

CURRICULUM VITAE: Valery J. Terwilliger

CONTACT INFORMATION:

University of Kansas
Department of Geography
Lawrence, Kansas 66045 USA
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FAX: 785-864-5378

EDUCATION:

- 1983-88 Ph.D. Geography. University of California, Los Angeles (subconcentration in geotechnical engineering)
1980-82 M.S. Forest ecology. University of Florida, Gainesville (subconcentration in botany)
1977 B.A. Biology. Western Maryland College (now McDaniel College), Westminster

PERTINENT EMPLOYMENT:

- 2016 Visiting Professor. University of California, Merced, School of Natural Resources
2011-2012 LE STUDIUM® research scientist fellow. Institut des Sciences de la Terre d'Orléans (ISTO), Orléans France
2010-2010 Visiting scientist. Carnegie Institution of Washington, D.C.
2008-present Adjunct Professor, Department of Geography. University of Kansas, Lawrence.
2007-09 Visiting Researcher. Université François Rabelais de Tours, France
2002-04 Senior Research Fellow, Smithsonian Environmental Research Center and Visiting Investigator, Carnegie Institution of Washington, D.C.
1999-2000 Visiting Scholar (Sabbatical). Columbia University, Biosphere 2 Center. Oracle, AZ.
1998-2008 Associate Professor. Department of Geography. Courtesy Professor, Department of Ecology and Evolutionary Biology, Affiliate member, Environmental Studies Program, Latin American Area Studies, Member Quaternary Science Program, University of Kansas, Lawrence.
1991-98 Assistant Professor. Department of Geography. Courtesy Professor. Department of Botany. University of Kansas, Lawrence, KS.
1989-1991 Postdoctoral Research Associate. Department of Geological Sciences, University of California, Santa Barbara, CA. Sponsor: Dr. Michael J. DeNiro
1988-89 Lady Davis Postdoctoral Fellow. Institute of Earth Sciences, Hebrew University, Jerusalem, Israel. Sponsor: Dr. Asher P. Schick
1984-88 Research Assistant, University of California, Los Angeles.
Teaching Assistant, Department of Geography, University of California, Los Angeles
1981-82 Research Assistant. University of Florida, Gainesville, FL
1977-80 Agricultural Extensionist, Peace Corps and Banco Nacional de Nicaragua, Rama, Zelaya, Nicaragua; Conservation Biologist, Smithsonian Tropical Research

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Institute, Ancon, Panamá; Conservation Biologist, Asociación Costarricense para la Conservación de la Naturaleza, San José, Costa Rica

RESEARCH INTERESTS:

1989-present: I am interested in reconstructing palaeoenvironmental changes and in whether these changes influence the rise and fall of complex civilizations. I have conducted studies to improve knowledge of physical, biological, and biogeochemical influences on stable isotopic compositions of elements in biological matter and in water. I am also interested in the physiological responses of trees to environmental changes. These studies include stable isotopic analyses of carbon, nitrogen, hydrogen, and oxygen of bulk biological matter as well as fractions and specific compounds of these materials. Recently, I have been conducting research in northern Ethiopia. My main objective is to reconstruct Holocene environments to determine whether there are repeatable relationships between environmental (climate and land use) changes and the trajectories of the many complex kingdoms that have developed and declined there. The stable isotopic methods that I use for this work include analyses of carbon and nitrogen and of hydrogen in specific lipid compounds derived from plants ($\geq C_{26}$) in soil organic matter.

FIELD RESEARCH SITES:

Ethiopia, France, Panama, Israel, Costa Rica, Nicaragua, USA: California, Florida, Kansas, Maryland, Utah

TEACHING EXPERIENCE:

2012-14 Université d'Orléans/Institut des Sciences de la Terre d'Orléans. Directed Masters project requirements.

