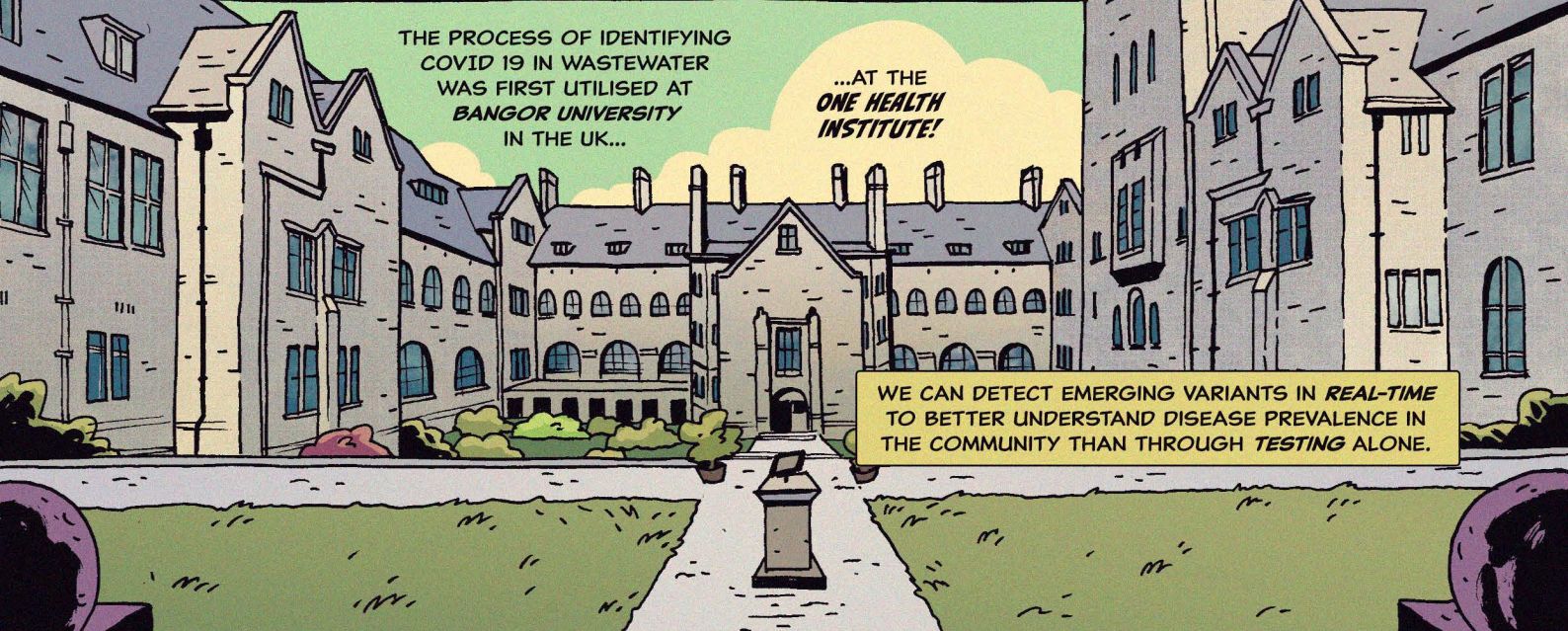
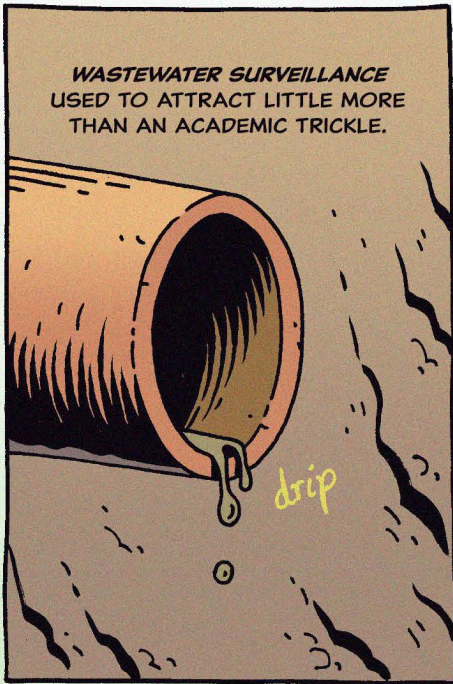


