PEARRL -
Pharmaceutical Education And Research with Regulatory Links:
Innovative drug development strategies and regulatory tools
tailored to facilitate earlier access to medicine

funded by the European Commission under the H2020 Marie Curie actions (no. 674909), offering attractive packages to the best candidates.

PhD **OPEN POSITIONS** **Initial Call**

ESR1: Lipid based formulations as Bio-enabling formulation technology. ESR1 will be recruited as a PhD candidate to explore novel application of Lipid based formulations (LBF). He/She will be tasked with (1) designing novel LBF to overcome solubility limited oral absorption; (2) developing in silico models for predicting in vivo performance; (3) Validating the utility of in silico modelling to predict in vivo drug levels. **Additional Requirements:** M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery or Industrial Pharmacy). Proof of English proficiency as communication and teaching language throughout PEARRL is English (e.g. TOEFL or similar test, not for native speakers). **Start date (planned):** 1st October 2016 **Application deadline:** 15th May 2016 **Planned secondments:** Host: HPRA, Dublin; Length 3 months; Purpose: Regulatory Partner; Host: Lundbeck, Copenhagen; Length: 3 months Purpose: Industrial partner	**Contact** Dr. Brendan Griffin School of Pharmacy University College Cork Ireland brendan.griffin@ucc.ie
ESR2: Solidified nanosuspensions as supersaturating oral drug delivery system. ESR 2 is a PhD candidate who will study novel kinds of supersaturating oral delivery systems that are manufactured by hot melt extrusion. **Additional Requirements:** M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery, or Physical Chemistry). A solid background and interest in Physical Pharmaceutics is preferred. Proof of English proficiency as communication and teaching language throughout PEARRL is English (e.g. TOEFL or similar test, not for native speakers). **Start date (planned):** 1st October 2016 **Application deadline:** 15th May 2016 **Planned secondments:** Host: HPRA, Dublin; Length 3 months; Purpose: Regulatory Partner; Host: Lundbeck, Copenhagen; Length: 3 months Purpose: Industrial partner	**Contact** Prof. Martin Kuentz School of Life Sciences Institute for Pharma Technology Gründenstrasse 40, 4132 Muttenz Switzerland martin.kuentz@fhnw.ch
ESR3: Novel Mesoporous Silica Formulations as a Bio-enabling Technology ESR3 will complete an industrially based PhD at Merck and will be registered for a PhD at Goethe-Universität Frankfurt. Drug formulations based on mesoporous silica or alternative enabling formulation principles will be screened, developed and characterized to overcome dissolution rate and solubility limited oral absorption. Based on these results a scorecard indicating the feasibility of using mesoporous silica as a bio-enabling formulation technique for pharmaceutical research compounds will be developed and validated using different poorly soluble model drugs. **Additional Requirements:** M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery, or Physical Chemistry). Proof of English proficiency as communication and teaching language throughout PEARRL is English (e.g. TOEFL or similar test, not for native speakers). Motivated candidates with scientific curiosity, result oriented working approach, good communication and networking skills preferred.	**Contact** Dr. Christoph Saal Merck KGaA Frankfurter Str. 250, Postcode: A022/001 64293 Darmstadt, Germany Christoph.Saal@merckgroup.com

