

## ABBREVIATED CURRICULUM VITAE

*Franco Biondi*

### University Degrees

- 1990-'94 Ph.D., Watershed Management and Geosciences; University of Arizona, Tucson.  
 1985-'87 M.S., Watershed Management; University of Arizona, Tucson  
 1980-'85 Laurea *magna cum laude* (Italian Doctorate), Forestry; Università di Firenze, Italy.

### Academic Appointments (post PhD)

- 2008-present Faculty Member, Interdisciplinary Graduate Program in Environmental Sciences, UNR.  
 2008-present External Faculty Member, PhD Program in "Scienze e Tecnologie per la Gestione Forestale e Ambientale", University of Tuscia, Viterbo, Italy.  
 2007-present Faculty Member, Graduate Program of Atmospheric Sciences, UNR.  
 2005-present Associate Professor, Department of Geography, University of Nevada, Reno (UNR).  
 2005-present Faculty Member, PhD Program in Ecology, Evolution and Conservation Biology, UNR.  
 2000-present Faculty Member, Graduate Program of Hydrologic Sciences, UNR.  
 2007 Guest Professor, Chair of Terrestrial Ecology, Swiss Federal Institute of Technology, Zurich, Switzerland.  
 2007 Visiting Associate Professor, School of Earth Sciences, Stanford University, California.  
 2000-2005 Assistant Professor, Department of Geography, University of Nevada, Reno.  
 1999-2000 Adjunct Professor, Global Change Research Group, Biology Department, San Diego State University, San Diego.  
 1998-2000 Assistant Project Scientist, Geosciences Research Division, Scripps Institution of Oceanography, University of California-San Diego, La Jolla.  
 1994-'97 Postgraduate Researcher, Paleoclimate; Geosciences Research Division, Scripps Institution of Oceanography, University of California-San Diego, La Jolla.

### Research Honors (since 2000)

- 2008 Hyung K. Shin Award for Excellence in Research, College of Science, University of Nevada, Reno.  
 2008 Senior Ecologist, Ecological Society of America (ESA) Board of Professional Certification.  
 2008 Outstanding Researcher Award, Mackay School of Earth Sciences and Engineering, University of Nevada, Reno.  
 2006 National Academy of Sciences, Committee Member, Surface Temperature Reconstructions for the Last 2,000 Years.  
 2001 Paper of the Year Award, Climate Specialty Group, Association of American Geographers.

### Peer-Reviewed Publications (since 1997)<sup>1</sup>

- (submitted) *Biondi, F.*, P. Hartsough, and I. Galindo Estrada. Recent warming at the tropical treeline of North America.  
 (submitted) Di Filippo, A., A. Alessandrini, *F. Biondi*, S. Blasi, L. Portoghesi, and G. Piovesan. Climate change and oak decline: Dendroecology and stand productivity of a Turkey oak (*Quercus cerris* L.) old stored coppice in Central Italy.  
 (submitted) Kleppe, J., D. Brothers, G. Kent, *F. Biondi*, S. Jensen, and N. Driscoll. Evidence for prolonged medieval drought in the Lake Tahoe Basin.

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<sup>1</sup> Articles in preparation were not included

