**Call for WEISS Health Challenges 2020**

**Guidance**

This call is open to doctors, nurses, allied health professionals, managers and commissioners involved in health care at UCL-affiliated institutions and working in the following areas of surgery/intervention:

* Anaesthetics
* Cardiac and vascular
* Gastrointestinal
* Hepatobiliary
* Musculoskeletal
* Neurosurgical/CNS
* Paediatric
* Radiology
* Urological
* Women’s Health

WEISS researchers will help you develop a solution to your challenge. They will work in partnership with you to make sure the new technology, device, or innovation will really work for you, your colleagues and your patients.

The following Research Platforms are currently available to help co-design solutions:

* **Surgical and Interventional Robotic Assistants (SIERRA) (lead: Prof Dan Stoyanov)**: To develop and link robotic assistants to imaging and sensing devices and to the algorithm capabilities within the Centre.
* **All Optical Ultrasound (lead: Prof Adrien Desjardins)**: High frequency, miniature ultrasound catheters can be invaluable for guiding minimally invasive medical procedures by visualising tissue from within the human body.
* **Endoscopic Imaging and Vision (EndoVI) (lead: Prof Dan Stoyanov)**: To translate computational techniques developed for endoscopic imaging into clinical systems that form part of first-in-man studies.
* **Miniature Sensors and Nanoengineered Coatings (lead: Prof Manish Tiwari)**: To underpin a transformation in surgical and interventional field by exploiting innovations in miniature, multiplexed and multimodal sensing and nanoengineered surface treatment strategies.
* **Photoacoustic Imaging Instrumentation (lead: Prof Paul Beard)**: Photoacoustic imaging will be translated for use in interventional medicine. This will be achieved by engineering the instrumentation so that it is suitable for first-in-man use for guiding fetal surgery, laparoscopic liver surgery and pre-treatment planning for cancer management.
* **Surgical Navigation Platform with Python (SNAPPY) (lead: Dr Matt Clarkson)**: The focus is on software components to facilitate tracking, image acquisition using devices such as ultrasound or video capture, calibration and real-time processing.
* **Simulation Platform for the dEvElopment of new surgical Devices and Optimisation of Personalised Clinical Procedures (SPEEDOP) (leads: Dr Rui Loureiro and Prof Vanessa Diaz)**: Development of novel surgical tools and techniques and for the optimisation of personalised clinical procedures will bridge the gap between theory/concept and practice for development of new tools and clinical techniques.
* **Advanced Ultrasound Imaging Modes for Interventional Applications (ADVUSIMIA) (lead: Prof Dean Barratt)**: A suite of software tools, code-based tutorials and associated guidance documents that collectively form a comprehensive toolkit to enable researchers to quickly and easily acquire ultrasound image data in a clinical setting using both standard and non-standard imaging modes.

All research platforms are supported by a clear translation strategy to support concept-to-product research for maximum impact, made possible by the innovation support themes:

* **System Integration**: Linking our fundamental research themes together and ensuring sustainability and scalability of our developments
* **Health Technology Assessment**: Evaluating the clinical impact of the Centre's technology and relying on our hub-and-spoke model with key clinical satellites and our international partners
* **(Micro)electronics for sensing, imaging and robotics in interventional sciences**: Microelectronics expertise is crucial to shorten the translational timeline for a number of WEISS platforms focusing on miniature sensing, imaging and robotics
* **Quality Management**: Implementing best practice in our design, development and evaluation work to ensure safety of the devices we translate to the clinic and lower the barrier of technology transfer
* **Human Systems**: Introducing training and developing rich accounts of user practice and needs and prototyping and testing novel user interfaces to advanced imaging systems

We expect to fund approximately 3-5 awards for this call, with the following possible outcomes:

1. Proposal(s) shortlisted for 50% WEISS funded fellowship (1-2 years), at ST level 3-7 – estimated at £40,000 per annum.
2. Proposal(s) shortlisted for a pump-prime award to support future applications to other funders, up to £20,000 per project.
3. Proposal(s) shortlisted for PPI (public/patient involvement) support with WEISS funds, to help refine the clinical question/challenge to address, up to £2,000 per project.

**Application Process**

**Phase 1 – Application Form**

Each applicant may submit up to two applications to the WEISS Health Challenge by **23:59 on Wednesday 15 January 2020**.

Each application requires a WEISS Co-Investigator as a champion. Priority will be given to applications where the champion is a clinical Co-Investigator. Please refer to our website for a list of all WEISS Co-Investigators: <https://www.ucl.ac.uk/drupal/site_interventional-surgical-sciences/about>

We prefer if applicants choose which WEISS platform(s) would best address the problem and produce innovative solution(s). A WEISS platform lead may also to volunteer to tackle to the problem.

The applicants are invited to consider and describe if they could match-fund any WEISS support with departmental resources or via collaboration with industry.

**Phase 2 – Presentation**

A WEISS Board (clinical director, Co-Investigators, PPI Coordinator) will shortlist applications for oral presentation and discussion; feedback and guidance will be provided to help inform the presentations.

Applicants will present the challenge and bid to the WEISS Board in late February 2020.

For all inquiries or to discuss your application, please contact Dr Dimitris Siasakos ([d.siasakos@ucl.ac.uk](mailto:d.siasakos@ucl.ac.uk)).

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**Application Form**

Please use this form to describe a specific issue or challenge which you are currently facing in your area of healthcare delivery. Shortlisted proposals will be invited to present their challenge to a panel of senior WEISS researchers.

The deadline for submission is **23:59 on Wednesday 15 January 2020**. Please email your short CV (1-2 pages) and your completed application form to Su-Lin Lee ([su-lin.lee@ucl.ac.uk](mailto:su-lin.lee@ucl.ac.uk)).

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| **Applicant Details** | |
| **Name** |  |
| **Job Title** |  |
| **Department** |  |
| **Employer** |  |
| **Telephone** |  |
| **E-Mail** |  |
| **WEISS Support**  Please identify your WEISS champion and the platform(s) with which you would like to collaborate. | |
| **WEISS Champion** |  |
| **Proposed Platform(s)** |  |
| **Challenge Title (max 20 words)** | |
|  | |
| **Challenge (max 300 words)**  Please describe the specific healthcare problem which needs addressing. | |
|  | |
| **Impact Summary (max 500 words)**  How does this issue impact on you, your colleagues and your patients?  Can you estimate how many patients or staff are affected by this problem?  Can you describe any associated financial implications for the NHS or patients? | |
|  | |
| **Pathway to Impact (optional – max 500 words)**  Describe how the solutions/innovations would address the healthcare challenge and how you will engage relevant public groups in the project to achieve your desired impact (this may be at any and all stages of the research). | |
|  | |
| **Departmental / other support for the bid**  Please describe other funds or sources of support for the project, if shortlisted.  Examples include existing collaboration with the industry, availability of matched funds, synergy with current projects/initiatives/teams, departmental reviews confirming the challenge is a top priority etc. | |
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| **References (optional)** | |
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| **Desired Outcome** | |
| 50% WEISS funded fellowship (1-2 years)  Pump-prime award to support future applications to other funders  PPI (public/patient involvement) support  Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |

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| **Applicant Signature** | | |
| I declare that the information given on this form is complete and correct. | | |
| Name (print): | Signature: | Date: |