

Kansas City - October 27- November 1, 2019



# RITA 30



# Welcome



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On behalf of the RITA 30 Organizing Committee, I welcome you to the 30th International Rabies in the Americas (RITA) conference.

Kansas State University (KSU) College of Veterinary Medicine is privileged to host this event, held for the first time in Kansas City, the Heart of America. The surrounding area spanning from KSU in Manhattan, Kansas to the University of Missouri in Columbia, Missouri is known as the KC Animal Health Corridor; the single largest concentration of animal health and nutrition companies in the world. This year's RITA focuses on the Zero by 30 effort to end human deaths from dog-mediated rabies. As primary organizers of the meeting and through our work, the KSU Rabies Laboratory is honored to be part of this effort.

On this 30th anniversary of RITA, we highlight RITA's history of providing an inviting environment to foster opportunities for researchers, human and animal health professionals, wildlife biologists, international, national and local rabies program managers, laboratory workers and students engaged in rabies prevention and control efforts. Many collaborations have been initiated, discussions shared, and successes celebrated during past RITA conferences and events. We look forward to advancing the knowledge and applications of lessons learned to meet the challenges of the Zero by 30 mission during this conference.

The organizers would like to thank all the presenters, both oral and poster, for sharing their work at RITA 30 and especially our invited speakers. To the International Steering Committee and past organizers, we extend our sincere thanks for invaluable guidance. We acknowledge and thank our generous sponsors for helping make this event a success.

It is our hope that you will find yourself challenged to consider problems in different ways, that you return to your workplaces/schools with genuine benefit, and that you find yourself part of the global effort to eliminate human rabies deaths. Enjoy your time in the Heart of America and explore the history, food and attractions of Kansas City, both the Kansas and Missouri sides!

Best wishes for a pleasant and educational meeting,

Susan M. Moore  
Chair, RITA 30 Organizing Committee  
and  
Rabies Laboratory Director, Kansas State University

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**Dr. Deborah J. Briggs** is the former Chair of the board for the Global Alliance for Rabies Control and former (and founding) Executive Director of GARC. She teaches as Adjunct Professor of Diagnostic Medicine/Pathobiology at the College of Veterinary Medicine at Kansas State University, where she previously worked as Director of the Rabies Laboratory. She is also a member of the Expert Group of the World Health Organization Committee on Rabies. Having dedicated her professional life to the eradication of rabies, Deborah in 1998 received a Distinguished Service Award from the Kansas Veterinary Medical Association as well as the Guide Dog Users Access Partners Award. She has been published in a plethora of renowned journals and continues the work toward rabies elimination.

**Dr. Susan Nadin-Davis** is an internationally recognized expert in molecular characterization of rabies viruses and her research has significantly impacted our understanding of rabies epizootiology both within Canada and abroad. She has also developed numerous molecular-based assays for rabies diagnosis and played a key role in genetic evaluation of oral vaccines for rabies control in terrestrial wildlife. Known for her collaborative nature and encouragement of trainees, she has authored or co-authored over 100 publications. She has been a long-time supporter of RITA and served as one of the Canadian representatives on the International Steering Committee from 2001-2007.

**Dr. Rodney Willoughby, Jr.**, is a Professor of Pediatrics (Infectious Diseases) at the Medical College of Wisconsin and Children's Hospital of Wisconsin. He graduated with a M.D. from Johns Hopkins University (JHU, 1982) including a year working in Switzerland and Cameroon. He underwent further training in Pediatrics (University of California at San Diego and JHU), Infectious Diseases (JHU), Biochemistry (JHU) and Clinical Investigation (JHU). He was Clinical and Fellowship Director, Pediatric Infectious Diseases at Johns Hopkins Hospital and moved to Wisconsin (2004) where the Milwaukee Protocol for treatment of human rabies was improvised during his second week on call. His research interests include brain infections including rabies, NMR metabolomics, and bacterial pathogenesis by hydrogen sulfide as a toxicant.



The George M. Baer Latin American Investigator Award is given to a researcher from a Latin American country for outstanding work in the field of rabies research. It is named for Dr. George Martin Baer, one of the founding members of the Rabies in the Americas Conference (RITA). He was an eminent virologist, veterinarian, and public health scientist, with a strong affection for the developing world. Dr. Baer helped to lay the groundwork for Mexico's public health programs against rabies, an effort he continued throughout his professional life. In 1969, became head of the US CDC Rabies Laboratory. With his team of researchers, he developed a method for the immunization of wildlife, for which he was credited as the "Father of Oral Rabies Vaccination". His considerable expertise made him one of the foremost international experts in this arena. Of his more than 100 publications, his 1991 book, *The Natural History of Rabies*, remains a definitive reference in the field. After retirement from CDC, he founded a diagnostic laboratory in Mexico City, and remained a member International Steering Committee for RITA.

For his multiple contributions, not the least of which focused upon relevant technology transfer to the developing world, the RITA International Steering Committee named the annual prize for the best work from a Latin American researcher in his honor.

