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# Becoming a Nurse Scientist: The Critical Role of Mentorship, Collaboration, and Foundational Experiences as a Graduate Student

Scholarly and Research  
Communication

VOLUME 5 / ISSUE 1 / 2014

Shelley Doucet

*University of New Brunswick*

## Abstract

This article is a narrative of my journey to become a nurse scientist, which began with an undergraduate degree in nursing. I share the ingredients that have been critical to my success as a new scientist, and look at how my past and present perceptions of the role of a scientist have evolved, as well as the personal benefits I have experienced in this role. I conclude with a summary of how I think my scientific work contributes to knowledge and society. Overall, my mentors, collaborative networks, and foundational experiences as a graduate student have laid the foundation for my career as a new scientist and have prepared me to conduct multimethod intersectoral research, which I believe is critical to informing health policy.

## Keywords

Science; Scientist; Benefits; Collaboration; Mentor; Graduate student

## Introduction

When asked about their perceived image of nursing as a profession, most people would describe a bedside nurse providing direct patient care. A unique benefit of becoming a nurse, however, is that it opens the door to a variety of career options, including staff nurse, educator, administrator, and researcher/scientist. Each of these roles can be carried out in multiple settings, such as hospitals, the community, and academic institutions. If I had been asked as an undergraduate nursing student about my future career plans, I would have said with 100% certainty that I was going to be a staff nurse.

## Dr. Shelley Doucet is

Assistant Professor in Nursing at the University of New Brunswick in Saint John, Adjunct Professor with Dalhousie Medicine New Brunswick, and Affiliate Professor with the University of British Columbia. Email: sdoucet@unb.ca .

CCSP Press

*Scholarly and Research Communication*

Volume 5, Issue 1, Article ID 0101129, 6 pages

Journal URL: [www.src-online.ca](http://www.src-online.ca)

Received August 20, 2013, Accepted September 30, 2013, Published January 7, 2014

Doucet, Shelley. (2014). Becoming a Nurse Scientist: The Critical Role of Mentorship, Collaboration, and Foundational Experiences as a Graduate Student. *Scholarly and Research Communication*, 5(1): 0101129, 6 pp.

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My personal journey to become a nurse scientist began prior to my being aware that this was the direction in which my career was heading. As an undergraduate student, I was inspired by the pursuit of knowledge, which propelled me to further my education at the postgraduate level. I continue to be inspired by the advancement of knowledge each and every day.

### **Becoming a scientist**

As an undergraduate student in nursing, I was constantly observing areas of practice that I thought could be improved and asking questions about why things were done the way they were. I was regularly told that “that’s just the way it has always been done.” I was never satisfied with such answers, and would seek out evidence-based literature to support my practice. Despite my initial plans to practice at the bedside, I realized at this early stage in my nursing career that I was drawn to becoming a scientist. I was fortunate to have the opportunity to work as a research assistant during my undergraduate training, as this confirmed that a career in research was my calling. To embark upon this new journey, I went directly from obtaining my Bachelor of Nursing degree to starting my Master of Science in Nursing program.

Early on in my graduate training, I perceived numbers and statistics to be the cornerstone of scientific evidence. As a result, I was convinced that I was going to be a quantitative researcher, collecting and analyzing numerical data to explain phenomena. I worked as a research assistant in my supervisor’s program of research on multiple projects that primarily involved collecting data through surveys and performing quantitative data analysis. It was not until I had completed my master’s degree that I started to understand the importance of qualitative research in the pursuit of science, which involves gaining an in-depth understanding of human behaviour. After completing my quantitative-based thesis, I was able to describe the relationship between the variables of interest; however, I could not explain the underlying reasons for how or why the variables were related in the way that they were.

After six years of postsecondary study, I was certain that I was finished being a student and was ready to start my career as a researcher. I quickly realized, however, that I needed more research training, and indeed I was pulled by an inner desire to continue learning, so I returned to university to embark on my doctoral research journey. While my primary field of study to date had been in nursing, I chose the Interdisciplinary Studies PhD program in view of the growing need in health care to address issues with an interprofessional team approach. I realized that all the research questions I was interested in were qualitative in nature, as I wanted to learn more about the patient experience from their perspective rather than just predicting their experience. As a result, I designed a qualitative research study using an interpretive design. I also worked as a research assistant in my doctoral supervisor’s program of research, where I was responsible for collecting data through in-depth individual interviews. This was quite a shift from my earlier quantitative-focused graduate work.

