

Simone Vincenzi

Curriculum Vitae – September 2018

Email: simon.vincenz@gmail.com

EB-1A Green Card holder for Alien of Extraordinary Ability in the Sciences

ACADEMIC TRAINING

2007: **Ph.D. in Ecology**, University of Parma (Italy). “Compensatory responses and population viability analysis of translocated marble trout populations in Slovenian streams”. Advisor: Prof. Giulio A. De Leo (now Full Professor at Stanford).

2003: BS and MS in Environmental Sciences (combined in a single program), University of Parma (Italy). Thesis: “Simulation model to estimate the emissions of pollutants from road traffic”. Advisor: Prof. Corrado Rizzoli.

TECH POSITIONS

October 2017-: **Senior Machine Learning Research Scientist** at Netflix.

Main projects at Netflix as Project Leader for post-launch predictions of viewership – The projects described below are all end-to-end analyses that included data collection and requirements specification, data processing and modeling, post-modeling analyses, deliverables (memos, reports) and internal presentations to business and science departments

Random-effects non-linear model that predicts n -week cumulative viewership of TV-shows within 1% of target in validation data sets three days after launch. Viewership trajectories are in title launch reports viewed daily by > 2,000 Netflix employees. **Predictions of cumulative viewership also provide support for the allocation of marketing assets**

Log-linear models and Random Forests that predict viewership targets for each title at Netflix in order to reach economic efficiency. Viewership targets translate machine-learning analyses in business recommendations that **support early decisions on renewals of TV-shows**

Bayesian Generalized Additive Models and Random Forests that predict the lifetime economic efficiency of TV-shows at ten days after launch. Predictions of lifetime efficiency are **the backbone of the Netflix internal recommendation system for renewal of TV-shows**

RESEARCH POSITIONS

January 2017 – September 2017: Research Scientist, Department of Ocean Sciences, UCSC, and Southwest Fisheries Science Center, Santa Cruz.

May 2016-September 2016: Research Scientist, Department of Ocean Sciences, UCSC, and Molecular Ecology and Genetic Analysis Team, Southwest Fisheries Science Center, Santa Cruz.

February 2013-December 2015: Marie Curie International Outgoing Fellow, University of California Santa Cruz (UCSC). Affiliated with UCSC's Department of Applied Mathematics and Statistics, and Molecular Ecology and Genetic Analysis Team, Southwest Fisheries Science Center, Santa Cruz.

August 2011-December 2015: Research Fellow, Center for Stock Assessment Research (CSTAR) and Department of Applied Mathematics and Statistics, University of California, Santa Cruz.

June 2011-January 2013: Senior Fisheries Biologist, MRAG Americas, Capitola, CA, US.

December 2010-May 2011: Research Assistant, Department of Environmental Sciences, University of Parma (Italy).

May-November 2010: Visiting Scientist, Center for Stock Assessment Research (CSTAR), University of California, Santa Cruz.

May-July 2009: Visiting Scientist, Center for Stock Assessment Research (CSTAR), University of California Santa Cruz.

April 2007-November 2010: Research Scholar, Department of Environmental Sciences, University of Parma (Italy).

HONORS AND AWARDS

2015: Part of the team selected by the Secretary of Commerce to receive the **2016 Group Gold Medal for Scientific and Engineering Achievement**, recognizing the Bering Sea Project as “the most comprehensive integrated ecosystem assessment ever completed, revealing how climate cycles affect the Nation's largest fishery”.

2014: Invited presentation at the EURAXESS event “European-Funded Research and North America” (5 speakers invited from a pool of 60 applicants).

2013-16: Marie Curie International Outgoing Fellowship (15% overall success rate, 10% for Italian proposals), more than \$300,000 of total funding.

2010: “Luigi and Francesca Brusarosco Award” to carry out a research project on rapid evolution of life-history traits in salmonids (3 awards are assigned each year to young Italian ecologists and evolutionary biologists). The research took place from May to November 2010 at the University of California, Santa Cruz.

2004: “Premio Marchetti” for the best oral presentation and paper of a young ecologist at the XIV National Meeting of the Italian Society of Ecology (S.It.E) – “A GIS-based Habitat Suitability Model for commercial yield estimation of *Tapes philippinarum* in a Mediterranean coastal lagoon (Sacca di Goro, Italy)”.

GRANTS AND FELLOWSHIPS

\$350,000. **Marie Curie International Outgoing Fellowship** granted by the European Research Council on rapid evolutionary responses to climate change in natural populations. January 2013-May 2016.