This year's George M. Baer Latin American Investigator Award Winner is Diego Fontana from Centro Biotecnológico del Litoral – Facultad de Bioquímica y Ciencias Biológicas – UNIVERSIDAD NACIONAL DEL LITORAL with work titled: From the academy to the industry: Virus-like particles as an effective rabies vaccine candidate to be applied in the veterinary market.

Congratulations, Diego.

# PROGRAM



## SUNDAY, OCTOBER 27

- 8:00 - 17:00 Bi-National Canine Rabies Elimination Coordination Meeting: Dominican Republic and Haiti  
*Truman A*
- 15:00 - 18:00 Registration – *Count Basie Foyer*
- 16:00 - 17:30 Get Acquainted with RITA30 – *Count Basie Foyer*
- 18:00 - 19:30 Opening Ceremony – *Count Basie Ballroom A&B*
- 19:30 - 22:00 Opening Cocktail Reception – *Count Basie Ballroom C*

## MONDAY, OCTOBER 28

- 7:30 - 9:00 Registration - *Count Basie Foyer*
- 9:00 - 9:45 Welcome Talk: Deborah Briggs – *Count Basie Ballroom A&B*
- 9:30 - 10:00 George M. Baer Latin American Investigator Award Presentation
- GB1:** From the academy to the industry: Virus-like particles as an effective rabies vaccine candidate to be applied in the veterinary market. By Diego Fontana
- 10:30 - 11:00 Coffee Break - *Count Basie Ballroom C*
- 11:00 - 12:00 **ORAL PRESENTATIONS: PATHOGENESIS/IMMUNOLOGY** – *Count Basie Ballroom A&B*  
*Moderators: Thomas Müller and Rodney Willoughby*
- OP1:** Inhibition by rabies glycoprotein neurotoxin like peptide differs between nicotinic acetylcholine receptor subtypes. By Karsten Hueffer
- OP2:** Improving rabies animal models for medical countermeasures through luminescent lyssaviruses. By David Lowe
- OP3:** Favipiravir treatment of human rabies. By Rodney Willoughby
- OP4:** PRE-EXPOSURE PROPHYLAXIS FOR RABIES MEDIATED BY VAMPIRE BAT IN HUMAN POPULATION LIVING AT RISK IN AMAZONIA REGION, STATE OF PARÁ, BRAZIL. By Felipe Rocha
- 12:00 - 13:30 Lunch

## MONDAY, OCTOBER 28

- 12:00 - 13:30 Steering Committee and Local Committee Lunch (by invitation only)  
*Jay McShann B – 3rd floor*
- 13:30 - 15:00 **ROUND TABLE: BOOTS ON THE GROUND** – *Count Basie Ballroom A&B*  
*Moderator: Ingrid Garrison*
- RT1:** Welcome and overview of panel. By Ingrid Garrison
- RT2:** Challenges of post-exposure prophylaxis: the difference between public health recommendations and physician administration of PEP. By Kyle Garrison.
- RT3:** Changing attitudes of clients toward rabies vaccination of pets.  
By Kate KuKanich
- RT4:** Challenges in animal control including emotional support animals, imported dogs, and exotic pets and enforcement of rabies vaccination laws. By Carla Lewis.
- RT5:** The burden of rabies prevention on local health departments and communication to partners through the One Health network in a semi-rural county. By Karen Winkelman
- RT6:** One Health strategies of rabies prevention and community engagement in Puebla, Mexico. By Alejandra Aguilar Ramos
- RT7:** Rabid livestock, imported dogs, and rabies vectors as pets. State Departments of Agriculture are crucial partners in rabies prevention. By Andy Hawkins
- 15:00 - 16:00 Break and Poster Session – *Count Basie Ballroom C*
- 16:00 - 17:30 **ORAL PRESENTATIONS: BAT RABIES** – *Count Basie Ballroom A&B*  
*Moderators: April Davis and Luis Lecuona*
- OP5:** The potential for urban water sources to increase Rabies transmissions between bats and mesocarnivores. By Lias Hastings
- OP6:** The feasibility of controlling rabies in bats through topical application of vaccine. By Tonia Rocke
- OP7:** Vampire...pigs? Assessing the impact of feral swine on the northward advancement of vampire bats towards the United States. By Michael Houts
- OP8:** Challenges and avenues in bringing the novel Kotalahti bat lyssavirus (KBLV) to life and characterize its priorities. By Conrad Freuling

## MONDAY, OCTOBER 28

**OP9:** Outbreak of bat-transmitted human rabies, Marajo island, Brazilian Amazon, 2018. By Jose Maria Coelho Junior

**OP10:** Increased detection of Bat Lyssaviruses and human imported case of Rabies in Great Britain in 2018. By Lorraine McElhinney

18:30 - 20:30 NARMP meeting (by invitation only) – *Andy Kirk A&B – 3rd floor*

18:30 - 20:30 City Tour (tickets required) – *Meet in Lobby*

## TUESDAY, OCTOBER 29

7:30 - 8:30 Registration – *Count Basie Foyer*

8:30 - 9:30 **ORAL PRESENTATIONS: RABIES IN WILDLIFE** – *Count Basie Ballroom A&B*  
*Moderator: Amy Gilbert and Richard Chapman*

