11 February 2023

**Curriculum Vitae**

George Patrick Malanson

*Coleman - Miller Professor Emeritus*

Department of Geographical &

Sustainability Sciences

University of Iowa

Iowa City, IA 52242

**Education**:

1968-1972, B.A. Williams College

(Art, w/Williams-in-India) Williamstown, MA

1973, language school U.S. Department of State

(Hindi) Foreign Service Institute

US Army (PFC-SP4) Rosslyn, VA

1974-1975, part-time Georgia State University

(Geography) Atlanta, GA

1976-1978, M.S. University of Utah

(Geography) Salt Lake City, UT

(Thesis: "Distribution of plant species in hanging gardens of the Narrows, Zion National Park, Utah" under J. Kay)

1978-1983, Ph.D. University of California

(Geography) Los Angeles, CA

(Dissertation: "A model of post-fire succession in Californian coastal sage scrub" under W.E. Westman)

**Awards and honors:**

2016 Lifetime Achievement Award, American Association of Geographers

2008 Sagarmatha Career Award, AAG Mountain Geography Specialty Group

2007 Henry C. Cowles Award for outstanding publication, with J.A. Kupfer and S.B. Franklin, AAG Biogeography Specialty Group

2006 Henry C. Cowles Award for outstanding publication, with K.J. Alftine, AAG Biogeography Specialty Group

2004 James J. Parsons Distinguished Career Award, AAG Biogeography Specialty Group

2003 Mary Sue Coleman - F. Wendell Miller Professor, University of Iowa

2003 elected Fellow, American Association for the Advancement of Science

1998-99 Intergraph Professor of Landscape Ecology, Department of Geography, University of Iowa

1990 University of Iowa Faculty Scholar Award

**Employment:**

2017-present Professor Emeritus, Dept. of Geography, University of Iowa

2014-15 Program Director (Intergovernmental Personnel Act assignment), Population & Community Ecology Cluster, Division of Environmental Biology, National Science Foundation, Arlington, VA

2000-2001 Professor, Dept. of Geography, Southwest Texas State University

1985-2017 Visiting Assistant – Assistant – Associate – Professor, Dept. of Geography, University of Iowa

1984-85 Visiting scientist, Section d'Etudes des Systemes Ecologiques, Centre d'Etudes Phytosociologiques et Ecologiques Louis Emberger, Centre National de la Recherche Scientifique, Montpellier, France

1982-84 Visiting Assistant Professor, Dept. of Geography, Oklahoma State University

1980-81 Research assistant, Dept. of Geography, UCLA ( NSF grant)

1980 Biogeographer, Archaeology Division, ESCA-Tech Corp., Costa Mesa, CA

1978-80 Teaching assistant, Dept. of Geography, UCLA

1977-78 Research assistant, Dept. of Geography, University of Utah (NASA grant)

1976 Cartographic draftsman, Wm. Moore Survey and Mapping Co., Shrewsbury, MA

1974-1975 Illustrator/draftsman, Graphics Branch and Emergency Operations Center, Ft. McPherson, GA (US Army, ranks SP4-SP5)

**Past and \*present membership and service in professional groups:**

American Association for the Advancement of Science

American Geophysical Union\*

Association of American Geographers\*

Nystrom Award Committee, 1990 (Chair), 1993, 1997

Biogeography Specialty Group

Chair, 1997-1999; Board of Directors, 1987-89; Student Paper Award Judge, 1992, 1996; Student Research Grants Panel, 1992, 1994

Mountain Geography Specialty Group

Chair 2006-2007, Awards Committee 2002-2005,

Secretary-Treasurer 2005-2006,

Scientific Freedom & Responsibility Committee, 2007-2010

Binghamton Symposium in Geomorphology Steering Committee, 2000-2003

Ecological Society of America\*

Vegetation Section, Vice-chair, 2016 – 2017; Chair, 2017-2019

International Association for Landscape Ecology

International Association for Vegetation Science\*

International Biogeography Society\*

International Geosphere-Biosphere Program (IGBP)

Task Leader, GCTE Ecosystem structure/Landscape processes/Dispersal modeling, 1997-1999

**Editorial service**

Managing Editor, *Progress in Physical Geography*, 2019-2022

Section Editor, Biogeography, *International Encyclopedia of Geography*, 2013-2017

North American Editor, *Progress in Physical Geography*, 2010-2014

Associate Editor for Biogeography, *Physical Geography*, 2006-2014

Associate Editor: *Arctic, Antarctic, and Alpine Research*, 2005-2013

Biogeography Editor, *Geography Compass*, 2008-2009

Other Editorial Boards:

*Journal of Biogeography,* 2018-present

*Annals, Association of American Geographers*, 2000-2019

*Physical Geography,* 1994-2006, 2014-2019

*Progress in Physical Geography,* 2014-2019

*Advances in Water Resources*, 2004-2009

*Geography Compass*, 2006-2007

*Landscape Ecology*, 1997-2005

*Geographical & Environmental Modelling*, 1996-2002

**Other extramural professional service**:

National Science Foundation, OIA EPSCoR Track I, reverse site visit panel, 2020

National Science Foundation, OIA EPSCoR Track II (Big Data) panel, 2019

National Science Foundation, Division of Environmental Biology LTER panel, 2013

NIH Social Sciences and Population Studies Study Section, ad hoc 2005, 2006, regular member 2007-2011

National Commission on Science for Sustainable Forestry, research proposals panel, 2004

National Science Foundation, Biocomplexity: Coupled Human & Natural Systems panel, 2002

National Academies/NRC Committee on Research Priorities in Geography at the USGS, 2000-02

NSF Geography & Regional Science Program review panel, 1998-1999

Faculty of 1000 – Biology, Spatial and Landscape Ecology section, 2006-2010, 2015-2019

Reviews of proposals for NSF, Swiss and Israeli NSF-equivalents, Nature Conservancy, Netherlands Foundation-Advancement Tropical Research, Royal Society of New Zealand, USGS

**Intramural professional service:**

Department:

2011-2014: Director, Undergraduate Studies (led development of new major – Environmental Policy & Planning)

1999-2000 Department Executive Officer (DEO, Chair)

1992-98, 2001-2011 Director, Graduate Studies

Chair or acting DEO of 8 faculty review committees

Chair of 4 faculty search committees

Various terms as Faculty Assembly representative

College:

