Curriculum Vita

Kevin Robert Gehringer

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Professional Experience

September 2004 - Present, Principal and managing member, Biometrics Northwest LLC, Redmond, Washington

June 2002 - August 2004, Consulting Biometrician, Sole Proprietor, Seattle, Washington

September 2001 - May 2002, Postdoctoral Researcher, The Rural Technology Initiative (RTI), University of Washington, Seattle, Washington

September 1998 - August 2001, Ph.D. Candidate and Postdoctoral Researcher, The Stand Management Cooperative, University of Washington, Seattle, Washington

February 1992 - August 1996, Member of the Technical Staff, Navigation and Ancillary Information Facility (NAIF), Jet Propulsion Laboratory, Pasadena, California

Summer 1990, Intern/Computer Programmer, IBM Corporation, Systems Integration Division, Houston, Texas

Summer 1989, Intern/Computer Programmer, Amoco Production Company, Research Center, Tulsa, Oklahoma

Summer 1988, Intern/Numerical Analyst, MPSI Americas, Inc., Tulsa, Oklahoma

Education

September 1996-June 2001 University of Washington, College of Forest Resources, Seattle, WA
Ph.D. Forest Biometrics, Quantitative Resources Management, Obtained June 2001
Dissertation: “Dynamic growth and yield modeling with climate: A model for plantation Douglas-fir in the Pacific Northwest”

September 1989-December 1991, Rice University, Houston, Texas
Statistics Ph.D. Program, 1989-1990, Mathematical Sciences Ph.D. Program, 1990-1991, no degree obtained

September 1987-May 1989, The University of Tulsa, Tulsa, Oklahoma
M.S. in Applied Mathematics, Numerical Analysis, Obtained May 1990
Master's Thesis: “Nonparametric Probability Density Estimation Using Normalized B-Splines”

September 1983-May 1987, The University of Tulsa, Tulsa, Oklahoma
B.S. in Mathematics, Computer Science Minor, Obtained May 1987, Magna Cum Laude
Senior Honors Thesis: “The Calculation of Pharmacokinetic Parameters through the use of Symbolic Computation and Rotational Discrimination Non-Linear Regression Analysis”

Areas of Specialization

Nearest neighbor and k-nearest neighbor methods, univariate and multivariate hypothesis testing, outlier detection, mixture modeling, parametric and nonparametric statistical analysis, regression analysis, ANOVA, exploratory data analysis and visualization, parametric and nonparametric probability density estimation, supervised and unsupervised classification and clustering methods, Monte Carlo simulation, bootstrap simulation and parameter estimation, statistical and mathematical modeling, optimization, linear and nonlinear least squares, numerical differential equations, numerical linear algebra, ray-tracing.

Technical Accomplishments and Consulting

Forest Biometrics Research Institute (FBRI): Examined the source code, model structure, and data collection and analysis procedures for the Forest Projection and Planning System (FPS) software to assess its robustness and the scientific and theoretical basis for its underlying models. Results and recommendations were reported to the FBRI board of directors.

Family Forest Foundation: Simulation modeling and multivariate assessment of riparian forest management scenarios developed to support a county wide habitat conservation plan for small forest landowners in Lewis County, WA.

The Rural Technology Initiative: Simulation modeling and multivariate assessment of riparian forest plans under the Forests and Fish Law of Washington State.

The Stand Management Cooperative: Designed, implemented, tested, and documented a set of programs and a portable Fortran 90/95 subroutine library to create and manage a customized database for imputing tree lists representing simulated forest stands using a small number of measured stand attributes.

NASA, Jet Propulsion Laboratory: Designed, implemented, documented, tested, supported, and maintained a large, portable Fortran 77 subroutine library and set of executable programs for the Navigation and Ancillary Information Facility (NAIF) to support the space science community; prototyped graphical user interfaces, ported the Fortran 77 source code base to C to allow its use by groups developing software with the C programming language.

