

Second International Symposium on Infectious Diseases on Bats

University Center for the Arts, Colorado State University

June 29 - July 1, 2017

Thursday, June 29

5:30 p.m. Registration, PowerPoint file transfer, **xxx**

6:00 p.m. Reception - *Wine, beer and snacks*, **xxx**

ORAL PRESENTATIONS

Friday, June 30

7:00 a.m. Registration, University Center for the Arts

8:00 a.m. [Tony Schountz](#). Colorado State University. **Welcoming remarks**

8:10 a.m. Session I - Filoviruses

8:10 a.m. [Jonathan Towner](#). **Studies of horizontal transmission of Marburg virus among experimentally infected fruit bats**

8:30 a.m. [Amy Schuh](#). **Investigations of long-term protective immunity against Marburg virus re-infection in Egyptian rousette bats**

8:45 a.m. [IV Kuzmin](#), [TM Schwarz](#), [PA Ilinykh](#), [I Jordan](#), [TG Ksiazek](#), [R Sachidanandam](#), [CF Basler](#) and [Alexander Bukreyev](#). **Innate immune response to filoviruses and the role of filoviral interferon-inhibiting domains in bat and human cells**

9:00 a.m. [Brian Bird](#), [Goldstein T](#), [Anthony S](#), [Gbakima A](#), [Saylors K](#), [Jean Louis F](#), [Wolking D](#), [Epstein J](#), [Karesh W](#), [Kreuder-Johnson C](#), [Mazet J](#). **Broad based surveillance for ebolaviruses: PREDICT in Sierra Leone, Liberia, and Guinea.**

9:15 a.m. [Brook CE](#), [Ng M](#), [Ndungo E](#), [Jangra RK](#), [Dobson, AP](#), [Graham AL](#), [Grenfell BT](#), [Metcalf CJE](#), and [Chandran K](#). **Quantifying signatures of resistance and tolerance to filoviruses in bat cell lines.**

9:30 a.m. [Laing ED](#), [Mendenhall IH](#), [Linster M](#), [Low DHW](#), [Chen Y](#), [Yan L](#), [Sterling S](#), [Borthwick S](#), [Neves ES](#), [Lim JSL](#), [Skiles M](#), [Lee BPYH](#), [Wang LF](#), [Broder CC](#), [Smith GJD](#). **Serologic evidence of exposure to filoviruses in fruit bats, Singapore**

9:45 a.m. [David Hayman](#). **Predicting undiscovered filovirus reservoirs and patterns of disease emergence**

10:00 a.m. Break

10:30 a.m. Session II - Coronaviruses A

10:30 a.m. [Susanna Lau](#). **Bats as possible animal origin of MERS-CoV**

10:45 a.m. [Patrick Woo](#). **Rapid detection of MERS-CoV ancestors in bats**

11:00 a.m. **TBA.**

11:15 a.m. [Simon J Anthony](#), [CK Johnson](#), [DJ Greig](#), [S Kramer](#), [X Che](#), [H Wells](#), [AL Hicks](#), [DO Joly](#), [ND Wolfe](#), [P Daszak](#), [W Karesh](#), [WI Lipkin](#), [SS Morse](#), [PREDICT Consortium](#), [JAK Mazet](#), [T Goldstein](#). **Global patterns in coronavirus diversity.**

11:30 a.m. [Hu B](#), [Zeng L-P](#), [Yang X-L](#), [Ge X-Y](#), [Zhang W](#), [Li B](#), [Luo D-S](#), [Zhang Y-Z](#), [Wang M-N](#), [Daszak P](#), [Wang L-F](#), [Cui J](#), [Zheng-Li Shi](#). **SARS coronavirus may have originated from frequent recombination events between SARS-like coronaviruses in a single horseshoe bat habitat**