2003-2007: Dean’s ad hoc committee on named chairs

1996-1999: Interdepartmental Studies Committee

1998: University Honors Council

1998: Dean’s Scholar Review Committee

1996-1998, 2001-2014: Environmental Science Executive Committee/Advisory Panel

1996: Unified-Program Review Committee

1994: College Development Assignment Review Committee

University:

2010-2014 Advisory board, Leopold Center for Sustainable Agriculture

2008-2011 Flood Mitigation Task Force

2005-2008, 2009-2010 University Research Council

2006 Jakobsen Graduate Conference, judge

2004, 2006, 2007, … 2019 CGRER Seed Grant reviews

1990-2000 Center for Global and Regional Environmental Research, executive committee; Organized symposium, 1999 – *The Science of Global Climate Change* –

1994: Carver Scientific Initiative Program, reviewer

1986-1988: Human Subjects Committee D

**Theses and Dissertations Supervised:**

M.A. Theses:

Hougen, D. 1994. Effects of Accessibility and Isolation on the Structure and Composition of Lakeshore Forest Sites in Voyageurs National Park, Minnesota.

Finley, S.D. 1993. Investigation of Factors Influencing Species Diversity of Remnant Forest Patches in Northeast Iowa.

Craig, M.R. 1992. Colonization on Point Bars by Woody Riparian Species.

Kupfer, J.A. 1991. Structure, Composition, and Successional Dynamics of a Riparian Edge Community

Rex, K.D. 1990. Fractal Analysis of Woodland Patches Along the Iowa and Cedar Rivers.

Ph.D. Dissertations:

Grafius DR. 2011. Distribution and biomass dynamics of the alpine treeline ecotone across the western United States.

Zeng Y. 2010. Modeling complex dynamics at alpine treeline ecotones.

Goshit S. 2009. Synoptic Influence on Winter Temperature and Precipitation in Western Montana.

Yadav V. 2008. Soil Carbon Dynamics in the Big Creek Basin in Southern Illinois, USA.

Wang Q. 2007. Effects of the Representation of Landscape Pattern on Species Dynamics in Colonization-Competition Models.

Alftine KJ. 2002. The Relationship Between Tree Establishment Patterns and Positive Feedback at Alpine Treeline.

Bekker MF. 2002. Effects of Biotic Feedback on the Pattern and Rate of Subalpine Forest Advancement.

Chen G. 2001. Relating Landscape Patterns to Hydrological Processes in a Watershed Hierarchy

Kupfer JA. 1995. The Effects of Edge Vegetation on Interior Gap-Successional Processes.

Liu ZJ. 1995. Impact of Climate and Management Practices on Nitrate Contamination in Groundwater: Spatial and Temporal Analyses in the Big Spring Basin, Iowa.

Cairns DM. 1995. Carbon Balance Modeling at the Alpine Treeline Ecotone in Glacier National Park, Montana.

**Research grants:**

2019-2023 NSF Geography & Spatial Sciences, Geographic patterns and spatial scales of alpine plant communities, sole PI, $201,171

2012-2014 NSF Geography & Spatial Sciences, Multiscale Context for Change in Alpine Tundra, lead PI with D Fagre and D Zimmerman, $219,719

2009-2012 NSF Geography & Spatial Sciences, Implications of an Invasive Forest Pathogen for Alpine Treeline Dynamics co-PI with L Resler and D Tomback, $439,006

2007 NSF Geography and Regional Science Program, Proposal Development on the Social and Ecological Impacts of the Three Gorges Dam, China; co-I with MA Linderman, Z Shen; $18,320

2006-08 NASA, Modeling Dynamism of Human Settlement Frontiers, co-I, with SJ Walsh, $42,000 of $178,756

2004-09 USGS, Western Mountain Initiative, Alpine Treeline; lead PI with DR Butler, SJ Walsh; $376,000

2004-07 NSF Biocomplexity, Coupled Human and Natural Systems: Virtual Watershed: Agricultural Landscape Evolution in an Adaptive Management Framework; subcontract with J Schnoor on grant to C Lant; $130,000 of $450,000

2004-07 NSF Biocomplexity, Coupled Human and Natural Systems: Feedbacks Among Patterns and Processes of Land Use and Land Cover Dynamics in the Northern Ecuadorian Amazon; co-PI with SJ Walsh; $320,000

# 2002-03 UI Center for Global and Regional Environmental Research, Factors Affecting the Adoption and Conservation Value of Certified Organic Coffee Production in Oaxaca, Mexico; co-PI with T. Mutersbaugh, $19,700

2002-03 NSF Geography & Regional Science, SGER: Effects of Avalanches on Local Carbon Budgets and Regional Forest Dynamics lead-PI with DR Butler, D Fagre, and SJ Walsh; $29,512

2002-03 National Commission on Science for Sustainable Forestry, Forest Fragmentation, co-PI with JA Kupfer and SB Franklin; $60,000

2000-03 NSF Geography & Regional Science, Uncovering the Spatial Pattern of Feedback Effects at Alpine Treeline; PI; $99,946

1999-03 USGS Biological Resources Division, Invasibility of Alpine Tundra; lead-PI with DG Brown, DR Butler, DM Cairns, D Fagre, and SJ Walsh; $416,730

1997-99 NSF, Geography & Regional Science, Pattern and Process at Alpine Treeline; co-PI with DG Brown; $204,147

1997-98 NASA, Project LIVE: Laboratory for the Immersive Visualization of the Environment; co-I with MP Armstrong, JR Brown, GR Carmichael; $230,000

1997-98 DOE National Institute for Global Environmental Change; Developing Rules for Transience in DGVMs Based on Migration Rates; PI, $5000

1994-97 DOE National Institute for Global Environmental Change, Spatial Scaling and Maintaining Information in Models of Response to Climatic Change; co-PI with MP Armstrong; $111,800

1993-94 Iowa Energy Center, Biomass Production and Conversion in Iowa; co-I with R Brown et al.; $22,330 of $145,634 total

1991-92 NSF Geography & Regional Science, Topological Relationships at Alpine Treeline; co-PI with DR, Butler and SJ, Walsh; $95,494

1991-92 DOE National Institute for Global Environmental Change, Simulation Experiments of Inertia in Forest Response to Climatic Change; co-PI with MP Armstrong; $55,000

1988-90 EPA, Modeling the Response of California Shrublands to Climatic Change; subcontracts on grants to WE Westman; $48,800