2007 Université François Rabelais de Tours (Geology). Portion of Scientific English for Masters students.

University of Kansas, Lawrence

1991- 2006 Global Environment and Civilization (EVRN 420/Geog 531)

Human Biogeography (Honors)(Biol/Geog 410)

Field Ecology (EVRN 460)

Introductory Physical Geography (Honors) (Geog 107)

Stable Isotopes in the Natural Sciences (Geog/Biol 749)

Applications of Stable Isotopes in the Natural Sciences (Geog 980).

Plant Geography (Geog 537/Biol 634).

Intermediate Physical Geography (Geog 331).

Environmental Conservation (Geography 304).

Vegetation Geography Seminar (on Tropical forest ecology)(Geog 937/Biol 968)

University of California, Santa Barbara

1990 Portion of Stable Isotope Methods Laboratory (Graduate course in Geological Sciences)

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Hebrew University, Givat Ram, Jerusalem, Israel.
1989 Portion of a field course in Physical Geography.

University of California, Los Angeles (as Teaching Assistant)
1983-87 People and the Earth's Ecosystems
1985-87 Ecology of Vegetation Laboratory
1985-87 Soils Laboratory

PROFESSIONAL SOCIETIES:

Association française pour l'étude du Quaternaire (French Quaternary Research Association)/
International Quaternary Association, French AFEQ Chapter
American Association for the Advancement of Science
American Geophysical Union
Association of American Geographers
European Association of Organic Geochemists
European Geosciences Union
International Biogeography Society
Comité National Français de Géographie (French National Geography Council)
Société Française des Isotopes Stables (French Stable Isotopes Association)

HONORARY SOCIETIES:

Sigma Xi, Full member

COMMITTEES AND SERVICE:

International:

2015- Advisory Board member, Société Français des Isotopes
2013 Judge, Young researcher's congress, Société Française des Isotopes Stables,
Dunkerque, France.
2012 Judge, International Conference on Applications of Stable Isotope Techniques to
Ecological Studies (ISOECOL), Brest, France
2011 Conference organizer. Le STUDIUM Conference: Hydrogen Isotopes as
Environmental Recorders. 15-16 September, Orleans, France <http://lestudium.cnrs-orleans.fr/hydrogen.html>
2010 Scientific committee, 2011 Conference of the International Association for
Geomorphology in Addis Ababa, Ethiopia.
2008-13 Advisory Board member, Société Français des Isotopes Stables

National (USA):

2012 Judge, Paleoenvironmental Specialty Group, Association of American Geographers,
of awards for best graduate student research proposal

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- 2008 Judge, Biogeography Specialty Group, Association of American Geographers, of awards for best graduate student research proposal
- 2007 University evaluator for National Research Council.
- 2005 Board Member nominee, Biogeography Specialty Group, Association of American Geographers.
Judge, Biogeography Specialty Group, of awards for best graduate student research proposal
Reviewed tenure dossier for University of San Francisco.
- 2004 Board Member nominee, Biogeography Specialty Group, Association of American Geographers.
- 2003 Review panelist for NSF, Science and Technology Centers Program
- 2002 Review panelist for EPA, STAR Environmental Studies Fellowships
- 1996- Reviewed manuscripts for Annals of the Association of American Geographers; Chemical Geology; Geochimica et Cosmochimica Acta; Geophysical Research Letters; Global Change Biology; Journal of Arid Environments; Journal of Environment and Development, Journal of Geophysical Research; Landscape Ecology; New Phytologist; Oecologia; Plant, Cell and Environment; Professional Geographer; Rapid Communications in Mass Spectrometry; Tree Physiology
- 1998 Reviewed tenure-track appointment renewal dossier (from University of Colorado at Colorado Springs)
- 1997 Judge, Biogeography Specialty Group, award for best graduate student research proposal
- 1996- Proposal reviews for National Science Foundation Earth Sciences Division (various programs), Geography and Regional Science, and Major Research Instrumentation Programs
- 1995 Judge, Buell Award for best graduate student presentation at Ecological Society of America meetings, Utah
- 1995 Textbook reviewer for Wm. C. Brown Publishers
- 1994 Nominee for Board member of Biogeography Specialty Group, Association of American Geographers
- 1994 Judge, Biogeography Specialty Group, award for best graduate student presentation at Association of American Geographers meetings, San Francisco

