

HANG-KWANG LUH**PRESENT POSITION**

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| Assistant Professor/Senior Research (0.5 FTE) IPPC Oregon State University 2040 Cordley Hall, Corvallis, OR 97331 Email: luhh@science.ore.edu TEL: (541) 7376491, FAX: (541)7373080 | Database and Web Application Specialist (0.5FTE) College of Forestry Oregon State University A210 Peavy Hall, Corvallis, OR 97331-5710 Email: Hans.Luh@oregonstate.edu TEL: (541) 7374238, FAX: (541)7374317 |
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EDUCATION

- Ph. D. Zoology, University of Tennessee-Knoxville, 1993,
Dissertation: Historical process in ecology and evolution
- M.S. Marine Biology, Sun Yat-sen University, Taiwan, 1985,
Thesis: Information transmission in agonistic interaction of mantis shrimp *Gonodactylus smithii*
- B.S. Fisheries, National Taiwan College of Marine Science and Technology, 1983

ACDEMIC EXPERIENCE

- Assistant Professor/Senior Research, Department of Botany and Plant Pathology, Oregon State University, July, 2003–present
- Database/Web Application Specialist, College of Forestry, Oregon State University, November, 2002–present
- Assistant Professor/Senior Research, Department of Entomology, Oregon State University, April, 2002– June, 2003
- Faculty Research Associate–Computing Specialist, Department of Entomology, Oregon State University, Dec. 1996 – March, 2002
- Research Assistant Professor, Department of Mathematics, University of Tennessee–Knoxville, Project: Parallelization of individual-based models, May, 1993 – Nov., 1996
- Research Assistant Professor, Department of Mathematics, University of Tennessee–Knoxville, Project: A spatial explicitly individual–based model of white-tailed deer and Florida panther in the Everglades, Jan. – May, 1993
- Graduate Research Assistant, Department of Mathematics, University of Tennessee–Knoxville, Project: Landscape–scale habitat suitability indices, 1991 – 1993
- Graduate Teaching Assistant of Human Biology, Department of Zoology, University of Tennessee–Knoxville, 1990 – 1991
- Research Assistant, Institute of Zoology, Academia Sinica, 1987 – 1989

MAJOR RESEARCH PROJECTS

- "A planning visit to Taiwan, Japan, and Korea to establish coordinated international long-term observation stations for biodiversity of Lepidoptera" funded by National Science Foundation (with Jeff Miller and Andy Moldenke, January 2006 – December 2007)
- "Web Loop Analysis: A Web-Based Computer Application to Model Complex Ecosystems" funded by NorthWest Academic Computing Consortium (May 2005 - April 2006)
- "U.S.-Taiwan Cooperative Research: Canopy Arthropod Responses to Storm Disturbances at U.S. and Taiwanese LTER Sites" funded by National Science Foundation (with T. Schowalter, May 2001 - December 2005)
- "National Biological Control of Weeds Data Base Project" funded by National Biological Control Institute (with P. McEvoy and E. Coombs, Sept. 2000 – Sept. 2001)
- "Multi-level Modeling of Codling Moth Population Dynamics: Assessment of Sustainable Strategies and Tactics for Pome Fruit IPM with Emphasis on Area-Wide Mating Disruption" funded by USDA (with B. Croft, 1997-1999)

- "Parallel processing for individual-based ecological models" funded by National Science Foundation, Computational biology program for 3 years (with T. Hallem, L. Gross, and M. Berry, 1994-1996).
- "Landscape-scale ecosystem analysis of forest productivity and habitat suitability indices" funded by US Forest Service Southern Forest Experiment Station for two years (with L. Gross and M. Huston, 1992-1993)

PROFESSIONAL EXPERIENCE

Provide consulting services to academic institutes and commercial companies in software development, simulation modeling, and database design

CERTIFICATION

- Microsoft Certified Professional for Implementing and Supporting Microsoft Windows NT Workstation 4.0, Server 4.0, NT, and Server 4.0 in the Enterprise

DATABASE MANAGEMENT

- Extensive experience with the Internet database applications such as Microsoft Universal Data Access (SQL, ACCESS, OLE DB, ODBC, and ADO.NET), ColdFusion Server, and SYBASE Powerbuilder