1988-90 National Science Foundation, Geography & Regional Science, Forest Dynamics of Riparian Corridors; PI; $84,000

1988 Old Gold Award, University of Iowa; $3,500

1988 National Geographic Society, co-PI with DR, Butler; $3975

1987 Old Gold Award, University of Iowa; $3,500

1984-85 Centre National de la Recherche Scientifique and the National Science Foundation, U.S.-France Exchange Award; 70,000 FF +US$1650

1983 Burlington Northern Foundation, with DR, Butler; $10,000

1983 Association of American Geographers, with DR, Butler; $500

1982 Chancellor's Patent Fund, UCLA

1979-81 Graduate Division, UCLA (4 research and travel grants)

1977-78 University of Utah Student Research Grant in Geography (2)

1977 Sigma Xi, the Scientific Research Society of North America

**Other grants:**

1997-99 Center for Global and Regional Environmental Research; $45,000 for Iowa Land Cover - Past and Future: GIS Infrastructure Development

1992 Ford Foundation UI-Grinnell College Bridging Project in International Education; for study group on biodiversity and sustainable development; $20,000

1990 Hewlett-Packard University Equipment Program; for CGRER GIS center $275,000

1988 Instructional Improvement Award, University of Iowa Council on Teaching, $500

**Consultancies**:

2007-2012 NIH R21, Modeling Household Dynamics and Land Use; NIH R21, Dynamically Integrating Macro and Micro Processes; and NSF DHB: Marginality in a Marginal Environment, all to B Entwisle, PI.

2004 National Park Service, geoindicators program, Correct and Complete Surficial Mapping of Glacier National Park, to DR Butler

2002-05 NASA grant, Modeling the Scale Dependent Drivers of LCLU Dynamics in Northeastern Ecuador, to SJ Walsh & RE Bilsborrow

2001-05 NSF-BioComplexity, Simulating Complexity in a Dynamic Landscape: Land-Use and Land-Cover Change in Nang Rong, Thailand, to RR Rindfuss, SJ Walsh, & B Entwisle

**Publications**:

(from Harzing’s Publish or Perish: most cited: *Riparian Landscapes*, 1292; 22 ≥ 100; H-index = 54)

**Monographs:**

National Research Council (WL Graf, BP Buttenfield, C Harden, JR Jensen, GP Malanson, PF McDowell, S McLafferty, R Palm, NP Psuty, HJ Vaux). 2002. *Geography in the Critical Zone: Research Opportunities for the U.S. Geological Survey*. National Academies Press, Washington, 130 pp.

Malanson GP. 1993. *Riparian Landscapes*, Cambridge Studies in Ecology, Cambridge University Press, Cambridge, 296 pp.

**Edited books and special issues:**

Shen Z, Malanson GP, Yao M, Zhang J. 2021. Temporal patterns and mechanisms of biodiversity across scales in East Asia. *Frontiers in Ecology and Evolution* Research Topic 11218.

Butler DR, Malanson GP, Walsh SJ & Fagre DB, eds. 2009. *The Changing Alpine Treeline: The Example of Glacier National Park, Montana*, *USA*. Elsevier, Amsterdam.

Malanson GP, Butler DR. eds. 2007. Alpine treeline, climate, and environmental changes. Special issue of *Physical Geography*

Butler DR, Walsh SJ & Malanson GP, eds. 2003. Mountain Geomorphology – Integrating Earth Systems. Special issue of *Geomorphology*; also published as:

Butler DR, Walsh SJ & Malanson GP, eds. 2003. *Mountain Geomorphology – Integrating Earth Systems*. Elsevier, Amsterdam.

Malanson GP. ed. 1989. *Natural Areas Facing Climate Change,* SPB Academic, The Hague.

**Articles in refereed journals, book chapters, and symposia proceedings:**

Malanson GP, Testolin R, Pansing ER, Jiménez-Alfaro B. 2023. Area, environmental heterogeneity, scale, and the conservation of alpine diversity. *Journal of Biogeography*, in press.

Malanson GP, Pansing ER, Testolin R, Jiménez-Alfaro B. 2023. Simulations reveal climate and legacy effects underlying regional beta diversity in alpine vegetation. *Frontiers in Ecology and Evolution* 11: <https://doi.org/10.3389/fevo.2023.1053017>.

Malanson GP, Testolin R, Pansing ER, Jiménez-Alfaro B. 2022. Mesoscale refugia for European alpine grasslands based on climatic envelopes. *Alpine Botany* 132: 169-180.

Malanson GP, Pansing ER, Testolin R, Abdulhak S, Bergamini A, Ćušterevska R, Kuzmanović S, Marcenó C, Milanović D, Ruprecht E, Šibik J, Stanisci A, Vassilev K, Willner W, Jiménez-Alfaro B. 2022. Explanation of beta-diversity in European alpine grasslands changes with scale. *Ecosphere* 13: e4066.

Malanson GP, Alftine KJ. 2021. Ecological impacts of climate change. In R Sivanpillai (ed) *Biological and Environmental Hazards, Risks, and Disasters, 2nd edition*. Elsevier, Amsterdam, in press (also in 1st ed., 2014, 397-426).

Malanson GP, Talal ML, Pansing ER, Franklin S. 2021. Vegetation ecology with anthropic drivers and consequences. *Progress in Physical Geography* 45: 446-459.

Testolin R., Attorre F, Borchardt P, Brand RF, Bruelheide H, Chytrý M, De Sanctis M, Dolezal J, Finckh M, Haider S, Hemp A, Jandt U, Kessler M, Korolyuk AY, Lenoir J, Makunina N, Malanson GP, Montesinos-Tubée DB, NorooziJ, Nowak A, Peet RK, Peyre G, Sabatini FM, Šibík J, Sklenář P, Sylvester SP, Vassilev K, Virtanen R, Willner W, Wiser SK, Zibzeev EG, Jiménez-Alfaro B. 2021a. Global patterns and drivers of alpine plant species richness. Global Ecology and Biogeography 30: 1218– 1231.

Testolin R., Carmona CP, Attore F, Borchardt P, Bruelheide H, Dolezal J, M. Finckh M, Haider S, Hemp A, Jandt U, Korolyuk AY, Lenoir J, Makunina N, Malanson GP, Noroozi J, Nowak A, Peet RK, Peyre G, Sabatini FM, Šibík J, Sklenář P, Vassilev K, Virtanen R, Wiser SK, Zibzeev EG, Jiménez-Alfaro, B. 2021b. Global functional variation in alpine vegetation. Journal of Vegetation Science 32: e13000.

