The International Centre for Mathematical Sciences (ICMS), Isaac Newton Institute (INI), Newton Gateway to Mathematics and KTN have worked with various representatives from the mathematical sciences community to develop a Virtual Forum for Knowledge Exchange in the Mathematical Sciences (V-KEMS). The main aim has been to identify a range of virtual approaches that will help address challenges from business and industry, the third sector, and other groups outside academia. These challenges may be long-standing or may have arisen directly as a consequence of disruption to UK society caused by the COVID-19 pandemic. Many initiatives were already taking place to help provide infrastructure and resources to clinicians and others who were urgently helping to model the pandemic. The mechanisms for delivery include virtual study groups (VSGs), webinars and the formation of virtual teams of mathematicians. V-KEMS will continue operating in a virtual context to connect academic communities and help address urgent national challenges.

Those involved in taking V-KEMS activities forward are:

- David Abrahams - University of Cambridge
- Miguel Anjos - University of Edinburgh
- Chris Budd OBE - University of Bath
- Matt Butchers (previously KTN)
- Alan Champneys - University of Bristol
- Rebecca Hoyle - University of Southampton
- Joanna Jordan - Freelance Mathematics Knowledge Exchange
- Maha Kaouri - Newton Gateway to Mathematics
- Jane Leeks - Newton Gateway to Mathematics
- Clare Merritt - Newton Gateway to Mathematics
- Audrey Repetti - Heriot-Watt University
- Dawn Wasley - International Centre for Mathematical Sciences

In addition we have benefitted from invaluable contributions, guidance, steer and research from across the UK Mathematical Sciences community, and are continually welcoming new members.

Previous joint activities include:

- Recovery from the Pandemic: Transport Logistics – Virtual Study Group, 29th - 31st March 2022
- Communities for an Ageing Society – Virtual Study Group, 9th - 11th March 2022
- Post Covid-19 Recovery - Communities of the Future – Virtual Study Group, 12th - 14th January 2022
- Modelling Energy Systems and Resilience – Virtual Study Group, 8th - 9th November 2021
- Recovery from the Pandemic: Hospitality & Leisure – Virtual Study Group, 12th - 14th October 2021
- Covid-19 Safety in Large Events – Virtual Study Group, 13th - 15th July 2021
- Modelling Solutions to the Impact of COVID-19 on Cardiovascular Waiting Lists – Virtual Study Group, 2nd - 4th February 2021
- Feeding Vulnerable People – Virtual Study Group, 29th June - 1st July 2020
- Unlocking Higher Education Spaces – Virtual Study Group, 15th - 17th June 2020
Upcoming events include:

- The Public Perception of Science – Virtual Study Group, 18th - 20th May 2022
- RAMP Royal Society event, 13th June 2022
- End of RAMP Project event, 22nd - 23rd June 2022
- COVID-19 and the Environment, 29th June - 1st July 2022

Much of V-KEMS activity has focused on the development and delivery of Virtual Study Groups – a number of which have input directly to advice being developed by officials who have been working with Government in response to COVID-19. For example, Unlocking Higher Education Spaces helped provide input to dialogue between the Department for Education, the Department of Health and Social Care, Universities UK, the Scottish Government and the Welsh Government. Other activity has input to advice going to SAGE (Scientific Advisory Group for Emergencies) and SPI-M (Scientific Pandemic Influenza Group on Modelling).

We welcome involvement from the wider mathematical sciences community, so if you would like to collaborate on V-KEMS activities, please use the contact details below.

**Newton Gateway to Mathematics** (gateway@newton.ac.uk)

**International Centre for Mathematical Sciences** (knowledge.exchange@icms.org.uk)

**KTN** (info@ktn-uk.org)

For more information and how to contact us please visit our website: vkemsuk.org

Follow V-KEMS on Twitter to keep updated on all the joint activities: @v_kems