

**Forum for Microbiology Education**  
**Workshop Abstracts**

**Monday, June 18th, 2018**  
**1:00 – 4:30 PM**

**Hands-on workshop**

**Practical ways to develop and use active and engaging activities in your classes or labs**

Tanya NOEL, University of Windsor, Windsor, ON and Josie LIBERTUCCI, University of Michigan, Ann Arbor, MI

**MicroFOME sessions:**

**Using common read to facilitate common interest: Strategies for engaging small, medium, and large size biology classes in book discussions**

Anni MOORE and Matthew NIELAND, Morningside College, Sioux City, IA

**“My Favourite Microbe” – A creative assignment for exploring microbial diversity**

Nicole SUKDEO and Keith N. EGGER, University of Northern British Columbia, Natural Resources and Environmental Studies Institute, Prince George, BC

**Tips on designing online courses in biology**

Jessica HILL, University of Toronto, Toronto, ON

## Poster Abstract Titles

### POSTER SESSION I

Tuesday, June 19th, 2018

3:00 – 5:00 PM

Presenters to be by their posters:

**Odd number** posters from **3:00 – 4:00 PM** \*\* **Even number** posters from **4:00 – 5:00 PM**

Note: **AEM:** Applied Environmental Microbiology

**II:** Infection and Immunity | **MGCM:** Molecular Genetic Cellular Microbiology

### Applied Environmental Microbiology

#### **AEM 001**

##### **Antimicrobial Resistance Pattern of Bacteria Isolated from Laboratory Workers' White Coats of Princess Nourah bint Abdulrahman University in KSA**

F AL-JUAIB, Biology Department, Faculty of Science, Princess Nourah Bint Abdulrahman University, Riyadh, Saudi Arabia, G AL-HARBI<sup>1</sup>, J AL-ABDULLH<sup>1</sup>, S QALAM<sup>1</sup>, W AL-ENAZI<sup>1</sup>, A AL-TURAIQI<sup>1</sup>, A AL-GAMMASHI<sup>1</sup>, A AL-MUTAIRI<sup>1</sup>, E EBRAHIM<sup>1</sup>, Kawther AABED<sup>1</sup>, <sup>1</sup>Biology Department, Faculty of Science, Princess Nourah Bint Abdulrahman University, Riyadh, Saudi Arabia

#### **AEM 002**

##### **Mitogenomics of the ophiostomatoid fungi**

Talal George ABOUD, University of Manitoba, A ZUBAER<sup>1</sup>, A WAI<sup>1</sup>, G HAUSNER<sup>1</sup>, <sup>1</sup>University of Manitoba

#### **AEM 003**

##### **Creating a GFP labelled Agrobacterium strain as a tool to capture mobile ciprofloxacin resistance plasmids from human impacted environments**

Zainab AHMEDSEIDI, University of Regina, C.K. YOST<sup>1</sup>, <sup>1</sup>University of Regina

#### **AEM 004**

##### **Bacterial communities associated with the surface of fresh matured treated and untreated sweet bell pepper (*Capsicum annuum*)**

Olayinka AIYEGORO, Agricultural Research Council- Animal Production, TP MAMPHOGORO<sup>1</sup>, M MABOKO<sup>2</sup>, C KAMUTANDO<sup>3</sup>, <sup>1</sup>Agricultural Research Council- Animal Production, <sup>2</sup>Agriculture Research Council-Vegetable and Ornamental Plants, <sup>3</sup>University of Pretoria, Centre for Microbial Ecology and Genomics

#### **AEM 005**

##### **Identifying genes associated with the *cmd* operon which are important for cell envelope function in *Rhizobium leguminosarum***

Mir AKTER, University of Regina, B.J. PERRY<sup>2</sup>, K.D. NEUDORF<sup>1</sup>, C.K. YOST<sup>1</sup>, <sup>1</sup>University of Regina, <sup>2</sup>University of Otago

#### **AEM 006**

##### **The *Clostridium difficile* surface layer protein A (SlpA) serves as a general receptor for bacteriophage infection**

Marie-Maude ALLEN, Université de Sherbrooke, M OSPINA-BEDOYA<sup>1</sup>, J KIRK<sup>2</sup>, R FAGAN<sup>2</sup>, G GOVONI<sup>3</sup>, LC FORTIER<sup>1</sup>, <sup>1</sup>Université de Sherbrooke, <sup>2</sup>University of Sheffield, <sup>3</sup>AvidBiotics Corp.

#### **AEM 007**

##### **Control of Salmonella Newport on Cherry tomato using a cocktail of lytic bacteriophages and studying the virulence fitness of the developed resistant mutants**

Hany ANANY, Agriculture and Agri-Food Canada, N.K. EL-DOUGDOUG<sup>2</sup>, S. CUCIC<sup>2</sup>, A.G.ABDELHAMID<sup>2</sup>, M.W. GRIFFITHS<sup>2</sup>, <sup>1</sup>Agriculture and Agri-Food Canada, <sup>2</sup>University of Guelph

#### **AEM 010**

##### **Exploring the Biosynthetic Potential of Lichen Fungi**

Robert BERTRAND, University of Manitoba, M ABDEL-HAMEED<sup>1</sup>, JL SORENSEN<sup>1</sup>, <sup>1</sup>University of Manitoba

#### **AEM 011**

##### **A complex community of viruses and virophages infect the alga *C. parva***

Jenna BLACK, University of Toronto Mississauga, J.M.A. STOUGH<sup>1</sup>, S.W. WILHELM<sup>1</sup>, S.M.SHORT<sup>1</sup>, <sup>1</sup>University of Toronto Mississauga

#### **AEM 012**

##### **CR-10, A Safe Novel Tool for the Control of Phytopathogenic Fungi and Superbugs**

VRR VELAZQUEZ-ROBLEDO, Química Internacional Aplicada S.A. de C.V Lab, OM OULÉ<sup>2</sup>, ELOR ESCALANTE-LÓPEZ<sup>1</sup>, PLK PARRA-LEÓN<sup>1</sup>, Éric BOUCHARD<sup>2</sup>, DM DICKAMAN<sup>2</sup>, <sup>1</sup>Química Internacional Aplicada S.A. de C.V Lab, <sup>2</sup>Collège universitaire de Saint-Boniface

#### **AEM 013**

##### **Detection and molecular characterisation of E. coli O26 from cattle faecal samples in the North-West Province of South Africa**

Emmanuel Wihkocho BUMUNANG, Agriculture and Agri-Food Canada, Lethbridge Research Centre, TA MCALLISTER<sup>1</sup>, K STANDFORD<sup>1</sup>, YD NIU<sup>2</sup>, A KURMAR<sup>3</sup>, CN ATEBA<sup>3</sup>, <sup>1</sup>Agriculture and Agri-Food Canada, Lethbridge Research Centre, <sup>2</sup>University of Calgary, <sup>3</sup>North-West University, Mafikeng Campus

#### **AEM 014**

##### **Isolation, characterization, and genomic study of a bacterial strain isolated from TPH and PAH polluted soil**

Ilaria CHICCA, University of Pisa, LCS LA CHINA<sup>2</sup>, BS BECARELLI<sup>1</sup>, SG SIRACUSA<sup>1</sup>, DGS DI GREGORIO<sup>1</sup>, LD LEVIN<sup>3</sup>, <sup>1</sup>Department of Biology, University of Pisa, <sup>2</sup>Department of Life Sciences, University of Modena and Reggio Emilia, <sup>3</sup>University of Manitoba

#### **AEM 015**

##### **Biodegradation of crude petroleum oil by lipase producing fungi isolated from olive oil mill effluent site**

Ukaeje CONFIDENCE, Cyprus International University, M.A ABDUELBASET<sup>0</sup>, <sup>1</sup>Cyprus International University

#### **AEM 016**

##### **Hurdles to Characterizing the Microbial Community in Oligotrophic Bentonite Clay**

Spencer CROOK, Ryerson University, O KROUKAMP<sup>1</sup>, M HAUSNER<sup>1</sup>, G WOLFAARDT<sup>1</sup>, <sup>1</sup>Ryerson University

#### **AEM 019**

##### **Redefinition and unification of the SXT/R391 family of integrative and conjugative elements**

Romain DURAND, Université de Sherbrooke, AB BIOTEAU<sup>1</sup>, VB BURRUS<sup>1</sup>, <sup>1</sup>Université de Sherbrooke

#### **AEM 021**

##### **Analysis of microbial community composition on bird feeders for wildlife management**

Madison ELLIS, Thompson Rivers University, EM BOTTOS<sup>1</sup>, BM MCAMMOND<sup>1</sup>, MW REUDINK<sup>1</sup>, JD VAN HAMME<sup>1</sup>, <sup>1</sup>Thompson Rivers University

#### **AEM 022**

##### **Screening fungi for antimicrobial compounds**

A. KURDI, University of Manitoba, Raelene ENGELBERG<sup>1</sup>, A. DANIELSON<sup>1</sup>, S. SHAHHAT<sup>1</sup>, K. DUAN<sup>1</sup>, M. SINGH<sup>1</sup>, G. HAUSNER<sup>1</sup>, A. KUMAR<sup>1</sup>, <sup>1</sup>University of Manitoba

#### **AEM 023**

##### **Effect of water distribution method on microbial quality of drinking water in three First Nation reserves in Manitoba, Canada**

Geethani ERAGODA ARACHCHILAGE, University of Manitoba, A FARENHORST<sup>1</sup>, F ZVOMUYA<sup>1</sup>, R MI<sup>1</sup>, <sup>1</sup>University of Manitoba

#### **AEM 024**

##### **Plasmid Diversity in Wastewater Influent Revealed Through Plasmid Enriched Metagenome Analysis**

Claire FREEMAN, University of Regina, R.A. KELLN<sup>1</sup>, C.K. YOST<sup>1</sup>, <sup>1</sup>University of Regina

#### **AEM 025**

##### **Investigating the atypical central metabolism of the cellulolytic *Ruminiclostridiumthermocellum*: characterization of key glycolytic enzymes and targeted metabolomics**

Alan FROESE, University of Manitoba, S. DALEY<sup>1</sup>, M. TAILLEFER<sup>1</sup>, R. SPARLING<sup>1</sup>, <sup>1</sup>University of Manitoba

#### **AEM 026**

##### **Interaction of the biocontrol agent *Pseudomonas chlororaphis* strain PA23 with the grazing predator *A. castellanii***

Akrm GHERGAB, University of Manitoba, K BRASSINGA<sup>1</sup>, T DE KIEVIT<sup>1</sup>, <sup>1</sup>University of Manitoba

## **AEM 036**

### **The lung microbiome and antimicrobial resistome of bovine respiratory disease mortalities**

Devin HOLMAN, Agriculture and Agri-Food Canada, Lacombe Research Centre, CL KLIMA<sup>2</sup>, BJ RALSTON<sup>3</sup>, K STANFORD<sup>3</sup>, TW ALEXANDER<sup>4</sup>, TA MCALLISTER<sup>4</sup>, <sup>1</sup>Agriculture and Agri-Food Canada, Lacombe Research Centre, <sup>2</sup>Feedlot Health Management Services, <sup>3</sup>Alberta Agriculture and Food, <sup>4</sup>Agriculture and Agri-Food Canada, Lethbridge Research Centre

## **AEM 087**

### **The Pollution Particulate Concentrator (PoPCon): a platform to investigate the effects of particulate air pollutants on viral infectivity**