Jiménez-Alfaro, B., Abdulhak S, Attorre, Bergamini A, Carranza ML, Chiarucci, A., Ćušterevska R, Dullinger S, Gavilán RG, Giusso del Galdo G, Kuzmanov N, Laiolo P, Loidi J, Malanson GP, Marcenó C, Milanović D, Pansing ER, Roces-Díaz JV, Ruprecht E, Šibik J, Stanisci A, Testolin R, Theurillat J-P, Vassilev K, Willner W, Winkler M. 2021. Postglacial determinants of regional species pools in alpine grasslands. Global Ecology and Biogeography 30: 1101-1115.

Malanson GP, Franklin S, Talal ML, Pansing ER. 2020. Human dimensions: vegetation ecology. *Bulletin of the Ecological Society of America* 104: e01776.

Malanson GP, Virtanen R, Britton AJ, Jiménez-Alfaro B, Qian H, Petraglia A, Tomaselli M, Cooper D, Damm C, Pemble RH, Brett RB. 2020. Hemispheric and continental scale patterns of similarity in mountain tundra. *Annals of the American Association of Geographers* 110: 1005-1021.

Malanson GP, Peet RK. 2020. Foundational biogeography: Vegetation of the Great Smoky Mountains (*Ecological Monographs*, 26:1-80, 1956), by Robert H. Whittaker. *Progress in Physical Geography* 44: 137-143.

Malanson GP, Nelson E, Fagre DB, Zimmerman DL. 2020. Alpine plant community diversity in species-area relations at fine scale. *Arctic, Antarctic, and Alpine Research* 52: 41-46.

Malanson GP, DeRose J, Bekker MF. 2019. Individual variation and ecotypic niches in simulations of the impact of climatic volatility. *Ecological Modelling* 411:#108782

Malanson GP, Resler LM, Butler DR, Fagre DB. 2019. Mountain plant communities: uncertain sentinels? *Progress in Physical Geography* 43:521-543.

Malanson GP, Fagre DB, Zimmerman DL. 2018. Scale dependence of diversity in alpine tundra, Rocky Mountains, USA. *Plant Ecology* 219: 999-1008.

Malanson GP. 2018. Intraspecific variability may not compensate for increasing climatic volatility. *Population Ecology* 60: 287–295.

Rodriguez N, Malanson GP. 2018. Plant dynamics, birth-jump processes and sharp traveling waves. *Bulletin of Mathematical Biology* 80: 1655–1687.

Malanson GP, Rodriguez N. 2018. Traveling waves and spatial patterns from dispersal on homogeneous and gradient habitats. *Ecological Complexity* 33: 57-65.

Malanson GP. 2017. Mixed signals of trends in variance in high-elevation tree ring series. *Journal of Mountain Science* 14: 1961-1968.

Malanson GP, Zimmerman DL, Fagre DB. 2017. Distance and environmental difference in alpine plant communities. *Physical Geography* 38: 489-505.

Malanson GP. 2017. Interactions and constraints in model species response to environmental heteroscedasticity. *Journal of Theoretical Biology* 419: 343-349.

Young S, Carrel M, Kitchen A, Malanson GP, Tamerius J, Ali M, Kayali G. 2017. How's the Flu Getting Through? Landscape genetics suggests both humans and birds spread H5N1 in Egypt. *Infection, Genetics and Evolution* 49: 293-299.

Malanson GP, Resler, LM, Tomback, D. 2017. Ecotone response to climatic variability depends on stress gradient interactions. *Climate Change Responses* 4:1 DOI: 10.1186/s40665-017-0029-4

Malanson GP, Zimmerman DL, Kinney M, Fagre DB. 2017. Relations of alpine plant communities across environmental gradients: Multilevel versus multiscale analyses. *Annals of the American Association of Geographers* 107: 41-53.

Young SG, Carrel M, Malanson GP, Ali MA, Kayali G. 2016. Predicting Locations at Risk of Avian Influenza Co-infection with H5N1 and H9N2, Egypt. *International Journal of Environmental Research and Public Health* 13: #886 doi:10.3390/ijerph130908

Entwisle B, Williams NE, Verdery AM, Rindfuss RR, Walsh SJ, Malanson GP, Mucha PJ, Frizzelle BG, McDaniel PM, Yao X, Heumann BW, Prasartkul P, Sawangdee Y, Jampaklay A. 2016. Climate shocks and migration: an agent-based modeling approach. *Population and Environment* 38: 47-71

Malanson GP, Resler LM. 2016. A size gradient hypothesis for alpine treeline ecotones. *Journal of Mountain Science* 13: 1154-1161.

Malanson GP, Heumann BW. 2016. Models and data in biogeography and landscape ecology. In N Clifford, M Cope, T Gillespie, S French, eds, *Key Methods in Geography*, 5th ed. SAGE, London. 470-494.

Malanson GP, Zimmerman DL, Fagre DB. 2015. Floristic similarity, diversity, and endemism as indicators of refugia characteristics and needs in the West. *Biodiversity* 16: 237-246.

Malanson GP. 2015. Diversity differs among three variations of the stress gradients hypothesis in two representations of niche space. *Journal of Theoretical Biology* 384: 121-130.

Grafius D, Malanson GP. 2015. Biomass distributions in dwarf tree, krummholz, and tundra vegetation in the alpine treeline ecotone. *Physical Geography* 36: 337-352.

Weiss D, Malanson GP, Walsh SJ. 2015. Multi-scale relationships between alpine treeline elevation and hypothesized environmental controls in the western United States. *Annals of the Association of American Geographers* 105: 437-453.

Malanson GP, Cheney AB, Kinney M. 2015. Climatic and geographic relations of alpine tundra floras in western North America. *Alpine Botany* 125: 21-29.

Malanson GP, Walsh SJ. 2015. Agent-based models: Individuals interacting in space. *Applied Geography* 56: 95-98.

Malanson GP, Resler LM. 2015. Neighborhood functions alter unbalanced facilitation on a stress gradient. *Journal of Theoretical Biology* 365: 76-83.

