

MSCA Doctoral Networks – European Joint Doctorates

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University
of Cyprus



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INSTITUTE



Outline

- Why this action?
- How we approach the calls
- Challenges and lessons learned:
 - HPC-LEAP and STIMULATE EJD projects
 - ❖ Accomplishments
 - ❖ Issues encountered
 - AQTIVATE – **Our third EJD project starting 2023!**
 - ❖ New elements

Why this action?

- We were interested in recruiting good students from an international pool at both the University of Cyprus (UCY) and the Cyprus Institute (CyI)
- We wanted to bring complementary expertise from other institutional across Europe to strengthened our research activities e.g. collaborate with mathematicians working on algorithms
- We were interested to design a program where students could have a wider perspective, e.g. common workshops in different countries, secondments to research and **computational centers** and **companies**
- For H2020 this was a new action where we thought we can have bigger chances of success – **not any more!**

How we approach the call

- Formed a consortium engaging world experts in their fields (e.g. with advanced ERCs) to ensure excellence
- Designed cross-disciplinary projects that needed the involvement of experts with complementary expertise e.g. domain experts and experts in algorithms and HPC
- Ensure that projects had some common themes to ensure collaboration of fellows
- Integrated cross-sectoral activities with secondments to supercomputing centers and industrial partners
- Incorporated net-wide workshops and activities including transferable skills

Challenges and lessons learned

European Joint Doctorate Program: *High Performance Computing in Life Sciences, Engineering and Physics (HPC-LEAP)*

HPC-LEAP had the goal to train the next generation of scientists by addressing the challenges of HPC in the fields of **computational biology, particle and nuclear physics** and **computational fluid dynamics (CFD)**.



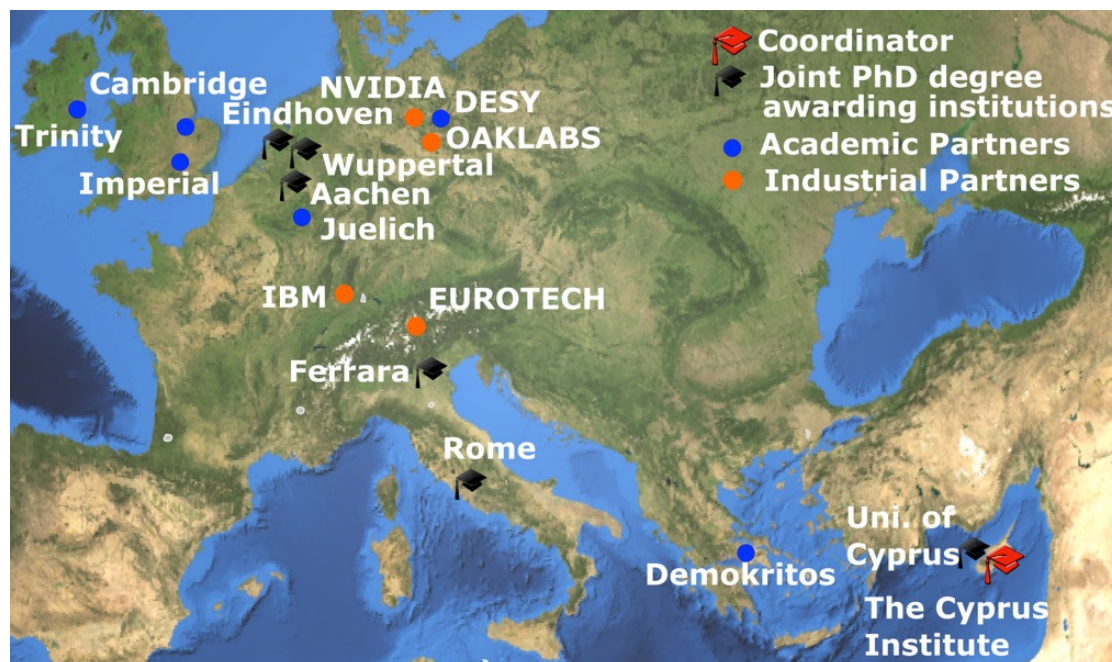
Coordinator: Cyl
Budget: 3.7 mil
One of only 9 such programs in the first round

15 Marie Skłodowska-Curie fellowships in:

- Lattice QCD
- Turbulent and Complex flows
- Computational Biology
- Modelling and algorithms
- HPC architectures and technologies

Seven HEIs in four EU countries as beneficiaries, six academic partners and four non-academic partners.