Start date (planned): 1st October 2016 **Application deadline:** 15th May 2016 **Planned secondments:** Host: BfArM, Bonn, Germany; Length 3 months; Purpose: Regulatory Partner; Host: University of Goethe (Frankfurt); Length: 3 months Purpose: Academic partner	
ESR4: Amorphous Solid Dispersions as Bio-enabling formulation technology ESR4 will complete an industrially based PhD at Pharmathen and will be registered for a PhD at National and Kapodistrian University of Athens. He/She will be tasked with (1) Developing formulations with 'hot-melt extrusion' processing; (2) developing in vitro methodology for predicting in vivo performance for ASD technology that will predict *in vivo* performance; (3) testing the validity of the *in vitro* predictions for forecasting *in vivo* performance by conducting an *in vivo* study in humans comparing one ASD formulation to a currently marketed product. **Additional Requirements:** M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery or Industrial Pharmacy). Proof of English proficiency as communication and teaching language throughout PEARRL is English (e.g. TOEFL or similar test, not for native speakers). **Start date (planned):** 1st October 2016 **Application deadline:** 15th May 2016 **Planned secondments:** Host: EMA, London. Length 3 months; Purpose: Regulatory Partner; Host: FHNW, Basel. Length: 3 months Purpose: Academic partner	**Contact** Dr. Lida Kalantzi Pharmathen 44 Kifissias Ave.,15125 Marousi Attica , Greece lkalantzi@pharmathen.com 
ESR5: Computational modelling of molecular interactions applied to solid drug dispersions. ESR5 is a PhD candidate who will study different tools (computational and experimental) to assess drug-excipient interactions as applied to oral formulations (primarily solid dispersions) **Additional Requirements:** M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery, or Physical Chemistry). A solid background and interest in Physical Pharmaceutics is preferred. Proof of English proficiency as communication and teaching language throughout PEARRL is English (e.g. TOEFL or similar test, not for native speakers). **Start date (planned):** 1st January 2017 **Application deadline:** 15th May 2016 **Planned secondments:** Host: HPRA, Dublin; Length 3 months; Purpose: Regulatory Partner; Host: Pharmathen, Athens; Length: 4 months Purpose: Industrial partner	**Contact** Prof. Martin Kuentz School of Life Sciences Institute for Pharma Technology Gründenstrasse 40, 4132 Muttenz Switzerland martin.kuentz@fhnw.ch 
ESR6: Transfer model utility – investigation of GI supersaturation and precipitation from discovery to regulatory submission. The objectives of this project are ***1)*** To develop a physiologically oriented *in vitro* transfer model to assess the risk of drug precipitation in the GI tract after administration of bio-enabling formulations; ***2)*** Application of the *in vitro* transfer model to the bio-enabling formulations being developed as part of the PEARRL project. 3) to couple *in vitro* results with a PBPK model to simulate the plasma profile after administration of the bio-enabling formulation. **Additional Requirements:** M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery, or Physical Chemistry). Proof of English proficiency as communication and teaching language throughout PEARRL is English (e.g. TOEFL or similar test, not for native speakers). **Start date (planned):** 1st January 2017 **Application deadline:** 15th May 2016 **Planned secondments:** Host: BfArM, Bonn; Length 3 months; Purpose: Regulatory Partner; Host: Sirius, UK; Length: 3 months Purpose: Industrial partner	**Contact** Dr. Edmund Kostewicz Goethe-Universität Frankfurt Campus Riedberg, Institut für Pharmazeutische Technologie, Gebäude N230 Max-von-Laue-Str. 9, 60438 Frankfurt am Main Germany kostewicz@em.uni-frankfurt.de 

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ESR7: Developing in vitro tools to forecast gastrointestinal drug transfer in the fed state ESR7 will be recruited as a PhD candidate to develop in vitro tools to evaluate the impact of gastrointestinal (GI) transfer in the fed state on drug concentrations in the contents of upper gastrointestinal (GI) lumen. Specific tasks include: (a) build an in vitro model that reproduces luminal drug concentrations vs. time profiles previously measured in humans, (b) measure luminal drug concentrations vs. time after administration of a bio-enabling drug product to fed adults, (c) Optimise the in vitro model, if needed **Additional Requirements:** M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery). Proof of English proficiency as communication and teaching language throughout PEARRL is English (e.g. TOEFL or similar test, not for native speakers). **Start date (planned):** 1st October 2016 **Application deadline:** 15th May 2016 **Planned secondments:** Host: BfArM, Bonn, Germany; Length: 3 months; Purpose: Regulatory Partner; Host: Pfizer, UK; Length: 3 months; Purpose: Industrial Partner	**Contact** Prof. Christos Reppas Department of Pharmaceutical Technology, Faculty of Pharmacy,National and Kapodistrian University of Athens, Panepistimiopolis, 157 84 Zografou, Greece reppas@pharm.uoa.gr 
ESR8: Setting bioequivalence limits using PK/PD Physiologically based, pharmacokinetic (PBPK) modelling is increasingly being used by industry and regulatory researchers alike to predict e.g. drug-drug interactions and bioequivalence of drug formulations. By combining PBPK modelling with pharmacodynamics we aim to ***(1)*** predict the therapeutic equivalence (or lack thereof) of generic drug formulations (a prerequisite for marketing approval) and ***(2)*** better predict therapeutic effects in special patient populations e.g. children and those with GI disease. **Additional Requirements:** M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery, or Physical Chemistry). Proof of English proficiency as communication and teaching language throughout PEARRL is English (e.g. TOEFL or similar test, not for native speakers). **Start date (planned):** 1st October 2016 **Application deadline:** 15th May 2016 **Planned secondments:** Host: EMA, London; Length 3 months; Purpose: Regulatory Partner; Host: tbd; Length: 3 months Purpose: Academic partner	**Contact** Prof. Dr. Jennifer B. Dressman Institute of Pharmaceutical Technology Biocenter Johann Wolfgang Goethe University Max-von-Laue-Str. 9, 60438 Frankfurt am Main, Germany dressman@em.uni-frankfurt.de 
ESR9: Comparative assessment of preclinical animal models for predicting bio-enabling oral drug products performance in humans ESR9 will be recruited as a PhD candidate to conduct a comparative assessment of pre-clinical animal models for predicting oral formulation performance in humans. He/She will be expected to (1) develop biorelevant *in vitro* models for the pig that improve interpretation of preclinical results (2) the suitability of the the 'pig' model for predicting formulation behaviour in humans *(3)* develop improved PBPK *in silico* 'porcine' models that take account of species-specific factors. **Requirements:** M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery or Industrial Pharmacy). Proof of English proficiency as communication and teaching language throughout PEARRL is English (e.g. TOEFL or similar test, not for native speakers). **Start date (planned):** 1st January 2017 **Application deadline:** 15th May 2016 **Planned secondments:** Host: HPRA, Dublin; Length 3 months; Purpose: Regulatory Partner; Host: Lundbeck, Copenhagen; Length: 3 months Purpose: Academic partner	**Contact** Dr. Brendan Griffin School of Pharmacy University College Cork Ireland brendan.griffin@ucc.ie 
ESR10: Small-scale dissolution assays for evaluating active pharmaceutical ingredients (APIs) and formulation behaviour. ESR10 will be recruited at Sirius Analytical Ltd., and registered as a PhD candidate at the University of Athens. He/she will be tasked with (1) development and use of novel, small-scale *in vitro* dissolution assays that	**Contact** Karl Box Sirius Analytical Ltd, Forest Row,East Sussex, United Kingdom

