

Curriculum sintetico (italiano)

Il Dott. Raffaele Laforteza è risultato vincitore del concorso indetto dalla Facoltà di Agraria dell'Università degli Studi di Bari con D.R. 3020 del 28/02/2008, per un posto di Ricercatore Universitario nel Settore Scientifico-Disciplinare AGR/05 (Assestamento Forestale e Selvicoltura) ed è stato confermato nel ruolo dei ricercatori universitari a decorrere dal 02.02.2012 (D.R. 3537 del 11/07/2012).

Ha conseguito il titolo di Dottore di Ricerca in "Studio e Progettazione del Paesaggio" presso l'Università degli Studi di Bari (28/02/2002).

L'attività scientifica svolta ha riguardato vari ambiti dell'Assestamento Forestale e Selvicoltura, con particolare riferimento allo studio degli ecosistemi forestali e del territorio a diverse scale spaziali e temporali; alla relazione tra frammentazione ecologica delle aree boschive e biodiversità; al monitoraggio e caratterizzazione delle aree boschive percorse da incendio; all'impiego di modelli statistici multi-variati per la spazializzazione dei dati inventariali e alla pianificazione ecologica del territorio forestale. Un elemento importante di queste ricerche è l'analisi delle relazioni tra le componenti biotiche ed abiotiche degli ecosistemi in rapporto ai cambiamenti dovuti all'utilizzo delle risorse forestali da parte dell'uomo.

I risultati di tali ricerche sono stati presentati in occasione di numerosi congressi internazionali e sono stati divulgati attraverso oltre settanta pubblicazioni scientifiche, di cui due libri pubblicati dalla casa editrice internazionale Springer: "Patterns and Processes in Forest Landscapes" (2008); "Landscape Ecology in Forest Management and Conservation" (2011).

Ha svolto periodi di ricerca presso Università in Canada (University of Guelph); Giappone (University of Tsukuba, University of Tokyo); Inghilterra (University of Cambridge); Danimarca (University of Copenhagen) e partecipato a numerosi progetti di ricerca internazionali nei settori del monitoraggio e dell'analisi quantitativa degli ecosistemi forestali, tra cui: tra cui: FIRB 2012 (Futuro in Ricerca); BIO-SOS (EC-FP7-Space-2010); BioFrag (University of Cambridge, UNEP-WCMC 2007); INTERFACE (British Council 2005); KYOTO-INV (European Space Agency- DUP-II/2002); BALU (European Space Agency- DUP-I/2001).

Nel periodo 2001-2003 collabora con la società Planetek Italia s.r.l. (Bari) nell'ambito di progetti di ricerca internazionali riguardanti il monitoraggio da satellite delle aree boschive e l'impiego dei Sistemi Informativi Geografici (GIS) per l'analisi e la gestione dei dati territoriali.

Nel periodo 2003-2008 svolge attività di ricerca, in qualità di Assegnista di Ricerca, presso il Dipartimento di Scienze delle Produzioni Vegetali, Facoltà di Agraria, Università degli Studi di Bari.

Nel 2005 è risultato vincitore del Programma di collaborazione italo-britannica per giovani ricercatori dal titolo "Climate Change: the UK and Italy's role in a global challenge" (British Council).

Nel 2006 ha coordinato l'organizzazione scientifica della Conferenza Internazionale IUFRO - Unit 08.01.02 (Landscape Ecology): "Patterns and Processes in Forest Landscapes" ed ha curato la pubblicazione degli atti per conto dell'Accademia Italiana di Scienze Forestali (Firenze).

Ha inoltre partecipato, in qualità di membro dello Scientific Board, alla organizzazione delle seguenti Conferenze Internazionali: "Landscape Ecology and Forest Management" (IUFRO - 08.01.02, Chengdu, Cina, Settembre 2008); "Forest Landscapes and Global Change" (IUFRO - 08.01.02, Bragança, Portogallo, Settembre 2010).

