

CURRICULUM VITAE

NAME: Luigi Boschetti

DATE: 7/29/2019

RANK OR TITLE: Professor

DEPARTMENT: Natural Resources and Society

OFFICE LOCATION AND CAMPUS ZIP: CNR 203E, MS 1133

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WEB:

DATE OF FIRST EMPLOYMENT AT UI: August 2012

DATE OF PRESENT RANK OR TITLE: August 2018

EDUCATION BEYOND HIGH SCHOOL:

Degrees: (List most recent degree first: Degree, institution name, city, state, date, major or area of specialization.)

- PhD Geodesy and Geomatics (2005), Politecnico di Milano, cum laude
- BSc/MSc Environmental Engineer (2000), Politecnico di Milano – School of Environmental Engineering (Milano, Italy).

Certificates and Licenses:

- Chartered Civil Engineer (Italy) since 2000.

EXPERIENCE:

Teaching, Extension and Research Appointments: (List position titles and locations since receipt of Bachelor's degree)

August 2018-	Professor, University of Idaho, Department of Natural Resources and Society
August 2015- August 2018	Associate Professor, University of Idaho, Department of Natural Resources and Society
August 2012- August 2015	Associate Professor, University of Idaho, Department of Forest Rangeland and Fire Sciences.
November 2009 – August 2012	Research Associate Professor, University of Maryland, Department of Geographical Sciences
July 2005 – November 2009	Assistant Research Scientist, University of Maryland, Department of Geography
April 2005 – July 2005	Faculty Research Assistant, University of Maryland, Department of Geography
April 2004 – April 2005	Research Fellow, Institute for the Electromagnetic Sensing of the Environment National Research Council (CNR-IREA), Milano, Italy
March 2002 – April 2004	Research Fellow, Institute for Environment and Sustainability (IES) Joint Research Centre (JRC) of the European Commission, Ispra, Italy
October 2000 – March 2002	Visiting Scientist, Natural Resource Institute (NRI), University of Greenwich Chatham Maritime, United Kingdom

TEACHING ACCOMPLISHMENTS: (Academic and Extension teaching)

Areas of Specialization:

Remote Sensing, Carbon Monitoring, Fire

Courses Taught: (title, course number, date(s))

University of Idaho:

2013-2018	Instructor, Introduction to Geospatial Analysis (FOR 375/ NRS 375)
2015, 2018	Instructor, Carbon, Climate, Forests (ISEM 301-20)

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2014,2016, 2017 Instructor, Remote Sensing of Fire (FOR435/535)

University of Maryland:

- 2012 Instructor, “Italy: Land, Culture, Development”, (winter term study abroad course, GEOG328G, ECON314, ANTH448O, HONR 328R)
2011 Instructor, “Remote Sensing for Carbon Stock Estimation” (GEOG 778)
2011 Instructor, “Italy: Land, Culture, Development”, (winter term study abroad course GEOG328G, ECON314, ANTH448O, HONR 328R))
2010 Instructor, “Introduction to Remote Sensing” (GEOG 372)
2008 Instructor, “Remote Sensing and Digital Image Processing” (GEOG472)
2006 Co-instructor, “Introduction to Remote Sensing” (GEOG 372)
2006 Lectures on geolocation and burned area mapping, course “Advances in Remote Sensing of Terrestrial Global Change: Past Present & Future”, (GEOG 778)
2005 Guest lecture on algorithms for mapping burned areas with MODIS data, University of Maryland, Department of Geography, course “Fire in the Global Environment”, coordinated by Prof. Chris Justice

Politecnico di Milano

- 2000-2005 Guest lectures on global Earth Observation Systems, Global Landcover Mapping and Validation, Politecnico di Milano, School of Environmental Engineering, course of Remote Sensing coordinated by Prof. Giovanmaria Lechi.
2000-2001 Guest lectures on Remote Sensing for monitoring desertification and land degradation, Politecnico di Milano, School of Environmental Engineering, course of Environmental Impact Assessment coordinated by Prof. Giulio de Leo

European Social Fund Professional Master Courses

- 2004 Instructor of GIS and Remote Sensing (25 hours) at the European Social Fund Master course in Remote Sensing organized by Centro Camuno Studi Preistorici, Capodiponte, Brescia, Italy
2000 Instructor of Remote Sensing (40 hours) at the European Social Fund Master course in Remote Sensing, organized by CNR-Istituto di Ricerca sul Rischio Sismico and Parco Lombardo del Ticino, Milano, Italy.

Students Advised:

Undergraduate Students: (number per year)

- 2018: 2 advisees
2017: 2 advisees
2016: 6 advisees
2015: 8 advisees
2014: 8 advisees
2013: 2 advisees

Graduate Students:

A) Major Professor

Advised to completion of degree (student name, degree, and date)

University of Idaho

Nuria Sanchez Lopez (Ph.D. Natural Resources), 2019

Adam Young, (Ph.D. Environmental Sciences), 2018 co-advising with Prof. Phil Higuera (University of Montana)

Erik Boren (M.S. Natural Resources - Thesis), 2015

Luca Marini (M.S., Natural Resources), 2014

Politecnico di Milano

Elena De Angelis, M.S., MSc. Environmental Engineering, 2017, (Co-advised with Prof. Maria Brovelli)

Annamaria Kunzle, MSc. Environmental Engineering, 2005. (Co-advised with Dr. Pietro Alessandro Brivio and Dr. Luigi Mussio).

Università degli Studi di Milano

Ilaria Palumbo, MSc., Environmental Sciences, 2003, Università degli Studi di Milano (Co-advised with Prof. Carlo Maria Marino and Dr. Jean Marie Gregoire).

