Fundraising and Research Careers in EU R&I Framework Programme

Dr Nikolina Janković
BioSense Institute
University of Novi Sad
Serbia
BioSense Institute

- R&D institute for Information Technology in Biosystems
- Public institute, University of Novi Sad, Serbia
- Dynamic multidisciplinary international organization
- Main focus – IT in Agriculture and Food
- 85 permanent staff
- 50 part-time staff
<table>
<thead>
<tr>
<th>Legal Name</th>
<th>Country</th>
<th>EU Contribution (EUR)</th>
<th>Project Participations</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOSENSE INSTITUTE - RESEARCH AND DEVELOPMENT INSTITUTE FOR INNOVATION TECHNOLOGIES IN BIOSYSTEMS</td>
<td>Serbia</td>
<td>21,239.349 €</td>
<td>16</td>
</tr>
<tr>
<td>TARTU ULIKOOL</td>
<td>Estonia</td>
<td>18,791.525 €</td>
<td>56</td>
</tr>
<tr>
<td>TURKIYE BILIMSEL VE TEKNOLOJIK ARASTIRMA KURUMU</td>
<td>Turkey</td>
<td>17,564.621 €</td>
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<td>ENERGOCHIMICA TRADING AS</td>
<td>Slovakia</td>
<td>15,675.968 €</td>
<td>2</td>
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<tr>
<td>INSTYTUT CHEMII BIOORGANICZNEJ POLSKIEJ AKADEMII NAUk</td>
<td>Poland</td>
<td>14,272.826 €</td>
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<td>UNIwersytet Warszawski</td>
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<td>13,815.263 €</td>
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<tr>
<td>Masarykova univerzita</td>
<td>Czech Republic</td>
<td>13,773.956 €</td>
<td>38</td>
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<td>NEMZETI KUTATASI FEJLESZTESI ES INNOVACIOS HIVALTAL</td>
<td>Hungary</td>
<td>13,738.143 €</td>
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<td>CESKE VYSOKE UCENI TECHNICKE V PRAZE</td>
<td>Czech Republic</td>
<td>13,639.438 €</td>
<td>46</td>
</tr>
</tbody>
</table>

Number of project participations and EU Contribution by organisation

Funded Projects 2,684 (17.38%) of total
Project Participations 6,111 (8.47%) of total
EU Contribution (EUR) 1,250 (4.52%) of total

H2020 – No.1 East of Vienna
ANTARES project

1st ranked in H2020 Teaming call
Agenda

• Horizon 2020
• Horizon Europe
• Marie Skłodowska Curie Actions
  • Individual Fellowships
  • Innovative Training Networks
  • COFUND
  • Research and Innovation Staff Exchange
• Job opportunities
  • Job searching
  • Job application
About me

• Senior researcher at the Group of Nano and Microelectronics
• PhD in microwave electronics in 2013 from the University of Novi Sad
• Coordinator of the project H2020-MSCA-RISE-2017 NOCTURNO Non-Conventional Wave Propagation for Future Sensing and Actuating Technologies
• Work Package leader in H2020 project ANTARES Phase 2 2017-2024
• Project coordinator in Serbia in EUREKA project E!13044 WaQuMoS
• Project manager of H2020 project ANATRES Phase 1 2015-2016
• Project manager of FP7 project InnoSense
• Participated in FP7 projects and EUREKA projects
What is Horizon 2020?
Horizon 2020

• Biggest EU R&I programme
• Budget 80 billion EUR 2014-2020
• Expected outcome – taking great ideas from the lab to the market
• Overrun the fragmentation imposed by the national boundaries
  • the EU level ensures an important budget line, deep transnational coordination, strong cooperation, full exploitation of networks and the exchange of human capital
• Strategy – coupling research and innovation
Horizon 2020

Excellent Science

Societal Challenges

Industrial Leadership

Total funding for 2014–2020

| European Research Council (ERC) | 13 095 |
| Future & emerging technologies | 2 696 |
| Marie Skłodowska-Curie actions (MSCA) | 6 162 |
| Research infrastructures (including e-infrastructure) | 2 488 |

Total funding for 2014–2020

| Health, demographic change & wellbeing | 7 472 |
| Food security, sustainable agriculture and forestry, marine/maritime/inland water research and the bioeconomy | 3 851 |
| Secure, clean & efficient energy | 5 931 |
| Smart, green & integrated transport | 6 339 |
| Climate action, environment, resource efficiency & raw materials | 3 081 |
| Inclusive, innovative & reflective societies | 1 310 |
| Secure societies | 1 695 |

Total funding for 2014–2020

| Leadership in enabling & industrial technologies (LEITs) (ICT, nanotechnologies, materials, biotechnology, manufacturing, space) | 13 557 |
| Access to risk finance | 2 642 |
| Innovation in SMEs | 616 |
Horizon Europe

• 100 billion EUR R&I programme
• 2021-2027
• Continuation of H2020

• Objectives:
  • Strengthen EU science and technology thanks to increased investment in highly skilled people and cutting-edge research;
  • Foster the EU’s industrial competitiveness and its innovation performance
  • Deliver on the EU’s strategic priorities
The three-pillar structure will be continued, but redesigned for more coherence, both between and within pillars.
Why Horizon 2020?

