SHORT C.V. - PROF. STEFANO MAZZOLENI

Current position
Full professor Applied Ecology and System Dynamics Modelling – Dept. Agricultural Sciences - University of Napoli "Federico II", Italy
Director Museum Centre "Musei delle Scienze Agrarie – MUSA" - Università di Napoli "Federico II"

Previous positions
Director Dept. Horticulture, Botany and Plant Pathology – University of Napoli "Federico II"
President of degree in "Forestry and Environmental Sciences" – University of Napoli "Federico II"

Education
1983 Laurea degree in Agricultural Sciences. University of Napoli "Federico II".
1985 M.Sc. in Forestry. Michigan State University (M.S.U.), East Lansing, USA.
1992 PhD in Plant Ecology. Institute of Terrestrial Ecology and University of Aberdeen, UK.

Main research interests

Ecology and System Dynamics Modelling, Inhibitory effect of extracellular DNA, Pathogen control in agriculture and medicine,

Main appointments
- 2017 Componente Commissione nazionale per la previsione e la prevenzione dei grandi rischi – settore rischio ambientale e degli incendi boschivi – Dipartimento della Protezione Civile, Presidenza del Consiglio dei Ministri.
- 2002-2005 Componente della Concerted Action "AVEC - Integrated Assessment of Vulnerable Ecosystems under Global Change". European Commission - 5th FP Energy, Environment and Sustainable Development
- 1996-1999 Membro dello Steering Committee of the Concerted Action "Degradation and desertification in Europe of DG XII of the European Union
- 1992-99 Coordinatore del "Gruppo per l'Ecologia" della Società Botanica Italiana
- 1993-1994 Responsabile scientifico per la Regione Molise e Ministero dell'Ambiente per il progetto BIOITALY-HABITAT, UE D.G. XI

International research projects
Project Coordinator:
- ModMED I and II – "Modelling Vegetation Dynamics and Degradation in Mediterranean Ecosystems", istituzioni partecipanti: Università di Napoli, Edimburgo, Atene, Lisbona, Valencia, Trier, Pisa e Campobasso - EU DG XII EV5V CT94-0489/0139.
- ModMED III- "Modelling Mediterranean Ecosystems Dynamics", istituzioni partecipanti: Università di Napoli, Edimburgo, Atene, Lisbona, Valencia, Trier, Pisa, Campobasso, Budapest – EU DG XII ENV4CT97-0680.

Coordinator of research unit:
- AIR-HERITAGE - Improving the environmental quality of the City of Portici: Monitoring, Modelling, and Mitigating Air Pollution through participated and efficient Policies. UE - Urban Innovative Actions "Air Quality". UIA 03-322.
- LUCIFER – "Land Use Interaction with Fire in Mediterranean Landscapes", coordinamento Toledo University, Spain - EU DG XII ENV4 CT96 0320.
- ERMES II – "Soil Erosion in Mediterranean Ecosystems", coordinamento Cranfield University, GB - EU DG XII ENV4CT95 0181.
- MODULUS – "Integrated modelling environment", coordinamento RIKS Mastricht, Netherland – EU DG XII ENV4CT97-0685.
- FIRE PARADOX – "An innovative approach of Integrated Wildland Fire Management regulating the wildfire problem by the wise use of fire: solving the FIRE PARADOX", coordinamento University of Lisbon, Portugal – EU DG XII FP6 018505.

Main national projects

Project Coordinator:

- "Effects of species diversity on litter production and decomposition in Mediterranean maquis: modelling analysis" – Progetti Ricerca Interesse Nazionale (PRIN) MIUR 2005.
- "Modelling of C and N fluxes in mediterranean vegetation: effects of the spatial variability of vegetation cover" – Progetti Ricerca Interesse Nazionale (PRIN) MIUR 2003.
- Decision support system for Servizio Foreste della Regione Campania.
- Widfire prevention plans of Parco Nazionale del Cilento e Vallo di Diano 2003-2009.

Coordinatorof research unit:

- MESCOSAGR – "Metodi Sostenibili per il sequestro del carbonio organico nei suoli agrari. Valutazione degli effetti sulla qualità chimica, fisica, biologica ed agronomica dei suoli". FISR – MIUR, modelling research unit.
- "Natura 2000", Ministero dell'Ambiente project units for Campania and Molise Regions.
- Fire in Mediterranean environment: effects on vegetation and soil – Progetti Ricerca Interesse Nazionale (PRIN) MIUR 1999.
- "Vegetazione e incendi" unit of PON PETIT OSA Information technology for environment – Ministero dell'Università e Ricerca.

Publications

Prof. Mazzoleni has been working on ecology and modelling of biological systems for over 30 years with a specific interest in the field of negative feedbacks in cell and organism growth processes. He has (co-)authored over 150 publications, including internationally-respected peer-reviewed journals, books and monographs.

Selected list of recent papers (2015-)

Bonanomi, G., De Filippis, F., Cesarano, G., La Storia, A., Zotti, M., Mazzoleni, S., Incerti, G.
Linking bacterial and eukaryotic microbiota to litter chemistry: Combining next generation sequencing with 13C CPMAS NMR spectroscopy
(2019) Soil Biology and Biochemistry, 129, pp. 110-121.