Nicolas GROULX, University of Toronto, BU URCH<sup>1</sup>, CD DUCHAINE<sup>2</sup>, SM MUBAREKA<sup>1</sup>, JAS SCOTT<sup>1</sup>, <sup>1</sup>University of Toronto, <sup>2</sup>Université de Laval

## **Infection & Immunity**

### **II 001**

#### **Potential antimicrobial activity of *Punicagranatum* extracts on *Acinetobacter baumannii* and *Pseudomonas aeruginosa***

Yanelis ACEBO GUERRERO, University of Manitoba, M HARIDOSS<sup>2</sup>, R VAIDYANATHAN<sup>2</sup>, A KUMAR<sup>1</sup>, <sup>1</sup>University of Manitoba, <sup>2</sup>Dr. MGR Educational and Research Institute, Chennai, TN, India

### **II 002**

#### **Data and Curation in the Comprehensive Antibiotic Resistance Database**

Brian ALCOCK, McMaster University, AR RAPHENYA<sup>1</sup>, AN SHARMA<sup>1</sup>, KK TSANG<sup>1</sup>, TTY LAU<sup>1</sup>, A HERNÁNDEZ-KOUTOUCHEVA<sup>0</sup>, AG MCARTHUR<sup>1</sup>, <sup>1</sup>McMaster University

### **II 003**

#### **Genomic Comparison of *Mycobacterium avium* Recovered from Respiratory Specimens and Household Plumbing**

David ALEXANDER, University of Manitoba, L LANDE<sup>2</sup>, JO FALKINHAM III<sup>3</sup>, RJ WALLACE JR<sup>4</sup>, E IAKHIAEVA<sup>4</sup>, S OLSHEFSKY<sup>5</sup>, ADS CAMERON<sup>5</sup>, <sup>1</sup>University of Manitoba, <sup>2</sup>Lankenau Institute for Medical Research, <sup>3</sup>Virginia Tech, <sup>4</sup>The University of Texas Health Science Center, <sup>5</sup>University of Regina

### **II 004**

#### **A Pseudo-Outbreak of Carbapenemase-Producing *Pseudomonas* in a Hospital Intensive Care Unit**

DC ALEXANDER, University of Manitoba, J TOMLINSON<sup>2</sup>, D MCDONALD<sup>2</sup>, C DOERKSEN<sup>2</sup>, V TRAN<sup>1</sup>, HJ ADAM<sup>1</sup>, A WALKTY<sup>1</sup>, J EMBIL<sup>1</sup>, <sup>1</sup>University of Manitoba, <sup>2</sup>Health Sciences Centre Winnipeg

### **II 005**

#### **Serotyping of *Mannheimia haemolytica* isolated from European cattle with bovine respiratory disease**

Sara ANDRES-LASHERAS, Agriculture and Agri-Food Canada, Lethbridge Research Centre, GV VERTENTEN<sup>2</sup>, RZ ZAHEER<sup>1</sup>, CK KLIMA<sup>1</sup>, TAM MCALLISTER<sup>1</sup>, CW WILHELM<sup>3</sup>, CCG GELFERT<sup>4</sup>, <sup>1</sup>Agriculture and Agri-Food Canada, Lethbridge Research Centre, <sup>2</sup>MSD Animal Health, Boxmeer, The Netherlands, <sup>3</sup>MSD Animal Health, Schwabenheim, Germany, <sup>4</sup>Intervet GesmbH, Vienna, Austria

## II 007

### **HIV-associated Immune Exhaustion: Can we reverse this dysfunction with a LAG-3 blockade system?**

Allison BALASKO, University of Manitoba, C GRAYDON<sup>1</sup>, M KOWATSCH<sup>1</sup>, J JUNO<sup>2</sup>, J LAJOIE<sup>1</sup>, K FOWKE<sup>1</sup>, <sup>1</sup>University of Manitoba, <sup>2</sup>University of Melbourne

## II 008

### **Effect of Different Temperatures, Salinity and pH on the Emergence of SCV *Staphylococcus aureus* and Detection of SCVs in Commercial Pork Products**

David BECK, Tennessee Technological University, Cookeville, TN, USA, K. DUNHAM<sup>1</sup>, N.A. NASH<sup>1</sup>, P. NGO<sup>1</sup>, L. GUNNELS<sup>1</sup>, <sup>1</sup>Tennessee Technological University, Cookeville, TN, USA

## II 010

### **Determining glycogen degradation and utilization capabilities of *Gardnerella vaginalis***

Pashupati BHANDARI, University of Saskatchewan, JE HILL<sup>1</sup>, <sup>1</sup>University of Saskatchewan

## II 011

### ***Shigella* Type Three Secretion System reloaded**

N SILUÉ, University of Ottawa, A ALZHRANI<sup>1</sup>, W BAJUNAID<sup>1</sup>, L PINAUD<sup>2</sup>, François-Xavier CAMPBELL-VALOIS<sup>1</sup>, <sup>1</sup>University of Ottawa, <sup>2</sup>Institut Pasteur

## II 012

### **Structural analysis of MERS-CoV-specific ubiquitin variants: potent inhibitors of the MERS-CoV papain-like protease**

Ben BAILEY-ELKIN, University of Manitoba, W. ZHANG<sup>2</sup>, R.C.M. KNAAP<sup>3</sup>, B. KHARE<sup>1</sup>, T.J. DALEBOUT<sup>3</sup>, G.G. JOHNSON<sup>1</sup>, P.B. VAN KASTEREN<sup>3</sup>, N.J. MCLEISH<sup>1</sup>, J. GU<sup>2</sup>, M. KIKKERT<sup>3</sup>, S.S. SIDHU<sup>2</sup>, B.L. MARK<sup>1</sup>, <sup>1</sup>University of Manitoba, <sup>2</sup>University of Toronto, <sup>3</sup>Leiden University Medical Centre

## II 013

### **Phylogeography and genomic variation of an understudied expanding lineage of *Acinetobacter baumannii***

Santiago CASTILLO, Center for Genome Sciences - National Autonomous University of Mexico, L GRAÑA<sup>1</sup>, MA CEVALLOS<sup>1</sup>, P VOLKOW<sup>2</sup>, R FRANCO<sup>3</sup>, G LOPEZ<sup>4</sup>, <sup>1</sup>Center for Genome Sciences - National Autonomous University of Mexico, <sup>2</sup>Departamento de Enfermedades Infecciosas, Instituto Nacional de Cancerología, <sup>3</sup>Instituto Nacional de Rehabilitación, <sup>4</sup>Instituto de Biotecnología - National Autonomous University of Mexico

## II 014

### **Investigating host defense peptide resistance and associated mechanisms in clinical isolates of inflammatory bowel disease-associated *Escherichia coli***

YounHee CHO, Ryerson University, M. J. RENOUF<sup>1</sup>, J. B. MCPHEE<sup>1</sup>, <sup>1</sup>Ryerson University

## II 015

### **Development of a “National MALDI Database” to enable Provincial Laboratories to Identify Rare and Novel Clinical Bacterial Isolates Using MALDI-TOF MS Analysis**

Patrick CHONG, Public Health Agency of Canada, M UNGER<sup>1</sup>, T ZIMMERMAN<sup>1</sup>, G WESTMACOTT<sup>1</sup>, K BERNARD<sup>1</sup>, <sup>1</sup>Public Health Agency of Canada

## II 017

### **Molecular View of Pathogen Effector Kinases and Their Mechanisms of Activation**

Mirosław CYGLER, University of Saskatchewan, K BYERAKHOVA<sup>1</sup>, C XU<sup>1</sup>, MT BONIECKI<sup>1</sup>,  
<sup>1</sup>University of Saskatchewan

## II 018

### **Marine and Cave Clay Microbiomes and Antibacterial Properties**

Julian DAVIES, University of British Columbia, SB BEHROOZIAN<sup>1</sup>, KY YE<sup>1</sup>, IV VILLANUEVA<sup>1</sup>, MD DESMARAIS<sup>1</sup>, AC CHEEPHTHAM<sup>2</sup>, WR REZNIKOFF<sup>3</sup>, LL LI<sup>1</sup>,<sup>1</sup>University of British Columbia,<sup>2</sup>Thompson Rivers University,<sup>3</sup>Woods Hole Oceanographic Institution

## II 019

### **Phage Antibiotic Synergy (PAS): A Promising Treatment for Chronic *Pseudomonas* Lung Infections**

Carly DAVIS, University of Alberta, J.J. DENNIS<sup>1</sup>, <sup>1</sup>University of Alberta

## II 020

### **SPI-1 and SPI-2 are present in human clinical isolates in Saudi Arabia where *S. Enteritidis* and *S. Typhimurium* are the predominant serotypes**

Taseen DESIN, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia, M. ALRODAYYAN<sup>2</sup>, M. ALGHORIBI<sup>2</sup>, A. MUHANNA<sup>3</sup>, S. ALJOHANI<sup>4</sup>, H. BALKHY<sup>2</sup>, <sup>1</sup>College of Science & Health Professions, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia, <sup>2</sup>King Abdullah International Medical Research Center, MNGHA, Riyadh, Saudi Arabia, <sup>3</sup>John H Stroger Junior Hospital of Cook County, Chicago, USA, <sup>4</sup>National Guard Hospital, MNGHA, Riyadh, Saudi Arabia

## II 022

### **The periplasmic trehalase affects type 1 fimbriae production and urinary tract virulence of extraintestinal pathogenic *E. coli* strain MT78 in the mouse**

D BRISOTTO PAVANELO, INRS-Institut Armand Frappier, S HOULE<sup>1</sup>, LB MATTER<sup>2</sup>, Charles DOZOIS<sup>1</sup>, F HORN<sup>3</sup>, <sup>1</sup>INRS-Institut Armand Frappier, <sup>2</sup>Universidade Regional Integrada do Alto Uruguai e das Missões, Santo Ângelo, Rio Grande do Sul, Brasil, <sup>3</sup>Universidade Federal do Rio Grande do Sul, Porto Alegre, Brasil

## II 023

### **New generation of mini-Tn7 vectors for genomic manipulation in multidrug and extreme drug resistant clinical isolates of *Acinetobacter baumannii***

Kaleigh DUCAS-MOWCHUN, University of Manitoba, P.M. DE SILVA<sup>1</sup>, A. KUMAR<sup>1</sup>, <sup>1</sup>University of Manitoba

## II 087

### **A multilayered effector delivery network of the type VI secretion system**

B BURKINSHAW, University of Calgary, X LIANG<sup>1</sup>, M WONG<sup>1</sup>, A LE<sup>1</sup>, LINH LAM<sup>1</sup>, Tao DONG<sup>1</sup>,  
<sup>1</sup>University of Calgary

## Molecular Genetics & Cellular Microbiology

### **MGC 002**

#### **Examining the metabolite production potential of *Streptomyces pratensis***

Nader ABUSARA, Memorial University of Newfoundland, S SRIVASTAVA<sup>1</sup>, K TAHLAN<sup>1</sup>, <sup>1</sup>Memorial University of Newfoundland

### **MGC 003**

#### **Determination of thermostable and oxygen-resistant pyruvate decarboxylases from *Sulfolobus* species**

Faisal ALHARBI, University of Waterloo, J.-P. J. PHAM<sup>1</sup>, T.K. KNURA<sup>2</sup>, B.S. SIEBERS<sup>2</sup>, K. MA<sup>1</sup>, <sup>1</sup>University of Waterloo, <sup>2</sup>University of Duisburg-Essen, Germany

