Eⁱ **EPI**-interactive

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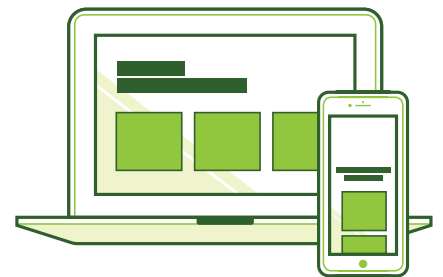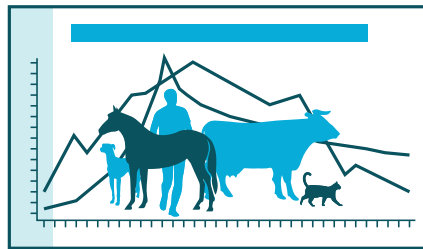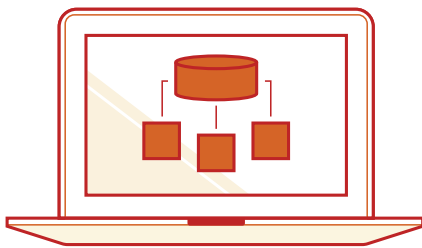**CAVEPM Post-Conference Workshop**

Supercharging Epidemiology with IT

Venue: University of Saskatchewan, Canada | **Date:** 4-6 June 2020

Facilitators: The workshop will be led by Dr. Uli Muellner (EPI-interactive Director - IT & Learning) and Dr. Petra Muellner (EPI-interactive Director - Science & Data)

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🌐 epi-interactive.com

DESCRIPTION

This 2.5 day workshop will provide an overview of how IT can support epidemiological activities from data collection to interactive data visualizations on the web. You will build your capability to collect and use data to inform decisions and communicate data-driven outputs with different stakeholder groups.

The course format will be highly interactive – a mix of presentations, exercises and group discussions. There will be laptop exercises, including a session on how to build an online data visualization in R Shiny. Neither of these will require prior coding experience.

WHO SHOULD ATTEND

Anyone with an interest in using IT tools efficiently to augment epidemiology and related disciplines. The course is not intended to make you an expert in IT, but rather to familiarize you with key approaches. You will learn how to ask critical questions, whom to involve and make more informed decisions on which IT approaches might be most helpful to you. The training will also provide guidance on how to transform manual processes into a digital format and streamline them with the help of software tools.

PROGRAM

AM session: 8.30am – 12 noon | **PM session:** 1.00pm – 4.30pm

DAY ONE

AM
Navigating the technology jungle

- Overview of how technology is used in (veterinary) epidemiology
- 10 IT concepts you should be familiar with, incl. cloud computing and virtualization, application programming interfaces (APIs), scaling, backup, recovery and security
- IT technologies and when to use them: open source vs. commercial products, overview of programming languages, e.g. R, Python, Java; overview of common web technologies, frameworks and libraries for data visualization

PM
The human side of things

- Usability matters: User Experience (UX) and User Interface design
- The Design Thinking Process and how it can help to solve problems creatively
- How to run an outward facing IT project: from stakeholder engagement to design mock-ups, testing, implementation and "getting it out there"

DAY TWO

AM
The data processing pipeline

- Case study: Work through the process from data acquisition to data cleaning, filtering, data representation and refinement to interacting with data
- Big data, machine learning and AI – what is this about and opportunities for epidemiology

PM
Connecting data with people

- Case study "Freedom from reporting": Improving accessibility of New Zealand public health data
- Providing decision-support and digitalization
- Improving communication between people and decision-makers through data
- How people use data dashboards
- Case study: Sharing research outputs with farmers

DAY THREE

AM
Data visualization & reporting

- The good bad and ugly – how to improve the impact of visualizations
- Practical Shiny R exercise: Building an R Shiny dashboard for the web – we will demonstrate best practices on how to get started and which tools to use; participants can gain hands-on experience in this session
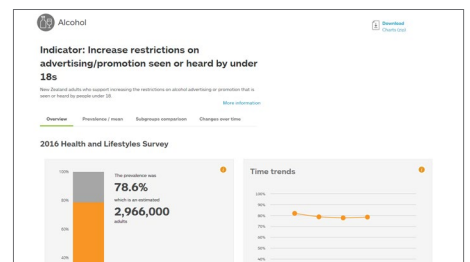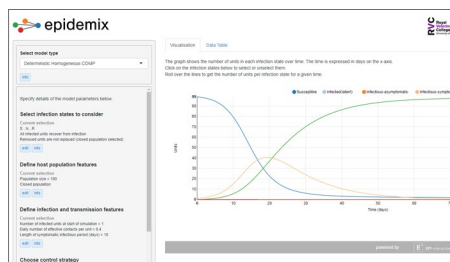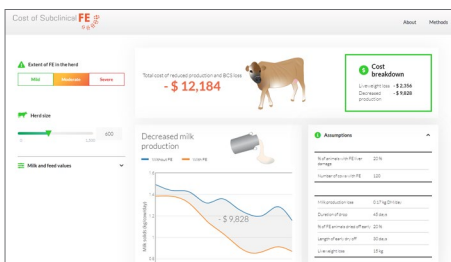- Case study: Building a dashboard for veterinary diagnostic laboratory data

REQUIREMENTS

None, other than a keen interest in the topic.

To complete the exercises the following software should be installed. Participants are welcome to partner up during the exercises.

Required software:

• Microsoft Excel

• R and R Studio (detailed instructions will be provided)

REGISTRATION

Please register via the CAVEPM 2020 conference website:
🌐 wcvm.usask.ca/education/cavepm.php

Contact for questions and further information:

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