IBM Systems Integration Division: Developed prototype client and server applications for a geologic data transfer product for the oil and gas industry using the C programming language and the C socket interface to the TCP/IP communications protocol

AMOCO Research Center: Developed a graphical user interface for annotating geologic well log data, extended existing software to include file conversion and the automatic generation of scripts for a geologic well log analysis system.

MPSI Americas: Examined the numerical optimization methods of the MPSI retail market analysis system to identify and resolve issues with their numerical optimization algorithms, presented results and recommendations to the director of research and development.

Computing and Software

MATLAB, R, C, Fortran 77/90/95, Assembly Language, C-shell, sed, awk; Client-server programming using TCP/IP and the C socket interface; Microsoft Office: Word, Access, Powerpoint, Excel; TeX and LaTeX.

PCs under Windows 9x/NT/2000/XP/7, PC-DOS, MS-DOS; Hewlett-Packard workstations under HP-UX; Sun workstations and Sparcstations under Solaris and SunOS; Silicon Graphics workstations under IRIX; NeXT workstations under NeXTStep; IBM mainframes under CMS and TSO/MVS; Digital Equipment Corporation Micro VAX II, VAX 11/750, and VAX 11/780 under VMS, Alpha under Open VMS.

Awards and Honors

University of Washington, Seattle, Washington, College of Forest Resources
Research Assistantship in the Quantitative Resources Management Ph.D. Program, Member: Alpha Chapter, Xi Sigma Pi Forestry Honor Society.

National Aeronautics and Space Administration, Jet Propulsion Laboratory, Pasadena CA
Certificate of Recognition for the NAIF Toolkit, September 19, 1997
NASA Tech Briefs, "The SPICE System," October 1997, Vol. 21, No. 10

Rice University; Houston, Texas
Research Assistantship, Department of Computational and Applied Mathematics Ph.D. program
Teaching assistantship, Department of Statistics Ph.D. Program.

The University of Tulsa; Tulsa, Oklahoma
Graduate Teaching Assistantship, Department of Mathematics and Computer Sciences
Honors Scholarship, University Scholar Scholarship
Graduated magna cum laude, G.P.A. 3.808/4.000, May 1987
Member: University of Tulsa Honors Program; Phi Gamma Kappa honor society

Peer Reviewed Publications

Gehringer, Kevin R., Turnblom, Eric C. (2014) Constructing a virtual forest: Using hierarchical nearest neighbor imputation to generate simulated tree lists. *Can. J. For. Res.*, Vol. 44, pp. 711-719.

Kuhn, Gary, Hanley, Donald P., Gehringer, Kevin R. (2009) Davenport Living Snowfence Demonstration: Five-Year Update. *Northwest Science*, Vol. 83, No. 2, pp. 163-168.

Gehringer, Kevin R. (2006) Structure-Based Nonparametric Target Definition and Assessment Procedures with an Application to Riparian Forest Management. *Forest Ecology and Management*, Vol. 223, pp. 125-138.

Gehringer, Kevin R (2005). A Nonparametric Method for Defining and Using Biologically Based Targets in Forest Management. In: Bevers, Michael; Barrett, Tara M., tech. comps. 2005. *System analysis in forest resources: proceedings of the 2003 symposium*. Gen. Tech. Rep. PNW-GTR-656. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 366 p.

Zobrist, K.W., K.R. Gehringer, and B.R. Lippke. (2005) A sustainable solution for riparian management. In R.L. Deal and S.M. White, editors, *Understanding key issues of sustainable wood production in the Pacific Northwest*, General Technical Report PNW-GTR-626. USDA Forest Service, Pacific Northwest Research Station, Portland, OR.

Zobrist, K.W., K.R. Gehringer, and B.R. Lippke. (2004) Templates for Sustainable Riparian Management on Family Forest Ownerships. Journal of Forestry 102(7):19-25.

Redner, R. A. and K. R. Gehringer (1994) Function Estimation Using Partitions of Unity. *Comm. in Stat.-Theory and Methods*, Vol. 23, No. 7, pp. 2059-2076.