Currently advising:

Andrea Melchiorre (Ph.D. student), started Fall 2013, advanced candidacy Spring 2016
Maria Zubkova (PhD student), started Spring 2015, advancing candidacy Fall 2017
Erik Boren (Ph.D. student), started Fall 2015 advancing candidacy Fall 2017

B) Committee Member

Advised to completion of degree

Carlos Alberto Silva, Ph.D. 2018, University of Idaho, major professor: Prof. Lee Vierling.
Danielle Berardi, MS, 2017, University of Idaho, major professor: Prof. Tara Hudiburg
Aaron Sparks, Ph.D, 2017, University of Idaho, major professors: Prof. Crystal Kolden – Prof. Alistair Smith.
Sanath Kumar, PhD, 2014, South Dakota State University, GIS Centre of Excellence. Main supervisor: Prof. David Roy.
Kelley O’Neal, PhD, 2014, University of Maryland, Department of Geography. Main supervisor: Prof. Chris Justice.
Jessica Mc Carthy, PhD., 2009, University of Maryland, Department of Geography. Main supervisor: Prof. Chris Justice.
Jose Roa, PhD., completed 2007, University of Maryland, Department of Geography, Main supervisor: Prof. Michael Kearney.
Stefano Testa, PhD, 2015, University of Turin, major professor: Prof. Enrico Borgogno Mondino

External examiner

Ramin Azar, PhD, 2015, Politecnico di Milano, major professor prof. Luigi Mussio
Roberto Luciani, PhD, 2017, Università di Roma La Sapienza, major professor prof. Giovanni Laneve

Currently advising

Michael Humber, PhD student, University of Maryland, Department of Geography, major professor: Prof. Chris Justice

Materials Developed: (non-scholarship activity)

Courses Developed or Substantially Revised:

2015 “Climate, Carbon, Forests”
2013 “Remote Sensing of Fire” (FOR435/FOR535) for Spring 2014
2013 “Introduction to Geospatial Analysis” (FOR 375) for Fall 2013
2011 “Remote Sensing for Carbon Stock Estimation” (GEOG 778)
2006 “Introduction to Remote Sensing”(GEOG375)

Other material

2014/2017 Training material on GOF-C-Gold Sourcebook on REDD+ (funded by the World Bank)

SCHOLARSHIP ACCOMPLISHMENTS: (Including scholarship of teaching and learning, artistic creativity, discovery, and application/integration)

Publications, Exhibitions, Performances, Recitals:

Peer Reviewed: (i.e. books, book chaps., journals, proc., abstr., etc.; provide citations-author, date, title, publisher)

1. Humber, M., Boschetti, L., Giglio, L., Assessing the shape accuracy of coarse resolution burned area identifications in the western United States, IEEE TGRS, in press
2. Sanchez-Lopez, N., **Boschetti, L.**, & Hudak, A., Reconstruction of the disturbance history of a temperate coniferous forest through stand-level analysis of airborne LiDAR data, *Forestry*, in press
3. Roy, D., Huang, H., **Boschetti, L.**, Giglio, L., Yan, L., Zhang, H. and Li, Z., Landsat-8 and Sentinel-2 burned area mapping - a combined sensor multi-temporal change detection approach, *Remote Sensing of Environment*, in press
4. Boren, E., **Boschetti L.**, Johnson, D., Characterizing the Variability of the Structural Parameter in the PROSPECT Leaf Optical Properties Model, *Remote Sensing*,
5. Steady, W.D., Partelli Feltrin, R., Johnson, D.M., Sparks, A.M., Kolden, C., Talhelm, A.F., Lutz, J.A., **Boschetti, L.**, Hudak, A.T., Nelson, A.S. and Smith, A., 2019. The Survival of Pinus ponderosa Saplings Subjected to Increasing Levels of Fire Behavior and Impacts on Post-Fire Growth. *Fire*, 2(2), p.23.
6. Zubkova, M., **Boschetti, L.**, Abatzoglou, J., and Giglio, L., Changes in Fire Activity in Africa from 2002 to 2016 and Their Potential Drivers, 2019, *Geophysical Research Letters* DOI:10.1029/2019GL083469
7. Huo, L., Boschetti, L. and Sparks, A., (2019) Object-based classification of forest disturbance types in the conterminous United States, *Remote Sensing*, 11(5), 477 <https://doi.org/10.3390/rs11050477>
8. Sanchez-Lopez, N., **Boschetti, L.**, & Hudak, A. (2018). Semi-Automated Delineation of Stands in an Even-Age Dominated Forest: A LiDAR-GEOBIA Two-Stage Evaluation Strategy. *Remote Sensing*, 10(10), 1622.
9. Abatzoglou, J. T., Williams, A. P., **Boschetti, L.**, Zubkova, M., & Kolden, C. A. (2018). Global patterns of interannual climate–fire relationships. *Global change biology*, 24(11), 5164-5175.
10. Giglio, L., **Boschetti, L.**, Roy, D. P., Humber, M. L., & Justice, C. O. (2018). The Collection 6 MODIS burned area mapping algorithm and product. *Remote sensing of environment*, 217, 72-85.
11. Sparks, A. M., Kolden, C. A., Smith, A. M., Boschetti, L., Johnson, D. M., & Cochrane, M. A. (2018). Fire intensity impacts on post-fire temperate coniferous forest net primary productivity. *Biogeosciences*, 15(4), 1173.
12. Sparks, A. M., Talhelm, A. F., Feltrin, R. P., Smith, A. M., Johnson, D. M., Kolden, C. A., & **Boschetti, L.** (2018). An experimental assessment of the impact of drought and fire on western larch injury, mortality and recovery. *International Journal of Wildland Fire*, 27(7), 490-497.
13. Melchiorre, A. and Boschetti, L., 2018, Global analysis of the burned area spectral signal persistence, *Remote Sensing*, 10(5), 750.
14. Klauber, C., Hudak, A. T., Bright, B. C., **Boschetti, L.**, Dickinson, M. B., Kremens, R. L., & Silva, C. A. (2018). Use of ordinary kriging and Gaussian conditional simulation to interpolate airborne fire radiative energy density estimates. *International journal of wildland fire*, 27(4), 228-240.
15. Humber, M., **Boschetti, L.**, Giglio, L., Justice, C., 2018, Spatial and Temporal Intercomparison of Four Global Burned Area Products, *International Journal of Digital Earth*, DOI: 10.1080/17538947.2018.1433727.

