PERSONAL INFORMATION	Francesco Giannino
	Dipartimento di Agraria, Università di Napoli Federico II, 80055 Portici (Na), Italia
	+39 081 25 31041 +39 328 2018901
	giannino@unina.it
	1. https://www.docenti.unina.it/francesco.giannino
	Sex M | *Date of birth* 27/07/1972| *Nationality* Italian
	h-index: 20 total citations: 1233 (source: Scopus, 05/11/2022)

Enterprise	University	EPR
☐ Management Level	☐ Full professor	☐ Research Director and 1st level Technologist / First Researcher and 2nd level Technologist
☐ Mid-Management Level	☒ Associate Professor	☐ Level III Researcher and Technologist
☐ Employee / worker level	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

2020 - present	**Associate Professor of Numerical Analysis**
	Department of Agricultural Sciences, University of Naples Federico II
	- Research topics: mathematical modelling, numerical analysis, applied ecology, ODE, PDE
2005 - 2020	**Researcher of Numerical Analysis**
	Department of Agricultural Sciences, University of Naples Federico II
	- Research topics: mathematical modelling, numerical analysis, applied ecology, ODE, PDE

EDUCATION AND TRAINING

2002	Ph.D in Applied mathematics	
	University of Naples Federico II	
	▪ Modelling of Plant System	
1997	M.Sc. in Applied mathematics	
	University of Naples Federico II	
	▪ sull'Ultimo Teorema di Fermat, 110/110 cum laude	

PROJECTS (last five years)

	With leadership roles
2019 - present	"Abcd - Astroni Bosco da Conoscere per Difendere" – Finanziamento: Fondazione con il Sud (PI for the UNINA research unit)
2019-present	SHEALTY "Non-Thermal physical technologies to preserve fresh and minimally processed fruit and vegetables" Finanziamento: H2020-SFS-2018- 2020 (Modelling Task leader)
2019-present	LIFE - Living In a Fringe Environment, Finanziamento: ERC Consolidator Grant -2015 (Modelling Task leader)
2019-present	VISmaF: Synthetic Tree for Immersive Virtual Visualization in Smart Farming - P.O.R. Campania FSE 2014/2020 "Dottorati di ricerca con caratterizzazione industriale", Regione Campania (PI)
2019 - 2022	PREVAIL "PREVention Action Increases Large fire response preparedness" 826400 — PREVAIL — UCPM-2018-PP-AG – Finanziamento: Union Civil Protection Mechanism Programme of the European Union (PI for the UNINA research unit)
2017-2022	AIR-HERITAGE - Improving the environmental quality of the City of Portici: Monitoring, Modelling, and Mitigating Air Pollution through participated and efficient Policies, Finanziamento: UIA-UE (Participant)

2017-2022	VISCA Vineyards´ Integrated Smart Climate Application", Finanziamento: H2020 Grant Agreement no. 730253 (Participant)
2017 - 2020	MOD_DEV_CELL "System dynamics modeling of microbial cell cultures: numerical methods, process optimization, and individual-based approach" - Finanziamento della ricerca in Ateneo (PI)
2018-2019	"Nuove TECNOlogie a supporto di nuove coltivazioni e di nuovi scenari nell'AGRICOltura moderna" - TECNOAGRICO, Finanziamento: Regione Campania (PI)

COMMUNITY SERVICE (last 5y)

TPC chair	"10th Conference on Dynamical Systems Applied to Biology and Natural Sciences (DSABNS)", Università di Napoli Federico II - dal 03-02-2019 al 06-02-2019 http://www.dsabns2019.unina.it/LocalCom.html "Pensare per sistemi: Interpretare il presente, orientare il futuro", (Dipartimento di Agraria, Università degli studi di Napoli Federico II, 27 maggio 2019) dal 24-05-2019 al 27-05-2019
TPC member	"2019 IEEE International Workshop on Metrology for Agriculture and Forestry", Università di Napoli Federico II https://www.metroagrifor.org/special-session-2 - dal 24-10-2019 al 26-10-2019 "Natural Products in Cancer Prevention and Therapy – Trends in Methods and Modelling", 4-7-settembre 2018, Napoli, Università di Napoli Federico II - dal 04-09-2018 al 07-09-2018
Session chair/ Workshops chair	"Integrated iot data analysis and mathematical modeling for agro-forestry systems" per "2019 IEEE International Workshop on Metrology for Agriculture and Forestry", Università di Napoli Federico II - dal 24-10-2019 al 26-10-2019 "Ecological Applications of Hybrid Models" per " The International Society for Ecological Modelling Global Conference 2019" (Salzuburg, October 01 – 05, 2019) dal 01-10-2019 al 05-10-2019 "Numerical Analysis of Complex and Multiscale Systems" per NUMTA 2019 - Numerical Computations: Theory and Algorithms" (Le Castelle Village, Italy, June 15 – 21, 2019) dal 15-06-2019 al 21-06-2019 "Hybrid modelling in Biology" per "11th European Conference on Mathematical and Theoretical Biology" (Lisbon, July 23 – 27, 2018) dal 23-10-2018 al 27-10-2018