### **MGC 004**

#### **Essential Bacterial Gene Landscape for Drug Synergy Discovery**

Mohan BABU, University of Regina, SK SUNYOUNG<sup>1</sup>, AH HOSSEINIA<sup>1</sup>, AG GAGARINOVA<sup>2</sup>, SP PHANSE<sup>1</sup>, SY-D YURIST-DOUTSCH<sup>3</sup>, NSK KUMAR<sup>3</sup>, EMD DULLAGHAN<sup>3</sup>, <sup>1</sup>University of Regina, <sup>2</sup>University of Saskatchewan, <sup>3</sup>The Centre for Drug Research and Development

### **MGC 007**

#### **The mutational landscape of quinolone resistance in *Escherichia coli***

Kamya BHATNAGAR, Carleton University, A WONG<sup>1</sup>, <sup>1</sup>Carleton University

### **MGC 010**

#### **The multidrug resistance-conferring *Salmonella* genomic island 1 (SGI1) alters the entry exclusion group of the transfer apparatus of IncC conjugative plasmids**

M. HUMBERT, Sherbrooke University, F. COULOMBE<sup>1</sup>, Vincent BURRUS<sup>1</sup>, <sup>1</sup>Sherbrooke University

### **MGC 011**

#### **Examining cationic antimicrobial tolerant *Escherichia coli*: Antimicrobial cross-resistance, fitness, and stability testing**

Nicola CARTWRIGHT, University of Manitoba, G. G. ZHANEL<sup>1</sup>, D. C. BAY<sup>1</sup>, <sup>1</sup>University of Manitoba

### **MGC 012**

#### **EspK plays an active role in *Mycobacterium tuberculosis* ESX-1 mediated secretion and virulence**

Jeffrey CHEN, University of Saskatchewan, Z. LIM<sup>1</sup>, <sup>1</sup>University of Saskatchewan

### **MGC 013**

#### **Oxidative stress and unfolded protein responses in *Neurospora crassa* lacking VDAC**

Deborah COURT, University of Manitoba, A. MOTNENKO<sup>1</sup>, O. KROHKIN<sup>1</sup>, V. SPICER<sup>1</sup>, S.R. SHUVO<sup>1</sup>, <sup>1</sup>University of Manitoba



#### **MGC 014**

##### **Nek9 Exerts Transcriptional Control over p53-Regulated Promoters through Novel Interaction with Adenovirus E1A Protein**

Leandro CRISOSTOMO, University of Manitoba, R JUNG<sup>2</sup>, P PELKA<sup>1</sup>, <sup>1</sup>University of Manitoba, <sup>2</sup>University of Ottawa

#### **MGC 015**

##### **Impacts of Outer Membrane Porins OmpA and OmpX on *Serratia Marcescens* Virulence in an Invertebrate Host Model**

Alexander DIAMANDAS, University of Manitoba, A.M. MOYA-TORRES<sup>1</sup>, K.B. BRASSINGA<sup>1</sup>, <sup>1</sup>University of Manitoba

### **POSTER SESSION II** **Wednesday, June 20th, 2018** **3:00 – 5:00 PM**

Presenters to be by their posters:

**Odd number** posters from **3:00 – 4:00 PM** \*\* **Even number** posters from **4:00 – 5:00 PM**

### **Applied & Environmental Microbiology**

#### **AEM 027**

##### **Prey versus Predator: Investigating *Pseudomonas brassicacearum* DF41 Biofilm Formation on *Caenorhabditis elegans***

April GISLASON, University of Manitoba, MS NANDI<sup>1</sup>, TR DE KIEVIT<sup>1</sup>, <sup>1</sup>University of Manitoba

#### **AEM 028**

##### **Comparison of *Pseudomonas chlororaphis* PA23 Application Strategies for Protecting Against Blackleg disease by *Leptosphaeria maculans* Avr7**

Elham GOLKHANDAN, University of Manitoba, TK TERESA DE KIEVIT<sup>1</sup>, DF DILANTHA FERNANDO<sup>1</sup>, <sup>1</sup>University of Manitoba

#### **AEM 029**

##### **Chemical and Microbial Content of Medical Air Produced On-Site in a Healthcare Institution**

Nicolas GROULX, University of Toronto, HM MOVAHHEDENIA<sup>1</sup>, FQ QHRESHI<sup>2</sup>, PE EDWARDS<sup>2</sup>, GE EVANS<sup>1</sup>, SM MUBAREKA<sup>1</sup>, <sup>1</sup>University of Toronto, <sup>2</sup>Air Liquide Healthcare

#### **AEM 030**

##### **Bioaerosols and transmission of human and animal pathogens, a diverse and growing community of practice**

Nicolas GROULX, University of Toronto, ES SAVORY<sup>2</sup>, TC CUTTS<sup>3</sup>, CJR ROY<sup>4</sup>, GK KOBINGER<sup>5</sup>, MG GIRARD<sup>6</sup>, SM MUBAREKA<sup>1</sup>, CD DUCHAINE<sup>5</sup>, <sup>1</sup>University of Toronto, <sup>2</sup>University of Western Ontario, <sup>3</sup>Public Health Agency of Canada, <sup>4</sup>Tulane University, <sup>5</sup>Université de Laval, <sup>6</sup>Institut de Recherche et de Développement en Agroenvironnement

### **AEM 032**

#### ***Klebsiella* plasmids and their relevance for the transfer of antimicrobial resistance determinants**

Jens Andre HAMMERL, German Federal Institute for Risk Assessment, G. CARL<sup>1</sup>, C. JAECKEL<sup>1</sup>, M. GROBBEL<sup>1</sup>, A. KAESBOHRER<sup>1</sup>, <sup>1</sup>German Federal Institute for Risk Assessment

### **AEM 033**

#### **Diversity of *mcr-4* harbouring *Escherichia coli* isolates from food and livestock in Germany**

Jens Andre HAMMERL, German Federal Institute for Risk Assessment, D. SHAMOUN<sup>1</sup>, S. SCHMOGER<sup>1</sup>, M. GROBBEL<sup>1</sup>, B.-A. TENHAGEN<sup>1</sup>, A. KAESBOHRER<sup>1</sup>, <sup>1</sup>German Federal Institute for Risk Assessment

### **AEM 035**

#### **The dynamics of the fecal and nasopharyngeal microbiome of feedlot cattle administered oxytetracycline and tulathromycin**

Devin HOLMAN, Agriculture and Agri-Food Canada, Lacombe Research Centre, TW ALEXANDER<sup>2</sup>, <sup>1</sup>Agriculture and Agri-Food Canada, Lacombe Research Centre, <sup>2</sup>Agriculture and Agri-Food Canada, Lethbridge Research Centre

### **AEM 037**

#### **Polyhydroxyalkanoates production from volatile fatty acids and potential application to wastewater treatment**

Zimo JIN, University of Manitoba, SW WUSHKE<sup>1</sup>, WB BLUNT<sup>1</sup>, CD DARTIAILH<sup>1</sup>, PS SHARMA<sup>1</sup>, DL LEVIN<sup>1</sup>, RS SPARLING<sup>1</sup>, <sup>1</sup>University of Manitoba

### **AEM 038**

#### **Diversity and metabolic potential of the phylum Cloacimonetes, with a focus on organisms identified in a municipal waste environment**

Lisa JOHNSON, University of Waterloo, A. SAUK<sup>1</sup>, L.A. HUG<sup>1</sup>, <sup>1</sup>University of Waterloo

### **AEM 039**

#### **Characterization of antimicrobial resistant bacteria from vegetables and spices imported into Canada**

Dongyun JUNG, University of Saskatchewan, J.E. RUBIN<sup>1</sup>, <sup>1</sup>University of Saskatchewan

### **AEM 040**

#### **Characterization of second site suppressor mutations of *tktA* in *Sinorhizobium meliloti***

Sabhjeet KAUR, University of Manitoba, J.P. HAWKINS<sup>1</sup>, I.J. ORESNIK<sup>1</sup>, <sup>1</sup>University of Manitoba

### **AEM 041**

#### **Multidrug resistance in Pasteurellaceae contributing to fatal bovine respiratory disease cases in North American feedlots between 2011 and 2016**

Cassidy KLIMA, Feedlot Health Management Services, DB HOLMAN<sup>2</sup>, R ZAHEER<sup>3</sup>, SR COOK<sup>4</sup>, BJ RALSTON<sup>4</sup>, RM ANHOLT<sup>5</sup>, YD NIU<sup>6</sup>, K STANFORD<sup>4</sup>, SJ HANNON<sup>1</sup>, C BOOKER<sup>1</sup>, RR READ<sup>6</sup>, TA MCALLISTER<sup>3</sup>, <sup>1</sup>Feedlot Health Management Services, <sup>2</sup>Agriculture and Agri-Food Canada, Lacombe Research Centre, <sup>3</sup>Agriculture and Agri-Food Canada, Lethbridge Research Centre, <sup>4</sup>Alberta Agriculture and Forestry, <sup>5</sup>POV Inc., <sup>6</sup>University of Calgary

#### AEM 042

##### **Characterization of a locus responsible for the metabolism of multiple sugar alcohol substrates in *Sinorhizobium meliloti***

MacLean KOHLMEIER, University of Manitoba, I. J. ORESNIK<sup>1</sup>, <sup>1</sup>University of Manitoba

#### AEM 043

##### **Genetic and Phenotypic Analyses of *Aspergillus fumigatus* from New Zealand and Saudi Arabian Soils**

Gregory KORFANTY, McMaster University, N.P. PUM<sup>1</sup>, L.T. TENG<sup>1</sup>, J.X. XU<sup>1</sup>, <sup>1</sup>McMaster University

#### AEM 044

##### **Identification of novel enzymes in the riboflavin biosynthetic pathway of invasive bacteria**

Omkar KSHIRSAGAR, Dalhousie University, S. N. YURGEL<sup>1</sup>, <sup>1</sup>Dalhousie University

#### AEM 045

##### **Seasonal Abundance and Diversity of Aerobic Anoxygenic Phototrophs in Lake Winnipeg's Euphotic Zones**

Steven KUZYK, University of Manitoba, X. MA<sup>1</sup>, V. YURKOV<sup>1</sup>, <sup>1</sup>University of Manitoba

#### AEM 046

##### **Epidemiology and molecular characterization of old and new amdoparvoviruses in Canadian wildlife**

M. CANUTI, Memorial University of Newfoundland, E. MCDONALD<sup>1</sup>, H.E. DOYLE<sup>1</sup>, S.M. GRAHAM<sup>1</sup>, B. RODRIGUES<sup>2</sup>, A.P. BRITTON<sup>3</sup>, H.G. WHITNEY<sup>1</sup>, H.D. MARSHALL<sup>1</sup>, Andrew LANG<sup>1</sup>, <sup>1</sup>Memorial University of Newfoundland, <sup>2</sup>Newfoundland and Labrador Department of Fisheries and Land Resources, <sup>3</sup>British Columbia Ministry of Agriculture

#### AEM 047

##### **Microbiota modification of *Mytilus edulis* larvae in response to the use of a new probiotic, the marennine, in aquaculture**

Jordan LATOUR, Université du Québec à Rimouski, S.-B. BERNIER<sup>1</sup>, K. DOIRON<sup>1</sup>, R. TREMBLAY<sup>1</sup>, K. LEMARCHAND<sup>1</sup>, <sup>1</sup>Université du Québec à Rimouski