Cartenì, F., Deslauriers, A., Rossi, S., Morin, H., De Micco, V., Mazzoleni, S., Giannino, F.
The physiological mechanisms behind the earlywood-to-latewood transition: A process-based modeling approach
(2018) Frontiers in Plant Science, 9, art. no. 1053, .

de Alteriis, E., Cartenì, F., Parascandola, P., Serpa, J., Mazzoleni, S.
Revisiting the Crabtree/Warburg effect in a dynamic perspective: a fitness advantage against sugar-induced cell death
(2018) Cell Cycle, 17 (6), pp. 688-701.

De Gennaro, S., Russo, L., Giannino, F., Maffettone, P.L., Mazzoleni, S., Siettos, C.
Analysis of catastrophic shifts between different moving vegetation patterns
(2018) Chemical Engineering Transactions, 67, pp. 343-348.

Bonanomi, G., Incerti, G., Abd El-Gawad, A.M., Cesarano, G., Sarker, T.C., Saulino, L., Lanzotti, V., Saracino, A., Rego, F.C., Mazzoleni, S. - Comparing chemistry and bioactivity of burned vs. decomposed plant litter: different pathways but same result?
(2018) Ecology, 99 (1), pp. 158-171.

Sarker, T.C., Maisto, G., De Marco, A., Esposito, F., Panico, S.C., Alam, M.F., Mazzoleni, S., Bonanomi, G.
Explaining trajectories of chemical changes during decomposition of tropical litter by 13C-CPMAS NMR, proximate and nutrients analysis. (2018) Plant and Soil.

Bonanomi, G., Cesarano, G., Lombardi, N., Motti, R., Scala, F., Mazzoleni, S., Incerti, G.
Litter chemistry explains contrasting feeding preferences of bacteria, fungi, and higher plants
(2017) Scientific Reports, 7 (1), art. no. 9208, .

Vincenot, C.E., Cartenì, F., Bonanomi, G., Mazzoleni, S., Giannino, F.
Plant–soil negative feedback explains vegetation dynamics and patterns at multiple scales
(2017) Oikos, 126 (9), pp. 1319-1328.

Incerti, G., Bonanomi, G., Giannino, F., Cartenì, F., Spaccini, R., Mazzei, P., Piccolo, A., Mazzoleni, S.
OMDY: a new model of organic matter decomposition based on biomolecular content as assessed by 13C-CPMAS-NMR
(2017) Plant and Soil, 411 (1-2), pp. 377-394.

Gehring, E., Pezzatti, G.B., Krebs, P., Mazzoleni, S., Zappa, M., Conedera, M.
The influence of site characteristics on the leaf-to-sapwood area relationship in chestnut trees (Castanea sativa Mill.)
(2016) Trees - Structure and Function, 30 (6), pp. 2217-2226.

Vincenot, C.E., Carteni, F., Mazzoleni, S., Rietkerk, M., Giannino, F.
Spatial self-organization of vegetation subject to climatic stress—insights from a system dynamics—individual-based hybrid model
(2016) Frontiers in Plant Science, 7 (MAY2016), art. no. 636, .

Cartení, F., Bonanomi, G., Giannino, F., Incerti, G., Vincenot, C.E., Chiusano, M.L., Mazzoleni, S.
Self-dna inhibitory effects: Underlying mechanisms and ecological implications
(2016) Plant Signaling and Behavior, 11 (4), art. no. e1158381, .

Bonanomi, G., Ippolito, F., Senatore, M., Cesarano, G., Incerti, G., Saracino, A., Lanzotti, V., Scala, F., Mazzoleni, S.
Water extracts of charred litter cause opposite effects on growth of plants and fungi
(2016) Soil Biology and Biochemistry, 92, pp. 133-141.

Mazzoleni, S., Landi, C., Cartenì, F., de Alteriis, E., Giannino, F., Paciello, L., Parascandola, P.
A novel process-based model of microbial growth: Self-inhibition in Saccharomyces cerevisiae aerobic fed-batch cultures
(2015) Microbial Cell Factories, 14 (1), art. no. 109, .

Vincenot, C.E., Mazzoleni, S., Moriya, K., Cartenì, F., Giannino, F.
How spatial resource distribution and memory impact foraging success: A hybrid model and mechanistic index
(2015) Ecological Complexity, 22, pp. 139-151.

Gehring, E., Pezzatti, G.B., Krebs, P., Mazzoleni, S., Conedera, M.
On the applicability of the pipe model theory on the chestnut tree (Castanea sativa Mill.)
(2015) Trees - Structure and Function, 29 (2), pp. 321-332.

Mazzoleni, S., Cartenì, F., Bonanomi, G., Senatore, M., Termolino, P., Giannino, F., Incerti, G., Rietkerk, M., Lanzotti, V., Chiusano, M.L.
Inhibitory effects of extracellular self-DNA: A general biological process?
(2015) New Phytologist, 206 (1), pp. 127-132.

Mazzoleni, S., Bonanomi, G., Incerti, G., Chiusano, M.L., Termolino, P., Mingo, A., Senatore, M., Giannino, F., Cartenì, F., Rietkerk, M., Lanzotti, V.
Inhibitory and toxic effects of extracellular self-DNA in litter: A mechanism for negative plant-soil feedbacks?
(2015) New Phytologist, 205 (3), pp. 1195-1210.

Mazzoleni, S., Cartenì, F., Bonanomi, G., Incerti, G., Chiusano, M.L., Termolino, P., Migliozzi, A., Senatore, M., Giannino, F., Rietkerk, M., Risitano, A., Lanzotti, V.
New perspectives on the use of nucleic acids in pharmacological applications: inhibitory action of extracellular self-DNA in biological systems
(2014) Phytochemistry Reviews, 13 (4), pp. 937-946.