- 2009 Dilts, T.E., J.S. Sibold, and *F. Biondi*. A weights-of-evidence model for mapping the probability of fire occurrence in Lincoln County, Nevada. *Annals of the Association of American Geographers* 99(4):1–16.<sup>1</sup>
- 2009 Piovesan, G., E. Presutti Saba, *F. Biondi*, A. Alessandrini, A. Di Filippo, and B. Schirone. Population ecology of yew (*Taxus baccata* L.) in the Central Apennines: Spatial patterns and their relevance for conservation strategies. *Plant Ecology* DOI 10.1007/s11258-009-9596-1.<sup>1</sup>
- 2008a *Biondi, F.*, and F. Qeadan. Inequality in paleorecords. *Ecology* 89(4): 1056–1067.<sup>1</sup>
- 2008b *Biondi, F.* and F. Qeadan. A theory-driven approach to tree-ring standardization: Defining the biological trend from expected basal area increment. *Tree-Ring Research* 64(2): 81–96.<sup>1</sup>
- 2008 *Biondi, F.*, T.J. Kozubowski, A.K. Panorska, and L. Saito. A new stochastic model of episode peak and duration for eco-hydro-climatic applications. *Ecological Modelling* 211: 383-395.<sup>1</sup>
- 2008 Kirchner, P., *F. Biondi*, R. Edwards, and J. McConnell. Variability of trace metal concentrations in Jeffrey pine (*Pinus jeffreyi*) tree rings from the Tahoe Basin, California, USA. *Journal of Forest Research* 13: 347–356.<sup>1</sup>
- 2008 Piovesan, G., *F. Biondi*, A. Di Filippo, A. Alessandrini, and M. Maugeri. Drought-driven growth reduction in old beech (*Fagus sylvatica*) forests of the central Apennines, Italy. *Global Change Biology* 14(6): 1265–1281.<sup>1</sup>
- 2008 Saito, L., *F. Biondi*, J.D. Salas, A.K. Panorska, and T.J. Kozubowski. A watershed modeling approach to streamflow reconstruction from tree-ring records. *Environmental Research Letters* 3: 024006 (6pp); doi:10.1088/1748-9326/3/2/024006.
- 2008 Hartsough, P.C., S.R. Poulson, *F. Biondi*, and I. Galindo Estrada. Stable isotope characterization of the ecohydrological cycle at a tropical treeline site. *Arctic, Antarctic, and Alpine Research* 40(2): 343–354.<sup>1</sup>
- 2007 *Biondi, F.*, S.D.J. Strachan, S.A. Mensing, and G. Piovesan. Radiocarbon analysis confirms the annual nature of sagebrush growth rings. *Radiocarbon* 49(3): 1231-1240.<sup>1</sup>
- 2007 Di Filippo, A., *F. Biondi*, K. Cufar, M. de Luis, M. Grabner, M. Maugeri, E. Presutti Saba, B. Schirone, and G. Piovesan. Bioclimatology of beech (*Fagus sylvatica* L.) on the Eastern Alps: spatial and altitudinal climatic signals identified through a tree-ring network. *Journal of Biogeography* 34(11): 1873-1892.<sup>1</sup>
- 2006 North, G.R., *F. Biondi*, P. Bloomfield, Christy, J. R., Cuffey, K. M., Dickinson, R. E., Druffel, E. R., Nychka, D., Otto-Bliesner, B., Roberts, N., Turekian, K. K., Wallace, J. M. *Surface Temperature Reconstructions for the Last 2,000 Years*, National Research Council, The National Academies Press, Washington, D.C., 196 pp.<sup>1</sup>
- 2006 Py, C., J. Bauer, P.J. Weisberg, and *F. Biondi*. Radial growth responses of singleleaf pinyon (*Pinus monophylla*) to wildfire. *Dendrochronologia* 24: 39-46.<sup>1</sup>
- 2005 *Biondi, F.*, P.C. Hartsough, and I. Galindo Estrada. Daily weather and tree growth at the tropical treeline of North America. *Arctic, Antarctic, and Alpine Research* 37(1): 16-24.<sup>1</sup>
- 2005 *Biondi, F.*, T.J. Kozubowski, and A.K. Panorska. A new model for quantifying climate episodes. *International Journal of Climatology* 25(9): 1253-1264.
- 2005 Piovesan, G., *F. Biondi*, M. Bernabei, A. Di Filippo, and B. Schirone. Spatial and altitudinal bioclimatic zones of the Italian peninsula identified from a beech (*Fagus sylvatica* L.) tree-ring network. *Acta Oecologica* 27: 197–210.<sup>1</sup>
- 2005 Piovesan, G., A. Di Filippo, A. Alessandrini, *F. Biondi*, and B. Schirone. Structure, dynamics, and dendroecology of an old-growth *Fagus* forest in the Apennines. *Journal of Vegetation Science* 16: 13-28.<sup>1</sup>
- 2004 *Biondi, F.* and K. Waikul. DENDROCLIM2002: A C++ program for statistical calibration of climate signals in tree-ring chronologies. *Computers & Geosciences* 30(3): 303-311.<sup>1</sup>
- 2003 *Biondi, F.*, I. Galindo Estrada, J.C. Gavilanes R., and A. Elizalde Torres. Tree growth response to the 1913 eruption of Volcán de Fuego de Colima, Mexico. *Quaternary Research* 59(3): 293-299<sup>1</sup>