#### AEM 048

##### **Polyhydroxyalkanoate (PHA) polymer accumulation and *pha* gene expression in phenazine and pyrrolnitrin defective mutants of *Pseudomonas chlororaphis* PA23**

David LEVIN, University of Manitoba, P SHARMA<sup>1</sup>, R MUNIR<sup>1</sup>, J PLOUFFE<sup>1</sup>, N SHAH<sup>1</sup>, T DE KIEVIT<sup>1</sup>, <sup>1</sup>University of Manitoba

#### AEM 049

##### **Urea containing synthetic nitrification inhibitors lowers N<sub>2</sub>O emissions but not nitrogen cycling bacterial communities and gene expression in a soil microcosm study**

Nicola LINTON, University of Guelph, A ANDERSON<sup>1</sup>, K CONGREVES<sup>2</sup>, C WAGNER-RIDDLE<sup>1</sup>, K DUNFIELD<sup>1</sup>, <sup>1</sup>University of Guelph, <sup>2</sup>University of Saskatchewan

#### AEM 050

##### **A comparative genomic analysis of three *Pseudomonas syringae* strains with variable virulence against the common bean plant *Phaseolus vulgaris***

Janet LORV, University of Waterloo, B.J.M. MCCONKEY<sup>1</sup>, <sup>1</sup>University of Waterloo

#### **AEM 051**

##### **Optimization for the Isolation of *Legionella* from First Nations Potable Water Sources**

Teassa MACMARTIN, University of Manitoba, A K BRASSINGA<sup>1</sup>, A FARENHORST<sup>1</sup>, <sup>1</sup>University of Manitoba

#### **AEM 052**

##### **Shifts in abundance of microbial N-cycling communities associated with riparian plantings in southern Ontario agricultural systems**

Tolulope MAFA-ATTOYE, University of Guelph, M BASKERVILLE<sup>2</sup>, M OLEBERMAN<sup>2</sup>, N THEVATHASAN<sup>1</sup>, K DUNFIELD<sup>1</sup>, <sup>1</sup>University of Guelph, <sup>2</sup>University of Waterloo

#### **AEM 054**

##### **Pathogenicity assessment of *Arcobacter butzleri* isolated from surface water of a Canadian agricultural watershed**

Maria MAHMUD, Agriculture and Agri-Food Canada, M CLOUTIER<sup>1</sup>, G WILKES<sup>1</sup>, D LAPEN<sup>1</sup>, E TOPP<sup>1</sup>, A KUMAR<sup>2</sup>, IUH KHAN<sup>1</sup>, <sup>1</sup>Agriculture and Agri-Food Canada, <sup>2</sup>University of Manitoba

#### **AEM 055**

##### **Evaluating the Effectiveness of Metagenome Plasmid Enrichment by Bioinformatically Comparing a Metagenome and Plasmidome from a Mine Reclamation Site**

Breanne MCAMMOND, Thompson Rivers University, A GUERRIERI<sup>1</sup>, EM BOTTOS<sup>1</sup>, M DAGHIO<sup>1</sup>, JD VAN HAMME<sup>1</sup>, <sup>1</sup>Thompson Rivers University

#### **AEM 056**

##### **Biomining by Bacteria Isolated from Iron Curtain Cave Popcorn Speleothem Samples**

Richenda MCFARLANE, Thompson Rivers University, N. CHEEPHAM<sup>1</sup>, K. DONKOR<sup>1</sup>, <sup>1</sup>Thompson Rivers University

#### **AEM 057**

##### **Quantitative assessment of agricultural surface water quality, human and animal feces for prevalence of *Arcobacter faecis* and *A. lanthieri***

MARY MILTENBURG, Agriculture and Agri-Food Canada, Eastern Cereal and Oilseed Research Center, M. CLOUTIER<sup>1</sup>, O. ISLAM<sup>1</sup>, D.R. LAPEN<sup>1</sup>, G. WILKES<sup>1</sup>, G. TALBOT<sup>2</sup>, E. TOPP<sup>3</sup>, I.U.H KHAN<sup>1</sup>, <sup>1</sup>Agriculture and Agri-Food Canada, Eastern Cereal and Oilseed Research Center, <sup>2</sup>Agriculture and Agri-Food Canada, Dairy and Swine Research and Development Centre, <sup>3</sup>Agriculture and Agri-Food Canada, Southern Crop Protection and Food Research Centre

#### **AEM 058**

##### **An evaluation of silica-*Bacillus* microencapsulation for reducing acid mine drainage from sulfur waste rock in cold climates**

Katie MITCHELL, Laurentian University, NCS MYKYTCZUK<sup>1</sup>, GA SPIERS<sup>1</sup>, M SCHINDLER<sup>1</sup>, <sup>1</sup>Laurentian University

#### **AEM 060**

##### **Crop Rotations and the Persistence of *Bradyrhizobium japonicum* in Manitoba Soils**

Patricia ORDONEZ, University of Manitoba, Y. LAWLEY<sup>1</sup>, I.J. ORESNIK<sup>1</sup>, <sup>1</sup>University of Manitoba

#### **AEM 061**

##### **Genes implicated for prolonged-incubation phase of *E. coli* under nutrient-limited condition**

Bansri PATEL, McMaster University, H. SCHELLHORN<sup>1</sup>, <sup>1</sup>McMaster University

#### **AEM 062**

##### **Detection of *E. coli*/Total coliforms and Antibiotic Resistance Genes in Drinking Water Collected from Pine Creek First Nation in Manitoba**

R MI, University of Manitoba, Rakesh PATIDAR<sup>1</sup>, F ZVOMUYA<sup>1</sup>, E KHAFIPOUR<sup>1</sup>, K ANDERSON<sup>1</sup>, A KUMAR<sup>1</sup>, A FARENHORST<sup>1</sup>, <sup>1</sup>University of Manitoba

#### **AEM 063**

##### **Bioactivity and structure-activity relationships of cryptolepine and its derivatives as potential antibacterial agents for human infections**

George PESEWU, University of Ghana, WA MORGAN<sup>2</sup>, <sup>1</sup>University of Ghana, <sup>2</sup>University of East London

#### **AEM 064**

##### **Extended spectrum $\beta$ -lactamases producing bacteria isolated from feces of gilts and sows reared in conventional and antibiotic-free settings**

Dominic POULIN-LAPRADE, Sherbrooke Research and Development Centre of Agriculture and Agri-Food Canada, N. GAGNON<sup>1</sup>, A. TURCOTTE<sup>1</sup>, E. TOPP<sup>2</sup>, J.J. MATTE<sup>1</sup>, G. TALBOT<sup>1</sup>, <sup>1</sup>Sherbrooke Research and Development Centre of Agriculture and Agri-Food Canada, <sup>2</sup>London Research and Development Centre of Agriculture and Agri-Food Canada

#### **AEM 065**

##### **Developing an effective rhizobial strain using an adaptive evolution approach to biologically fix nitrogen in *Phaseolus vulgaris***

Gaganpreet Kaur RAI, University of Manitoba, S. KAUR<sup>1</sup>, I.J. ORESNIK<sup>1</sup>, <sup>1</sup>University of Manitoba

#### **AEM 066**

##### **The impact of *Azospirillum brasilense* on *Cannabis indica* microbial communities and secondary metabolite production**

Emma READ, Thompson Rivers University, EM BOTTOS<sup>1</sup>, E O'BRIEN<sup>2</sup>, R O'BRIEN<sup>3</sup>, JD VAN HAMME<sup>1</sup>, <sup>1</sup>Thompson Rivers University, <sup>2</sup>University of British Columbia Okanagan, <sup>3</sup>Valens Agritech

#### **AEM 076**

##### **Validation of the microbiological quality assurance procedures used with axenic mice**

Nathalie TURGEON, Université Laval, M LEBEUF<sup>1</sup>, C FAUBERT<sup>2</sup>, A PLEAU<sup>2</sup>, J ROBILLARD<sup>2</sup>, E PARADIS<sup>2</sup>, C DUCHAINE<sup>1</sup>, <sup>1</sup>Université Laval, <sup>2</sup>Institut universitaire de cardiologie et de pneumologie de Québec

## Infection & Immunity

### II 009

#### **Iron Accumulation by Bacteria During Lag Phase as a Counter-Strategy to Host Nutritional Immunity**

Robert BERTRAND, University of Manitoba

### II 024

#### **Chem-Seq for High-Throughput Identification of New Genes Involved in Resistance to Imipenem in Gram Negative Bacteria**

Jessica Y. EL KHOURY, Université de Laval, A. MAURE<sup>0</sup>, H. GINGRAS<sup>1</sup>, P. LEPROHON<sup>1</sup>, M. OUELLETTE<sup>1</sup>, <sup>1</sup>Université de Laval

### II 025

#### **Oxygen and contact with human intestinal epithelium stimulate virulence gene expression in enteroaggregative *Escherichia coli***

Samuel ELLIS, Quadram Institute Bioscience, M.A. CHATTAWAY<sup>2</sup>, S. SCHÜLLER<sup>3</sup>, <sup>1</sup>Quadram Institute Bioscience, <sup>2</sup>Public Health England, <sup>3</sup>Norwich Medical School, University of East Anglia

### II 027

#### **Antimicrobial Resistant Plasmid Effects on Growth in *Salmonella enterica* serovar Heidelberg**

Jayelle FRIESEN, Public Health Agency of Canada, C.S. MANGAT<sup>1</sup>, A. BHARAT<sup>1</sup>, M.R. MULVEY<sup>1</sup>, <sup>1</sup>Public Health Agency of Canada

### II 028

#### **Epinephrine and norepinephrine augment Ebolavirus replication**

Lauren GARNETT, University of Manitoba, J STRONG<sup>2</sup>, <sup>1</sup>University of Manitoba, <sup>2</sup>Public Health Agency of Canada

### II 029

#### **T cell receptor signaling is inhibited by the immune checkpoint LAG3, which impairs immunity during chronic infectious disease**

Colin GRAYDON, University of Manitoba, J LAJOIE<sup>1</sup>, J.K. KINDRACHUK<sup>1</sup>, K.F. FOWKE<sup>1</sup>, <sup>1</sup>University of Manitoba

### II 030

#### **A high throughput fluorescent assay to determine Gram-negative cationic antimicrobial susceptibility**

Branden GREGORCHUK, University of Manitoba, N CARTWRIGHT<sup>1</sup>, M.R. MULVEY<sup>1</sup>, M KHAJEPOUR<sup>1</sup>, G.G. ZHANEL<sup>1</sup>, D.C. BAY<sup>1</sup>, <sup>1</sup>University of Manitoba

### II 031

#### ***Staphylococcus aureus* requires the GraXRS regulatory system to adapt to the phagolysosomal compartment of macrophages**

David HEINRICHS, University of Western Ontario, R FLANNAGAN<sup>1</sup>, R KUIACK<sup>1</sup>, M MCGAVIN<sup>1</sup>, <sup>1</sup>University of Western Ontario

## II 032

### **A water-soluble Rifampicin-Tobramycin conjugate sensitizes *Pseudomonas aeruginosa* to Doxycycline and Chloramphenicol**

Temilolu IDOWU, University of Manitoba, G.G. ZHANEL<sup>1</sup>, F. SCHWEIZER<sup>1</sup>, <sup>1</sup>University of Manitoba