My research assistant experiences and doctoral research findings gave me an in-depth understanding of human behaviour and experiences. However, I was again left with unanswered questions, as I was not able to examine causal relationships or test new propositions. The central learning for me as a doctoral student was that I came to

appreciate the value of both qualitative and quantitative research. I now consider myself a researcher who has skills in both qualitative and quantitative methods, and the research questions I ask ultimately drive the methods I use.

Once I graduated with my PhD, I was thrilled to finally begin my career as an independent researcher. After nine years of full-time study, I longed for the day when I would finally be free from being a trainee and having supervisors always overseeing my work. I quickly realized, however, that I was not going to become the isolated researcher I had once envisioned, as I was asking more complex research questions that required the use of mixed-methods designs and an interprofessional team with diverse expertise and backgrounds. My multimethod community-based research involves intersectoral partnerships with a variety of stakeholders, such as health professionals, economists, educators, regulatory bodies, community members, private industry, and the provincial government.

### **Ingredients for success as a new scientist**

I am currently in the early stages of developing a program of research that aims to inform health policy. As a new investigator (three years post-PhD), I have identified four ingredients that have been critical in launching my research program. All my ingredients for success as a new scientist can be traced back to my foundational research experiences as a graduate student.

My first ingredient for success as a new scientist was having the opportunity to engage in rich research and teaching assistant opportunities as a graduate student. Through being involved in a number of projects as a research assistant in my graduate supervisors' research programs, I developed skills in qualitative and quantitative research methods, peer-reviewed publications and presentations, and organizational planning, which prepared me to lead my own research program. I also had opportunities to present my research at conferences, providing me with experience in articulating my research to a broader audience. Through working as a teaching assistant, I was provided with additional opportunities to practise public speaking, which has increased my confidence in presenting to large audiences. Working as a research and teaching assistant on top of having a full graduate course load had its challenges; however, this early investment of time and energy has been critical to my success today.

A second factor that has prepared me to become a new investigator was my rich national and international networking experiences as a graduate student. For example, as a doctoral student, I was successful in obtaining a Transdisciplinary Understanding and Training on Research – Primary Health Care (TUTOR-PHC) fellowship, which is a one-year, national interdisciplinary research training program for twelve fellows funded by the Canadian Institutes of Health Research (CIHR). This unique training experience provided me with the necessary skills to conduct interdisciplinary research, but more importantly, it helped me to develop a national network of mentors and collaborators whom I continue to collaborate with on research projects.

My third ingredient for success as a new scientist was having a mentor. In fact, I have multiple mentors across Canada who support and mentor me in different areas,

including content expertise and methods, and offer overall guidance. I call upon my mentors as needed to ensure that my program of research is contributing to knowledge and society. I also need to be redirected at times, as I find my passion for research can steer me in multiple directions, spreading me thin. I have found that a mentor helps by telling you when it is reasonable to say “no” and supporting you through the highs (e.g. first grant as Principal Investigator) and lows (e.g. negative peer-review feedback on publications and grant applications) of being a new scientist.

My fourth, and most important, ingredient for success was collaborating with others. While one benefit of collaborating is that many hands make for light work, the greatest advantage is having the opportunity to work with like-minded people who are passionate about the same things. Collaborating with others prevents researchers from becoming isolated and can also be inspiring, as partnerships lead to new ideas and projects that are not possible when working in isolation. Data-sharing further enhances collaborative efforts and avoids duplication of research activities. In my research, I actively seek to involve partners from a variety of institutions with different professional backgrounds so that research questions are examined from multiple perspectives. Through attending various conferences, workshops, and certificate programs, I have also had the opportunity to establish international partnerships with like-minded colleagues. This extensive network has been essential for my emerging program of research and has also proven to be valuable for my graduate students and colleagues, as it has established new collaborative research partnerships.

### **Past and present perceptions of scientists**

My early idea of a scientist was of an individual wearing a white lab coat and working in an ivory tower. Due to the majority of well-known scientific advances being discovered by men, I viewed science as a male-dominated field. I perceived microscopes and telescopes as being the primary scientific research tools, and understood science to be a list of facts, most commonly found in textbooks. I also believed everything politicians and the mass media reported about research findings and rarely questioned their motives in the way they presented the data. I also admit that I viewed scientists as being rather boring (the stereotypical scientific “nerd”), having no life outside their work.

