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**STEPHEN R. MITCHELL**

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**Research Interests**

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Global change, ecosystem ecology, landscape ecology, forest community ecology, and simulation modeling. Strong interest in studying the effects of global climate change on the disturbance regimes and biogeochemical cycling of terrestrial ecosystems.

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**Education**

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- 2009 OREGON STATE UNIVERSITY  
Doctor of Philosophy in Forest Science, Minor in Ecosystem Informatics  
Dissertation: The effects of forest fuel reduction on fire severity and long-term carbon storage
- 2004 DUKE UNIVERSITY  
Master of Forestry
- 2001 EMORY UNIVERSITY  
Bachelor of Science in Anthropology and Human Biology, Minor in Philosophy

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**Current Position**

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- 2008- Postdoctoral Associate in Ecology at the Nicholas School of the Environment, Duke University

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**Refereed Journal Articles**

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- 2012 Cambell J.L., Harmon M.E., and Mitchell S.R. Can fuel-reduction treatments really increase forest carbon storage in the western US by reducing future fire emissions? *Frontiers in Ecology and the Environment* (in press)
- 2011 Mitchell S.R., Beven K.J., Freer J.E., and Law B.E. Processes influencing model-data mismatch in drought-stressed, fire-disturbed eddy flux sites. *Journal of Geophysical Research – Biogeosciences* 116, G02008.
- 2009 Mitchell S.R., Harmon M.E., and O'Connell, K.E.B. Forest fuel reduction alters fire severity and long-term carbon storage in three Pacific Northwest ecosystems. *Ecological Applications* 19:643-655
- 2009 Mitchell S.R., Beven K.J., and Freer J.E. Multiple sources of predictive uncertainty in modeled estimates of net ecosystem CO<sub>2</sub> exchange. *Ecological Modelling* 220: 3259–3270

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**Under Review**

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Mitchell S.R., Harmon M.E., and O'Connell, K.E.B. Carbon debt and carbon sequestration parity in forest bioenergy production. Under review at *Proceedings of the National Academy of Sciences*

## Working Papers

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Kasischke E.S., O'Donnell J.A., Kane E.S., Hoy E.S., Mitchell S.R., Barrett K., and Turetsky M.R. Post-fire permafrost degradation increases boreal forest loss in interior Alaska

Mitchell S.R., Christensen, N.L., Walters J.W., Cohen S.A., and Bertone M. Multitrophic niche overlap in pine forest ecosystems of the Atlantic coastal plain

Mitchell S.R., Christensen, N.L., and Walters J.W. The red-cockaded woodpecker as an umbrella species in the pine forests of the Atlantic coastal plain

Mitchell S.R., Harmon M.E., and O'Connell, K.E.B. Modification of landscape-level fuel load alters fire behavior and long-term carbon storage in three Pacific Northwest ecosystems

Mitchell S.R. and Christensen, N.L. Disturbance history as a determinant of vegetative composition in pine forests of the Atlantic coastal plain

## Presented Research

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- 2011 Vegetative diversity and composition correlates with avifaunal diversity and composition in pine forests of the Atlantic coastal plain. Presented at the Ecological Society of America conference in Austin, Texas
- 2010 Processes influencing model-data mismatch in drought-stressed, fire-disturbed eddy flux sites. Presented at the American Geophysical Union Fall conference in San Francisco, California
- 2010 Harvesting forests for biofuels production likely to yield a near-term increase in atmospheric CO<sub>2</sub>. Presented at the Ecological Society of America conference in Pittsburgh, Pennsylvania
- 2009 Forest fuel reduction alters pyrogenic C emissions and landscape-level C storage in Ponderosa pine ecosystems. Presented at the Ecological Society of America conference in Albuquerque, New Mexico
- 2007 Effects of forest fuel reduction on fire severity and long-term carbon dynamics across three Pacific Northwest ecosystems. Presented at the Ecological Society of America conference in San Jose, California
- 2006 The predictive uncertainty of modeled estimates of net ecosystem CO<sub>2</sub> exchange. Presented at the Long-Term Ecological Research symposium in Estes Park, Colorado
- 2006 The predictive uncertainty of modeled estimates of net ecosystem CO<sub>2</sub> exchange. Presented at the Ecological Society of America conference in Memphis, Tennessee
- 2005 Herb-layer composition across an 80-year chronosequence following clear-cutting in southern Appalachian forests. Presented at the Ecological Society of America conference in Montreal, Quebec

## Related Skills

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Experienced in methods of multivariate analysis, Bayesian hierarchical models, and simulation modeling. Statistical Software: *S-Plus*, *R*, *PC-ORD*; Mathematical Software: *MATLAB*, *Mathematica*; GIS: *ArcGIS*; Programming: Working knowledge of *C*, *Fortran*, and *Python*.

## **Media Outreach**

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Research discussed on MSNBC, *US News and World Report*, the *Los Angeles Times*, and other media outlets as well.

## **Awards**

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National Science Foundation IGERT Fellowship  
International Paper Scholarship  
Mount Oread Scholarship

## **Collaborators (past 48 months)**

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Norm Christensen (Duke), Ryan Emanuel (North Carolina State), Matthew Bertone (North Carolina State), Jeff Walters (Virginia Tech), Karsten Baumann (Atmospheric Research Associates), Mark Harmon (Oregon State), John Campbell (Oregon State), Kari O'Connell (Oregon Department of Forestry), Beverly Law (Oregon State), Eric Kasischke (Maryland), Jonathan O'Donnell (USGS), Evan Kane (Michigan Tech), Merritt Turetsky (University of Guleph), Keith Beven (Lancaster University), Jim Freer (University of Bristol), Susan Cohen (Marine Corps Base Camp Lejeune)