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| **Marie Skłodowska-Curie European Fellowship****Expression of Interest Application Form 2019** |

This form must be completed for Expressions of Interest (EoIs) to the Marie Skłodowska-Curie European Fellowship scheme being run by the University of Birmingham.

The document length (excluding CV) should be no more than two pages of A4, single spacing and completed in English (a 200 word count is set for the primary research topic). The document, together with a full CV should be emailed to Sally Wiley (s.a.wiley@bham.ac.uk) by 17:00 (UK time) on **31 May 2019.**

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| APPLICANT INFORMATION |
| **Name of Applicant** | Insert name |
| **Email address** | Insert Email Address |
| **Current Position & Institution** | Insert |

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| ELIGIBILITY |
| **PhD year and month** | Insert |
| **Have you lived, worked or studied in the UK for more than 12 months in the last three years?** | List residence in last 3 years |

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| RESEARCH THEMES APPLYING TOYou may choose up to 3 different research themes (Option 1 should be your first choice)*See list below* |
|  | Option 1 | Option2 | Option 3 |
| **Arts & Humanities** | Insert reference number | Insert reference number | Insert reference number |
| **Engineering & Physical Sciences** | Insert reference number | Insert reference number | Insert reference number |
| **Economic & Social Sciences** | Insert reference number | Insert reference number | Insert reference number |
| **Life & Environmental Sciences** | Insert reference number | Insert reference number | Insert reference number |
| **Medical & Dental Sciences** | Insert reference number | Insert reference number | Insert reference number |

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| PROPOSED RESEARCH |
| **Please give the title and brief outline and nature of your proposed research including its aims how it would impact on your future research career (max 200 words).*****If you have chosen more than one option then you only need provide and outline for Option 1.***Title and research outline - 250 word limit |
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**Research Themes and Reference Numbers**

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| **Engineering & Physical Sciences** |
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| eps1 | The interaction between tropical and extra-tropical extremes and their use for financial applications. |
| eps2 | Enabling direct removal of Fe contamination in recycled Al alloys via electromagnetic control |
| eps3 | 4D Synchrotron X-ray Tomographic Quantification with Machine Learning: Application to Metal Solidification |
| eps4 | Large-scale production of two-dimensional materials |
| eps5 | Development of new cathode materials for Li/Na/K ion batteries |
| eps6 | Recovery and reuse of cathode materials from used Li ion batteries |
| eps6.1 | Development of new electrode or electrolyte materials for use in solid oxide fuel cells |
| eps7 | Terahertz imaging |
| eps8 | Syntax and semantics of type theories |
| eps9 | Artificial Intelligence for human-robot collaboration |
| eps9.1 | Knowledge representation and reasoning |
| eps9.2 | Cognitive robot systems |
| eps10 | Bidirectional lasing with cold atoms in a ring cavity |
| eps11 | Development of Preferred Orientation in Nd2 Fe 14 B -based materials by means of the HyD-Process |
| eps12 | Information processing in complex networks: structure and dynamics |
| eps13 | Wind Energy Structures/Floating Structures/Sustainability |
| eps13.1 | Structural Aluminium Design/High Performance Structures |
| eps14 | Dynamic, functional bio-interface materials |
| eps14.1 | Materials with anti-fouling properties |
| eps14.2 | Glycan recognition and sensing for cancer diagnosis |
| eps14.3 | Vesicle engineering |
| eps15 | Application of novel carbazoles in optoelectronics |
| eps15.1 | Application of novel carbazoles in profluorescent nitroxides |
| eps15.2 | Organocatalytic and Asymmetric Alkane Oxidation |
| eps16 | Luminescent metal nanoprobes for environmental and biomedical sensing |
| eps17 | Development of Advanced Miniaturised Raman based Devices for Point-of-Care Diagnostics |
| eps18 | Development of Novel Nanophtonics Metamaterials from Synthetic Biology Building Blocks |