Nel 2007 viene nominato Research Associate presso il Department of Plant Sciences della University of Cambridge, Regno Unito con il compito di partecipare ad un progetto finalizzato al monitoraggio degli ecosistemi forestali e dei processi di frammentazione ecologica a scala globale. I risultati di questo progetto sono stati pubblicati su riviste scientifiche ISI.

Dal 2008 svolge attività di docenza a contratto (insegnamenti afferenti al SSD AGR/05) presso la Facoltà di Ingegneria, Politecnico di Bari nell'ambito del Master Universitario di I livello in Pianificazione Territoriale e Ambientale.

Dal 2009 svolge in maniera continuativa incarichi di docenza (insegnamenti afferenti al SSD AGR/05) presso l'Università degli Studi di Bari, nell'ambito dei Corsi di Laurea Magistrale in "Scienze del Territorio e dell'Ambiente Agro-Forestale" e "Gestione e Sviluppo Sostenibile dei Sistemi Rurali Mediterranei".

Dal 2010 è componente del Collegio dei docenti del dottorato di ricerca in "Ingegneria del territorio e dell'ambiente agro-forestale", Scuola di dottorato in "Governare del territorio e dell'ambiente" e del Consiglio di indirizzo in "Gestione e ingegneria dei biosistemi agro-forestali", Scuola di dottorato in "Scienze della pianta e tecnologie per l'ambiente" (dal 2011), istituiti presso dell'Università degli Studi di Bari.

Dal 2012 è membro del gruppo di lavoro SISEF (Società Italiana di Selvicoltura ed Ecologia Forestale) su "Geomatica Forestale" coordinato dal Prof. Gherardo Chirici (Università del Molise). Sempre nel 2012 è stato nominato Regional Editor (Europe, Middle East, Africa) della rivista ISI "Urban Forestry & Urban Greening" (Elsevier) e Co-Editor della rivista ISI "iForest-Biogeosciences and Forestry" (SISEF).

Il Dott. Raffaele Laforteza è membro delle società scientifiche internazionali: IUFRO (International Union of Forest Research Organizations) Unit 08.01.02 (Landscape Ecology), Unit 06.07.00 (Urban Forestry) e IALE (International Association for Landscape Ecology).

Conseguimento di premi e riconoscimenti per l'attività scientifica:

2004 Riceve il “Distinguished Participant Diploma” intitolato alla memoria del Prof. Ilya Prigogine (Premio Nobel 1977). Il riconoscimento gli viene conferito in occasione della Conferenza Internazionale “Brownfield sites: assessment, rehabilitation and development” (Siena, Giugno 2004).

2004 Viene nominato “Special Graduate Faculty Member” dalla University of Guelph, Canada con il compito di fornire il necessario supporto tecnico-scientifico agli studenti (Master e PhD) della Faculty of Environmental Design and Rural Development della stessa università.

2007 Viene nominato Coordinatore del Working Group "Forest Landscape Ecology" istituito nell'ambito della International Association of Landscape Ecology (IALE). La nomina gli viene conferita in Olanda in occasione del Congresso Mondiale IALE (Wageningen, Luglio 2007).

2008 Viene nominato Coordinatore Europeo del Gruppo Scientifico IUFRO (International Union of Forestry Research Organizations), Unit 8.01.02 (Landscape Ecology). La nomina gli viene conferita in Cina in occasione della Conferenza Internazionale "Landscape Ecology and Forest Management" (Chengdu, Settembre 2008).

Altri titoli:

2001 Corso di specializzazione in “Agro-Ecology” presso la University of California, Santa Cruz, USA (120 ore).

2005 Corso di specializzazione in Landscape Ecology - “FRAGSTATS Measuring Spatial Patterns in Landscape Ecology” presso la University of Syracuse, NY, USA (15 ore).

2007 Master Class in Landscape Ecology - "Understanding Processes from Patterns" presso la University of Wageningen, ALTERNURA (The Netherlands) (15 ore).

