

CURRICULUM VITAE

Name: Eberhard O. Voit

Place of Birth: Dortmund, Germany

Nationality: German, Resident Alien U.S.

Education (Universität zu Köln):

Diplom (M.S.)	1976	Biology (Zoology, Genetics)
Staatsexamen (M.S.)	1978	Mathematics
Dr. rer. nat. (Ph.D.)	1981	Developmental/Theoretical Biology

Appointments:

1979-1985 Wissenschaftlicher Mitarbeiter, Department of Zoology, Universität zu Köln, Laboratory of Dr. H.J. Anton.

1981-1982, 1985-1986 Department of Microbiology and Immunology, The University of Michigan, Laboratory of Dr. M. A. Savageau.

1993-1994 Cooperative Research Centre for Temperate Hardwood Forestry, Sandy Bay, Tasmania, Australia.

1986-1993 Associate Professor,
1993- Professor, Department of Biometry and Epidemiology, Medical University of South Carolina (MUSC)

1994-1999 Assistant Dean for Environmental Studies, College of Graduate Studies, MUSC

1994-1999 Director, Environmental Studies Program, MUSC

2001- Professor of Biochemistry and Molecular Biology, MUSC (secondary appointment).

2001- Member, Hollings Oncology Center, MUSC

2001- Member, Marine Biomedicine Program, MUSC

2002- Member, Centre for Integrative Genetics, Norway

2002- Member, Steering Committee, and Co-Director for Modeling, *E. coli* Model Cell Consortium, U.S.A.

2003- Member, Modeling Team, International *E. coli* Alliance

Service on Editorial Boards:

1995- Mathematical Biosciences

1996- Environmetrics

2001- Senior Editor, Chapman & Hall / CRC Mathematical Biology and Medicine Series

Service on National and International Review Boards:

Department of Energy (Adv. Modeling and Simulation of Biol. Systems)
Eidgenössische Technische Hochschule, Zürich, Switzerland
Gordon-Kenan Summer School Program
Health Research Board, Ireland
Howard Hughes Medical Institute, National Academy of Sciences
Idaho State Board of Education
National Academy of Sciences, German Democratic Republic.
National Institutes of Health (Large-Scale Collaborative Projects, NIGMS)
National Science Foundation (Biocomplexity: Physics and Mathematics;
Large Information Technology; ITR/IM+AP (CSE); Signal Transduction;
ITR BIO-CISE; ITR Small Grants; Metabolic Engineering)
Universiti Kebangsaan Malaysia
Vietnam Education Foundation, National Research Council,
The National Academies

Journal, Book, and Book Proposal Reviews:

Advances in Mathematics and Computers in Medicine, Biochemistry, Bioinformatics,
Biometrical Journal, Biophysical Journal, Biotechnology and Bioengineering,
Biotechnology Progress, Bulletin of Mathematical Biology, Cambridge University Press,
Cell Biochemistry and Biophysics, Chaos, CRC Press, Inc., Communications in Statistics,
Electronic Journal of Biotechnology, Environmental Health Perspectives, Environmetrics,
Genetics, Journal of Biological Systems, Journal of Mathematical Analysis and
Applications, Journal of Mathematical Biology, Journal of Theoretical Biology, Journal of
Zhejiang University Science, Mathematical Biosciences, Metabolic Engineering,
Philosophical Transactions (Biological Sciences) of the Royal Society, London,
Proceedings of the National Academy of Science, U.S.A., U.S. Department of Health and
Human Services

Major Advisor:

Master's Degree: Volker Weinberger, Christine McKay, Brian Helmlinger, Brad Shaver,
Amy Weaver, Sami Shaban, William Sloger, Johnna Jordan, Ashley Price, Justin Williams,
Paul Campbell, Bradley Higerd, Yan Lin, Marcy Hayden, Justin Hughes, Kellie Sims, Alan
Shirey

Ph.D. Degree: Shuiyang Yu, Raul Curto, Qin He, Len Balthis, Keith Bangerter, Richard
Thompson, Lorelei Schwacke, António Ferreira, Russell Goodman, Kellie Sims, W. Chip
Hood, John Schwacke

Postdoctoral Fellows: Ronald Holser, Lorelei Schwacke, Fernando Alvarez, António
Ferreira, Romesh Stanislaus, Anandhi Radhakrishnan, Raman Lall, Daniel Shegogue,
David McClean

Current Extramural Grant Support:

Source: NIH
Role: Co-Investigator (PI: Yusuf Hannun)
Title: Modeling and Analysis of Roles of Yeast Sphingolipids

Source: NSF
Role: Principal Investigator
Title: Operating Principles for Optimal Functioning

Source: NIH
Role: Mentor (PI: Dan McGee)
Title: Medical Informatics Training in Jamaica and Nigeria

Source: NIH - NCRR
Role: Faculty Mentor (PI: Roger Markwald)
Title: Centers for Biomedical Research Excellence

Source: DOE
Role: Project Director
Title: Hollings Cancer Center Biostatistics and Informatics Core
Development Grant

Source: NIH-NLM
Role: Principal Investigator
Title: Training of Toolmakers for Bio-Medical Informatics

Source: USC/MUSC Collaborative Project
Role: Principal Investigator
Title: Dynamical Optimization of Metabolic Systems

Source: NIH/NHLBI
Role: Co-Investigator (PI: Daniel Knapp)
Title: Cardiac Proteomics Center

6/2003

BIBLIOGRAPHY

Eberhard O. Voit

Articles in Scientific Journals:

- [1] Anton, H.J. and E.O. Voit: Die Darstellung der Größenverteilung kugelliger Kerne durch Schnittflächenhistogramme. *Microsc. Acta*, **84 (1)**, 17-23, 1981.
- [2] Voit, E.O. and H.J. Anton: Der Einfluß der Schnittdicke auf Flächenhistogramme von Kugelschnitten und auf die Verhältnisgleichung von Delesse. *Microsc. Acta*, **84 (2)**, 147-152, 1982.
- [3] Anton, H.J., E.O. Voit, and M. Bourauel: Die Charakterisierung von Geweben durch Formfaktoren. *Microsc. Acta* **85 (3)**, 259-266, 1982.
- [4] Savageau, M.A. and E.O. Voit: Power-law approach to modeling biological systems; I. Theory. *J. Ferment. Technol.* **60 (3)**, 221-228, 1982.
- [5] Voit, E.O. and M.A. Savageau: Power-law approach to modeling biological systems; II. Application to ethanol production. *J. Ferment. Technol.* **60 (3)**, 229-232, 1982.
- [6] Voit, E.O. and M.A. Savageau: Power-law approach to modeling biological systems; III. Methods of analysis. *J. Ferment. Technol.* **60 (3)**, 233-241, 1982.
- [7] Voit, E.O. and G. Dick: Growth of cell populations with arbitrarily distributed cycle durations; I. Basic model. *Mathem. Biosci.* **66**, 229-246, 1983.
- [8] Voit, E.O. and G. Dick: Growth of cell populations with arbitrarily distributed cycle durations; II. Extended model for correlated cycle durations of mother and daughter cells. *Mathem. Biosci.* **66**, 247-262, 1983.
- [9] Voit, E.O.: Encounters in predator-prey systems. *BioSystems* **17 (1)**, 57-64, 1984.
- [10] Voit, E.O. and M.A. Savageau: Analytical solutions to a generalized growth equation. *J. Mathem. Anal. Appl.* **103 (2)**, 380-386, 1984.
- [11] Voit, E.O., H.J. Anton, and J. Blecker: Regenerative growth curves. *Mathem. Biosci.* **73**, 253-269, 1985.
- [12] Voit, E.O. and H.J. Anton: Derivation of the frequency distribution of cycle durations from continuous-labeling curves. *J. Theor. Biol.* **112**, 575-588, 1985.
- [13] Voit, E.O.: Cell cycles and growth laws. The CCC-model. *J. Theor. Biol.* **114**, 589-599, 1985.

