8th Microbial Bioinformatics Hackathon

DoubleTree by Hilton, Bath, UK: 11-13 September 2022

Registration form: https://tinyurl.com/microbinfiehackathon

Together with CLIMB-BigData and the BBSRC/FSA Food Safety Network we are organising the 8th Microbial Bioinformatics Hackathon in Bath, UK. This event is just before the 13th International Meeting on Microbial Epidemiological Markers (IMMEM XIII) [https://www.escmid.org/dates_events/escmid_conferences/immem_xiii/] which is also being held in Bath. The event is funded by the BBSRC international workshop fund.

We want to bring together international bioinformatics researchers, scientists and clinicians to collaborate and solve common problems that impact our community, as pathogens know no borders.

Event overview

The application of high-throughput sequencing to microbes is transforming our understanding of how pathogens and resistance genes emerge, evolve and spread. This helps to inform our understanding of microbes in the food chain, particularly pathogens, leading to safer food and healthier populations. Sequencing has delivering translational impact in public health labs in the rapid identification and surveillance of food-borne pathogens and detection, analysis and control of food-borne outbreaks.

However, it is clear that there are challenges in translating tools developed by bioinformaticians into robust and reliable standard operating procedures and workflows needed for public health. Here, we aim to bridge this gap by hosting a 3-day microbial bioinformatics hackathon in September 2022 in Bath. Its timing, and location, is scheduled before a major microbial genomic epidemiology surveillance conference (13th International Meeting on Microbial Epidemiological Markers (IMMEM XIII) [2]) to tap into the large number of international experts who will be in the city at that time. This is the 8th hackathon on microbial bioinformatics.

We aim to unite key internationally-renowned bioinformaticians with medical/molecular microbiologists, epidemiologists and clinicians to address targeted challenges in microbial bioinformatics. We aim to apply three operational approaches to specifically address global public health challenges of strategic relevance to BBSRC, including associated technical issues, as follows:
1. Antimicrobial resistance in the food chain
2. Benchmarking datasets for bioinformatics tool validation
3. Scaling biological informatics methods

We anticipate that this dynamically stimulating intellectual environment will not only establish synergistic relationships in the international microbial bioinformatics community but also deliver impact through the development of new open-source software tools, new bioinformatics workflows or working environments, and at least one open access peer-reviewed publication, all for the benefit of users around the world.

Are you interested in participating in the hackathon?

There are **30 places** available to attend this **in-person** hackathon. There is no fee for this event as it is funded by the BBSRC, however the participants will be selected to provide an

appropriate mix as regards gender, career level (aim to include early-career scientists), expertise and geographical spread. This is not a training course. At a minimum participants will be expected to have advanced knowledge of the Linux command line and have a good working knowledge of bioinformatics and genomics. Queries can be directed to climb-big-data@quadram.ac.uk

Bursaries

If you are selected, information will be provided on how to apply to a special bursary fund towards part of the costs of attending to ensure wide participation.

Time scales

Registration will close on the 15th of July 2022 and participants will be informed of selection by the 1st of August at the latest.

Agenda

The hackathon will begin each day at 9am and run until 5pm. Refreshments will be provided throughout the day, as will lunch. An event dinner will be held on the second evening to encourage collaboration through social interaction. Dinner on the other nights will be up to the participants.

Hackathon Activities

At the start of the hackathon, each attendee will present Powerpoint slides outlining challenges they encounter in their work. We will then initiate brainstorming on common challenges. Next, groups of 4-6 people, with at least one facilitator in each group, will each agree a single problem and plan on how to address it. Group members will work together for the remainder of the event on their chosen problem, with facilitators rotating between groups, as their skills and expertise are required.
On the last day there will be presentations from each group to wrap-up the hackathon and plan for further collaboration. The meeting will benefit from a dedicated Discord server and github organisation. During the event ad hoc panel discussions will be recorded with attendees and made available to the wider community through the Micro Binfie Podcast. We will write up a report of the event and certificates of attendance will be made available.

COVID-19 backup plan: If an in-person event is not feasible, it will move online. The members of the organising committee have run virtual hackathons in 2020 and 2021 on microbial bioinformatics and have the skills and knowledge to undertake this move at short notice.

Organising committee

Andrew Page, Quadram Institute Bioscience
Nabil-Fareed Alikhan, Quadram Institute Bioscience
Lee Katz, Centres for Disease Control and Prevention
Maria Traka, Quadram Institute Bioscience
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