16. Testa, S., Soudani, K., **Boschetti, L.**, Borgogno Mondino E., (2018) MODIS-derived EVI, NDVI and WDRVI time series to estimate phenological metrics in French deciduous forests, *International Journal of Applied Earth Observation and Geoinformation*, vol. 64, 132-144.
17. Huang, H., Roy, D. P., **Boschetti, L.**, Zhang, H. K., Yan, L., Kumar, S. S., ... & Li, J. (2016). Separability analysis of sentinel-2A multi-spectral instrument (MSI) data for burned area discrimination. *Remote Sensing*, 8(10), 873.
18. **Boschetti, L.**, Stehman, S. V., & Roy, D. P. (2016). A stratified random sampling design in space and time for regional to global scale burned area product validation. *Remote Sensing of Environment*, 186, 465-478.
19. Sparks, A. M., Kolden, C. A., Talhelm, A. F., Smith, A., Apostol, K. G., Johnson, D. M., & **Boschetti, L.** (2016). Spectral indices accurately quantify changes in seedling physiology following fire: towards mechanistic assessments of post-fire carbon cycling. *Remote Sensing*, 8(7), 572.
20. Rossi, S., Tubiello, F., Prosperi, P., Salvatore, M., Jacobs, H., Biancalani, R. and **Boschetti, L.**, 2016, FAOSTAT estimates of greenhouse gas emissions from biomass and peat fires, *Climatic Change*, 1-13.
21. Smith, A.M.S., Sparks, A.M., Kolden, C.A., Abatzoglou, J.T., Talhelm, A.F., Johnson, D.M., **Boschetti, L.**, Lutz, J.A., Apostol, K.G., Yedinak, K.M., Tinkham, W.T. and Kremens, R.J, 2016, Toward a new paradigm in fire severity research using dose-response experiments, *International Journal of Wildland Fires*, 158-156.
22. Smith, A., Kolden, C., Paveglio, T., Cochrane, M., Bowman, D., Moritz., M., Kliskey, A., Alessa, L., Hudak, A., Hoffman, C., Lutz, J., Queen, L., Goetz, S., Higuera, P., **Boschetti, L.**, Flannigan, M., Yedinak, K., Watts, A., Strand, E., van Wagendonk, J, Anderson, J, and Stocks, B., 2016, The Science of Firescapes: Achieving Fire Resilient Communities, *BioScience*, 66(2), 130-146.
23. **Boschetti, L.**, Roy, D. P., Justice, C. O., & Humber, M. L. (2015). MODIS–Landsat fusion for large area 30m burned area mapping. *Remote Sensing of Environment*, 161, 27-42.
24. Sparks, A.M., **Boschetti, L.**, Tinkham, W.T., Smith, A.M.S., and Lannom, K.O., 2014, An accuracy assessment of the MTBS burned area product for shrub-steppe fires in the northern Great Basin, United States, *International Journal of Wildland Fire*, 24, 70-78
25. van Leeuwen, T. T., van der Werf, G. R., Hoffmann, A. A., Detmers, R. G., Rücker, G., French, N., Archibald, S., Carvalho Jr., J. A., Cook, G. D., de Groot, W. J., Hely, C., Kasischke, E. S., Kloster, S., McCarty, J. L., Pettinari, M. L., Savadogo, P., Alvarado, E. C., **Boschetti, L.**, Manuri, S., Meyer, C. P., Siegert, F., Trollope, L. A., Trollope, W. S., 2014., Biomass burning fuel consumption rates: a field measurement database, *Biogeosciences Discussions*, 11(6):8115-8180, doi: 10.5194/bgd-11-8115-2014.
26. Kumar, S.S., Roy, D.P., Cochrane, M.A., Souza JR, C.M., Barber, C., **Boschetti, L.**, 2014, A quantitative study of the proximity of satellite detected active fires to roads and rivers in the Brazilian tropical moist forest biome, *International Journal of Wildland Fire*. 23(4):532-543, doi 10.1071/WF13106
27. Smith, A.M.S., Kolden, K.A, Tinkham, W. T., Talhelm, A., Marshall, J., D., Hudak, A.T., Greenberg, J., Falkowski, M.J., Anderson, J. W., Kliskey, A., Alessa, L., **Boschetti, L.**, Keefe, R.F. and Gosz, J.R., Remote Sensing the Vulnerability of Vegetation in Natural Terrestrial Ecosystem, 2014, *Remote Sensing of Environment*, 254:322-337.
28. Baraldi, A., **Boschetti, L.**, and Humber, M., 2014., Probability sampling protocol for thematic and spatial quality assessments of classification maps generated from spaceborne/airborne very high resolution images. *IEEE Transactions on Geoscience and Remote Sensing*, 51(1), pp 701-760.
29. Smith, A.M.S., Tinkham, W.T., Roy, D.P., **Boschetti, L.**, Kremens, R.L., Kumar, S.S., Sparks, A., Falkowski, M.J., 2013, Quantification of fuel moisture effects on biomass consumed derived from fire

