

laden gemeinsam zum

GASTVORTRAG

Prof. Arthur J. Olson

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“Envisioning the Visible Molecular Cell”

Abstract:

Biology has become accessible to an understanding of processes that span from atom to organism. As such we now have the opportunity to model a spatio-temporal picture of living systems at the molecular level. In our recent work we attempt to create, interact with, and communicate physical representations of complex molecular environments. I will discuss the challenges and demonstrate three levels of interaction with complex molecular environments: 1) human perceptual and cognitive interaction with complex structural information; 2) interaction and integration of multiple data sources to construct cellular environments at the molecular level; and 3) interaction of software tools that can bridge the disparate disciplines needed to explore, analyze and communicate a holistic molecular view of living systems.

In order to increase our understanding and interaction with complex molecular structural information we have combined two evolving computer technologies, 3D printing and augmented reality¹. We create custom tangible molecular models and track their manipulation with real-time video, superimposing text and graphics onto the models to enhance their information content and to drive interactive computation.
up.

Biography:

Ph.D., University of California, Berkeley, 1975

Postdoctoral Fellow, Harvard University, 1976-1979

Awards & Professional Activities:

- Editorial Board, Computational Biology and Chemistry, 1992-present
- Distinguished Fellowship, Institute of Advanced Studies, Durham University, UK, 2007
- Chair, Gordon Conference on Visualization in Science and Education, 2009
- Advisory Board Member, San Diego State University Center for Research in Mathematics & Science Education (CRMSE), 2009-present
- Director NIH Center for Structural Biology of AIDS, 2012-present

Datum: Freitag 18. November 2016, 10:30 Uhr s.t.

Ort: TU Wien, Favoritenstr. 9, Stiege 1, 5. Stock, Seminarraum 186