- [14] Voit, E.O. and M.A. Savageau: Equivalence between S-systems and Volterra-systems. *Mathem. Biosci.* **78**, 47-55, 1986.
- [15] Voit, E.O.: Control in Perspective. *Trends in Biochem. Sci.* **12 (6)**, 221, 1987.
- [16] Voit, E.O. and M.A. Savageau: Accuracy of alternative representations for integrated biochemical systems. *Biochemistry* **26**, 6869-6880, 1987.
- [17] Savageau, M.A., E.O. Voit, and D.H. Irvine: Biochemical systems theory and metabolic control theory. I. Fundamental similarities and differences. *Mathem. Biosci.* **86**, 127-145, 1987.
- [18] Savageau, M.A., E.O. Voit, and D.H. Irvine: Biochemical systems theory and metabolic control theory. II. The role of summation and connectivity relationships. *Mathem. Biosci.* **86**, 147-169, 1987.
- [19] Savageau, M.A. and E.O. Voit: Recasting nonlinear differential equations as S-systems: A canonical nonlinear form. *Mathem. Biosci.* **87**, 83-115, 1987.
- [20] Voit, E.O.: Recasting nonlinear models as S-systems. *Mathl. Comput. Modelling* **11**, 140-145, 1988.
- [21] Voit, E.O. and H.J. Anton: Estimation of cell cycle parameters from double labeling experiments. *J. Theor. Biol.* **131**, 435-440, 1988.
- [22] Voit, E.O.: Dynamics of self-thinning plant stands. *Ann. Bot.* **62**, 67-78, 1988.
- [23] Peschel, M., W. Mende, M.A. Savageau, and E.O. Voit: Allgemeine Systemkonzepte für homogene dynamische Netzwerke. *Messen-Steuern-Regeln* **32**, 170-172, 1989.
- [24] Rust, P.F. and E.O. Voit: Statistical densities, cumulatives, quantiles, and power obtained by S-system differential equations. *J. Americ. Stat. Assoc. (JASA)* **85 (410)**, 572-578, 1990.
- [25] Voit, E.O.: S-system analysis of endemic infections. *Comput. Math. Appl.* **20 (4-6)**, 161-173, 1990.
- [26] Voit, E.O. and P.F. Rust: Evaluation of the noncentral t distribution with S-systems. *Biometrical J.* **32(6)**, 681-695, 1990.
- [27] Voit, E.O. and P.N. Yi: Comparison of alternative isoeffect curves in radiotherapy. *Bull. Math. Biol.* **52 (5)**, 657-675, 1990.

- [28] Voit, E.O.: Symmetries of S-systems. *Mathem. Biosc.* **109**, 19-37, 1992.
- [29] Voit, E.O., and P.F. Rust: Invited Tutorial: S-system analysis of continuous univariate probability distributions. *J. Stat. Comp. Simul.* **42**, 187-249, 1992.
- [30] Voit, E.O.: Optimization in integrated biochemical systems. *Biotechn. Bioengin.* **40**, 572-582, 1992.
- [31] Voit, E.O.: The S-distribution. A tool for approximation and classification of univariate, unimodal probability distributions. *Biometrical J.* **34 (7)**, 855-878, 1992.
- [32] Voit, E.O.: S-system modeling of complex systems with chaotic input. *Environmetrics* **4(2)**, 153-186, 1993.
- [33] Voit, E.O., and S. Yu: The S-distribution. Approximation of discrete distributions. *Biometrical J.* **36**, 205-219, 1994.
- [34] Zhang, Z., Voit, E.O. and H. Zhang: A fast algorithm for computing Lie series solutions of autonomous differential equations. *Int. J. Computer Math.* **53**, 237-251, 1994.
- [35] Yu, S., and E.O. Voit: A simple, flexible failure model. *Biometrical J.* **37**, 595-609, 1995.
- [36] Voit, E.O., W. L. Balthis, and R. A. Holser: Hierarchical Monte Carlo Modeling with S-distributions: Concepts and illustrative analysis of mercury contamination in king mackerel. *Environm. Intl.*, **21**, 627-635, 1995; invited.
- [37] Torres, N. V., E.O. Voit, and C. H. Alcón: Optimization of nonlinear biotechnological processes with linear programming. Application to citric acid production in *Aspergillus niger*. *Biotechn. Bioengin.* **49**, 247-258, 1996.
- [38] Voit, E.O., and P.J. Sands: Modeling forest growth. I. Canonical approach. *Ecol. Modeling* **86**, 51-71, 1996.
- [39] Voit, E.O., and P.J. Sands: Modeling forest growth. II. Biomass partitioning in Scots pine. *Ecol. Modeling* **86**, 73-89, 1996.
- [40] Balthis, W.L., and E.O. Voit, and G.M. Meaburn: Setting prediction limits for mercury concentrations in fish having high bioaccumulation potential, *Environmetrics* **7**, 429-439, 1996.

- [41] Berg, P.H., E.O. Voit, and R. White: A pharmacodynamic model for the action of the antibiotic Imipenem on *Pseudomonas in vitro*. *Bull. Math. Biol.* **58 (5)**, 923-938, 1996.
- [42] Voit, E.O.: Dynamic trends in distributions. *Biometrical J.* **38 (5)**, 587-603, 1996.
- [43] Sands, P.J., and E.O. Voit: Flux-based estimation of parameters in S-systems. *Ecol. Modeling* **93**, 75-88, 1996.
- [44] Voit, E.O., and R.G. Knapp: Derivation of the linear-logistic model and Cox's proportional hazard model from a canonical system description. *Stats. in Med.* **16**, 1705-1729, 1997.
- [45] Torres, N.V., E.O. Voit, C. Glez-Alcón, and F. Rodríguez: An indirect optimization method for biochemical systems. Description of method and application to ethanol, glycerol and carbohydrate production in *Saccharomyces cerevisiae*, *Biotechn. Bioengin.* **55(5)**, 758-772, 1997.
- [46] Curto, R., E.O. Voit, A. Sorribas, and M. Cascante: Validation and steady-state analysis of a power-law model of purine metabolism, *Biochem. J.* **324**, 761-775, 1997.
- [47] Curto, R., E.O. Voit, A. Sorribas, and M. Cascante: Mathematical models of purine metabolism in man, *Math. Biosc.* **151**, 1-49, 1998.
- [48] Curto, R., E.O. Voit, A. Sorribas, and M. Cascante: Analysis of abnormalities in purine metabolism leading to gout and to neurological dysfunctions in man, *Biochem. J.* **329**, 477-487, 1998.
- [49] Voit, E.O., and A.E.N. Ferreira: Buffering in models of integrated biochemical systems, *J. Theor. Biol.*, **191**, 429-438, 1998.
- [50] Voit, E.O., and L.H. Schwacke: Scalability properties of the S-distribution, *Biometrical J.*, **40**, 665-684, 1998.
- [51] Torres, N.V., F. Rodríguez, C. Glez-Alcón, and E.O. Voit: A novel approach to designing an overexpression strategy for metabolic engineering. Application to the carbohydrate metabolism in the citric acid producing mould *Aspergillus niger*, *Food Techn. and Biotechn.*, **36**, 177-184, 1998.
- [52] Voit, E.O.: Canonical modeling: a link between environmental models and statistics, *Austrian J. Stats.* **27**, 109-121, 1998.
- [53] Voit, E.O. and N.V. Torres: Canonical modeling of complex pathways in

biotechnology (Invited review). *Recent Res. Devel. in Biotech. and Bioeng.* **1**, 321-341, 1998.

