

The Value of Summer Studentships to Help Shape Undergraduate Career Trajectories

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Résumé :

(traduction)

Le niveau d'éducation peut avoir un impact significatif sur le risque de maladie et est considéré comme étant l'un des déterminants de la santé. Les expériences d'apprentissage de qualité, à l'intérieur et à l'extérieur de la salle de classe, peuvent encourager les étudiants à poursuivre des études supérieures. Ces expériences pourraient aussi faciliter toutes améliorations sur le développement personnel et avoir un impact de façon indirecte sur leur perception de l'avenir, leur motivation et leur état de santé. Ainsi, les étudiants ayant vécu des expériences d'apprentissage positives auraient plus de chance d'être en bonne santé mentale et physique et d'être motivés à appliquer leur apprentissage afin d'avoir un impact sur la santé et le bien-être des autres. Les stages d'été forment une part intégrante de l'orientation des étudiants vers les sciences et la médecine, les guidant dans leurs choix de carrière. De nombreux étudiants trouvent que les placements d'été sont bénéfiques car ils offrent l'opportunité d'appliquer leurs connaissances apprises en salle de classe au monde réel afin de mieux les préparer à la vie après les études de premier cycle. Le présent commentaire vise à informer les étudiants intéressés par les études médicales des avantages et désavantages des stages d'été, et à offrir des recommandations pour surmonter les défis rencontrés durant ces stages et, enfin, à les encourager à poursuivre ces opportunités pour qu'ils puissent compléter leur éducation des compétences nécessaires pour aider les autres dans l'avenir.

Mots-clés :

Bourses, éducation, premier cycle, médecine, formation, apprentissage expérientiel

Abstract:

Education level can have a substantial impact on disease risk and is considered a determinant of health. Quality learning experiences, both in- and outside the classroom, may encourage trainees to pursue higher education. Consequently, this could facilitate improvements in personal development and indirectly impact their outlook, motivation, and health status. Thus, students who have positive learning experiences may be more likely to have improved mental and physical health, and be motivated to apply their learnings in a way that positively impacts the health and well-being of others. Summer studentships are an integral part of stimulating students' interest in science and medicine, and can direct future career endeavours. Many find summer placements beneficial as they give trainees the opportunity to apply classroom knowledge to real-world settings in order to better prepare them for life after undergrad. This commentary aims to inform aspiring medical students of the pros and cons of summer studentships, provide advice on how to overcome challenges they may be faced with during their work term, and encourage trainees to pursue these opportunities to further complement their education so they can develop the necessary skills to help others in the future.

Keywords:

Studentships, education, undergraduate, medicine, training, experiential learning

Summer studentships are similar to scholarships, but involve paid work on a research project throughout the course of the summer (Wikipedia, 2014). These opportunities are generally made available to students at varying education levels for several reasons including, stimulating students' interest in research, encouraging students to pursue graduate studies or research careers, allowing students to gain an appreciation for the intricacies, nuances and ethics of scientific exploration, and affording students the opportunity to apply knowledge learned in the classroom in real-world settings. As a third year student, I was given the chance to complete a four-month co-op work term at the Ottawa Hospital in the Division of Maternal Fetal Medicine. As a research assistant I was involved with several clinical research activities that resulted in an academic publication. Thus, it is these experiences that form the foundation from which this essay is based.

Working in a tertiary care academic centre offers many rewarding experiences, however, there are several challenges one will likely be forced to overcome. Some trainees may be intimidated at the onset of their studentship as they may feel inadequate in comparison to other employees who have much more experience and a wider range of learned skills. This is normal given the fact that summer students are younger and less educated and does not mean that trainees hired in the studentship program are unable to make any contribution or difference. If this was the case they would not have hired you. In fact, a piece of advice to others entering a similar position would be to remain confident in your own abilities and skillset, and be aware that your coworkers and supervisors are cognizant of your experience level. One should not succumb to the 'imposter syndrome', a term used to designate an internal experience of intellectual phoniness (Clance & Imes, 1978). All summer students should remember that they are an integral part of the research team, and are given tasks and objectives based on their training level. It is important to remember that a supervisor will not assign projects which are beyond students' capabilities. It is through the team's unity and mentorship that trainees will begin to feel a sense of belonging and realize that they are in fact deserving of the research position. Personally, I felt that I made an impact within Division especially after I developed a functional database of more than 700 twin pregnancies that staff physicians, researchers, and trainees can use in the future.

