A student experience in neurosurgery: How summer research can equate to much more than a publication

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On November 17, 2011 I had the great pleasure of presenting to a group of some 200 students, parents, and faculty during the banquet portion of the first ever University of Alberta Undergraduate Research Symposium (URS). This symposium aimed to unite all undergraduate faculties across campus in a two-day event, providing students the opportunity to present academic research they've completed through a summer studentship, thesis project, or simply work throughout the year. Students presented their research in a poster format, while three projects including my own, were selected for oral presentations at the banquet night.

To begin the presentation, I introduced myself as a second year medical student at the University of Alberta with a background in the Neurosciences. I explained that I have a strong interest in pursuing Neurosurgery, which began several years ago but was certainly cultivated by a summer experience following my first year of medicine. During that summer, I worked with two Pediatric Neurosurgeons performing clinical research on a condition known as Hydrocephalus, a common presentation in Pediatric Neurosurgery. In my summer, I worked on database design and data collection on Mondays, Wednesdays and Fridays. On Tuesdays I assisted in surgeries while Thursdays were spent in clinic with patients. From the perspective of a medical student, the academic as well as personal development that occurred during these shadowing experiences were far more useful than any lecture could teach. It gave me the opportunity to extend my knowledge significantly in an area of great interest to me.

I spent a significant amount of time pondering how to best present my project at the URS. In the end, I had decided to instead comment on the multiple positive aspects of the overall research. I felt and still feel that many aspects beyond the research component of summer studentships are often under-recognized. These components nonetheless, deserve to be highlighted and should serve as additional intrinsic and extrinsic motivators for students considering participation in undergraduate research.

In presenting during the URS banquet, I emphasized many components of undergraduate research that extended far beyond the fundamental principles. Some topics I emphasized included:

- Many research projects can be recognized for elective and course credit.
- Many studentships are funded, providing students with a paid position.
- Research is an excellent opportunity to establish contacts, references and friendships.
- Students develop academically by learning new content in an area of interest.
- Students develop academically by learning about the research process.
- Students develop personally by developing insight into the world of academia while simultaneously establishing firm understandings of individual interests and dislikes.
- Students are often encouraged to partake in research dissemination including conferences. Students develop public speaking and knowledge translation skills necessary to convey academic knowledge. Further, funding is commonly provided for students to present across North America and indeed, the world.
- Opportunities often arise to become involved with work in addition to the assigned research. These opportu-

nities can further develop the students curriculum vitae in addition to allowing for personal growth and new experience.

While this is by no means an exhaustive list, it provides a number of suggestions for additional benefit outside the opportunity to become involved with research with a potential for publication. From a personal perspective, I was able to establish very strong relationships with surgeons in an area I am greatly interested in. This will undoubtedly serve me well when it comes time to apply for a Residency position towards the end of my medical education. Further, the connections I developed during oral and poster presentations associated with this project as well as opportunities to participate in medical rounds and shadowing experience are very worthwhile for my personal and professional development. This research was also recognized as a medical elective component of my academic development. I was able to learn significantly about clinical and surgical Neurosurgery, an area that we are not well exposed to during pre-clinical medicine. Also, I was able to lead and assist in three research papers beyond my assigned project. Finally, the personal experience of dealing with complicated surgical cases and families of dying children has helped me develop and mature as an individual.

Undergraduate research provides students with several opportunities to develop in both an academic and personal nature. As such, the first annual Undergraduate Research Symposium was an excellent initiative to showcase the diversity, experiences, and excellence of research done by our students. Hopefully, interest in this experience will continue to grow among fellow colleagues across campus as increasing awareness and excitement for the opportunities and benefits of undergraduate research is disseminated.

Good luck in your journey,

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