- radiative energy retrievals, *Geophysical Research Letters*, 40, 6298–6302, doi:10.1002/2013GL058232.
30. Baraldi, A., **Boschetti, L.**, and Humber, M., 2013, Quality Assessment of Pre-Classification Maps Generated from Spaceborne/Airborne Multi-Spectral Images by the Satellite Image Automatic Mapper (TM) and Atmospheric/Topographic Correction (TM)-Spectral Classification Software Products: Part 2-Experimental Results, *Remote Sensing*, 5(10), 5209-5264
 31. Clerici, N., Weissteiner, C.J., Paracchini, M.L., **Boschetti, L.**, and Baraldi, A., 2013, Pan-European distribution modelling of stream riparian zones based on multi-source Earth Observation data, *Ecological Indicators* 24, 211-223.
 32. Loboda, T.V., Giglio, L., **Boschetti, L.**, and Justice, C.O., 2012, Regional fire monitoring and characterization using global NASA MODIS fire products in dry lands of Central Asia, *Frontiers of Earth Science*, 1-10.
 33. Baraldi, A. and **Boschetti, L.**, 2012, Operational Automatic Remote Sensing Image Understanding Systems: Beyond Geographic Object-Based and Object-Oriented Image Analysis (GEOBIA/GEOOIA). Part 1: Introduction, *Remote Sensing*, 4 (9), 2694-2735.
 34. Baraldi, A. and **Boschetti, L.**, 2012, Operational Automatic Remote Sensing Image Understanding Systems: Beyond Geographic Object-Based and Object-Oriented Image Analysis (GEOBIA/GEOOIA). Part 2: Novel system architecture, information/knowledge representation, algorithm design and implementation, *Remote Sensing*, 4 (9), 2768-2817.
 35. Stroppiana, D., Bordogna, G., Boschetti, M., Carrara, P., **Boschetti, L.**, Brivio, P. A., 2012, A new method for extracting burned areas from Landsat TM images by soft aggregation of spectral indices and a region growing algorithm, *ISPRS Journal of Photogrammetry and Remote Sensing*, 69, 88-102.
 36. Bresciani M, Giardino C. and **Boschetti L.**, 2011, Evaluation of dynamics of bio-physical parameters in lake waters from MODIS and MERIS images, *Rivista italiana di Telerilevamento* 43(3),49-62
 37. Brivio, P.A. and Boschetti. L., 2011, Introduction to Special Issue “MODIS 2000-2010: Ten Years of Success in the Earth Observation”, *Rivista italiana di Telerilevamento*, 43(3), 3-5.
 38. Stroppiana, D., Bordogna, G., Boschetti, M., Carrara, P., **Boschetti, L.**, Brivio, P. A., 2011, Positive and Negative Information for Assessing and Revising Scores of Burn Evidence , *IEEE Geoscience and Remote Sensing Letters*, 10.1109/LGRS.2011.2167953.
 39. Kumar, S., Roy, D., **Boschetti, L.**, Kremens, R., Exploiting the Power law Distribution Properties of Satellite Fire Radiative Power Retrievals - a Method to Estimate Fire Radiative Energy and Biomass Burned From Sparse Satellite Observations, 2011, *Journal of Geophysical Research-Atmospheres*, vol 166, D19303 DOI: 10.1029/2011JD015676
 40. Pepe, M., **Boschetti, L.**, Brivio, P.A., Rampini, A., 2010, Comparing the performance of fuzzy and crisp classifiers on remotely sensed images: a case of snow classification, *International Journal of Remote Sensing*, 31(23):6189-6203.
 41. Archibald, S., Scholes, R., Roy, D., Wooster, M. and **Boschetti, L.**, 2010 Southern African fire regimes as revealed by remote Sensing, *International Journal of Wildland Fires*, 19:861-878
 42. **Boschetti L.**, Roy, D., Justice, C. and Giglio, L., 2010, Global assessment of the temporal reporting accuracy and precision of the MODIS burned area product, *International Journal of Wildland Fire*, 19(6), pp.705-709.
 43. Roy, D., Boschetti, L., Maier, S. and Smith, A.M.S, 2010, Field estimation of ash color-lightness using a standard grey scale, *International Journal of Wildland Fires*, 19(6), pp.698,704.
 44. Petropoulos, G, Knorr, W., Sholze, M., **Boschetti, L.** and Karantounias, G., 2010, Combining ASTER Multispectral Imagery Analysis and Support Vector Machines for Rapid and Cost-Effective Post-Fire Assessment: A case study from the Greek Wildland Fires of Year 2007, *Natural Hazards and Earth System Sciences*, vol 10, pp. 1-13.
 45. **Boschetti, L.** and Roy, D, 2009, Strategies for the fusion of satellite fire radiative power with burned area data for fire radiative energy derivation, *Journal of Geophysical Research, Atmospheres*, vol.114, D20302, doi:10.1029/2008JD011645 .

46. Roy, D.P. and **Boschetti, L.**, 2009, Southern Africa Validation of the MODIS, L3JRC and GlobCarbon Burned Area Products, *IEEE transactions on Geoscience and Remote Sensing*, vol. 47(4), pp. 1032 – 1044, doi:10.1109/TGRS.2008.2009000.
47. Roy, D.P., **Boschetti, L.**, Justice, C.O. and Ju, J. 2008. The Collection 5 MODIS Burned Area Product - Global Evaluation by Comparison with the MODIS Active Fire Product, *Remote Sensing of Environment*, vol. 112, pp. 3690-3707
48. **Boschetti, L.** and Roy, D.P., 2008, Defining a fire year for reporting and analysis of global fire inter-annual variability, *Journal of Geophysical Research - Biogeosciences*, vol. 113, G03020, doi:10.1029/2008JG000686,
49. **Boschetti, L.**, Roy, D. and Justice, C., 2008, Using NASA's World Wind Virtual Globe for Interactive Visualization of the Global MODIS Burned Area Product, *International Journal of Remote Sensing*, vol 29(11), pp.3067-3072.
50. **Boschetti, L.**, Roy, D. Barbosa, P., Boca, R. and Justice, C., 2008, A MODIS assessment of the summer 2007 extent burned in Greece, *International Journal of Remote Sensing*, vol. 29, pp.2433-2436.
51. Boschetti, M., **Boschetti, L.**, Oliveri, S., and Casati, L., 2007, Tree species mapping with Airborne hyper-spectral MIVIS data: the Ticino Park study case, *International Journal of Remote Sensing*, vol 28(6), pp 1251-1261.
52. Roy, D., Lewis, P., Schaaf, C., Devadiga, S., **Boschetti, L.**, 2006, The Global impact of cloud on the production of MODIS n-day and daily rolling n-day bi-directional reflectance model based composites for terrestrial monitoring , *IEEE Geoscience and Remote Sensing Letters*, vol. 3(4), pp 452 - 456, doi:10.1109/LGRS.2006.875433
53. **Boschetti, L.**, Brivio, P. A., Eva, Hugh D., Gallego, J., Baraldi, A. and Grégoire, 2006, J-M., A Sampling Method for the Retrospective Validation of Global Burned Area Products, *IEEE-Transactions on Geoscience and Remote Sensing*, vol 44(7), pp.176-1773, doi: 10.1109/TGRS.2006.874039
54. Roy, D.P., **Boschetti, L.**, Trigg, S., Remote Sensing of Fire Severity: Assessing the performance of the Normalized Burn Ratio, 2006, *IEEE Geoscience and Remote Sensing Letters*, vol.3(1), pp.112-116, doi:10.1109/ LGRS.2005.858485.
55. **Boschetti, L.**, Eva, H., Brivio, P.A. and Grégoire, J.M., 2004, Lessons to be learned from the intercalibration of three satellite-derived biomass burning products, *Geophysical Research Letters*, vol. 31(21),doi: L21501 10.1029/2004GL021229.
56. Tansey K., Grégoire, J-M., Stroppiana, D., Sousa, A., Silva, J.M.N., Pereira, J.M.C., **Boschetti, L.**, Maggi, M., Brivio, P.A., Fraser, R., Flasse, S., Ershov, D., Binaghi, E., Graetz D. and Peduzzi, P., 2004, Vegetation burning in the year 2000: Global burned area estimates from SPOT VEGETATION data, *Journal of Geophysical. Research - Atmospheres*, vol.109, D14S03, doi:10.1029/2003JD003598.
57. Tansey K., Grégoire, J.M., Binaghi, E., **Boschetti, L.**, Brivio, P.A., Ershov, D, Flasse, S., Fraser, R., Graetz, D., Maggi, M, Peduzzi, P., Pereira, J.M.C., Silva, J.M.N. , Sousa, A. and Stroppiana, D., 2004, A global inventory of burned areas at 1km resolution for the year 2000 derived from SPOT VEGETATION data, *Climatic Change*, vol. 67(2), pp.1573-1580.
58. **Boschetti L.**, Flasse, S. and Brivio, P.A., 2004, Analysis of the conflict between omission and commission in low spatial resolution thematic products: the Pareto Boundary, *Remote Sensing of Environment*, vol. 91 (3-4), pp. 280-292.
59. **Boschetti L.**, Brivio, P.A. and Grégoire, J.M., 2003, The use of Meteosat and GMS imagery to detect burned areas in tropical environments, *Remote Sensing of Environment*, vol. 85(1), pp. 78-91.