## II 033

### **Understanding the role of para-hydroxybenzoic acid derivatives (*p*-HBADs) in bovine TB Pathogenesis**

Olivia IHEDIOHA, University of Saskatchewan, A. POTTERS<sup>1</sup>, and J. CHEN<sup>1</sup>, <sup>1</sup>University of Saskatchewan

## II 034

### **Genomic Variants Associated with *Pseudomonas aeruginosa* Eradication Failure in Pediatric Patients with Cystic Fibrosis**

Conrad IZYDORCZYK, University of Toronto, P STAPLETON<sup>1</sup>, J DIAZ CABALLERO<sup>1</sup>, T BEAUDOIN<sup>1</sup>, YC YAU<sup>1</sup>, V WATERS<sup>1</sup>, PW WANG<sup>1</sup>, DS GUTTMAN<sup>1</sup>, <sup>1</sup>University of Toronto

## II 035

### **Use of MALDI-TOF mass spectrometry for the identification of bacteria growing as biofilms**

Mario JACQUES, Université de Montréal, Sainte-Hyacinthe, AM GAUDREAU<sup>1</sup>, J LABRIE<sup>1</sup>, C GOETZ<sup>1</sup>, S DUFOUR<sup>1</sup>, <sup>1</sup>Université de Montréal, Sainte-Hyacinthe

## II 036

### **Interactions between *cpn-60* defined subgroups of *Gardnerella vaginalis***

Salahuddin KHAN, University of Saskatchewan, J.E. HILL<sup>1</sup>, <sup>1</sup>University of Saskatchewan

## II 037

### **BCG-mediated Trained Immunity – evaluation of the THP-1 monocytic cell-line to identify the most effective BCG substrain**

Christian KORDAN, University of Saskatchewan, J.M. CHEN<sup>1</sup>, <sup>1</sup>University of Saskatchewan

## II 038

### **Distinct double stranded RNA length requirement and the dimeric nature of human oligoadenylate synthetase 2 (OAS2)**

Amit KOUL, University of Manitoba, DR. DEO<sup>1</sup>, DR. BOOY<sup>1</sup>, <sup>1</sup>University of Manitoba

## II 039

### **Human Papilloma Virus Peptide Induced Immune Responses in a Healthy Population**

Monika KOWATSCH, University of Manitoba, J. LAJOIE<sup>1</sup>, K.R. FOWKE<sup>1</sup>, <sup>1</sup>University of Manitoba

## II 040

### **Evaluation of the cost and time in the diagnosis of *Brachyspira* from farm to antimicrobial susceptibility test results**

Ruwini KULATHUNGA, University of Saskatchewan, J.E. RUBIN<sup>1</sup>, <sup>1</sup>University of Saskatchewan

## II 041

### **Understanding the molecular basis of enterohemorrhagic *E. coli* resistance to cationic antimicrobial peptides**

Chhatra KUNWAR, Ryerson University, D.E. BARNETT FOSTER<sup>1</sup>, <sup>1</sup>Ryerson University

## II 042

**Expression and characterization of a putative extracellular sialidase enzyme in *Gardnerella vaginalis***  
Shakya KURUKULASURIYA, University of Saskatchewan, J.E HILL<sup>1</sup>, <sup>1</sup>University of Saskatchewan

## II 043

**Host Immune Associations in the Female Genital Tract to Microbial Structure and Functionality in Manitoban Women**

Alana LAMONT, University of Manitoba, K.D. BIRSE<sup>1</sup>, C. FARR ZUEND<sup>1</sup>, L. NOËL-ROMAS<sup>1</sup>, S. MUTCH<sup>1</sup>, M. ABOU<sup>1</sup>, S. MCCORRISTER<sup>2</sup>, G. WESTMACOTT<sup>2</sup>, F. MULHALL<sup>3</sup>, J. SCHELLENBERG<sup>1</sup>, V. POLIQUIN<sup>1</sup>, A.D. BURGNER<sup>1</sup>, <sup>1</sup>University of Manitoba, <sup>2</sup>Public Health Agency of Canada, <sup>3</sup>Health Sciences Centre

## II 044

**Optimizing Antimicrobial Resistance Surveillance Tools through Biocuration and Taxonomic Identification of Resistance Genes**

Tammy LAU, McMaster University, A.R. RAPHENYA<sup>1</sup>, B.P. ALCOCK<sup>1</sup>, A.G. MCARTHUR<sup>1</sup>, <sup>1</sup>McMaster University

## II 045

**Investigating the role of the phenylacetic acid pathway in the quorum sensing-regulated virulence of *Burkholderiacenocepacia***

Tasia LIGHTLY, University of Manitoba, SJ WOLFRAM<sup>1</sup>, JL SORENSEN<sup>1</sup>, ST CARDONA<sup>1</sup>, <sup>1</sup>University of Manitoba

## II 046

**Molecular basis for CesT recognition of type III secretion effectors in enteropathogenic *Escherichia coli***

Dustin LITTLE, McMaster University, B.K. COOMBES<sup>1</sup>, <sup>1</sup>McMaster University

## II 047

**A novel approach of Photo Dynamic Therapy (PDT) against the dominant agent of superficial infection, *Trichophyton rubrum***

Lijun LIU, McMaster University, I. VAN-HAM<sup>2</sup>, H. YOELL<sup>1</sup>, S. ZHU<sup>1</sup>, J. XU<sup>1</sup>, <sup>1</sup>McMaster University, <sup>2</sup>Olliane

## II 048

**Structural and functional analysis of Golgi in *Legionella*-infected macrophages**

Vinitha MACWAN, University of Toronto at Scarborough, R HARRISON<sup>1</sup>, M TEREbiznik<sup>1</sup>, <sup>1</sup>University of Toronto at Scarborough

## II 049

**A novel ABC transporter encoded by PA3228 contributes to multidrug resistance in *Pseudomonas aeruginosa***

L ZHANG, University of Ottawa, Thien-Fah MAH<sup>1</sup>, <sup>1</sup>University of Ottawa



## II 050

### **The Influence of Zn<sup>2+</sup> on Polymyxin Resistance in *Pseudomonas aeruginosa***

Olivia MAROUN, Queen's University, R.K. POOLE<sup>1</sup>, <sup>1</sup>Queen's University

## II 052

### **Identification of the type IV pili as the receptor of broad host range *Stenotrophomonas maltophilia* bacteriophages DLP1 and DLP2**

Jaelyn MCCUTCHEON, University of Alberta, D.L. PETERS<sup>1</sup>, J.J. DENNIS<sup>1</sup>, <sup>1</sup>University of Alberta

## II 053

### **Resistance of *Staphylococcus aureus* to antimicrobial unsaturated fatty acids is mediated through fatty acid kinase FakA, TetR family regulator FarR, and RND family efflux pump FarE**

Martin MCGAVIN, University of Western Ontario, D.E. HEINRICH<sup>1</sup>, K.A. FERGUSON<sup>1</sup>, H. ALNASERI<sup>1</sup>, <sup>1</sup>University of Western Ontario

## II 057

### **Detection and Characterization of Antimicrobial Resistant Gram-Negative Bacteria from Imported Reptile and Amphibian Meat Products**

Beverly MORRISON, University of Saskatchewan, J.E. RUBIN<sup>1</sup>, <sup>1</sup>University of Saskatchewan

## II 058

### **Development of Model Mouse Microbiota for Gut Microbiome Studies**

E WONG, University of Toronto, E BROWNLIE<sup>1</sup>, S SAHA<sup>1</sup>, William NAVARRE<sup>1</sup>, <sup>1</sup>University of Toronto

## II 068

### **Characterizing the Molecular Pathogenesis of Co-Infections: Modelling the Methicillin-Resistant *Staphylococcus aureus*-Influenza A Virus-Respiratory Epithelium Interface**

Michaela NICKOL, University of Manitoba, J CIRIC<sup>1</sup>, J KINDRACHUK<sup>1</sup>, <sup>1</sup>University of Manitoba

## II 082

### **Role of Resistance-Nodulation-Division efflux pump AdeIJK and its TetR transcriptional regulator AdeN in resistance and virulence of *Acinetobacter baumannii***

Rakesh PATIDAR, University of Manitoba, M UNGER<sup>1</sup>, A KUMAR<sup>1</sup>, <sup>1</sup>University of Manitoba

## Molecular Genetics & Cellular Microbiology

## MGC 016

### **Acid-pH Mediated Regulation of the Mycobacterial ESX-1 Secretion System**

Kylee DREVER, University of Saskatchewan, Z.L. LIM<sup>1</sup>, J.M. CHEN<sup>1</sup>, <sup>1</sup>

## MGC 017

### **The Impact of Solid Food Introduction on Microbial Succession in the Infant Gut**

Luna ELDAKIKY, McMaster University, S DIZZELL<sup>1</sup>, J SIMIONI<sup>1</sup>, J LI<sup>1</sup>, E GUNN<sup>1</sup>, KM MORRISON<sup>1</sup>, EK HUTTON<sup>1</sup>, MG SURETTE<sup>1</sup>, JC STEARNS<sup>1</sup>, <sup>1</sup>McMaster University

### **MGC 019**

#### **Sequencing and Annotation of *Rhodospiridiumdiobovatum* for the Investigation of Concomitant Production of Triacylglycerides and Carotenoids**

Irene FAKANKUN, University of Manitoba, B FRISTENSKY<sup>1</sup>, D.B LEVIN<sup>1</sup>, <sup>1</sup>University of Manitoba

### **MGC 020**

#### **Comparative genomics and phylogenetic analysis of rhizobiophages from western Canada**

Damitha GUNATHILAKE, University of Calgary, A.P. HALMILLAWEWA<sup>1</sup>, M. RESTREPO-CÓRDOBA<sup>1</sup>, B.J. PERRY<sup>2</sup>, C.K. YOST<sup>2</sup>, M.F. HYNES<sup>1</sup>, <sup>1</sup>University of Calgary, <sup>2</sup>University of Regina

### **MGC 021**

#### **A New Implementation of BIOM Format using Hash Tables**

Sayna HAJILOO, Dalhousie University, RB BEIKO<sup>1</sup>, <sup>1</sup>Dalhousie University

### **MGC 022**

#### **Visually mapping phylogenetic conflicts onto a reference tree**

Henry HEBERLE, Dalhousie University, R. MINGHIM<sup>2</sup>, R. BEIKO<sup>1</sup>, <sup>1</sup>Dalhousie University, <sup>2</sup>University of São Paulo

### **MGC 023**

#### **cpnDB: a reference database of chaperonin sequences**

S.J. VANCUREN, University of Saskatchewan, Janet HILL<sup>1</sup>, <sup>1</sup>University of Saskatchewan

### **MGC 024**

#### **Regulation of plasmid transfer gene expression on pRleVF39b in *Rhizobium leguminosarum* bv. *viciae* VF39SM**

Kasuni HINIDUMA GAMA ACHCHI, University of Calgary, M.F. HYNES<sup>1</sup>, <sup>1</sup>University of Calgary

### **MGC 025**

#### **Effect of Cold-shock proteins (Csp) on *Aeromonas salmonicida* endogenous chromosomal rearrangement and virulence**

MD HOSSAIN, Memorial University of Newfoundland, JAVIER SANTANDER<sup>1</sup>, <sup>1</sup>Memorial University of Newfoundland

### **MGC 026**

#### **Optimization of Real Time PCR for detection of, and virulence gene contents in naturally occurring *Vibrio cholerae* in Bangladesh**