<sup>1</sup> Reprint (PDF file) linked from <http://wolfweb.unr.edu/homepage/fbiondi/pubs.html>

- 2003 Weinheimer, A. and *F. Biondi*. Paleoclimatology: Varves. In: J.R. Holton, J.A. Pyle, and J.A. Curry (editors), *Encyclopedia of Atmospheric Sciences*, Academic Press, London, Vol.4, pp. 1680-1684.<sup>1</sup>
- 2002 *Biondi, F.*, T.J. Kozubowski, and A.K. Panorska. Stochastic modeling of regime shifts. *Climate Research* 23: 23-30.<sup>1</sup>
- 2002 Redmond, K.T., Y. Enzel, P.K. House, and *F. Biondi*. Climate variability and flood frequency at decadal to millennial time scales. In: P.K. House, R.H. Webb, V.R. Baker, and D.R. Levish (eds.), *Ancient Floods, Modern Hazards: Principles and Applications of Paleoflood Hydrology*, Water Science and Application Vol.5, American Geophysical Union, San Francisco, pp. 21-45.
- 2001 *Biondi, F.* A 400-year tree-ring chronology from the tropical treeline of North America. *Ambio* 30: 162-166.<sup>1</sup>
- 2001 *Biondi, F.*, A. Gershunov, and D.R. Cayan. North Pacific decadal climate variability since AD 1661. *Journal of Climate* (Letters) 14: 5-10.<sup>1</sup>
- 2000 *Biondi, F.* Are climate-tree growth relationships changing in north-central Idaho? *Arctic, Antarctic, and Alpine Research* 32: 111-116.
- 1999 *Biondi, F.* Comparing tree-ring chronologies and repeated timber inventories as forest monitoring tools. *Ecological Applications* 9: 216-227.<sup>1</sup>
- 1999a *Biondi, F.*, and J.E. Fessenden. Response of lodgepole pine growth to CO<sub>2</sub> degassing at Mammoth Mountain, California. *Ecology* 80: 2420-2426.<sup>1</sup>
- 1999b *Biondi, F.*, and J.E. Fessenden. Radiocarbon analysis of *Pinus lagunae* tree rings: implications for tropical dendrochronology. *Radiocarbon* 41: 241-249.<sup>1</sup>
- 1999 *Biondi, F.*, D.L. Perkins, D.R. Cayan, and M.K. Hughes. July temperature during the second millennium reconstructed from Idaho tree rings. *Geophysical Research Letters* 26: 1445-1448.<sup>1</sup>
- 1998 *Biondi, F.* Twentieth-century growth trends at the Gus Pearson Natural Area, Arizona, USA. In: F. Dallmeier and J.A. Comiskey (editors), *Forest Biodiversity in North, Central and South America, and the Caribbean: Research and Monitoring*, Man and the Biosphere Series, Vol.21. Unesco and The Parthenon Publishing Group, Pearl River, New York, pp. 107-147
- 1997 *Biondi, F.* Evolutionary and moving response functions in dendroclimatology. *Dendrochronologia* 15: 139-150.<sup>1</sup>
- 1997 *Biondi, F.*, D.R. Cayan, and W.H. Berger. Dendroclimatology of Torrey pine (*Pinus torreyana* Parry ex Carr.). *The American Midland Naturalist* 138: 237-251.<sup>1</sup>
- 1997 *Biondi, F.*, C.B. Lange, M.K. Hughes, and W.H. Berger. Inter-decadal signals during the last millennium (AD 1117-1992) in the varve record of Santa Barbara basin, California. *Geophysical Research Letters* 24: 193-196.<sup>1</sup>