- [54] Voit, E.O., and A. Sorribas: Computer modeling of dynamically changing distributions of random variables, *Mathem. and Computer Modelling* **31**, 217-225, 2000.
- [55] Voit, E.O.: Canonical modeling: A review of concepts with emphasis on environmental health (invited). *Environmental Health Perspectives*, **108**, **Suppl. 5: Mathematical Modeling in Environmental Health Studies**, 895-909, 2000.
- [56] Thompson, R.E., E.O. Voit, and G.I. Scott: Statistical modeling of sediment and oyster PAH contamination data collected at a South Carolina estuary (complete and left-censored samples), *Environmetrics* **11**: 99-115, 2000.
- [57] Sorribas, A., J. March, and E.O. Voit: Estimating age-related trends in cross-sectional studies using S-distributions, *Stats. in Med.* **10(5)**: 697-713, 2000.
- [58] Voit, E.O.: Utility of Biochemical System Theory for the analysis of metabolic effects from low-dose chemical exposure, *Risk Analysis* **20(3)**, 393-402, 2000.
- [59] Voit, E.O.: A maximum likelihood estimator for the shape parameters of S-distributions, *Biometr. J.*, **42 (4)**, 471-479, 2000.
- [60] Voit, B.F., and E.O. Voit: A 7th-grade science project casts doubt on the standard explanation of the Gaussian plume model for seepage through soil, *Environm. Modelling and Software* **15**: 497-499, 2000.
- [61] Voit, E.O., and L.H. Schwacke: Random number generation from right-skewed, symmetric, and left-skewed distribution, *Risk Analysis* **20(1)**: 59-71, 2000.
- [62] Thompson, R.E., E.O. Voit, and G.I. Scott: A probabilistic model for predicting distributions of PAH ratios between oysters and marine sediments, *Ecol. Modeling*, **135**, 231-242, 2000.
- [63] Voit, E.O., and T. Radivoyevitch: Biochemical systems analysis of genome-wide expression data, *Bioinformatics* **16(11)**, 1023-1037, 2000.
- [64] Voit, E.O. and M. Del Signore: Assessment of effects of experimental imprecision on optimized biochemical systems, *Biotech. Bioengin.* **74(5)**, 443-448, 2001.
- [65] Simpson, K.N., E.O. Voit, R.A. Goodman, and E.C.G. Chumney: Estimating the

social and economic benefits of pharmaceutical innovations: Modeling clinical trial results in HIV-disease. *Research in Human Capital and Development* **14**, 175-196, 2001.

- [66] Shiraishi, F. and E.O. Voit: Solution of a two-point boundary value model of immobilized enzyme reactions, using an S-system based root-finding method. *Appl. Math. and Computation*, **127**, 289-310, 2002.
- [67] Voit, E.O.: Metabolic modeling: A tool of drug discovery in the post-genomic era. *Drug Discovery Today* **7(11)**, 621-628, 2002.
- [68] Voit, E.O.: Models-of-data and models-of processes in the post-genomic era. Special Issue in honor of John A. Jacquez (invited). *Math. Biosc.* **180**, 263-274, 2002.
- [69] Schwacke, L.H., E.O. Voit, L.J. Hansen, R.S. Wells, G. Mitchum, A.A. Hohn, and P. Fair: Probabilistic Risk Assessment of Reproductive Effects of Polychlorinated Biphenyls (PCBs) on Bottlenose Dolphins from the Southeast Atlantic Coast and Gulf of Mexico. *Env. Toxicol. Chem.* **21 (12)**, 2752-2764, 2002.
- [70] Voit, E.O.: Design principles and operating principles: The Yin and Yang of optimal functioning. *Math. Biosc.* **182**, 81-92, 2003.
- [71] Voit, E.O.: Biochemical and genomic regulation of the trehalose cycle in *Saccharomyces cerevisiae*. *J. Theor. Biol.*, **223**, 55-78, 2003.

Books:

- [1] Voit, E.O., D.H. Irvine, and M.A. Savageau: *The User's Guide to ESSYNS*, 148 pp., Medical University of South Carolina Press, 1989&1990.
- [2] Voit, E.O. (ed): *Canonical Nonlinear Modeling. S-System Approach to Understanding Complexity*, xi+365 pp., Van Nostrand Reinhold, NY, 1991.
- [3] Voit, E.O. and Z. Zhang (eds.): *Festschrift for Millage Clinton Miller III, Ph.D.*, viii + 196 pp., Medical University of South Carolina Press, 1993.
- [4] Voit, E.O. (ed): *Selected Topics in Risk Analysis*, viii + 190 pp., Medical University

of South Carolina Press, 1993.

- [5] Voit, E.O.: *Computational Analysis of Biochemical Systems. A Practical Guide for Biochemists and Molecular Biologists*, xii + 530 pp., Cambridge University Press, Cambridge, U.K., 2000.
- [6] Torres, N.V., and E.O. Voit: *Pathway Analysis and Optimization in Metabolic Engineering*. Cambridge University Press, Cambridge, U.K., 2002.

Chapters in Books:

- [1] Voit, E.O.: Zellzyklus und Wachstum, *in*: D. Möller (Ed.), *Systemanalyse Biologischer Prozesse. Medizinische Informatik und Statistik*, Vol. 52, Springer Verlag, Heidelberg, pp. 97-102, 1984.
- [2] Voit, E.O. and G. Dick: On the growth of cell populations with arbitrarily distributed cycle durations, *in*: V. Capasso, E. Grosso, and S.L. Paveri-Fontana (Eds.), *Mathematics in Biology and Medicine. Lecture Notes in Biomathematics*, Vol. 57, Springer Verlag, Heidelberg, pp. 366-372, 1985.
- [3] Voit, E.O. and M.A. Savageau: S-system analysis of biological systems, *in*: V. Capasso, E. Grosso, and S.L. Paveri-Fontana (Eds.), *Mathematics in Biology and Medicine. Lecture Notes in Biomathematics*, Vol. 57, Springer Verlag, Heidelberg, pp. 517-524, 1985.
- [4] Voit, E.O.: Accuracy of alternative nonlinear power-law models for biochemical systems: Advantages of S-systems, *in*: J. Eisenfeld and M. Witten (Eds.): *IMACS Transactions on Scientific Computing '85*, Vol. 5: *Modelling of Biomedical Systems*. North Holland, Elsevier, pp. 187-192, 1986.
- [5] Rust, P.F. and E.O. Voit: Non-central chi-square distributions computed by S-system differential equations. *Proceedings of the Annual Meeting of the Americ. Stat. Association, Statistical Computing Section*. San Francisco, pp. 118-121, 1987.
- [6] Rust, P.F. and E.O. Voit: S-system computation of central and noncentral F densities and cumulatives. *Proceedings of the Annual Meeting of the Americ. Stat. Association, Statistical Computing Section*, pp. 274-279, 1988.
- [7] Rust, P.F. and E.O. Voit: S-system analysis of the noncentral t distribution with fractional degrees of freedom. *Proceedings of the Annual Meeting of the Americ. Stat. Association, Statistical Computing Section*, pp. 84-87, 1989.