After several years of education and experience, I now understand that science includes the process of discovering and acquiring knowledge. Accordingly, I believe that a scientist’s most important tool is him- or herself, and not the high-tech lab equipment. I understand the importance of collaboration and consultation, and no longer view scientists as being restricted to their ivory towers. This is, unfortunately, not always the case, which is evident in the theory-to-practice divide whereby research and practice exist in parallel. I have come to learn that scientists are not restricted to working in academic settings. For instance, scientists work in industry (e.g. pharmaceuticals), health care (clinician scientists), and government (provincial, federal). I no longer consider science to be a man’s world, thanks to the increasing number of women breaking down the barriers and becoming scientists. Progress is still needed, however, before women have equal footing with men in science. Finally, my perception of scientists as boring individuals has changed; in fact, I cannot think of a more exciting group of individuals. The most interesting and motivating people I have ever met are fellow researchers who are passionate about and committed to the pursuit of science.

And contrary to my early belief, scientists do have varied personal interests and lives outside of their work!

### **The benefits of being a scientist**

As a scientist working in an academic university setting, I have experienced a number of benefits. Foremost, I am provided with a unique opportunity to use my imagination and curiosity to solve important and interesting problems, which can have profound implications locally and internationally. Academic scientists experience a high degree of intellectual freedom in that we can (generally) choose to study whatever is of personal interest and follow our nose to wherever it may lead, even when it is an unfashionable topic. As a result of the tenure process, academic scientists enjoy freedom of speech, including disagreeing with authorities or the general public. Accordingly, investigators can publish and present controversial research findings without fear of losing their job. It should be noted, however, that not all scientists are afforded equal opportunities when it comes to exchanging their ideas and research findings. For instance, scientists who work for the government in Canada are increasingly being silenced, which can result in their research not being presented or published. The free exchange of ideas, data, and research findings is critical to achieving one of the main benefits of being a scientist, which is advancing knowledge and changing/challenging the status quo.

Another major benefit of being a scientist is flexibility. Very few scientists restrict themselves to 9-to-5 work; their hours can vary as long as expectations, deadlines, and responsibilities are met. Such flexibility is a major benefit when raising a young family. A final benefit of being a scientist is having opportunities to travel the world, meeting with international collaborators or presenting at conferences.

### **Contributing to knowledge and society**

My emerging program of research aims to inform health policy by exploring the *impact* of interprofessional education and practice interventions on students, health professionals, patients, and health service delivery. My research also aims to understand *how* interprofessional education and practice interventions improve collaborative practice and patient outcomes. Interprofessional education involves two or more professionals engaged in learning about, from, and with each other in order to improve collaboration and the quality of care (World Health Organization, 2010). The way health professionals are educated is key to ensuring that they have the necessary training to work effectively in interprofessional teams within the evolving health care system. My interests in interprofessional education and practice have evolved from my research as a graduate student, my experiences of teaching interprofessional student teams in classroom and clinical settings, and my ongoing clinical experiences in mental health nursing.

My program of research in interprofessional education and practice has the potential to benefit Canada in several ways. There is mounting evidence that interprofessional practice leads to increased efficiency and coordination, improved patient safety, decreased cost of care, improved provider satisfaction, and enhanced patient outcomes (Curran, 2008). Cost savings are the result of patients receiving the right service, at the right place, from the right professional. Patients receiving team-based care are also

more likely to manage their own health needs and consume fewer health care resources, such as costly hospitalizations (Health Council of Canada, 2009).

Interprofessional education and practice is an under-researched area in Canada. As an emerging scholar and active practitioner, I have innovative ideas and great potential to grow a research program in this area. My established partnerships with colleagues from numerous jurisdictions ensure that my research crosses international boundaries. In the long term, my program of research will have an influence on the creation of more robust policies that support interprofessional education and practice at multiple levels, including health professional licensing bodies, regulatory bodies, education, and the government.

### **Conclusion**

My experiences as a graduate student laid the foundation for my career as a new scientist and prepared me to conduct multimethod interprofessional and intersectoral research, which I believe is critical to informing health policy. My research goals set the stage for a lifelong program of research focused on interprofessional education and practice to promote a collaborative practice-ready work force. Through my working with established mentors and an international network of colleagues, my research will provide the scientific evidence needed to improve health care practices across Canada and internationally by making the health care system more patient-centred, collaborative, and efficient.

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