#### Competitive Research Grants (since 1997)

- Multi-Century Streamflow Derived From Watershed Modeling and Tree-Ring Data*; Paleo Perspectives on Climate Change (P2C2) Program, National Science Foundation; **P.I.**, 2008-11.
- Tree-Ring Extension of Hydrological Records for Selected Eastern Nevada Valleys*; Southern Nevada Water Authority; 2008-10 (sole **P.I.**).
- Pre-settlement Wildfire, Drought, and Piñon Juniper Dynamics in Southeastern Nevada*; Department of the Interior, Bureau of Land Management (through the Great Basin Cooperative Ecosystem Study Unit); **P.I.**, 2007-2009.
- Tracing the Waters Through the Trees: North American Monsoon Dynamics During the Past Four Centuries*; Geography and Regional Science Program, National Science Foundation; 2005-09 (sole **P.I.**).
- Stochastic Modeling of Episode Duration, Magnitude, and Peak in Long Paleo Records*; Paleoclimate Program, National Science Foundation; **P.I.**, 2005-09.
- CAREER: Learning in the Woods - Decadal Climate, Water Supply, and Fire Frequency in the Great Basin*;

Paleoclimate Program, National Science Foundation; 2002-08 (sole **P.I.**).<sup>1</sup>  
*Radiocarbon Dating of Sagebrush for Fire History Research*; Research Initiatives Program, Woods Hole Oceanographic Institute; **P.I.**, 2005-06.  
*Did Settlement-Era Livestock Grazing Facilitate Pinyon-Juniper Expansion by Altering Fire Regimes?*; Joint Fire Science Program, Bureau of Land Management; Co-P.I., 2003-05.  
*Tree-Ring Dating of Truckee Charcoal Ovens*; Archaeologist Susan Lindström; 2003-05 (sole **P.I.**).  
*Assessment of Present, Past, and Future Climate Variability in the Americas from Treeline Environments*; Inter-American Institute for Global Change Research; Co-P.I., 1999-2005.  
*Tree-ring Dating of Eureka Charcoal Ovens*; Summit Envirosolutions; 2003-04 (sole **P.I.**).  
*Development of a Methodology for Building Long-term Fire History in Great Basin Valley Landscapes*; Joint Fire Science Program, Bureau of Land Management; Co-P.I., 2002-03.  
*High Elevation Tree Rings and Climate in the North American Tropics*; Paleoclimate Program, National Science Foundation; **P.I.**, 2000-03.  
*Establishing a Laboratory for High-resolution Paleoclimatology*; Interdisciplinary Science of Nevada's Unique Environments Program, National Science Foundation; 2001-02 (sole **P.I.**).  
*Tree-Ring Reconstruction of Climate Variability at the Tropical Boundary of the American West*; Paleoclimate Program, National Oceanic and Atmospheric Administration; **P.I.**; 2000-02.  
*The Last Four Centuries of the California Current: Calibration and Interpretation from Laminated Sediments, Tree-rings, and Historical Records of Southern Alta California and Baja California*; Inter-American Institute for Global Change Research; Co-P.I., 1997-99.  
*Multi-Proxy Reconstruction of Climate Variability in Jalisco, Mexico*; National Geographic Society; 1997-99 (sole **P.I.**).

### **Synergistic Activities (since 1997)**

#### ***Courses Taught at the University of Nevada, Reno***

2001, '02, '03, '04, '05, '08, '09	Physical Geography (GEOG 103, 3 credits) <sup>2</sup>
2008	Climate Change and its Environmental Impacts (GEOG/ATMS 121, 4 credits) <sup>3</sup>
2001, '02, '04	Field Methods (GEOG 314, 3 credits)
2006, '09	Understanding Climate (GEOG 321, 3 credits) <sup>3</sup>
2001, '03, '05, '09	Spatial Analysis (GEOG 416/616, 3 credits) <sup>2</sup>
2000, '02, '04	Climatology (GEOG 421/621, 3 credits) <sup>2</sup>
2002	Geography of Past Environments (GEOG 437/637, 3 credits) <sup>3</sup>
2001, '02, '03, '04, '06, '08, '09	Special Topics (GEOG 491/691, 1-3 credits)
2005	Advanced Geography – Climatology (GEOG 701R, 3 credits)
2001, '03, '08	Advanced Climatology (GEOG 721, 3 credits) <sup>2</sup>
2002	Rural Landscapes of Northern Italy (USAC; GEOG 300, 1 credit) <sup>3</sup>
2003	Research Rotation II (EECB 702, 3 credits)

#### ***Development of Research Tools***

2002-'03	<i>DendroClim2002</i> , Software for the analysis of climate-tree growth relationships. Freely available from <a href="http://dendrolab.org/dendroclim2002.htm">http://dendrolab.org/dendroclim2002.htm</a>
2002-'04	<i>DendroNET GIS</i> , Web-based ASP.NET interactive GIS service that allows online users to geographically browse the Great Basin region, create custom maps, and download time-series climate data by spatial coordinates. <a href="http://dendrolab.org/gis.htm">http://dendrolab.org/gis.htm</a>

<sup>1</sup> A Graduate Research Assistantship was provided by UNR's Office of the Vice President for Research for the first three years of the grant.