Serbia vs. Italy
What are the Marie Skłodowska Curie Actions?

A European Union funded programme for structuring researcher training, mobility and career development

Objectives
Ensure the optimum development and dynamic use of Europe’s intellectual capital to generate new skills, knowledge and innovation

• Budget 2014-2020: € 6.162 billion
MSCA: What do the MSCA offer researchers?

• Prestigious career opportunities
• Excellent working conditions: employment contracts, full social security etc.
• Opportunities to work and train with the best researchers in Europe and worldwide
• Whole career training: complementary skills
• Access to top level conferences, professional associations & Marie Curie Alumni
Who: All levels of research experience from PhD researcher upwards – there are actions for different levels of experience.

What: All areas of research are supported: bottom-up approach.

Where: Anywhere: any research performing organisation, public or private worldwide - there are actions for European and international mobility.
MSCA Actions

**IF**
Individual Fellowships

**What?**
Personal research projects, between sectors and countries

**Who applies?**
Individual researcher and organisation

**Who is funded?**
ER, i.e. postdocs

---

**ITN**
Innovative Training Networks

**What?**
Research training through interdisciplinary and international networks
Industrial or joint doctorates

**Who applies?**
International network academia and non-academia

**Who is funded?**
ESR

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**COFUND**
Co-funding of Regional, National, and International Programmes

**What?**
Regional, National, and International Programmes to foster researchers’ trainings and careers

**Who applies?**
International network academia and non-academia

**Who is funded?**
ER and ESR

---

**RISE**
Research and Innovation Staff Exchange

**What?**
Exchange of research and innovation staff in a particular project

**Who applies?**
International network academia and non-academia

**Who is funded?**
ER and ESR, techs, admin and manag staff
MSCA Actions

Early-stage researcher (ESR)

- No PhD
- < 4 years of experience

Can participate in ITN RISE COFUND

Experienced researcher (ER)

- PhD or >4 years of experience

Can participate in IF RISE COFUND
MSCA Actions

- Member States (MS) – countries members of the EU
- Associated Countries (AC) - Albania, Armenia, Bosnia and Herzegovina, Faroe Islands, Former Yugoslav Republic of Macedonia, Georgia, Moldova, Montenegro, Serbia, Tunisia, Turkey and Ukraine
- Third Countries – Australia, US, Canada, Brazil...
## MSCA Actions

<table>
<thead>
<tr>
<th>IF</th>
<th>Individual Fellowships</th>
</tr>
</thead>
<tbody>
<tr>
<td>What?</td>
<td>Personal research projects, between sectors and countries</td>
</tr>
<tr>
<td>Who applies?</td>
<td>Individual researcher and organisation</td>
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<tr>
<td>Who is funded?</td>
<td>ER, i.e. postdocs</td>
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<th>Innovative Training Networks</th>
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<td>Research training through interdisciplinary and international networks Industrial or joint doctorates</td>
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<tr>
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<td>Who is funded?</td>
<td>ESR</td>
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<th>COFUND</th>
<th>Co-funding of Regional, National, and International Programmes</th>
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<tr>
<td>What?</td>
<td>Regional, National, and International Programmes to foster researchers’ trainings and careers</td>
</tr>
<tr>
<td>Who applies?</td>
<td>Organisation managing/funding PhD programmes</td>
</tr>
<tr>
<td>Who is funded?</td>
<td>ER and ESR</td>
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<th>Research and Innovation Staff Exchange</th>
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<td>Who applies?</td>
<td>International network academia and non-academia</td>
</tr>
<tr>
<td>Who is funded?</td>
<td>ER and ESR, techs, admin and managing staff</td>
</tr>
</tbody>
</table>
MSCA – Individual Fellowship

• Excellent opportunity for individual experienced researchers to boost career abroad.

• To enhance the creative and innovative potential of experienced researchers through advanced training, international and intersectoral mobility

• Researchers of any nationality, any age

• Within and beyond Europe (MS and AC)

• In particular:
  • the return and (re)integration of European researchers from outside Europe and those who have previously worked in Europe
  • promotes the career restart
MSCA – Individual Fellowship

• **General idea:**
  • An individual researcher with PhD degree applies for IF with a research institution out of the country where the researchers carried out the main activities.
  • The research institution is a beneficiary at which the researcher is employed during the IF.