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mimic transitions from gastric pH to intestinal pH environments; (2) optimisation and use of biorelevant media and biphasic dissolution assays for modelling compound solubilisation and oral absorption; (3) understanding supersaturation effects and precipitation risk of different drug substance and dosage forms. In addition to assay development/optimisation, the candidate will spend time at the University of Athens on formulation development activities and understanding pharmacopeia dissolution methods as well as experimental gastric to intestinal transfer models. Further time will also be spent at a regulatory agency. **Additional Requirements:** M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery). Proof of English proficiency as communication and teaching language throughout PEARRL is English (e.g. TOEFL or similar test, not for native speakers). **Start date (planned):** 1st October 2016 **Application deadline:** 15th May 2016 **Planned secondments:** Host: MHRA, London; Length 3 months; Purpose: Regulatory Partner; Host: University of Athens; Length: 3 months Purpose: Academic partner	Karl.Box@sirius-analytical.com 
ESR11: Developing new *in vitro* and *in vivo* methods to predict performance of paediatric formulations ESR11 will be recruited as a PhD candidate to develop *in vitro* and *in vivo* methods to predict performance of paediatric formulations. Specific tasks include: (a) Optimise the design of an *in vivo* study in healthy adults for assessing pharmacokinetics of a licensed paediatric medicine. *(b)* Develop new *in vitro* methods for simulating the *in vivo* dissolution of the chosen drug in paediatric populations; (c) Evaluate the usefulness of biopharmaceutics tools developed in PEARRL for predicting the *in vivo* data. **Additional Requirements:** M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery, Industrial Pharmacy). Proof of English proficiency as communication and teaching language throughout PEARRL is English (e.g. TOEFL or similar test, not for native speakers). **Start date (planned):** 1st January 2017 **Application deadline:** 15th May 2016 **Planned secondments:** Host: EMA (London, UK); Length 3 months; Purpose: Regulatory Partner; Host: Lundbeck (Valby, Denmark); Length: 3 months Purpose: Industry partner	**Contact** Dr Maria Vertzoni Department of Pharmaceutical Technology, Faculty of Pharmacy, National and Kapodistrian University of Athens, Panepistimiopolis, 157 84 Zografou, Greece vertzoni@pharm.uoa.gr 
ESR12: Developing in vitro and in silico approaches to predict clinical outcomes: focus on paediatrics ***(1)*** To develop biorelevant dissolution methodology for paediatric populations; ***(2)*** To develop a paediatric absorption model (integrated into a PBPK model) which adjusts for physiological differences as a function of age; ***(3)*** To evaluate the *in vitro* and *in silico* models based on comparison with *in vivo* data. **Additional Requirements:** M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery). First or good second class honours degree (or equivalent) in an appropriate subject or lower qualification with extended and responsible experience in a relevant field in industry, teaching or government establishment, or in some branch of medicine or medical science, together with authorship of scientific or medical papers. Language requirements: IELTS 6.5 (at least 6.0 in each of the 4 components) **Start date (planned):** 1st October 2016 **Application deadline:** 15th May 2016 Host: MHRA, UK; Length 3 months; Purpose: Regulatory Partner; Host: UCB, Belgium; Length: 3 months Purpose: Industry partner	**Contact** Dr. Nikoletta Fotaki Department of Pharmacy and Pharmacology, University of Bath, Claverton Down, Bath, United Kingdom N.Fotaki@bath.ac.uk 
ESR13: Extension of biowaivers to BCS Class 2 drugs The objectives of this project are ***(1)*** to study the dissolution kinetics of poorly soluble weak acid drugs and ***(2)*** determine what solubility, dissolution and excipient criteria such drugs need to meet in order to qualify for a biowaiver based approval.	**Contact** Prof. Dr. Jennifer B. Dressman Institute of Pharmaceutical Technology, Biocenter Johann Wolfgang Goethe

