OTHER REVIEWS

Protocol Reviewer

2007	Division of Endocrinology Fellow research project
2006	Division of Endocrinology Fellow research project

Other Research and Professional Activities

CONFERENCE

2004 May 20	**Facilitator**. Reproductive Session, Centre for Research In Women's Health Research Day. The Centre for Research in Women's Health, Toronto, Ontario, Canada

C. Academic Profile

1. RESEARCH STATEMENTS

Research Statement.
The goal of my research is to improve the management of women with reproductive health issues related to insulin resistance, and polycystic ovary syndrome (PCOS) in particular. My clinical experience has formed my research by emphasizing the need for better assessment, lifestyle management and pro-active pregnancy planning in women with PCOS. PCOS is the most common endocrine disorder in women of reproductive age and is under-recognized and under-treated. I previously ran the University of Toronto PCOS Clinic at CREATE and moved this clinic into Women's College Hospital. The large volume of women with PCOS seen in clinic, referred from across Ontario, provides a unique opportunity to conduct clinical research on a variety of women with PCOS with diverse health needs. Optimization of lifestyle for women with PCOS, and early identification of increased diabetes and cardiovascular risk are priorities in my research. I have undertaken a randomized trial assessing the benefits of exercise in PCOS, am undertaking a pilot RCT to assess different diets in women with PCOS, and have an observational study underway to examine the prevalence and predictors of microalbuminuria in women with PCOS. As my appointment has changed to clinical teacher, I am focusing my PCOS research on the completion of ongoing projects. This includes the microalbuminuria observational cohort (over 110 women recruited to date), the randomized pilot on the relative benefits of different diet types and intervention intensity for women with PCOS (recruitment complete), and a student project examining metabolic differences between women with early and late onset PCOS. In addition, I am developing a PCOS database with an endocrine colleague, Dr. Sujana Kumar. This database will have clinical relevance as an electronic health record, will serve as an evidence-based teaching tool (using data from real clinical patients to demonstrate teaching points), and will allow me to undertake research projects utilizing a rich data source, as part of my ongoing scholarly activity.

I have previously, and continue to work with trainees and fellows on research projects. These include projects on PCOS (the cohort of women with early vs. late onset PCOS, and a systematic review on the metabolic effects of oral contraceptives on women with PCOS), and has included a project on quality assurance (assessing the extent to which Canadian Diabetes Association guidelines are followed in patients with diabetes).

Collaborative Studies

My training in research methods has also allowed me to participate in other research (with other principal investigators) by providing methodological expertise. These have included participation in the planning and implementation of studies such as: the role of exercise in women with newly diagnosed breast cancer, the effect of menstrual cycles on mood in women of reproductive age, and the benefit of adding resistance training to aerobic activity in individuals with type 2 diabetes.

Other Research Contributions - Knowledge Translation and Health Policy Advocacy

I have two children with autism spectrum disorder. This has required a significant time commitment, including significant interruption of research and clinical activities. However, I have used this as an opportunity to combine my personal experience and knowledge, with my research methods expertise by contributing to research and policy-making in my work with the Government of Ontario. This has included work on the Autism Expert Clinical Panel in undertaking a systematic review of the literature and developing evidence-based clinical practice guidelines for the treatment of children with autism spectrum disorders in Ontario. It has also included evidence-based recommendations, through the Autism Reference Group (of which I was a member, as well as chair of the research and knowledge management committees) to the Ministry of Child and Youth Services (MCYS) and the Ministry of Education for school-based intervention for children with autism spectrum disorders. This resulted in a province-wide initiative across all school boards. The Ministry reports back to the Reference Group twice per year on the status of the implementation of the recommendations made. I am continuing to advocate regularly with government policy-makers about the implementation of evidence-based practices for autism. As the Ontario Women's Directorate is currently run within MCYS, I plan to draw on my knowledge and relationships to extend my health advocacy to evidence-based recommendations regarding provincial reproductive health policies for fertility treatment and adoption funding. I also plan to continue my advocacy efforts in collaboration with the Canadian Diabetes Association on projects related to diabetes and social justice.