• **General Mobility Rule**
  Researchers **must not** have resided or carried out their main activity in the country of their host organization for more than **12 months in the previous 3 years** before the call deadline.
MSCA – Individual Fellowship

• Research areas: No pre-defined research topics (»bottom-up«)

• Eligible: Experienced Researchers (ERs):
  – doctoral degree (95% of the applicants) or
  – at the Call deadline, at least 4 years research experience (full-time equivalent) after graduation

• Working conditions: Generally full-time employment contract including social security
MSCA – Individual Fellowship

- Excellent opportunity for experienced researchers to boost career abroad.

Individual Fellowships

- European Fellowships
- Global Fellowships
MSCA – Individual Fellowship

**European Fellowships**

Researchers moving within or coming to MS/AC countries (12-24 months)

**Global Fellowships**

Researchers from MS/AC countries (12-24 months) going to Third countries (12-24 months) and return to Europe (12 months)
MSCA – Standard European IF

• 1 to 2-year research stay in Europe (MS/AC)
• Experienced researchers of any nationality
• Host institution: academic or non-academic (MS/AC)
• 8 scientific panels:
  • Chemistry (CHE)
  • Social Sciences and Humanities (SOC)
  • Economic Sciences (ECO)
  • Information Science and Engineering (ENG)
  • Environment and Geosciences (ENV)
  • Life Sciences (LIF)
  • Mathematics (MAT)
  • Physics (PHY)
MSCA – Career Restart Panel (CAR) European IF

• Resuming a scientific career after a break (e.g. illness, parental leave, working outside research)

• Researchers of any nationality

• Not have been active (being employed or holding a scholarship in research) in research for at least 12 consecutive months in the 18 months prior to the call deadline

• Researchers must not have resided or carried out their main activity in the country of their host organisation for more than 3 years in the 5 years immediately before the call deadline
• Assistance in conducting research in the non-academic sector
• Host institution must be located in a MS/AC and be a non-academic institution (e.g. industry, business, NGO etc.)
• Researchers of any nationality
• The researcher must not have resided and/or carried out his/her main activity for more than 3 years in the 5 years immediately before the call deadline
• Assistance in returning to Europe from a Third Country
• Researchers with **MS/AC nationality or MS/AC long-term residence** (at least 5 consecutive years)
• The researcher must **move or have moved directly from a TC to the MS or AC where the host organisation is located**
• Researchers must not have resided or carried out their main activity in the country of their host organisation for more than **3 years in the 5 years** immediately before the call deadline
MSCA – Global IF

Global Fellowships
MSCA – Global IF

• One to two-year research stay outside of Europe
• Mandatory one-year return phase in Europe (MS/AC)
• Experienced researchers with MS/AC nationality or MS/AC long-term residence (at least five consecutive years)
• Two host institutions
  – in a third country (partner organisation)
  – in MS/AC (return phase),
• Researchers must not have resided or carried out their main activity in the country of their host organisation for more than 1 year in the 3 years immediately before the call deadline
MSCA – Global IF

• **8 scientific panels:**
  • Chemistry (CHE)
  • Social Sciences and Humanities (SOC)
  • Economic Sciences (ECO)
  • Information Science and Engineering (ENG)
  • Environment and Geosciences (ENV)
  • Life Sciences (LIF)
  • Mathematics (MAT)
  • Physics (PHY)
MSCA – Individual Fellowship

• Optional secondment phase in **MS/AC**, preferably **intersectoral** to boost other skills

<table>
<thead>
<tr>
<th>Fellowship duration</th>
<th>Secondment duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 18 month</td>
<td>≤ 3 month</td>
</tr>
<tr>
<td>&gt; 18 month</td>
<td>≤ 6 month</td>
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</tbody>
</table>
MSCA – Individual Fellowship

- Funding:

<table>
<thead>
<tr>
<th>Researcher unit cost in EUR</th>
<th>Institutional unit cost in EUR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>person/month</td>
</tr>
<tr>
<td></td>
<td>person/month</td>
</tr>
<tr>
<td>Living Allowance</td>
<td>Mobility Allowance</td>
</tr>
<tr>
<td>4,880</td>
<td>600</td>
</tr>
<tr>
<td>Family Allowance</td>
<td></td>
</tr>
<tr>
<td>500</td>
<td></td>
</tr>
<tr>
<td>Research, training and networking costs</td>
<td>800</td>
</tr>
<tr>
<td>Management and indirect costs</td>
<td>650</td>
</tr>
</tbody>
</table>
MSCA – Individual Fellowship

• Success rate:

<table>
<thead>
<tr>
<th></th>
<th>Submitted</th>
<th>Evaluated</th>
<th>Selected for funding</th>
<th>Success rate in %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard-EF</td>
<td>7.154</td>
<td>7.065</td>
<td>1.029</td>
<td>14,6</td>
</tr>
<tr>
<td>EF-CAR</td>
<td>329</td>
<td>322</td>
<td>46</td>
<td>14,3</td>
</tr>
<tr>
<td>EF-RI</td>
<td>539</td>
<td>533</td>
<td>78</td>
<td>14,6</td>
</tr>
<tr>
<td>EF-SE</td>
<td>209</td>
<td>204</td>
<td>58</td>
<td>28,4</td>
</tr>
<tr>
<td>GF</td>
<td>858</td>
<td>833</td>
<td>137</td>
<td>16,4</td>
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<tr>
<td>Altogether</td>
<td>9.089</td>
<td>8.957</td>
<td>1.348</td>
<td>14,8</td>
</tr>
</tbody>
</table>
• **Application procedure:**

  • Part A – administrative data (CV, infrastructure of the host, supervisor, ethics...)

  • Part B – proposal text
    • 10 pages
      • Excellence
      • Impact
      • Implementation

• **Evaluation**
  • Excellence (50%)
  • Impact (30%)
  • Implementation (20%)
### H2020-MSCA-IF call

<table>
<thead>
<tr>
<th></th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opening-Closing</strong></td>
<td>April 12 – Sept 12 2018</td>
<td>April 11 – Sept 11 2019</td>
<td>April 08 – Sept 09 2020</td>
</tr>
<tr>
<td><strong>Budget</strong></td>
<td>220 mil EUR</td>
<td>237 mil EUR</td>
<td>325 mil EUR</td>
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</table>
**MSCA Actions**

**IF**
**Individual Fellowships**

*What?*  
Personal research projects, between sectors and countries

*Who applies?*  
Individual researcher and organisation

*Who is funded?*  
ER, i.e. postdocs

---

**ITN**
**Innovative Training Networks**

*What?*  
Research training through interdisciplinary and international networks  
Industrial or joint doctorates

*Who applies?*  
International network academia and non-academia

*Who is funded?*  
ESR

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**COFUND**
**Co-funding of Regional, National, and International Programmes**

*What?*  
Regional, National, and International Programmes to foster researchers’ trainings and careers

*Who applies?*  
International network academia and non-academia

*Who is funded?*  
ER and ESR

---

**RISE**
**Research and Innovation Staff Exchange**

*What?*  
Exchange of research and innovation staff in a particular project

*Who applies?*  
International network academia and non-academia

*Who is funded?*  
ER and ESR, techs, admin and manag staff
MSCA – Innovative Training Networks

• To train a new generation of creative, entrepreneurial and innovative early-stage researchers able to face current and future challenges and to convert knowledge and ideas into products and services for economic and social benefit;

• To raise excellence and structure research and doctoral training, extending the traditional academic research training setting,

• To provide enhanced career perspectives in both the academic and non-academic sectors through international, interdisciplinary and inter-sectoral mobility combined with an innovation-oriented mindset
MSCA – Innovative Training Networks

• Excellence: International network of organisations applies and proposes a joint research training or doctoral programme
• All domains & bottom-up
• Multidisciplinary approach
• Meaningful exposure to non-academic sector
• Fellowships of 3-36 months
• Project duration up to 4 years
MSCA – Innovative Training Networks

ETN  European Training Networks

Participants implement a joint research programme

EID  European Industrial Doctorates

Doctoral programme with the non-academic sector

EJD  European Joint Doctorates

Doctoral programme to deliver joint degrees

8 scientific panels:
Chemistry (CHE)
Social Sciences and Humanities (SOC)
Economic Sciences (ECO)
Information Science and Engineering (ENG)

Environment and Geosciences (ENV)
Life Sciences (LIF)
Mathematics (MAT)
Physics (PHY)
### Eligibility

<table>
<thead>
<tr>
<th>Program</th>
<th>Eligibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Training Networks</td>
<td>Min. 3 beneficiaries from any sector from 3 different MS/AC</td>
</tr>
<tr>
<td>European Industrial Doctorates</td>
<td>Min. 2 beneficiaries from 2 different MS/AC: min. 1 from academic sector awarding PhD + min. 1 from non-academic sector</td>
</tr>
<tr>
<td>European Joint Doctorates</td>
<td>Min. 3 beneficiaries from academic sector awarding PhD from 3 different MS/AC</td>
</tr>
</tbody>
</table>

Above this minimum: participants from any sector / country
MSCA – European Training Networks