WEB/GIS DEVELOPMENT

- Extensive experience developing interactive mapping web sites integrating content from research databases with multiple spatial data formats using ARCSDE and ARCIMS (examples available on the OSU web sites: <http://zephyrus.forestry.oregonstate.edu/mcdforest/mapview.aspx> and <http://www.ent.orst.edu/corvallisgis/parcel.aspx>)
- Extensive experience developing web-based interactive modeling tools for simulating ecological community systems (examples available on the OSU web sites: <http://www.ent.orst.edu/loop/>)

PROGRAMMING

- C, C++, C# - 10 years advanced knowledge, advanced programming skills
- Visual Basic 5.x, 6.x, .NET- 7 years advanced knowledge, advanced programming skills
- Transact-SQL - 5 years advanced knowledge, advanced programming skills
- ColdFusion Language - 5 years advanced knowledge, advanced programming skills
- PHP 3.x, 4.x - 4 years advanced knowledge, advanced programming skills
- MATLAB, IDL, PV-WAVE- 10 years advanced knowledge, advanced programming skills
- HTML - 10 years hand coding, following w3c standards, advanced programming skills
- CSS, JavaScript - 4 years general knowledge, intermediate programming skills
- XML, XSL - 2 years general knowledge, basic programming skills
- PowerBuilder - general knowledge, basic programming skills

QUANTITATIVE SKILLS

- Advanced knowledge in informational statistics, such as Akaike's Information Criterion (AIC), Bayesian information criterion (BIC), and Minimum Description Length (MDL)
- Advanced knowledge in statistical classification, such as Fussy Clustering, Mixture Discriminant Analysis, and Bayesian Classification

TEACHING EXPERIENCE

- Systematics Phylogeny
- Informational Statistical Modeling and Applications in Ecology
- Essential Models in Ecology
- Relational Database Management for Biological Systems (<http://www.ent.orst.edu/rd2003/>)
- VBA for MS Access Workshop (http://wwwdata.forestry.oregonstate.edu/vba_workshop/)

PUBLICATIONS

- Blackwood, J.S., M. Dresner and H.-K. Luh. 2006. Using Student Generated Qualitative Ecological Models. Teaching Issues and Experiments in Ecology. Teaching Issues and Experiments in Ecology, Vol. 4: Experiment #4 [online].
http://tiee.ecoed.net/vol/v4/experiments/ecological_models/abstract.html
- Blackwood, J.S., H.-K. Luh and B.A. Croft. 2004. Evaluation of Prey-Stage Preference as an Indicator of Life-Style Type in Phytoseiid Mites. *Exper. Appl. Acarol.* 33: 261-280
- Croft, B.A. and H.-K. Luh. 2004. Phytoseiid Mites on Unsprayed Apple Trees in Oregon, and Other Western States (USA): Distributions, Life-Style Types and Relevance to Commercial Orchards. *Exper. Appl. Acarol.* 33: 281-326
- Dambacher, J. M., H-K Luh, H. W. Li, and P. A. Rossignol. 2003. Qualitative Stability and Ambiguity in Model Ecosystems. *American Naturalist.* 161: 876-888.
- Prischmann, D, H. -K. Luh and B.A. Croft. 2002. Biological control of spider mites on grape by phytoseiid mites (Acari: Phytoseiidae): emphasis on regional aspects. *J. Econ. Entomol.* 95: 340-346.
- Luh, H.-K. and B.A. Croft. 2001. Quantitative classification of life-styles types in predaceous phytoseiid mites. *Exper. Appl. Acarol.* SI2: 1-22.
- Gittleman, J.L., H.-K. Luh, C.G. Anderson, and S.E. Cates. 2000. Evolutionary development, life histories, and brain size: Finding connections via a multivariate method. Pp. 159-180 in *Biology, Brains, and Behavior.* (S.T. Parker, J. Langer, and M.L. McKinney, eds.) SAR Press, Santa Fe, New Mexico.
- Luh, H.-K., and B. A. Croft. 1999. Classification of generalist or specialist life styles of predaceous phytoseiid mites using a computer genetic algorithm, information theory and life history traits. *Environmental Entomology*, 28: 915-922.
- Luh, H.-K. and B.A. Croft. 1999. Choosing the optimal number of life-style types in the classification of a generalist-specialist predator group. Page 55 in *Proceedings of the International Symposium of Population Dynamics of Plant-Inhabiting Mites*, Shiran-Kaikan, Kyoto, Japan.
- Croft, B.A., H.-K. Luh and P. Schausberger. 1999. Larval size relative to larval feeding, cannibalism of larvae, egg, or adult female size and larval-adult setal patterns among thirteen phytoseiid mite species. *Exper. Appl. Acarol.* 23: 599-610.
- Croft B. A., J. A. McMurtry, and H.-K. Luh. 1999. Do literature citation frequencies for six prey-food groups reflect feeding specialization and preferences among for Phytoseiid predation types? *Exper. Appl. Acarol.* 23: 551-565.
- Luh, H.-K. and B.A. Croft. 1998. Reanalysis of oviposition and development rates in the Phytoseiidae using a phylogenetic autoregressive method. *Exper. Appl. Acarol.* 22: 287-296.
- Gittleman, J.L., C.G. Anderson, S.E. Cates, H.-K. Luh, and J.D. Smith. 1998. Detecting ecological pattern in phylogenies. Pp.77-95. in *Dynamics of Biodiversity-Turnover of Populations, Species, Communities, and Higher Taxa.* (M.L. McKinney and J.A. Drake, eds.). Columbia University Press.
- Luh, H.-K., C. A. Abbott, M. Berry, E. Comiskey, J. Dempsey, and L. Gross. 1997. Parallelization in a spatial-explicit individual-based model (I) - Spatial data Interpolation. *Computers and Geosciences.* Vol 23, No. 3, pp: 293-304.