Peer Reviewed (currently scheduled or submitted):

Submitted

1. Boschetti, L., Roy, D.P., Giglio, L., Huang, H., Zubkova, M., Humber, M.L., 2019, Global validation of the Collection 6 MODIS burned area product, *Remote Sensing of Environment*. In Review.
2. Melchiorre, A, Boschetti, L, and Roy, D., Global evaluation of the suitability of MODIS-Terra detected cloud cover as a proxy for Landsat 7 cloud condition, *Remote Sensing*, under review

3. Prosperi, P., Bloise, M., Tubiello, F., Conchedda, G., Rossi, S., Boschetti, L., Salvatore, M., Bernoux, M., New estimates of greenhouse gas emissions from biomass burning and peat fires, *Climatic Change*, in Review.

Refereed/Adjudicated: (i.e. journals, articles, proceedings, abstracts, etc.)

BOOK CHAPTERS AND MONOGRAPHS

1. Delponte, L., Pellegrin, J., Sirtori, E., Gianinetto, M., Boschetti, L., 2016, *Space Market Uptake in Europe*, European Parliament, PE 569.984
2. Csiszar, I.A., Justice, C.O., Goldammer, J.G., Lynham, T., de Groot, W.J., Prins, E.M., Elvidge, C.D., Oertel, D., Lorenz, E., Bobbe, T., Quayle, B., Davies, D., Roy, D., Boschetti, L., Korontzi, S., Ambrose, S., Stephens, G., 2014, The GOF/GOLD Fire Mapping and Monitoring theme: assessment and strategic plans, in “*Remote Sensing Modeling and Applications to Wildland Fires*”, Qu, J.J.; Sommers, W.; Yang, R.; Riebau, A.; Kafatos, M. (Eds.), Springer Verlag, 550p, ISBN 978-3-642-32529-8,
3. Chris Justice, Ivan Csiszar, **Luigi Boschetti**, Stefania Korontzi, Wilfrid Schroeder, Louis Giglio and David Roy, 2013, Satellite Monitoring and Inventory of Global Vegetation Fire, in *Vegetation Fires and Global Change – Challenges for Concerted International Action. A White Paper directed to the United Nations and International Organizations, A publication of the Global Fire Monitoring Center (GFMC)* (Goldammer Ed.), Kessel Publishing House
4. Roy, D.P, **Boschetti, L.**, and Smith, A.M, 2013, Satellite Remote Sensing of Fires, in *Fire Phenomena and the Earth System: An Interdisciplinary Guide to Fire Science*, Belcher, C.M. (Ed.), Wiley, London.
5. Justice C.O., Giglio L., Roy D., **Boschetti L.**, Csiszar I., Davies D., Korontzi S., Schroeder W., O’Neal K.J., Morisette J.T., 2011, Global Fire Products from the MODIS instruments, in *Land Remote Sensing and Global Environmental Change: NASA’s EOS and the science Of ASTER and MODIS*”, B. Ramachandran, C. Justice and M. Abrams (Eds), Springer Verlag, New York, ISBN: 978-1-4419-6749-
6. Roy, D.P, **Boschetti, L.**, and Giglio, L., 2010, Remote Sensing of Global Savanna Fire Occurrence, Extent and Properties, in *Ecosystem Function in Global Savannas: Measurement and Modeling at Landscape to Global Scales*, Michael J. Hill and Niall P. Hanan (Eds.), CRC/Taylor and Francis.
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21. Boschetti, L., Hoffman, A., UN-REDD Fire-GOFC source book updates and next steps, GOFC Fire IT meeting, July 29th – August 1st 2014, NOAA NCWCP, MD (invitation only workshop)
22. Giglio L., Schroeder, W., Boschetti, L., Roy, D., Justice, C., Collection 6 Fire Products, NASA MODIS Science Team Meeting, April 29-30 2014, Columbia, MD (**invited presentation**)
23. Boschetti, L., Roy, D., Humber, M., MODIS-Landsat data fusion for automated continental 30 m burned area mapping, NASA MODIS Science Team Meeting, April 29-30, Columbia, MD (poster)
24. Boschetti L., Keefe, R., Smith, A., Hudak, A, Prototyping global industrial forest mapping, a Landsat spatio-temporal approach”, NASA Land-Cover Land-Use Change Science Team Meeting, April 23-25, Rockville, Maryland (poster).
25. Boschetti, L., Tansey, K., Validation Status of the International Fire Satellite Products, CEOS LPV subgroup meeting, 30-31 January, European Space Agency, Frascati 30-31 January 2014 (Invitation only workshop)
26. Boschetti, L., Tansey, K., Status of the International Fire Satellite Products, CEOS LPV subgroup meeting, 30-31 January, European Space Agency, Frascati 30-31 January 2014 (Invitation only)

