



FIELDS

THE FIELDS INSTITUTE

KEYFITZ LECTURES IN MATHEMATICS AND THE SOCIAL SCIENCES

# Wolfgang Lutz

Founding Director, Wittgenstein Centre for Demography and Global Human Capital (IIASA, VID/ÖAW, WU)/ Director, World Population Program (IIASA)

MONDAY, JUNE 13, 2016 AT 5:00 P.M • THE FIELDS INSTITUTE

## *Modelling human capital formation as the basis for assessing the benefits of education: A global perspective*

The methods of multi-dimensional population analysis and modeling, which were developed by Nathan Keyfitz and Andrei Rogers during the 1970s and early 1980s in and around IIASA provide powerful tools for explicitly considering population heterogeneity that goes beyond the conventional break-down by age and sex. Over the last decade work at IIASA has demonstrated that the level of highest educational attainment is probably the single most important source of population heterogeneity because in virtually all countries of the world women with higher levels of education have fewer children and both men and women with higher education live longer. Along these lines IIASA has recently produced the first comprehensive reconstructions and projections of populations by age, sex and level of educational attainment for most countries of the world. For the future, alternative scenarios have been developed where different education expansion trajectories alone can lead to a difference of more than one billion in world population already by mid-century. These new comprehensive educational attainment data by age and sex reconstructed to 1970 were also used to firmly establish the key role of human capital for economic growth, but also for improvements in health and even for strengthening the adaptive capacity to already unavoidable climate change.



**WOLFGANG LUTZ** is Founding Director of the Wittgenstein Centre for Demography and Global Human Capital, a collaboration between International Institute for Applied Systems Analysis (IIASA), the Austrian Academy of Sciences, and the WU-Vienna University of Economics and Business. He is also Program Director of the World Population Program at IIASA, Director of the Vienna Institute of Demography (VID) of the Austrian Academy of Sciences, Professor of Applied Statistics at the WU, Professorial Research Fellow at the Oxford Martin School for 21st Century Studies, and Principal Investigator of the Asian MetaCentre for Population and Sustainable Development Analysis.

He has worked on family demography, fertility analysis, population projection, and the interaction between population and environment. He has been conducting a series of in-depth studies on population-development-environment interactions in Mexico, several African countries, and Asia. He is the author of the series of world population projections produced at IIASA and has developed approaches for projecting education and human capital.

Lutz is author and editor of 34 books and more than 200 refereed articles, including 8 in Science and Nature.

For more information, please visit:

[www.fields.utoronto.ca/programs/scientific/keyfitz\\_lectures](http://www.fields.utoronto.ca/programs/scientific/keyfitz_lectures)



THE FIELDS INSTITUTE FOR RESEARCH IN MATHEMATICAL SCIENCES

222 College Street, Second Floor, Toronto, Ontario, M5T 3J1 • [www.fields.utoronto.ca](http://www.fields.utoronto.ca) • 416-348-9710