

Dr. Valérie Trouet

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September 2015

CHRONOLOGY OF EDUCATION

Ghent University, Belgium	Bioscience Engineering	BSc, 1997
Ghent University, Belgium	Bioscience Engineering: Land Management and Forestry; Major in soil and water management	MEng, 1999
KULeuven, Belgium	Bioscience Engineering	PhD, 2004
PennState University	Geography	Postdoc, 2005-2006

CHRONOLOGY OF EMPLOYMENT

2015-Present	Associate Professor , University of Arizona, Laboratory of Tree-Ring Research and School of Natural Resources and Environment
2011-2015	Assistant Professor , University of Arizona, Laboratory of Tree-Ring Research and School of Natural Resources and Environment
2007- 2010	Research Scientist , the Swiss Federal Research Institute for Forest, Snow, and Landscape WSL (ETH domain), Dendro Sciences Research Unit
2005 – 2006	Post-Doctoral Research Associate , The Pennsylvania State University, Department of Geography, Vegetation Dynamics Laboratory.
2000 – 2003	Doctoral Research Fellow , Institute for the Promotion of Innovation by Science and Technology in Flanders

HONORS AND AWARDS (SELECTED)

2015	NSF travel grant to attend 5 th International Summit on Hurricanes and Climate Change (Chania, Crete, June 9-14 2015)
2014	NSF CAREER Grant
2000	Doctoral Research Fellowship , Institute for the Promotion of Innovation by Science and Technology in Flanders
1999	Development Cooperation Prize , Belgian Development Cooperation

SERVICE/OUTREACH (2011-PRESENT)

Associate editor for Fire Ecology (2010-present)

AMQUA council member (2015-present)

Reviewer for >30 ISI-listed journals, including Science, Nature, Nature Geoscience, Nature Communications

Reviewer for proposals for national and international funding agencies, including NSF – National Science Foundation and NGS - National Geographic Society

Professional memberships: AGU, ESA, Tree-Ring Society

Conferences, workshops, and fieldweeks (selected):

- 2nd American Dendrochronology Conference (13-17 May 2013, Tucson, AZ), **co-chair of the programming committee**
- PAGES NAM2K workshop (27-29 October 2011; Tucson, AZ), **convenor**
- Department of Forest Resources and Environmental Conservation, Virginia Tech: A showcase of female scientists (13 March 2012, Blacksburg, VA), discussion panellist
- North American Dendroecological Fieldweek (2011, 2012), dendroclimatology instructor (INVITED)
- International Dendroecological Fieldweek (Tasmania, January 2014), dendroclimatology instructor (INVITED)
- ARAMACC summer school (Wales, UK, May 2014), instructor (INVITED)

PEER-REVIEWED PUBLICATIONS (PUBLISHED OR ACCEPTED)

**Publications substantially based on work done as a graduate student.*

Underlined author is a student or post-doctoral advisee.

H-index: 18 (ISI) and 21 (Google Scholar)

Total citations: 1297 (ISI) and 2023 (Google Scholar)

Journal articles (indexed in the Journal Citation Reports, Science Citation Index)

37. Belmecheri S, Babst F, Wahl ER, Stahle DW, **Trouet V** (in press) Millennium-length evaluation of Sierra Nevada snowpack. *Nature Climate Change*

36. Cook ER and 55 co-authors including **Trouet V** (in press) Old World megadroughts and pluvials during the Common Era, *Science Advances*

35. Baker A, Hellstrom J, Kelly BFJ, Mariethoz G, **Trouet V** (2015) A composite annual-resolution stalagmite record of North Atlantic climate over the last three millennia. *Nature Scientific Reports* DOI: 10.1038/srep10307

34. Dawson A, Austin D, Walker D, **Trouet V** (2015) A tree-ring based reconstruction of early summer precipitation in southwestern Virginia (1750-1981). *Climate Research* 64, 243-256.

33. **Trouet V** (2014) A tree-ring based late summer temperature reconstruction (1675-1980) for the northeastern Mediterranean. *Tree-Ring Research/Radiocarbon* 56, 69–78.

32. Klesse S, Ziehmer M, **Trouet V**, Frank D (2015) A 400 year multiproxy summer climate reconstruction from Mt. Olympus, Greece. *Climate Dynamics* 45, 807-824.