11:45 a.m. [Marika Geldenhuys](#), [M Mortlock](#), [J Weyer](#), [O Bezuidt](#), [E Seamark](#), [T Kearney](#), [C Gleasner](#), [T Erkkila](#), [H Cui](#) and [W Markotter](#). **A metagenomic approach identifying a MERS-related coronavirus in a bat from South Africa.**

12:00 p.m. Lunch and Poster Session

2:00 p.m. Session III - Rhabdoviruses

- 2:00 p.m. [Sarkis Sarkis](#), Lise MC, Darcissac E, Dabo S, Neuveut C, de Thoisy B, Meurs E, Lavergne A, Lacoste V. **New insights into the antiviral innate immune response of *Desmodus rotundus*.**
- 2:15 p.m. [Eric D. Laing](#), SL. Sterling, DL Weir, SE Larsen, L-F Wang, BC Schaefer, CC Broder. **A comparative study of the autophagy pathway during virus infection of bat (natural) and human (accidental) host cells**
- 2:30 p.m. [Jessica Coertse](#), Le Roux, K., Richardson, E., White, W., Markotter, W. **Lagos bat virus in South Africa, 2013-2017**
- 2:45 p.m. [Davide Lelli](#), A Prosperi, ChCiara Chiapponi, P Debenedictis, A M Gibellini, S Leopardi, S Sozzi, D Scaravelli, A Moreno, A Lavazza. **Characterization of a novel Rhabdovirus isolated from insectivorous bat (*Pipistrellus kuhlii*) in Italy.**

3:00 p.m. Session IV - Paramyxoviruses

- 3:00 p.m. [Alison Peel](#), Baker KS, Hayman DTS, Cunningham AA, Wood JLN Garnier R, Restif O. **Age-specific dynamics of maternally- and infection- derived immunity within African bat populations.**
- 3:15 p.m. [Marinda Mortlock](#), Weyer J, Paweska J and Markotter W. **Detection of rubula- and related viruses in an Egyptian fruit bat (*Rousettus aegyptiacus*) colony in South Africa.**

3:30 p.m. Break

- 4:00 p.m. [Angélica Cristine Campos](#), LG Góes, C Carvalho, G Ambar, L Thomazelli, JC Costa, MC de Souza, A Ruckert, DC Oliveira, LF Martorelli, AP Kataoka, MS Nardi, JL Summa, R Marcatti de Azevedo, LH Queiroz, WA Pedro, AP Cruz-Neto and E Durigon. **Influenza-like virus and Paramyxovirus Screening in Brazilian Bats.**
- 4:15 p.m. [Raina Plowright](#). **Dynamics and spillover of Hendra virus.**

3:00 p.m. Session V - Methodology in Bat-borne Viruses

- 4:30 p.m. [Jon Epstein](#). **Using serology to understand the dynamics of concurrent viral infections in pteropid bats**
- 4:45 p.m. [Kevin Olival](#). **Estimating viral richness and viral sharing in bats: integrating previously-published and newly-acquired field data**
- 5:00 p.m. **Open Discussion**

6:00 p.m. Recess

Saturday, July 1

7:30 a.m. Registration

8:00 a.m. Session II - Coronaviruses B

- 8:00 a.m. [Wolfgang Preiser](#), NL Ithete1, N Cronjé, T Suliman. **Optimised sampling efforts and screening assays identify several MERS-related coronaviruses in South African bats**
- 8:15 a.m. [Luiz Gustavo Góes](#), AC Campos, C Carvalho, G Ambar, D Oliveira, C Alvarenga, JC Costa, A Ruckert, DC Oliveira, LF Martorelli, AP Kataoka, MS Nardi, JL Summa, R Marcatti de Azevedo, LH Queiroz, AP Cruz-Neto, E Durigon. **Coronavirus diversity in bats from urban, rural and forest areas of Atlantic and Amazon Forest biomes, Brazil.**
- 8:30 a.m. Doug Causey, [Rupp Jonathan C](#), Lange M, Howard M, Sundarajan A, Sena J, Schilkey FD, Murphy M, Bortz B. **Preliminary Evidence of Secondary Acquisition of Tymoviridae and Partitiviridae in Little Brown Bats (*Myotis lucifugus*) in Southcentral Alaska.**
- 8:45 a.m. [Arinjay Banerjee](#), R Brownie, N Rapin, T Bollinger, D Falzarano, V Misra. **Are big brown bat cells different than human cells in their innate immune response to coronavirus and viral ligands?**