- [8] Voit, E.O.: Theory and applications of S-systems, *in*: W. Ebeling and M. Peschel (Eds.), *Dynamical Networks*. Akademie-Verlag, Berlin, DDR, pp. 37-51, 1989.
- [9] Voit, E.O.: New nonlinear methodologies for modeling molecular and cellular systems, *in*: *Proceedings of the 1st IFAC Symposium on Modelling and Control in Biomedical Systems*. Pergamon Press, 1989.
- [10] Voit, E.O.: Comparison of accuracy of alternative models for biochemical pathways. *in*: A. Cornish-Bowden, (Ed.), *Proceedings of the Advanced NATO Research Workshop on Control in Metabolic Systems*. Plenum Press, pp. 89-100, 1990.
- [11] Voit, E.O.: Generic modeling of population dynamics with S-systems. *Proceedings of the 2nd International Conference on Mathematical Population Dynamics*, Marcel Dekker, pp. 261-280, 1990.
- [12] Voit, E.O.: Canonical nonlinear simulation of complex systems. *Proceedings of the 1990 European Simulation Multiconference*, Nürnberg, W. Germany, pp. 34-39, 1990.
- [13] Morrison, M.S. and E.O. Voit: Effects of the variability of cell cycle durations on labeling experiments. *Proceedings of the 2nd International Conference on Mathematical Population Dynamics*, Marcel Dekker, pp. 593-608, 1990.
- [14] Voit, E.O.: Recasting of nonlinearities as S-systems, *in*: Voit, E.O. (ed): *Canonical Nonlinear Modeling. S-system Approach to Understanding Complexity*, Van Nostrand Reinhold, NY, pp. 213-237, 1991.
- [15] Voit, E.O.: Algebraic properties of S-systems, *in*: Voit, E.O. (ed): *Canonical Nonlinear Modeling. S-system Approach to Understanding Complexity*, Van Nostrand Reinhold, NY, pp. 278-303, 1991.
- [16] Irvine, D.H., M.A. Savageau, and E.O. Voit: Numerical Analysis of S-systems with ESSYNS, *in*: Voit, E.O. (ed): *Canonical Nonlinear Modeling. S-system Approach to Understanding Complexity*, Van Nostrand Reinhold, NY, pp. 133-141, 1991.
- [17] Voit, E.O., M.A. Savageau, and D.H. Irvine: An introduction to S-systems, *in*: Voit, E.O. (ed): *Canonical Nonlinear Modeling. S-system Approach to Understanding Complexity*, Van Nostrand Reinhold, NY, pp. 47-66, 1991.
- [18] Voit, E.O.: Selecting a model for integrated biomedical systems, *in*: Eisenfeld, J., D.S. Levine, and M. Witten (eds): *Biomedical Modeling and Simulation*, Elsevier Science Publishers, Amsterdam, pp. 465-472, 1992.

- [19] Voit, E.O. and S. Yu: A new tool for distribution approximation and classification. *Proceedings of the Annual Meeting of the Americ. Stat. Association, Statistical Computing Section*, Boston, MA, 1992 .
- [20] Voit, E.O. : Introduction, *in*: Voit, E.O. (ed). *Selected Topics in Risk Analysis*, viii + 190 pp., Medical University of South Carolina Press, 1993.
- [21] Voit, E.O.: S-system developments in DBESS (1986-1993), *in*: Voit, E.O. and Z. Zhang (eds.): *Festschrift for Millage Clinton Miller III, Ph.D.*, viii + 196 pp., Medical University of South Carolina Press, 1993.
- [22] Berg, P.H. and E.O. Voit: Analysis of the action of the antibiotic Imipenem and of regrowth in *E. coli* populations, *in*: Voit, E.O. and Z. Zhang (eds.): *Festschrift for Millage Clinton Miller III, Ph.D.*, viii + 196 pp., Medical University of South Carolina Press, 1993.
- [23] Yu, S. and E.O. Voit: A new, flexible tool for the analysis of survival data, *in*: Voit, E.O. and Z. Zhang (eds.): *Festschrift for Millage Clinton Miller III, Ph.D.*, viii + 196 pp., Medical University of South Carolina Press, 1993.
- [24] Voit, E.O., W. L. Balthis, and R. A. Holser: Conditional Monte Carlo modeling with S-systems, *in*: McAleer, M., and A. Jakeman (eds.): *Proceedings of the International Congress on Modelling and Simulation*, Perth, W. Australia, pp.1223-1234, 1993.
- [25] Zhang, Z., E.O. Voit, R.G. Knapp, and H. Zhang: A fast algorithm for computing Lie series solutions of systems of autonomous differential equations with applications to physiologically based pharmacokinetic modeling and simulation. *Spectrum '94: Nuclear and Hazardous Waste Management International Topical Meeting*, Atlanta, GA, 1994.
- [26] Torres, N.V. and E.O. Voit, 1995: Optimization of biotechnological processes by linear programming. Application to citric acid production in *Aspergillus niger*, *in*: Gross, F. and L. Penasse (eds), *Proceed. 7th Europ. Conf. Biotechnol.*, Nice, France.
- [27] Zhang, Z., R.G. Knapp, and E.O. Voit, 1995: Computerized laboratory course material for graduate studies in environmental health risk assessment. *1995 ASEE Annual Conference Proceedings*, Session 3613.
- [28] Voit, E.O. and N. V. Torres: Simulation and Steady-State Optimization of Integrated Biochemical Systems: Theory and Applications in Biotechnology, *in*: F.

Breitenecker and I. Husinsky (Eds.) *Proceedings of the EUROSIM simulation Congress EUROSIM 1995*, Vienna, Austria, Elsevier Science B.V., Amsterdam, The Netherlands.

- [29] Voit, E.O.: Tutorial on the structure of S-systems. Tutorials of the Iizuka '96 *4th International Conference on Soft Computing*, Iizuka, Fukuoka, Japan, September 30-October 1, 1996.
- [30] Voit, E.O.: How many variables? Some comments on the dimensionality of nonlinear systems. Invited contribution to: V. Lakshmikantham (Ed.) *Proceedings of the World Congress of Nonlinear Analysts, Tampa, FL, 1992*; Walter de Gruyter & Co., Berlin, New York, 1996.
- [31] Voit, E.O.: Dynamics of distributed variables. in: T. Yamakawa and G. Matsumoto, *Methodologies for the Conception, Design, and Application of Intelligent Systems*, World Scientific, Singapore, 1996, pp. 159-162.
- [32] Ferreira A.E.N. and E.O. Voit: Buffering components in integrative systems models. in: T. Yamakawa and G. Matsumoto, *Methodologies for the Conception, Design, and Application of Intelligent Systems*, World Scientific, Singapore, 1996, pp. 159-162.
- [33] Yu, S.S., and E.O. Voit: A graphical classification of survival distributions, in: Jewell, N.P., A.C. Kimber, M.-L. T. Lee, and G.A. Whitmore (Eds.) *Lifetime Data: Models in Reliability and Survival Analysis*, Kluwer Academic Publishers, Dordrecht, 1996, pp. 385-392.
- [34] Zhang, Z., E.O. Voit, and L.H. Schwacke: Parameter estimation and sensitivity analysis of S-systems using a genetic algorithm. in: T. Yamakawa and G. Matsumoto, *Methodologies for the Conception, Design, and Application of Intelligent Systems*, World Scientific, Singapore, 1996, pp. 155-158.
- [35] Curto, R., E.O. Voit, and M. Cascante: Symbolic and numerical simulations of adenylosuccinate lyase deficiency in man. in: T. Yamakawa and G. Matsumoto, *Methodologies for the Conception, Design, and Application of Intelligent Systems*, World Scientific, Singapore, 1996, pp. 163-168.
- [36] Torres, N.V., C. González-Alcón, and E.O. Voit: Optimization of metabolic systems with linear programming. Application to biotechnological processes. in: T. Yamakawa and G. Matsumoto, *Methodologies for the Conception, Design, and Application of Intelligent Systems*, World Scientific, Singapore, 1996, pp. 171-174.
- [37] Lamb, J.C., P. Matthiessen, R. Balcolm, C. M. Bens, R. L. Cooper, J. W. Gorsuch, M.

M. Peden-Adams, and E.O. Voit: Hazard Identification/Epidemiology. in: Kendall, R. J., R. Dickerson, J.P. Giesy, and W. Suk (Eds.), *Principles and Processes for Evaluating Endocrine Disruption in Wildlife*, Soc. Env. Tox. and Chem. (SETAC) press, pp. 101-139, 1998.

