



## Andree Coschizza

<https://www.linkedin.com/in/andreecoschizza/>

4899 Dogwood Drive, Delta, BC, V4M 1M3

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2019/12/13

*Perimeter Institute of Theoretical Physics*

*31 Caroline St. , Waterloo*

*ON, Canada*

*Re: Perimeter Institute Summer Research School and Summer Internship*

Dear Hiring Manager

I am writing to express interest in the Perimeter Institute Summer Research School and Summer Internship. As a 4<sup>th</sup> year Physics student at the University of British Columbia, I believe I have the skills to not only take advantage of such a learning environment, but to also contribute in a research setting.

As noted on my resume, I have spent the last eight months researching Topological Insulators with Molenkamp's group at the University of Wurzburg. During this time, I was able to assist in the realization of the 2D and 3D quantum anomalous hall effect in the ferromagnetic topological insulator  $V(\text{BiSb})_2\text{Te}_3$  and investigate quantization dependence on material thickness. While this was an incredible opportunity, I found that my research raised questions that could only be explained in a theoretical sense, and it was these phenomena that I found most interesting. Any experimental design lies within theoretical prediction, and it is this fundamental basis of physics that I am interested in pursuing.

Entering the final year of my undergraduate degree, my education has provided me with a strong background in critical thinking and communication. Specifically, as a teaching assistant for first year physics courses, I have had to facilitate labs and tutorials to groups of nearly 50 students. In this position, I communicated physics concepts and listened to feedback to improve student experience. Furthermore, my lab courses have encouraged an extensive amount of system modelling and graphing using python. In PHYS 210 (Introduction to Computational Physics), I had the opportunity to model phenomena from electron behavior in ferromagnets to Mandelbrot sets, and have been able to apply my graphing and data acquisition skills to other lab courses. I am confident that these skills would be beneficial for both research and group work during the summer school.

Most importantly, I am passionate about learning and sharing ideas. I am a hard worker, and would value an opportunity to work in such a dynamic research environment and have the chance to learn about such diverse areas of Physics at the Perimeter Institute. Thank you so much for your time and consideration, please let me know if you have any further questions.

Best,

Andree Coschizza



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- Objective** Undergraduate Physics student entering their final year of study pursuing a placement for the Summer Research School and Internship at the Perimeter Institute of Theoretical Physics.
- Education** **University of British Columbia**, B.Sc. Physics, 3<sup>rd</sup> year  
Expected Completion: 2021
- Relevant Courses:**
- PHYS 319: Electronics Laboratory – coding in C, Assembly to program microprocessors
  - MATH 317: Calculus IV – parametrizations, inverse functions, Gauss, Green and Stokes Theorem
  - PHYS 210: Introduction to Computational Physics – applications of Python
  - ASTR 200: Frontiers in Astrophysics – planet, solar system, and star formation, cosmological principles
  - CPSC 110: Computation, Programs and Programming – programming and computation structures
- Work Experience**
- 2019 **Undergraduate Researcher**, Julius-Maximilians-Universität Würzburg
- Working with the topological insulator: V doped BiSb, Te, to investigate the Quantum Anomalous Hall Effect
  - Fabricating nanostructures using photolithography in a clean room environment
  - Using Labview to run experiments and characterize hall bars in He4 environments
  - Analyzing, comparing and graphing material data using Origin
- 2018-2019 **Undergraduate Teaching Assistant for PHYS 100/101**, UBC
- Conducting weekly tutorial sessions for PHYS 100/101 students, marking examinations, and being available to students during office hours
  - Facilitating tutorials and experiments, and promoting student engagement by encouraging discussion on course material
- 2018-2019 **Expediter and Server**, Bridges
- Setting up for events, coordinating with event planners and decorators, and exhibiting professionalism in a high class dining environment
  - Organizing the efficient delivery of multiple course dinners for functions of over 100 people
- 2017-2018 **Maker Girls Instructor**, Geering Up
- Co-planning weekly STEM focused lesson plans for girls age 11-15
  - Facilitating science and engineering based club sessions in community environments
  - Being an ambassador for women in science, providing opportunities for younger girls to pursue education in science and engineering



## Volunteer Experience

- 2018 **Vancouver Island Health Volunteer**, Queen Alexandra Center for Children's Health
- Leading workshops alongside an occupational therapist to assist children (ages 7-11) with mental and cognitive disabilities
  - Leading exercise sessions for patients with mobility conditions (ex. Strokes, diabetes, muscle dysfunction)

## Skills and Qualifications

### Technical Skills / Lab Skills

- Constructing AC/DC circuits
- Measuring systems using multimeters, oscilloscopes, function generators, and lock-in amplifiers
- Analyzing and fitting experimental data using Python and Origin
- Fabricating nanodevices in clean room settings
- Experience using cryostats and repairing sample sticks
- Experience with machine shop tools (lathes, milling machines)

### Computational Skills

- Proficient in graphing, modelling and fitting data with Python
- Simulating physical concepts with animation using Python
- Programming microcontrollers using C and Assembly

