**Benjamin Snow**

3512 Old Beverly Road

Cambridge, Ontario

N1R-5S7

(226)-341-2367

[be](mailto:bsnow@uoguelph.ca)nsnow0910@gmail.com

**PERSONAL SKILLS AND HIGHLIGHTS**

* Experience with the design and building of components for involved research projects
* Knowledge of field tasks and risk management through project fieldwork
* Experience with identifying drainage features and boundaries and conducting culvert inspections
* Worked on water resources software including, MatLAB, XPStorm, CulvertMaster, AutoCAD Civil 3D, SWMHYMO, and ArcGIS
* Knowledge and skill in several aspects of engineering and design through classes and design projects
* Experience in Windows computer software, Excel, Word, PowerPoint
* Have experience in writing reports for engineering, research and chemistry settings
* Punctual and reliable with excellent attendance in school and workplace environments
* Friendly and comfortable presenting to a group
* Able to learn quickly and effectively
* Have received WHMIS training in chemistry and industrial settings as of Fall 2014 and Summer 2015 respectively
* Experience with finding potential sources of information, setting up and conducting interviews to find information

**EDUCATION**

Bachelor of Engineering, Water Resources Engineering (Co-op) September 2014 – Present

University of Guelph, Guelph Ontario

**Relevant courses:**

* Geomorphology
* Environmental Systems Analysis
* Engineering Design
* Chemistry
* Microbiology
* Watershed Design
* Fluid Mechanics
* Urban Water Systems Design
* Physical and Chemical Water Treatment Design

Obtained an entrance scholarship to the University of Guelph 2014

**Design projects**

**School of Engineering, University of Guelph, Guelph Ontario**  September - December 2014

* Worked efficiently in a group to build a small electronic wheelchair that could perform a variety of skills
* Used several different types of skills including AutoCAD, analysis, and report development to complete the project
* Used problem solving to overcome several restraints and problems with original design
* Able to reconcile and understand what the problem was when the design did not perform as hoped

**School of Engineering, University of Guelph, Guelph Ontario** January – April 2016

* Designed with a group a children’s toy that could launch a projectile a specific distance, could be disassembled, and fit in a large kinder egg
* Used the 3D modeller SolidWorks to design the toy parts that were required for 3D printing using ABS plastic
* Helped create a PowerPoint and advertising video for the toy that provided an attractive marketing tool
* Through teamwork the toy successfully completed the required tasks and performed very well during evaluation

**School of Engineering, University of Guelph, Guelph Ontario** September – December 2017

* Worked in a group to design a water treatment plant for a Mars One mission involving many water treatment stages including UV disinfection, ozone disinfection, filtration, screening and reverse osmosis
* Conduced extensive research to produce accurate designs for the water treatment processes
* Completed calculations to determine how much water had to be treated and recycled from different processes, these involved determining the flows into and out of the treatment processes
* Presented the final design in a professional manner as an oral presentation as well as a written report

**School of Engineering, University of Guelph, Guelph Ontario** September – December 2017

* In conjunction with a group a water distribution system was designed to handle different intensities of storms using different methods
* A conventional water conveyance, detention, and treatment system, consisting of pipes leading to a large wet pond were designed using EPASWMM software
* The same area was then modeled for conveyance treatment and detention by only using LID’s, using EPASWMM software
* The results of our design were presented as an individual written report for the conventional design and an oral presentation with the group for the LID design

**School of Engineering, University of Guelph, Guelph Ontario** September – December 2017

* Worked in a group to design a wastewater treatment process to treat a specified wastewater using an aerobic process
* This design process included numerous calculations, design decisions, and determining the optimal process for a range of temperatures
* The volume and dimensions of the clarifier and aeration tank, air flow rate, sludge production rates, waste streams, and clarifier design were completed for the design
* The results of our final design was presented as a detailed written report

**School of Engineering, University of Guelph, Guelph Ontario** January – April 2019

* Worked in a group to design components of a dam for the Williams Fork Reservoir in Colorado, specifically a fish ladder and an erosion resistant channel
* Flood flows were determined from USGS data, and using StreamStats peak flow flood statistics were determined for the river downstream of the dam
* A model of the river was constructed using topographic data and HEC-RAS
* The design involved extensive research as well as numerous calculations to determine the correct dimensions for the fish ladder to allow for fish to swim up the fish ladder and size of rock rip-rap to protect the stream banks
* The results of our final design were presented as a detailed written report and an oral presentation