**OP11:** Re-emergence of wildlife rabies in golden jackals (*Canis aureus*), Israel (2017-2018). By Boris Yakobson.

**OP12:** When all else fails: Contingency actions for racoon rabies control. By Richard Chipman

**OP13:** Evaluation of a commercial blocking ELISA for the detection of rabies virus in North American wildlife sera. By Amy Gilbert

**OP14:** Improved strategies for distribution of oral rabies vaccines to manage racoon rabies in the urban landscape of Great Pittsburgh, Pennsylvania, USA. By Timothy Linder

9:30 - 10:30 **ORAL PRESENTATIONS: EPIDEMIOLOGY AND SURVEILLANCE**  
*Count Basie Ballroom A&B | Moderators: Lorraine McElhinney and Veronica Gutierrez*

**OP15:** Rabies Molecular Epidemiology - how, when and why. By Susan Nadin-Davis

**OP16:** Rabies Survalence in the United States during 2018. By Xiaoyue Ma

**OP17:** Revising the United States rabies surveillance system through electronic laboratory reporting. By Sarah Bonaparte

**OP18:** A One Health approach to rabies management in Manitoba, Canada. By Rhonda Foote

10:30 - 11:00 Break – *Count Basie Ballroom C*



11:00-12:00

**ORAL PRESENTATIONS: CANINE RABIES ELIMINATION** – *Count Basie Ballroom A&B*

*Moderator: Laura Robinson and Marco Antonio Natal Vigilato*

**OP19:** From apartment pets to cave dogs: the gradient of free-ranging behavior in a rabies-affected city. By Ricardo Castillo

**OP21:** Rabies vaccine at six weeks of age increases all-cause mortality rate in female but not male puppies: results of a randomized controlled trial in a high-mortality dog population. By Darryn Knobel

**OP22:** The epidemiology of canine rabies in Santa Cruz, Bolivia (2017-2019). By Fidel Villegas Anze

**OP22.2:** Effect of Antimalarial Drugs on the Immune Response to Intramuscular Rabies Vaccination Using a Post-Exposure Prophylaxis Regimen and the Immunogenicity and Proteomic Analysis of a Two versus Three doses, Intradermal and Intramuscular Administration of a Licensed Rabies Vaccine for Pre-Exposure Prophylaxis. By Stephen Thomas

12:00 - 13:30

Lunch

12:00 - 13:30

Sponsors Luncheon (by invitation only) – *Jay McShann B – 3rd floor*

13:30 - 15:00

**ROUND TABLE: IMPORT/EXPORT REGULATIONS** – *Count Basie Ballroom A&B*

*Moderator: Ryan Wallace*

**RT8:** Global Rabies Epidemiology and Impact on Dog Importation: Lessons from the European Union. By Thomas Müller

**RT9:** Experience of an Importer: NGO perspective on importation process and the rationale for international dog rescue movements. By Frederic Lohr

**RT10:** Serologic Assays Performed for Pet Travel: Approved methods and intended use. By Susan Moore

**RT11:** Skirting the Rules: Examples of Falsified Records to Evade Importation Regulations. By Elizabeth McQuade

**RT12:** Impact of an Illegal Importation: Health response to an imported rabid dog, Kansas. By Chelsea Rayburn

**RT13:** Dog Importation: The state perspective on burden, complexity, and risk. By Sandra Norman

15:00 - 16:00

Break and Poster Session – *Count Basie Ballroom C*

## TUESDAY, OCTOBER 29

16:00 - 17:30

**ORAL PRESENTATIONS: RABIES DIAGNOSTIC METHODS** – *Count Basie Ballroom A&B*  
*Moderators: Christine Fehlner-Gardiner and Rolan Davis*

**OP23:** Development of a high throughput, low cost sequencing method for bat rabies virus and host identification using the Oxford Nanopore MinION sequencer. By Rene Condori

**OP24:** Low-cost rabies virus sequencing around the world using the Oxford Nanopore MinION. By Crystal Gigante

**OP25:** Rapid, low cost rabies virus genetic typing using pan-lyssavirus real-time RT-PCR assay LN34 amplicon sequences. By Yu Li

**OP26:** Rabies Diagnosis in the USA - Time for a Revision to the National Standard DFA Protocol? By Lillian Orciari

**OP27:** BioTek Cytation 5 and Gen5 software for high throughput analysis of rabies viral tests. By Matthew Daddysman

**OP28:** Preparation and Qualification of an Internal Rabies Reference Standard for RFFIT: From Present to Future. By Tatyana Timiryasova

## WEDNESDAY, OCTOBER 30

7:30 - 8:30

Registration – *Count Basie Foyer*

8:30 - 9:30

**ORAL PRESENTATIONS: SPATIAL AND ECONOMIC DISEASE MODELING**

*Count Basie Ballroom A&B | Moderators: Ram Raghaven and Ryan Wallace*

**OP29:** Updating scenarios for human rabies in the Peruvian Amazon Basin. By Sergio Recuenco-Cabrera

**OP30:** Rabies surveillance identifies potential risk corridors and enables management evaluation. By Amy Davis

**OP31:** Exploring the Effects of Artic Fox Ecology on Rabies Epidemiology in Northern Quebec Using a Spatially-Explicit Individual-Based Model. By Agatha Allibert