31. Babst F, Alexander MR, Moore DJ, Monson R, Frank DC, Klesse S, Bouriaud O, Poulter B, Ciais P, Roden J, Bowling D, **Trouet V** (2014) A tree-ring perspective on the terrestrial carbon cycle. *Oecologia* DOI 10.1007/s00442-014-3031-6

30. Seim A, Treydte K, **Trouet V**, Frank F, Fonti P, Tegel W, Panayotov M, Fernandez Donado L, Büntgen U (2014) Climate sensitivity of Mediterranean pine growth reveals a distinct west-east dipole structure. *IJ Climatology* DOI: 10.1002/joc.4137

29. Babst F, Bouriaud O, Alexander MR, **Trouet V**, Frank D (2014) Biomass estimates from tree rings: A case study at five managed forest sites. *Dendrochronologia* 32, 153-161.

28. **Trouet V**, Diaz HF, Wahl ER, Viau AE, Cook ER (2013) A 1500-year reconstruction of annual mean temperature for temperate North America on decadal-to-multidecadal time-scales. *Environmental Research Letters* DOI 10.1088/1748-9326/8/2/024008

27. PAGES2K consortium (including **Trouet V**) (2013) Temperature variability at the continental scale over two millennia. *Nature Geoscience* DOI 10.1038/NGEO1797

26. De Ridder M, Trouet V, Van den Bulcke J, Hubau W, Van Acker J, Beeckman H (2013) A tree-ring based comparison of *Terminalia superba* climate-growth relationships in West and Central Africa. **Trees – Structure and Function** DOI 10.1007/s00468-013-0871-3
25. Trouet V, Van Oldenborgh GJ (2013) KNMI Climate Explorer: a web-based research tool for high-resolution paleoclimatology. **Tree-Ring Research** 69(1): 3-13.
24. Babst F, Poulter B, Trouet V, Kun T, Neuwirth B, Wilson R, Carrer M, Grabner M, Tegel W, Levanic T, Panayotov M, Urbinati C, Bouriaud O, Ciais P, Frank D (2012) Climatic drivers of forest productivity derived from 1000 sites in Europe. **Global Ecology and Biogeography** DOI: 10.1111/geb.12023
23. *Trouet V, Mukelabai M, Verheyden A, Beeckman H (2012) Cambial growth season of brevi-deciduous *Brachystegia spiciformis* trees from South Central Africa restricted to four months. **PLoS ONE** 7(10): e47364. DOI:10.1371/journal.pone.0047364
22. Seim A, Buntgen U, Fonti P, Haska H, Herzig F, Tegel W, Trouet V, Treydte K (2012) The paleoclimatic value of a millennium-long tree-ring chronology from Albania. **Climate Research** DOI: 10.3354/cr01076
21. Trouet V, Panayotov M, Ivanova A, Frank DC (2012) A pan-European summer teleconnection mode revealed by a new temperature reconstruction from the northeastern Mediterranean (1868-2008). **The Holocene** DOI: 10.1177/0959683611434225
20. Trouet V, Scourse JD, Raible CC (2012) North Atlantic storminess and Atlantic Meridional Overturning Circulation in the last Millennium: reconciling contradictory proxy records of NAO variability. **Global and Planetary Change** DOI 10.1016/j.gloplacha.2011.10.003 Most cited publication in Global and Planetary Change in 2012
19. Baker A, Wilson R, Fairchild I, Franke J, Spoetl C, Trouet V (2011) High resolution d18O and d13C records of the last millennium climate from an annually laminated Scottish stalagmite. **Global and Planetary Change** DOI: 10.1016/j.gloplacha.2010.12.007
18. Buntgen U, Tegel W, Nicolussi K, McCormick M, Frank D, Trouet V, et al. (2011) 2500 years of European climate variability and human susceptibility. **Science** DOI: 10.1126/science.1197175
17. *Trouet V, Esper J, Beeckman H (2010) Climate/growth relationships of *Brachystegia spiciformis* from the Miombo woodland in southern Africa. **Dendrochronologia** DOI: 10.1016/j.dendro.2009.10.002
16. Trouet V, Taylor AH (2010) Multi-century variability in the Pacific North American (PNA) circulation pattern reconstructed from tree rings. **Climate Dynamics** DOI:10.1007/s00382-009-0605-9
15. Trouet V, Taylor AH, Wahl ER, Skinner CN, Stephens SL (2010) Fire-climate interactions in the American West since 1400 CE. **Geophysical Research Letters** DOI:10.1029/2009GL041695
14. Buntgen U, Frank D, Trouet V, Esper J (2010) Diverse growth trends and climate responses of high-elevation Mediterranean tree-ring width and density. **Trees – Structure and Function** DOI:10.1007/s00468-009-0396-y
13. Buntgen U, Trouet V, Leuschner HH, Frank D, Friedrichs D, Esper J (2010) A tree ring-based summer drought reconstruction for Central Germany reveals evidence of the Medieval Climate Anomaly. **Quaternary Science Reviews** DOI: 10.1016/j.quascirev.2010.01.003
12. Frank D, Esper J, Raible C, Buntgen U, Trouet V, Joos F (2010) Ensemble temperature reconstruction constraints on CO₂ feedbacks. **Nature** 463, 527-530, DOI: 10.1038/nature08769