PHD SUPERVISION

2008 - 2011	Gianni Boris Pezzatti "Modeling plant biomass partitioning: responses to environmental conditions and disturbance", Università di Napoli Federico II (XXIII ciclo) http://www.fedoa.unina.it/8515/
2011 - 2014	Fabrizio Cartenì "Self-organization in the development of plant spatial patterns", Università di Napoli Federico II (XXV ciclo) http://www.fedoa.unina.it/9805/
2014 - 2017	Andrea Baraldi Università di Napoli Federico II (XXIX ciclo) Pre-processing, classification and semantic querying of large-scale Earth observation spaceborne/airborne/terrestrial image databases: Process and product innovations http://www.fedoa.unina.it/11724/
2014 - 2017	Bruno Hay Mele Università di Napoli Federico II (XXX ciclo) "Exploring the potential of cell-based models in simulating tissue biophysics in plant morphogenesis: the case ofwoody tissues."
2019 - 2022	Mariano CrimanIdi Università di Napoli Federico II "(XXXIV ciclo) "VISmaF: Visualizzazione Immersiva per lo Smart Farming"
2021 - Present	Nikos Karagiannis, Università di Napoli Federico II "(XXXVII ciclo) "Applied Game Theory in biology"

TEACHING

2005- Present	MSc course on "Mathematics"
2021- present	MSc course on "Computational Methods for Applied Sciences"
2017 - 2018	PhD course on "Introduction to System Dynamics and Individual Based Modelling"

INSTITUTIONAL

RESPONSIBILITIES

2020 - present	Delegate to students dell'Università di Napoli Federico II
2020 - present	Coordinator of "Gruppo di lavoro Commissione per le tasse ed il monitoraggio dei servizi agli studenti dell'Università di Napoli Federico II
2021- present	Member of "Comitato scientifico del Centro Servizi Informatici" University of Naples Federico II
2016-present	Member of PhD collegium "SUSTAINABLE AGRICULTURAL AND FORESTRY SYSTEMS AND FOOD SECURITY", University of Naples Federico II I
2017 - 2021	Member of "Gruppo di gestione Assicurazione di Qualità (AQ) del "Corso Scienze Agrarie, forestali e ambientali" Department of Agricultural Sciences, University of Naples Federico II
2017-2021	Member of ERASMUS Commission Department of Agricultural Sciences, University of Naples Federico II
2015 - 2020	Member of "Gruppo di lavoro Commissione per le tasse ed il monitoraggio dei servizi agli studenti dell'Università di Napoli Federico II
2015 - 2017	Member of "Senato Accademico dell'Università di Napoli Federico II"

INVITED TALKS

2018	Speaker invited - "Plant–soil feedback and vegetation patterns at multiple scales". In "Plant Ecology and Biodiversity" Università degli Studi di Trieste
2017	Speaker Invited for Plenary "Mathematical model for Fire Propagation" in "Training on climate change and illegal logging" – Food and Agriculture Organization of the United Nations (FAO) e l'Arma dei Carabinieri, Roma,
2014	Speaker Invited for Plenary "Individual-based modeling approach to population dynamics" Workshop Numerical Simulation of Evolutionary Processes C.N.R., Bari, Italy,

FELLOWSHIPS AND AWARDS

July 2017	Fellowship "Nitrogen-Carbon cycle" Environmental Informatics Group, University of Kyoto

ADDITIONAL INFORMATION

2015	Founder member of SYstem Dynamics Italian Chapter, System Dynamics, System Dynamics Society SDS
2015 - Present	Member of Policy Council SYstem Dynamics Italian Chapter, System Dynamics, System Dynamics Society SDS

PUBLICATIONS

Publications (select)
best and most relevant
in the last 5 years

Ahmad, Z., El-Kafrawy, S.A., Alandijany, T.A., Giannino, F., Mirza, A.A., El-Daly, M.M., Faizo, A.A., Bajrai, L.H., Kamal, M.A., Azhar, E.I.
A global report on the dynamics of COVID-19 with quarantine and hospitalization: A fractional order model with non-local kernel
(2022) Computational Biology and Chemistry, 98, art. no. 107645, .

Allegrezza, M., Bonanomi, G., Zotti, M., Carteni, F., Moreno, M., Olivieri, L., Garbarino, M., Tesei, G., Giannino, F., Mazzoleni, S.
Biogeography and shape of fungal fairy rings in the Apennine mountains, Italy
(2022) Journal of Biogeography, 49 (2), pp. 353-363.

Salvatori, N., Carteni, F., Giannino, F., Alberti, G., Mazzoleni, S., Peressotti, A.
A System Dynamics Approach to Model Photosynthesis at Leaf Level Under Fluctuating Light
(2022) Frontiers in Plant Science, 12, art. no. 787877,

Sarker, T.C., Zotti, M., Fang, Y., Giannino, F., Mazzoleni, S., Bonanomi, G., Cai, Y., Chang, S.X.
Soil Aggregation in Relation to Organic Amendment: a Synthesis
(2022) Journal of Soil Science and Plant Nutrition,

Crimaldi, M., Cartenì, F., Giannino, F.
VISmaF: Synthetic tree for immersive virtual visualization in smart farming. part I: Scientific background review and model proposal
(2021) Agronomy, 11 (12), art. no. 2458,

Bobrovskikh, A., Doroshkov, A., Mazzoleni, S., Cartenì, F., Giannino, F., Zubairova, U.
A Sight on Single-Cell Transcriptomics in Plants Through the Prism of Cell-Based Computational Modeling Approaches: Benefits and Challenges for Data Analysis
(2021) Frontiers in Genetics, 12, art. no. 652974, .

