



# GROWTH AND MATURATION IN HUMAN BIOLOGY AND SPORTS

*FESTSCHRIFT HONORING ROBERT M. MALINA  
BY FELLOWS AND COLLEAGUES*

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# ROBERT M. MALINA: A RENAISSANCE MAN AND BIG PICTURE HUMAN BIOLOGIST

*Claude Bouchard*

## INTRODUCTION

It is an honor for me to be given the opportunity to contribute to this Festschrift recognizing the many accomplishments and the global legacy of Professor Robert M. Malina. I met Professor Malina for the first time in 1972 in Saskatoon, Canada, at a meeting focused on ongoing growth studies in Canada. It was a defining moment for me as it marked the beginning of a successful working relationship and a long-term friendship. Over the last 40 years, I have had the privilege of being able to observe from a front-row seat the numerous contributions made or spearheaded by Professor Malina (RMM), and this commentary is inspired by sustained contacts with him over these decades.

RMM is a true scholar as evidenced by hundreds of publications, oral presentations and invited lectures delivered around the world. His influence has been felt well beyond the United States. RMM has developed a large network of collaborations that have translated into numerous research projects and publications and the training of graduate students. Having often been a witness to the evolution of such relationships, I can testify that they were always approached by RMM with respect for the others and an unlimited listening capacity. Professor Malina is a devoted family man, supportive of his wife, Dr. Eva Malina, and three grown-up children, just as he was so strongly supported and motivated by them. Professor Malina's interest in history, old books, sculptures, paintings, religious arts, languages and good food and wine sets him apart from most of his peer scientists. His whole integrated bio-cultural approach to science questions and his personal life philosophy represent some of the typical traits of what is often referred to as a renaissance man, and this is undoubtedly among the reasons why we have all been fascinated by him over the years.

This commentary will highlight Professor Malina's research productivity and contributions to the training of the next generation of academics and scientists. It will conclude with some personal notes arising from our longstanding relationship.

## RESEARCH PRODUCTIVITY

Anyone who has reviewed the curriculum vitae of RMM realizes that his research interests extend from human biology in the broad sense to exercise science, with a particular focus on growth and a variety of pediatric issues. His contribution to science spans a period of

50 years. He published his first research paper in 1962 in the *Journal of Bone and Joint Surgery* (Rarick et al., 1962). Since then, he has contributed to the advancement of knowledge in areas as diverse as the morphological growth of children; motor development and motor skills across the growing years; maturation, including age at menarche; skeletal age; growth and sports performance; the risk factor profile for common chronic diseases in children; and the role of social, cultural and economic circumstances as seen in developed and developing countries on growth and maturation.

RMM has published almost 400 peer-reviewed research papers and about 300 book chapters, technical papers, book reviews and other reports. He has also written several monographs and books, including being the lead author on the first and second editions of *Growth, Maturation, and Physical Activity* (Malina & Bouchard, 1991; Malina, Bouchard & Bar-Or, 2004). His publications have been cited more than 7,600 times in the world literature.

I have chosen to highlight three aspects of his scholarly contributions. First, Professor Malina has been considered for decades as one of the premier experts on anthropometry, particularly as applied to pediatric populations. One example should suffice to illustrate the latter. RMM served for about a decade as the anthropometric consultant for the United States Health Examination Survey (HES) and Health and Nutrition Examination Survey (HANES). Second, RMM has had a longstanding interest in motor development and skill acquisition in children and adolescents. This was recognized in a comprehensive review of this research area by Professor Jerry Thomas presented at a meeting of the American Academy of Kinesiology and Physical Education and published in *Quest* in 2006. Thomas (2006) concluded that RMM was “the most highly cited motor development scholar,” as well as the scientist who had published the most extensively in the area. Third, RMM is also widely perceived as the most prominent scholar on the topic of the “young athlete.” He has published extensively and consulted with several national and international bodies on talent detection and growth and development of young athletes, including issues such as maturation, bone development and social integration in youth exposed to the demanding regimens of training for sports performance.

## TRAINING GRADUATE STUDENTS

RMM has contributed substantially to the training of the next generation of scientists in his field. He has supervised 70 graduate students during his career, including 43 who were doctoral candidates. Several of them are actually contributing to this volume. A trademark of Professor Malina’s approach to mentoring graduate students was his continuous effort to involve them in publication activities. This strategy allowed him to teach students to be accurate in their writing, to learn how to present their data in a clear manner, and most importantly to learn the art and science of interpreting their results in light of the existing literature. I suspect that it was also a tool for him to identify the best students who had a chance at succeeding at the doctoral and postdoctoral levels so that he could encourage them to consider a career in academia and science.