11. Panayotov M, Bebi P, **Trouet V**, Yurukov S (2010) Climate signal in tree-ring chronologies of *Pinus peuce* and *Pinus heldreichii* from the Pirin Mountains in Bulgaria. **Trees – Structure and Function** 24, 479-490, DOI:10.1007/s00468-010-0416-y
10. **Trouet V**, Esper J, Graham NE, Baker A, Frank DC, Scourse JD (2009) Persistent positive North Atlantic Oscillation mode dominated the Medieval Climate Anomaly. *Science* 324, 78–80, DOI: 10.1126/science.1166349
9. **Trouet V**, Taylor AH, Carleton AM (2009) Interannual variations in fire weather, fire extent, and synoptic-scale circulation patterns in northern California and Oregon. **Theoretical and Applied Climatology** 95:349-360, DOI: 10.1007/s00704-008-0012-x.
8. Skinner CN, Abbott CS, Fry DL, Stephens SL, Taylor AH, **Trouet V** (2009) Variation in Fire Regime Characteristics in California's North Coast Range. **Fire Ecology** 5: 73-96, doi: 10.4996/fireecology.0503073
7. Friedrichs D, **Trouet V**, Büntgen U, Frank DC, Esper J, Neuwirth B, Löffler J (2009) Twentieth century climate sensitivity of Central European tree species. **Trees - Structure and Function** 23:729-739, DOI 10.1007/s00468-009-0315-2
6. Taylor AH, **Trouet V**, Skinner CN (2008). Climatic influences on fire regimes in montane forests in the southern Cascades, California, USA. **International Journal of Wildland Fire** 17:60-71.
5. Yuan Y, Shao X, Wei W, Yu S, Gong Y, **Trouet V** (2007) The potential to reconstruct Manasi River streamflow in the northern Tien Shan mountains (NW China). **Tree Ring Research** 63, 81-93.
4. **Trouet V**, Taylor AH, Carleton AM, Skinner CN (2006) Fire-climate interactions in forests of the American Pacific Coast. **Geophysical Research Letters**, 33:L18704, doi:10.1029/2006GL027502.
3. ***Trouet V**, Coppin P, Beeckman H (2006) Annual ring patterns in Brachystegia Trees of the Miombo Woodland reveal climatic Influence. **Biotropica** 38(3): 375-382.
2. *Fichtler E, **Trouet V**, Beeckman H, Coppin P, Worbes M (2004) Climatic signals in tree rings of *Burkea africana* and *Pterocarpus angolensis* from semi-arid forests in Namibia. **Trees – Structure and Function** 18: 422-451.
1. ***Trouet V**, Haneca K, Coppin P, Beeckman H (2001) Tree ring analysis of *Brachystegia spiciformis* and *Isoberlinia tomentosa*: evaluation of the ENSO-signal in the miombo-woodland of eastern Africa. **IWA Journal** 22: 385-399.