Curriculum (English version)

Dr. Raffaele Laforteza is Senior Research at the University of Bari, Italy and Adjunct Professor at the Center for Global Change and Earth Observations (CGCEO), Michigan State University. In February 2014, he obtained the title of “Associate Professor” from the Italian Ministry of Education, Universities and Research (MIUR) by fulfilling the requirements of a nationwide selection. He holds a PhD in Landscape Ecology and Geographical Information Systems (GIS) from the University of Bari, Italy (2002) and has acquired considerable knowledge and experience in global change issues, including coupled human-natural systems, by participating in numerous research projects and scientific collaborations worldwide.

His research interests are interdisciplinary in nature and relate to the assessment of driving forces, interactions, and feedback mechanisms underlying ecosystem dynamics at multiple spatial and temporal scales. He seeks to understand the impact of human activity on

ecosystems (i.e., coupled human-natural systems) and to develop management concepts and tools for an efficient combination of sustainability and use of natural resources. Dealing with such structured and multi-scaled issues implies the use of quantitative and interdisciplinary approaches. Consequently, Dr. Laforteza's research increasingly involves the development and use of remote sensing tools, including satellite images and laser scanning data (LiDAR), GIS, multivariate statistical techniques and process-based models accounting for uncertainty (e.g., Hierarchical Bayesian Models), and working in a multi-disciplinary setting.

Dr. Laforteza has developed his research interests in Italy (University of Bari), Canada (University of Guelph), the United States (Michigan State University), Japan (University of Tsukuba), the United Kingdom (University of Cambridge), and China (The University of Hong Kong and Zhejiang University) and has recently been awarded the Visiting Scholars to Advance Science (VISTAS) grant by the Environmental Science and Policy Program at Michigan State University. Since 2016, he is an official member of a working group that focuses on the Water-Energy-Food Nexus in Asia (ASIA WEF Nexus). He has authored and co-authored more than 100 peer-reviewed articles and book chapters, including two books on landscape ecology and GIS modelling: "Patterns and Processes in Forest Landscapes" (Springer, 2008) and "Landscape Ecology in Forest Management and Conservation" (HEP & Springer, 2010). He is Associate Editor of the following scientific journals: "Urban Forestry & Urban Greening" (Elsevier), "Landscape Ecology" (Springer), and Ecological Processes (Springer).

Current Appointment

Senior Researcher^{1,2}, Department of Agricultural and Environmental Sciences, University of Bari, Italy (02/2009-present)

Adjunct Professor, Department of Geography, The University of Hong Kong (01/2018-present)

Adjunct Professor, Center for Global Change & Earth Observations (CGCEO), Michigan State University, Michigan, USA (11/2014-present)

University of Bari Dean Representative and Deputy Coordinator for the Sino-Italian Partnership (09/2015-present)

Previous Appointments

Research Associate, Department of Plant Sciences, University of Cambridge, UK (2007-2009)

Research Associate, Department of Plant Sciences, University of Bari, Italy (2003-2007)

Scientific Advisor and Project Manager, Planetek Italia s.r.l., Bari, Italy (2002-2003)

¹ Promoted to Full Professor (03/2017) by the Italian Ministry of Education, Universities and Research (MIUR) upon fulfilling the requirements of a nationwide selection

<https://asn16.cineca.it/pubblico/miur/esito/07%252FB2/1>

² Promoted to Associate Professor (03/2014) by the Italian Ministry of Education, Universities and Research (MIUR) upon fulfilling the requirements of a nationwide selection (effective start, spring semester 2017)

<https://abilitazione.cineca.it/ministero.php/public/esitoAbilitati/settore/07%252FB2/fascia/2>

Degrees Received

Ph.D., University of Bari, Italy, Faculty of Agricultural and Forestry Sciences (Landscape Ecology and Natural Resources Management), 2002

B.S. and M.Sc., University of Bari, Italy, Faculty of Agricultural and Forestry Sciences (Plant Ecology) (Agricultural Science and Ecology), 1998 (grade 110/110 cum laude)

Academic Career

Visiting Professor, Natural Resources Institute Finland (Luke), Helsinki, Finland (02-03/2017)

Contract Professor of Natural Resource Management, Faculty of Engineering, Polytechnic of Bari, Italy, Master of Landscape and Urban Planning (05/2007 - 05/2016)

