FOREWORD

Insights on Cross Disciplinary Collaboration

I am very pleased to write this Foreword for the Journal of Student Science and Technology. I wish that an equivalent Journal and associated Foundation had existed when I was a student more than forty years ago! I am delighted that you have this collaborative forum for exchange of ideas. Especially now, many breakthroughs occur at the interfaces between traditional disciplines and require broad thinkers that are not afraid to exchange ideas outside their own disciplinary comfort zone. I am always amazed and excited to see these intellectual exchanges at work.

While I was fortunate enough as a student to experience cross disciplinary collaboration, the attitude and reward system were still (back then) much more about individual pursuits, discipline focus and single author papers. I am glad that I pursued my passion for collaborative and interdisciplinary endeavours as it did result in better papers - a collaboration with Russian physicists with unique semiconductor nanostructures allowed me to experience the thrill of discovery of what looked like a new state of matter, as predicted by Wigner in 1934.

Similarly, my collaborations with talented polymer chemists at l’université Laval and l’université de Montréal and with industries involved in materials scale-up and device printing helped launch organic electronics and photonics in Canada. As a leader of a research institute in Information and Communication Technology, I had the pleasure, with my counterpart in Research in Construction, to launch a collaborative research program in Intelligent Buildings. We both felt outside our professional comfort zones and more exposed but we trusted that our research colleagues could come up with smart sensors whose data could be mined to lower energy consumption in buildings, monitor the outgassing of organic volatile compounds and provide personalized working environments.

This collaborative program succeeded in a delight-filled fashion which convinced me that Canada should support a broad range of team-based research integrated across government labs, universities and industry to solve problems that matter to Canada and its future. Indeed, today’s grand challenges will not be solved by individuals but by large international teams that will succeed by sharing data, by using a diversity of approaches and by marshalling talent and tools to push the frontiers of knowledge and understanding. I hope that you will experience, in your careers, the end-point of the evolution of a profound change in how we assess success in many human endeavours: from solo to collaborative achievements.

Finally I will conclude by saying that service to humanity through the scientific community has been a constant objective throughout my career, not because it came easily but because it challenged me personally. Recognizing small personal advances, often in discussion with others, helped to sustain me through professional setbacks. In this and in other ways, mentors, colleagues and family members have been very important to me. I wish that you will find and cultivate these precious people who will accompany, guide and support you on your career journey, helping you move forward!

“When we least expect it, life sets us a challenge to test our courage and willingness to change; at such a moment, there is no point in pretending that nothing has happened or in saying that we are not yet ready. The challenge will not wait. Life does not look back. A week is more than enough time for us to decide whether or not to accept our destiny.”

— Paulo Coelho, The Devil and Miss Prym

Marie D’Iorio is a Senior Strategy Advisor with the Office of the Vice President Research at the University of Ottawa and is President of NanoCanada. She obtained a Master’s and a Doctorate degree in Solid State Physics from the University of Toronto. After working at IBM’s Zurich Research Laboratories, she joined the National Research Council first as a researcher and then as Director-General of two research institutes. She also served as President of the Academy of Science of the Royal Society of Canada and President of the Canadian Association of Physicists.

Dr. Marie D’Iorio