**OP32:** Dog movement analysis associated with a rabies outbreak response on the Haiti-Dominican Republic border, 2019. By Benjamin Monroe

9:30 - 10:30

**ORAL PRESENTATIONS: COMMUNITY ENGAGEMENT** – *Count Basie Ballroom A&B*

*Moderators: Elizabeth McQuade and Peter Costa*

**OP33:** Rabies Management in the North. Analysis of Alaska, Northwest Territories and Svalbard. By Karsten Hueffer

**OP34:** Raising awareness about bat rabies in the Americas through a One Health approach. By Peter Costa

**OP35:** Contención de la Rabia Urbana Basada en la Atención Primaria a la Salud, En el Estado de Puebla. By Alejandra Aguilar Ramos

**OP36:** “Zero by 30” - should we really be concerned about wildlife? By Charles E. Rupprecht

10:30 - 11:00 Break – *Count Basie Ballroom C*

11:00 - 12:30 **ROUND TABLE: RABIES SEROLOGY AND VACCINATIONS** – *Count Basie Ballroom A&B*  
*Moderator: Susan Moore*

**RT14:** Introductions and Overview: Rabies serology: Issues in its role in the prevention and control of rabies. By Susan Moore

**RT15:** Proficiency test for rabies serology: a design complying with international standards for a reliable assessment of participating laboratories. By Marine Wasniewski

**RT16:** Owner reported rabies vaccination and serologic response to vaccination in working equids in the Peruvian Andes. By Stacy Tinkler

**RT17:** Tailoring vaccine protocols to benefit the patient and practice. By Sue Nelson

**RT18:** Role of rabies serology: NASPHV Rabies Compendium Committee viewpoint. By Sally Slavinski

**RT19:** Monitoring oral baiting programs: Factors in selection of rabies serology assay and cut-off. By Conrad Freuling

**RT20:** Can rabies serologic tests replace challenge for potency and efficacy of rabies vaccines? By Lorraine McElhinney

12:30 - 14:00 Lunch

12:30 - 14:00 Steering committee lunch meeting (by invitation only) – *Jay McShann B – 3rd floor*

14:00 - 15:00 **ROUND TABLE: SKUNK RABIES** – *Count Basie Ballroom A&B*  
*Moderator: Amy Gilbert*

**RT21:** Welcome and Overview. By Amy Gilbert

**RT22:** Why are skunks so susceptible to several rabies virus variants? By Susan Nadin-Davis

**RT23:** Skunk rabies virus epizootiology in Mexico. By Verónica Gutiérrez Cedillo

**RT24:** Oral rabies vaccination of wildlife: What drives vaccine uptake efficiency in different reservoir species? By Thomas Müller

**RT25:** Evaluation of ONRAB at low and high bait density applications in West Virginia, USA. By Shylo Johnson

**RT26:** Volatile metabolomic signatures of rabies immunization and infection in skunks and raccoons. By Amy Gilbert

15:30 - 16:30 **LIGHTNING TALKS** – *Count Basie Ballroom A&B*

*Moderators: Mylissia Smith and Rodney Rohde*

**LT1:** Smart Phones vs traditional vaccination protocols. By Frederic Lohr

**LT2:** Smart Phones vs traditional vaccination protocols. By Marco Antonio Natal Vigilato

**LT3:** Roles of myths, beliefs affecting understanding of rabies (needing vs not needing vaccinations). By Mylissia Smith

**LT4:** Roles of myths, beliefs affecting understanding of rabies (needing vs not needing vaccinations). By Ryan Wallace

**LT5:** Traditional oral vaccine vs immunocontraceptive vaccine for control of rabies in wildlife. By Xianfu Wu

**LT6:** Traditional oral vaccine vs immunocontraceptive vaccine for control of rabies in wildlife. Ad Vos

17:30 - 18:00 Load buses for Gala – *Front of Hotel*

18:00 - 22:00 Gala at Union Station – *30 W. Pershing Road, Kansas City, Missouri*

