Curriculum Vita

Kevin Robert Gehringer

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Professional Experience

September 2004 – Present
Principal and managing member of Biometrics Northwest LLC, a Washington State limited liability company providing biometrical and statistical consulting services

- Designed, documented, and implemented (in MATLAB) a simulation system for multi-zone riparian forest buffer management to estimate distributions for large woody debris creation
- Developed, documented, and implemented (in MATLAB) an individual tree simulation system that used ray-tracing to estimate the light transmission and shade creation properties of riparian forest canopies
- Project tasks included: Univariate and multivariate hypothesis testing, parametric and nonparametric statistical analyses, regression analyses, ANOVA, optimization and parameter estimation, statistical and mathematical modeling, exploratory data analysis and visualization, differential equations, parametric and nonparametric probability density function estimation, classification and clustering methods, Monte Carlo simulation, bootstrap simulations

June 2002 – August 2004, Sole Proprietor
Consulting Biometrician
Family Forest Foundation, Chehalis, Washington

- Multivariate assessment of riparian forest management scenarios to identify scenarios that were consistent with biological targets for habitat creation and other criteria
- Simulation modeling of riparian forest management scenarios for a habitat conservation plan

The Rural Technology Initiative, University of Washington, Seattle

- Multivariate assessment of alternate plans under the Forests and Fish Law of Washington State to identify plans that were consistent with biological targets for habitat creation and other criteria
- Simulation modeling of riparian forest plans under the Forests and Fish Law of Washington State

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

- Developed robust, multivariate, nonparametric target definition and assessment procedures

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

- 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 generating simulated forest stands

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

- Designed, implemented, documented, tested, supported, and maintained a large, portable Fortran 77 subroutine library and set of executable programs for an information system developed to support the space science community
- Prototyped graphical user interfaces using the X Window System and Unix
- Ported the Fortran 77 source code base to C using the f2c Fortran to C translator for use by groups developing software with the C programming language

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

- Developed prototype client and server applications for a remote data acquisition product using the C programming language and the C socket interface to the TCP/IP communications protocol

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

- 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

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

- Examined the numerical optimization methods of the MPSI retail market analysis system to identify potential problems and solutions.
- Results and recommendations were presented to the director of research and development.

Education

June 2001 Ph.D. Obtained, Forest Biometrics, forest classification, forest simulation, and growth and yield modeling
Dissertation title: “Dynamic growth and yield modeling with climate: A model for plantation Douglas-fir in the Pacific Northwest”

December 1998 – June 2001, University of Washington, Seattle, College of Forest Resources
Ph.D. Candidate, Forest Biometrics, Quantitative Resources Management Program
Research: simulation of natural and managed forests, growth and yield modeling

September 1996 – December 1998, University of Washington, Seattle, College of Forest Resources

Graduate student, Quantitative Resources Management Ph.D. Program
Cumulative G.P.A.: 3.80/4.00

September 1990 - December 1991, Rice University, Houston, Texas
Mathematical Sciences Ph.D. Program, no degree obtained
Cumulative G.P.A. 4.04/4.33

September 1989 - May 1990, Rice University, Houston, Texas
Statistics Ph.D. Program, no degree obtained
Cumulative G.P.A. 4.07/4.33

September 1987 - May 1989, The University of Tulsa, Tulsa, Oklahoma
M.S. in Applied Mathematics, Obtained May 1990
Graduate GPA: 4.000/4.000
Emphasis: Numerical analysis and numerical computing
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
Graduated Magna Cum Laude, Cumulative GPA: 3.808/4.000
Senior Honors Thesis: "The Calculation of Pharmacokinetic Parameters through the use of Symbolic Computation and Rotational Discrimination Non-Linear Regression Analysis"

Computing and Software

Programming Languages and Software

MATLAB and R for data analysis, visualization, and statistics
C, Fortran 77/90/95, Assembly Language, C-shell, sed, awk
Client-server programming using TCP/IP and the C socket interface
Portable mixed language programming (C and Fortran)
Microsoft Office products: Word, Access, Powerpoint, Excel
TeX and LaTeX scientific documents

Computers and operating systems

PCs under Windows 9x/NT/2000/XP/7, Windows, PC-DOS or 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
DEC Micro VAX II, VAX 11/750, and VAX 11/780 under VMS
DEC Alpha under Open VMS

Awards and Honors

University of Washington, Seattle, Washington

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

Jet Propulsion Laboratory, Pasadena CA
Certificate of Recognition for the NAIF Toolkit, National Aeronautics and Space Administration, 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 Mathematic Ph.D. program
Teaching assistantship, Department of Statistics Ph.D. Program.

The University of Tulsa; Tulsa, Oklahoma
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.

Selected 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.

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.

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.

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.

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. (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.

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.

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, WA, 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.

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, WA, 98195-2100.

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.

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.

Selected Presentations and Conferences

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

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

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

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, MN.

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, WA.

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, B.C., Canada.

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