Invited Lecturer, Center for Resource Management and Environmental Studies (CERMES), The University of the West Indies, Cave Hill Campus, Barbados (06/2016)

Visiting Professor, Department of Environmental Sciences, University of Toledo, Ohio, USA (05/2013)

Visiting Professor, Department of Life Sciences, University of Copenhagen, Denmark (10/2011)

Research Associate, Department of Plant Sciences, University of Cambridge, UK (2007-2009)

Regional Coordinator of the IUFRO Working Group 08.01.02 - Landscape Ecology (10/2006 - 10/2009)

Special Graduate Faculty Member, School of Environmental Design and Rural Development, University of Guelph, Ontario, Canada (03/2004 - 03/2006)

Visiting Researcher, Graduate School of Systems and Information Engineering, University of Tsukuba, Japan (10/2004)

Invited Lecturer, School of Landscape Architecture, University of Guelph, Ontario, Canada (10/2002)

Invited Lecturer, Graduate School of Agricultural and Life Sciences, University of Tokyo, Japan (06/2002)

Visiting Researcher, Department of Environmental Studies, University of Guelph, Ontario, Canada (02-07/2001)

Training Courses

“Landscape Ecology: Understanding Processes from Patterns” held at the Wageningen UR, Wageningen, The Netherlands, July 6-7, 2007 (15 hours)

“FRAGSTATS - Measuring Spatial Patterns in Landscape Ecology” held at the University of Syracuse, NY, USA, Faculty of Environ. Science, March 12-13, 2005 (15 hours)

“Ecological Landscape Planning” held at the University of Bari, Italy, Faculty of Agricultural and Forestry Sciences, July 8-19, 2003 (Prof. Makoto Yokohari, University of Tsukuba; 30 hours)

“Agro-Ecology and Local Communities” held at the Center for Agro-ecology and Sustainable Food Systems, University of California, Santa Cruz, CA, USA, August 13-24, 2001 (120 hours)

“GIS and Remote Sensing” held at the Tecnopolis Research Institute, Bari, Italy, May 8-12, 2000 (Planetek Italia s.r.l.; 35 hours)

Internship in “GIS and Geo-Data Management” at the Tecnopolis Research Institute, Bari, Italy, February 16–May 29, 1998 (500 hours)

Academic Awards

2017: Educational and Research Award from Hexagon Geospatial, USA

<http://blog.hexagongeospatial.com/2017-hxgn-live-edu-contest/>

2015: Visiting Scholars to Advance Science (VISTAS). Award from the Environmental Science and Policy Program, Michigan State University, Michigan, USA

2005: 'British-Italian Partnership Programme' Award on Climate Change & Impacts on Human Health from the British Council, UK

2004: 'Ilya Prigogine Award'. Distinguished Diploma from Wessex Institute of Technology, UK, and the University of Siena, Italy

Principal investigator/Co-investigator of Major Projects

National Funds

MiMOSE - Development of innovative models for multiscale monitoring of ecosystem services indicators in Mediterranean forests. Italian Ministry of Education, Universities and Research – Future in Research: Mar. 2013–Mar. 2016. Budget € 1,196,194. The project aimed to: (1) assess the provision of ecosystem services (ES) (e.g., carbon storage in biomass, biodiversity) in Mediterranean forest landscapes; (2) model changes in ES and trade-offs across scales; (3) and predict ES variation across different scenarios of land-use change and forest management.

NEUFOR - Innovative models for the analysis of ecosystem services of forests in urban and periurban context). Italian Ministry of Education, Universities and Research Projects of National Interest: Oct. 2013–Oct. 2016. Budget € 467,149. The project aimed to: (1) develop ES indicators in forest plantation systems (forests in the urban and periurban context); (2) establish a monitoring protocol of ES application in test areas; and (3) estimate spatial indicators of ES in relation to different management scenarios (e.g., land use/canopy changes, forest dynamics and management practices).