Although there will be variation in how each summer student perceives and then describes the value of their experi-

ence, it is without question that good mentorship and a challenging work environment will help build confidence, and eventually lead to feelings that a true contribution was made. Evidence of a successful summer program was demonstrated by Cleland et al., who explored the benefits of studentships at the University of Aberdeen for undergraduate medical students. They also assessed the impact of the program in guiding the participants to pursue academic medicine. Students participating in this program completed a questionnaire and personal reflections. At the end of the study the results were clear – the trainees reported that the summer studentship program was a positive learning experience that helped them learn new skills, gain insight into medical education and research, facilitated team work and camaraderie among staff, and had the added benefit of academic publications or presentations (Cleland et al., 2010).

Summer studentships can be further described as educational opportunities that offer an academic experience outside of the classroom. Many will perceive this different learning environment as a refreshing change. This summer studentship was my first introduction to the rigours and ethics of clinical research – something that all health science undergraduate students should become familiar with. By learning to critically appraise and evaluate research, trainees will be able to directly transfer critical thinking skills to the lab portion of their coursework and indirectly to the lecture portion as they evaluate the content presented and try to interpret its quality and validity within context of the course objectives. Furthermore, good advice and mentorship are invaluable with respect to quality summer programs and the indirect benefits they may provide. Having a supportive mentor outside the classroom can create opportunities for future research (i.e., securing a senior thesis supervisor) and employment (e.g., networking, meeting, and liaising with potential employers for future coop placements/paid work). Overall, undergraduate students should consider not only the direct opportunities presented by the studentship, but also consider how quality and positive interpersonal relationships between the student and mentor can facilitate current and future success.

Summer students will be required to overcome an immense knowledge barrier. This is exactly what happened to me as I familiarized myself with work done in the Division of Maternal-Fetal Medicine and scanned existing literature on several topics of personal interest. Trainees should realize that it is essential to spend time investigating your in-

terests before deciding on a research topic, as the bulk of your placement will be dedicated to this specific area. So it will be more valuable if you find it interesting. It is also essential to consider how your current research project aligns with your future goals as a trainee and with your career goals post-graduation. While you will likely change directions in some capacity, it is important to initiate your research experience in an area of personal interest as it could set you up on an accelerated trajectory with respect to future educational and career opportunities.

Medical and scientific jargon can be intimidating and familiarization with the language used on a day-to-day basis can be most helpful. Exposure to the technical language used by physicians and other health care professionals on a daily basis helped me get acquainted with the work done in the Division of Maternal-Fetal Medicine. I was constantly challenged and learning something new. It is this type of experience that is likely common to a diverse array of studentships where trainees will not only gain valuable work experience but will also acquire a tremendous amount of knowledge comparable to that obtained in a didactic learning environment (e.g., the classroom).

As the summer came to an end and I started to see the research projects I was assigned to come to fruition, it became obvious that I had a very unique experience that was important for both my personal and academic growth. At the beginning of the summer, like many undergraduate students early in their academic careers, my knowledge regarding clinical research was limited. After reviewing literature and meeting with scientists and physicians it came to our attention that there was a lack of consensus regarding significant predictors of adverse neonatal outcome in fetal Gastroschisis (a complex abdominal wall defect in the fetus). To reconcile this I published a literature review on the topic to inform the future design of a research project to address the shortcomings in the literature. Moreover, our team completed the database on twin pregnancy to determine the relationship, if any, between fetal nuchal translucency (a predictive ultrasound marker of fetal health in early pregnancy) and neonatal weight. This project will help with the early identification of adverse outcome in twin pregnancies. Lastly, I explored the literature and engaged in personal reflection regarding the role of summer studentships in guiding the direction of undergraduate career trajectories (I wanted to share my experience with others). By the end of summer, after capitalizing on the many learning opportunities, my work resulted in 3 academic peer-reviewed publications. This

alone was significant for my academic growth as the submission and peer-review process truly developed my critical thinking and research skills. More importantly, however, this placement facilitated my personal growth and enhanced my confidence. Collectively, it became evident that the skills obtained throughout my studentship would increase the chance that I would obtain future research placements – and for this I am extremely grateful.