9:00 a.m. Session V - Influenza

- 9:00 a.m. [Martin Schwemmler](#). **Reverse genetic analysis of bat influenza viruses: A journey full of surprises.**
- 9:30 a.m. [Wenjun Ma](#). **Towards understanding bat influenza A-like viruses**
- 9:45 a.m. [Tony Schountz](#), Ashley Malmlov, J Ma, J Lee, C Campbell, T Aboellail, A Hawkinson, M Stenglein, W Ma. **Experimental Infection of Jamaican Fruit Bats (*Artibeus jamaicensis*) with a Rescued Bat HL18NL11 Influenza A-like Virus**

10:00 a.m. Break

10:00 a.m. Session VI - Ecology

- 10:30 a.m. [Rebekah Kading](#). Seroprevalence of alphaviruses, flaviviruses and Rift Valley fever virus in Ugandan bats
- 10:45 a.m. [Wanda Markotter](#), M Dietrich, T Kearney, S McCulloch, M Mortlock, E Seamark and J Paweska. **Presence of zoonotic bat pathogens correlate with reproductive seasons in South African bat populations.**
- 11:00 a.m. [Low de Vries](#), S McCulloch, J Paweska and W Markotter. **Body mass index of the Egyptian fruit bat, *Rousettus aegyptiacus*: An indicator of infection status**
- 11:15 a.m. [Arielle Salmier](#), S Tirera, B de Thoisy, A Franc, E Darcissac, D Donato, C Bouchier, V Lacoste and A Lavergne. **Environmental constraints drive the viral diversity of two sympatric Amazonian bat species.**
- 11:30 a.m. [Cecilia Sanchez](#), TB Reardon, WSJ Boardman, S Altizer. **Seasonal and individual predictors of grey-headed flying fox (*Pteropus poliocephalus*) foraging movements in Adelaide, South Australia.**
- 11:45 a.m. [Robert Kityo](#), R Kading, B Nalikka, J Lutwama. **Uganda Bat calls library-developing a tool to survey arthropod-borne viruses associated with Chiroptera.**

12:00 p.m. Lunch

1:00 p.m. Session V - Immunology of Bats

- 1:00 p.m. J Xie, C Ma, Y Li, J Cui, L-F Wang, Z Shi, [Peng Zhou](#). **Dampening of STING-dependent IFN production: an implication of virus tolerance in bats?**
- 1:15 p.m. [Aaron T. Irving](#), K Luko, M Ahn, KP San, L-F Wang. **Regulation of immune activation and dampened inflammation in Pterid bats**
- 1:30 p.m. [Pravin Periasamy](#), Martínez Gómez J.M.1,2, Wang LF3, and Alonso S.1,2 **Delineating the phenotype and function of the B cell population in the fruit-eating bat, *Pteropus Alecto*.**
- 1:45 p.m. [DeeAnn Reeder](#). **Integrative measures for assessing “health” in free-ranging bats – zoonotic and conservation implications from a One Health perspective.**

2:00 p.m. Session VI - White Nose Syndrome

2:00 p.m. [Ken Field](#). **Host-pathogen interactions during white-nose syndrome**

2:15 p.m. [Marcus Fritze](#), CC Voigt, GA Czirjak, SJ Puechmaille. **Resistance or Tolerance – How do European bats cope with *Pseudogymnoascus destructans*?**

