International Internship Program

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*taking a leave of absence in the upcoming academic year 2014-2015
Chemical Engineering at UTP

- Despite being a Chemistry (AB) major, I was placed into a project conducted by the Chemical Engineering Department at UTP. However, the work conducted was highly relevant to my current and previous experiences, both lab- and academics-wise.

- I was under the supervision of Dr Cecilia Wilfred, and was directly involved in her ongoing project “Synthesis and Application of Ionic Liquid (IL) in the Selective Extraction and Removal of Metals in Wastewater”. Specifically, I used [bmim]thiocyanate as the IL, which I synthesized.
Ionic Liquids Laboratory
Reflections

- Work-wise, this experience was highly relevant and valuable for my future career in the field of chemical research. Not only did I learn a number of new skills such as setting up nitrogen columns and synthesizing metal solutions and using ionic liquids to remove them, but I was also able to polish skills that I had previously learned in Princeton such as using the rotary evaporator and synthesizing ionic liquids from available commercial stock solutions.

- Another rewarding aspect of this internship was the sheer amount of connections and friendship I was able to construct both at UTP and whilst traveling on the weekends. I made both local, international and American friends—all of whom had come from different paths in life and had amazing stories to share with me.
Labwork
My impact on UTP

- Ionic liquids are, simply put, salt in liquid states that are considered to be “greener” alternatives to metal removal in wastewater. Previously, organic solvents such as kerosene and toluene—both highly volatile and toxic if ingested—were used, which were obviously not sustainable routes.

- My work at UTP, which consisted of synthesizing a specific ionic liquid ([bmim]thiocyanate) from two readily-available commercial stock solutions: [bmim]^+Cl^- and Sodium thiocyanate (Na^+ SCN^-). Their synthesis was relatively straightforward and the removal of metals from metal solutions containing Nickel was successful and efficient. Therefore, I hope that what I have demonstrated could prove to be helpful for UTP (and ultimately other public services) in providing a green, sustainable method to remove metals from water for safe drinking in regions where clean water may be a luxury.

Malaysia_Jeong
Lab Equipment
After UTP: Academic and Career Plans

As I plan to pursue a career in the sciences (most likely Chemistry), this internship at UTP allowed me to confirm whatever doubts that I had in me that this *was* the path that I wanted to follow. I found myself having a lot of fun, whether it be when I was conducting experiments independent or talking with other postgraduate students in the office. It was just so refreshing and humbling to talk to people who were passionate about something, especially a subject that I was also very interested in.
Outside UTP: Travelling in Southeast Asia
Final thoughts…

- On this internship, I was fortunate to have the company of 7 other college interns—1 from Princeton and the rest from Lehigh—who were all passionate about both their respective academic fields and travelling. Naturally, we would work in labs during the day and explore Southeast Asia on the weekends. Over the course of IIP, we went to: Pangkor Island, Kuala Lumpur, an indigenous village in the jungle near the state of Pahang, Langkawi Island, Singapore and Perhentian Islands. Before I started this internship, I wrote in my journal “I wonder if I would be the same person after 7 weeks”. During the course of work and travelling, I believe that I have definitely become more mature and my outlooks on life in general have changed somewhat, but most certainly for the better. That said, these were some of the best weeks of my entire life, filled with friendship and memories that I would never forget.
Thank You!