• Network of participants implementing a joint research training programme

• Mandatory
  • Min. 3 beneficiaries from 3 different MS/AC
  • Each beneficiary recruits and hosts at least 1 ESR

• Other
  • Non-academic participation essential
  • PhD enrolment typically expected
  • Secondments to other countries/sector/disciplines
  • Joint supervision recommended
  • Partner organisations (any country/sector)
MSCA – European Training Networks

- HAoS project creates new generation of numerical tools that will facilitate the cost effective design of novel fuel injection equipment.
MSCA – European Industrial Doctorate

- **Mandatory:**
  - Min. 2 organisations from 2 different EU/ associated countries
    1 academic awarding PhD + 1 non-academic

- **Other:**
  - Individual research projects under the topic of the doctoral programme
  - Joint supervision by academic and non-academic supervisor
  - Flexible recruitment rule
  - Each fellow enrolled in the doctoral programme
  - Each fellow must spend ≥50% of time in non-academic sector
  - Secondments to partner organisation possible
MSCA – European Joint Doctorate

**Mandatory:**
- Min. 3 beneficiaries from academic sector awarding PhDs, from 3 different MS/AC
- Each ESR enrolled in the joint (international) doctoral programme
- Joint selection, training and supervision
- Commitment to deliver joint/double/multi degrees

**Other:**
- Meaningful stays at joint doctorate beneficiaries
- Non-academic participation through secondments to other sector/disciplines
MSCA – Innovation Training Network

- Funding:

<table>
<thead>
<tr>
<th></th>
<th>Researcher unit cost in EUR person/month</th>
<th>Institutional unit cost in EUR person/month</th>
</tr>
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<tbody>
<tr>
<td>Living Allowance</td>
<td>3270</td>
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<tr>
<td>Mobility Allowance</td>
<td>600</td>
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<tr>
<td>Family Allowance</td>
<td>500</td>
<td></td>
</tr>
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<td>Research, training, and networking costs</td>
<td>1800</td>
<td></td>
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<td>Management and indirect costs</td>
<td>1200</td>
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## MSCA – Innovation Training Network

<table>
<thead>
<tr>
<th>H2020-MSCA-ITN call</th>
<th>2019</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Budget</td>
<td>470 mil EUR</td>
<td>525 mil EUR</td>
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MSCA Actions

**IF Individual Fellowships**
- **What?** Personal research projects, between sectors and countries
- **Who applies?** Individual researcher and organisation
- **Who is funded?** ER, i.e. postdocs

**ITN Innovative Training Networks**
- **What?** Research training through interdisciplinary and international networks
- **Industrial or joint doctorates**
- **Who applies?** International network academia and non-academia
- **Who is funded?** ESR

**COFUND Co-funding of Regional, National, and International Programmes**
- **What?** Regional, National, and International Programmes to foster researchers’ trainings and careers
- **Who applies?** International network academia and non-academia
- **Who is funded?** ER and ESR

**RISE Research and Innovation Staff Exchange**
- **What?** Exchange of research and innovation staff in a particular project
- **Who applies?** International network academia and non-academia
- **Who is funded?** ER and ESR, techs, admin and manage staff
The COFUND scheme aims to stimulate regional, national or international programmes to foster excellence in researchers' training, mobility and career development.

Co-funding new or existing regional, national, and international programmes to open up to, and provide for, international, intersectoral and interdisciplinary research training, as well as transnational and cross-sectoral mobility of researchers at all stages of their career.
• Participating organisations in COFUND are legal entities that fund or manage Doctoral Programmes or Fellowship Programmes for researchers, or that recruit, supervise, host or train researchers (research funding agencies, ministries, universities, research organisations, private companies, museums, hospitals...).
MSCA – COFUND

Hierarchical:

1 beneficiary and partner organisations

Horizontal:

Single Point:

We do everything!
MSCA – COFUND

- Doctoral Programmes (DP)
- Fellowship Programmes (FP)

COFUND
• To offer high-quality research options to researchers and to cover as many research disciplines as possible

• Duration of the programme 3-5 years

• DPs typically offer programmes that last for the duration of PhD programme

• FPs usually last for 1-3 years

• Researchers may not have resided or carried out their main activity (work, studies, etc.) in the country of the beneficiary/partner organisation for more than 12 months in the 3 years immediately before the co-funded programme's call deadline or the date of recruitment

• For Fellowship programmes similar to those of the MSCA-IF researchers may not have resided or carried out their main activity (work, studies, etc.) in the country of the beneficiary/partner organisation for more than 3 years in the 5 years immediately before the co-funded programme's call deadline or the date of recruitment
MSCA – COFUND Doctoral Programmes

• Development and broadening of the research competencies of early-stage researchers (ESR)