2:30 p.m. [C. Reed Hranac](#), BJ Klüg-Baerwald, YA Dzal, C Lausen, JC Marshall, SH Olson, DTS Hayman. **Modeling the impact of White-nose syndrome on two western bat species.**

2:45 p.m. [Paul Cryan](#). **Variable behaviors influence species susceptibility to disease – surviving white-nose syndrome.**

3:00 p.m. Break

3:30 p.m. Session VI - Other Infectious Agents of Bats

3:30 p.m. [Richard Yanagihara](#). **Emerging Insights into the Geographic Distribution, Genetic Diversity and Evolutionary Origin of Bat-borne Hantaviruses**

3:45 p.m. A Vicente-Santos, A Moreira-Soto, C Soto-Garita, LG Chaverri, A Chaves, JF Drexler, JA Morales, A Alfaro-Alarcón, B Rodríguez-Herrera and [Eugenia Corrales-Aguilar](#). **Neotropical Bats that Co-habit with Humans Function as Dead-End Hosts for Dengue Virus.**

4:00 p.m. [Sonu Subudhi](#), N Rapin, J Hill and V Misra. **Novel Gammaherpesvirus in Bats: discerning the secrets of these oncogenic viruses**

3:15 p.m. [Ashley Malmlov](#), K Miedema, T Aboellail, R Perera, C Campbell, M Eckley, N Chotiwan, R Gullberg, T Schountz. **Detection of Zika virus in the brains and testes of experimentally infected Jamaican fruit bats.**

4:30 p.m. [Clif McKee](#), C Webb, M Kosoy, Y Bai, L Osikowicz, R Suu-Ire, Y Ntiamo-Baidu, A Cunningham, J Wood, D Hayman. **Long-term monitoring of *Bartonella* bacteria in a captive colony of fruit bats and experimental evidence of bat flies as vectors of bartonella**

POSTER PRESENTATIONS

James N. Aegerter, Ashley C. Banyard, Anthony R. Fooks, Graham C. Smith. **Predicting the epizootiology of temperate bat disease: Is it all about the bats?**

Danielle E. Anderson, Kristmundur Sigmundsson, So Young Kim, Brian Ho Wenkae, Jasmine Tan¹ and Lin-Fa Wang. **Comparative loss of function screens highlight common cellular pathways required by mumps virus for replication in bats and humans**

Victoria Avanzato, Neeltje van Doremalen, Christine Carrington, Janine Seetahal, Tony Schountz, Vincent Munster. **Development Implementation of a RT-PCR Assay to Detect Henipaviruses in Trinidad Bats**

Jonathan C. Rupp, Maegan Lange, Megan Howard, Anitha Sundarajan, Jonny Sena³, Faye D. Schilkey, Molly Murphy, Douglas Causey, Eric Bortz. **Genomic characterization and pathogenic potential of a novel evolutionarily-divergent alphacoronavirus isolated from *M. lucifugus* bats in Alaska.**

Douglas Causey, Jonathan C. Rupp, Maegan Lange, Megan Howard, Anitha Sundarajan, Jonny Sena, Faye D. Schilkey, Molly Murphy, Eric Bortz. **Preliminary Evidence of Secondary Acquisition of Tymoviridae and Partitiviridae in Little Brown Bats (*Myotis lucifugus*) in Southcentral Alaska.**

Marcy Kanuka, Ashley Malmlov, Christine Cornish, Kathleen Parker, Cassandra Tang Wing, Diana Stone, Tony Schountz and Sonia Cheetham **Molecular Screening of Zika and Dengue Viruses in Bats (*Artibeus jamaicensis*, *Glossophaga longirostris* and *Molossus molossus*) from Grenada, West Indies.**

Diana Stone, Christine Cornish, Amy C. Lyons, Yan-Jang S. Huang, Dana L. Vanlandingham, Stephen Higgs Bradley Blitvich, Abiodun A. Adesiyun, Sharlene Santana, Leith Leiser-Miller, Sonia Cheetham. **Serologic evaluation of Alphavirus and Flavivirus exposure in bats in Grenada**