Join us for a **FREE WEBINAR:**

An update on recent progress in human rabies prevention recommendations

**Friday, Nov. 1**

9:00 - 12:30

*Count Basie Ballroom A*

- 8:30 - 9:00 Registration – *Count Basie Foyer*
- 9:00-10:00 **ORAL PRESENTATIONS: VACCINES AND THERAPUTICS** – *Count Basie Ballroom A&B*  
*Moderators: Alejandro Parola and Chandra Gordon*
- OP37:** A dual-target rabies/yellow fever vaccine candidate. By Lotte Coelmont
- OP38:** Rabies vaccination trials in common vampire bats using a raccoonpox recombinant vaccine. By Elsa Cárdenas Canales
- OP39:** Anti-rabies compounds developed by PiPiQ, a new drug discovery technology. By Shigeru Matsuoka
- OP40:** Preliminary experimental evaluation of Griffithsin's effectiveness against rabies virus infection in a hamster model. By Nadia Fernanda Gallardo-Romero
- 10:00 - 10:30 Break – *Count Basie Ballroom C*
- 10:30 - 12:00 **ROUND TABLE: ZERO BY 30** – *Count Basie Ballroom A&B*  
*Moderators: Leah Knopf and Peter Costa*
- Z301:** Welcome-Session Overview and Introductions . By Peter Costa
- Z302:** The road towards the 'Zero by 30' goal: Time to leave the bumpy road? By Lea Knopf
- Z303:** Insights from and way forward in Mexico. By Véronica Gutiérrez
- Z304:** Insights from and way forward in Peru. By Sergio Recuenco-Cabrera
- Z305:** Research, National Programs and Strategies in Ethiopia toward Zero by '30 Tariku Jibat Beyene
- Z306:** Insights from and way forward in Sri Lanka. By Amila Gunasekara
- Z307:** Insights from and way forward in Tanzania. By Anna Czupryna
- 12:00 - 13:30 Lunch
- 13:30 - 15:00 **ORAL PRESENTATIONS: HUMAN RABIES TREATMENT AND PROPHYLAXIS**  
*Count Basie Ballroom A&B | Moderators: Rodney Willoughby and Charles Rupprecht*
- OP41:** Evolution of the Clinical Picture in Cases of Human Rabies in Mexico in the Period 2000-2018. By Verónica Gutiérrez
- OP42:** Challenges of human rabies in Brazil in the 21st century: analysis of the epidemiological profile from 2000 to 2017. By Alexander Vargas
- OP43:** Adherence to guideline recommendations for human rabies immune globulin patient selection, dosing, timing, and anatomical site of administration in rabies postexposure prophylaxis. By Joshua Swan

**OP44:** Resultados aplicación del modelo pre exposición intradérmico en comunidades indígenas y afrodescendientes de zonas con alta ruralidad de las selva Colombiana 2018. By Angela Xiomara Castro Duran

**OP45:** Rabies Post-exposure Prophylaxis of Veterinarians and Veterinary Staff Following Contact with Rabid Animals, Kansas – 2013-2017. By Ingrid Garrison

**OP46:** Treatment of Human Rabies. By Rodney Willoughby.

15:00-15:30 Group Discussion – *Count Basie Ballroom A&B*

15:30-16:00 Conference Closing – *Count Basie Ballroom A&B*

16:00 - 17:30 Closing Cocktail Reception – *Count Basie Ballroom C*

## POSTER PRESENTATIONS

**PP01:** Rabies Exposure and Case Tracking Tool for smartphones and tablets B2. By Pierre Dilius Augustin

**PP02:** Fc engineering of anti-rabies virus therapeutic human IgG1 to alter binding to the neonatal Fc receptor in *Nicotiana tabacum*. By Kisung Ko

**PP03:** Barriers of attendance canine rabies vaccination in Haiti, 2017. BY Galileu Barbosa Costa

**PP04:** Purification of plant-derived anti-rabies virus monoclonal antibody through optimized pH conditions for coupling between protein A and epoxy-activated beads. By Kisung Ko

**PP05:** Systematic Domestic Dog Vaccination Results in Significant Declines in Rabies Exposures and Human Rabies Deaths. By Anna Czupryna

**PP06:** Operational Tool for attention of Canine Rabies Outbreaks in Mexico. By Verónica Gutiérrez

**PP08:** Casos de Rabia Parálitica Bovina en el Estado de Nuevo León. By Alejandra Marín Ramírez

**PP09:** Estrategias de Vacunación Antirrábica Canina y Felina en el Estado de Campeche. By Antonio de Jesús Contreras Domínguez

**PP10:** Pathogenicity investigation of Taiwan ferret badger rabies virus on Gem-faced civets. By Shih-Ying Lee

**PP12:** Percepción de las Estrategias de Vacunación Antirrábica Canina y Felina en Niños del Estado de Campeche. By Juan Octavio Avila Lopez

**PP13:** Barriers to rabies post-exposure prophylaxis in the Congo Basin: results from three rabies KAP surveys. Sarah Bonaparte

**PP14:** Puppy pregnancy: the burdensome legacy of the Nerve Tissue Vaccine in India. By Deborah Nadal

**PP15:** Knowledge, attitudes, and practices of dog vaccination, ownership, and health seeking behaviors in peri-urban and urban communities in Bangladesh, 2018. By Yasmeen Ross

