Carlo Modeling, Prostate SABR, RT quality improvement, Prostate LDR
Mehran Goharian	Automation, Adaptive Radiotherapy, Beam Modeling, Absolute & Relative Dosimetry
Cornelia Hoehr	Proton therapy, Dosimetry, Medical isotopes for imaging and therapy
Manuel Rodriguez	BC Cancer - Victoria Faculty
Derek Wells	Gated radiotherapy, Motion artifacts in x-ray CT
Sergei Zavgorodni	Monte Carlo modeling, Radiobiological modeling

Table 1: UVic medical physics faculty.

## 6.2 Graduate Students

The graduate program at UVic is comprised of both MSc and PhD students, many that are very happy to assist in any questions you have as they all have gone through it as well! The full list of current graduate students are listed in [Table 2](#). To get contact information for any student, please visit [here](#) and send them an email!



Student	Degree	Supervisor
Abdulaziz Alhussan	PhD	Dr. Chithrani
Kyle Bromma	PhD	Dr. Chithrani and Dr. Beckham
Susan Dang	MSc	Dr. Rodriguez and Dr. Bazalova-Carter
Ece Pinar Dimerici Bozdogan	MSc	Dr. Chithrani
Sarah Eaton	MSc	Dr. Chithrani
Nolan Esplen	PhD	Dr. Bazalova-Carter
Jade Fischer	MSc	Dr. Bazalova-Carter
Alexander Hart	PhD	Dr. Bazalova-Carter
Nolan Jackson	MSc	Dr. Chithrani
Olivia Masell	MSc	Dr. Bazalova-Carter
Jericho O'Connell	PhD	Dr. Bazalova-Carter
Devon Richtsmeier	PhD	Dr. Bazalova-Carter and Dr. Moffitt
Conor Smith	MSc	Dr. Chin and Dr. Bazalova-Carter
Elena Timakova	MSc	Dr. Zavgordni and Dr. Bazalova-Carter

Table 2: UVic medical physics graduate students

### 6.3 Postdoctoral Fellows

We currently have two Postdoctoral Fellows here at UVic, both working under Dr. Magdalena Bazalova-Carter.

### 6.4 Graduate Student Meeting

The medical physics group at UVic hosts a weekly graduate student meeting that invites all the students and faculty to present their current work in a low-stress environment. This includes talks on research, practice talks for conferences, and work from the clinic! Upon joining the program, the graduate student meeting will include a introductory week, where the new graduate students can meet everyone, introduce themselves, and talk about their interests both in and outside of school. This is a great opportunity for everyone to get to know you, but also for you to get to know everyone else!

## 7 Resources

The following are some helpful resources that may include information not mentioned in this document:

- [UVic Physics Graduate Handbook](#) - Full of useful information regarding general information for studying and working at UVic.

- [PAGSA Student Manual](#) - An extra student manual created and curated by the Physics and Astronomy Graduate Student Association.
- [UVic Medical Physics Program](#) - A website that has most information on specifically Medical Physics at UVic.