Foreword

Since its inception in 2003, scholars at the Centre for Arab Genomic Studies (CAGS) realized that progress in understanding the etiology of genetic disorders in the region comes in little steps that will add up to one big leap forward. One of those first little steps achieved in CAGS was the successful launch of its Catalogue of Transmission Genetic in Arabs (CTGA) database, which is a continuously updated compendium of bibliographic material and observations on human gene variants and inherited, or heritable, genetic diseases in Arab individuals (*Tadmouri et al., Nucleic Acids Res. 2006, 34:D602-6*). To begin with, CAGS worked closely with scientists in the United Arab Emirates to collect information on the occurrence of genetic disorders in the Arab population of the UAE. Using a comprehensive search strategy in international and national peer-reviewed medical journals, it was possible to bring together information on the presence of more than 700 genetic disorders in the region of which 225 genetic disorders occur in the Arab population of the UAE.

Early in 2005, CAGS made another practical step by exploring the molecular pathology leading to an inherited skeletal abnormality in a UAE family. Initial results of this study have been recently published (*Naveed et al., Am J Med Genet A. 2006; 140:1440-6*) and work is currently ongoing to depict the gene mutation responsible for this disease. The genetic depiction for this disorder will surely bring fresh insights to our understanding of the human genome and will pave the way for many similar projects in light of the presence of many non-characterized inherited disorders in Arab populations. Similarly, CAGS also aims at those disorders that have assumed epidemic proportions in the region and played a pivotal role in the nationwide campaign that was launched in the UAE in 2006 under the title Emirates Free of Thalassemia. The main aim behind this endeavor is to prevent the spread of thalassemia and other blood disorders through a nation-wide adult screening program.

Another significant step achieved was the formation of the Arab Council of CAGS early in 2006 with the aim to lay the foundation of a regional network to support present and future activities of the centre. It is by way of the Arab Council that CAGS will achieve a thorough understanding of the spectrum of genetic disorders in the region. For this reason, CAGS started working closely with nuclear groups of scientists in 12 Arab countries to conduct local projects of data collection; especially in the Arabian Gulf countries neighboring the UAE. The present book

is just a small example of the strategy adapted with scientists in the Kingdom of Bahrain hoping to apply this successful decentralized approach in other Arab countries as well.

Until the public release of the CTGA database in 2004, a main obstacle that faced any genetic research was the dearth of comprehensive statistical data on genetic diseases and their prevalence rates. This fate is changing forever with the dissemination of the knowledge accumulated in the CTGA database in the local, regional, and international scientific societies. Currently, the CTGA database project has surpassed the level of individual work and now is embarking to the phase of joint efforts. In fact, when the CTGA project reaches the full capacity aimed at, it will certainly represent the foremost attempt to define the scale of genetic disorders described in the Arab World and define future directions of research in this important realm of science.

With the little steps achieved thus far, the Centre for Arab Genomic Studies plays an important role in the international scientific community and proves to be a successfully germinating seed of Arab genomics (*Axton, Nat Genet. 2006, 38:851*). Following the recent completion of the international Human Genome Project, CAGS plans to initiate the Arab Human Variome Project in collaboration with leading laboratories and scientists in the region and in accordance with the international Human Variome Project initiative. The project derives its strength from the appreciation of human variation by Muslim societies and its study is an important step to direct the future of healthcare provisions in the region by combining the solid science of genomics with the power of modern pharmacology.

> **"Of His signs is that He created you of dust, and then lo! You are humankind spreading yourselves. And of His signs is, that He created for you from yourselves mates that you may find repose in them, and He set between you affection and mercy, verily in this are signs for a people who ponder. And of His signs are the creation of the heavens and the earth, and the variation of your languages and complexions. Verily in this are signs for men of knowledge."** (Al-Rum, 20-22)

Mahmoud Taleb Al Ali ***Ghazi Omar Tadmouri***