**PP16:** Indicators of Rabies Elimination Readiness. By Sarah Bonaparte

**PP17:** Rabies Outbreak Investigation — Pedernales, Dominican Republic and Anse-a-Pitre, Haiti, 2019. By Anna Mandra

- PP19:** Selective involvement of vomeronasal organ in rabies virus infection. By Jane Megid
- PP20:** Sequence analysis of Rabies viruses collected from 2004 to 2016 in Minnesota, USA. By Jinxin Gao
- PP21:** Comparing Methods of Assessing Dog Rabies Vaccination Coverage in Rural and Urban Communities in Tanzania. By Maganga Sambo
- PP24:** Rabies in Canada – 2018. By Christine Fehlner-Gardiner
- PP 25:** Epidemiological profile of rabies virus circulation in the state of Ceará - Brazil in recent years. By Francisco Atualpa Soares Júnior
- PP26:** Update on in vivo efficacy of small molecular weight compounds against rabies virus. By Yong Yang
- PP28:** Case of canine rabies in Fortaleza-Ceará-Brazil after 14 years: Case analysis. By Francisco Atualpa Soares Júnior
- PP29:** Spatial modelling of raccoon rabies vaccine barrier changes between Canada and the US. By Valerie Hongoh
- PP30:** Implications of raccoon movement and resource selection for determining optimal baiting designs for oral rabies vaccines in urban and suburban landscapes. By Kim Pepin
- PP31:** Implementation summary of OIE Twinning Project for Rabies. By Ai-Ping Hsu
- PP33:** A model of canine rabies that integrates ecological corridors and urban dog subpopulations. By Brinkley Raynor
- PP34:** A Spatial Analysis of Rabies Studies. By Julie Elser
- PP35:** Seroprevalence of anti-rabies antibodies in wild boars (*Sus scrofa*) of Brazil. By Keila/Elaine Lamamoto/Raniero
- PP 36:** Vaccination of small Indian mongooses (*Herpestes auro-punctatus*) with ONRAB via Ultralite baits – preliminary results. By Are Berentsen
- PP37:** Standardized habitat-specific small Indian mongoose density estimates: Implications for rabies control. By Caroline Sauvé
- PP40:** Novel lyssaviruses identified in bats, Taiwan. By Shu-Chia Hu
- PP41:** Double staining rabies infected bat tissue to determine the location of the virus and better understand the overwintering of the virus. Kim Appler
- PP42:** Application of commercially available immunochromatographic test kits in wildlife rabies surveillance in Taiwan. By Shu-Chia Hu
- PP43:** EVALUATION OF RABIES LYSSAVIRUS REPLICATION AND CELL GROWTH IN DIFFERENT CONCENTRATIONS OF N2A CELL LINE. By Keila lamamoto
- PP45:** LIVESTOCK RABIES IN BRAZIL'S CENTRAL REGION: PREVENTION AND CONTROL ACTIONS IN YEARS 2017 AND 2018. By Fernando Bosso
- PP 46:** Nanopore sequencing to improve rabies surveillance in the United States. By Crystal Gigante
- PP48:** First report of rabies in *Desmodus rotundus* in Nuevo León State, Mexico. By Efrén Jaramillo-Reyna
- PP49:** Development of New Biotinylated Monoclonal Cocktails for Lyssavirus Antigen Detection using Direct Rapid Immunohistochemistry Test (DRIT). By Lillian Orciari

## POSTER PRESENTATIONS

- PP50:** SENSITIVE AND SPECIFIC ANTI-RIBONUCLEOPROTEIN POLYCLONAL HORSE IgG FOR RABIES VIRUS ANTIGEN DETECTION BY DIRECT RAPID IMMUNOHISTOCHEMICAL TEST. By Sandriana dos Ramos Silva
- PP51:** Inter-laboratory test for rabies diagnosis: technical evaluation of two rapid kits. Alexandre Servat
- PP52:** DEVELOPMENT AND EVALUATION OF A RABIES ENZYME-LINKED IMMUNOSORBENT ASSAY (ELISA) TARGETING IgM AND IgG IN HUMAN SERA. By Michelle Zajac
- PP53:** Early Rabies Infection Detected in Two Raccoon Cases by rRT-PCR in Pennsylvania. By Melanie Seiders
- PP54:** EVALUATION OF THE INDIRECT RAPID IMMUNOHISTOCHEMICAL TEST IN THE RABIES LABORATORY DIAGNOSIS AT THE PASTEUR INSTITUTE, SÃO PAULO, BRAZIL. By Elaine Raniero Fernandes
- PP55:** Enhanced rabies surveillance in road kill specimens by real-time PCR. By Crystal Gigante
- PP56:** Diagnostic sensitivity and specificity of the indirect rapid immunohistochemistry test for “post mortem” rabies diagnosis. By Fernanda Guedes
- PP58:** The effect of sample handling on rabies neutralizing antibody stability. By Sami Pralle
- PP60:** Permeability Patterns of Fluorescent Isothiocyanate Dextranin Blood-Brain Barrier of Mice Model. By Waqas Ahmad
- PP61:** Rabies lyssavirus isolated from *Myotis* sp induces an increase expression of iNOS, TNF- $\alpha$  and caspase-3 in the astrocytes. By Iana Suly Santos Katz
- PP62:** IgG Fab GLYCOSYLATION DIFFERS BETWEEN NEUTRALIZING AND NON-NEUTRALIZING ANTIBODY INDUCED AFTER RABIES VACCINATION. By Sandriana dos Ramos Silva
- PP 64:** Make it go Viral: Rabies Science Communication. By Rodney E. Rohde
- PP66:** STABILITY ANALYSIS OF A NEW FREEZE-DRIED RABIES VACCINE AND ITS PROCESS INTERMEDIATES. By Carlos Adolfo Palacios
- PP68:** Development of a recombinant poxvirus rabies vaccine for bats using a mouse model. By Carly Malave
- PP69:** SYN023 Anti-Rabies MAbs: Preparation for Phase 3 Trials. By Eric Tsao
- PP71:** Innovative Strategies for Patient Contact Following Mass Bat Exposures. By Kelly Giesbrecht
- PP72:** Human rabies by variant of *Desmodus rotundus*: report of 6 cases in Brazil in 2017. By Alexander Vargas
- PP74:** Rabies post exposure treatment vs pre exposure prophylaxis for foreign travels in Sri Lanka. By Amila Gunesequera
- PP75:** Epidemiology of dog bites: information of patients treated at the Health Centre for Zoonoses Control in Lima, Peru, 2017. By Ornela Chávez Inagaki
- PP76:** Characteristics of pediatric and adult cases of putative rabies exposure treated in emergency rooms in the United States, reported in the Centers for Disease Control (CDC) National Hospital Ambulatory Medical Care Survey (NHAMCS) between 2002-2016. By Huy-Binh Nguyen
- PP77:** RETROSPECTIVE STUDY OF HUMAN RABIES CASES CONFIRMED BY LABORATORY DIAGNOSIS AT THE INSTITUTO PASTEUR, SÃO PAULO, BRAZIL, IN THE PERIOD 2003-2016. By Keila Iamamoto
- PP78:** Rabies post-exposure prophylaxis in residents of Saint Louis County, MO, 2014 to 2018. By Karla Howell