Smith-McKenna E, Malanson GP, Resler LM, Carstensen LW, Prisley SP, and Tomback DF. 2014. Cascading effects of feedbacks, disease, and climate change on alpine treeline dynamics. *Environmental Modelling & Software* 62: 85-96.

Malanson GP, Verdery AM, Walsh SJ, Sawangdee Y, Heumann BW, McDaniel PM, Brian G. Frizzelle BG, Williams NE, Yao X, Entwisle B, Rindfuss RR. 2014. Changing crops in response to climate: virtual Nang Rong, Thailand in an agent based simulation. *Applied Geography* 53: 202-212.

Wu R, Long Y, Malanson GP, Garber PA, Zhang S, Li D, Zhao P, Wang L, Duo H. 2014. Optimized spatial priorities for biodiversity conservation in China: a systematic conservation planning perspective. *PLoS One*, DOI:10.1371/journal.pone.0103783

Resler LM, Shao Y, Tomback DF, Malanson GP, Smith-McKenna EK. 2014. Predicting the functional role of whitebark pine (*Pinus albicaulis*) at alpine treelines: Model accuracy and variable importance. *Annals of the Association of American Geographers* 104: 703-722.

Ying L-X, Shen Z-H, Piao S-L, Malanson GP. 2014. Terrestrial surface area increment: the effects of topography, DEM resolution, and algorithm. *Physical Geography* 35: 297-312.

Malanson GP. 2014. Physical geography on the methodological fence: David Stoddart (1965) Geography and the ecological approach. The ecosystem as a geographic principle and method. *Progress in Physical Geography* 38: 251-258.

Malanson GP, Scuderi L, Moser K, Willmott C, Resler L, Warner T, Mearns LO. 2014. The composite nature of physical geography. *Progress in Physical Geography* 38: 3-18

Malanson GP. 2014. Biosphere-human feedbacks: A physical geography perspective. *Physical Geography* 35: 50-75.

Smith-McKenna EK, Resler LM, Tomback DF, Zhang H & Malanson GP. 2013. Topographic influences on the distribution of white pine blister rust in Pinus albicaulis treeline communities. *Ecoscience* 20: 215-229.

Malanson GP, Fagre DB. 2013. Spatial contexts for temporal variability in alpine vegetation under ongoing climate change. *Plant Ecology* 214: 1309-1319.

Walsh SJ, Malanson GP, Entwisle B, Rindfuss RR, Mucha PJ, Heumann BW, McDaniel PM, Frizzelle BG, Verdery A, Williams N, Yao X, Ding D. 2013. Design of an agent-based model to examine population-environment interactions in Nang Rong District, Thailand. *Applied Geography* 39: 183-198.

Malanson GP, Walsh SJ. 2013. A geographical approach to optimization of response to invasive species. In Walsh SJ & Mena C, eds. *Science and Conservation in the Galapagos Islands: Frameworks and Perspectives*. Springer, New York, 199-215.

Yadav V, Malanson GP. 2013. A spatially explicit scheme for tracking and validating annual landscape scale changes in soil carbon. *Applied Geography* 37: 101-113.

Rose JP, Malanson GP. 2012. Microtopographic heterogeneity constrains alpine plant diversity, Glacier National Park, MT. *Plant Ecology* 213: 955-965.

Malanson GP, Bengtson LE, Fagre DB. 2012. Geomorphic determinants of species composition of alpine tundra, Glacier National Park, USA. *Arctic, Antarctic, and Alpine Research* 44: 197-209.

Grafius DR, Malanson GP, Weiss DJ. 2012. Secondary controls of alpine treeline elevations in the western USA. *Physical Geography* 33: 146-164.

Peterson DL, Allen, CD, Baron, JS, Fagre, DB, McKenzie, D, Stephenson, NL, Fountain, AG, Hicke, JA, Malanson GP, Tague, CL, van Mantgem PJ. 2011. Response of Western mountain ecosystems to climatic variability and change: A collaborative research approach. In EA Beever, JL Belant (ed) *Ecological Consequences of Climate Change: Mechanisms, Conservation, and Management*. CRC Press, Boca Raton FL, 183-190.

Walsh SJ, Malanson GP, Messina JP, Brown DG, Mena CF. 2011. Biocomplexity. In A. Millington, M. Blumler, G. MacDonald, U. Schickhoff, eds. *Handbook of Biogeography*. Sage, London, 469-487.

Malanson GP. 2011. Simulation. In A. Millington, M. Blumler, G. MacDonald, U. Schickhoff, eds. Handbook of Biogeography. SAGE, London, 454-468.

Malanson GP, Rose JP, Schroeder PJ, Fagre DB. 2011. Contexts for change in alpine tundra. *Physical Geography* 32: 97-113.

Malanson GP, Resler LM, Bader MY, Holtmeier F-K, Weiss DJ, Butler DR, Fagre DB, Daniels LD. 2011. Mountain treelines: a roadmap for research orientation. *Arctic, Antarctic, and Alpine Research* 43: 167-177.

Malanson GP. 2011. Ecosystem. In J. Agnew and D. Livinsgtone, eds. Handbook of Geographical Knowledge. Sage, London, 452-464.

Mena CF, Walsh SJ, Frizzelle BG, Yao X, Malanson GP. 2011. Land use change on household farms in the Ecuadorian Amazon: design and implementation of an agent-based model. *Applied Geography* 31: 210-222.

Yadav V, Malanson GP, Bekele EG, Lant C. 2009. Modeling watershed-scale sequestration of soil organic carbon for carbon credit programs. Applied Geography 29: 488-500.

Grafius DR, Malanson GP. 2009. Precipitation and temperature estimation error at alpine treeline ecotones using the Mountain Climate Simulator model (MT-CLIM). *Physical Geography* 30: 285-307.

Yadav V, Malanson GP. 2009. Modeling impacts of erosion and deposition on soil organic carbon in the Big Creek Basin of southern Illinois. *Geomorphology* 106: 304-314.

Butler DR, Malanson GP, Walsh SJ. 2009. The future of treeline. In DR Butler, GP Malanson, SJ Walsh & DB Fagre, eds. *The Changing Alpine Treeline: The Example of Glacier National Park, Montana, USA*. Elsevier, Amsterdam, 191-194.

Schmid GL, Butler DR, Malanson GP, Resler LM. 2009. Soils and pedogenesis at alpine treeline. In DR Butler, GP Malanson, SJ Walsh & DB Fagre, eds. *The Changing Alpine Treeline: The Example of Glacier National Park, Montana, USA*. Elsevier, Amsterdam, 107-108.