Md Deen ISLAM, University of Manitoba, MR. ISLAM<sup>2</sup>, Professor RAHMAN<sup>3</sup>, DR. ALAM<sup>2</sup>, <sup>1</sup>University of Manitoba, <sup>2</sup>International Centre for Diarrheal Disease Research, Bangladesh, <sup>3</sup>Department of Microbiology, University of Dhaka, Bangladesh

### **MGC 028**

#### **Inability to catabolize rhamnose by *Sinorhizobiummeliloti* Rm1021 affects competition for nodule occupancy**

D.M.R. RIVERS, University of Manitoba, Derek KIM<sup>1</sup>, I.J. ORESNIK<sup>1</sup>, <sup>1</sup>University of Manitoba

### **MGC 029**

#### **Production of solvents by the hyperthermophilic archaeon *Hyperthermusbutylicus***

Sarah KIM, University of Waterloo, C. TSE<sup>1</sup>, T.N. NGUYEN<sup>1</sup>, K. MA<sup>1</sup>, <sup>1</sup>University of Waterloo

### **MGC 031**

#### **Movement of an insertion sequence element is correlated with the gain of the ability to utilize xylitol as a sole carbon source in *Sinorhizobiummeliloti***

MacLean KOHLMEIER, University of Manitoba, B. A. GEDDES<sup>1</sup>, P. C. LOEWEN<sup>1</sup>, I. J. ORESNIK<sup>1</sup>,  
<sup>1</sup>University of Manitoba

### **MGC 032**

#### **CsrA homologue regulates AdeFGH efflux pump in *Acinetobacter baumannii***

Vanessa KORNELSEN, University of Manitoba, R PATIDAR<sup>1</sup>, A KUMAR<sup>1</sup>, <sup>1</sup>University of Manitoba

### **MGC 033**

#### **Revisiting the growth fitness based scoring models to define genetic interactions in *Escherichia coli***

Ashwani KUMAR, University of Regina, M. BABU<sup>1</sup>, S. ZILLES<sup>1</sup>, <sup>1</sup>University of Regina

### **MGC 034**

#### **TxtH is an important component of the thaxtomin biosynthetic machinery in the potato common scab pathogen *Streptomyces scabies***

Yuting LI, Memorial University of Newfoundland, J LIU<sup>1</sup>, K TAHLAN<sup>1</sup>, DRD BIGNELL<sup>1</sup>, <sup>1</sup>Memorial University of Newfoundland

### **MGC 035**

#### **A genome-wide screen identifies genes in rhizosphere-associated *Pseudomonas* required to evade plant defenses**

Zhexian LIU, University of British Columbia, P BESKSROVNAYA<sup>1</sup>, RA MELNYK<sup>1</sup>, SS HOSSAIN<sup>1</sup>, CL KHORASANI<sup>2</sup>, S O'SULLIVAN<sup>2</sup>, LR WIESMANN<sup>1</sup>, J BUSH<sup>2</sup>, JD RICHARD<sup>1</sup>, CH HANEY<sup>3</sup>, <sup>1</sup>University of British Columbia, <sup>2</sup>Harvard Medical School, <sup>3</sup>University of British Columbia, Michael Smith Laboratories

### **MGC 036**

#### **Characterization of a cryptic secondary metabolite in the common scab pathogen *Streptomyces scabies***

Jingyu LIU, Memorial University of Newfoundland, DRD BIGNELL<sup>1</sup>, <sup>1</sup>Memorial University of Newfoundland

### **MGC 039**

#### **Biosynthesis of Usnic acid and its analogues**

Navriti MITTAL, University of Manitoba

### **MGC 040**

#### **Silver resistance in *Pseudomonas aeruginosa* and *Staphylococcus aureus* as a mixed species culture**

Nadia MONYCH, University of Calgary, RJ TURNER<sup>1</sup>, <sup>1</sup>University of Calgary

### **MGC 041**

#### **Mechanisms of the cation selectivity of NhaP2 Antiporter in *Vibrio cholerae***

Muntahi MOURIN, University of Manitoba, AW WAI<sup>1</sup>, JO O'NEIL<sup>1</sup>, GH HAUSNER<sup>1</sup>, PD DIBROV<sup>1</sup>, <sup>1</sup>University of Manitoba

## POSTER SESSION III

Thursday, June 21st, 2018

3:00 – 5:00 PM

Presenters to be by their posters:

Odd number posters from 3:00 – 4:00 PM \*\* Even number posters from 4:00 – 5:00 PM

### Applied & Environmental Microbiology

#### AEM 034

##### **Genetic diversity of VCC-1 carbapenemase-producing *Vibrio cholerae* in costal waters of Germany**

Jens Andre HAMMERL, German Federal Institute for Risk Assessment, C. JAECKEL<sup>1</sup>, E. STRAUCH<sup>1</sup>, <sup>1</sup>German Federal Institute for Risk Assessment

#### AEM 059

##### **Shotgun metagenomics: can it be a one-stop-shop CIDT for enteric pathogen detection and typing in stool?**

Christy PETERSON, Public Health Agency of Canada, M WALKER<sup>1</sup>, NC KNOX<sup>1</sup>, J FORBES<sup>2</sup>, M GRAHAM<sup>1</sup>, G VAN DOMSELAAR<sup>1</sup>, MW GILMOUR<sup>1</sup>, H ADAM<sup>2</sup>, AR REIMER<sup>1</sup>, <sup>1</sup>Public Health Agency of Canada, <sup>2</sup>University of Manitoba

#### AEM 067

##### **Novel Methodology for the Isolation of Marine Bacteria from Sediment of the St. Lawrence Estuary**

Zach SCHIFFMAN, Concordia University

#### AEM 068

##### **Characterization of the PhzRI and CsaRI Quorum Sensing Systems of *Pseudomonas chlororaphis* PA23**

Grace SALIGA, University of Manitoba, N SHAH<sup>1</sup>, T DE KIEVIT<sup>1</sup>, <sup>1</sup>University of Manitoba

#### AEM 069

##### **Exploring microbial diversity across a municipal waste site**

Alexandra SAUK, University of Waterloo, L.A. HUG<sup>1</sup>, <sup>1</sup>University of Waterloo

#### AEM 070

##### **Microbial Activity Microassay development for extant microbial detection and characterization in extreme environments**

David TOUCHETTE, McGill University, Macdonald Campus, L.G. WHYTE<sup>1</sup>, <sup>1</sup>McGill University, Macdonald Campus

#### AEM 071

##### **Functional gene profiles in stockpiled versus undisturbed LFH from a sub-boreal forest**

Nicole SUKDEO, University of Northern BC, E TEEN<sup>1</sup>, PM RUTHERFORD<sup>1</sup>, HB MASSICOTTE<sup>1</sup>, KN EGGER<sup>1</sup>, <sup>1</sup>University of Northern BC

#### **AEM 072**

##### **Influence of birth weight, micronutrient supplementation, and colostrum administration during lactation on piglets' microbiota**

Guylaine TALBOT, Agriculture and Agri-Food Canada, L GALIOT<sup>2</sup>, N GAGNON<sup>1</sup>, M LESSARD<sup>1</sup>, L LOVERSO<sup>1</sup>, F GUAY<sup>2</sup>, J LAPOINTE<sup>1</sup>, B OUATTARA<sup>1</sup>, D BUENO DALTO<sup>1</sup>, JJ MATTE<sup>1</sup>, <sup>1</sup>Agriculture and Agri-Food Canada, <sup>2</sup>Université Laval

#### **AEM 074**

##### **The Influence of Environmental Conditions on the Transfer of Antibiotic Resistance Plasmids in Wild-type *Escherichia coli* Isolated from Wastewater Treatment Systems**

Amir TEHRANI, Ryerson University, F YUSUF<sup>1</sup>, K GILBRIDE<sup>1</sup>, <sup>1</sup>Ryerson University

#### **AEM 078**

##### **Elucidating the diversity of bioplastic degrading microorganisms in a municipal waste site**

Veronica VILJAKAINEN, University of Waterloo, LA HUG<sup>1</sup>, <sup>1</sup>University of Waterloo

#### **AEM 079**

##### **Diversity of aerobic anoxygenic phototrophs in Lake Winnipeg and their association with the zebra mussel *Dreissena polymorpha***

Kaitlyn WIENS, University of Manitoba, S KUZYK<sup>1</sup>, V YURKOV<sup>1</sup>, <sup>1</sup>University of Manitoba

#### **AEM 080**

##### **Characterization of Ciprofloxacin Resistant Bacteria and QNR Determinants Isolated from Rural and Urban Water Sources**

Farhan YUSUF, Ryerson University, K GILBRIDE<sup>1</sup>, <sup>1</sup>Ryerson University

#### **AEM 081**

##### **Investigating *Enterococcus* spp. Diversity and Antimicrobial Resistance across the One-Health Continuum**

Rahat ZAHEER, Agriculture and Agri-Food Canada, Lethbridge Research Centre, R BARBIERI<sup>1</sup>, S.R COOK<sup>2</sup>, L TYMENSEN<sup>2</sup>, N GOJI<sup>3</sup>, A CAMERON<sup>1</sup>, C.W BOOKER<sup>4</sup>, S HANNON<sup>4</sup>, T JONES<sup>5</sup>, K AMOAKO<sup>3</sup>, R.R READ<sup>6</sup>, T.A MCALLISTER<sup>1</sup>, <sup>1</sup>Agriculture and Agri-Food Canada, Lethbridge Research Centre, <sup>2</sup>Alberta Agriculture and Food, <sup>3</sup>Canadian Food Inspection Agency, <sup>4</sup>feedlot Health Management Services, AB, Canada, <sup>5</sup>Agriculture and Agri-Food Canada, Lacombe Research Centre, <sup>6</sup>University of Calgary

#### **AEM 082**

##### **Microbial Responses to Environmental Change in Canada High Arctic**

Graham COLBY, University of Ottawa, K ST. PIERRE<sup>0</sup>, V ST. LOUIS<sup>0</sup>, S ARIS-BROU<sup>1</sup>, A POULAIN<sup>1</sup>, <sup>1</sup>University of Ottawa

### **AEM 083**

#### **Electricity generation from winery wastewater using air cathode microbial fuel cell: addressing the practical issues**

Tianlong LIU, University of British Columbia Okanagan, A.V.N. PILLAI<sup>1</sup>, D.J. ROBERTS<sup>1</sup>, <sup>1</sup>University of British Columbia Okanagan

### **AEM 084**

#### **Developing a Bioactive Paper to Detect Enteric Viruses**

Nahed MAHROUS, University of Guelph, J.C. HALL<sup>1</sup>, M HABASH<sup>1</sup>, <sup>1</sup>University of Guelph

### **AEM 085**

#### **Sucralose and Caffeine as Chemical Indicators of Fecal Contamination from Wastewater in Rural and Indigenous Communities**

Marsha SERVILLE, Trent University, C.D. METCALFE<sup>1</sup>, <sup>1</sup>Trent University

### **AEM 086**

#### **Shifts in microbial community composition in response to mining site reclamation**

Eric BOTTOS, Thompson Rivers University, B MCAMMOND<sup>1</sup>, J FOSTER<sup>1</sup>, LH FRASER<sup>1</sup>, JD VAN HAMME<sup>1</sup>, <sup>1</sup>Thompson Rivers University

