Preface

This monograph is peculiar in several aspects. First, it is written by a single author, inspired by the worldwide recognized Craniofacial Genetics course that he has been teaching for 15 years in the University of Pittsburgh. The author himself is a renowned scientist with a background on Human Molecular Genetics that has received two prestigious awards in Cariology for his outstanding and pioneer work on individual genetic susceptibility to dental caries, erosive tooth wear, and dental fluorosis: the Distinguished Scientist in Dental Caries Award from the International Association for Dental Research and the ORCA Prize from the European Association for Dental Research. This combination of expertise is so unique that being the editor of the present volume I had a hard time finding reviewers for the individual chapters.

This brief description makes it clear that the information that can be found in this book is unique, since it results from years of experience of the author and of his interaction with other eminent dental and craniofacial scientists, physi-

cians, and dentists from all over the world. One interesting aspect is that the book also contains original data.

The monograph is structured in 17 chapters, with the first one, dedicated to describing inheritance in humans, providing the basis for the others. Chapter 2 deals with amelogenesis imperfecta. The next 3 chapters deal with dental caries. Chapter 3 describes findings of the Vipeholm study, suggesting the existence of genetic variation modulating dental caries, while chapter 4 shows research with animal models that has been used as a tool for gaining insight on the contribution of genetics to dental caries. Chapter 5 highlights twin studies that allow to infer the heritability of dental caries. Chapter 6 deals with individual susceptibility to erosive tooth wear, based mainly on studies involving wine tasters. Chapters 7 and 8 discuss genes involved in enamel and saliva formation, respectively, and their impact on caries susceptibility and erosive tooth wear, while chapters 9, 10, and 11 focus on genes related to dietary preferences, interacting with fluoride,

and influencing behavior, respectively. In chapter 12, the impact of genes involved in immune response on caries susceptibility is discussed. Chapters 13 and 14 are devoted to the initiation and progression, respectively, of caries and erosive tooth wear, from the host standpoint, while chapter 15 deals with host response to adhesive restorative dental treatment. In chapter 16, possible genomic predictors of caries experience and erosive tooth wear affection that might be used in the fu-

ture are presented. In the last chapter, the author presents his view on fluoridating drinking water as a populational intervention.

This monograph is a most valuable resource and compulsory reading for those who want to gather information on genetic susceptibility to dental caries and erosive tooth wear.

Marília A.R. Buzalaf
Bauru, Brazil