- [38] Voit, E.O., and M. K. Schubauer-Berigan: The role of canonical modeling as a unifying framework for ecological and human risk assessment. in: Newman, M.C., and C.L. Stojan (Eds.), *Risk Assessment: Logic and Measurement*, Ann Arbor Press, Chelsea, MI, pp. 101-139, 1998.
- [39] Schwacke, L.H., E.O. Voit, and L.J. Hansen: Probabilistic Risk Assessment of Reproductive Effects of PCBs on Populations of Bottlenose Dolphins. Presentations of the Atlantic Coast Contaminants Workshop 2000, "Endocrine Disruptors in the Marine Environment: Impacts on Marine Wildlife and Human Health". June 22-25, 2000. Bar Harbor, Maine.
- [40] Voit, E.O., L.H. Schwacke, and K.N. Simpson: Application of S-distributions to resource use and cost data in clinical economic studies, *Proceedings of the Annual Meeting of the Americ. Stat. Association, Section on Survey Research methods.*, O, Indianapolis, pp. 120-125, 2000.
- [41] Voit, E.O.: Challenges of Complexity and Integration in Quantitative Systems Biotechnology. *Report and Proceedings of NSF Workshop on Quantitative Systems Biotechnology*, World Technology Evaluation Center, Inc., Baltimore, MD, 2000.
- [42] Voit, E.O.: Bioaccumulation. in: El-Shaarawi, A., and W. W. Piegorsch (Eds.), *Encyclopedia of Environmetrics*. John Wiley and Sons, Chichester, 2001.
- [43] Voit, E.O.: Design and operation: Keys to understanding biological systems. in: A. Deustch, J. Howard, M. Falcke, and W. Zimmermann (Eds.), *Function and Regulation of Cellular Systems: Experiments and Models*, Birkhäuser-Verlag (in press).
- [44] Torres, N.V., F. Alvarez-Vasquez, and E.O. Voit: Optimization of biotechnological processes with S-system models. Methodology and applications to fungal metabolism. In: D. K. Arora (Ed.) *Handbook of Fungal Biotechnology* (2th edition). Marcel Dekker, Inc. New York, 2002.
- [45] Voit, E. O., and J. Almeida: Dynamic Profiling and Canonical Modeling: Powerful Partners in Metabolic Pathway Identification, in: R. Goodacre and G.G. Harrigan (Eds): *Metabolite Profiling: Its Role in Biomarker Discovery and Gene Function Analysis*. Kluwer Academic Publishing, Dordrecht, The Netherlands, 2003.
- [46] Long, C.E., E.O. Voit, and E.P. Gatzke: A mixed integer horizon formulation for

prioritized objective inferential control of a bioprocess system. Proceedings of the American Control Conference, June 4-6, 2003, Denver, CO.

- [47] Voit, E.O. and E.P. Gatzke: Modeling of metabolic systems using global optimization methods. Proceedings of Adchem: International Symposium on Advanced Control of Chemical Processes, Hong Kong, January 11-14, 2004.

Book Reviews:

- [1] Voit, E.O.: Review of "Cybernetics, Theory and Applications" by R. Trappl (Ed.), *Mathem. Biosci.* **79**, 115-117, 1986.
- [2] Voit, E.O.: Review of "Metabolic Regulation" by B.R. Martin, *Bull. Math. Biol.* **52**, 326-328, 1990.
- [3] Voit, E.O.: Review of "Computational Molecular Biology: An Algorithmic Approach" by P. A. Pevzner, MIT Press, 2000; *Bull. Math. Biol.* **63**, 1197-1198, 2001.
- [4] Voit, E.O.: Review of "An Introduction to Computational Biochemistry" by C. S. Tsai, Wiley-Liss Inc.; *Quart. Rev. Biol.* **77(4)**, 450-451, 2002.
- [5] Voit, E.O.: Review of "Promises and Limits of Reductionism in the Biomedical Sciences" by M. H.V. Van Regenmortel and D. L. Hull (Editors); *Drug Discovery Today* **8(2)**, 66, 2003.

Abstracts:

- [1] Savageau, M.A. and E.O. Voit: The power-function approach to mathematical modeling of biological systems yields a general growth law. 182nd National Meeting of the American Chemical Society, New York, NY, 1981.
- [2] Voit, E.O. and G. Dick: On the growth of cell populations with arbitrarily distributed cycle durations. Int. Conf. "Mathematics in Biology and Medicine", Bari, 1983.
- [3] Voit, E.O. and M.A. Savageau: S-system analysis of biological systems. Int. Conf. "Mathematics in Biology and Medicine", Bari, 1983.
- [4] Voit, E.O.: Die Anwendung von S-Systemen in der Biologie. Jahrestagung der Deutschen Mathematiker-Vereinigung. Köln, 1983.
- [5] Voit, E.O.: Zellzyklus und Wachstum. ASIM - Arbeitstagung "Systemanalyse Biologischer Prozesse", Bad Münster, W. Germany, 1984.

- [6] Voit, E.O.: Cell cycles and growth laws. Symposium "Biomedical Applications of Computers", Bethesda, MD, 1984.
- [7] Voit, E.O. and H.J. Anton: Mathematical analysis of regenerative growth curves. EMBO-Conference, Southampton, England, 1984.
- [8] Voit, E.O. and H.J. Anton: Regenerative growth in newts. Proc. Club Régénération, Arch. d'Anatom. Microscop., 1985.
- [9] Voit, E.O.: Accuracy of alternative nonlinear power-law models for biochemical systems: Advantages of S-systems. 11th IMACS World Congress, Oslo, Norway, 1985.
- [10] Voit, E.O. and M.A. Savageau: Accuracy of alternative nonlinear power-law models for biochemical systems: Advantages of S-systems. 192nd National Meeting of the American Chemical Society, Division of Microbial and Biochemical Technology, Anaheim, CA, 1986.
- [11] Voit, E.O.: Effects of the variability of cell cycle durations. 13th North East Engineering Conference, Philadelphia, PA, 1987.
- [12] Voit, E.O.: Teaching mathematical modelling with S-systems. 66th Annual Meeting of the Mathematical Association of America, Southeastern Section, Savannah, GA, 1987.
- [13] Voit, E.O.: Equivalence between S-systems and Lotka-Volterra systems. Mathematical Ecology Conference, Charleston, SC, 1987.
- [14] Voit, E.O.: Recasting of Differential Equations as S-systems. VIth International Conference on Mathematical Modelling, St. Louis, MO, 1987.
- [15] Rust, P.F. and E.O. Voit: Non-central chi-square distributions computed by S-system differential equations. Annual Meeting of the American Statistical Association, San Francisco, CA, 1987.
- [16] Voit, E.O.: New nonlinear methodologies for modeling molecular and cellular systems. 1st IFAC Symposium on Modelling and Control in Biomedical Systems. Venice, Italy, 1988.
- [17] Rust, P.F. and E.O. Voit: S-system computation of central and noncentral F densities and cumulatives. Annual Meeting of the American Statistical Association, New Orleans, LA, 1988.
- [18] Voit, E.O.: Comparison of accuracy of alternative models for biochemical pathways. Advanced NATO Research Workshop on Control in Metabolic Systems, Il Ciocco,

Italy, 1989.