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2016: Malanson GP, Resler, LM, Tomback, DF: A size-growth gradient hypothesis model for alpine treeline ecotones with climatic variation and extremes. American Association of Geographers, San Francisco.

2015: Malanson GP, Zimmerman, DL, Kinney M, Fagre DB: Distance within scales: explaining landscape and regional variation in alpine tundra. IALE World Congress, Portland.

2014: Tomback DF, Resler LM, Malanson GP, Smith-McKenna EK, Blakeslee SC, Pyatt JC. White pine blister rust alters facilitation interactions at treeline: Implications for treeline communities and response to climate change.  IUFRO Joint Conference: Genetics of Five-Needle Pines, Rusts of Forest Trees, and Strobusphere, Fort Collins.

2014: Malanson GP, Resler LM: Neighborhood functions alter unbalanced facilitation in an alpine treeline simulation. AGU Fall Meeting, San Francisco.

2013: Malanson GP: *Progress in Physical Geography* lecture: Missing links. Annual Meeting of the AAG, Los Angeles

2012: Malanson GP, Fagre DB: Glacier National Park GLORIA sites in regional context. MtnClim2012, Estes Park, CO (poster)

2011: Malanson GP, Shen Z: Topography and epistemology: review and prospect. International Association for Landscape Ecology, Beijing.

2010: Malanson GP, Rose JP: Neutral vs. niche context for change in alpine tundra. Annual Meeting of the AAG, Washington

2009: Rose J, Nathanson R, Malanson GP: Providing context for alpine tundra response to global climatic change. Association of American Geographers, Las Vegas.

2009: Malanson GP: Biogeography; Progress in Physical Geography Panel on Earth Systems Science. Association of American Geographers, Las Vegas (invited).

2009: Malanson GP, Honey R: Water towers, the metaphor. Association of American Geographers, Las Vegas.

2009: Goshit S, Malanson GP: Synoptic influence on daily temperature and precipitation in western Montana. Association of American Geographers, Las Vegas.

2009: Bekker MF, Malanson GP: Feedback and linear forest patterns in subalpine environments: a global view. Association of American Geographers, Las Vegas.

2008: Malanson GP, Walsh SJ, Atkinson RJ, Milsted WB: Detection and control protocols for invasive plant species in the Galapagos Islands. Association of American Geographers, Boston.

2008: Bekker MF, Malanson GP: Linear vegetation patterns in subalpine forests. Association of American Geographers, Boston.

2007: Zeng Y, Malanson GP: Coupling climate change with complex alpine treeline dynamics. Association of American Geographers, San Francisco.

2007: Wang Q, Malanson GP: Analysis of effects of landscape pattern on species dynamics using colonization-competition models. Association of American Geographers, San Francisco.

2007: Goshit S, Malanson GP, McGinnis DL: Patterns of winter precipitation variability in western Montana. Association of American Geographers, San Francisco.

2006: Walsh SJ and the Ecuadorian Amazon LULC Team. Pattern-process relations in coupled human-natural systems: modeling LULC dynamics in the Ecuadorian Amazon. NASA Science Teams Meeting, Brasilia, Brazil.

2006: Malanson GP, Shen Z, Butler DR*:* Dynamic geomorphology affects ecological pattern and process. Association of American Geographers, Chicago.

2006: Malanson GP and the Alpine Treeline Workshop Group. Treeline dynamics and climate change. MTNCLIM2006, Mt. Hood, OR

2006: Goshit S, Malanson GP: Synoptic climatology and winter precipitation variability in western Montana. MTNCLIM2006, Mt. Hood, OR

2005: Walsh SJ, Bilsborrow RE, Mena CF, Erlien CM, Barbieri AF, Messina JP, Medina F, Malanson GP. 2005. Modeling deforestation and agricultural extensification in the Ecuadorian Amazon. NASA Science Team Meeting, São Paulo, Brazil.

2005: Malanson GP: Complexity and dynamics in biogeography. Association of American Geographers, Denver.

2005: Malanson GP, Scott K, Fagre D, Holzer K: Ordination Context of GLORIA Sites in Glacier National Park, USA. Global Change in Mountain Regions Open Science Conference, Perth, Scotland

2005: Malanson GP, Bennett DA: Why is land use/land cover change biocomplex? AAG West Lakes Division, Iowa City.

2005: Butler DR, Malanson GP:Active frost processes and fine-scale polygonal patterned ground on turf-banked terrace treads, eastern Glacier National Park, Montana. Association of American Geographers, Denver.

2004: Zeng Y, Malanson GP, Walsh SJ: Searching for complexity on landscapes. Association of American Geographers, Philadelphia.

2004: Weiss DJ, Walsh SJ, Hammer, ES, Butler DR, Malanson GP: An assessment of snow avalanche paths using Ikonos satellite data and LAI field data. Association of American Geographers, Philadelphia.

2004: Tang W, Malanson GP, Walsh SJ: Agent-Based Simulation of Pattern Formation of Village Territory in Thailand. Association of American Geographers, Philadelphia.

2004: Malanson GP, Zeng, Y, Walsh SJ: Frontiers as frontiers. Association of American Geographers, Philadelphia.

2004: Malanson GP, Zeng Y, Butler DR, Resler LM: Advance of trees and krummholz into alpine tundra. American Geophysical Union, San Francisco

2004: Malanson GP, Brown DG, Butler DR, Cairns DM, Fagre DF, Walsh SJ: Advance of tree species into alpine tundra. International Association for Vegetation Science, Kona, HI.

2004: Malanson GP, Alftine KJ, Bekker MF, Brown DG, Butler DR, Cairns DM, Fagre DF, Resler LM, Schmid GL, Walsh SJ, Zeng Y: Advance of trees into alpine tundra. Mountain Climate Sciences Symposium, North Beach, CA.

2004: Butler, DR, Resler, L., Malanson GP: Turf-banked terrace treads and risers, turf exfoliation, and possible relationships with advancing treeline. Association of American Geographers, Philadelphia.

2003: Zeng, Y & Malanson GP, Evolutionary computation of nonlinear feedback in alpine treeline advance. Association of American Geographers, New Orleans.

2003: Tang W, Malanson GP, Entwisle B: Agent-based modeling of village location in Thailand. Association of American Geographers, New Orleans.