\$8,500. Project financed by the University of Ferrara (Italy) for the development of a habitat suitability model for *Tapes philippinarum* living in coastal lagoons in Region Veneto (Italy). June 2009-December 2009.

\$42,000. Project financed by CORILA for the development and application of correlative species distribution models for *Tapes philippinarum* and for marine phanerogams in the Venice lagoon. February 2009-May 2011.

\$11,000. Project financed by Consorzio Ferrara Ricerche (CFR) for the development of a model of optimal harvesting of *Tapes philippinarum* in North Adriatic lagoons. January-June 2009.

PUBLICATIONS (pdfs at <http://simonevincenzi.com/publications/>)

Google Scholar : <https://scholar.google.com/citations?user=kiV7yTQAAAAJ&hl=it>

Population Ecology and Evolutionary Biology

Vincenzi S, Jesensek D, Garza JC, Crivelli AJ (in press). Stronger effects of heterozygosity on survival in harsher environments. *Journal of Fish Biology* (pre-print here <http://www.biorxiv.org/content/early/2017/08/17/177725> - doi: <https://doi.org/10.1101/177725>).

Ayllón D, Railsback SF, Almodóvar A, Nicola GG, **Vincenzi S**, Elvira B, Grimm V (2018). Eco-evolutionary responses to recreational fishing under different harvest regulations. *Ecology and Evolution* <https://doi.org/10.1002/ece3.4270>.

Vincenzi S, Crivelli AJ, Jesensek D, Campbell E, Garza JC (2018). Effects of species invasion on population dynamics, vital rates, and life histories of the native species. *Population Ecology* (pre-print here <http://www.biorxiv.org/content/early/2017/08/17/177741> - doi: <https://doi.org/10.1101/177741>).

Vincenzi S, Jesenšek D, Crivelli AJ (2018). A framework for estimating the determinants of spatial and temporal variation in vital rates and inferring the occurrence of unobserved extreme events. *Royal Society Open Science* 5 (3), 171087

Vincenzi S, Mangel M, Jesenšek D, Garza JC, Crivelli AJ (2018). Genetic and life-history consequences of extreme events. *Proceedings of the Royal Society B* 284: 20162118

Musseau C, Vincenzi S, Jesenšek D, Crivelli AJ (2017) Cannibalism in non-native brown trout *Salmo trutta* and rainbow trout *Oncorhynchus mykiss* in stream-dwelling populations. *Journal of Fish Biology* 91: 1737-1744.

Vincenzi S, Mangel M, Jesensek D, Garza JC, Crivelli AJ (2016). Within and among-population variation in vital rates and population dynamics in a variable environment. *Ecological Applications* 26: 2086–2102.

Vincenzi S, Crivelli AJ, Munch S, Skaug HJ, Mangel M (2016). Trade-offs between accuracy and interpretability in von Bertalanffy random-effects models of growth. *Ecological Applications* 26:1535–1552.

Pujolar M, **Vincenzi S**, Zane L, Crivelli AJ (2016). Temporal changes in allele frequencies in a small marble trout *Salmo marmoratus* population threatened by extreme flood events. *Journal of Fish Biology* 88:1175-1190.

Ayllón D, Railsback SF, **Vincenzi S**, Groeneveld J, Almodóvar A, Grimm V. InSTREAM-Gen: modelling eco-evolutionary dynamics of trout populations under anthropogenic environmental change (2016). *Ecological Modelling* 24: 36–53.

Vincenzi S, Hatch S, Merklung T, Kitaysky A (2015) Carry-over effects of food supplementation on recruitment and breeding performance of long-lived seabirds. *Proceedings of the Royal Society B: Biological Sciences* 282: 20150762. **Media coverage at:** <https://www.sciencenews.org/blog/wild-things/feeding-seabirds-may-give-declining-populations-boost>

Musseau C, **Vincenzi S**, Jesenšek D, Cantera I, Boulêtreau S, Santoul F, Crivelli AJ (2015) Direct and indirect effects of environmental factors on dietary niches within size-structured populations of a wild salmonid. *Ecosphere* 6: 1-15.

Vincenzi S, Mangel M (2014) Food abundance, kittiwake life histories, and colony dynamics in the Northeastern Pacific: implications of climate change and regime shifts. *Marine Ecology Progress Series* 515: 251–263.