- [19] Voit, E.O.: Generic modelling of population dynamics with S-systems. 2nd International Conference on Mathematical Population Dynamics, Rutgers, 1989.
- [20] Voit, E.O. and M.S. Morrison: Effects of the variability in cell cycle durations. 2nd International Conference on Mathematical Population Dynamics, Rutgers, 1989.
- [21] Sorribas, A., E.O. Voit, P.F. Rust, and J. Sentis: S-systems: A useful representation for computing statistical distributions. *Biometric Bulletin* 7, 19, 1990.
- [22] Voit, E.O.: Canonical nonlinear simulation of complex systems. Proceedings of the 1990 European Simulation Multiconference, Nürnberg, W. Germany.
- [23] Yu, S. and E.O. Voit: A new tool for distribution approximation and classification. SRCOS Summer Research Conference, Flat Rock, NC, 1992.
- [24] Voit, E.O.: S-system modeling of complex systems with randomly fluctuating input. Fourth International Conference on Statistical Methods for the Environmental Sciences, Espoo, Finland, 1992.
- [25] Voit, E.O.: How many variables? Some comments on the dimensionality of nonlinear systems. World Congress of Nonlinear Analysts, Tampa, FL, 1992.
- [26] Voit, E.O. and S. Yu: A new tool for distribution approximation and classification. Annual Meeting of the American Statistical Association, Boston, MA, 1992.
- [27] Voit, E.O.: Optimization of integrated biochemical systems. Second S-System Symposium, Tampa, FL, 1992.
- [28] Berg, P.H. and E.O. Voit: A brief update on S-system analysis and parameter estimation with SCoP. Second S-System Symposium, Tampa, FL, 1992.
- [29] Yu, S. and E.O. Voit: A new tool for distribution approximation and classification. Second S-System Symposium, Tampa, FL, 1992.
- [30] Scarberry, R., E.O. Voit and W.R. Harms: ForestSim: A Computer Simulation Package to Model Growth of Self-Thinning Tree Stands. MUSC Student Research Day, 1992.
- [31] Yu, S. and E.O. Voit: A new tool for distribution approximation and classification. MUSC Student Research Day, 1992.
- [32] Voit, E.O., R.A. Holser, and W.L. Balthis: Conditional Monte-Carlo Modeling with S-Systems. International Congress on Modelling and Simulation, Perth, Australia,

1993.

- [33] Balthis, W.L., E.O. Voit, and G.M. Meaburn: A new method for the quantification and characterization of contaminant levels in fish. Annual Meeting of the Society of Risk Analysis, Savannah, GA, 1993.
- [34] Zhang, H., E.O. Voit, and Z. Zhang: A systems analysis approach for PB-PK modeling. Annual Meeting of the Society of Risk Analysis, Savannah, GA, 1993.
- [35] Zhang, Z., H. Zhang, B.C. Smith, and E.O. Voit: Graph theoretical methods for PB-PK modeling. Annual Meeting of the Society of Risk Analysis, Savannah, GA, 1993.
- [36] Zhang, H., Z. Zhang, and E.O. Voit: Sensitivity analysis of PB-PK models. Annual Meeting of the Society of Risk Analysis, Savannah, GA, 1993.
- [37] Yu, S., and E.O. Voit. A graphical classification of classic survival distributions. 1994 International Research Conference on Lifetime Data Models in Reliability and Survival Analysis, Boston, MA, 1994.
- [38] Voit, E.O. and P.J. Sands: S-system analysis of biomass partitioning in Scots pine, *Pinus sylvestris*. International Symposium on Integrative Biochemistry, Barcelona, Spain, 1994.
- [39] Sands, P.J., and E.O. Voit: Parameter estimation for S-systems: Exploration of a strange terrain. International Symposium on Integrative Biochemistry, Barcelona, Spain, 1994.
- [40] Curto, R., A. Sorribas, E.O. Voit, and M. Cascante: Building up and improvement of an S-system model of purine metabolism in man. International Symposium on Integrative Biochemistry, Barcelona, Spain, 1994.
- [41] Voit, E.O. and R.G. Knapp: Environmental Health Risk Assessment at the Medical University of South Carolina and the University of Charleston. International Conference on Environmetrics, Burlington, Canada, 1994.
- [42] Voit, E.O. and W.L. Balthis: Assessment of size-dependent mercury distributions in king mackerel. International Conference on Environmetrics, Burlington, Canada, 1994.
- [43] Zhang, Z., E.O. Voit, and H. Zhang: A fast algorithm for computing Lie series solutions of systems of autonomous differential equations for modeling and simulation. International Conference on Environmetrics, Burlington, Canada, 1994.

- [44] Zhang, Z., E.O. Voit, R.G. Knapp, and H. Zhang: A fast algorithm for computing Lie series solutions of systems of autonomous differential equations with applications to physiologically based pharmacokinetic modeling and simulation. Spectrum '94: Nuclear and Hazardous Waste Management International Topical Meeting, Atlanta, GA, 1994.
- [45] Zhang, Z., H. Zhang, and E.O. Voit: A search algorithm based method for analysis of absolute sensitivities of models of a large number of parameters. Annual Meeting of the Society of Risk Analysis, Baltimore, MD, 1994 .
- [46] Balthis, W.L., E.O. Voit, and G.M. Meaburn: A new method for the quantification and characterization of contaminant levels in fish. MUSC Student Research Day, 4 November, 1994.
- [47] Berg, P.H., E.O. Voit, and R. White: A pharmacodynamic model for the action of the antibiotic Imipenem on the bacterium E. Coli. MUSC Student Research Day, 4 November, 1994.
- [48] Voit, E.O. and N.V. Torres: Optimization in Integrated biochemical systems: Theoretical background and application to citric acid production in the mold *Apergillus niger*. Nineteenth Annual Southeastern-Atlantic Section Meeting of the Soc. Industr. and Appl. Math. (SIAM), Charleston, SC, 1995.
- [49] Zhang, Z., E.O. Voit, and H. Zhang: A fast algorithm for computing Lie series solutions of autonomous differential equations. Nineteenth Annual Southeastern-Atlantic Section Meeting of the Society of Industrial and Applied Mathematics (SIAM), Charleston, SC, 1995.
- [50] Voit, E.O., and P.J. Sands: Modeling forest growth. I. Canonical approach and application to biomass partitioning in Scots pine. Annual Meeting of the Society for Mathematical Biology, Oaxtepec, Morelos, Mexico, 1995.
- [51] Voit, E.O. and N.V. Torres. Simulation and steady-state optimization of integrated biochemical systems: Theory and applications in biotechnology. Eurosim '95 Simulation Congress, Wien, 1995.
- [52] Balthis, W.L., E.O. Voit, and G.M. Meaburn: Evaluating human exposure to mercury using hierarchical Monte Carlo simulations. MUSC Student Research Day, 3 November, 1995.
- [53] Lou, Y., Z. Zhang, R.G. Knapp, and E.O. Voit: Computerized laboratory course material in environmental health risk assessment. MUSC Student Research Day, 3 November, 1995.
- [54] Voit, E.O., W. L. Balthis, and Z. Zhang. Hierarchical Monte Carlo simulation--A tool

for assessing uncertainty. Annual Meeting of the Society of Risk Analysis, Hawaii, 1995.

- [55] Zhang, Z., H. Zhang, and E.O. Voit. An automated software system for physiologically based pharmacokinetic modeling using parallel processing on Intel Paragon supercompute. Annual Meeting of the Society of Risk Analysis, Hawaii, 1995.
- [56] Voit, E.O., W.L. Balthis, and Z. Zhang: Analysis of mercury exposure from eating fish, using hierarchical Monte Carlo simulations. 6-th International Conference on Environmetrics, Kuala Lumpur, Malaysia, 1995.
- [57] Voit, E.O.: Dynamic trends in distributions. Conference on Dynamical Systems in Biology and Medicine. Veszprém, Hungary, July 17-20, 1996.
- [58] Curto, R., Voit, E.O., and M. Cascante: New insights in abnormalities of human purine metabolism derived from a mathematical model. Purine Symposium, Milano, Italy, July 6-9, 1996.
- [59] Zhang, Z., E.O. Voit, L.H. Schwacke, and D.G. Hoel: Sensitivity Analysis of PBPK models using importance sampling with a genetic algorithm search method. Annual Meeting of the Society for Risk Analysis and the International Society of Exposure Analysis, New Orleans, Dec. 8-12, 1996.
- [60] Balthis, W. L., E.O. Voit, and Z. Zhang: Quantification of mercury exposure distributions in different human populations. Annual Meeting of the Society for Risk Analysis and the International Society of Exposure Analysis, New Orleans, Dec. 8-12, 1996.
- [61] Bangerter, J. K., W.L. Balthis, A.R. Fortner, E.O. Voit, and G.M. Meaburn: Modeling mercury exposure from fish having high bioaccumulation potential. Southern States Mercury Task Force Meeting and Lake Remediation Workshop, Hot Springs, AR, April 23-25, 1997.
- [62] Voit, E.O.: Derivation of the linear-logistic model and Cox's proportional hazard model from a canonical system description. Conference on Environmetrics, Innsbruck, Austria, August 4-8, 1997.
- [63] Ferreira, A.E.N., and E.O. Voit: Buffer modules in integrated biochemical systems models. Annual Meeting of the Society for Mathematical Biology, Raleigh, NC, August 2-6, 1997.
- [64] Voit, E.O.: S-systems in statistics, epidemiology, and risk assessment: Not just a mathematical curiosity. International PowBioSys Symposium on Power-Law Modeling of Biological Systems, Oeiras, Portugal, October 4-7, 1998.

