

My main research interests are the use of mathematical models to help solve problems in Ecology and Epidemiology. Research emphasis is on application of bifurcation theory for the analysis mathematical models based on processes and mechanisms at lower levels of organization, such as the individual, to solve problems at higher levels, such as populations and ecosystems. Topics of special interest are the role of interactions between populations, such as predator-prey interaction, disease transmission, inducible defence mechanisms and competition on ecosystem structure and functioning.

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Date of birth in Uithuizermeeden, Prov. Groningen, The Netherlands.

Aug 1973- March 1979

Study Mathematics at University of Groningen Specialization: Applied Mechanics, Computer Science and Numerical Analysis.

March '79 Masters degree (ingenieurs examen Technische Mechanica).

March 1979- March 1983 PhD student employed by the Netherlands Organization for Pure Scientific Research (ZWO) at the Mathematical Institute, University of Groningen.

March 1983 Ph-Degree, title thesis: "On the Mechanics of the Bow and Arrow", promotor prof. dr. J.A. Sparenberg (Applied Mathematics, University of Groningen), referees prof. ir. M. Kuipers (Applied Mechanics, University of Groningen) and prof.dr. ir. J.G. Lekkerkerker (Applied Mechanics, Technical University Delft).

Aug 1983-May 1988 Research worker at Fokker, Space & Systems Amsterdam, cq. Division of Structural Analysis (now Dutch Space). Main field of activity: Structural Analysis of satellites and appendices such as solar arrays. Thermal-Structural interactions, Fluid-Structural interactions, Test-Analysis Correlation, Modal Survey Analysis.

May 1988-June 2009 Assistant-Professor Dept. Theoretical Biology, Vrije Universiteit, Amsterdam, The Netherlands;

Jan 1999- May 1999 Visiting-Professor Dept. Ecology & Evolutionary Biology and Dept. Mathematics, University of Tennessee, Knoxville TN 37996 USA; My host was Prof. Dr. T.G. Hallam.

June 2009-2020 Associate-Professor Faculty of Science, Vrije Universiteit, Amsterdam, The Netherlands;

Side activities (list is not exhaustive)

1996-2001 Coordinator of the National Program on Massive Parallel Processing, cluster Biological Application (NWO).

2001-2005 President of the NVTB (Nederlandse Vereniging voor Theoretische Biologie) Dutch Society of Theoretical Biology

1991-present Founding member of European Society for Mathematical and Theoretical Biology (ESMTB)

co-Promotor

C.H. Ratsak. Grazer induced sludge reduction in wastewater treatment, 1994

M.P. Boer. The dynamics of tri-trophic food chains, 2000

L.D.J. Kuijper. The role of trophic flows in food web dynamics, 2004

T. Troost. Evolution of community metabolism, 2006

G.A.K. van Voorn. Ecological implications of global bifurcations, 2009

D. Stiefs. (Oldenburg Germany) Relating generalized and specific modeling in population dynamical systems, 2009

J. Bruggeman. Succession in plankton communities: A trait-based perspective, 2009

D. Bontje. Analysis of toxic effects and nutrient stress in aquatic ecosystems, 2010

Maira Aguiar Freire dos Santos. Rich dynamics in multi-strain models: non-linear dynamics and deterministic chaos in dengue fever epidemiology, 2012

Daniel Jakob Gerla. Positive feedback in species communities 2012