- workshop)
27. Boschetti, L., Roy, D., Stehman, S., Justice, C., Design-Based Validation of the MODIS Global Burned Area Product., Land Product Validation and Evolution, European Space Agency, Frascati, Rome 28-30 January 2014
 28. Schaepman-Strub, G., Román, M., Boschetti, L., Che, T., Dash, J., Fernandes, R., Gobron, N., Hall, D., Herold, M., Hook, S., Jackson, T., Jones, M., Nickeson, J., Olofsson, P., Plummer, S., Sanchez, A., Schaaf, C., Sobrino, J., Tansey, K., Wagner, W., Coordinating Validation of Satellite-Derived Land Surface Products – Mission and Achievements of the CEOS LPV, Land Product Validation and Evolution, European Space Agency, Frascati, Rome 28-30 January 2014, **Invited Keynote**.
 29. Roy, D.P., Kovalsky, V., Yan, L., Egorov, A., Kommareddy, I., Zhang, H., Hansen, M., Boschetti, L., Votava, P., Nemani, R., Web-Enabled Landsat Data (WELD) for monitoring contemporary terrestrial change nearly everywhere, Frontiers in Earth Observation for Land System Science - a joint workshop of the EARSeL SIG LULC and the NASA LCLUC Science Team, Humboldt-Universität, Berlin, Germany, 17-18 March, 2014, **Invited Keynote**.
 30. Boschetti L., Fire and REDD+, King's College London, UK, October 18th 2013 (**Invited Seminar**)
 31. Boschetti, L., Roy, D., Justice C., Giglio, L., Building a global fire climate record: The challenge of meeting the Essential Climate Variable requirements, 9th Earsel Fire SIG, Coventry 16 October 2013 (**Invited Keynote**)
 32. Boschetti, L., Roy, D., Justice C., Giglio, L., Burned Area and Validation – next steps GOFCSymposium, Wageningen, NL, 15 April 2013
 33. Boschetti, L., Hoffman, A., UN-REDD Fire-GOFC source book updates and next steps, GOFCSymposium, Wageningen, NL, 17 April 2013
 34. Boschetti, L., Roy, D., Baraldi A., Justice C., systematic burned area mapping with Landsat in the context of emission estimation, invited presentation at the Workshop “Burn Severity and related ecosystem responses” organized by the Brazilian Ministry for Environment, Brasilia Dec 11-14
 35. Boschetti, L., Roy, D., Baraldi A., Justice C., MODIS-Landsat Data Fusion for Continental Scale 30m Resolution Burned Area Mapping, invited presentation at the *Sentinel-3 OLCI & MERIS ATSR ESA workshop*, Frascati, Italy, 15-19 October 2013
 36. Boschetti, L., Roy, D., Justice C., Giglio, L., “Global Burned Area Mapping: MODIS and beyond”, Invited presentation at the NASA Science Meeting, GOFC-GOLD and NEESPI Workshop and Regional Conference Impacts of extreme weather on natural, socio-economic, and land-use systems: Focus on the 2010 summer anomaly in the Volga region June 17 – 22, 2012 Volga State University of Technology, Yoshkar-Ola, Mari El, Russian Federation
 37. Boschetti L., Roy, D., Justice C., Giglio, L., Davies, D., “MODIS RapidFire and Burned Area analysis – An operational Success Story”, invited presentation at the 2012 NASA Modis Science Team Meeting, Silver Spring May 7-9 2012

Professional Meeting Papers, Workshops, Showings, Recitals: (provide date and location)

Patents: (provide title/description, patent number and date)

Grants and Contracts Awarded: (provide principal and co investigators, title, sponsor, funding dates, amount)

Total external funding awarded: \$8 M (\$1.8 M as PI, \$6.2 M as Co-I)

Active grants

Project/Proposal Title: *Africa burned area product generation, quality assessment and validation – demonstrating a Multi-Source Land Imaging (MuSLI) Landsat-8 Sentinel-2 capability*

PI: Dr. David Roy (SDSU GSCE) CO-I: Dr. Luigi Boschetti (University of Idaho), Hayian Huang (South Dakota State University)

Source of Support: NASA solicitation NNH17ZDA001N-LCLUCLand-Cover/Land-Use Change Multi-Source Land Imaging.

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Proposed performance period: August 15th 2018 – August 15th 2021

Total award: \$1,102,045

Project/Proposal Title: *Using the NASA polar orbiting fire product record to enhance and expand the Global Wildfire Information System (GWIS)*

PI: Dr. Luigi Boschetti (University Idaho), CO-I: Dr. David Roy (SDSU GSCE),

Source of Support: NASA solicitation NNH16ZDA001N-GEO *Group on Earth Observation Work Programme* Element 3.8: Global Wildfire Information System

Proposed performance period: January 1st 2018 – December 31st 2021 @ 0.16 FTE years 1 and 2, 0.12 FTE in year 3

Total award: \$535,996

Project/Proposal Title: *Development of a Suomi NPP VIIRS Global Burned Area Earth System Data Record*

PI: Dr. Louis Giglio, University of Maryland, College Park, MD, USA

Co-Is: Boschetti, L. (University of Idaho), Roy, D.P. (South Dakota State University),

Source of Support: NASA ROSES 2017, “Terra and Aqua – Algorithms – Existing Data Products” (NNH17ZDA001N-TASNPP)

Performance Period: December 2017 – November 2020 @ 0.06 FTE in years 1, 2, 3 respectively

Total award: \$100,000

Submitted proposals (pending)

Past grants

Project/Proposal Title: *MODIS global active fire and burned area product maintenance and validation*

PI: Dr. Louis Giglio (University of Maryland)

CO-: Boschetti, L. (University of Idaho), Schroder, W. (University of Maryland), Roy, D.P. (SDSU), Justice, C. (University of Maryland), Csiszar, I. (NOAA)

Source of Support: *NNH13ZDA001N-TERAQEA Terra and Aqua – Algorithms – Existing Data Products*

Performance Period: July 2014 to June 2018.