<sup>2</sup> Modified course

<sup>3</sup> New course

***Outreach Seminars Aimed at Groups Underrepresented in Science***

2002, '03, '04 *Learning in the Woods*, Science Experience for Nevada K-12 teachers and Latino/a students funded by a CAREER grant from the Paleoclimate Program in the Division of Atmospheric Sciences at the National Science Foundation.

***Service to the Scientific Community***

Organizer, Special Sessions I and II on “Climate, Wildfire, and Woodland Dynamics in the Great Basin of North America”, *2009 Annual Meeting of the Association of American Geographers*, Las Vegas, Nevada, USA.

Member, 2002-2006 and 2007-present, Selection Committee for the Paper of the Year Award, Climate Specialty Group, Association of American Geographers.

Member, 2006, National Academy of Sciences Committee on *Surface Temperature Reconstructions for the Past 2,000 Year*.

Co-leader, 2005-2006, MTNCLIM Working Group on *Paleoclimatology and Water Resources Management: Time for an Integrated Paleo-Resource?*.

Member, Scientific Board, *Eurodendro 2005 International Conference of Dendrochronology*, Sep 20-Oct 2, 2005, Viterbo, Italy.

Member, 1999-2005, Advisory Board, *Dendrochronologia*.

Member, 1997-2000, Committee on Biometeorology and Aerobiology, American Meteorological Society.

Organizer, Special Sessions I and II on “Paleorecords of Changing Climate Variability”, *98<sup>th</sup> Annual Meeting of the Association of American Geographers*, March 19-23, 2002, Los Angeles, California, USA.

Member, Organizing Committee for the International Conference on *Tree Rings, Environment, and Humanity: Relationships and Processes*, May 17-21, 1994, Tucson, Arizona, USA.

Reviewer of grant proposals submitted to the *National Science Foundation* (Civilian Research and Development Foundation Cooperative Grants Program; Earth System History Program; Ecosystem Studies Program; Geography and Regional Science Program; Instrumentation and Facilities Program; International Research Fellows Program; Marine Geology and Geophysics Program; Paleoclimate Program; Petrology and Geochemistry Program; Sedimentary Geology and Paleobiology Program), the *National Oceanic and Atmospheric Administration* (Climate and Global Change Program; Climate Change Data and Detection Program), the *United States Department of Agriculture* (National Research Initiative Competitive Grants Program), the *International Arid Lands Consortium*, the *International Foundation for Science*, Sweden, and the *Austrian Science Fund*.

Reviewer of manuscripts submitted to refereed journals (*American Midland Naturalist*; *Arctic, Antarctic, and Alpine Research*; *Australian Journal of Botany*; *Bulletin of the American Meteorological Society*; *Canadian Journal of Forest Research*; *Climate Research*; *Climatic Change*; *Dendrochronologia*; *Earth, Planets and Space*; *Ecological Applications*; *Ecological Monographs*; *Ecology*; *Ecoscience*; *Environmental Management*; *Forest Ecology and Management*; *Geology*; *Geophysical Research Letters*; *Global Change Biology*; *International Journal of Climatology*; *Journal of Climate*; *Journal of Coastal Research*; *Journal of Geophysical Research-Atmospheres*; *Journal of Geophysical Research-Oceans*; *Journal of Glaciology*; *Journal of the American Water Resources Association*; *Journal of Vegetation Science*; *Oecologia*; *Paleogeography, Paleoclimatology, Paleoecology*; *Plant Ecology*; *Proceedings of the National Academy of Sciences*; *Quaternary International*; *Quaternary Research*; *Radiocarbon*; *Restoration Ecology*; *Scandinavian Journal of Forest Research*; *Theoretical and Applied Climatology*; *Tree Physiology*; *Tree-Ring Research*; *Trees*; *Water Resources Research*), and for refereed books and proceedings.