State University System (Kansas, USA):

1996 Ad Hoc Reviewer of NSF EPSCoR First Award proposals

University of Kansas (unless otherwise noted):

College and University:

University of Kansas

2001 Chaired panel of judges for graduate student research presentations for the Kansas

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- Chapter of Sigma XI.
- 1996-99 Committee on Undergraduate Studies and Advising (CUSA), Subcommittee on Academic Standards, and Chair of Subcommittee on Advising
- 1996-2007 Member, University Quaternary science Program
- 1994-95 Science Faculty Teaching Introductory Courses Group
- 1994 Participant in Undergraduate Affairs Committee of Chemistry Department to develop Environmental Chemistry major
- 1994 Ad Hoc Reviewer of General Research Fund Proposals for Biology entity
- 1993-2007 Member, Faculty Committee on Latin American Studies
- 1993 Campus-wide freshman advising during orientation
- 1992-95 Member, Graduate Council and Committee for Evaluation of New Programs and Program Changes

Departmental:

- 2005-06 Member, Faculty Affairs (Promotion and Tenure) Committee
- 2004-05 Member, Curriculum committee, Space Committee
- 2000-02 Member, Faculty Affairs Committee
- 1999 Member, Awards Committee
- 1998 Member, Faculty Affairs Committee
- 1996-99 Colloquium coordinator or co-coordinator
- 1993-96 Grade Appeal Committee
- 1992-95 Member, Faculty Affairs Committee
- 1992 Member, research committee for University review
- 1991-92 Member, Student Affairs Committee, graduate student recruitment

Kansas Ecological Reserve System:

- 1992-2007 Member
- 1992-94 Presentations for Kansas Ecological Reserves Field Day

Outreach:

- 2003 Invited discussions and field demonstrations for students at historically black colleges as part of NSF funded program (PI: Kelton Clarke). Smithsonian Environmental Research Center.
- 1995 Invited laboratory workshop leader for Summer Career Horizons Program. (U.S. Department of Education funded program for sixth grade students from at risk neighborhoods in Kansas City, Kansas
- 1995 Invited laboratory workshop leader for Expanding Your Horizons in Science and Mathematics Conference
- 1994 Invited Discussion leader for the Expanding Your Horizons in Science and Mathematics Conference

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GRADUATE STUDENTS

University of Kansas

Chair of Graduate Student Committee:

Joseph Daniel Terry (Masters in Geography Completed Fall 1996)
John Livingston (Masters in Geography Completed Fall 1995, presently chair,
Department of Geography & Environmental Studies, Slippery Rock University, PA)
Eunmi Chang Park (Ph.D. in Geography Completed Fall 1997)
Debbie Jeanette LeRoux, (Ph. D in Ecology and Evolutionary Biology completed
with honors, Summer 1999)
Zhang Xue, Doctoral Student, Ecology and Evolutionary Biology (Degree not
completed).

Member of Graduate Student committee (University of Kansas):

Masters Degree Completed:

Jon Shultz, Geography, Completed Fall 1995
Elizabeth Hane, Ecology and Systematics, Completed Fall 1995
Dana Peterson, Geography, Completed Summer 1999
Karen Willey, Geography, Completed 2009

Doctoral Degree Completed:

Kyeong Park, Geography, Completed Fall 1997
Marcia Schulmeister, Geology, Completed Fall 2000

External Supervisor, other universities:

Organic Geochemistry, University of Orleans/Institut des Sciences de la Terre, Orléans, France
Doctoral Degree :
Nicolas Bossard (Completed 2013)

Environmental Science, Earth Sciences, Addis Ababa University, Ethiopia:

Master's Degree:

Tsige Gebru, Environmental Science, Geology, Completed Fall 2007 (now doctoral
student at University of Cologne, Germany)

2007 Mekonnen Getahun, Environmental Science (Degree not completed)

Research Supervision (at University of Kansas unless otherwise stated):