As an aspiring medical student, being able to work amongst physicians and health care professionals fostered my confidence and reinforced my desire to pursue undergraduate medical education. I had the opportunity to shadow my supervisor in the operating room and observe a caesarean section of a twin pregnancy; a defining moment that helped me realize that medicine is truly a calling to help others. Research for those directly involved with medical education, academia, scientific exploration, etc. has many far-reaching benefits beyond publishing manuscripts and/or delivering research presentations. It became clear that for these individuals this is a life passion and quest for the unknown with a focus on human health.

Overall, studentships and research placements offer many intangible and indirect benefits. These include: learning to keep clear, detailed, and accurate notes, understanding the importance of transparency in the scientific writing process, recognizing that it is essential to remain ethical when collecting data and interpreting the analysis, highlights the value of understanding diagnostic techniques used on a daily basis, and enhancing one's awareness and understanding of the scientific process for those who plan to continue researching in their careers (Collier, 2012). The notion of transparency is a core foundation of medical research and it requires the need to be explicit, clear, and open about the methods and results (Hiles, 2008). This is essential, particularly in medical research where scientific integrity is vital. If information is incompletely or falsely reported, ambiguity may arise in the application of the research which could lead to non-evidence-based practice and adverse patient outcomes.

Summer studentships are highly valuable employment opportunities that all undergraduates should be encouraged to pursue. These beneficial experiences provide unique exposure to science and medicine, and can help reinforce one's desires, motivation, and drive to pursue higher education. Not only do studentships provide relevant experience in a field of interest, they also develop intangible skills that cannot be developed in the classroom. This idea has

been explored extensively in the literature and echoes my feelings. One example includes a study that aimed to evaluate the value of real world experience to learner employability. Ehiyazarayan et al. (2009) suggest that certain skills are more effectively developed in a real-world environment rather than in the classroom but these workplace skills can be enhanced when integrated back into a classroom setting.

Summer studentships in a fast-paced academic environment requires the trainee to adapt and quickly develop critical thinking and research skills that can be of great use when completing an honours thesis project or after graduation when commencing one's career. In order to capitalize on studentships, it is important for junior trainees to ensure they work in a field of interest to them, as anywhere from four months to a year will be devoted to learning and expanding upon the employers' specific interests. My advice to aspiring students looking to apply for and complete a studentship is to remain confident in your abilities and to not get discouraged when presented with complex tasks. Break down your perceived problems into manageable daily tasks, ask questions when necessary, and learn from other staff, students, and employees to ensure a comprehensive educational experience. Do not take the opportunity for granted and make the most of your studentship. Trainees should feel comfortable learning from those around them and try to absorb as much information as possible. After all, learning from experts, enhancing your scientific literacy, and improving your confidence will be intangible lessons you can carry forward throughout life, independent of the career path chosen.

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References

Clance P.R., & Imes S. (1978). The Imposter Phenomenon in High Achieving Women: Dynamics and Therapeutic In-

tervention. *Psychotherapy Theory, Research and Practice*, 15(3).

Cleland J., Engel N., Dunlop R., & Kay C. (2010). Innovation in medical education: Summer Studentships. *The Clinical Teacher*, 7: 47-52.

Collier A.C. (2012). Importance of research in medical education. *Hawaii Journal of Medicine and Public Health*, 71 (2): 53-56.

Ehiyazaryan, E., & Barraclough, N. (2009). Enhancing employability: integrating real world experience in the curriculum. *Education & Training*, 51(4): 292-308.

Hiles, D. (2008). Transparency. In Lisa M. Given (Ed.), *The Sage Encyclopedia of Qualitative Research Methods*. (pp. 891-893). Thousand Oaks, CA: SAGE Publications, Inc. doi: <http://dx.doi.org/10.4135/9781412963909.n467>.

Studentships. (n.d.). In *Wikipedia, the free encyclopedia*. Retrieved August 14, 2014, from <http://en.wikipedia.org/wiki/Studentship>