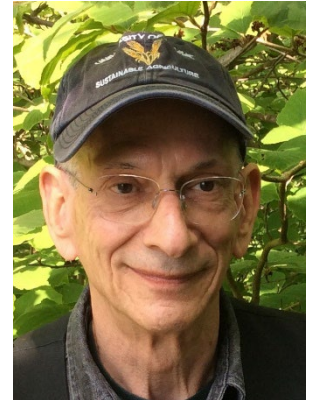


GATERSLEBEN LECTURE



Speaker: Prof. Dr. Jacob Weiner
Department of Plant and Environmental Sciences
University of Copenhagen, Frederiksberg,
Denmark



Title: Applying Evolutionary Theory to Improve Plant Production

Time: Tuesday, February 28, 2023, 2 pm

Place: VCS Zoom: <https://ipk-gatersleben-de.zoom.us/j/64478219266?pwd=TEhObzNVMXUySm1jQlgrNVpoVUIPUT09>
Meeting-ID: 644 7821 9266 Kenncode: 033848

Skype for Business: <https://ipk-gatersleben-de.zoom.us/skype/64478219266>

Abstract:

Evolutionary theory can be applied to improve agricultural yields and/or sustainability. The basic idea is that it is very unlikely that plant breeding or genetic engineering can improve attributes already favored by millions of years of natural selection, but there may be unutilized potential in selecting for attributes that increase total crop yield but reduce plants' individual fitness. In other words, plant breeding should be based on group, not individual, selection. In this seminar, I present the theoretical evolutionary and agronomic background for this approach, show recent results testing the core hypothesis, and discuss the potential mechanisms and implications for plant breeding.

Short CV:

Education

University of Oregon, Department of Biology, Ph.D., 1978 University of Michigan, Department of Botany, M.S., 1974 Antioch College, B.A., 1970

Positions Held

University of Copenhagen, Department of Plant and Environmental Sciences, Professor, 1998-, Associate Professor, 1996-98

Beijing Normal University, Adjunct Professor, 2014-

Lanzhou University, Adjunct Professor, 2012-

National Center for Ecological Analysis and Synthesis, Sabbatical Fellow, 2007-08

Swarthmore College, Department of Biology, Professor, 1992-96, Chairman 1990-92

Associate Professor, 1984-92, Assistant Professor, 1978-84

Harvard University, Department of Organismal and Evolutionary Biology, Bullard Fellow, 1994-95 Research Center Jülich, Working Group in Theoretical Ecology, Visiting Scientist, 1992-93 University of Basel, Botanical Institute, Visiting Scientist, 1990

Imperial College at Silwood Park, Department of Biology, Visiting Researcher, 1989-90 Smithsonian Environmental Research Center, Postdoctoral Fellow, 1985

University College of North Wales, School of Plant Biology, Visiting Researcher, 1981-82

Harvard University, Gray Herbarium, Visiting Scientist, 1981

Selected Recent Publications

Cavaliere, A., Groß, D., Dutay, A. and Weiner, J. 2022. Do plant communities show Constant Final Yield? Ecology 103, e3802. doi: 10.1002/ecy.3802

Zhu, Y.-H., Weiner J., Jin, Y., Yu, M.-X. and Li, F.-M. 2022. Biomass allocation in response to root interactions in wheat cultivars support predictions of evolutionary agroecology theory. Frontiers in Plant Science 13. doi: 10.3389/fpls.2022.858636

Weiner, J., Du, Y.-L., Zhao, Y.-M. and Li, F.-M. 2021. Allometry and yield stability of cereals. Frontiers in Plant Science 12. doi: 10.3389/fpls.2021.681490.

Prof. Dr. Nils Stein (Organizer and Host)