2. TEACHING PHILOSOPHY

My teaching philosophy has evolved in the years since I have been appointed as an Assistant Professor at the University of Toronto. During my training I felt that my role was to learn as much medical content as I could. It was only some years later, on reflection, that I understand that my great teachers, those who inspired me to want to learn and to want to care for my patients as well as I could were not always the best medical experts, but rather had something else. In some cases, they simply loved to teach and made the learners feels comfortable in their inquiry. In other cases, their 'back story', such as personal histories of medical issues (a favourite endocrinologist mentor with an endocrine condition comes to mind) or other adversities, made them passionate about their work, and inspired a similar passion in us as students. In all cases, they were extraordinary role models.

As sometimes happens, my 'back story' took a front seat also. My oldest two sons were diagnosed with autism. When I was forced to deal with my children and our family's new situation, I needed to re-evaluate what I would do. I changed my role description to that of Clinician Teacher. In order to develop an approach to pedagogy, I decided to undertake the Stepping Stones Certificate Program at the Centre for Faculty Development. I have combined what I have learned in my personal life and in the program to create my approach to teaching.

First, my experience (becoming an avid learner and reader of evidence in an area outside of my area of expertise because of personal experience) and my reading and training through the Stepping Stones Program, led me to learn about and believe in the principle of adult learning theory (andragogy). I have used these principles every day, in the way I teach my learners, and in the way I teach my patients. Because learners are internally motivated, I begin individual or small group teaching sessions with introductions and asking for "something interesting about you", which allow me to assess where learners express an interest, or to learn about their particular passions. I use this information to find a way to direct my teaching at their interests, and make it relevant to them. I check in with them, to determine if the work is relevant to them and if not, I try again. When I identify gaps in knowledge, I review with students at the end of the

session what they think they would like to learn about further. If an observed student interaction doesn't go well, I ask the learner, "how do you think that went?" In most cases, I am able to get the students to self-identify their gaps and encourage them to do further self-directed learning. I find this to be more productive and less critical than identifying the gaps for the student.

I always keep in mind that my learners are also my future colleagues. In some cases, they may be my future superiors! I keep this in mind when I teach, because it reminds me to teach respectfully and in an encouraging manner.

Learning how to teach children with autism at home has profoundly affected my teaching style. I have become trained in behavioural analysis and operant conditioning (changing behavior by using reinforcement techniques). Positive reinforcement encourages independent further learning; negative reinforcement (using a punishing or critical style of teaching) tends to cause desired behavior to occur only in the context of fear of reprisal. I utilize this knowledge to ensure that I create a positive environment; one that encourages not just learning, but the desire to do so independently, and the willingness of learners to approach me further.

Finally, because of my background in clinical epidemiology, evidence-based practice has been a thread that runs through every aspect of my teaching. This has been something that I have consistently shared with students. Part of my philosophy in teaching clinical skills is to critically analyze those practices for which we have good evidence (in some cases contradicting guidelines) and those which we undertake as a matter of course (perhaps from common sense or best practice amongst peers) but for which evidence is lacking. I encourage students to think critically about their clinical decisions in light of the best available evidence. When I teach on content, I pay attention to clarify whether what I am saying that is my 'expert opinion' or whether it is based in research evidence.

From the perspective of content teaching, I strongly believe, based on my experience, that physicians are highly effective advocates, both for the health of their communities and as agents for social justice change. The reason for this is that here is an element of high public trust for physicians in Ontario and other constituencies, and that physicians are uniquely positioned to understand the scientific evidence for best practices, and the gaps between the evidence and what is actually available. Finally, physicians have access to policymakers and have the ability to influence positive change. This combination is largely unique to physicians. Notwithstanding this, there is a paucity of physicians who advocate, in part because they don't feel prepared for it, and because they don't realize how effectively they can do this work.

As a result, my passion now is in teaching advocacy to students, and in continuing to advocate, always grounded in scientific evidence, in order to effect positive public policy change. I feel that my understanding of the CanMEDS Advocate role is a strength for the Faculty, in that it is an area not otherwise well-covered in an explicit manner through the formal medical curriculum. I believe that it is critical to teach excellent advocacy practice through role-modeling, in the same way that my role models affected my practice. This is aligned with the University of Toronto, which has articulated in its recent strategic plan the importance of social justice advocacy. The mission specifies the development of leaders who contribute to the community and improve the health of populations, and this is further refined in the vision which includes, "promotion of social justice, equity, diversity and professionalism" (http://www.facmed.utoronto.ca/about/dean/vision.htm).

