

**Job Title:** Co-op Student  
**Employer:** University of XYZ, Faculty of Veterinary Medicine  
**Contact:** Dr. Meredith Grey

### **Job Description**

Our group is interested in viral diseases and prion diseases. We are in the process of developing diagnostic procedures and tools for a variety of viral diseases, such as Equine herpes virus, West Nile virus, Porcine Influenza virus and others. We are located in a brand new lab, in a new building and our group members are from a variety of backgrounds. We are looking for a student with interest in infectious diseases and molecular biology. The candidate should have good background knowledge in molecular biology, and/or cell biology and/or immunology and/or microbiology. Some laboratory experience would be helpful. We will provide an exciting working and learning environment with comprehensive opportunities to gain in-depth experience in various areas of molecular virology.

### **Duties**

General lab maintenance, solution preparation, other responsibilities as requested and maintaining a detailed lab book.

### **Qualifications**

Minimum: Knowledge of PCR, cloning and agarose gels, aseptic techniques. Nice to have: experience with PCR, cloning, agarose and acrylamide gels, knowledge of Real Time PCR, tissue culture experience.

Basic laboratory techniques, tissue culture, cloning, bacterial transformation, solution preparation, problem solving.

# Jane Yen

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Dr. Meredith Grey  
123 Hospital Drive  
Newtown, Ontario  
N3N 2Z5

September 17, 2012

Dear Dr. Grey,

Please consider my application for a co-op position with the Faculty of Veterinary Medicine at the University of XYZ posted by the University of Toronto at Scarborough (UTSC) co-op department. I am a motivated and hard working individual with an interest in eventually playing a role in aiding in the research of vaccinations. I am confident that my proficient laboratory skills will be beneficial to your team.

As a third year student in the Cellular and Molecular Biology Co-op Program at UTSC, I have gained valuable experience working in the University of Toronto laboratories. In a previous cellular and molecular laboratory course I learned how to prepare competent host cells and transform *E.coli* bacteria with plasmid DNA. I am also able to purify plasmid DNA and analyze restriction enzyme mapping problems. Additionally, I have performed protein purification and SDS PAGE.

My laboratory skills have been further improved after working as a summer research assistant for the National Research Council (NRC). Here I mastered necessary molecular biology techniques such as RNA extraction, conventional PCR, quantitative PCR and gel electrophoresis. I am able to analyze my results to advance in the project of interest. At the NRC I also enhanced my ability to use the multi-channel pipette accurately in performing the Beta-hexosaminidase and MTT cytotoxicity assay. Through working as part of a laboratory research group I am able to communicate effectively with my supervisor to obtain valuable results for the entire lab.

From my work experience in a high-traffic sports retail store, I gained the ability to multi-task under pressure. As a volunteer for a large event with the Canadian Cancer Society I proved my strong organizational skills and ability to meet deadlines. These skills will allow me to learn basic methods and procedures quickly so that I will be able to provide outstanding assistance to the Faculty of Veterinary Medicine at the University of XYZ.

Given my strong laboratory skills and ability to work and learn quickly under pressure I feel I am an excellent fit for this co-op placement. My aspirations to become a researcher motivate me to learn as much as possible about molecular virology and assist with your research. Thank you for your consideration and hope to discuss my qualifications further in an interview.

Sincerely,  
Jane Yen

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## LABORATORY AND TECHNICAL SKILLS

- Experienced in applying molecular biology techniques such as RNA isolation, cDNA synthesis, conventional and real-time PCR and gel electrophoresis
- Proficient in performing protein assays, making media and growth and enumeration of bacteria while maintaining sterile conditions
- Practised in preparing competent host cells, transforming bacteria with plasmid DNA, purifying plasmid DNA and restriction enzyme mapping
- Familiar with performing biochemistry techniques to purify proteins, these include producing a homogenate, ion exchange chromatography, Bradford assay and SDS-PAGE
- Can evaluate effect of compounds on mast cells by Beta-hexosaminidase and MTT Assay
- Acquired chemistry laboratory techniques include: Titration, distillation, extraction, recrystallization and interpretation of IR and NMR spectroscopy
- Capable of using research databases, such as Scholars Portal, to investigate a broad range of topics to produce successful essays and lab reports
- Familiar with several statistical practices: Chi-square test, mark-recapture, student T-test and analyzing and interpreting an assortment of graphs
- Trained in working with laboratory equipment and knowledgeable of safety measures required in laboratory, WHMIS certified
- Experienced in using Microsoft Office (Word, Excel, PowerPoint)

## INTERPERSONAL SKILLS

- Advanced customer service and communication skills developed through four years of working as a cashier
- Exceptional team player and leader; have assisted with several organizations and committees
- Strong organizational and time management skills demonstrated by maintaining above average grades while participating in several extra curricular activities
- Ability to acquire skills and multi-task in a fast paced retail environment as well as apply and teach skills to new employees
- Constantly demonstrating positive attitude and friendliness when addressing customer questions and solving problems

## EDUCATION

University of Toronto Scarborough, Toronto ON 2010-Present

### Candidate, Honours Bachelor of Science

- Cell and Molecular Biology Co-op, 3<sup>rd</sup> year
- Cumulative GPA 3.33 out of 4.0

## AWARDS AND ACHIEVEMENTS

- Four-time recipient of Academic Honours 2006-2010
- Received award for Contributing to School Athletics 2010

## WORK EXPERIENCE

National Research Council of Canada

Institute of Nutrisciences and Health, Charlottetown, PE

May-August 2012

### Research Assistant

- Proficiently conducted several experiments to observe the effect of peptides on pro-inflammatory responses of human monocytes using molecular biology techniques such as RNA extraction from a cell culture and real-time PCR
- Efficiently tested bioactive compounds for the ability to reduce pro-inflammatory responses in mouse bone marrow cells using Beta Hexosaminidase assay
- Tested cytotoxicity of bioactive compounds on mast cells via MTT Assay
- Conducted well-organized presentations using power point for members of the lab in order to present findings as well as relevant journal articles

Rouge Valley Centenary Hospital, Toronto, ON

June 2011-May 2012

### Emergency Room Volunteer

- Effectively created urine and blood packages for nurses to collect biological specimens from patients and deliver these to hospital laboratory
- Provided excellent patient care by being available to obtain blankets, water and other essentials when nurses are unavailable
- Immediately available to nurses in order to increase time efficiency by filing papers, delivering patient reports and medication as well as directing patients

Sport Mart, Toronto, ON

January 2008-April 2012

### Cashier

- Provided excellent customer service skills by processing transactions, returns, and exchanges for customers as well as answering general inquiries
- Demonstrated outstanding team work skills resulting in “sales support of the month” award
- Qualified leadership and training skills attained for past 3 years while training and assisting new cashiers and sales associates
- Exhibited strong problem solving skills while finding solutions to customer issues and complaints

Canadian Cancer Society, Toronto, ON

October 2008-December 2009

### Volunteer, Chair of Program Coordination for Volunteer Appreciation Event

- Worked successfully with team members to create invitations, call guests and acquire several sponsors with a goal of attracting over 200 guests
- Produced and published article in Canadian Cancer Society Newsletter summarizing the success of the event