### **AEM 088**

#### **Global activation of specialized metabolism in *Streptomyces venezuelae***

Hindra HINDRA, McMaster University, EJ GEHRKE<sup>1</sup>, S BOURSALIE<sup>1</sup>, MA ELLIOT<sup>1</sup>, <sup>1</sup>McMaster University

### **AEM 089**

#### **Building a metagenomics ontology: The winding road to standardization and interoperability**

Elvira MITRAKA, Dalhousie University, R.G. BEIKO<sup>1</sup>, <sup>1</sup>Dalhousie University

### **AEM 090**

#### **Route of administration of antibiotics as a method of reducing antibiotic concentration in feces and mitigating gut community disruptions in swine**

Nicole RICKER, USDA-ARS NADC, J TRACHSEL<sup>1</sup>, JA JONES<sup>1</sup>, P COLGAN<sup>2</sup>, A HOWE<sup>2</sup>, JF COETZEE<sup>3</sup>, CL LOVING<sup>1</sup>, HK ALLEN<sup>1</sup>, <sup>1</sup>USDA-ARS NADC, <sup>2</sup>Iowa State University, <sup>3</sup>Kansas State University

### **AEM 091**

#### **Authentication of natural health products using plant associated microbiota**

Hanan SHEHATA, University of Guelph, S RAGUPATHY<sup>1</sup>, S NEWMASER<sup>1</sup>, <sup>1</sup>University of Guelph

## Infection & Immunity

### II 021

#### **Development of di-lipid polymyxin B analogs: investigation on the effect of hydrophobicity through its fatty acyl component**

Ronald DOMALAON, University of Manitoba, L. BERRY<sup>1</sup>, Q. TAYS<sup>1</sup>, G. G. ZHANEL<sup>1</sup>,  
F.SCHWEIZER<sup>1</sup>,<sup>1</sup>University of Manitoba

### II 056

#### **A novel engineered peptide WRL3 with a potent antimicrobial activity against Shiga toxin-producing *Escherichia coli* O157**

Zhi MA, Agriculture and Agri-Food Canada, Lethbridge Research Centre, J. HAN<sup>2</sup>, B. CHANG<sup>2</sup>, X. BIE<sup>2</sup>,  
K. STANFORD<sup>3</sup>, Y.D. NIU<sup>4</sup>, T.A. MCALLISTER<sup>1</sup>, <sup>1</sup>Agriculture and Agri-Food Canada, Lethbridge  
Research Centre, <sup>2</sup>College of Food Science and Technology, Nanjing Agricultural University, Nanjing  
210095, China, <sup>3</sup>Alberta Agriculture and Food, <sup>4</sup>University of Calgary

### II 059

#### **Interactions Between Adherent-Invasive *Escherichia coli* and Host Macrophages: A Virulence Phenotype**

Michael RENOUF, Ryerson University, J.B. MCPHEE<sup>1</sup>, <sup>1</sup>Ryerson University

### II 060

#### **Cigarette smoke suppresses short chain fatty acid release by oral bacteria**

I ZELLER, Medical University of Vienna, M MALOVICHKO<sup>2</sup>, HE HURST<sup>2</sup>, David SCOTT<sup>2</sup>, <sup>1</sup>Medical  
University of Vienna, <sup>2</sup>University of Louisville

### II 063

#### **RNAseq analysis of *Shigella flexneri* transcriptional program reveals two putative T3SS substrates**

NAVOUN SILUE, University of Ottawa

### II 064

#### **Functional Characterization of MexXY-OprM/OprA efflux systems in *Pseudomonas aeruginosa***

Manu SINGH, University of Manitoba, A KUMAR<sup>1</sup>, <sup>1</sup>University of Manitoba

### II 065

#### **Comparing the substrate overlap and antimicrobial susceptibility of various single component cation selective multidrug efflux pumps in *Escherichia coli***

Carmine SLIPSKI, University of Manitoba, GG ZHANEL<sup>1</sup>, DC BAY<sup>1</sup>, <sup>1</sup>University of Manitoba

### II 066

#### **Exploring the contributions of siderophores to the evolution of human pathogenic bacteria**

Craig SOUTAR, University of Regina, J STAVRINIDES<sup>1</sup>, <sup>1</sup>University of Regina

## II 067

### **A *Pantoea*-derived natural product with antimicrobial activity against clinically relevant *Acinetobacter baumannii***

Ashley WILLIAMS, University of Regina, J. STAVRINIDES<sup>1</sup>, <sup>1</sup>University of Regina

## II 069

### **Phloroglucinol derivatives exhibit antimicrobial and antibiofilm activities against *Staphylococcus aureus***

Haben TESFU, University of Manitoba, N. MITTAL<sup>1</sup>, A. M. HOGAN<sup>1</sup>, J. L. SORENSEN<sup>1</sup>, S. T. CARDONA<sup>1</sup>, <sup>1</sup>University of Manitoba

## II 070

### **Development of a Diagnostic Assay for Bacterial Toxin Identification and Quantitation using Targeted Mass Spectrometry**

Mark UNGER, Public Health Agency of Canada, D. DAVLUT<sup>1</sup>, C. BERRY<sup>1</sup>, P. CHONG<sup>1</sup>, G. WESTMACOTT<sup>1</sup>, <sup>1</sup>Public Health Agency of Canada

## II 071

### **Development of a respiratory vaccine for sheep**

Mireia VIVAS, University of Saskatchewan, G. CROCKFORD<sup>1</sup>, N. RAWLYK<sup>1</sup>, R. BROWNLIE<sup>1</sup>, J. VAN DONKERSGOED<sup>2</sup>, A. POTTER<sup>1</sup>, <sup>1</sup>VIDO-InterVac University of Saskatchewan, <sup>2</sup>Alberta Beef Health Solutions

## II 072

### **Structural Studies on *Legionella pneumophila* Effector Proteins**

Kevin VOTH, University of Saskatchewan, M. CYGLER<sup>1</sup>, L. LI<sup>1</sup>, I.Y.W. CHUNG<sup>1</sup>, K. VAN STRAATEN<sup>1</sup>, <sup>1</sup>University of Saskatchewan

## II 073

### **Colistin resistance and *mcr* (1-2) genes in presumed beta-lactamase-producing *Escherichia coli* isolated from poultry in Quebec, Senegal and Vietnam**

PASSORET VOUNBA, Université de Montréal, M RHOUMA<sup>1</sup>, J ARSENAULT<sup>1</sup>, R BADA-ALAMBEDI<sup>2</sup>, JM FAIRBROTHER<sup>1</sup>, <sup>1</sup>Université de Montréal, <sup>2</sup>École InterÉtats des Sciences et Médecine Vétérinaires de Dakar

## II 074

### ***Legionella pneumophila* or non-pneumophila, that is the question: Understanding the differences between *Legionella* species infection on host response**

Breanne HEAD, University of Manitoba, A TRAJTMAN<sup>1</sup>, C GRAHAM<sup>1</sup>, A.K. BRASSINGA<sup>1</sup>, K BERNARD<sup>2</sup>, K NICHOL<sup>3</sup>, J KINDRACHUK<sup>1</sup>, L VELEZ<sup>4</sup>, Z.V. RUEDA<sup>5</sup>, Y KEYNAN<sup>1</sup>, <sup>1</sup>University of Manitoba, <sup>2</sup>Public Health Agency of Canada, <sup>3</sup>Health Sciences Centre, <sup>4</sup>Sede de Investigación Universitaria, <sup>5</sup>Universidad Pontificia Bolivariana



## II 075A

### **A Green Vaccine for Red Zones: Efficient Stable Expression of Nuclear H5N1 Avian Influenza Virus HA2 Transgene in *Chlamydomonas reinhardtii***

ME BAYOUMI, Faculty of Veterinary Medicine, Cairo University, MM SAMIR<sup>2</sup>, MA ELGAMAL<sup>1</sup>, HM AMER<sup>1</sup>, Ausama YOUSIF<sup>1</sup>, <sup>1</sup>Faculty of Veterinary Medicine, Cairo University, <sup>2</sup>Animal Health Research Institute, Ministry of Agriculture, Egypt.

## II 075B

### **Non-primate Hepaciviruses in Egyptian Equids**

AM HASAN, Genome Research Unit, Animal Health Research Institute, AI ELSAYED<sup>2</sup>, NM HAGAG<sup>3</sup>, MSM EL-SHAHIDY<sup>2</sup>, MA SHAHEIN<sup>0</sup>, MG AGGOUR<sup>1</sup>, F STEINBACH<sup>4</sup>, Ausama YOUSIF<sup>5</sup>, <sup>1</sup>Genome Research Unit, Animal Health Research Institute, <sup>2</sup>Faculty of Veterinary Medicine, Suez Canal University, <sup>3</sup>Genome Research Unit, Animal Health Research Institute El-Shahidy, <sup>4</sup>Faculty of Health and Medical Sciences, University of Surrey, <sup>5</sup>Faculty of Veterinary Medicine, Cairo University

## II 076

### **Development of novel, simple, rapid and, highly sensitive lumpy skin disease virus-specific PCR and real time-PCR assays**

Ausama YOUSIF, Cairo University, OH REFAEI<sup>1</sup>, MM BAYOUMI<sup>1</sup>, HA EL-SHEIKH<sup>2</sup>, MA ELGAMAL<sup>1</sup>, AA EL-SAYED<sup>1</sup>, AA FAYED<sup>1</sup>, MA SHALABY<sup>1</sup>, <sup>1</sup>Faculty of Veterinary Medicine, Cairo University, <sup>2</sup>Faculty of Veterinary Medicine, Zagazig University

## II 077

### **Post-exposure protective efficacy of T-705 (Favipiravir) against Sudan virus infection in guinea pigs**

Zirui ZHANG, University of Manitoba, Z.R. ZHANG<sup>2</sup>, MD N. RAHIM<sup>1</sup>, MD N. RAHIM<sup>2</sup>, S.H. HE<sup>2</sup>, W.J. ZHU<sup>1</sup>, W.J. ZHU<sup>2</sup>, L BANADYGA<sup>2</sup>, D SAFRONETZ<sup>2</sup>, X.G. QIU<sup>1</sup>, X.G. QIU<sup>2</sup>, <sup>1</sup>University of Manitoba, <sup>2</sup>Public Health Agency of Canada

## II 078

### **Role of host and viral factors in persistent and asymptomatic testicular Ebola infections**

Andrew WEBB, University of Manitoba, B SCHINDELL<sup>1</sup>, G SOULE<sup>2</sup>, D SAFRONETZ<sup>2</sup>, J KINDRACHUK<sup>1</sup>, <sup>1</sup>University of Manitoba, <sup>2</sup>Public Health Agency of Canada

## II 079

### ***Staphylococcus aureus* poses a significant health concern for IV drug user populations due to the increased bacterial survival in controlled-release opioid Hydromorphcontin**

Katherine KASPER, University of Western Ontario, B HALLAM<sup>1</sup>, CE COLEMAN<sup>2</sup>, I MANOHARAN<sup>1</sup>, S STRANGES<sup>1</sup>, JK MCCORMICK<sup>1</sup>, M SILVERMAN<sup>1</sup>, <sup>1</sup>University of Western Ontario, <sup>2</sup>Queen's University

## II 080

### **Evidence of Selection for Loss of the Biofilm Phenotypes in Invasive Nontyphoidal *Salmonella* Strains D7795 and D23580**