# The "WASTEWATER DETECTIVES" A One Health Story

COMIC BY RIK WORTH & JORDAN COLLVER  
WITH COLOURS BY JP JORDAN

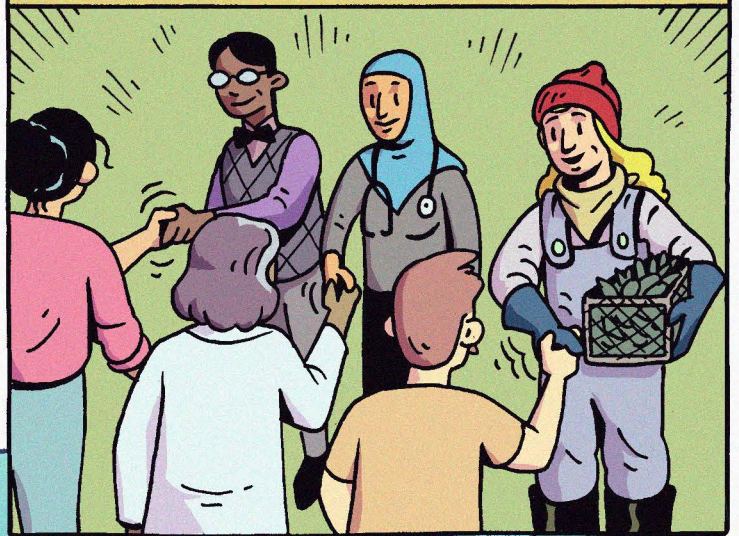
IN COLLABORATION WITH  
ELLIE JAMESON & AMY ELLISON  
ONE HEALTH AT BANGOR UNIVERSITY  
FUNDED BY WALES INNOVATION NETWORK



ONE HEALTH BANGOR'S MISSION IS TO USE INTERDISCIPLINARY RESEARCH TO UNDERSTAND AND SOLVE THE ISSUES OF HUMAN HEALTH, BIODIVERSITY LOSS AND CLIMATE CHANGE...



AND WORK WITH ACADEMIC COMMUNITIES, PUBLIC HEALTH AGENCIES AND INDUSTRY EXPERTS TO MAKE EFFECTIVE AND SUSTAINABLE CHANGE.



TAKE SHELLFISH, FOR EXAMPLE. THEY'RE FILTER FEEDERS AND EAT EVERYTHING, INCLUDING VIRUSES, IN TINY DOSES THAT BIOACCUMULATE - ANYTHING FROM HEPATITIS TO NOROVIRUS.