3. CREATIVE PROFESSIONAL ACTIVITIES STATEMENT

The majority of my Creative Professional Activity centres on my public policy and advocacy work, primarily in the province of Ontario, and nationally as well. This has led to the development of my particular expertise in advocacy, and I have developed and delivered curricula around this CanMEDS role.

Until around late 1999 and early 2000, I did not have any history or experience in work related to public policy. At that time, my two eldest children were diagnosed with autism. As I sought treatment as a recipient of health care rather than as a provider, it became evident that the diagnosis, investigation and treatment of autism spectrum disorders (ASDs) differed greatly from that occurring in other medical conditions. In fact, at that time, the Ministry of Health in the province of Ontario did not acknowledge autism as a legitimate medical condition but rather referred to it as a psychological issue.

The inability to access publicly funded, evidence-based treatment for my children profoundly affected my view of our health care system and how it addressed vulnerable members of our society. At the time, health care providers had no answers regarding treatment or its access, and as happened frequently at the time, I was referred by my health care

provider to another parent, who served as a 'case manager' in assisting us to navigate our way through the system. This, and access to primary research because of my background, led my family eventually to the only evidence-based treatment at that time, applied behavioural analysis (ABA). This parent had experienced similar barriers, and was in early conversations with a human rights lawyer to address the lack of services for ASDs.

This led to my involvement in a Charter of Rights constitutional challenge (Wynberg et al v. Ontario), in which 28 families of 35 children challenged the failure to provide services for this medical condition as unconstitutional (a breach on the basis of disability discrimination). I also acted as an expert witness, providing evidence to the court regarding critical appraisal of literature, which led to the ability of the court to evaluate the relative credibility and strength of different lines of medical evidence. The court accepted my evidence in its entirety and was utilized in making its decision. This work, and my subsequent leadership in the media related to the litigation resulted in an almost inadvertent push into public policy advocacy work.

The litigation profoundly affected policy in Ontario for children with autism – a new autism program was implemented, and over the course of the litigation, it was expanded both with respect to resource allocation and to the scope of eligibility for children. It struck me that I had had more impact on the health of Ontarians through this work than through my prior research efforts. I found the work exceptionally rewarding.

Notwithstanding the litigation, I eventually developed a collegial and collaborative relationship with the Ministry of Children and Youth Services (MCYS), including at the Minister and Deputy Minister levels. As a result, this work expanded to include, amongst others, the items mentioned in the body of my CPA document, including the participation in an Expert Clinical Panel to develop autism treatment guidelines, participation on the Autism Reference Group that developed 34 recommendations that are being implemented by MCYS and the Ministry of Education, and ongoing direct policy work with MCYS to assist them in implementing policies in governance and oversight of the program, as well as in expansion of the program to more children and to include parent training initiatives. The current program is funded at approximately $180 million annually. Over 1,500 children currently receive intensive ABA programming. Many more families receive some form of behavioral training. Almost all of the policy initiatives in the autism program have received direct input from me and my co-advocate prior to implementation in Ontario. I am viewed as someone who can reliably gauge the responsiveness of families to particular policies in a measured way, and who can assess the policy implications from an evidence-based perspective. I am also viewed as someone who can influence the opinion of families of children with ASDs. Despite the advances for children with autism in the last 12 years, there are ongoing issues to be resolved, and I continue to work with MCYS on this. I have also started to work on related initiatives, including adult services for disabled individuals, and am expanding my scope nationally, including working with a federally funded Network Centre of Excellence, Neurodevnet. I have also spoken at federal (Senate of Canada, MP meetings) and provincial (Ontario Legislative Assembly, MCYS, Ministry of Education) venues to advance this work.

This type of work is a departure from the endeavors undertaken by most academic physicians at the University of Toronto. The Faculty of Medicine Strategic Academic Plan 2011-16 states in its mission statement, "We fulfill our social responsibility by developing leaders, contributing to our communities, and improving the health of individuals and populations through the discovery, application, and communication of knowledge". I feel my CPA embodies this statement.