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| **Arts & Humanities** |
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| cal1 | Tracking the Side-Effects of Counter-Terrorism Policy |
| cal2 | Male lone-actor terrorism in the USA, UK and Canada 1868-2018 |

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| **Social Sciences** |
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| Coss1 | Political Campaigning |
| CoSS1 | Sunspot equilibrium and endogenous fluctuations, economic epidemiology models, growth theory, general equilibrium theory, environmental economics, financial crises and financial market imperfections. |

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| **Medical & Dental Sciences** |
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| mds1 | Steroid sulfation in women’s health: from molecular mechanisms and biomarkers to clinical application |
| mds2 | Biomaterials for regenerative medicine and dentistry |
| mds2.1 | Phototherapy for accelerated wound repair |
| mds3 | Multi-omic profiling and identification of therapies for Patient-Derived Xenografts (PDX) and Patient-Derived Organoids (PDO) in Cancer |
| mds4 | Nanomedicine |
| mds4.1 | Drug delivery & nanotoxicology |
| mds5 | Precision rehabilitation following lumbar spinal surgery |
| mds6 | Understanding metabolic disturbance in alcohol-related liver disease |
| mds7 | Evolutionary genomics of multi-drug resistant gram negative pathogens |

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| **Life and Environmental Sciences** |
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| les1 | Response of nitrogen cycling processes in forest soils under land use and climate change. |
| les1.1 | Understanding denitrification and its role in the soil and water nitrogen budgets and pollution control |
| les1.2 | Disentangling the controls of biological nitrogen fixation in restored wetlands and forests. |
| les2 | The genetic regulation of senescence and nutrient content in wheat |
| les3 | Computational Modelling of Protein Structure and Function via Machine Learning, Molecular Modelling and Molecular Simulation |
| les4 | The interaction between tropical and extra-tropical extremes and their use for financial applications. |
| les5 | Real world air pollution emissions from vehicles: understanding direct emissions of reactive NOx and VOC species from vehicles, their response to driving conditions, and impacts upon urban air quality. |
| les6 | Carbon Emissions from Large Igneous Provinces: Fieldwork and Modelling Approaches |
| les7 | Towards validation of a blood biomarker panel for bipolar disorder mood phases |
| les8 | The shared future of water and forests in a changing world |
| les9 | Behavioural governance, datafication and emotional cultures: charting norms, vocabularies, practices and subjectivities |
| les10 | How can data from high resolution networks of sensors be used to improve the forecasting of weather hazards |
| les11 | Quantifying the "plastic cycle" in UK rivers |
| les12 | Fluvial Sedimentology: using the modern to assess whether channel pattern can be interpreted from ancient deposits |
| les13 | neurobiology of behaviour in Drosophila |
| les13.1 | neural mechanisms of decision-making in Drosophila |
| les13.2 | impact of infection on reproduction and mate selection in Drosophila |
| les14 | Mathematical modelling of antimicrobial resistance dynamics and transmission routes |
| les15 | Collaborative development of psychological interventions with young people, for young people. Focusing on young people with neurodevelopmental disorders or those potentially at risk of developing mental health problems (e.g. due to social/ family background |
| les15.1 | Understanding cognitive and/or emotional control processes in young people with neurodevelopmental disorders or behaviour problems |
| les15.2 | Understanding factors that contribute to loneliness in young people.  |
| les16 | hydrology and water science |
| les17 | How does sleep deprivation affect social understanding? Approaches from developmental psychology, clinical psychology and neuroscience |
| les18 | Interactions of nanomaterials and/or nanoplastics with environmental molecules (Eco-Corona) and organisms (Ecotoxicity) |
| les18.1 | Ecosystems impacts and opportunities from nanomaterials and/or nanoplastics |
| les19 | Neural modulation of postural control and balance in ageing |
| les20 | Stress response signalling in cell death, regeneration and cancer |
| les21 | Internal displacement as a result of conflict, disaster and/or development: everyday experiences, intersectionality and polic |
| les21.1 | Social geographies of forced displacement, mental health and well-being  |

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