Satterthwaite W, Carlson S, Allen-Moran S, **Vincenzi S**, Bograd S, Wells B (2014) Match-mismatch dynamics and the relationship between ocean-entry timing and relative ocean recoveries of Central Valley fall run Chinook salmon. *Marine Ecology Progress Series* 511:237–248.

Vincenzi S, Mangel M, Crivelli AJ, Munch S, Skaug HJ (2014) Determining individual variation in growth and its implication for life-history and population processes using the Empirical Bayes method. *PLoS Computational Biology* 10: e1003828.

Vincenzi S (2014) Extinction risk and eco-evolutionary dynamics in a variable environment with increasing frequency of extreme events. *Journal of the Royal Society Interface* 11:20140441.

Vincenzi S, Piotti A (2014) Evolution of serotiny in maritime pine (*Pinus pinaster*) in the light of increasing frequency of fires. *Plant Ecology* 215:689-701.

Vincenzi S, Crivelli AJ, Satterthwaite WH, Mangel M (2014). Eco-evolutionary dynamics induced by massive mortality events. *Journal of Fish Biology* 85:8-30.

Vincenzi S, Hatch S, Mangel M, Kitaysky A (2013) Food availability affects onset of reproduction in a long-lived seabird. *Proceedings of the Royal Society B: Biological Sciences* 280: 20130554.

Vincenzi S, Mangel M (2013) Linking food availability, body growth and survival in the Black-legged Kittiwake *Rissa tridactyla*. *Deep Sea Research Part II: Topical Studies in Oceanography* 94:192-200.

Bevacqua D, Capoccioni F, Melià P, **Vincenzi S**, Pujolar JM, De Leo GA, Ciccotti E (2012) Fishery-induced selection for slow somatic growth in European eel. *PLoS One* 7:e37622.

Vincenzi S, Crivelli AJ, Jesensek D, De Leo GA (2012) Translocation of stream-dwelling salmonids in headwaters: insights from a 15-year reintroduction experience. *Reviews in Fish Biology and Fisheries* 22:437–455.

Vincenzi S, De Leo GA, Bellingeri M (2012) Consequences of extreme events on population persistence and evolution of a quantitative trait. *Ecological Informatics* 8:20–28.

Vincenzi S, Satterthwaite WH, Mangel M (2012) Spatial and temporal scale of density-dependent body growth and its implications for recruitment, population dynamics and management of stream-dwelling salmonid populations. *Reviews in Fish Biology and Fisheries* 22:813–825.

Vincenzi S, Crivelli AJ, Giske J, Satterthwaite WH, Mangel M (2012) Selective consequences of catastrophes for growth rates in a stream-dwelling salmonid. *Oecologia* 168:393–404.

Bevacqua D, Andreollo M, Melià P, **Vincenzi S**, Leo GA, Crivelli AJ (2011) Density-dependent and inter-specific interactions affecting European eel settlement in freshwater habitats. *Hydrobiologia* 671:259–265.

Vincenzi S, Crivelli AJ, Jesensek D, Rossi G, De Leo GA (2011) Innocent until proven guilty? Stable coexistence of alien rainbow trout and native marble trout in a Slovenian stream. *Naturwissenschaften* 98:57–66.

Pujolar JM, **Vincenzi S**, Zane L, Jesensek D, De Leo GA, Crivelli AJ (2011) The effect of recurrent floods on genetic composition of marble trout populations. *PLoS One* 6:e23822.

Vincenzi S, Crivelli AJ, Jesensek D, De Leo GA (2010) Detection of density-dependent growth at two spatial scales in marble trout (*Salmo marmoratus*) populations. *Ecology of Freshwater Fish* 19:338–347.

Vincenzi S, Crivelli AJ, Jesensek D, De Leo GA (2010) Individual growth and its implications for the recruitment dynamics of stream-dwelling marble trout (*Salmo marmoratus*). *Ecology of Freshwater Fish* 19:477–486.

Vincenzi S, Crivelli AJ, Jesensek D, De Leo GA, Jesensek D, De Leo GA (2010) The management of small, isolated salmonid populations: do we have to fix it if it ain't broken? *Animal Conservation* 13:21–23.

Vincenzi S, Crivelli AJ, Jesensek D, Rubin J-F, Poizat G, De Leo GA (2008) Potential factors controlling the population viability of newly introduced endangered marble trout populations. *Biological Conservation* 141:198–210.