2003: Malanson GP: Land-use/land-cover change. UNESCO MAB Mountain Research Initiative Workshop, Sörenborg, Switzerland.

2003: Malanson GP, Walsh SJ, Butler DR, Reardon B, Fagre DB, McKnight S: Effects of avalanches on local carbon budgets and regional forest dynamics Association of American Geographers, New Orleans.

2003: Malanson GP, Zeng Y: Uncovering spatial feedbacks at alpine treeline using spatial metrics in evolutionary simulations. GeoComputation ’03, Southampton, UK.

2003: Butler DR, Malanson GP, Walsh SJ, Reardon B, Fagre DB: Tree-ring dating of high magnitude snow-avalanche winters and their relationship with Snow-Water Equivalence (SWE). Association of American Geographers, New Orleans.

2002: Zeng Y, Malanson GP: Genetic programming to explore alpine treeline advance. US – International Association for Landscape Ecology, Lincoln, NE.

2002: Tang W, Malanson GP: Representations of habitat and specialization in competition-colonization models. US – International Association for Landscape Ecology, Lincoln, NE.

2002: Resler LM, Butler DR, Malanson GP: The role of microtopography in conifer establishment at the alpine treeline ecotone, Glacier National Park, Montana. SWAAG, Laredo

2002: Malanson GP: An ecological perspective on linking household and remotely sensed data on land-use change. Linking Households and Remotely Sensed Data, January 2002, East-West Center, Honolulu.

2002: Malanson GP, Messina JP, Walsh SJ, Entwisle B, Rindfuss RR: Linking households and parcels in models of land-use change. US – International Association for Landscape Ecology, Lincoln, NE.

2002: Butler DR, Malanson GP: The geomorphic influences of beaver dams and beaver-dam failure. 33rd Annual Binghamton Geomorphology Symposium, Bloomsburg, PA.

2001: Malanson GP, Butler DR, Welsh TE, Cairns DM: Variability of soil depth in alpine tundra and possible effects on tree advance. Association of American Geographers, New York.

2001: Butler DR, Malanson GP, Bekker M, Resler L: Lithologic, structural, and geomorphic controls on ribbon forest patterns. 32nd Binghamton Symposium in Geomorphology, Chapel Hill, NC.

2000: Walsh SJ, Butler DR, Malanson GP, Crews-Meyer KA, Messina JP, Xiao N: Mapping, Modeling, and visualization of the influences of geomorphic processes on the alpine treeline ecotone, Glacier National Park, Montana, USA. 31st Binghamton Symposium in Geomorphology, Binghamton, NY

2000: Malanson GP: Discrete and continuous representations of habitat quality in ecological simulations. SWAAG, College Station.

2000: Malanson GP, Xiao N , Alftine KJ, Bekker MF, Butler DR, Brown DG, Cairns DM, Fagre DB, Walsh SJ: Abiotic and biotic controls of spatial pattern at alpine treeline. 4th International Conference on Integrating GIS and Environmental Modeling, Banff.

2000: Malanson GP: Simulations of the resource averaging hypothesis for alpine treeline. Association of American Geographers, Pittsburgh.

1999: Malanson GP: Complex responses to global change at alpine treeline. Plenary session. Southwest Division, Association of American Geographers, San Marcos.

1999: Malanson GP, Alftine KJ, Bekker, M: Finding simplicity in simulations of the alpine treeline ecotone. Association of American Geographers, Honolulu.

1998: Malanson GP: Simulation of phase changes in ecotone patterns. Association of American Geographers, Boston.

1998: Malanson GP: Plant dispersal and migration across fragmented landscapes. IGBP GCTE/LUCC Open Science Conference, Barcelona.

1997: Walsh SJ, Butler DR, Malanson GP: Issues of scale in mountain research in Glacier National Park, Montana. USGS-BRD workshop on Human-Induced Environmental Change in the Rocky Mountains, Polson, MT.

1997: Malanson GP: MAUP in a simulation of forest dynamics. Association of American Geographers, Ft. Worth

1997: Malanson GP: Landscape diversity and landscape function: heterogeneity of conduits. MEDECOS VIII Conference, San Diego.

1997: Malanson GP: Effects of landscape pattern on species migration under changing climates. IGBP-GCTE Focus 2, Activity 2 workshop, San Diego.

1997: Butler DR, Malanson GP: Repeat photography of the physical landscape, Glacier National Park, MT. US - International Association for Landscape Ecology, Durham

1997: Butler DR, Malanson GP: Repeat photography of physical geography, Glacier National Park, MT. Association of American Geographers, Ft. Worth

1996: Malanson GP: Treeline as pattern on an environmental gradient. Association of American Geographers, Charlotte.

1996: Malanson GP: Effects of feedback and seed rain on ecotone patterns. Spatio-Temporal Dynamics in Ecological Systems Conference. National Center for Ecological Analysis and Synthesis, Santa Barbara.

1996: Butler DR, Cairns DM, Walsh SJ, Malanson GP: Climatic implications of treeline establishment dates, eastern Glacier National Park, Montana. Association of American Geographers, Charlotte.

1995: Malanson GP, Cairns DM: Calibrating dispersal in a simulation of fragmented forest dynamics. U.S. Landscape Ecology Symposium, Minneapolis.

1995: Kupfer JA, Runkle JR, Malanson GP: Early gap successional pathways in Hueston Woods Nature Preserve, Ohio: patterns and determinants. Association of American Geographers, Chicago.

1995: Butler DR, Malanson GP: Sedimentation rates and patterns in beaver ponds in a mountain environment. 26th Binghamton Symposium in Geomorphology, Charlottesville, VA.

1995: Butler DR, Malanson GP: Sedimentation patterns and rates in beaver ponds. Association of American Geographers, Chicago.

1994: Malanson GP, Driessen CA, Butler DR: Pattern of riparian environments of different geomorphic origin. Association of American Geographers, San Francisco.

1994: Malanson GP, Armstrong MP: Dispersal probability affects forest richness with climatic change. Global Change II: A Midwest Perspective. Iowa City.

1994: Butler DR, Malanson GP: Beaver geomorphology and lacustrine sedimentation in Glacier National Park, Montana. Association of American Geographers, San Francisco.