### General Skills

- Strong technical written and oral communication skills (English)
- Ability to work both independently and in group settings
- Adaptable, dedicated and eager to learn

## Extracurriculars

- 2018 **Research Team Member**, UBC Mars Colony Design Team
- Reorganizing team information and creating templates to ensure easily accessible data
  - Communicating with engineering team leaders to research relevant topics in their area

- 2018 **Team Member**, Project U&G
- Practising 5 hrs/week and competing with Project U&G, a UBC based hip hop dance team
  - Teaching hip hop classes for students under UBC's Unlimited Dance Club

## Achievements

- 2016 ◦ Dogwood District Authority Award
- 2016 ◦ BC Passport to Education
- 2014 ◦ Michelle Lynne Rosa Scholarship Award

## Hobbies & Interests

In my free time, I participate in dance classes for ballet, hip hop, and jazz. Having danced for over fifteen years, training has not only been a creative outlet, but has also taught me lessons in hard work and discipline. This has allowed me to practice with groups in Vancouver, and to train abroad with The Odyssey dance crew in Germany. I also enjoy running, bouldering and listening to podcasts.



*Andree Coschizza  
Heinestrasse 6  
Wurzburg, Germany*

*12/12/2019*

*Kajetan Fijalkowski  
University of Wurzburg  
Sanderring 2, 97070 Würzburg*

*Subject: Request for Letter of Reference*

Dear Kaj,

I hope this letter finds you well and research is going smoothly.

I am currently pursuing my next co-op placement, and am applying for a position at a Summer Research School and Internship at the Perimeter Institute for Theoretical Physics in Ontario. Having spent eight months working under your supervision at the University of Wurzburg, I was hoping you would consider providing a letter of reference.

While quite different from the experimental physics research conducted in EP3, I was inspired to apply for this position after learning more about solid state physics during my time with your group. I am looking forward to continuing research in this field and would be grateful if you could attest to the work I did at the University.

For your convenience, I have included a list of talking points that I think you could speak well to:

1. **Research Skills:** Ability to conduct research and take measurements in a safe and ethical manner
2. **Responsibility:** Conducted safe fabrication of samples, entrusted with important measurements and delicate samples
3. **Ability to Multitask:** Worked on several projects at once, whether taking measurements, fabricating samples, or repairing sample sticks

If you agree to be a reference, I will provide your name and email to the selection committee, and they will contact you in the next few weeks. Thank you in advance!

Best,

A handwritten signature in black ink, appearing to read 'Andree'.

Andree Coschizza



*Andree Coschizza  
Heinestrasse 6  
Wurzburg, Germany*

*12/12/2019*

*Andre Graval  
Bridges Restaurant  
696 Duranleau St, Vancouver, BC V6H 3S4*

*Subject: Request for Letter of Reference*

Dear Andre,

I hope this letter finds you well and work has been going smoothly lately. I've missed working with you all!

I'm currently pursuing my next coop placement, and am applying for a position for a Summer Research School and Internship at the Perimeter Institute for Theoretical Physics. Having spent a year working at Bridges, I was hoping that you would be able to provide a reference.

I am hoping that you will be able to testify to my work ethics and responsibility in positions of leadership, and for your convenience have provided a list of points that I think you could speak well to:

1. **Leadership:** Facilitated the delivering of multiple courses of food at events with over 100 attendees
2. **Work Ethics:** Sought out opportunities to help in all aspects of event planning, ability to keep calm and work efficiently in a high stress environment
3. **Teamwork:** Working with the whole staff to deliver successful events

If you are able to provide a reference, I will give your name and contact to the selection committee, and they will contact you in the upcoming weeks. Thank you in advance, I look forward to hearing from you!

Best,

Andree Coschizza



*Andree Coschizza  
Heinestrasse 6  
Wurzburg, Germany*

*12/12/2019*

*Sean Boulet  
Queen Alexandra Center for Children's Health  
2400 Arbutus Rd, Victoria, BC V8N 1V7*

*Subject: Request for Letter of Reference*

Dear Sean,

I hope this letter finds you well and you're enjoying the holidays with your family!

I'm currently pursuing my next coop placement, and am applying for a position for a Summer Research School and Internship at the Perimeter Institute for Theoretical Physics. Having spent last summer working with you, I was hoping that you would be able to provide a reference.

I am hoping that you will be able to testify to my work ethics and responsibility in positions of leadership, and for your convenience have provided a list of points that I think you could speak well to:

1. **Leadership:** Assisted in running both the "How does your engine run?" and Clay workshop
2. **Communication Skills:** Was able to calmly and effectively communicate instructions
3. **Patience and Respect:** Being patient with clients in the program and respecting their boundaries and needs, while encouraging them to try new things

If you are able to provide a reference, I will give your name and contact to the selection committee, and they will contact you in the upcoming weeks. If you for any reason feel uncomfortable doing so, I completely understand. Thank you in advance, I look forward to hearing from you!

Best,

A handwritten signature in black ink, appearing to read 'Andree'.

Andree Coschizza