As I became more 'public' with my advocacy work at Women's College Hospital and the University of Toronto, I was struck by the fact that this work was in fact unique, and that it was a different representation of the CanMEDS Advocacy role than the one usually envisioned. I discussed with my Physician in Chief and with the Chair of the Department of Medicine the ways in which I might contribute my experience. This experience fundamentally changed my academic focus within the University Department of Medicine. Utilizing my experience and review of the literature on the teaching of advocacy in health care, I developed advocacy curricula at both the undergraduate (2nd year medical student) and postgraduate (endocrinology fellow trainees) levels.

At the undergraduate level, there was recognition that there was no formal curriculum focusing on the CanMEDS Advocacy role, and I undertook, in collaboration with Dr. Lisa Richardson, to develop one for the first time in the Faculty of Medicine at the undergraduate level. We understood that students at all levels grasp the concept of patient-level advocacy (address this patient's problem at this time) but that community, global and policy-based advocacy were not well-understood. As this was the student's first exposure, we wished to provide both didactic teaching and hands-on opportunities to experience what advocacy might be like. Students were asked to create an advocacy plan for an area about which they felt passionate. We specifically taught about the role of merging evidence with passion and

communication skills in effective advocacy. The response to this was both expected and unexpected. Some students didn't understand the relevance of advocacy teaching at this point in their training (focusing on the CanMEDS Expert role instead), but for a good number of students who had previously had areas of experience (e.g. a medical condition) or passion (e.g. a sports activity or hobby), they found the program interesting and inspiring. Some of our students created an interest group in head injury prevention, and the group persists 2 years later. They have had invited speakers, have fundraised for helmets for children in underprivileged neighborhoods, and have ongoing activities at the medical school.

I have also created an advocacy curriculum for the University Division of Endocrinology. I have been running this for over 4 years. We do some basic didactic discussion around advocacy principles, and select a project that can be accomplished during the academic year. The group directs all aspects of the project including its direction, focus and goals; I act as their mentor and advisor. Student initiative is an important component of their advocacy projects. The outcomes must be measurable and deliverable and the students must present their work at an annual divisional day at the end of the academic year. Projects have included:

1) Diabetes treatment outreach to individuals who are homeless or in shelters with severe psychiatric illness (this project has continued);
2) Government based advocacy (MPPs and Ministry of Education) for policy change for children with Type 1 diabetes in schools;
3) Development of school-based diabetes management protocols for children with Type 1 diabetes for parent advocates to use to support their children and to facilitate safe diabetes care while at school;
4) Diabetes and lifestyle teaching to new immigrants in shelters. This project started last year and is going to continue this year.

One future goal is to create a more seamless program that runs as a thread throughout medical training, and which targets the needs and interests of students based on their level of training, in a progressively advanced way. Advocacy teaching as a recurring theme in each year of medical school and in residency training is important to solidify students' understanding of the topic. More importantly, I hope to increase the confidence of our trainees in their ability to be effective and influential advocates more broadly than just for individual patients. I am currently working with other faculty interested in advocacy teaching to expand the scope of the curricula over time.

I feel fortunate to have been at the crossroad of science, evidence-based policy implementation, and passion when the opportunity to effect change occurred; this intersection has contributed uniquely to the success of my effort both as an advocate, and as a teacher of advocacy.

D. Research Funding

1. GRANTS, CONTRACTS AND CLINICAL TRIALS

PEER-REVIEWED GRANTS

FUNDED

2011 Apr - 2014 Jul — **Collaborator**. Evaluation of clinical outcomes and costs of a transferable interdisciplinary lifestyle intervention, pre-and per-pregnancy, in obese infertile women. Canadian Institutes of Health Research (CIHR). Partnership for Health System Improvement (PHSI). PI: Baillargeon, J-Patrice. Collaborator(s): **Laredo S**, Greenblatt E, Sagle M, Homan G, Moore C, Wilson E, Ramos-Salas, Sharma A. 345,000 CAD. [Clinical Trials]
Advisory Committee Member and Collaborator.

2011 Apr - 2014 Jul — **Collaborator**. Evaluation of clinical outcomes and costs of a transferable interdisciplinary lifestyle intervention, pre-and per-pregnancy, in obese infertile women. Fondation de la recherche en sante Quebec (FRSQ). PI: Baillargeon, J-Patrice. Collaborator(s): **Laredo S**, Greenblatt E, Sagle M, Homan G, Moore C, Wilson E, Ramos-Salas, Sharma A. 80,000