Selected other peer reviewed articles and book chapters

3. Diaz H, **Trouet V** (2014) Some Perspectives on Societal Impacts of Past Climatic Changes. **History Compass**
2. **Trouet V** (2011) Paleoclimates. In: Mastrandrea, M., Schneider, S.H. and Root, T.L. (Eds.), The Encyclopedia of Climate and Weather, Oxford University Press, 2nd edition, 391-394.
1. **Trouet V** (2011) Little Ice Age. In: Mastrandrea, M., Schneider, S.H. and Root, T.L. (Eds.), The Encyclopedia of Climate and Weather, Oxford University Press, 2nd edition, 241-243.

Papers in review

3. Abram NJ, McGregor HV, Tierney JE, Evans MN, McKay NP, Kaufman DS, and the PAGES 2K Consortium (including **Trouet V**) (in revision) The onset of industrial-era warming across the oceans and continents.
2. **Trouet V**, Harley G, Dominguez-Delmas M (submitted) North Atlantic Tropical Cyclone Response to Past Radiative Forcing Revealed by Shipwreck Rates.
1. Charney ND, Babst F, Poulter B, Record S, **Trouet V**, Frank D, Enquist BJ, Evans MEK (submitted) Observed forest sensitivity to climate implies larger reductions in 21st century forest growth.

MEDIA COVERAGE OF RESEARCH (SELECTED; 2011-PRESENT)

- www.insidescience.org (March 10 2014), *Climate alters Mongolian Past and Present* (Marcus Woo), comment on PNAS paper by Pederson et al.
- climatenexus.org (January and December 2014), Telepressers, panellist on CA drought
- Video interview for NAU paleoclimate science documentary 'Taking Earth's temperature' (Oct 2013): <http://takingearthsttemperature.org/>
- stateimpact.npr.org/Texas (June 5, 2013), *High wildfire risk, longer fire season possible this year* (Holly Heinrich)
- environmentalresearchweb.org (July 5, 2013), *Tree rings and pollen enable 1500-year temperature reconstruction* (Nadya Anscombe)
- climatenexus.org (June 2013), Telepresser, panellist on wildfire in the American West
- *Arizona Daily Star* (4 November 2012): *Laboratory in the sky* (Newspaper article about UA research on Mt Lemmon)

SCHOLARLY PRESENTATIONS (2011-PRESENT)

University departmental seminars (invited only)

- **Department of Atmospheric and Hydrological Sciences, University of Arizona**, Seminar series Fall 2015 (29 October 2015) *Shipwreck rates reveal North Atlantic Tropical Cyclone Response to Past Radiative Forcing*
- **Physical Oceanography and Climate Change seminar series, University of Wales, Bangor (UK)** (21 May 2014), *Reconstructing the position of the North Atlantic Jet*
- **Laboratory of Tree-Ring Research, University of Arizona, Tree-Ring Talk series** (21 November 2012) *A Tree-Ring Based Reconstruction of Balkan Temperatures Back to Medieval Times Reveals a Robust Pan-European Summer Teleconnection Mode*
- **Research Insights in Semiarid Ecosystems (RISE) Symposium, University of Arizona** (13 October 2012) *Large-scale interactions of climate, fire and vegetation structure in the western US as observed through tree rings*
- **Department of Forest Resources and Environmental Conservation, Virginia Tech** (12 March 2012) *Fire-Climate Interactions in the American West*
- **Department of Atmospheric Sciences, University of Arizona, Seminar series Fall 2011** (3 November 2011) *Climate Dynamics during the Medieval Climate Anomaly.*
- **School of Geography and Development, University of Arizona, Speaker series Fall 2011** (30 September 2011) *Trees, Climate and History: What Tree-rings Can Tell Us About European History, Its Climate Drivers and How It's Linked to the Southwest*
- **Laboratory of Tree-Ring Research, University of Arizona, Tree-Ring Talk series** (27 April 2011) *Myth busters: can tropical trees form annual rings?*
- **Fire Sciences Laboratory, Rocky Mountain Research Station, USDA Forest Service, Missoula** (3 February 2011) *Fire-climate interactions in the American West*

National and international conferences (invited only)