Fagre AC, Kityo R, Lee J, Mossel E, Crabtree, M, Nalikka B, Nakayiki T, Kerbis J, Gilbert, A, Bergren, N, Nyakarahuka L, Lutwama J, Stenglein M, Byas A, Malmlov A, Bergren N, Rice L, Miller B, Schountz T & Kading, RC. **Isolation and molecular characterization of Bukakata orbivirus, a novel virus from a Ugandan bat, and associated pathology in experimentally infected Jamaican fruit bats (*Artibeus jamaicensis*)**

Robert J. Fischer, Seth D. Judson, Sarah H. Olson, Vincent J. Munster **Using GIS to Guide Ebola Virus Disease Ecology Field Investigations**

Hannah Frank, David Enard, Chase Mendenhall, Ji-Yeun Lee, Ellie Armstrong, Stefan Prost, Seth Judson, Jamieson O'Marr, Gretchen Daily, Dmitri Petrov, Scott Boyd and Elizabeth Hadly^{1,6,7}. **Bat - infection interactions: Signals of evolution, ecology, immunity and deforestation**

Yupadee Hengjan, Didik Pramono, Hitoshi Takemae, Ryosuke Kobayashi, Karla Cristine Doysabas, Keisuke Iida, Takeshi Ando, Supratikno, Chaerul Basri Yuli Sulistya Fitriana, Eko M.Z. Arifin, Yasushige Ohmori, Ken Maeda, Srihadi Agungprijono and Eiichi Hondo. **Daytime behavior of *Pteropus vampyrus* and *Acerodon jubatus* in the natural habitats: a cue of viral transmission**

Yutthana Joyjinda, Supaporn Wacharapluesadee, Prateep Duengkae, Apaporn Rodpan, Teerada ponpinit, Thongchai Kaewpom, Sangchai Yingsakmongkol, Kevin J Olival, Thiravat Hemachudha. **The study of whole spike gene of bat coronavirus from Thailand using Next Generation Sequencing**

Jun Li & Vincent Munster. **Assessment of the cross-species potential of two emerging coronaviruses, SARS-CoV and MERS-CoV, by Protein-Protein Molecular Docking analyses**

Kessler MK, Kamath PL, Smith CS, Goldspink LK, Plowright RK. **Hendra virus phylogeography in eastern Australia**

Tamar Kutateladze, Lela Urushadze, Davit Putkaradze, Magda Dgebuadze, Giorgi Babuadze, Ioseb Natradze, Lillian Orciari, and Andres Velasco-Villa. **Viral Zoonosis in Georgian Bats**

Aiah Lebbie, Jonathan Towner, Ibrahim Bakarr Brian Amman, Amy Schuh, Jonathan Johnny, Tara Sealy, James Graziano, Celine Taboy, John Klana, Immah Conteh, Stuart Nichol, Alusine Koroma, Ibrahim Foday and Richard Wadsworth. **Forestalling Future Outbreaks: Enhancing Capacity for Surveillance of Viral Hemorrhagic Fever Viruses in Sierra Leone**

Matovu Benard, Nalikka Betty and Kityo Robert. **Ecological aspects of bats in a cave frequented by members of the local community in Kaptum Cave in eastern Uganda.**

Rebekah McMinn, Michael Letko, Neeltje van Doremalen, Kerri Miazgowicz, Vincent Munster¹. **Middle East respiratory syndrome coronavirus spike plasticity in the context of the common vampire bat (*Desmodus rotundus*) DPP4 receptor.**

Alison J. Peel, Victoria Boyd, Raina K. Plowright, Olivier Restif, Gary Crameri, John Giles, Hamish McCallum, Konstans Wells. **Viral community dynamics of Australian Flying foxes**