Vincenzi S, Crivelli AJ, Jesensek D, De Leo GA (2008) Total population density during the first year of life as a major determinant of lifetime body-length trajectory in marble trout. *Ecology of Freshwater Fish* 17:515–519.

Vincenzi S, Crivelli AJ, Jesensek D, De Leo GA (2008) The role of density-dependent individual growth in the persistence of freshwater salmonid populations. *Oecologia* 156:523–534.

Vincenzi S, Crivelli AJ, Jesensek D, Rubin J-F, De Leo GA (2007) Density-dependent individual growth of marble trout (*Salmo marmoratus*) in the Soca and Idrijca river basins, Slovenia. *Hydrobiologia* 583:57–68.

Vincenzi S, Crivelli AJ, Jesensek D, Rubin J-F, De Leo GA (2007) Early survival of marble trout *Salmo marmoratus*: Evidence for density dependence? *Ecology of Freshwater Fish* 16:116–123.

Manuscripts under review in Population Ecology and Evolutionary Biology

Musseau C, **Vincenzi S**, Jesensek D, Boulêtreau S, Santoul F, Crivelli AJ. Sympatry with the devil? Niche-based approach explains the mechanisms allowing coexistence of native and non-native salmonids. <http://biorxiv.org/content/early/2016/08/05/068171>

Other Environmental Sciences

Rossi G, De Leo GA, Pongolini S, Natalini S, **Vincenzi S**, Bolzoni L (2015) Epidemiological modelling for the assessment of bovine tuberculosis surveillance in the dairy farm network in Emilia-Romagna (Italy). *Epidemics* 11: 62-70.

Bellingeri M, Cassi D, **Vincenzi S** (2014) Efficiency of attack strategies on complex model and real-world networks. *Physica A* 414:174–180.

Vincenzi S, De Leo GA, Munari C, Mistri M (2014). Rapid estimation of potential yield for data-poor *Tapes philippinarum* fisheries in North Adriatic coastal lagoons. *Hydrobiologia* 724:267-277.

Bellingeri M, **Vincenzi S** (2013) Robustness of empirical food webs with varying consumer's sensitivities to loss of resources. *Journal of Theoretical Biology* 333:18–26 [The two authors contributed equally to the work].

Bellingeri M, Cassi D, **Vincenzi S** (2013) Increasing the extinction risk of highly connected species causes a sharp robust-to-fragile transition in empirical food webs. *Ecological Modelling* 251:1–8.

Cordioli M, **Vincenzi S**, De Leo GA (2013) Effects of heat recovery for district heating on waste incineration health impact: a simulation study in Northern Italy. *The Science of the Total Environment* 444:369–80.

Lorenzoni M, Giannetto D, Maio G, Pizzul E, Pompei L, Turin P, **Vincenzi S**, Crivelli A (2012) Empirical standard mass equation for *Salmo marmoratus*. *Journal of Fish Biology* 81:2086–91.

Visioli G, **Vincenzi S**, Marmioli M, Marmioli N (2012) Correlation between phenotype and proteome in the Ni hyperaccumulator *Noccaea caerulescens* subsp. *caerulescens*. *Environmental and Experimental Botany* 77:156–164.

Vincenzi S, Zucchetta M, Franzoi P, Pellizzato M, Pranovi F, De Leo GA, Torricelli P (2011) Application of a Random Forest algorithm to predict spatial distribution of the potential yield of *Ruditapes philippinarum* in the Venice lagoon, Italy. *Ecological Modelling* 222:1471–1478.

Vincenzi S, Caramori G, Rossi R, De Leo GA (2007) A comparative analysis of three habitat suitability models for commercial yield estimation of *Tapes philippinarum* in a North Adriatic coastal lagoon (Sacca di Goro, Italy). *Marine Pollution Bulletin* 55:579–590.

Vincenzi S, Caramori G, Rossi R, De Leo GA (2006) Estimating clam yield potential in the Sacca di Goro lagoon (Italy) by using a two-part conditional model. *Aquaculture* 261:1281–1291.

Vincenzi S, Caramori G, Rossi R, De Leo GA (2006) A GIS-based habitat suitability model for commercial yield estimation of *Tapes philippinarum* in a Mediterranean coastal lagoon (Sacca di Goro, Italy). *Ecological Modelling* 193:90–104.

SERVICES

Reviewer for *American Naturalist*, *Ecology Letters*, *Aquaculture*, *Ecology of Freshwater Fish*, *Conservation Biology*, *Journal of Environmental Management*, *PEERJ*, *Canadian Journal of Fisheries and Aquatic Sciences*, *Journal of Fish Biology*, *Oecologia*, *Hydrobiologia*, *ICES*, and others.