- [65] Ferreira, A.E.N., and E.O. Voit: Modeling the Maillard reaction in vivo. International PowBioSys Symposium on Power-Law Modeling of Biological Systems, Oeiras, Portugal, October 4-7, 1998.
- [66] Sorribas, A., J. March, and E.O. Voit: Modeling trends in cross-sectional population studies. International PowBioSys Symposium on Power-Law Modeling of Biological Systems, Oeiras, Portugal, October 4-7, 1998.
- [67] Voit, E.O., and L. H. Schwacke: New results on the S-distribution. International PowBioSys Symposium on Power-Law Modeling of Biological Systems, Oeiras, Portugal, October 4-7, 1998.
- [68] Voit, E.O.: Biochemically-based toxicodynamic modeling and its implications for responses to low-dose chemical exposure. Theory and Mathematics in Biology and Medicine, Amsterdam, The Netherlands, June 29 – July 3, 1999.
- [69] Ferreira, A.E.N., A. Ponces, and E.O. Voit: A model of the generation of Maillard modifications in proteins: an assessment of its importance in the determination of life span. Theory and Mathematics in Biology and Medicine, Amsterdam, The Netherlands, June 29 – July 3, 1999.
- [70] Schwacke, L.H., L. Hansen, E.O. Voit, R. Wells, G. Mitchum, and P. Fair: A framework for the assessment of population-level risks associated with exposure to the polychlorinated biphenyls (PCBs) for *Tursiops truncatus*. 13th Biennial Conference on the Biology of Marine Mammals. Wailea, Maui, Hawaii, November 28 – December 3, 1999.
- [71] Voit, E.O., T. Radivoyevitch, and Z. Zhang: Biochemical systems analysis of genome-wide expression data. 4th Annual Hilton Head Workshop: Computational Modeling of Biological Systems: From Gene to Organ, Hilton Head, SC, February 23-27, 2000.
- [72] Simpson K.N., E.O. Voit, and R.A. Goodman: Data requirements of second-generation economic models in HIV/AIDS. ISPOR 5th Annual Meeting. Washington, DC. May 22, 2000.
- [73] Schwacke, L.H., E.O. Voit, and L.J. Hansen: Probabilistic risk assessment of reproductive effects of PCBs on populations of bottlenose dolphins. Atlantic Coast Contaminants Workshop "Endocrine Disruptors in the Marine environments: Impacts on Marine Wildlife and Human Health," June 22-25, 2000, Bar Harbor, ME.
- [74] Voit, E.O., R.A. Goodman, and K.N. Simpson: Analysis of Health and Economic Outcomes in HIV/AIDS models, using S-Distributions, International Biometrics

Society Meeting, San Francisco, July 2-7, 2000.

- [75] Voit, E.O., L.H. Schwacke, and K.N. Simpson: Application of S-distributions to resource use and cost data in clinical economic studies, 2000, Joint Statistical Meeting, Indianapolis, August 13-17, 2000.
- [76] Simpson K.N., E.O.Voit, R. Goodman, T. Ashraf, J. Hutton, E. Sun: A second generation model for exploring impacts of sequential regimens of HAART, adherence differences, resistance patterns, ART change criteria, and drug side effects on survival, quality of life, and lifetime cost of illness for PVAs in the US. XIII International Conference on AIDS, Durban South Africa. July 8-9, 2000.
- [77] Voit, E.O., and M.A. Savageau: Introduction to the Analysis of Biochemical and Genetic Systems. Half-day Tutorial, Eighth International Conference on Intelligent Systems for Molecular Biology, San Diego, CA, August 18-23, 2000.
- [78] Voit, E.O.: Estimation of Metabolic Parameters from Genomic Data. Eighth International Conference on Intelligent Systems for Molecular Biology, San Diego, CA, August 18-23, 2000 (Poster).
- [79] Voit, E.O.: Software Presentation: PLAS. Eighth International Conference on Intelligent Systems for Molecular Biology, San Diego, CA, August 18-23, 2000.
- [80] Voit, E.O.: Challenges of Complexity and Integration in Quantitative Systems Biotechnology. Workshop on Quantitative Systems Biotechnology, National Science Foundation, September 13-14, 2000.
- [81] Voit, E.O.: Functional Intergration of Genomic and Metabolic Data. VIth International Symposium on Biochemical Systems Theory. Puerto de la Cruz (Tenerife). September 25-29, 2000.
- [82] Voit, E.O., L.H. Schwacke, and K.N. Simpson: Extension of the S-distribution to Multimodality. VIth International Symposium on Biochemical Systems Theory. Puerto de la Cruz (Tenerife). September 25-29, 2000.
- [83] Voit, E.O., and M. Del Signore: Assessment of Imprecision in the Optimization of Biochemical Systems. VIth International Symposium on Biochemical Systems Theory. Puerto de la Cruz (Tenerife). September 25-29, 2000.
- [84] Goodman, R.A., E.O. Voit, and K.N. Simpson: A Markov model Monte Carlo simulation for forecasting long-term health outcomes in HIV disease. Student Research Day, Medical University of South Carolina, 3 November 2000.
- [85] Voit, E.O.: Introduction and overview. Conference on Biochemical Systems Theory and Modeling in the Post Genomic Era: Principles of Design to Designed

Benefits. Ann Arbor, MI, December 1-2, 2000.

- [86] Voit, E.O.: Optimal design for heat stress response in yeast. Conference on Biochemical Systems Theory and Modeling in the Post Genomic Era: Principles of Design to Designed Benefits. Ann Arbor, MI, December 1-2, 2000.
- [87] Voit, E.O.: Understanding Complexity (Short presentation). *Biological Information Processing and Systems Workshop*, Clemson University, Clemson, SC, January 19-20, 2001.
- [88] Voit, E.O.: Functional integration of genomic and metabolic data. International Conference "Function and Regulation of Cellular Systems: Experiments and Models," Dresden, Germany, June 24-30, 2001.
- [89] K.A. Enzweiler, R. L. White, L.V. Friedrich, K.R. Lorenz, E.O. Voit, K. Sims, W. C. Hood, and J.A. Bosso: Monte Carlo analysis of Levofloxacin and Gatifloxacin pharmacodynamics in a population with varying renal function. 36th Annual MUSC Student Research Day, Charleston November 2, 2001.
- [90] Alvarez-Vasquez, F., Y. Okamoto, C. Mao, Y.A. Hannun, and E.O. Voit: Canonical nonlinear modeling: A systems approach to assessing structure and function of sphingolipid metabolism. (Poster) Charleston Ceramide Conference, Wild Dunes, SC, November 14-17, 2001.
- [91] Voit, E.O.: Functional integration of genomic and metabolic data. Cambridge Healthtech Institute's Premier Conference "Metabolic Profiling: Pathways in Discovery," Chapel Hill, NC, December 3-4, 2001.
- [92] J. Combadão, J.Almeida, and E.O. Voit: Structure identification of biological systems with genetic algorithms. DIMACS Workshop on Complexity in Biosystems, Rutgers University, April 8-10, 2002 (dimacs.rutgers.edu/Workshops/Complexity/Contributors/DIMACSAbstract.pdf).
- [93] Voit, E.O.: Bottom-Up and Top-Down Analysis of Operating Principles in Metabolic Networks. VIIth International Symposium for Biochemical Systems Theory: From Phenotype to Genotype and Back. Averoy, More og Romsdal, Norway, June 17-20, 2002 (invited).
- [94] Alvarez-Vasquez, F., Y. Okamoto, C. Mao, Y.A. Hannun, and E.O. Voit: An S-System Model of Structure and Function of Sphingolipid Metabolism in Yeast. VIIth International Symposium for Biochemical Systems Theory: From Phenotype to Genotype and Back. Averoy, More og Romsdal, Norway, June 17-20, 2002.
- [95] Ferreira, A., A. Ponces, and E.O. Voit: A model of the interplay of Maillard-type protein modifications and protein turnover rate during aging and diabetes. VIIth

