MMM Newsletter: December 2017

Our website is now updated - you can see the new page via this link: http://modmedmicro.nsms.ox.ac.uk
You can follow us on Twitter @modmedmicro
If are interested in joining our public engagement panel, please contact Dona Foster (dona.foster@ndm.ox.ac.uk)

News:

The NIHR Oxford Biomedical Research Center is supporting our Infection theme for a further three years. The aims of the project are to investigate methods to improve the speed and accuracy of diagnosis of infectious diseases by looking at the genetic code of bacteria and viruses; and to use anonymised electronic health records to understand patterns of infection in Oxfordshire (IORD: https://oxfordbrc.nihr.ac.uk/research-themes-overview/antimicrobial-resistance-and-modernising-microbiology/infections-in-oxfordshire-research-database-iord/)

Recently, two of our researchers used a new sequencing technology called 'Nanopore' to detect infection in joint fluids in under an hour. You can find out more here http://modmedmicro.nsms.ox.ac.uk/speeding-up-the-diagnosis-of-joint-infections/

Has the antibiotic course had its day
http://www.bmj.com/content/358/bmj.j3418
This BMJ article published in July 2017 was covered extensively by radio and news outlets including the BBC (http://www.bbc.co.uk/news/health-40731465) and informed evidence for the House of Commons debate pack during World Antibiotics Awareness week. In it, we discuss how little evidence there is to show how long people should take antibiotics for most infections and that more research is needed in this area. We also debunk the myth 'complete the course to avoid resistance'.

Work undertaken by the MMM group and Public Health England led to the launch this year of the first diagnostic test for Mycobacterial infection, including tuberculosis. The test, using whole genome sequencing, allows faster and more accurate diagnosis. https://oxfordbrc.nihr.ac.uk/england-world-leaders-in-the-use-of-whole-genome-sequencing-to-diagnose-tb/

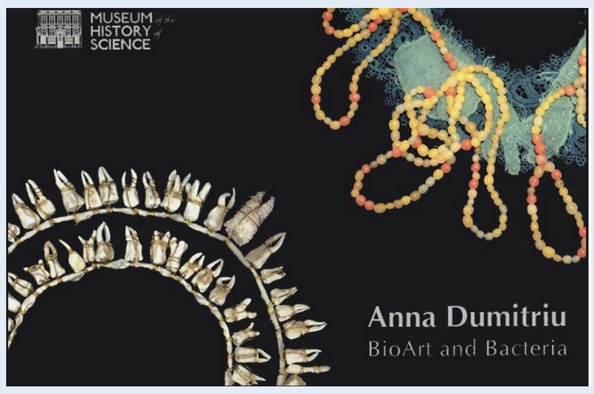
The group continues to work on tuberculosis with colleagues from Health Protection Research Unit, Cryptic consortium investigating tuberculosis around the world and the Oxford Biomedical Research Centre. You can hear Dr Tim Walker discuss the work and why tuberculosis continues to be a problem here: http://www.bbc.co.uk/guides/zpnp6yc

Antibiotic Review Kit

Antibiotics are essential to treat serious infections caused by bacteria. However, as you may have seen on the news, there is concern about bacteria becoming resistant to antibiotics. When patients in hospitals start antibiotics, it is recommended that they are reviewed 24 to 72 hours later to check they are still required. The ARK-Hospital programme aims to develop ways to help healthcare staff stop antibiotics at this review when they are no longer needed and test whether these measures reduce overall antibiotic use.
You can find out more about ARK at http://www.arkstudy.ox.ac.uk

Art works

Images on our webpages are all thanks to the current members of the MMM group who took part in our photography competition.



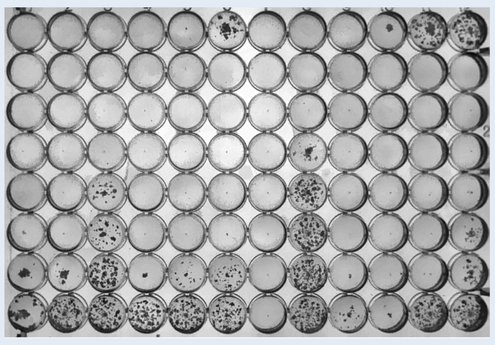
Visit Anna Dumitriu's BioArt and Bacteria exhibition at the Museum of History of Science in Oxford until 18 March 2018
http://www.mhs.ox.ac.uk/bioart/

The art created by Dr Nicola Fawcett is currently featured at a gallery in China. You can read about this amazing art made from poo at http://modmedmicro.nsms.ox.ac.uk/art-from-the-gut/

Get involved: Help us fight resistance to antibiotics with Bash the bug

http://bashthebug.net

The Cryptic project (http://www.crypticproject.org) is collecting over 100,000 Mycobacterium tuberculosis (known as TB) samples from around the world. The samples will be sequenced (have their genetic code read) and tested for whether the bug is sensitive to various antibiotics on a 96 well plate. After two or three weeks, the plate is examined to see if bacteria are growing or not and a photograph taken, like the one here.



We compare the results from the plates with the sequencing results to detect changes in resistance in the bacteria.
We need your help to accurately determine which antibiotics are effective for every one of the 100,000 TB samples. We will combine scientists opinions with those from our volunteers to get an accurate assessment of how sensitive each bug is to each of the 14 drugs. This is an example of 'citizen science'.

In 2017 BashTheBug won the National Institute for Health Research 'Let's Get Digital' Online Community Award.

We would like to thank all our fantastic volunteers who classify each of the images- there are still many more waiting!

You can find out about other 'citizen science' projects and sign up to help Bash The Bug at the website: https://www.zooniverse.org/projects/mrniaboc/bash-the-bug