Four workshops were organized that were compulsory for all students with the goal to teach them HPC components and harmonize their background



← Double degrees →



This project has received funding from the European Union's Horizon 2020 research and innovation program under the Marie Skłodowska-Curie Grant Agreement No 642069

Success stories



Alessandro Gabbana – ESR1
Postdoctoral Fellow at the
University of Ferrara, IT



Srijit Paul – ESR2
Postdoctoral fellow at the
University of Mainz, DE



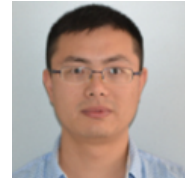
Viacheslav Bolnykh – ESR3
Postdoctoral Fellow at the RWTH
University of Aachen, DE



Felix Milan – ESR4
Defended his PhD in December 2019,
Eindhoven, NL (4 year program)
Metrology Design Engineer, NL



Simone Bacchio-ESR5
Postdoctoral fellow at The
Cyprus Institute, CY



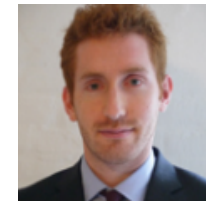
Wenping Lyu – ESR6
Postdoctoral Fellow at
Forschungszentrum Jülich, DE



Xiao Xue – ESR7
Defend his PhD in December 2019,
Eindhoven, NL (4 year program)
Postdoctoral fellow at Chalmers
University



Georgios Margazoglou – ESR8
Postdoctoral Fellow at the
University of Reading, UK



Guillaume Tauzin – ESR 9
Postdoctoral fellow at École
Polytechnique Fédérale de
Lausanne, CH



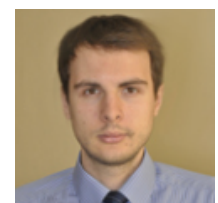
Aurora Scapellato – ESR11
Postdoctoral Fellow at the Adam
Mickiewicz University in Posnan,
PO



Salvatore Cali– ESR12
Postdoctoral Fellow the
Jagiellonian University,
Krakow, PO



Thomas Tarenzi – ESR14
Postdoctoral Fellow at the
University of Trento, IT



Teodor Nikolov – ESR15
Scientific Employee, Jülich
Supercomputing Centre, DE



Vanessa Koch – ESR16
Postdoctoral Fellow at the
University of Wuppertal, DE



Georgia Guccione – ESR18
Expected to defend her PhD thesis in
2021, Eindhoven, NL (4 year program)

Simulation in MULTISCALE physical and biological systems

- 8 degree awarding institutions in 4 countries
- 3 research centers
- 3 industrial partners



Will deliver a single joint Ph.D. degree from 3 academic institutions

www.stimulate-ejd.eu



This project has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No. 765048



STIMULATE fellows

All recruited in 1st year



Issues encountered – But also benefits

- One fellow dropped in both programs and replaced but required the reallocation of the overall budget
 - The consortium agreement was delayed due to legal issues raised from one beneficiary, which is participating for the first time in an EJD
 - The procedure of signing all the partnership agreements took time especially for STIMULATE where 3 universities are involved
 - **A very demanding program of studies for students and advisors**
 - **Turned out to be more difficult to arrange for joint degrees**
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- **The overlap of STIMULATE with HPC-LEAP fellows was extremely useful**
 - **We recruited very good students and the first fellows will graduate by end of 2022**

Advanced computing, quantum algorithms, and data-driven approaches for science, technology and engineering (AQTIVATE)

- We made an EJD proposal in 2019 that was not successful – instead we submitted in 2020 a more diverse co-fund MSC and were successful
- We resubmitted an EJD in 2021 and got 98.4/100!!
- What did we do different?
 - the topics remained the same but strengthened some of the teams e.g. added a computer science group and a group leading in biology with an ERC grant
 - We explained better the joint supervision arrangements
 - Developments in quantum computing that happened in the mean-time made the topic of EJD more relevant
- What will we do differently? We will explore further funding opportunities for continuation of joint degrees

Concluding remarks

- **Coordination of HPC-LEAP and STIMULATE gained us a lot of experience in joint degrees**
- **Internationalized our student body**
- **Recruited excellent students most of whom remain in Europe**
- **We were successful in the coordination of ENGAGE (Enabling the next generation of computational physicists and engineers): MSC-cofund program that started 1st Jan. 2022 and we were successful with AQTIVATE that will start 1st March 2023**
- **However, long-term sustainability without funding is a challenge**

Thank you