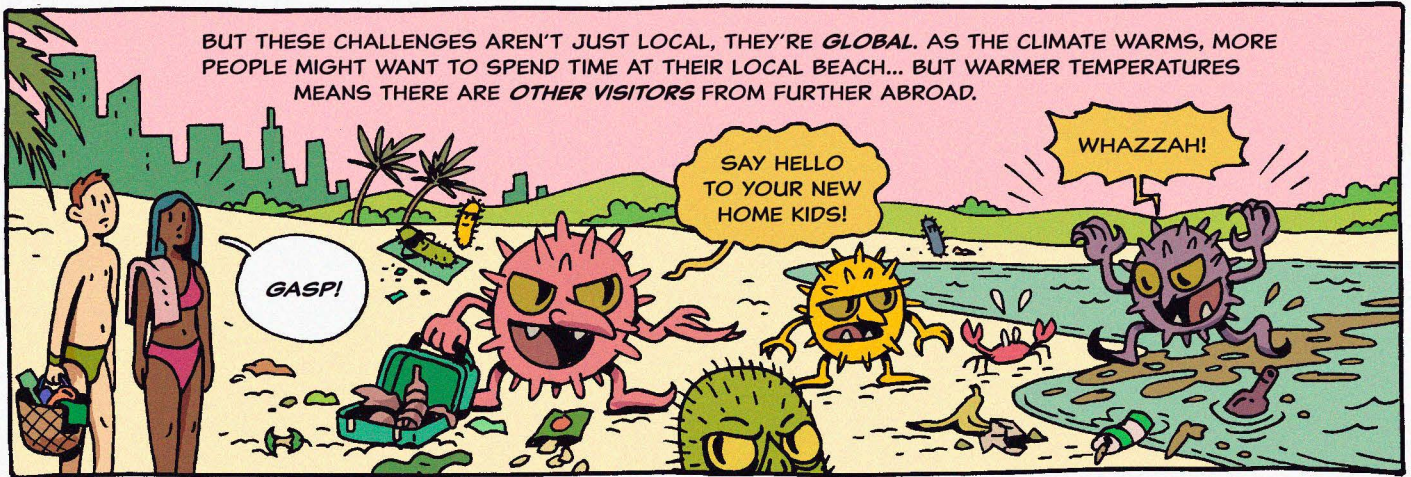


THEN THEY'RE FARMED. AND ALTHOUGH THE SHELLFISH ARE CLEANED, THOSE VIRUSES CAN STILL GET THROUGH TO HUMANS...



THROUGH MONITORING, WE CAN PREDICT OUTBREAKS IN COMMUNITIES - WORKING WITH INDUSTRY TO ENSURE CONTAMINATED SHELLFISH ISN'T SOLD, AND WITH PUBLIC HEALTH TO DEVELOP POLICIES.





BUT THESE CHALLENGES AREN'T JUST LOCAL, THEY'RE *GLOBAL*. AS THE CLIMATE WARMS, MORE PEOPLE MIGHT WANT TO SPEND TIME AT THEIR LOCAL BEACH... BUT WARMER TEMPERATURES MEANS THERE ARE *OTHER VISITORS* FROM FURTHER ABROAD.

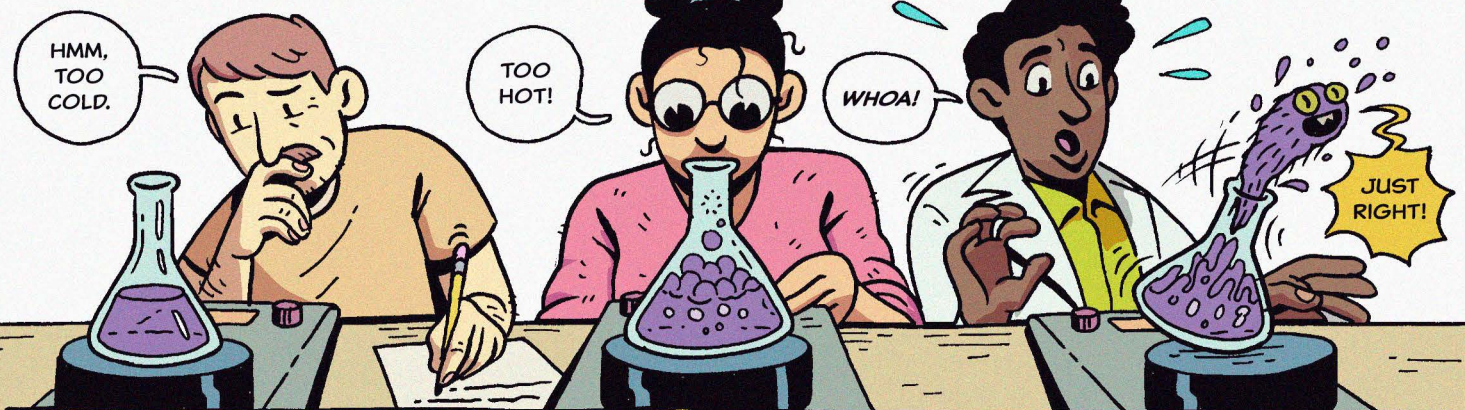
SAY HELLO TO YOUR NEW HOME KIDS!