INFO-BIO (Influence of wildfires on forest biodiversity). Fondazione Cassa di Risparmio di Puglia: Feb. 2012–Feb. 2013. Budget € 80,000. The project aimed to: (1) assess forest biodiversity (insects) in burned forest areas, and (2) develop a model to predict the turnover of insect communities through space and time.

INFLAMING (Developing innovative models and techniques for integrated fuel management for fire prevention in Mediterranean and temperate forests). Italian Ministry of Education, Universities and Research Projects of National Interest: Oct. 2011–Oct. 2013. Budget € 438,425. This project aimed to test innovative models and techniques in the context of integrated forest fuel management in Mediterranean and temperate forests and wildland-urban interface (WUI) areas.

ASPEN (Assessment of ecological and visual aspects of forest resources in the periurban and landscape context). Italian Ministry of Education, Universities and Research Projects of National Interest: Oct. 2008–Oct. 2010. Budget € 301,200. This project aimed to analyze: (1) urban and periurban green area typologies; (2) ecological and structural characteristics; and (3) social characteristics.

REFER (Research finalized to the estimation of the Ecological and Functional values of standard typologies of urban and periurban green areas). Italian Ministry of Education,

Universities and Research Projects of National Interest: Oct. 2005-Oct. 2008. Budget € 203,000. This project aimed at the following objectives: (1) assessment of habitat biodiversity in terms of vegetation and animal species; (2) evaluation of the relationship between the microclimate and vegetation; and (3) evaluation of the relationship between pollutants and vegetation.

European and International Funds

proGReg (productive Green Infrastructure for post-industrial urban regeneration) European Commission Seventh Framework Programme (Horizon 2020). Jan. 2018 – Jan. 2022. Budget € 10,432,512. The project has the objective of demonstrating the integration of Nature Based Solutions (NBS) into business models which are economically self-sustaining and which provide multiple benefits for the economic, ecological and social regeneration of deprived urban areas suffering from the consequences of de industrialization.

Socioecological Carbon Production in Managed Agricultural-Forest Landscapes. Michigan State University (16-CARBON16-0106). NASA- ROSES-2016, Program Element: Carbon Cycle Science. Jan. 2017 – Jan. 2019. Budget US\$ 1,500,000. Our overall objective is to explore new concepts of social C flux and its effect on the carbon cycle in managed agriculture and forest landscapes. We will quantify the landscape-scale C fluxes at annual scale of both managed agricultural-forest landscapes and people, using the Kalamazoo watershed in southwestern Michigan as our testbed.

TeamCHEMS (A Team for Coupled Human and Environmental MacroSystems in a Changing Globe). Michigan State University, USA, ESPP program. Mar. 2015 – Mar. 2017. Budget US\$ 10,000. The project will construct a comprehensive database of the Natural System (NS) and Human System (HS) for three main MacroSystems at multiple spatial and temporal scales from multiple sources of government publications, previous research projects, remote sensing, and other international agencies.

GREEN SURGE (Green Infrastructure and Urban Biodiversity for Sustainable Urban Development and the Green Economy - www.greensurge.eu). European Commission Seventh Framework Programme (FP7). Nov. 2013 – Nov. 2017. Budget € 7,213,352. The project will identify, develop and test ways of linking green spaces, biodiversity, people and the green economy in order to meet the major urban challenges related to land use conflicts, climate change adaptation, demographic changes, and human health and wellbeing. It will provide a sound evidence base for urban green infrastructure planning and implementation, exploring the potential for innovation in better linking environmental, social and economic ecosystem services with local communities.

EMONFUR (Establishing a monitoring network to assess lowland forest and urban plantation in Lombardy and urban forest in Slovenia - www.emonfur.eu) European Commission LIFE + Program (2010). Sept. 2011 – Sept. 2014. Budget € 574,022. The project aimed at assessing the impacts of urban and periurban forests on biodiversity conservation, regulation of surface temperature, carbon storage and their influence in the preservation of livelihood in

local communities. In addition, the effects of climate change on the evolution of the urban forest areas, and specifically on the development of plant diseases, have been assessed.