## LOCAL ORGANIZING COMMITTEE

Susan Moore – Kansas State University – KSVDL Rabies Laboratory – Chair  
Elizabeth McQuade – Kansas State University – KSVDL Rabies Laboratory  
Chandra Gordon – Kansas State University - KSVDL Rabies Laboratory  
Ingrid Garrison – State of Kansas Public Health Veterinarian  
Mylissia Smith – Pacific Northwest National Laboratory  
Amy Gilbert – National Wildlife Resource Center (USDA/APHIS)  
Ram Raghavan – Kansas State University - Diagnostic Medicine/Pathobiology  
Gary Anderson – Kansas State University – International Animal Health & Food Safety Institute

Kate KuKanich – Kansas State University – College of Veterinary Medicine Clinical Sciences  
Luis Lecuona – USDA International Services  
Charles Rupprecht – The Wistar Institute  
Ashley McCowan – Kansas State University – Events Coordinator  
Dana Parker – Kansas State University – Events Coordinator  
Tony Ballard – Kansas State University – Events Coordinator  
Sarah Keatly – Kansas State University – Events Coordinator

## SCIENTIFIC COMMITTEE

Susan Moore – Kansas State University – KSVDL Rabies Laboratory - USA – Chair  
Elizabeth McQuade – Kansas State University – KSVDL Rabies Laboratory - USA  
Ingrid Garrison – State of Kansas Public Health Veterinarian - USA  
Mylissia Smith – Pacific Northwest National Laboratory - USA  
Amy Gilbert – National Wildlife Resource Center (USDA/APHIS) - USA  
Ram Raghavan – Kansas State University - Diagnostic Medicine/Pathobiology - USA  
Luis Lecuona – USDA International Services - Mexico  
Charles Rupprecht – The Wistar Institute - USA  
April Davis – New York Department of Health – Rabies Laboratory - USA  
Darcia Kostiuik – Canada  
Ellyn Mulcahy – Kansas State University – Masters of Public Health Department - USA  
Jane Megid - Sao Paulo State University – Department of Vet Hygiene and Public Health - Brazil  
Joanne Malmgre Tataryn – Epidemiologist Public Health Agency – Canada  
Laura Robinson – Texas Department of Health – Oral Rabies Vaccination Program - USA  
Marco Antonio Natal Vigilato – PAHO – Public Health Advisor -  
Peter Costa – Kedrion / One Health Initiative - USA  
Richard Chipman – USDA – Wildlife Rabies - USA  
Rodney Rohde – Texas State University – Associate Dean for Research - USA  
Rodney Willoughby – Physician – Children’s Hospital of Wisconsin - USA  
Rolan Davis - Kansas State University – KSVDL Rabies Laboratory - USA  
Ryan Wallace – Centers for Disease Control - USA

## INTERNATIONAL STEERING COMMITTEE

President – Christine Fehlner-Gardiner  
Canadian Food Inspection Agency Ottawa, Ontario,  
Canada

Vice-President – Verónica Gutiérrez Cedillo  
Subdirección de Zoonosis/CENAPRECE Secretaría de  
Salud – México, D.F., México

Secretary - Catherine Filejski  
Canadian Animal Health Institute  
Guelph, Ontario, Canada

Treasurer – Charles Rupprecht  
Professor (Adjunct) The Wistar Institute –  
Philadelphia, Pennsylvania, USA

Richard B. Chipman  
USDA-APHIS Wildlife Services – Concord, New  
Hampshire, USA

Alberto Contreras Galindo  
Departamento de Zoonosis y Vectores Instituto de  
Salud del Estado de México – México

Alan C. Jackson  
University of Manitoba Health Sciences Centre  
Winnipeg, Manitoba, Canada

