

Thomas Knudsen, Developmental Systems Biologist, in EPA's National Center for Computational Toxicology

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Area of Expertise: Dr. Knudsen is a Developmental Systems Biologist at the US Environmental Protection Agency's National Center for Computational Toxicology, where he is a member of the ToxCast research team and lead of the Virtual Tissue Models research effort. His research on prenatal developmental toxicity and systems biology has led to over 120 scientific papers and book chapters. His current research focus is on the application of ToxCast HTS data for predictive modeling of developmental toxicity and the use of multicellular-agent based models to unravel spatial and temporal dynamics of complex embryological systems in response to chemical exposures.

Select Publications:

Leung MCK, Phuong J, Baker NC, Sipes NS, Klinefelter GR, Martin MT, McLaurin K, Setzer RW, Martin MT, Perreault-Darney S, Judson RS and Knudsen TB (2016) [Systems Toxicology of Male Reproductive Development: Profiling 774 Chemicals for Molecular Targets and Adverse Outcomes](#). Env Hlth Persp 124: <http://dx.dor.org/10.1289/ehp.1510385>. [Exit](#)

Judson R, Magpantay FM, Chickarmane V, Haskell C, Tania N, Taylor J, Xia M, Huang R, Rotroff D, Filer DM, Houck KA, Martin MT, Sipes N, Richard AM, Mansouri K, Setzer RW, Knudsen T, Crofton KM and Thomas RS (2015) [Integrated Model of Chemical Perturbations of a Biological Pathway Using 18 In Vitro High Throughput Screening Assays for the Estrogen Receptor](#). Toxicol Sci 148: 137-154. [Exit](#)

Solecki, R, Rauch M, Gall A, Buschmann J, Clark R, Fuchs A, Kan H, Kellner R, Knudsen TB, Li W, Makris S, Ooshima Y, Paumgarten F, Piersma AH, Schönfelder G, Oelgeschläger M, Schäfer C, Shiota K, Ulbrich B, Xuncheng D and Chahoud I (2015) [Continuing international harmonisation of the terminology used in the assessment of findings in developmental toxicology Report of the International Symposium on Developmental Toxicity \(including the 8th Berlin Workshop on DevTox Terminology\). Berlin, 14-16 May 2014](#). Reproductive Toxicology 57: 140-146. [Exit](#)

Knudsen TB, Keller DA, Sander M, Carney EW, Doerrer NG, Eaton DL, Fitzpatrick SC, Hastings KL, Mendrick DL, Tice RR, Watkins PB and Whelan M (2015) [FutureTox II: In vitro data and in silico models for predictive toxicology](#). Toxicol Sci 143: 256-267. [Exit](#)

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Education:

- B.S., Albright College, Reading, PA; Biology, 1976
- Ph.D., Thomas Jefferson University, Philadelphia, PA; Anatomy, 1981

Professional Experience:

- Scientific and Technological Achievement Award (STAA), Level II for "ExpoCast High Throughput Framework for Rapid Prioritization of Human Exposure to Environmental Chemicals", 2015

- Scientific and Technological Achievement Award (STAA), Level III for “Using High-Throughput Screening Assays to Profile Enzymatic and Receptor Signaling Activity of ToxCast Chemicals”, 2016
- Scientific and Technological Achievement Award (STAA), Level III for “Classifying Toxic and Therapeutic Mechanisms by Phenotypic Screening of ToxCast Chemicals”, 2016
- Scientific and Technological Achievement Award (STAA), Level III for “Development of a Novel Experimental System to Evaluate Predictive-Toxicity Signatures”, 2016

Additional Publications:

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