1993: Malanson GP: Scaling issues in a spatially explicit model of ecological response. International Geosphere-Biosphere Program Workshop on Global Change and Landscape Dynamics in Mediterranean Systems. Toledo, Spain

1993: Malanson GP, Butler DR, Walsh SJ, Brown DG: Hierarchical modeling of the position and pattern of alpine treeline. Association of American Geographers, Atlanta.

1993: Malanson GP, Cairns DM: Effects of cloudiness on vegetation processes modeled at two scales. West-Lakes Division, AAG, Milwaukee.

1993: Kupfer JA, Malanson GP: Forest-stream ecotones: structure, composition, and carbon dynamics along Midwestern cutbank edges. Association of American Geographers, Atlanta.

1993: Butler DR, Malanson GP: Nearest neighbor analysis of miniature polygonal patterned ground, eastern Glacier National Park, Montana. Association of American Geographers, Atlanta.

1992: O'Leary JF, Malanson GP: Patterns and controls on vegetation distribution and composition of coastal sage scrub. Symposium on Anticipated Effects of a Changing Global Environment on Mediterranean-type Ecosystems. Valencia, Spain.

1992: Malanson GP: Consequences of secondary effects of global climatic change on California shrublands. 19th Natural Areas Conference, Bloomington, IN.

1992: Malanson GP: Niche functions and plant community response to climatic change. Association of American Geographers, San Diego.

1992: Malanson GP, Butler, DR, Georgakakos KP: Nonequilibrium geomorphic processes and deterministic chaos. 23rd Binghamton Symposium in Geomorphology, Oxford, OH.

1991: Malanson GP, Yan Y-L, Westman WE: The realized niche of plant species and modeling their response to climatic change. Ecological Society of America, San Antonio.

1991: Kupfer JA, Malanson GP: Vegetational structure, composition and successional dynamics of a riparian forest edge. International Association of Landscape Ecology, Ottawa.

1991: Craig MR, Malanson GP: Riparian forest colonization on point bars. International Association of Landscape Ecology, Ottawa.

1991: Butler DR, Malanson GP, Walsh SJ,: Snow-avalanche paths: conduits from the periglacial-alpine to the subalpine-depositional zone. 22nd Binghamton Symposium in Geomorphology, Buffalo, NY.

1990: Malanson GP, Westman WE: Modeling the response of California shrublands to change in climate and fire regime. Fire and the Environment Symposium, Knoxville.

1990: Malanson GP, Westman WE: Modeling the response of California shrublands to climate change. Association of American Geographers, Toronto.

1990: Butler DR, Walsh SJ, Malanson GP: Inclusion of temporal and spatial data on forest fires in a geographic information system for potential erosion hazards analysis: an example from Glacier National Park. Fire and the Environment Symposium, Knoxville.

1989: Malanson GP, Westman WE: Modelling interactive effects of climate change, air pollution, and fire on California shrublands. Ecological Society of America, Toronto

1989: Butler DR, Malanson GP, Oelfke JG: Potential catastrophic flooding from landslide-dammed lakes, Glacier National Park, Montana, USA. Second International Conference on Geomorphology, Frankfurt.

1988: Malanson GP: Processes in riparian forests. Association of American Geographers, Phoenix.

1988: Hanson JS, Malanson GP: Spatial constraints on the response of vegetation to climate change. West-Lakes Division, AAG, St. Paul.

1988: Butler DR, Malanson GP: Periglacial patterned ground, Glacier National Park, Montana. Association of American Geographers, Phoenix.

1987: Westman WE, Malanson GP: Effects of climate change on Mediterranean-type ecosystems in California and Baja California. World Wildlife Fund Symposium, Washington, DC.

1987: Malanson GP: Space in simulations of forest dynamics. Association of American Geographers, Portland.

1986: Malanson GP: Diversity: effects of fire regime and ecological resilience. Association of American Geographers, Minneapolis.

1986: Malanson GP: Diversity and resilience: effects of fire regime. Ecological Society of America and International Congress of Ecology, Syracuse.

1984: Malanson GP, Butler, DR: The role of avalanche paths in forest fire behavior. Association of American Geographers, Washington.

1984: Butler DR, Malanson GP: Tree-ring dating of high magnitude snow avalanches, Glacier National Park, Montana. Association of American Geographers, Washington.

1983: Malanson GP: Analyzing Gaussian distributions of species importance values. Association of American Geographers, Denver.

1983: Malanson GP: A critique of ecological similarity indices. Southwest Division, AAG, Hot Springs, AR.

1982: Malanson GP: Simulation of post-fire succession in Californian coastal sage scrub. Association of American Geographers, San Antonio.

1982: Malanson GP: Post-fire succession in Californian coastal sage scrub. Ecological Society of America, University Park, PA.

1982: Malanson GP, Westman WE: Fire management in Californian coastal sage scrub. Association of Pacific Coast Geographers, Long Beach.

1981: Malanson GP: Modeling post-fire succession in coastal sage scrub. USFS Symposium on dynamics and management of Mediterranean type ecosystems, San Diego

1981: Malanson GP: A multiple pathway model of post-fire succession in Californian coastal sage scrub. Association of American Geographers, Los Angeles.

1980: Malanson GP: Simulation of species importance values in succession. Association of American Geographers, Louisville.

1979: Travis RW, Rogers GF, Malanson GP: An insular geography approach to equilibrium numbers of physician specialties across urban centers. Association of American Geographers, Philadelphia.

1979: Malanson GP: Perception of the Uintah Valley Indian Reservation. Association of Pacific Coast Geographers, Santa Barbara.

1978: Van Pelt NS, Malanson GP, Petersen JF: Ecological studies in the Utah canyonlands: a review and appraisal. Association for Arid Lands Studies, Denver.

1978: Malanson GP: Dissimilarity of hanging garden communities. Association of American Geographers, New Orleans

**Invited departmental presentations at:**

UC Santa Barbara, Memphis State Univ, Univ Colorado, Univ Oklahoma, Univ Connecticut, SUNY Albany, Univ Kansas, Univ Georgia, Univ North Carolina (2), Pennsylvania State Univ, Michigan State Univ, Univ Arizona, Iowa State Univ (3), UC San Diego, Southwest Texas State Univ, Univ Minnesota; Peking University (2); Univ Nevada-Las Vegas, Kansas State Univ, Univ Northern Illinois, National Science Foundation, Univ Maryland; Virginia Tech; Crown of the Continent Research Learning Center.