- Comiskey, J. E., L. J. Gross, D. M. Fleming, M. A. Huston, O. L. Bass, H.-K. Luh, and Y. Wu. 1997. A spatially-explicit individual-based simulation model for Florida Panther and white-tailed deer in the Everglades and Big Cypress landscapes. *In* Proceedings of the Florida Panther Conference. ed. Jordan, D. B., U.S. Fish and Wildlife Services.
- Abbott C. A., M. Berry, E. Comiskey, L. Gross and H.-K. Luh. 1997. Parallel individual-based modeling of Everglades deer ecology. *IEEE Computational Science and Engineering*. Vol 4, No. 4, pp: 60-72.
- Gittleman, J. L., C. G. Anderson, M. Kot, and H.-K. Luh. 1996. Comparative tests of evolutionary lability and rates using molecular phylogenies. *In* New uses for new phylogenies. eds. Harvey, P. H. et al. Oxford: Oxford University Press.
- Gittleman, J. L., C. G. Anderson, M. Kot, and H.-K. Luh. 1996. Comparing behavioral and morphological evolution: using molecular phylogenies to measure phylogeny, plasticity and rates. *In* Phylogenies and the Comparative Method in Animal Behavior. ed. Martins, E. P. Oxford: Oxford University Press.
- Geffen, E., M. E. Gompper, J. L. Gittleman, D. W. Macdonald, H.-K. Luh, and R. K. Wayne. 1996. Size, life history traits, and social organization in the Canidae: a reevaluation. *American Naturalist*. 147: 140-160.
- Curnutt, J., J. Lockwood, H.-K. Luh, P. Nott, and G. Russell. 1994. Hotspots and species diversity. *Nature*. 367: 326-327.
- Gittleman, J. L. and H.-K. Luh. 1994. Phylogeny, evolutionary models, and comparative methods: a simulation study. *In* Pattern and Process: Phylogenetic Approaches to Ecological Problems. ed. P. Eggleton, D. Vane-Wright. London: Academic Press.
- Luh, H.-K., J. L. Gittleman, and M. Kot. 1994. Macintosh program for phylogenetic autocorrelational analyses: a manual.
- Purvis, A., J. L. Gittleman and H.-K. Luh. 1994. Truth or consequences: effects of phylogenetic accuracy on two comparative methods. *Journal of Theoretical Biology*. 167:293-300.
- Luh, H.-K. and S. L. Pimm. 1993. The assembly of ecological communities: a minimalist approach. *Journal of Animal Ecology*. 62: 749-765.
- Gittleman, J. L. and H.-K. Luh. 1992. On comparing comparative methods. *Annual Review of Ecology and Systematics*. 23: 383-404.
- Luh, H.-K. and S. K. Mok. 1986. Sound production in the domino damselfish, *Dascyllus trimaculatus* (Pomacentridae) under laboratory conditions. *Japanese Journal of Ichthyology*. 33(1): 70-74.