Foreword

This volume, "Seasonality in Human Mortality: A Demographic Approach" by Dr. Roland Rau, is the third book of a series of Demographic Research Monographs published by Springer Verlag. Dr. Rau is now a research scientist at the Duke University Population Research Institute (DuPRI), but at the time of his writing the book he was a research scientist at the Max Planck Institute for Demographic Research. The book is a slightly-revised version of his doctoral dissertation, which he completed at the Max Planck Institute and submitted to the University of Rostock. He was awarded highest honors, summa cum laude, for his dissertation and he was later awarded the Otto Hahn Medal of the Max Planck Society for his contribution. Rau's research has three exceptional strengths.

First, the book is meticulously researched. This is a superb example of careful reading and assessment of the corpus of relevant literature. More than 400 references are listed in the bibliography. Existing knowledge is judiciously evaluated, cogently organized and lucidly described. Rau presents all the relevant findings, pointing out when they are contradictory and when caution is needed. The result is a balanced, nuanced, comprehensive account of the state of current knowledge. Rau is clearly a dedicated, diligent scholar interested in pursuing the truth, rather than a story-teller or an advocate pushing some theory.

Second, the book includes important original contributions to knowledge. Rau has not only assessed current knowledge, he has also substantially advanced it. In particular:

- His critical appraisal of existing methods for measuring seasonality is much more than a review: it provides new insights into the comparative advantages and disadvantages of the various methods.
- Based on his understanding of the deficiencies of existing methods, Rau develops a novel approach to incorporate "changes in the trend, the seasonal component and unobserved heterogeneity."

- His analysis of data for the United States provides interesting findings for an important country that has been neglected in research on seasonality in mortality.
- His study of the data for Denmark is based on exceptionally accurate and complete information, analyzed using sophisticated statistical methods.
- Socio-economic status and marital status are known to have major impacts on mortality. Rau presents the first careful study of their impacts on seasonal mortality. Using U.S. data, he finds no significant effect of marital status, but he does find a social gradient by education in seasonal mortality. This, he notes, "is an effect which has not been discovered elsewhere".
- Using Danish data, Rau uncovered another significant finding: people living alone have higher relative mortality risks in winter than people living with someone else.
- Another important contribution to knowledge is Rau's estimate of the gain in life expectancy if seasonal increases in mortality could be eliminated. The gain, based on U.S. data for 1998, would be about 0.8 years for women and 1 year for men. Although seemingly modest, such a gain would have a large absolute impact on national well-being.
- Based on his new findings and on his careful review of previous findings, Rau is able to make the convincing recommendation that public health policies should focus on three groups that are especially vulnerable to cold-related mortality: "old people, people who are living alone and people of lower socio-economic status".

The third exceptional strength of this book is its single, clear focus—seasonality in mortality. Rau appropriately addresses this issue from various perspectives, but always with the single, clear underlying focus.

Rau starts with discussion of the causal chain linking seasonal fluctuations with mortality, emphasizing the importance of social as well as biological factors. He reviews the history of seasonal mortality, with a fascinating account of the modern elimination of the summer peak. He then turns to an analysis of alternative measures of seasonality, including an innovative comparative evaluation of different approaches. The next two chapters analyze U.S. data and Danish data. Finally, there is an interesting "outlook" chapter. Lengthy appendices that provide supplemental material for various chapters are available in the online edition of the book.

Many doctoral dissertations present a bouquet of research flowers, loosely bound together. Rau's work has a unitary theme; it is indeed a monograph. The cumulative impact is impressive. By concentrating on a single topic, by carefully and comprehensively assessing existing knowledge about it, and by adding important new knowledge, Rau has written a magisterial work that will become a key book on the subject. Rau notes that the last monograph on seasonal mortality was published more than 25 years ago (in 1977). This monograph may be the major work on the topic for the next quarter century.

The series of Demographic Research Monographs is under the editorial supervision of the Max Planck Institute for Demographic Research. Prof. James W. Vaupel, Founding Director of the Institute, is Editor-in-Chief. He is advised by an Editorial Board that currently consists of Prof. Elisabetta Barbi (Messina University, Italy), Prof. Gabriele Doblhammer (Rostock University, Germny), Dr. Jutta Gampe (Max Planck Institute), Prof. Jan M. Hoem (Max Planck Institute), and Prof. Bernard Jeune (University of Southern Denmark). Additional members of the Editorial Board will be appointed as needed to review manuscripts submitted for possible publication. The current manuscript was reviewed and accepted by James Vaupel, Gabriele Doblhammer and Jutta Gampe, based on advice from a group of referees.

The Demographic Research Monographs series can be considered the successor to the series called Odense Monographs on Population Aging, edited by Bernard Jeune and James Vaupel. The volumes in this now-terminated series were first published as hardcover books by an academic publisher, the Odense University Press, and subsequently made available online at www.demogr.mpg.de/books/odense. The nine Odense Monographs on Population Aging include two collections of research articles that focus on specific subjects on the frontier of demographic research, three volumes by senior researchers that present path-breaking findings, a review of research on a topic of emerging interest, a presentation of a new method for analysis of demographic data, an out-standing doctoral dissertation, and a unique collection of important demographic data on non-human species.

The new series of Demographic Research Monographs will continue this mix, with books that are often under 200 pages in length, that have a clear focus, and that significantly advance demographic knowledge. Research related to population aging will continue to be a prime focus on the new series, but not the only one. The new series will embrace all of demography, broadly defined. As indicated by the first volume, an important subject will be historical demography. We also plan to highlight research on fertility and family dynamics, especially in Europe. Mathematical demography is the core of the population sciences and we will strive to foster monographs that use mathematics and statistics to further develop the theories and methods of demography. Biodemography is a small but rapidly growing and particularly innovative branch of demography: we will seize opportunities to publish monographs at the intersection of biology and demography, pertaining both to human and other species, and including demographic research with ties to such fields as epidemiology, genetics, evolutionary biology, life-history biology, experimental demography, and paleodemography.

Each volume in the Demographic Research Monograph series will have a substantial link to the Max Planck Institute for Demographic Research. As well as being published as hardcover books by Springer-Verlag, the volumes

of the Max Planck series of Demographic Research Monographs will subsequently be available at www.demogr.mpg.de/books/drm. The online version may include color graphs, supplemental analyses, databases and other ancillary or enhanced material. Parallel publication online and in print is a significant innovation that will make the monograph series particularly useful to scholars and students around the world.

James W. Vaupel
Editor-in-Chief