• Possibility of joint or double/multiple degrees and mutual recognition of training activities

• The selection of the researchers - **vacancies internationally advertised** and published, including on the EURAXESS website

• Possibility of secondments
MSCA – COFUND Doctoral Programmes

- Example: RESCUE COFUND
- RESCUE train researchers in the field of Regenerative Medicine research towards valuable new applications in medicine
- Joint programme between the University Medical Center Utrecht (UMCU) and Utrecht University (UU), coordinated by UMCU
- Over 50 partner academic and industry organisations (secondments)

ESR PhD projects
MSCA – COFUND Fellowship Programmes

• Individual-driven research training and career development fellowships for experienced researchers
• Calls for proposals advertised at international level, and on the EURAXESS website
• Freely choose a research topic and the appropriate host organisation
MSCA – COFUND Fellowship Programmes

• FELLINI - Fellowship for Innovation at INFN
• The National Institute for Nuclear Physics (INFN)
• Candidates proposes projects in application
• Fields:
  • Experimental Particle Physics
  • Experimental Astroparticle Physics
  • Experimental Nuclear Physics
  • Theoretical Physics
  • Technological Research
• 4 national labs, 20 national units, 1 national centre
• 3-years length, 1-year secondment
MSCA – COFUND

• FUNDING:
  • ESR, recruited under an employment contract/equivalent direct contract, a minimum of EUR 2,709/person/month
  • ER - recruited under an employment contract/equivalent direct contract, a minimum of EUR 3,836/person/month.
• CO-FUNDing of the programmes
### H2020-MSCA-COFUND call

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<tr>
<td>Opening-Closing</td>
<td>April 04 – Sept 26 2019</td>
<td>April 08 – Sept 29 2020</td>
</tr>
<tr>
<td>Budget</td>
<td>90 mil EUR</td>
<td>100 mil EUR</td>
</tr>
</tbody>
</table>
## MSCA Actions

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
<th>Who applies?</th>
<th>Who is funded?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IF</strong> Individual Fellowships</td>
<td>Personal research projects, between sectors and countries</td>
<td>Individual researcher and organisation</td>
<td>ER, i.e. postdocs</td>
</tr>
<tr>
<td><strong>ITN</strong> Innovative Training Networks</td>
<td>Research training through interdisciplinary and international networks Industrial or joint doctorates</td>
<td>International network academia and non-academia</td>
<td>ESR</td>
</tr>
<tr>
<td><strong>COFUND</strong> Co-funding of Regional, National, and International Programmes</td>
<td>Exchange of research and innovation staff in a particular project</td>
<td>International network academia and non-academia</td>
<td>ER and ESR</td>
</tr>
<tr>
<td><strong>RISE</strong> Research and Innovation Staff Exchange</td>
<td>Regional, National, and International Programmes to foster researchers’ trainings and careers</td>
<td>Organisation managing/funding PhD programmes</td>
<td>ER and ESR, techs, admin and manag staff</td>
</tr>
</tbody>
</table>
MSCA – Research and Innovation Staff Exchange

**Partnership**
- Academic and non-academic institutions
- Europe and rest of the world

**Staff Exchanges**
- Project implemented through the secondment of existing staff
- Staff seconded for a period of 1 to 12 months

**Transfer of Knowledge**
- International and inter-sectoral transfer of knowledge
- Sharing of ideas and R&I culture
MSCA – Research and Innovation Staff Exchange

RISE CONSORTIUM

- At least 3 independent participants in 3 different countries
- Of which at least 2 participants from 2 different MS/AC
- If all in MS/AC: at least 1 academic and 1 non-academic (intersectoral)

R&I project

R&I activities

Staff secondments

Max duration 48 months
MSCA – Research and Innovation Staff Exchange

• Staff exchange:
  • Inter-sectoral – between academic and non-academic partners
  • International – between MS/AC partners and TC partners
MSCA – Research and Innovation Staff Exchange

- Staff exchange:
  - ESR (no PhD and < 4 years experience)
  - ER (PhD or > 4 years experience)
  - Managerial staff
  - Administrative or Technical staff
MSCA – Research and Innovation Staff Exchange

- Funding:

<table>
<thead>
<tr>
<th></th>
<th>Researcher unit cost in EUR person/month</th>
<th>Institutional unit cost in EUR person/month</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2000/2100</td>
<td>Research, training, and networking costs</td>
</tr>
<tr>
<td>MSCA</td>
<td></td>
<td>Management and indirect costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1800</td>
</tr>
<tr>
<td></td>
<td></td>
<td>700</td>
</tr>
<tr>
<td>H2020-MSCA-ITN call</td>
<td>2019</td>
<td>2020</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>Opening-Closing</td>
<td>Dec 04 2018 – Apr 02 2019</td>
<td>Dec 05 2019 – Apr 07 2020</td>
</tr>
<tr>
<td>Budget</td>
<td>80 mil EUR</td>
<td>80 mil EUR</td>
</tr>
</tbody>
</table>
NOCTURNO