Post-doctoral sponsor

2006-08 Nikki Strong, Postdoctoral researcher

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1994-96 Jun Huang, Postdoctoral researcher

Undergraduate supervision

2007 Cyrielle Gomes-Leal, Université François Rabelais de Tours, France
2007 Arthur Beauville, Université François Rabelais de Tours, France
2005-06 Andrew Hodgson, Kathryn McKinley
2002-04 Lauren Urgenson (now grad student at Univ. of Washington), Brianna Smith Miles, Kati Dawson, Andrea Krystan, all at Smithsonian Environmental Research Center.
2001-02 Thomas Rolf, undergraduate; Catherine Wiegand, visiting NSF-REU student
2000 Bryce Lawrence, Kellis Bayliss,
1999 Tom Buller, undergraduate
1997-00 Chandra Jones
1996-98 Fanny Stein, Ari Langston
1995-96 Reiko Makabe, undergraduate
1995 Lisa Peltier, visiting undergraduate Howard Hughes research fellow
1994 Yan Qui Huang, undergraduate
1993-94 Brent Helliker, Heather Milton
1992-93 Luke Gard, Jennifer Powers

Other

Organic Geochemistry, University of Orleans/Institut des Sciences de la Terre d'Orléans, France
2013 Celine van Haecke, I was the jury examiner for a visiting master's research project
2012-13 Joana Sauze, I designed and supervised a master's research assignment

PROFESSIONAL MEETINGS:

American Geophysical Union (Oral presentations):

2004 San Francisco, CA
1988 Baltimore, MD

Annual Meeting of the Association of American Geographers (Oral presentations):

2014 Tampa, FL
2012 New York, NY
2010 Washington, D. C.
2009 Las Vegas, Nevada (co-author of presentation by Z. Eshetu)
2008 Boston, MA
2005 Denver, CO
2004 Philadelphia, PA
2002 Los Angeles, CA
2001 New York City, NY
1999 Honolulu, HI

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- 1998 Annual Meeting of the Great Plains/Rocky Mountain Division of the Association of American Geographers. Lawrence, KS (Second author for student poster and oral research presentations)
- 1997 Fort Worth, TX
- 1996 Charlotte, NC
- 1994 San Francisco, CA
- 1993 Atlanta, GA
- 1992 San Diego, CA
- 1988 Phoenix, AZ

International Conference on Applications of Stable Isotope Techniques to Ecological Studies:

- 2012 Brest, France (Poster)
- 2004 Wellington, New Zealand (Oral)
- 2000 Braunschweig, Germany (Oral presentation, chaired session)

International Congress on Geochronology, Cosmochronology, and Isotope Geology (Oral presentations):

- 1998 Beijing, China
- 1994 Berkeley, CA

Ecological Society of America Meetings:

- 2005 Montreal, Canada (co-author on oral presentation by Cavender-Bares)
- 1997 Albuquerque, NM (oral)
- 1995 Snowbird, UT (oral)
- 1993 Madison, WI (oral)
- 1991 San Antonio, TX (Poster)
- 1988 Davis, CA (oral)

Gordon Conference, Stable Isotopes Session (Posters)

- 1995 Ventura, CA
- 1994 Oxnard, CA

Others (oral presentation unless otherwise noted):

- 2013 Association Française des Etudes Quaternaires. (Poster, first authored by J. Jacob)
- 2011 Geological Society of America Meeting, Minnesota. (Poster, first authored by B. M. Payton)
- 2011 Journées Jeunes Chercheurs de la Société Française des Isotopes Stables, Brest, France. (Poster, first authored by N. Bossard)
- 2011 International Quaternary Research Association, Bern, Switzerland
- 2011 Le STUDIUM: Hydrogen Isotopes as Environmental Recorders, Orléans, France
- 2011 International Meeting of Organic Geochemists, Interlaken, Switzerland (3 posters 2