Gehringer, Kevin R and Richard A. Redner (1992) Nonparametric Probability Density Estimation Using Normalized B-Splines.' *Communications in Statistics, Part B: Simulation and Computation*, Vol. 21, No. 3, pp 849-878.

Technical Reports

Gehringer, Kevin R. (2004a) An Individual Tree Simulation Model for Estimating Expected Values of Potentially Available Large Woody Debris (LWD). A technical report prepared for the Rural Technology Initiative, University of Washington, Box 352100, Seattle, Washington, 98195-2100 and the Family Forest Foundation, P.O. Box 1364, Chehalis Washington, 98532.

Gehringer, Kevin R. (2004b) An Individual Tree Simulation Model for Managed Riparian Buffers. A technical report prepared for the Rural Technology Initiative, University of Washington, Box 352100, Seattle, Washington, 98195-2100 and the Family Forest Foundation, P.O. Box 1364, Chehalis Washington, 98532.

Gehringer, Kevin R. (2003) Nonparametric target definition and assessment procedures with an application to riparian forest management. A technical report prepared for the Rural Technology Initiative, University of Washington, Box 352100, Seattle, Washington, 98195-2100.

Gehringer, Kevin R. (2001) *New Shoots: A tree list generation database tutorial*. A technical report prepared for The Stand Management Cooperative, College of Forest Resources, University of Washington, Seattle, Washington, 98195-2100

Gehringer, Kevin R. (2001) *Dynamic growth and yield modeling with climate: A model for plantation Douglas-fir in the Pacific Northwest.* Ph.D. Dissertation, College of Forest Resources, University of Washington, Seattle, Washington.

Gehringer, Kevin R. and Turnblom, Eric C. (2000) *Tree list generation database user's guide and reference manual*. A technical report prepared for The Stand Management Cooperative, College of Forest Resources, University of Washington, Seattle, Washington, 98195-2100.

Gehringer, Kevin R. (1990) *Nonparametric Probability Density Estimation Using Normalized B-Splines.* Master's Thesis, Department of Mathematics and Computer Science, The University of Tulsa.

Presentations and Conferences

Potentially available LWD metrics for assessing riparian forest function. Society of American Foresters National Convention, October 27-31, 2010, Albuquerque, New Mexico.

Using quantitative forest structure targets: the good, bad, and ugly. Society of American Foresters National Convention, October 27-31, 2010, Albuquerque, New Mexico.

Seeing the trees in the forest when estimating riparian shade. Society of American Foresters National Convention, October 27-31, 2010, Albuquerque, New Mexico.

Constructing a virtual forest: An hierarchical nearest neighbors method for generating simulated tree lists. 2006 Nearest Neighbors Workshop, August 28-30, 2006, University of Minnesota, Minneapolis, Minnesota.

Kuhn, Gary, Hanley, Donald, Robinson, Dennis, Gehringer, Kevin (2005) "Living Snow Fences: Protection that keeps growing. Two year growth responses: Davenport, WA demonstration." The Association for Temperate Agroforestry Ninth North American Agroforestry Conference, June 12-15, 2005, Rochester, Minnesota.

A Nonparametric Method for Defining and Using Biologically Based Targets in Forest Management. Symposium for Systems Analysis in Forest Resources 2003, October 7-9, Skamania, Washington.

Dynamic Growth and Yield Modeling: An application of S-systems to Plantation Douglas-fir in the Pacific Northwest. Stand Management Cooperative Fall Meeting 2000, a joint meeting with the Virginia Tech Cooperative. Worthington Conference Center, St. Martin College, Lacey, Washington.

Constructing a virtual forest: A nearest neighbor tree list generation procedure. Invited presentation at the Tree List Generation Symposium, January 21, 2000, University of British Columbia, British Columbia., Canada.

An Evaluation of the Fertilization Response of the Tree and Stand Simulator (TASS). Western Mensurationists Conference, 1998, Port Ludlow, Washington.