WHAZZAH!

GASP!

TROPICAL VIRUSES AND BACTERIA WILL FIND NEW HOMES IN OUR WATERS. AND AS COVID PROVED, OUR COMMUNITIES ARE EASILY CAUGHT UNAWARE BY NEW DISEASES.

OUR RESEARCH - JUST ONE OF MANY - LOOKS AT HOW PATHOGENS REACT TO DIFFERENT TEMPERATURES.



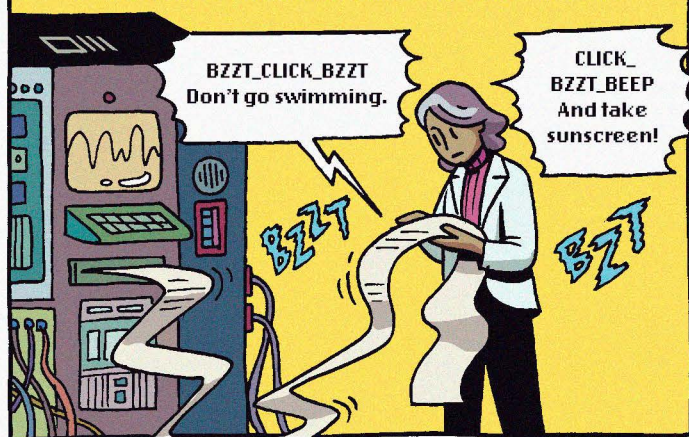
HMM, TOO COLD.

TOO HOT!

WHOA!

JUST RIGHT!

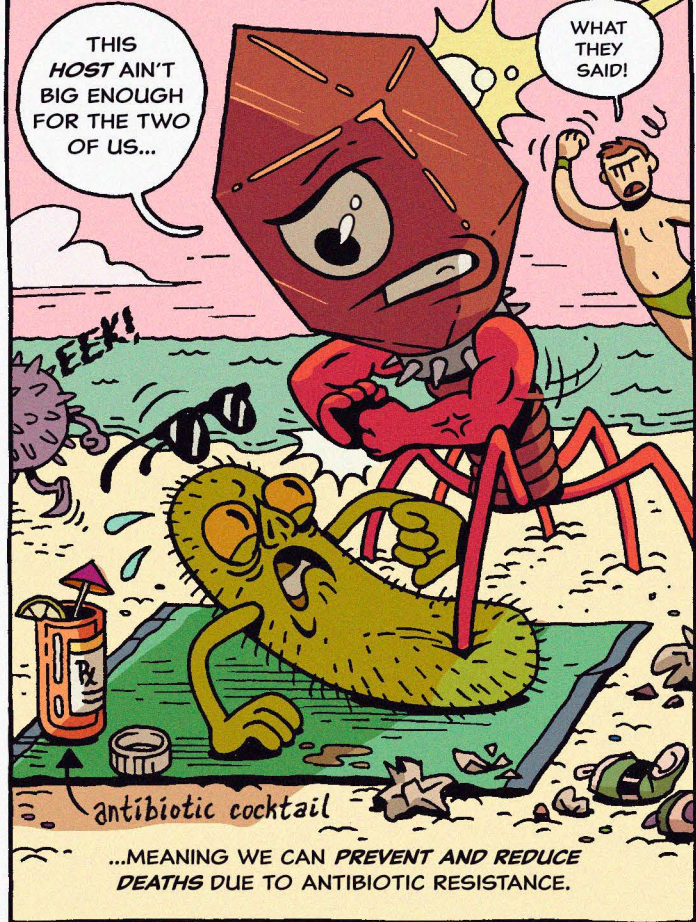
THIS DATA IS FED INTO *COMPUTER MODELS* THAT CAN FORECAST POTENTIAL RISKS TO HUMAN HEALTH.