A hallmark of Professor Malina's contributions to training is his dedication to engaging colleagues from other countries and cultures. This is reflected in his portfolio of participation in graduate courses, research seminars and graduate thesis committees, especially in Europe and Latin American countries. Over the years, RMM has established strong collaborative research and graduate training partnerships with several institutions and colleagues, particularly from Belgium, Canada, Mexico, Poland and Portugal. His work in Oaxaca, Mexico, exemplifies this collaborative spirit; over the last 40 years, he has carried out growth and health assessments on samples of the indigenous community. One of his former doctoral students from Mexico is closely involved in this study and in the planned 45-year follow-up. RMM has always been very generous of his time, often working long hours helping non-English-speaking faculty or students with their manuscripts destined for publication in English language journals. Without his input and word-smithing, many of these manuscripts would not have been considered favorably by journal reviewers and editors.

Another indicator of the contributions of RMM can be seen in the performance of his former trainees. For instance, many of his former doctoral students have been asked to write papers for this Festschrift. For the sake of illustration, I will mention two of them. RMM's first PhD graduate was Dr. John H. Himes who completed his degree in 1975 (Himes, 1975). Over the last few decades, John has been a productive scientist at the University of Minnesota. He has been involved in about 147 peer-reviewed publications, which have been cited about 4,600 times to date, an average of 31 citations per paper. More than 20 years later, in 1997, Dr. Peter T. Katzmarzyk was the 30th graduate student completing a doctoral degree with RMM as his major professor (Katzmarzyk, 1997). Since then, Peter has risen to a high-profile research position and has been a highly productive scientist with more than 200 peer-reviewed papers averaging 28 citations each. Although several others have had distinguished careers following their training with RMM, these two cases illustrate the main point, which is that Professor Malina has made substantive contributions to the training of graduate students and to the emergence of the next generation of academics and human biologists.

## PERSONAL NOTES

I feel that personal souvenirs and remarks are warranted at this stage. As I said above, I met RMM for the first time in Saskatoon in 1972. I enjoyed his presentation, but I had also read earlier his chapter on "an anthropological perspective of man in action" (Malina, 1969), published in a book edited by Cratty and Brown on the topic of "new perspectives on man in action." This chapter had a major influence on the direction that my career was about to take. I was looking for an institution where I could study human biology and human genetics with a focus on normal human variation. Behavior genetics programs were almost the only ones asking the kind of questions I was interested in, but my interest was more on biological and physiological traits. There were really no programs with this particular focus. To make a long story short, I enrolled at the University of Texas at Austin in the physical anthropology program with RMM as my major professor. He became like

an orchestra conductor guiding me among the many courses in anthropology, molecular genetics, biochemical genetics, human genetics, statistical genetics, population genetics, etc, that were offered on the campus. It was a superb experience—and I became a Longhorns fan in the process!

To date, RMM and I have collaborated on about 50 publications, which have been cited about 2,000 times, for a very respectable average of 40 citations per paper. Incidentally, some of these papers were published with Dr. Arto Demirjian from the Human Growth Center at the University of Montreal. Our relationship with Arto was delightful and productive. Seventeen of these joint publications are based on the data of the Quebec Family Study, which RMM became familiar with when he spent a sabbatical year (1986-1987) with us in the Physical Activity Sciences Laboratory at Laval University in Quebec City. During this sabbatical, we wrote a substantial portion of the first edition of the book *Growth, Maturation, and Physical Activity* (Malina & Bouchard, 1991), which was finally published by Human Kinetics in 1991. In 1999, we began planning for the second edition of the book (Malina, Bouchard & Bar-Or, 2004), which was ultimately published in 2004. The late Professor Oded Bar-Or joined us for this new version, and it was a wonderful experience to work on this project with RMM and Oded. Both editions of the book have been well received around the world.

RMM and I have shared many passions over the years. His enthusiasm for human biology and human variation research had a great influence on me and broadened my thinking, which had been focused on genetic differences. His love for New York has been contagious, and I am proud to say that it is now a passion that I share with him and Eva. Needless to say, we both enjoy traveling and experiencing other cultures outside of North America, which we have done frequently. Finally, one other passion that we have shared for more than 35 years is for good food and great wines. This one is not likely to be attenuated as we get older.

So, on the wonderful occasion of this well-deserved Festschrift, from your many colleagues and friends around the world, Longue Vie et Bonne Santé, Robert Malina.

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