Mazzoleni, S., Russo, L., Giannino, F., Toraldo, G., Siettos, C.
Mathematical modelling and numerical bifurcation analysis of inbreeding and interdisciplinarity dynamics in academia
(2021) Journal of Computational and Applied Mathematics, 385, art. no. 113194,

Spiliotis, K., Russo, L., Giannino, F., Siettos, C.
Analytical and numerical bifurcation analysis of a forest ecosystem model with human interaction
(2021) ESAIM: Mathematical Modelling and Numerical Analysis, 55, pp. S653-S675.

Bonanomi, G., Salvatori, N., Zotti, M., Stinca, A., Motti, R., Idbella, M., Cartenì, F., Mazzoleni, S., Giannino, F.
Parasitic plant causes an ephemeral “rainbow” pattern in a reservoir bank
(2021) Journal of Vegetation Science, 32 (1), art. no. e12931, .

Marasco, A., Giannino, F., Iuorio, A.
Modelling competitive interactions and plant–soil feedback in vegetation dynamics
(2020) Ricerche di Matematica, 69 (2), pp. 553-577.

Carteni, F., Occhicone, A., Giannino, F., Vincenot, C.E., de Alteriis, E., Palomba, E., Mazzoleni, S.
A General Process-Based Model for Describing the Metabolic Shift in Microbial Cell Cultures
(2020) Frontiers in Microbiology, 11, art. no. 521368, .

Tamburis, O., Giannino, F., D’Arco, M., Tocchi, A., Esposito, C., Fiore, G.D., Piscopo, N., Esposito, L.
A night at the opera: A conceptual framework for an integrated distributed sensor network-based system to figure out safety protocols for animals under risk of fire †
(2020) Sensors (Switzerland), 20 (9), art. no. 2538, .

Russo, L., Spiliotis, K., Giannino, F., Mazzoleni, S., Siettos, C.
Bautin bifurcations in a forest-grassland ecosystem with human-environment interactions
(2019) Scientific Reports, 9 (1), art. no. 2665, .

Moreno, M., Bonanomi, G., Diano, M., Parente, M., Giannino, F.
TecnoAgrico: A new approach for crop scale agricultural DSSs.
(2019) 2019 IEEE International Workshop on Metrology for Agriculture and Forestry, MetroAgriFor 2019 - Proceedings, art. no. 8909265, pp. 158-162.

Giannino, F., Hay Mele, B., De Micco, V., Toraldo, G., Mazzoleni, S., Carteni, F.
An Individual Based Model of Wound Closure in Plant Stems
(2019) IEEE Access, 7, art. no. 8709683, pp. 65821-65827.

Buonomo, B., Giannino, F., Saussure, S., Venturino, E.
Effects of limited volatiles release by plants in tritrophic interactions

	(2019) Mathematical Biosciences and Engineering, 16 (5), pp. 3331-3344. Giannino, F., Esposito, S., Diano, M., Cuomo, S., Toraldo, G. A predictive Decision Support System (DSS) for a microalgae production plant based on Internet of Things paradigm (2018) Concurrency Computation, 30 (15), art. no. e4476, . piliotis, K., Russo, L., Giannino, F., Cuomo, S., Siettos, C., Toraldo, G. Nonlinear Galerkin methods for a system of PDEs with Turing instabilities (2018) Calcolo, 55 (1), art. no. 9, . Campagna, R., Cuomo, S., Giannino, F., Severino, G., Toraldo, G. A Semi-Automatic Numerical Algorithm for Turing Patterns Formation in a Reaction-Diffusion Model (2017) IEEE Access, 6, pp. 4720-4724. Severino, G., Giannino, F., Cartení, F., Mazzoleni, S., Tartakovsky, D.M. Effects of Hydraulic Soil Properties on Vegetation Pattern Formation in Sloping Landscapes (2017) Bulletin of Mathematical Biology, 79 (12), pp. 2773-2784. 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. Esposito, S., Cafiero, A., Giannino, F., Mazzoleni, S., Diano, M.M. A Monitoring, Modeling and Decision Support System (DSS) for a Microalgae Production Plant based on Internet of Things Structure (2017) Procedia Computer Science, 113, pp. 519-524. Vincenot CE, Carteni F, Mazzoleni S, Rietkerk M, Giannino F (2016). Spatial Self-Organization of Vegetation Subject to Climatic Stress—Insights from a System Dynamics—Individual-Based Hybrid Model. Frontiers In Plant Science, vol. 7, p. 1-18, ISSN: 1664-462X, doi: 10.3389/fpls.2016.00636

Napoli 05/11/2022