**WORK EXPERIENCE**

**Engineering Assistant** May – August 2016, May – August 2017

**Company: MMM/WSP**

Kitchener, Ontario

* Assisted engineering staff with writing, formatting, and editing reports for clients
* Conducted field work which included installing gauges, site monitoring, data collection and installing data loggers to gather information on project sites
* Delineated drainage mosaics using topographical mapping and AutoCAD tools
* Summarized proposals and reports for senior project management, selecting the most important points and summarizing them in a comprehensive manner
* Worked with a team effectively to complete projects on time
* Performed effective risk management and preparation for fieldwork
* Used mapping software to produce project maps that assisted in project management
* Worked experimentally with the program XPStorm to solve highway storm sewer problems
* Worked using the program SWMHYMO to model peak flows at culverts using different storms

**Research Assistant**

**Establishment: University of Guelph** January – April 2017

Guelph, Ontario

* Conducted research on a variety of different fields including codling moth trap testing and solar simulator design
* Using existing literature and interviews with professionals a research procedure was designed for testing the traps
* Conducted detailed literature review of published documents as well as consulting other information sources
* Coordinated meetings with professors, technicians, and graduate students and followed up these meetings
* Designed and constructed apparatuses for wind tunnel tests and solar simulator which required substantial problem solving
* Involved with contacting and ordering supplies from different companies for our research apparatuses
* Conducted and recorded experiments and analysed experimental results to determine the statistical distribution of the results
* Communicated with my research instructor by way of meetings and progress reports detailing information that I had found and results from testing
* Helped to complete a detailed final report for the recipient of our research
* Cared for live moths and developing pupae to maintain research integrity and also determined transport protocol for testing

**Research Assistant**

**Establishment: University of Guelph** May – August 2018

Guelph, Ontario

* Conducted research on the disinfection effect of copper structures on ecoli colonies
* Data and experimental procedures were refined and adjusted
* Designed and built experimental apparatuses for testing purposes, which included a lab scale, bench scale and pilot plant scale apparatus
* Tested apparatuses to determine proper operational settings and changes required for the smooth running of the apparatuses
* Conducted experiments using wastewater from the Guelph Wastewater Treatment Plant to determine how Fecal coliform, Total coliform and E.coli plates reacted to the copper structures
* Conducted a literature review to determine previous work on our research as well as to gather new ideas when conducting our tests
* Prepared experiments which included preparing E.coli, agar plates, actual plating, preparing the copper, ensuring that all containers were disinfected along with other tasks
* Presented our findings to professors, graduate students and our supplier for the copper structure that was used
* Analysed data to determine the effects of different experiments on the bacteria and to determine any trends
* Worked with a group of graduate, undergraduate and professors to complete experiments, share ideas and designs

**Pilot Plant Technician**

**Company: SUEZ Water Technologies and Solutions** September – December 2018

Burlington, Ontario

* Maintained and operated drinking water membrane pilot plants to ensure smooth operations
* Conducted a cataloguing of all the different chemicals that were associated with the different processes
* Worked with a small team to ensure that tasks were done on time and well done
* Conducted work on a new pilot plant that was being built
* Troubleshot problems that arose in the pilot plants and worked with more experienced technicians to fix the problems

**Shipping Employee**

**Company: Royce Ayr Cutting Tools** May - August2015

Cambridge, Ontario

* Worked in an environment where attention to detail was very important for completing the required task in a timely manner
* Worked where time management is essential to make specific deadlines

**Stone Mason Assistant**

**Company: Zenith Masonry** July – August 2013

Greater Toronto Area

* Worked hard to complete each duty in a quick efficient manner using the tools and techniques learned
* Conducted hard physical labour to complete the task at hand

**ACTIVITIES AND INTERESTS**

* Enjoy Chemistry and Biology and annually run a chemistry demonstration for a group of small children
* Have experience with fabrication and building with some machine shop and woodworking experience which includes making furniture, knives, bows and arrows, as well as skills such as welding
* Have lived on a farm for much of my life and have experience with growing crops, raising sheep and chickens