BIO-FRAG (Meaningful measures of trends in forest fragmentation). Cambridge University and UN-WCMC. Oct. 2007 – Jun. 2009. Budget UK£ 140,000. This project aimed to develop a set of biodiversity-relevant indices to describe forest fragmentation and how fragmentation has changed through space and time in order to support globally agreed policy targets on biodiversity. The project analyzed data from multiple sources to create a single global index of fragmentation that most closely correlates remotely sensed patterns of fragmentation with the observed biological patterns within and among landscapes.

INTERFACE (Integrative Research on Forest Areas, Citizens and urban Environment). British Council, UK: Dec. 2005 - Dec. 2007. Total budget € 22,000. This project investigated the effects of green spaces on citizens during periods of heat stress. The research developed applicative studies to: (1) demonstrate how to make cities and urban neighborhoods fit for climate change through planning, design and management of multi-functional green infrastructures; (2) explore policy options for urban planning in response to climate change and citizens' behavioral patterns, with emphasis on changes in urban forest availability, spatial distribution and accessibility.

TOARC Project - Ecological Rehabilitation: Connecting Opportunities and Solutions. The Ontario Aggregate Resources Corporation: Oct. 2004 - Oct. 2006. Total budget CAD\$ 75,000. This project explored the implications of alternative designed rehabilitation approaches for depleted aggregate sites. We measured the ecological (landscape patterns, ecological flows, microclimate) and social (perception and preference) outcomes for different rehabilitation approaches based on visual and ecological criteria. Outcomes of the research contributed to more efficient approaches to rehabilitation that achieve greater cultural acceptability.

KYOTO-INV (KYOTO INVENTORY). European Space Agency: Oct. 2002 - Aug. 2004. Total budget € 250,000. This project aimed to define and implement a nationwide service of benefit to actors involved in reporting for the Kyoto Protocol or in trade resulting from the Protocol. The service included provision of monitoring with respect to Afforestation Reforestation and Deforestation (ARD) activities, or more generally land-use change activities.

BALU (Burned Area Land Use change detection). European Space Agency: Oct. 2001 – Aug. 2003. Total budget € 290,000. This project aimed to develop remote sensing products supporting the: (1) detection of land use changes over burned forest areas, and (2) assessment of the damage caused by forest fires using environmental indicators.

Member of Committees and Scientific Boards

Member, Scientific Board of Tecnopolis PST - Science and Technology Park, Bari, Italy (07/2015-present)

Member, Internationalization Committee, University of Bari, Bari, Italy (07/2015-present)

Member, Sino-Italian Partnership Committee, University of Bari, Bari, Italy (07/2015-present)

Member, Scientific Board of GREEN SURGE Project (EU-funded), Urban Learning Lab, University of Bari, Bari, Italy (11/2013-present)

Member, PhD Committee, Graduate School of “Forest Ecology”, University of Tuscia, Viterbo, Italy (2016-2017)

Member, Search Committee for PhD candidates, Graduate School of “Agro-Forestry and Bio-Systems Engineering”, University of Bari, Bari, Italy (2013, 2014)

Member, Board of Professors, Graduate School of “Agro-Forestry and Bio-Systems Engineering”, University of Bari, Bari, Italy (02/2009-present)

Member, Search Committee for Research Associate position, INFLAMING Project (2009, 2011)

Member, Landscape Planning and Assessment Committee, Puglia Region, Southern Italy, (01/2007 - 01/2009)

Chair, IALE-IUFRO Working Group, Forest Landscape Ecology (07/2007-07/2015)

Member and European Coordinator, IUFRO Landscape Ecology Working Group, European Coordinator (10/2006 - 10/2009)

Member, IUFRO Urban Forestry Working Group (10/2002-present)

Editor of Scientific Journals

Urban Forestry and Urban Greening, Elsevier – IF2016=2.213 (Associate Editor)

Landscape Ecology, Springer – IF2016=3.615 (Member of the Editorial Board)

iForest - Biogeosciences and Forestry, SISEF - IF2016=1.623 (Associate Editor)

Ecological Processes, Springer (Member of the Editorial Board)