Reviewer for NSF grant proposals in DEB - Population and Community Ecology.

INVITED TALKS AND SEMINARS (recent and selected)

Invited talk at the Facultad de Agronomía, Pontificia Universidad Católica de Chile, Santiago de Chile, Chile. *Within and among-population variation in life histories and population dynamics in an increasingly extreme world*. December 2016.

Invited talk at the Facultad de Ciencias, University of Buenos Aires, Argentina. (*title as above*). December 2016.

Invited talk at the Facultad de Ciencias, University of Montevideo, Uruguay. (*title as above*). December 2016.

Invited talk at the Facultad de Ciencias, University of Cartagena, Colombia. (*title as above*). November 2016.

Invited talk at the Centro de Investigaciones Marinas, University of La Habana, Cuba. (*title as above*). November 2016.

Invited talk at De Leo's lab at the Hopkins Marine Station of Stanford University. *Extinction risk and eco-evolutionary dynamics in a variable environment with increasing frequency of extreme events*. July 2015.

Invited talk at the Wildlife & Conservation Biology Seminar series at UC Berkeley. *Genetic and life-history variation in small populations living in stochastic environments*. October 2014.

Invited talk at EURAXESS event in New York City. *Shaken, burned, drowned, but still there: how species survive catastrophic events in an increasingly extreme world*. March 2014. **Talk is online at** <https://www.youtube.com/watch?v=sp6xW67sC0I>

Invited talk at the 2013 SIAM meeting in San Diego. *Spatial features of density dependence and weather extremes in population models*. July 2013.

Invited talks at the Kittiwake Workshop at NTNU in Trondheim, Norway. First talk: *Food availability, kittiwake life histories and population dynamics in the North Pacific*. Second talk: *Food availability affects onset of reproduction in a long-lived seabird*. March 2013.

Invited talk at Bering Sea Project 2012 Principal Investigator Meeting in Anchorage, Alaska. *Linking patch dynamics, body growth and productivity in the black-legged kittiwake *Rissa tridactyla**. March 2011.

Invited Seminar at the Department of Environmental Science, Policy and Management of the University of California, Berkeley. *Managing and conserving marbled trout (*Salmo marmoratus*) in the face of climate change and species invasions: an overarching framework integrating ecology and evolution*. December 2011.

Invited talk at the 2011 American Fisheries Society Annual Symposium, Special Session “Factors Contributing to the Population Resilience of Anadromous and Resident Salmonids”. *Selective consequences of catastrophes on body growth rates*. September 2011.

Invited Seminar at the Ecology & Evolutionary Department (EEB) of the University of California, Santa Cruz. *Catastrophes and shaping of life histories*. October 2010.

Invited Seminar at the Hopkins Marine Station of the Stanford University. *Selective consequences of catastrophes on growth rates in a stream-dwelling salmonid*. October 2010.

Invited Seminar at Stanford University, Tuljapurkar’s Lab. *Selective consequences of catastrophes on growth rates in a stream-dwelling salmonid*. July 2010.

Invited Seminar at the University of Venice. *Main insights from the 15 years’ reintroduction experience of marbled trout *Salmo marmoratus**. November 2009.

Plenary lecture at the International Workshop on the Restoration of Fish Populations. *The Marble Trout Conservation Program: main insights from a 15 years’ reintroduction experience*. September 2009.

TEACHING AND MENTORING

Graduate courses as Instructor of record

2007 to 2010: “*Ecological Modelling*” (one semester, 30 hours, University of Parma, Master’s degree in Environmental Sciences).

2006-2007: “*Population Dynamics and Management of Renewable Resources*” (one semester, 70 hours, University of Parma, Master’s degree in Biology and Master’s degree in Environmental Sciences). From 2008 to 2010, I have been a teaching assistant in this course.

Mentoring/tutoring of graduate students

as co-supervisor of their Master’s

2009: Laura Silva. Analysis of community structure in an IBA (Important Bird Area).

2008: Michele Cordioli. Environmental impact assessment of incinerators.

2006: Elisa Gottardi. Population dynamics of of Roe Deer populations.

as co-supervisor of their PhD

2012-2015: Gianluigi Rossi. Preventing the diffusion of pathogen species in farm networks.

2011-2015: Michele Cordioli. Health risks of waste incinerators.