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- of which first authored by N. Bossard)
- 2010 Société Française des Isotopes Stables, 6th Congress, Toulouse, France (poster)
 - 2009 Isocompound2009, Potsdam, Germany (poster)
 - 2009 EAQUA, (Eastern African Quaternary Association), Addis Ababa, Ethiopia
 - 2008 JESIUM (Joint European Stable Isotopes Users Meeting), Presqu'île de Giens, France.
 - 2008 Geological Society of America, Houston, TX (N. Strong, presenter)
 - 2006 Isotopes as tracers of ecological change, BASIN and SIBAE Stable Isotope Meeting, 13-15 March. Tomar, Portugal (poster) .
 - 2005 Applied Isotope Geochemistry. Paleoenvironment session. (Second author on oral presentation by Z. Eshetu.) Prague, Czechoslovakia.
 - 2002 Harvard workshop on long distance transport processes in plants (Poster first authored by J. Cavender-Bares). Harvard Forest.
 - 2002 Netcarb summer school on stable isotopic methods in ecosystem research. Carcavelos, Portugal (participant).
 - 2000 International Conference on Dendrochronology for the Third Millennium. Mendoza, Argentina (Oral presentation)
 - 1996 Stable Isotopes and the Integration of Biological, Ecological and Geochemical Processes, Association of Applied Biologists Conference, Newcastle upon Tyne, United Kingdom (Poster)
 - 1994 VI International Congress of Ecology, Manchester, England (Oral presentation)

INVITED PRESENTATIONS:

- 2015 19th International Conference of Ethiopian Studies, **Panel:** 4.01 Genesis and development of the Aksumite kingdom: archaeological and historical analysis, 24—28 Aug. Warsaw, Poland.
- 2014 University of Naples L'Orientale, Asia, Africa and Mediterranean Department, Naples, Italy
- 2012 Société Française des Isotopes Stables, Après midis scientifiques, L'Institut de France, Paris. (Presented by J. Jacob)
- 2012 French Researchers in Organic Geochemistry conference. Museum d'Histoire Naturelle, Orléans, France
- 2012 Paléo Grand Projet, Institut des Sciences de la Terre d'Orléans, Orléans, France
- 2011 Jeudis STUDIUM talk. Le STUDIUM[®] Institute for Advanced Studies, Orléans, France
- 2011 PaleohydroMil-ANR project workshop, Orléans, France
- 2011 Séminaire "Isotopes Stables" ThermoScientific, Annecy, France (Presented by J. Jacob)
- 2009 Institut des Sciences de la Terre d'Orléans (ISTO), Centre National de Recherche, Orléans, France
- 2009 McDonald Institute seminar. Archaeology. University of Cambridge, United Kingdom

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- 2009 Boston University, MA.
- 2008 Boston University, MA.
- 2007 Session F. American Society for Environmental History Annual Meeting, Baton Rouge, Louisiana, USA.
- 2007 Wollo University, Dessie Campus, Ethiopia.
- 2007 Le Centre Européen de Recherche et d'Enseignement des Géosciences de l'Environnement, UMR 6635, (CEREGE) Aix en Provence, France
- 2007 Session F. American Society for Environmental History. Baton Rouge, Louisiana.
- 2007 Université François Rabelais de Tours. Laboratoire de géologie des environnements aquatiques continentaux. Tours, France.
- 2006 Ethiopian Institute for Agricultural Research, Forestry Research Center, Addis Ababa, Ethiopia.
- 2006 University of Mekelle, Department of dryland agriculture and natural resources. Mekelle, Ethiopia.
- 2006 University of Minnesota, National Center for Earth Surface Dynamics, Minneapolis, MN
- 2005 Ujamaa Brownbag Series. University of Kansas
- 2004 Ethiopian Agricultural Research Organization, Addis Ababa
- 2000 Biology Department Research Seminar, Southwest Missouri State University, Springfield, MO
- 1997 Geography Department Research Seminar, Texas A&M University, College Station
- 1997 Office of International Programs Worldview Seminar, University of Kansas
- 1997 Quaternary Science interdisciplinary group lunch, University of Kansas
- 1997 Presentation at Statewide K*STAR NSF EPSCoR Conference, Topeka, KS
- 1996 Presentation at Latin American Studies Merienda lunch, University of Kansas
- 1996 Poster for Gordon Conference: Isotopes in the Physical and Life Sciences, Ventura, CA
- 1995 K*STAR NSF EPSCoR Conference, Manhattan, KS
- 1994 Botany Department Research Seminar, University of Kansas
- 1994 Poster at the Statewide K*STAR NSF EPSCoR Conference, Topeka, KS. (For National Science Foundation program)
- 1993 Poster presentation at the Statewide K*STAR NSF EPSCoR Conference, Topeka, KS. (For National Science Foundation program)
- 1989 Research presentation at Session S6 (in Probach): Mediterranean erosion of the International Congress on Geomorphology, Frankfurt, Germany
- 1988 Research seminar. Institute of Earth Sciences, Hebrew University of Jerusalem, Israel
- 1988 Doctoral research seminar. Department of Geography, University of California, Los Angeles
- 1983 Master's research seminar. Department of Forestry. University of Florida
- 1980 Research seminar. Departamento de Biología. Universidad Nacional de Costa Rica