- **ESA annual meeting** (Baltimore, MD, August 10-14 2015) *A tree-ring perspective on terrestrial climate dynamics.*
- **XYLAREDD 2015 symposium** (Tervuren, Belgium, May 26-29 2015) *Climatic drivers of tree growth in the miombo woodland of southern Africa.*
- **MTNCLIM 2014 Conference, Cirmount** (Midway, UT, September 15-18 2014) *Reconstructing North Pacific Jet variability and its influence on Sierra Nevada fire regimes*
- **Center for the Ancient Mediterranean workshop, Columbia University** (NYC, NY, May 17 2014) *Potential pathways of climatic influence on the late Roman Empire*
- **AAG meeting** (Tampa, FL, April 6-12 2014) *Taking dendrochronology to the next level: reconstructing jet stream variability*
- **9th International Conference on Dendrochronology** (Melbourne, AUS, January 13-17 2014) *Climate Dynamics and European History*
- **PAGES NAM2K meeting** (Flagstaff, AZ, 8-10 May 2011) *Climate drivers of tree growth in Europe*

GRANTS AND CONTRACTS

Federal

PI: "Tree-ring based reconstruction of decadal to centennial-scale Northern Hemisphere Jetstream variability"; NSF CAREER (587,442 USD; 05/15/2014-05/14/2019)

PI: "Influence of interannual North Pacific Jet variability on Sierra Nevada Fire regimes"; USGS Southwest Climate Science Center (139,280 USD; 9/9/2013-9/8/2015); co-I: J Betancourt, USGS

Co-I: "Estimating carbon flux and storage: constraint of the Community Land Model using observations at different temporal scales"; DE-FOA-000749 (970,020 USD; 9/1/2013-8/31/2016);

PI: D. Moore, co-Is: A. Arellano, V. Trouet, A. Richardson

Co-I: "Catalyzing International Partnerships in Community-related Environmental and Sustainability Research and Education: Ethical, Structural and Institutional Issues of Collaboration"; NSF (20,000 USD; 4/1/12-3/31/14);

State

PI: "Dendroclimatic potential of *Widdringtonia cedarbergensis* trees in South Africa" UA (CoS Seed Grant: 9,986 USD; 10/1/2015-9/30/2016)

PI: "Hydrologically-driven Spatial Heterogeneity of Tree Productivity and Tree Climate Sensitivity in the Southwest" UA (WEES; 39,994 USD; 7/1/2014-6/30/2013); Co-I: D Moore, SNRE, UA

PI: "Spatial heterogeneity of tree growth sensitivity to climate in the Jemez River Basin Critical Zone Observatory" UA SAHRA (14,996 USD; 5/1/2012-6/30/2012)

PI: "Workshop: North American Dendroclimatic Data: Compilation, Characterization, and Spatiotemporal Analysis"; PAGES NAM2K (5,000 USD; 8/15/2011-10/31/2011)

Co-I: UA TRIF Optics/Imaging special program (14,941 USD; 2/1/2011-3/1/2011) PI: M. Hughes

TEACHING (2011-PRESENT)

Courses

Spring 2011

Topics in Dendrochronology GEOS 595E

Fall 2011, 2012, 2014, 2015

Introduction to Dendrochronology GEOS 439A/539A

Spring 2012, 2013, 2014

Introduction to Global Change GC 170A

Fall 2012, 2013, Spring 2013, 2014

Renewable Natural Resources Seminar RNR 696A

Theses and dissertations directed as chair

- Zakia Hassan Khamisi, MS, SNRE, UA (March 2014)
- Robert Shepard, MS, SNRE, UA (2013-present); in progress
- Michael Ross Alexander, PhD, SNRE, UA (2012-present); in progress
- Amy Hudson, PhD, SNRE, UA (2015-present); in progress

Post-doctoral advisees:

- Flurin Babst (2013-2015)
- Soumaya Belmecheri (2015-present)
- Genaro Gutierrez (2015-present)

Service on other dissertation and graduate committees

- Laura Marshall, PhD, SNRE, UA (2011-present); in progress
- Connor Nolan, PhD, Geosciences, UA (2013-present); in progress
- Paul Szejner, PhD, SNRE, UA (2013-present); in progress
- Rebecca Caroli, MS, Archeology, UA (2013-2015)
- Emily L Dynes, MS, SNRE, UA (2012-2015)
- Maaïke De Ridder, PhD, Applied Biological Sciences, Ghent University, Belgium (May 2013)
- Astika Bhugeloo, MSc, Geography, University of KwaZulu-Natal, South Africa (Spring 2014)
- Jesper Bjoerklund, PhD, Earth Sciences, University of Gothenburg, Sweden (June 2014)