International Symposium for Biochemical Systems Theory: From Phenotype to Genotype and Back. Averoy, More og Romsdal, Norway, June 17-20, 2002.

- [96] Voit, E.O.: Tutorial: A Primer on Metabolic Pathway Analysis. International Conference on Intelligent Systems in Molecular Biology, Edmonton, Canada, August 2002.
- [97] Sims, K.J., Y. Okamoto, F. Alvarez, Y.A. Hannun, and E.O. Voit: Comparison of [³H] palmitate labeled metabolites in the *de novo* sphingolipid synthetic pathway in wild type versus *Isc1* mutant of *Saccharomyces cerevisiae* suggest inhibition of serine palmitoyltransferase by a downstream metabolite. Hollings Cancer Center Retreat, Wild Dunes, SC, 23 August 2002.
- [98] Voit, E.O.: Introductory Lecture on Biochemical Systems Analysis. Advanced FEBS Workshop in Biochemistry, Carcavelos, Portugal, September 2002 (invited and accepted).
- [99] Voit, E.O.: Lecture on Metabolic and Genome Analysis. Advanced FEBS Workshop in Biochemistry, Carcavelos, Portugal September 2002 (invited and accepted).
- [100] Combadão, J., R. Neves, A. Ramos, H. Santos, J. Almeida, and E.O. Voit: Metabolic model of the glycolytic pathway in *Lactococcus lactis*: a biochemical systems approach. Advanced FEBS Workshop in Biochemistry, Carcavelos, Portugal September 2002.
- [101] Voit, E.O.: At the interface of control theory and biochemical systems theory. International Charleston Symposium on the Interface of Control Theory and Biochemical Systems Theory. Charleston, SC, October 26, 2002.
- [102] Schwacke, J. and E.O. Voit: Assessment of preferred irreversible step positions in unbranched biosynthetic pathways. International Charleston Symposium on the Interface of Control Theory and Biochemical Systems Theory. Charleston, SC, October 26, 2002.
- [103] Almeida, J. and E.O. Voit: Identification of S-system parameters from time-series data: practical issues associated with automating the identification of S-systems from experimental concentration time series. International Charleston Symposium on the Interface of Control Theory and Biochemical Systems Theory. Charleston, SC, October 26, 2002.
- [104] Ferreira, A.E.N, A. Ponces Freire and E.O. Voit: A model of the generation of Maillard-type protein modifications. International Charleston Symposium on the Interface of Control Theory and Biochemical Systems Theory. Charleston, SC, October 26, 2002.

- [105] Sims, K.J., F. Alvarez, Y. Okamoto, E. O. Voit, and Y.A. Hannun: Comparison of [3H] Palmitate labeled metabolites in the *de novo* sphingolipid synthetic pathway in wild type vs. ISC1 mutant of *Saccharomyces cerevisiae*. 54th Southeast Regional Meeting of the American Chemical Society, November 13-16, 2002, Charleston, SC.
- [106] Long, C.E., E.O. Voit, and E.P. Gatzke: A mixed integer horizon formulation for prioritized objective inferential control of a bioprocess system. Proceedings of the American Control Conference, June 4-6, 2003, Denver, CO.
- [107] Voit, E.O.: Biomedical Informatics, Computational Biology, Systems Biology — If we don't know what it is, how can we teach it? Southern Regional Conference on Statistics, Jekyll Island, GA, June 8-11, 2003.
- [108] K.J. Sims, F. Alvarez-Vasquez, Y. Okamoto, E.O. Voit, and Y.A. Hannun: Comparison of [3H]-palmitate labeled metabolites in the *de novo* sphingolipid synthetic pathway in wild type vs. ISC1 mutant of *Saccharomyces cerevisiae*. Federation of European Biochemical Societies Advanced Course "Lipid Signalling and Membrane Traffic," Santa Maria Imbaro, Italy, June 20-26, 2003.
- [109] Voit, E.O. and J. Almeida: Decoupling Dynamical Systems for Pathway Identification from Metabolic Profiles, using Biochemical Systems Theory. 1st International Conference on Systems Biology of *E.coli* (IECA2003). Keio University, Tsuruoka, Japan, June 23-25, 2003.
- [110] Voit, E.O. and J. Almeida: Data Preprocessing Facilitates Metabolic Pathway Identification from Time Profiles. ISMB 2003 Conference, Brisbane, Australia, June 28 – July 4, 2003.
- [111] Schwacke, J. and E.O. Voit: BSTLab: A Matlab Toolbox for Biochemical Systems Theory. ISMB 2003 Conference, Brisbane, Australia, June 28 – July 4, 2003.
- [112] K.J. Sims, F. Alvarez-Vasquez, Y.A. Hannun, and E.O. Voit: Targeted labeling experiments refine mathematical models of the *de novo* sphingolipid pathway in yeast. Annual Meeting of the National Library of Medicine Trainees. Bethesda, MD, July 9-11, 2003.
- [113] Voit, E.O. and E.P. Gatzke: Modeling of metabolic systems using global optimization methods. Adchem: International Symposium on Advanced Control of Chemical Processes, Hong Kong, January 11-14, 2004.

Other Publications:

- [1] Voit, E.O.: Räumliche Verteilung und Häufigkeit des Zusammentreffens von Spinnmilben and Raubmilben (*Tetranychus urticae* und *Phytoseiulus riegeli*, *Acarina*). Diplomarbeit, 91 pp., Universität zu Köln, 1976.
- [2] Voit, E.O.: Modelltheoretische Untersuchungen zur Anordnung der Knospennarben auf der Oberfläche von Hefezellen. Inaugural-Dissertation, 160 pp., Universität zu Köln, 1981.
- [3] Voit, E.O.: Yucch, 100 years of American Mathematics (Editorial). in: The News and Courier / The Evening Post, Charleston, SC, Saturday, April 30, 1988.
- [4] Voit, E.O., and J.T. Crowder: Research Growth at MUSC: Modeling of financial needs for new hiring. Internal Report, August 2, 1991.
- [5] Voit, E.O.: S-systems: 19 Cartoons depicting the state of the art in 92. Presented at the international Second S-System Symposium, Tampa, Fl, 1992.
- [6] Voit, E.O.: It all began with Prometheus. Medical Alumni Today, MUSC Press, pp. 18-19, Summer 1996.
- [7] Voit, E.O., and B.C. Tilley: Profile: Master's and doctoral programs in biostatistics, epidemiology, and biomedical informatics at the Medical University of South Carolina. *Quality Assurance Journal* **5(3)**, 179-181, 2001.