Total Award Amount: \$397,786

Project/Proposal Title: *Prototyping global industrial forest mapping, a Landsat spatio-temporal approach*

PI: Dr. Luigi Boschetti, University of Idaho, Moscow, ID, USA

Co-Is: Robert Keefe (University of Idaho), Alistair Smith (University of Idaho), Andrew Hudak (US Forest Service)

Source of Support: *NASA ROSES 2012, NNH12ZDA001N-LCLUC: Land Cover/Land Use Change*

Performance Period: April 2014 – April 2018

Total Award Amount: \$722,333

Project/Proposal Title: *Development of a Suomi NPP VIIRS Global Burned Area Earth System Data Record*

PI: Dr. Louis Giglio, University of Maryland, College Park, MD, USA

Co-Is: Boschetti, L. (University of Idaho), Roy, D.P. (South Dakota State University), Vadrevu, K. (University of Maryland),

Source of Support: NASA ROSES 2013, “Terra and Aqua – Algorithms – Existing Data Products” (NNH13ZDA001N-TERAQEA)

Performance Period: September 2014 – August 2018

Total Award Amount: \$542,422

Project/Proposal Title: *Prototyping a Landsat-8 Sentinel-2 global burned area product*

PI: Dr. David Roy (SDSU GSCE)

CO-Is: Valeriy Kovalskyy, Luigi Boschetti

Source of Support: NASA NNH14ZDA001N-LCLUC, LAND-COVER/LAND-USE CHANGE: MULTI-SOURCE LAND IMAGING SCIENCE

Performance Period: July 2015 to June 2018.

Total Award Amount: \$694,525

Project/Proposal Title: *Satellite Constellation Requirements for 30m global burned area mapping*

PI: Dr. Luigi Boschetti (University Idaho), Graduate Student: Andrea Melchiorre (University of Idaho)

Source of Support: NASA solicitation NESSF16 NASA Earth and Space Science Fellowship 2017

Proposed performance period: September 1st 2016 – August 31st 2018.

Total Award Amount: \$35000 first year, \$45000 second year (funding for up three year pending NASA approval)

September 2016-August 2017 “Impact of climate and Vegetation on Historical and Future Fire Activity in Boreal Forest and Arctic Tundra Ecosystems” NASA Earth And Space Science Fellowship 2016 (Renewal); PI: Luigi Boschetti, graduate student: Adam Young (\$35000)

November 2016: “Short Term Mobility” award for exchanges between personnel of Italian and Foreign research institution, funded by the Italian National Research Council (3000 EUR)

January 2015 - September 2015, “National Forest Monitoring Systems for a transparent and truthful REDD+”, **Boschetti L.** (Principal Investigator), Source of Support: UN FAO (61,000USD)

January 2011-December 2015 "Sentinel 3 Science Products: a US contribution". Justice C.O. (Principal Investigator), **Boschetti, L.** (Co- Principal Investigator), Giglio, L. (Co- Principal Investigator), Vermote E. (Co- Principal Investigator). Source of Support: NASA ROSES 2010 (464,117 USD)

January 2014 - September 2014, “National Forest Monitoring Systems for a transparent and truthful REDD+”, **Boschetti L.** (Principal Investigator), Source of Support: UN FAO (79,558USD)

January 2011-August 2014 "MODIS-Landsat data fusion for high spatial resolution multiannual wall to wall burned area mapping of the Conterminous United States", **Boschetti, L.** (Principal Investigator), Roy, D. (Co-Principal Investigator), Source of Support: NASA ROSES 2009 (278,710 USD, UI 111,056 USD)

January 2011-February 2015 "MODIS Burned Area Maintenance, Improvement and Validation", Justice C.O. (Principal Investigator), **Boschetti, L.** (Co- Principal Investigator), Roy, D. (Co-Principal Investigator), Giglio, L. (Co- Principal Investigator) Source of Support: NASA ROSES 2009 (789,598 USD, UI 102,791USD)

April 2011-October 2014, “Land Cover Land Use Change Scientist Program Support.” Justice C. (Principal Investigator), **Boschetti L.** (Co-Principal Investigator), Vadrevu K. (Co-Principal Investigator) Source of support: NASA (918,470 USD)

September 2010: “Short Term Mobility” award for exchanges between personnel of Italian and Foreign research institution, funded by the Italian National Research Council (2,400 EUR)

August 2009 - August 2010: Reconciliation between the MODIS Active Fires and Burned Area Products for Improved Biomass Burned and Uncertainty Estimation. **Boschetti, L.** (Principal Investigator), Roy, D. (Co- Principal Investigator) and Smith A.M. (Co- Principal Investigator). Source of support: NASA Earth Science Applications Feasibility Studies. (91,855 USD)

July 2008: “Short Term Mobility” award for exchanges between personnel of Italian and Foreign research institution, funded by the Italian National Research Council (1,600 EUR)

December 2007 – December 2010: A Global Burned Area ESDR, Justice, C. O. (Principal Investigator),

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Boschetti, L. (Co- Principal Investigator), Roy, D. (Co- Principal Investigator), Giglio, L. (Co- Principal Investigator). Source of Support: NASA Earth System Science Research using Data and Products from the Terra, Aqua, and ACRIMSAT Satellites, (1,067,586 USD)

July 2006: “Short Term Mobility” award for exchanges between personnel of Italian and Foreign research institution, funded by the Italian National Research Council (1,600 EUR)

March 2002-April 2004: “Training through Research” grant by the European Commission, covering a Research Fellowship at the Joint Research Centre (60,000 EUR)

October 2001-February 2002: Grant for research in a foreign university, funded by Italian National Research Council (7,000 EUR)