BZZT\_CLICK\_BZZT  
Don't go swimming.

CLICK\_BZZT\_BEEP  
And take sunscreen!

BY ISOLATING HELPFUL *BACTERIOPHAGES* (VIRUSES) IN SEWAGE, AND FINDING THE ONES HARMLESS TO HUMANS AND ANIMALS, WE CAN ATTACK ANTIBIOTIC RESISTANT BACTERIA...



THIS *HOST* AIN'T BIG ENOUGH FOR THE TWO OF US...

WHAT THEY SAID!

EEEK!



WE'RE ALSO USING VIRUSES TO OUR ADVANTAGE.

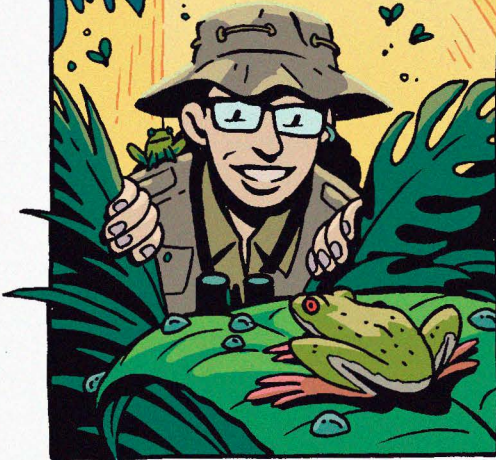
antibiotic cocktail

...MEANING WE CAN PREVENT AND REDUCE DEATHS DUE TO ANTIBIOTIC RESISTANCE.

BANGOR IS WELL SUITED TO THE *ONE HEALTH* APPROACH THANKS TO OUR OUTSTANDING...

**SCHOOL OF ENVIRONMENTAL AND NATURAL SCIENCE**

Home to zoologists, ecologists and environmental scientists (esp. forestry and soils).



**SCHOOL OF OCEAN STUDIES**

Oceanography, animal behavior, aquaculture (mussels, oysters, etc.)



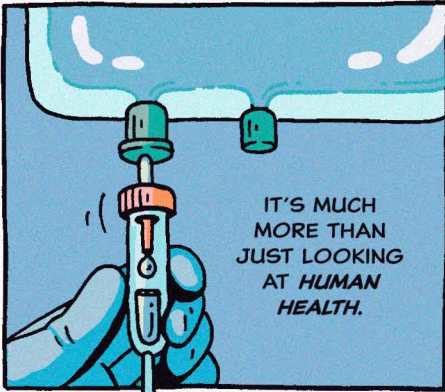
**and SCHOOL OF HEALTH SCIENCES**

Medical, health, social care, social science, health economics.



ALL SUPPORTED BY WALES' LEADING ENVIRONMENTAL, SUSTAINABILITY AND HEALTH INFRASTRUCTURE.

IT'S MUCH MORE THAN JUST LOOKING AT HUMAN HEALTH.



BANGOR'S *ONE HEALTH* RESEARCH INVESTIGATES THE HEALTH OF OUR ENVIRONMENT, WILDLIFE, AND HUMANS...



...TO STUDY HOW THESE THREE THINGS ARE *INEXTRICABLY INTERLINKED*.

BY MAKING POSITIVE CHANGES IN JUST *ONE AREA*...

...WE CAN SEE THE RIPPLE EFFECT...

...ACROSS ENTIRE ECO-SYSTEMS.

WE ALL SHARE *ONE PLANET*.

WE ALL SHARE... *ONE HEALTH*.