Keith MACKENZIE, University of Regina, Y WANG<sup>2</sup>, EG HANSEN<sup>3</sup>, NL HERMAN<sup>3</sup>, P MUSICHA<sup>4</sup>, DJ HERMAN<sup>3</sup>, NA FEASEY<sup>5</sup>, AP WHITE<sup>3</sup>, <sup>1</sup>University of Regina, <sup>2</sup>Shenzhen University Health Science Center, Guangdong, China, <sup>3</sup>Vaccine and Infectious Disease Organization-International Vaccine Centre, Saskatoon, SK.; University of Saskatchewan, <sup>4</sup>University of Malawi College of Medicine, Blantyre, Malawi; Centre for Tropical Medicine and Global Health, Nuffield Dept. of Medicine, University of Oxford, United Kingdom, <sup>5</sup>Dept. of Clinical Sciences, Liverpool School of Tropical Medicine, United Kingdom; Centre for Tropical Medicine and Global Health, Nuffield Dept. of Medicine, University of Oxford, United Kingdom

## II 081

### **The Cost of Speed: Evaluating Systematic Failures in Metagenomic AMR Profiling**

Finlay MAGUIRE, Dalhousie University, AR RAPHENYA<sup>2</sup>, B ALCOCK<sup>2</sup>, AG MCARTHUR<sup>2</sup>, FS BRINKMAN<sup>3</sup>, RG BEIKO<sup>1</sup>, <sup>1</sup>Dalhousie University, <sup>2</sup>McMaster University, <sup>3</sup>Simon Fraser University

## II 083

### **Etiology of the progression of Periodontitis: A meta survey of the genes and putative regulatory mechanisms driving disease**

Nikhil RAM MOHAN, Boston College, MMM MEYER<sup>1</sup>, <sup>1</sup>Boston College

## II 085

### **Vasoactive Intestinal Peptide (VIP) Promotes Intestinal Host Defense by Modulating Group 3 Innate Lymphoid Cells**

HB YU, University of British Columbia, H YANG<sup>1</sup>, C MA<sup>1</sup>, GS REID<sup>1</sup>, JA WASCHEK<sup>1</sup>, LC OSBORNE<sup>1</sup>, BA VALLANCE<sup>1</sup>, HONGBING YU<sup>1</sup>, <sup>1</sup>University of British Columbia

## II 086

### **Chemical genetic screen reveals new perturbants of the outer membrane of Gram-negative bacteria**

Jean-Philippe CÔTÉ, McMaster University, ED BROWN<sup>1</sup>, <sup>1</sup>McMaster University

## II 088

### **Investigating the Mumps epidemic in Canada through Whole Genome Sequencing**

Jasmine FROST, University of Manitoba, J HIEBERT<sup>0</sup>, H SCHULZ<sup>1</sup>, A SEVERINI<sup>1</sup>, <sup>1</sup>University of Manitoba

## II 089

### **Regulatory evolution drives immune evasion by *Salmonella* Typhimurium**

Bushra ILYAS, McMaster University, DT MULDER<sup>1</sup>, DJ LITTLE<sup>1</sup>, W ELHENAWY<sup>1</sup>, MM BANDA<sup>2</sup>, DP PÉREZ-MORALES<sup>2</sup>, CN TSAI<sup>1</sup>, NYE CHAU<sup>1</sup>, VH BUSTAMANTE<sup>2</sup>, BK COOMBES<sup>1</sup>, <sup>1</sup>McMaster University, <sup>2</sup>Universidad Nacional Autónoma de México, Cuernavaca, México

## II 090

### **The *Lactobacillus rhamnosus* R0011 secretome attenuates *Salmonella enterica* serovar Typhimurium secretome-induced pro-inflammatory intestinal epithelial cell gene expression**

Michael JEFFREY, University of Ontario Institute of Technology, C. MACPHERSON<sup>2</sup>, O. MATHIEU<sup>2</sup>, T.A. TOMPKINS<sup>2</sup>, J.M. GREEN-JOHNSON<sup>1</sup>, <sup>1</sup>University of Ontario Institute of Technology, <sup>2</sup>Lallemand Health Solutions

## II 093

### Effects of repeat and phage-like sequences on the virulence of human urogenital mycoplasmas

Orville ROACHFORD, University of the West Indies, Cave Hill Campus

## Molecular Genetics & Cellular Microbiology

### MGC 001

#### Investigation of the in-feed use of natural probiotics as an alternative to antibiotics on the prevalence of tetracycline resistant *Escherichia coli* in feedlot cattle

Taylor DAVEDOW, Lethbridge Research Centre, T RAN<sup>1</sup>, C NARVAEZ-BRAVO<sup>2</sup>, T.A. MCALLISTER<sup>1</sup>, <sup>1</sup>Lethbridge Research Centre, <sup>2</sup>University of Manitoba

### MGC 006

#### Do Codons Evolve to Produce 'Hidden' Stop Codons? Testing the Hypothesis in Fungal Biosynthetic Genes

Robert BERTRAND, University of Manitoba, M ABDEL-HAMEED<sup>1</sup>, JL SORENSEN<sup>1</sup>, <sup>1</sup>University of Manitoba

### MGC 030

#### Enabling Population-Scale Genomic Island Analyses

C. BERTELLI, Simon Fraser University, University Hospital Center of Lausanne, Kristen GRAY<sup>0</sup>, A.C. LIM<sup>0</sup>, K.E. TILLEY<sup>0</sup>, A. SPENCER<sup>0</sup>, J. PELTIER<sup>0</sup>, F.S.L. BRINKMAN<sup>0</sup>, <sup>1</sup>Simon Fraser University, University Hospital Center of Lausanne

### MGC 042

#### Structural studies of ribosomal frameshifting in Porcine reproductive and respiratory syndrome virus (PRRSV)

Ankoor PATEL, University of Manitoba, E. TREFFERS<sup>2</sup>, Y. FANG<sup>3</sup>, E. SNIJDER<sup>2</sup>, B.L. MARK<sup>1</sup>, <sup>1</sup>University of Manitoba, <sup>2</sup>Leiden University, <sup>3</sup>Kansas State University

### MGC 044

#### Functional analysis of XRE-family transcriptional regulators in *Streptomyces clavuligerus*

Brandon PIERCEY, Memorial University of Newfoundland, C. MCISAAC<sup>1</sup>, R. COLLINS<sup>1</sup>, K. TAHLAN<sup>1</sup>, <sup>1</sup>Memorial University of Newfoundland

### MGC 046

#### Identifying and classifying promoter sequences in prokaryotes

Miria RAFANTE, Dalhousie University, R BEIKO<sup>1</sup>, <sup>1</sup>Dalhousie University

### MGC 047

#### Investigation of Non-Structural Proteins to Study the Biology of Streptococcal Phage 2972

Ariane C. RENAUD, Université de Laval, APH HYNES<sup>2</sup>, SG GAGNÉ<sup>1</sup>, SM MOINEAU<sup>1</sup>, <sup>1</sup>Université de Laval, <sup>2</sup>McMaster University

### MGC 048

#### ***Campylobacter jejuni* bacteriophage tropism reliant on complex capsular polysaccharides and flagellum interactions**

Hayley REYNOLDS, University of Georgia, J.C. SACHER<sup>2</sup>, M. FOSS<sup>3</sup>, M.A. JAVED<sup>2</sup>, L. VAN ALPHEN<sup>2</sup>, M.P. LAMOUREUX<sup>3</sup>, A.V. KARLYSHEV<sup>4</sup>, A. SINGH<sup>5</sup>, H.C. JARRELL<sup>3</sup>, S. EVOY<sup>5</sup>, B.W. WREN<sup>6</sup>, C.M. SZYMANSKI<sup>2</sup>, <sup>1</sup>Department of Microbiology and Complex Carbohydrate Research Center, University of Georgia, Athens, GA, <sup>2</sup>Department of Biological Sciences, University of Alberta, Edmonton, AB, <sup>3</sup>National Research Council of Canada, Ottawa, ON, <sup>4</sup>School of Life Sciences, Faculty of Science, Kingston University, London, <sup>5</sup>Department of Electrical and Computer Engineering, University of Alberta, Edmonton, AB, <sup>6</sup>London School of Hygiene and Tropical Medicine, London

### MGC 050

#### **Suppression of p53 function via FUBP1 via Human Adenovirus E1A**

Andrea SORIANO, University of Manitoba, JR FROST<sup>1</sup>, M MENDEZ<sup>1</sup>, L CRISOSTOMO<sup>1</sup>, O OLANUBI<sup>1</sup>, S RADKO<sup>1</sup>, P PELKA<sup>1</sup>, <sup>1</sup>University of Manitoba

### MGC 052

#### **Evidence that Outer Membrane Factor, AdeK, is Functional in Combination with Adjacent RND Efflux Components, AdeAB, in *Acinetobacter baumannii* 17978**

Ellen SYKES, University of Manitoba, P. M. DE SILVA<sup>1</sup>, R. PATIDAR<sup>1</sup>, A. KUMAR<sup>1</sup>, <sup>1</sup>University of Manitoba

### MGC 053

#### ***In vivo* analysis of clavulanic acid biosynthesis in *Streptomyces clavuligerus***

Kapil TAHLAN, Memorial University of Newfoundland, S SRIVASTAVA<sup>1</sup>, K KING<sup>1</sup>, N ABUSARA<sup>1</sup>, C MALAYNY<sup>1</sup>, J WILSON<sup>1</sup>, <sup>1</sup>Memorial University of Newfoundland

### MGC 054

#### **Transcriptional Regulator *mmpT5* Controls Efflux Pump Expression in *Mycobacterium intracellulare* and Provides Mechanism for Bedaquiline Resistance**

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### MGC 056

#### **The tRNA<sup>Leu</sup>-encoding gene *leuX* plays a role in the regulation of virulence gene expression in enterohemorrhagic *Escherichia coli* O157:H7**

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### MGC 058

#### **Fungal Phylogenetics Using Mitochondrial Protein Sequences**

Nikita PATEL, University of Manitoba, A WAI<sup>1</sup>, A ZUBAER<sup>1</sup>, G HAUSNER<sup>1</sup>, <sup>1</sup>University of Manitoba

### MGC 059

#### **Investigation of the role of histone deacetylase 10 in HIV replication**

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#### **MGC 060**

**Intron-encoded ribosomal protein S3 and N-acetyltransferases within the mitochondrial genomes of some fungi: Here today, gone tomorrow?**

Alvan WAI, University of Manitoba, A CARTA<sup>1</sup>, G HAUSNER<sup>1</sup>, <sup>1</sup>University of Manitoba

#### **MGC 061**

**Mitochondrial genome expansion and intron mobility in *Ceratocystis sensulato* species**

Abdullah ZUBAER, University of Manitoba, A WAI<sup>1</sup>, G HAUSNER<sup>1</sup>, <sup>1</sup>University of Manitoba

#### **MGC 062**

**Characterization of the *dif* chromosome dimer resolution site in *Caulobacter crescentus***

Ali FARROKHI, Université de Montréal, G SZATMARI<sup>1</sup>, <sup>1</sup>Université de Montréal

#### **MGC 063**

**Application of CRISPR *Cas* as modern phage therapy**

Zhabiz GOLKAR, Voorhees, AH HARPER<sup>1</sup>, TC CAMPBELL<sup>1</sup>, <sup>1</sup>Voorhees

#### **MGC 064**

**Plasmid Profiler: Comparative Analysis of Plasmid Content in WGS Data**

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