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- 1980 Invited field course and lecture series for biology teachers. Universidad Estatal a Distancia, Costa Rica
- 1975 Research presentation at the Smithsonian Tropical Research Institute, Panama

FOREIGN LANGUAGES:

- Spanish; fluent reading, writing, speaking, and comprehension
- French; Advanced reading, writing, speaking, and comprehension
- Hebrew; some reading, writing, speaking, and comprehension

GRANT AWARDS AND FELLOWSHIPS:

Extra-mural

- 2014-16 Collaborator on Social Sciences and Humanities Research Council (Canada). Early state development in northern Ethiopia: PI: Catherine D'Andrea.
- 2011-12 LE STUDIUM® Loire Valley Institute of Advanced Studies. Compound-specific hydrogen isotopic analyses for unravelling present and past hydrological regimes. From biosynthesis to water cycle. Senior Scientist Fellowship, ca. \$70,000.
- 2006-10 National Science Foundation, Geography and Regional Science Program. Climate, land use, and the rise and fall of powerful Sub-Saharan African societies: collaborative research. PI: Terwilliger. Collaborator: Yongsong Huang. \$286,000.
- 2003-04 American Association for the Advancement of Science and National Science Foundation, Women's International Science Collaboration Program. Stable isotopic analyses of biological proxy to reconstruct paleoenvironments of the Middle Awash Basin, Ethiopia. PI: Terwilliger. \$5000.
- 2003-04 Smithsonian Senior Fellowships. Variation in photosynthetic and water use characters in relation to the distribution of oaks in eastern North American deciduous forest. PI: Terwilliger. \$32,000.
- 2002-2008 National Science Foundation, Long-Term Ecological Research Program. Konza Prairie LTER V: Long Term Research on Grassland Dynamics and Global Change. Co-PI (there were 22). \$4,680,000.
- 1999-2002 National Science Foundation, Major Research Instrumentation Program Acquisition. of an Isotope Ratio Mass Spectrometer in the Kansas State University-University of Kansas-Creighton University Consortium. PI: Loretta Johnson. Co-PIs: John Blair, Walter Dodds, Gwendolyn Macpherson, and Valery Terwilliger. \$150,000.
- 1998 National Science Foundation supplemental award, Geography and Regional Science Program, PI: Terwilliger. \$6000.
- 1998 National Geographic Society. Resource use variations of fast-growing trees in Panama. PI: Terwilliger. \$20,000.
- 1996-99 National Science Foundation, Geography and Regional Science Program. Reconstruction of Quaternary climates using stable isotopic analyses of packrat middens. PI: Terwilliger. \$205,250.

