

## **MSCA Individual Fellowships**

### **H2020 MSCA - IF 2016**

**Hjalte Frellesvig – HiProLoop: Scattering Amplitudes for Higgs Production at High-Order as touchstone for Automated Multiloop Feynman Calculus**

#### HiProLoop

Hjalte comes from Denmark. HiProLoop is about precision calculations of scattering processes at particle colliders such as the "Large Hadron Collider". Particularly the Researcher will investigate some specific processes involving the Higgs particle. His focus will be on calculational methods which are generalizable to other processes and on the classes of mathematical functions which will appear in the results.

The supervisor is prof. Pierpaolo Mastrolia at the Department of Physics and Astrophysics (DFA).

**Victoria Konidari – RE-mapping: Tackling early school leaving and low school performance through working with students' representational spaces. The case of 15 years old students in France, Italy and Greece.**

RE-mapping

Victoria comes from Greece. The Re-mapping project explores the question of early school leaving and low performance through students "representational spaces" and "imagined geographies". The aim is to deepen the problem of marginalization of young people, to shed light on the unidentified ontologies, lying in the shadows of the existing conceptual categories, and to propose a new language for school pedagogy.

The project will be supervised by prof. Mirca Benetton at the Department of Philosophy, Sociology, Pedagogy and Applied Psychology (FISPPA).

## **Sonia Silvestri – CreScenDo: Combining Remote Sensing Technologies for Peatland Detection and Characterization**

### CreScenDo

Sonia received her doctoral training in Environmental System Modelling at the University of Padova, with a focus on remote sensing and the interdependence of salt marsh morphology and halophytic vegetation. She received her Laurea in Environmental Sciences from the University Ca' Foscari in Venice. Silvestri joined the Nicholas School of the Environment (Duke University, USA) in 2011 and came back to Padova during the summer 2016. Her research has always focused on airborne and satellite remote sensing applied to soil studies, vegetation mapping, hydrology, tidal environments morphology, coastal water quality. Silvestri's main research interest is currently the quantification of organic carbon stocks in peatlands, which are the most carbon-dense environments of the world. As asserted by the Intergovernmental Panel on Climate Change (IPCC), the conservation and protection of peatlands is of key importance to avoid increased CO<sub>2</sub> emissions and to mitigate climate change. The MSCA fellowship will give Silvestri the opportunity to combine for the first time satellite acquisitions from passive and active sensors with geophysical data collected from airborne platforms to map the extent and the thickness of peat deposits at the regional to global scales.

The project will be supervised by prof. Antonio Vettore at the Department of Land, Environment, Agriculture and Forestry (TESAF).

**Alice Susic – BICEPSvsHIV: Novel strategies for anti-HIV-1 therapy: Small molecules targeting RNA partners of the nucleocapsid protein**

BICEPSvsHIV

Alice is a medicinal chemist specialized in drug development and in the evaluation of drugs molecular mechanisms of action. She obtained her PhD in Molecular Sciences in 2013 from the University of Padova, where then she has worked as Postdoctoral Research Fellow. Her project BICEPSvsHIV, "Novel strategies for anti-HIV-1 therapy: Small molecules targeting RNA partners of the nucleocapsid protein", will focus on the development of an original anti-HIV strategy that draws the spotlight on RNA leading to new antiretroviral agents, which are urgently needed to overcome the emergence of resistance to existing drugs. During the outgoing phase, she will work at The RNA Institute (State University of New York at Albany) aimed at the development of new mass spectrometry-based technologies to investigate the structure-function relationships of viral RNAs as tools for drug discovery, under the supervision of Prof. Dan Fabris. During the incoming phase, she will transfer her knowledge of mass spectrometry of nucleic acids acquired at the RNA Institute to the University of Padova, transforming her expertise into concrete therapeutic and technical applications.

The project will be supervised by Prof. Barbara Gatto at the Department of Pharmaceutical and Pharmacological Sciences.

*Video:* [Look at the Horizon! Gel Electrophoresis and Mass Spectrometry to Develop New anti-HIV Drugs](#)