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Additional Requirements: M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery, or Physical Chemistry). Proof of English proficiency as communication and teaching language throughout PEARRL is English (e.g. TOEFL or similar test, not for native speakers). **Start date (planned):** 1st October 2016 **Application deadline:** 15th May 2016 Host: BfArM, Bonn; Length 3 months; Purpose: Regulatory Partner; Host: tbd; Length: 3 months Purpose: Industrial partner	University Max-von-Laue-Str. 9, 60438 Frankfurt am Main, Germany dressman@em.uni-frankfurt.de 
ESR14: Developing in vitro and in silico models to predict in vivo performance of supersaturated Self-nano-emulsifying drug delivery systems (SNEDDS) ESR14 will complete an industrially based PhD at Lundbeck and will be registered for a PhD at University College Cork. The objectives of the project are ***1)*** To establish a biopharmaceutics tool to investigate the *in vivo* performance of supersaturated SNEDDS; ***(2)*** To use the *in vitro* understanding to develop an *in silico* models to predict the *in vivo* performance; ***(3)*** To compare the *in vitro* and *in silico* predictions to observations *in vivo*. **Additional Requirements:** M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery or Industrial Pharmacy). Proof of English proficiency as communication and teaching language throughout PEARRL is English (e.g. TOEFL or similar test, not for native speakers). **Start date (planned):** 1st October 2016 **Application deadline:** 15th May 2016 Host: EMA, UK; Length 3 months; Purpose: Regulatory Partner; Host: UCC, Ireland; Length: 3 months Purpose: Academic partner	**Contact** Dr. Rene Holm Biologics and Pharmaceutical Science, H. Lundbeck A/S, Ottiliavej 9, Valby, Denmark RHOL@Lundbeck.com 
ESR15: Developing *in vitro* and *in silico* approaches to predict the impact of Gastrointestinal Disease states on drug product performance ***(1)*** To develop clinical relevant dissolution methodology for patients with GI disease; ***(2)*** To develop an absorption model for GI disease states, that takes into account differing physiological conditions; ***(3)*** To evaluate the *in vitro* and *in silico* models based on comparison with *in vivo* data. **Additional Requirements:** M.Sc. (or equivalent graduation) in relevant area (e.g. Pharmacy, Pharmaceutical Sciences, Drug Delivery). First or good second class honours degree (or equivalent) in an appropriate subject or lower qualification with extended and responsible experience in a relevant field in industry, teaching or government establishment, or in some branch of medicine or medical science, together with authorship of scientific or medical papers. Language requirements: IELTS 6.5 (at least 6.0 in each of the four components) **Start date (planned):** 1st January 2017 **Application deadline:** 15th May 2016 Host: MHRA, UK; Length 3 months; Purpose: Regulatory Partner; Host: tbd; Length: 3 months Purpose: Academic partner	**Contact** Dr. Nikoletta Fotaki Department of Pharmacy and Pharmacology, University of Bath, Claverton Down, Bath, United Kingdom N.Fotaki@bath.ac.uk 

Applicants for the PhD positions must not yet been awarded a PhD degree and must be in the first 4 years (full-time equivalent) of their research careers prior to the recruitment.

All applicants must not have resided or carried out their main activity (work, studies, etc.) in the country of the organization they are applying to for more than 12 months in the 3 years immediately prior to the recruitment.

Positions include interdisciplinary training, summer schools and yearly international meetings.

Please send a CV and cover letter by email to the appropriate organization (see individual project application deadlines).

*Monthly salary is a gross amount including employer costs of employee according to MSCA ITN rules, salary will be paid in currency of respective country.

Further information can be found on www.pearrl.eu

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