Background
The Data Science Institute (DSI) was established in 2014 as the College’s 5th cross-Faculty Institute. The DSI provides a focal point for multidisciplinary data-driven research, supplying technology support for partners, and educating the next generation of data scientists.

This year, the Data Science Institute has established a research fund to be used for pilot projects in data science. The aim of the fund is to enable DSI Fellows to obtain preliminary results and data which can then be used in applications for further research funding from charities, RCUK or government bodies.

Following the launch of the DSI Machine Learning Lab, the DSI are now soliciting applications from across the College for pilot projects within the field of probabilistic modelling.

Recent efforts in machine learning have addressed the problem of learning from massive amounts of data. We now have highly scalable solutions for problems in object detection and recognition, machine translation, text-to-speech, recommender systems, and information retrieval, all of which attain state-of-the-art performance when trained with large amounts of data. In these domains, the challenge we now face is how to learn efficiently with the same performance in less time and with less data. Other problem domains, such as personalized healthcare, robot reinforcement learning, sentiment analysis, and community detection, are characterized as either small-data problems, or big-data problems that are a collection of small-data problems. The ability to learn in a sample-efficient manner is a necessity in these data-limited domains. Collectively, these problems highlight the increasing need for data-efficient machine learning: the ability to learn in complex domains without requiring large quantities of data. Probabilistic modelling is an important part of data-efficient machine learning and statistical inference when data is scarce. Accounting for uncertainty in modelling, prediction of long-term consequences and decision making is critical in these situations. Application areas include healthcare, robotics, optimization, finance and sentiment analysis.

Project criteria
The scheme will support research projects:

1. Between 1-5 months
2. In the research area of probabilistic modelling
3. With a Principle Investigator who be based at Imperial College, has a permanent contract with the College and is a member of the DSI Fellows scheme.
4. Up to £20k per project funding direct costs only.
5. Staff and non-staff costs can be included

Funding
A total funding pot of approximately £100k is available for projects running until January 2019. Funds will be awarded for direct costs only and can only be spent on activities that fit the purpose of this call. Funding can be applied for both staff and non-staff costs. The scheme will not support:
1. Directly incurred or indirect costs
2. Travel costs in excess of £1k
3. Applications for funding in excess of £20k
4. New equipment, including staff laptops or servers
5. PhD student bursaries or tuition fees
6. Projects which intend to subsequently receive funding from Industry.
7. Any additional administration costs

The funding must be used to support activity at Imperial College only and must remain under the financial control of Imperial College London. All funds must be spent by 31 January 2019.

How to apply
Applications should be emailed to a.ashley-smith@imperial.ac.uk

Applications should have a Principal Applicant based at Imperial and should contain:

- A completed Data Science Research Institute Seed Fund Application Form which includes:
  - A written case for support
  - A justification for resources
  - Relevant experience of applicant and co-applicants
- A one page financial summary: applications should provide information on the requested costs using an InfoEd statement approved by the Department. As InfoEds will not be submitted and will remain as draft, an email confirming departmental approval should also be included in the application, however, proposals do not need to be reviewed by Research Services prior to submission
- CV of the Principal Investigator and Co-Investigators

Deadlines
Deadline for applications is 12 noon (GMT) on Tuesday 20th March 2018. Decisions are expected by Friday 20th April 2018. Projects will be able to commence from 1st June 2018 and should have started by 1st September 2018 at the latest.

Review and Selection of Applications
All eligible applications will be considered for funding by a panel under the direction of the Director of the Machine Learning Lab. Proposals will be ranked based on:

- Fit to project criteria above
- Novelty of proposed research
- Potential for the project to leverage further funding from charities, government bodies or RCUK.

Applications will be informed of the results of the funding meeting via email as soon as possible after the meeting. A formal letter confirming the outcomes will then be sent to Principal Applicants directly by the Chair. Feedback on unsuccessful applications will be limited unless the group decides that additional feedback is necessary or useful.

Accessing Funds
Information on how to access funds will be provided to successful applicants with their award letter.

Reporting
Each project will be required to complete a template report form which must be completed and returned to the DSI Management Committee at the end of the project. The report should provide
details of the funding provided, the results of the research, and how these have addressed the objectives of the call. The Committee should also be informed of subsequent applications submitted using the pilot data and whether or not they were successful.

The Data Science Institute support must be acknowledged in any outputs from this funding through Fellows including their DSI Fellow title on subsequent publications and within grant applications.

Contacts
Queries related to research field: m.deisenroth@imperial.ac.uk

Queries regarding to funding and application submission: a.ashley-smith@imperial.ac.uk