October 2000-October 2001: Grant for research in a foreign university, funded by Politecnico di Milano (13,000 EUR)

Honors and Awards:

2015 Outstanding Continuing Education and Service Award, College of Natural Resources, University of Idaho

SERVICE:

Major Committee Assignments: (National, State, District, County, University, College, Departmental and dates)

International Committes and Working Groups

GOFC-GOLD Fire Implementation Team (2009-present)

CEOS Cal/Val, Working group on Fire validation, **co-chair** (2008-present)

CEOS Cal/Val Working Group on Global Land Products Validation (2003-present)

European Commission

JRC Institute for Environment and Sustainability Scientific Committee (2003)

National Committees

Tactical Fire Remote Sensing Advisory Committee, USFS-NASA, (2017-present)

Italian Ministry for Environment and National Research Council, Scientific Committee of the ‘Monitoring Fire in Protected Areas’ project (2005-2008)

Campus, College and Departmental Committees (University of Idaho)

Faculty Senate (2014-2017)

Vandal Loan Committee (2016-present)

NKN advisory board (2016-2017)

CNR graduate council (2016-present)

CNR geospatial committee (2012-present, **chair**)

Campus IT committee (2013-2016)

Graduate Council (2013-2014, alternate CNR representative)

International Engagement Council (2013-2016)

Department of Forest, Rangeland and Fire Sciences, Graduate Committee (2013)

Search committees:

Department of geography, Search Committee for GIS assistant professor (2014, external member)

Department of Forest, Rangeland and Fire Sciences, Search Committee for Range Ecology and Management Assistant Professor (2014, **chair**)

Department of Natural Resources and Society, Search Committee for Water Resources Management Assistant Professor (2017)

Department of Forest, Rangeland and Fire Sciences, Search Committee for Range Ecology and

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Management Heady Endowed Professor (2017, external member)
Department of Natural Resources and Society, Search Committee for Remote Sensing Assistant
Research Professor (2017)

Departmental Committees (University of Maryland, Department of Geography)

Research Faculty Advisory Committee (2010, **chair**)
Research Faculty voting representative in the Faculty Committee (2008-2012)
Graduate Committee (2006-2008)
Research Committee (2005-2006)
Research Faculty Merit Review Committee (2006, 2008)

Professional and Scholarly Organizations (including memberships, committee assignments, editorial services, offices held and dates)

Editorial Services

Member of the Editorial Board of the peer reviewed journals “*Fire*” and “*Remote Sensing*”, published by MDPI, 2017-present
Remote Sensing, guest editor of the special issue dedicated to the 10th International Workshop of the EARSeL Special Interest Group (SIG) on Forest Fires, Limassol (Cyprus) November 2015.
European Journal of Remote Sensing, guest editor of the special issue dedicated to the 10th anniversary of the MODIS mission, 2010.

Scientific Conference Organization and Service

Chair, “Forest fire detection and monitoring on multiple scales” session, 11th International Workshop of the EARSeL Special Interest Group (SIG) on Forest Fires, Chania (GR) September 2017
Member of Scientific committee, 11th International Workshop of the EARSeL Special Interest Group (SIG) on Forest Fires, Chania (GR) September 2017.
Member of Scientific committee, 9th International Workshop of the EARSeL Special Interest Group (SIG) on Forest Fires, Leicester (UK) October 2017.
Co-Convener, Fire Session, EGU Symposium, Vienna, Austria, April 2012
Chair, Burned Area Mapping Session, NASA LCLUC-NEESPI Workshop, Yoshkar-Ola, Russian Federation, June 2012.
Chair, Space Assets Session, 1st workshop on Remote Sensing for Sub-Saharan Africa, Nairobi, Kenya, November 2011
Chair, Special session on the 10th Anniversary of the MODIS mission, Italian Remote Sensing Conference (ASITA) Brescia, IT, 2010
Chair, Fire Validation Session, EARSEL-SIG FIRE workshop, Matera, Italy, September 2009
Member of Scientific committee, 6th International Workshop of the EARSeL Special Interest Group (SIG) on Forest Fires, Thessaloniki (Greece) September 2007.
Co-Chair Fire and Hazards session, Geoscience and Remote Sensing Symposium, 2004. IGARSS '06, Denver, USA, 31 July-5 August 2006.

Funding Agency Peer Review Service

NASA, *Peer Review Panelist* (2010, 2011, 2012, 2017)
Foundation for Polish Science, *reviewer* (2013)
Copernicus Global Land Service reviewer, European Commission (2017-2020)

Society Membership

American Geophysical Union, member, 2010-present

Outreach Service: (Including popular press, interview articles, newspaper articles, workshops-seminars-tours organized, Extension impact statements)

- GOFC-GOLD REDD Sourcebook, member of the Core Editorial Team (2009-present); the

sourcebook provides guidance for the use of satellite dataset for carbon accounting (<http://www.gofegold.wur.nl/redd/>) a new version of the material is presented every year at the Conference Of Parties (COP) of the UN Framework Convention on Climate Change (UNFCC)

- UN-FAO Open Foris Initiative: as part of my collaboration with FAO on the development of open source tools for carbon accounting of biomass burning, UI is one of the contributors of the Open Foris Initiative (<http://www.openforis.org/partnership.html>)
- participation in the FAO-IPCC-IFAD expert meeting on greenhouse gas inventory guidelines for agriculture and land use, Rome, 13-14 November 2014 (<http://www.fao.org/economic/ess/ess-events/fao-ipcc-ifad/en/>)

Contacts with popular press and media

AGU GeoSpace, June 27th 2019 (<https://blogs.agu.org/geospace/2019/06/27/study-finds-increased-moisture-facilitated-decline-in-african-fires-in-africa/>)

Washington Post, July 19th 2017 (<http://wapo.st/2yD8kPT>)

NASA Earth Observatory, August 11th, 2017 (<https://go.nasa.gov/2vpZhzd>)

Buzzfeed, July 27th 2017 (<http://bzfd.it/2gatwFA>)

The Atlanta Journal – Constitution, August 15th 2017 (<http://on-ajc.com/2xxfXYk>)