- **NOCTURNO**
  - **Non-Conventional Wave Propagation for Future Sensing and Actuating Technologies**

- Marie Skłodowska-Curie Research and Innovation Staff Exchange (RISE)
  - Call: H2020-MSCA-RISE-2017

- January 2018 – December 2021
• Focuses on:
  • Development of **sensors and actuators** based on **non-conventional propagation of acoustic waves** in artificial media
  • **Electromagnetic/optical sensors** based on **metasurfaces**
  • **Advanced manufacturing technologies** with the aim to provide practical solutions for the fabrication of novel acoustic and metasurface-based sensors and actuators
Consortium

European academic

European non-academic

Third-country

École Polytechnique Fédérale de Lausanne
The University of Texas at Austin
The City University of New York
Australian National University
Secondments

[Diagram showing network connections and labels for INO, PLAS, UoB, EPFL, BIOS, ANU, TEX, CUNY, with arrows indicating flow or interaction between these entities.]

SME

European academic

Third Country
Further information

- http://ec.europa.eu/research/mariecurieactions/
Job searching
Job searching

• MSCA – Individual Fellowship – “individual” proposal
• MSCA – RISE – career development if part of the consortium

• MSCA – ITN – for PhD candidates, looking for the project -> application -> recruitment
• MSCA – COFUND – for experienced researchers, looking for the project -> application -> recruitment
Job searching

Job searching

Job searching

• EURAXESS - Pan-European initiative delivering information and support services to professional researchers.

• https://euraxess.ec.europa.eu/
Job searching

- euraxess
- naturejobs.com
- ResearchGate
- EuroScienceJobs.com
- jobs.ac.uk
- Academic Positions
- Jobs in academia
Job searching

- Directly to the well-established research groups

**PRINCIPAL INVESTIGATOR**

Andrea Alù

Dr. Alù is currently seeking brilliant and highly motivated graduate students and postdocs to join his group. If you believe to be an exceptional candidate with interests in electromagnetism, plasmonics, metamaterials and/or acoustics, please feel free to contact him.

**Metamaterials Group**

**Group Leader:**
Associate Professor, D.Sc. And

**Senior Members and Postdocs:**
- Dr. Radu Malureanu
- Dr. Osamu Takayama
- Dr. Evgeniy Shikodin
- Dr. Akira Kudo

**Ph.D. Students:**
- Teaa Replah
- Johnnehy Sukham
- Larissa Vetchenko
- Rasmus Elkjær Jacobsen

**Associate Member:**

Join the team!

We are always on the lookout for new students and colleagues! For example there are a couple of opportunities for postdocs!

If you would like to join the group, please contact the group leader, Prof. Andrei Lavrinenko.

You may also find it valuable to consult the list of open positions at DTU.
Job searching

Open positions

Research leader in development of sensing devices – PDF
Research leader in satellite imaging and remote sensing – PDF
Research leader in multispectral/hyperspectral image processing – PDF
Research leader in Big Data – PDF
Experienced researcher in development of sensing devices – PDF
Experienced researcher in satellite imaging and remote sensing – PDF
Experienced researcher in multispectral/hyperspectral image processing – PDF
Experienced researcher in Big Data – PDF
Experienced researcher in IoT – internet-of-things – PDF
Experienced researcher in bioinformatics – PDF
Job application

• CV and cover letter
• CV - factsheet
• Cover Letter demonstrates your personality and other relevant skills
• Additional documents – e.g. research plan
Job application - CV

• **Form:**
  • **Length:** 2-4 pages
  • **Structure** – personal details, work experience, education, research...
    • Europass format
    • https://europass.cedefop.europa.eu/documents/curriculum-vitae
  • **Formatting:** CV should be clear and easy to read
  • **Brief, concrete, not many details**
Job application

Personal Details
Career Summary
Education
Research - highlight key research findings and accomplishments, research interests
Publications
• a short list of the most representative publication
• full list in the appendix
Job application - CV

• Personal Details
• Career Summary
• Education
• Research - highlight key research, research interests
• Publications
  • a short list of the most represe
  • full list in the appendix

WORK EXPERIENCE

07/2015-

Research Assistant Professor
BioSense Institute, Novi Sad, Serbia

Research in the field of microwave electronics, metamaterials, optics, and their application in sensors applied in agriculture, food, and environmental monitoring