Ex-officio Members:  
Luis Lecuona  
USDA International Services México, D.F., México

Baltazar Cortés García  
Servicio Nacional de Sanidad, Inocuidad y Calidad  
Agroalimentaria, México, D.F., México

Peter J. Costa  
One Health Commission, Apex, North Carolina, USA

Ivanete Kotait  
Venco Saúde Animal – Londrina, Parana, Brasil

Jane Megid  
UNESP-Universidade Estadual Paulista Julio de  
Mesquita Filho. Faculdade de Medicina Veterinária e  
Zootecnia – Botucatu, SP, Brasil

Juan Antonio Montaña Hirose  
Universidad Tecnológica de Tecámac Tecámac,  
Estado de México, México

Eduardo Pacheco de Caldas  
Secretaría da Saúde – Rio Grande do Sul, Brasil

Laura E. Robinson  
Texas Department of State Health Services – Austin,  
Texas, USA

Emeritus Members:  
Diódoro Batalla  
Rosely Cerqueira de Oliveira  
Dennis Donovan Susan Nadin-Davis Chris Nunan  
Dennis Slate  
Roly Tinline  
Fernando Vargas Pino  
Alexander Wandeler

# THINGS TO DO IN *Kansas City*



## **Arabia Steamboat Museum**

Located in the Downtown River Market/Columbus Park area



## **Crown Center**

## **Sea Life Kansas City Aquarium**

Located in the Crown Center District



## **LEGOLAND Discovery Center Kansas City**

Located in the Crown Center District



## **National World War I Museum and Memorial**

Located in the Crown Center District



## **The Money Museum at Federal Reserve Bank of Kansas City**

Located in the Crown Center District



## **Union Station Kansas City**

Located in the Crown Center District

## **Science City at Union Station**

Located in the Crown Center District

# 30<sup>TH</sup> ANNUAL RABIES IN THE AMERICAS 2019 AGENDA

Time	SUN OCT 27	MON OCT 28	TUES OCT 29	WED OCT 30	THURS 31	FRI NOV 1	
7:30 - 8:00							
8:00 - 8:30		Registration	Registration	Registration			
8:30 - 9:00		Bi-National Canine Rabies Elimination Coordination Meeting: Dominican Republic and Haiti (by invitation only)	Rabies in Wildlife (4)	Spatial and Economic Disease Modeling (4)	Registration	Webinar	
9:00 - 9:30			Welcome talk <small>Deborah Engels</small>	Epidemiology and Surveillance (4)	Community Engagement (4)		Vaccines and Therapeutics (4)
9:30 - 10:00			George Baer Award Presentation				Coffee Break
10:00 - 10:30			Coffee Break	Coffee Break	Coffee Break		Round Table: Zero by 30 Updates <small>Lea Knopf - Lead</small>
10:30 - 11:00			Pathogenesis / Immunology (4)	Canine Rabies Elimination (4)	Round Table: Serology and vaccinations <small>Susan Moore - Lead</small>		
11:00 - 11:30			Lunch Break RITA Steering Committee and Local Committee (by invitation only)	Lunch Break Sponsors Luncheon (by invitation only)	Lunch Break		Lunch Break
11:30 - 12:00			Round Table: Boots on the Ground <small>Ingrid Garrison - Lead</small>	Round Table: Import/Export Regulations <small>Ryan Wallace - Lead</small>	Round Table: Skunk Rabies <small>Amy Gilbert - Lead</small>		Human Rabies Treatment and Prophylaxis (6)
12:00 - 12:30			Coffee Break and Poster Session	Coffee Break and Poster Session	Lightning Talks <small>Rodney Rohde &amp; Mylissa Smith - Lead</small>		Group Discussion and Conference Closing
12:30 - 13:00			Bat Rabies (6)	Rabies Diagnostic Methods (6)	Break before Gala		Closing Cocktail Reception
13:00 - 13:30					Board Buses to Gala		
13:30 - 14:00		City Tour (tickets required)	NARMP meeting INVITEES ONLY	Gala Dinner			
14:00 - 14:30	Get Acquainted with RITA30				Registration		
14:30 - 15:00							
15:00 - 15:30							
15:30 - 16:00							
16:00 - 16:30							
16:30 - 17:00							
17:00 - 17:30							
17:30 - 18:00							
18:00 - 18:30	Opening Ceremony						
18:30 - 19:00							
19:00 - 19:30							
19:30 - 20:00							
20:00 - 20:30	Opening Cocktail Reception						
20:30 - 21:00							
21:00 - 21:30							
21:30 - 22:00							
22:00 - 22:30				Buses available to return to Hotel			
22:30 - 23:00				Gala Dinner wraps up			

Legend -   Receptions/Dinner included in registration cost   By invitation only meetings/luncheons   RITA Icebreakers  
  City Tour must have purchased tickets   Sponsored Coffee Breaks   Meals not included in registration

## Join us for a **FREE WEBINAR:**

An update on recent progress in human rabies prevention recommendations

## Friday, Nov. 1

9:00 - 12:30

Count Basie Ballroom A



#RITA2019KC @RITA2019KC