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- 1996 NSF-EPSCoR-SEM-RSI. Plasticity in resource use of fast-growing evergreen and deciduous trees in tropical moist forest. PI: Terwilliger. \$6000.
- 1995-96 National Science Foundation, Geography and Regional Science Program. Exposure of riparian trees to coal emissions: does it produce geographic variation in water use efficiency? PI: Terwilliger, (E. C. Park, Co-PI). \$9600.
- 1994 NSF-EPSCoR Travel Award. \$600.
- 1992-96 National Science Foundation EPSCoR proposal KU-I-15. Comparative Resource Use of Trees in Riparian Forests. PI: Terwilliger. \$150,000.
- 1988 Lady Davis Postdoctoral Fellowship to conduct research at the Hebrew University, Jerusalem, Israel. \$20,000
- 1987 Outstanding Woman Graduate Student in Geography Award. Society of Women Geographers. \$4000
- 1986 Sigma Xi Grant in Aid for Research. \$200
- 1981 Institute of Food and Agricultural Sciences, University of Florida travel grant for the Organization for Tropical Studies Tropical Ecology field course in Costa Rica. \$1800.
- 1975 Smithsonian Institution Nobel Fund Fellowship to study Baird's tapirs in Panama. \$3000

Intra-mural (Univ Kansas only)

- 2006 CLAS Faculty Travel Award for conference presentation in Tomar, Portugal
- 2004 International travel grant for academic interchange and to speak at conference in Wellington, New Zealand.
- 2002 International travel grant to learn new research methods at Weizman Institute, Israel. University of Kansas. \$1500.
- 2001 Effect of atmospheric CO₂ concentrations on carbon source-sink relations during the development of cottonwood (*Populus deltoides*) leaves. University of Kansas General Research Fund. \$8600.
- 1999 Effects of El Niño Related Drought on Water and Carbon Use of Neotropical trees. University of Kansas General Research Fund. \$10,000.
- 1995-96 University of Kansas General Research Fund. Stable isotopic analyses of packrat middens. \$6666
- 1994-95 University of Kansas General Research Fund. \$8500
- 1993-94 University of Kansas General Research Fund. \$1500
- 1992 University of Kansas General Research Fund. \$7000
- 1991 Univ. of Kansas New Faculty Research Fund. \$5000

PUBLICATIONS:

Articles in press:

Berdagué, P., P. Lesot, J. Jacob, V. J. Terwilliger, and C. Le Milbeau. 2015. Contribution of

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NAD 2D-NMR in liquid crystals to the determination of hydrogen isotope profile of methyl groups in miliacin. *Geochimica et Cosmochimica Acta*. In press.

Articles:

- Bossard N, J. J. Jacob, C. Le Milbeau, J. Sauze, V. J. Terwilliger, B. Poissonnier, E. Verges. 2013. Distribution of miliacin (olean-18-en-3 β -ol methyl ether) and related compounds in broomcorn millet (*Panicum miliaceum*) and other reputed sources: Implications for the use of sedimentary miliacin as a tracer of millet *Organic Geochemistry* 63:48-55.
- Terwilliger V. J., J. Jacob. 2013. Introduction: Hydrogen isotopes as environmental recorders. *Geochimica et Cosmochimica Acta* 111:1-4.
- Terwilliger V. J., Z. Eshetu, J. R. Disnar, J. Jacob J, W. P. Adderley, Y. Huang, M. Alexandre, M. L. Fogel. 2013. Environmental changes and the rise and fall of civilizations in the northern Horn of Africa: an approach combining δ D analyses of land-plant derived fatty acids with multiple proxies in soil. *Geochimica et Cosmochimica Acta* 111:140-161.
- Daniau A. L., P.J. Bartlein, S.P. Harrison, I.C. Prentice, S. Brewer, P. Friedlingstein, T. I. Harrison-Prentice, J. Inoue, K. Izumi, J.R. Marlon, S. Mooney, M.J. Power, J. Stevenson, W. Tinner, M. Andrič, J. Atanassova, H. Behling, M. Black, O. Blarquez, K. J. Brown, C. Carcaillet, E. Colhoun, D. Colombaroli, B. A. S. Davis, D. D'Costa, J. Dodson, L. Dupont, Z. Eshetu, D. G. Gavin, A. Genries, S. Haberle, D. J. Hallett, S. P. Horn, G. Hope, T. Kassa, F. Katamura, L. Kennedy, P. Kershaw, S. Krivonogov, C. Long, D. Magri, E. Marinova, G. M. McKenzie, P. I. Moreno, P. Moss, F. H. Neumann, E. Norström, C. Paitre, D. Rius, N. Roberts, G. Robinson, N. Sasaki, L. Scott, H. Takahara, V. Terwilliger, F. Thevenon, R. B. Turner, V. G. Valsecchi, B. Vannièrè, M. Walsh, N. Williams, and Y. Zhang. 2012. Predictability of biomass burning in response to climate changes. *Global Biogeochemical Cycles* 26: GB4007, doi:10.1029/2011GB004249.
- Bossard, N., J. Jacob, C. Le Milbeau, E. Lallier-Vergès, V. J. Terwilliger, R. Boscardin. 2011. Variation in δ D values of a single, species-specific molecular biomarker: a study of miliacin throughout a field of broomcorn millet (*Panicum miliaceum* L.). *Rapid Communications in Mass Spectrometry* 25:2732-2740.
- Terwilliger, V. J., Z. Eshetu, M. Alexandre, Y. Huang, M. Umer, and T. Gebru. 2011. Local variation in climate and land use during the time of the major kingdoms of the Tigray Plateau of Ethiopia and Eritrea. *Catena* 85: 130-143.
- Gebru, T., Z. Eshetu, Y. Huang, T. Woldemariam, N. Strong, M. Umer, M. DiBlasi and V. J. Terwilliger. 2009. Holocene palaeovegetation of the Tigray Plateau in northern Ethiopia from charcoal and stable organic carbon isotopic analyses of gully sediments.

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- Palaeogeography, Palaeoclimatology, and Palaeoecology* 282: 67-80.
- Terwilliger, V. J., Z. Eshetu, A. Colman, T. Bekele, A. Gezahgne, and M. L. Fogel. 2008. Reconstructing palaeoenvironment from $\delta^{13}\text{C}$ and $\delta^{15}\text{N}$ values of soil organic matter: a calibration from arid and wetter elevation transects in Ethiopia. *Geoderma* 147 :197-210.
- Terwilliger, V. J. 2003. Influence of phenotypic plasticity in photosynthetic functions on the spatial distributions of tropical trees. *Physical Geography* 24:433-446.
- Terwilliger, V. J., J. L. Betancourt, S. W. Leavitt, P. K. Van de Water. 2002. Leaf cellulose δD and $\delta^{18}\text{O}$ trends with elevation differ in direction among co-occurring, semi-arid plant species. *Geochimica et Cosmochimica Acta* 66:3887-3900.
- Terwilliger, V. J. 2002. Comment on “A mechanistic model for interpretation of hydrogen and oxygen isotope ratios in tree-ring cellulose,” by J. S. Roden, G. Lin, and J. R. Ehleringer. *Geochimica et Cosmochimica Acta* 66:729-731.
- Terwilliger, V. J., K. Kitajima, D. J. Le Roux-Swarthout, S. Mulkey, and S. J. Wright. 2001. Influences of heterotrophic and autotrophic resource use on carbon and hydrogen isotopic compositions of tropical tree leaves. *Isotopes in Environmental and Health Studies* 37:133-160.
- Terwilliger, V. J., K. Kitajima, D. J. Le Roux-Swarthout, S. S. Mulkey, and S. J. Wright. 2001. Intrinsic water-use efficiency and heterotrophic investment in tropical leaf growth of two Neotropical pioneer tree species as estimated from $\delta^{13}\text{C}$ values. *New Phytologist* 152:267-281.
- Le Roux-Swarthout, D. J., V. J. Terwilliger, and C. E. Martin. 2001. Deviation between $\delta^{13}\text{C}$ and leaf intercellular CO_2 in *Salix interior* cuttings developing under low light. *International Journal of Plant Sciences* 162:1017-1024.
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