From 2016 Head of the Group for Nano and Microelectronics

2018-2021 Coordinator of the project H2020-MSCA-RISE-2017 NOCTURNO Non-conventional wave propagation for future sensing and actuating technologies 777114

Leader of the Work Package 2 – Human resources in ANTARES Phase 2 - Centre of Excellence for Advanced Technologies in Sustainable Agriculture and Food Security, H2020 WIDESPREAD-01-2015-2017

Project manager of EU-funded projects FP7 InnovoSense (ended in 2016) and H2020 ANTARES Phase 1 (ended in 2016)

Business or sector Research

12/2014-06/2015

Research Assistant Professor
Faculty of Technical Sciences, University of Novi Sad, Novi Sad, Serbia

Research in the field of microwave electronics and metamaterials

Lecturing RF and Microwave Electronics, Modelling and Simulation of RF and Microwave Circuits

Business or sector Research, Education

EDUCATION AND TRAINING

2008-2013

PhD degree
Faculty of Technical Sciences, University of Novi Sad, Serbia

Title: Microwave microstrip multi-band filters with independently controlled passbands

2002-2008

Master of Science in Electrical and Computer Engineering
Faculty of Technical Sciences, University of Novi Sad, Serbia

Title of Master Thesis: High-impedance surfaces that use fractal curves
Job application - CV

- **Honors and Recognitions** - prizes, awards, honors or other recognitions for your research and work with the year it occurred and by who/which body the award was granted.

- **Funding** - the funding you have attracted for your research and work (grants, scholarships and funds)

- **Teaching**

- **Administrative experience** – events, coordination...

- **Professional experience** – working experience in e.g. industry relevant for the position

- **Other skills and qualifications** - technical and practical skills, certifications, languages...

- **Professional affiliations and memberships**

- **Attendance at conferences and seminars** - list the most relevant conferences or seminars where you presented or was invited

- **References** - list contact persons who can provide a reference for your research, work and character.

- **Appendices** - list of publications, certifications...

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**Other skills**
- Experienced user of simulation tools HFSS, CST, Sonnet, AWR Microwave Office, MatLab, Mathematica
Job application – Cover Letter

- **Demonstrate your enthusiasm** for the post, based on the research you have done
- **Explain your rationale** for applying and how the role fits with your career plans
- Answer the question “**Why should we hire you?**” by demonstrating how you meet the key criteria
- Provide **evidence of** your written communication and language **skills**
Job application – Cover Letter

• No longer than 1 page in paragraph format
• **Address**: Address the letter to a named person
• **First paragraph**: An introduction, explaining which job you are applying for, how you heard about the post, and some brief background on who you are e.g. in terms of your research interests and background.
• **Middle section**: Evidence of how you meet the criteria for the role,
• **Final section**: Explain what attracts you to this role in this institution and how the role fits into your career plans.
• **Concluding paragraph**: What makes you suitable for the job and a statement
Job application – Cover Letter

😊 To understand the job context - make your own enquiries (online research, colleagues...)

😊 Your Selling Points – what differentiate from the competition
  😊 Depth of expertise
  😊 Blends of experiences/expertise
  😊 Specific achievements
  😊 Developed research network

😊 Summarize CV – giving too much details

😊 Make unsubstantiated statements about relevant skills and experience without giving examples

😊 Make generalised statements about why you want to work for the institution
I would like to express my interest in the position of Research Fellow in Applied Health Research which I saw advertised on naturejobs.

I have recently completed my PhD in “Title of Thesis’ at the University of Pavia. My PhD involved research about... and it also included... Prior to that, I received MSc degree in the field of at the University of Pavia.

This position appears to be an ideal blend of my experience in ... and ...

I am particularly impressed by the BioSense Institute’s commitment to application of ICT in agriculture and environmental protection as the burning issues in the world. I am also drawn to the Institute’s multidisciplinary approach to research. Since I collaborated with the researchers from Department of Biology and Department of Electronics during my PhD, I believe in the importance of thinking beyond narrow academic disciplines.
Job application – Cover Letter

• I have held research posts in both academia and R&D making me ideally suited to a role ... **My technical skills and deep knowledge of ... has given me a real understanding** of the practical applications of ... I also took the opportunity to learn about data analysis techniques, for example ...

• At the University of... I worked as... and this **increased my competence in ...**

• **I am confident that my** expertise in electronics and project proposal preparation, my broad experience in both academic and R&D, my focus on a multidisciplinary approach and my strong organisational and influencing skills make me an ideal match for this position.
• Do your homework – get deeply into the institution/department/group to whose position you are applying

• Be prepared to answer “stupid” questions (how do you see yourself in 5 years, what makes you better than other candidates, what is your driving force...)

• Salary
Thank you!

biosense.rs
nikolina@biosense.rs