Ponpinit T, Wacharapluesadee S, Duengkae P, Kaewpom T, Yinsakmongkon S, Rodpan A, Hemachudha T. **The glycoprotein of Nipah virus in Thai bats associated with Nipah virus in Bangladesh**

Jonathan C. Rupp, Maegan Lange, Megan Howard, Anitha Sundarajan, Jonny Sena, Faye D. Schilkey, Molly Murphy-Douglas Causey, Eric Bortz. **Genomic characterization and pathogenic potential of a novel evolutionarily-divergent alphacoronavirus isolated from *M. lucifigus* bats in Alaska.**

Salmier A., de Thoisy B., Crouau-Roy B., Lacoste V. and Lavergne A. **Spatial pattern of genetic diversity and selection in the MHC class II DRB of three Neotropical bat species**

Ken Cameron, Stephanie Seifert, Shauna Milne-Price, Alain Ondzie, Trent Bushmaker, Jean-Vivien Mombouli, Sarah Olson and Vincent J. Munster. **Establishing a field collection scheme to investigate the role of African fruit bats as the natural reservoir of ebolaviruses**

Lela Urushadze, Ying Bai, Lynn Osikowicz, Ioseb Natradze, Ketevan Sidamonidze, Davit Putkaradze, and Michael Kosoy. **Co-infection in Georgian Bats**

Megan E. Vodzak, MS, MPH, Ohnmar Aung, MBBS, MA, Marc T. Valitutto, VMD, Kyaw Y. N. Tun, BVSc, MSc, PhD, Heather S. Davies, MS, Michael E. von Fricken, PhD, MPH, Suzan Murray, DVM, DACZM, and Dawn M. Zimmerman, DVM, MS. **Caves of Myanmar: a high-risk human-wildlife interface for zoonotic disease**

Supaporn Wacharapluesadee, Prateep Duengkae, Aingorn Chaiyes, Sangchai Yinsakmongkon³ Pattarapol Maneeorn⁴, Patcharakiti Phengsakul, Wachirapon Khumbucha, Thongchai Kaewpom, Apaporn Rodpan, Thiravat Hemachudha. **Prevalence Patterns of Coronaviruses in Lyle's flying fox (*Pteropus lylei*) in Thailand**

Xing-Lou Yang, Yun-Zhi Zhang, Ren-Di Jiang, Hua Guo, Wei Zhang, Bei-Li, Ning Wang, Li-Wang, Cecilia Waruhiu, Ji-Hua Zhou, Shi-Yue Li, Peter Daszak, Lin-Fa Wang, Zheng-Li Shi. **Genetically Diverse Filoviruses in *Rousettus* and *Eonycteris* spp. Bats, China, 2009 and 2015**

Miles Eckley, Ann Hawkinson, Tyler Sherman, Tony Schountz, Corey L Campbell. **Development of a monoclonal antibody to Jamaican fruit bat CD3γ.**

Candace Cotter, Tony Schountz, Corey L Campbell. **Bats and Immunity: Anti-Viral IFNγ Responses Differ Among Hosts.**

Janine F.R. Seetahal, Orchid M. Allicock, Stephen C. Sameroff, Christopher Oura, Vernie Ramkissoon, W. Ian Lipkin, Christine V.F. Carrington **Virome analysis of neotropical bats on the Caribbean island of Trinidad**

Periasamy P, Martínez Gómez JM, Wang LF, and Alonso S. **Delineating the phenotype and function of major lymphocyte populations in the fruit-eating bat, *Pteropus Alecto*.**

Coertse, J, Le Roux, K, Richardson, E, White, W, Markotter, W. **Lagos bat virus in South Africa, 2013-2017.**

Cara E. Brook, Hafaliana C. Ranaivoson, Christopher C. Broder, Andrew A. Cunningham, Andrea L. Graham, Jean-Michel Héraud, Louise Wong, James L.N. Wood, Andrew P. Dobson, C. Jessica E. Metcalf. **Seasonal serological signals in viral infections for Madagascar fruit bats**