

# Canadian Experience with University of British Columbia

**Bruno Botta**

As many of us are aware, international exchanges and participations between Universities and their scholars, provide significant benefits within the cultural, scientific and social aspects. Sapienza University of Rome is making an effort to expand its program to encourage further such exchanges with Universities on a worldwide basis, in the hope that its scholars may continue to derive such benefits. I have been requested, as a member of Sapienza, to provide my own personal experiences to exemplify how such an exchange has provided me with a significant opportunity for improving not only my scientific career, but some valuable experience as to the manner in which I interact with my colleagues and friends, on a daily basis.

In 1981, I became Researcher (a position equivalent to Assistant Professor in North American Universities) at the Catholic University in Rome, under the Professorship of Giovanni Battista Marini-Bettolo, one of the prominent Professors in Italy. While a member of that group, it was always my desire to pursue studies within an international group and so one day, I approached Professor Marini-Bettolo, for his opinion in this regard. Without hesitation, he said “go to Professor James P. Kutney’s laboratory at the University of British Columbia (UBC) in Vancouver, Canada. His laboratory is world recognized in the area of natural products chemistry and particularly within the area of interdisciplinary research combining chemistry and biotechnology. You will have a unique opportunity to develop your experience in this important field of research”. I followed my Professor’s advice and took up a postdoctoral fellowship at Professor James P. Kutney’s (JPK) laboratory where I initiated my study in Vancouver in August, 1984.

One of the main areas of JPK’s research involved the chemistry of the highly important anti-cancer drugs, vinblastine and vincristine, natural alkaloids isolated

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B. Botta (✉)

Dipartimento di Chimica e Technologie del Farmaco, Università degli Studi di Roma “La Sapienza”, Piazzale Aldo Moro 5, 00185 Roma, Italy  
e-mail: [bruno.botta@uniroma1.it](mailto:bruno.botta@uniroma1.it)

from plant, *Vinca rosea*, (the latter botanical name was changed to *Catharanthus roseus*) and used clinically, from 1964 to the present, for the treatment of various human cancers. As expected, JPK requested that I join his interdisciplinary program within the vinblastine-vincristine area, and to become involved in his most recent studies on developing cell cultures of this plant in order to study the biosynthetic pathway of these important natural products. More specifically, along with the other members of his international team of scientists, I were involved in the isolation of the important plant enzymes from the cell cultures of *Catharanthus roseus* which were responsible for the production of these compounds. In summary, we were able to succeed in deriving the biosynthetic pathway to these important anti-cancer drugs. For me, this was indeed a fantastic development in my training and in my career (see later). Via this interdisciplinary research from the more classical organic chemistry, which was the main field of my studies, I had obtained training in the area of enzymes, at that time, more within the realm of biochemistry and biology, and certainly not within the realm of organic chemistry research groups around the world.

Apart from my experiences as noted above, I was fascinated and indeed highly impressed at the overall approach and attitude that JPK used within his organization and direction of his research group. His group of approximately 30 researchers, was composed almost equally of Canadian and International members. The international component generally represented members from at least 10 different countries encompassing representatives from Asia, North and South America, Australia, New Zealand, Europe and the Caribbean islands. As a result, there was ample opportunity to exchange with them, their diverse ideas not only within the realm of science, but on many other social and cultural issues. Such personal interactions, home visitations with both the international and Canadian colleagues and friends, provided a unique opportunity for me and my family to learn from their native background and their living experiences in their homeland. I wish to emphasize that, until the present, my family and I, still maintain close relationships with many of these colleagues whom we met more than 30 years ago. We exchange greetings and/or discussions on a professional and/or personal basis.

I would now like to indicate how my experiences during my studies with JPK and his group in Vancouver played an important role in my future career after my return to Rome. My initial training at UBC was so stimulating that upon return to the Catholic University, I immediately initiated a research program on plant cell cultures, much along the lines which were pursued in Vancouver. This research avenue was among the first to be undertaken in Italy. We were successful in establishing cell cultures of plants, succeeded in isolating and characterizing enzymes from such cultures, and publishing a number of articles in peer reviewed journals, and with other colleagues have continued to pursue research in various areas of natural products chemistry. The aspect of interdisciplinary research, initially stimulated via my studies in Vancouver, form a large part of my present research at Sapienza where I am presently Professor and Head of a Department.

Finally, I would like to indicate how my studies at UBC played a major role in the manner in which I direct my present research group and how I generally interact

with my colleagues. Apart from his international recognition among the scientific community, I was continually impressed with how JPK interacted on a personal basis, with his collaborators and colleagues. The group of 30 would be divided into “teams” of about 5–6 scientists, with each group pursuing the specific objectives of their research. Even though there were individual personal interactions, each group would meet once a week for a description of their previous week’s results. These meetings would have open and free discussions with participants able to express their respective ideas and possible solutions to the problems at hand. In addition, JPK would arrange for a selected speaker to make a presentation to the entire group of 30, on a weekly basis, so that all members would be aware of the overall aspects of the large research program. His approach to any member from the young graduate students to the more senior research fellows and/or visiting Professors who were always part of the international research group, was always polite, considerate and humble. JPK would show a similar regard to the technicians and/or the cleanup lady who would come to sweep the floor. Upon return to Rome, I immediately instituted this manner of direction with my research group and with the various interactions with my colleagues.

In summary, I hope that this rather lengthy portrayal of my visit to Vancouver, will illustrate, at least in a small part, how international visits and cooperations between Universities and their accompanying scholars, can be of significant benefit to the entire University community. It is my sincere hope that the program which Sapienza wishes to develop further will be successful and will allow such interactions to become a “norm” for the future.

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