08:00 - 08:55  
*Opening Remarks, Awards and State of the Category*  
CAPT Sukhminder K. Sandhu  
*Moderator: LCDR Alaine Knipes; LCDR Michelle Lin*

09:00 - 09:45  
*Abstracts - Morning*  
LCDR Amy J. Schuh; LT Muhammad B. Altaf; LT Brian McAleney; LT Sergio E. Rodriguez  
*Moderator: LCDR Robert Gahl; LT Jin Qin*

**Science and Investigation – a five part session:**  
*LT Sergio E. Rodriguez: Deploying for enhanced surveillance in response to rabies raccoon virus variant detected in Douglas, County, Nebraska, October-November 2023*  
Rabies, a lethal yet preventable viral disease, remains a significant public health concern. On October 5, 2023, the Nebraska Department of Health and Human Services alerted the Centers for Disease Control and Prevention (CDC) regarding a distressing incident involving a kitten that had tested positive for the Eastern raccoon rabies virus variant (RRVV). This variant of rabies, primarily affecting raccoons, has been endemic in the southeastern United States. For the last thirty years, half a billion dollars has been federally invested in RRVV containment efforts to limit its westward expansion. The kitten was discovered by an Omaha resident with an indistinct history, suggesting it was a stray animal. Tragically, the kitten succumbed to rabies in late September 2023. Its physical condition revealed evidence of a recent bite wound, indicative of local transmission while within the Omaha area. To effectively respond to this alarming situation of RRVV discovery in an unexpected geographic context, an enhanced rabies surveillance (ERS) deployment was initiated by the CDC. ERS involves seeking out symptomatic or found-dead animals for testing and is used when additional surveillance data is crucial for shaping rabies management strategies. We present an account of the deployment activities of the PHS officers involved, and the collaborative efforts of county, state, and federal partners in executing ERS for rabies in Omaha, Nebraska, spanning from October to November 2023.

*LCDR Amy J. Schuh: Investigating the Ecology of Marburg Virus in its Natural Bat Reservoir to Identify Transmission Mechanisms and Drivers of Bat-borne Zoonotic Pathogen Spillover*  
Despite the threat of zoonotic bat-borne emerging infectious diseases to global health security, there are few examples of well-characterized zoonotic pathogen-natural reservoir systems. CDC’s Viral Special Pathogen Branch uses field- and laboratory-based approaches to investigate the ecology of Marburg virus (MARV) in its natural bat reservoir to identify transmission mechanisms and drivers of spillover. MARV, like its close relative Ebola virus, causes outbreaks of hemorrhagic disease with high case fatality ratios. A longitudinal investigation following two outbreaks of MARV disease among miners working in Kitaka Mine, Uganda and tourists visiting...
Python Cave, Uganda identified the cave-dwelling Egyptian rousette bat (ERB) as the virus’ natural reservoir. Using captive-bred ERBs, we demonstrated that MARV-inoculated ERBs become viremic and shed virus in their oral secretions, feces, and urine. The possibility that tick ectoparasites of ERBs might facilitate MARV transmission to humans was ruled-out after >3000 ticks collected from Python Cave tested negative for MARV. Further, an experimental transmission study demonstrated that MARV can be horizontally transmitted from inoculated to naïve contact ERBs, thereby providing a mechanism for virus maintenance in ERBs and spillover to humans. During this study, we found MARV-contaminated fruit in the cages of experimentally infected ERBs, thereby providing a plausible explanation for how humans that had not encroached on ERB habitats might have become infected. A follow-up investigation showed that ERBs travel long distances to feed in cultivated fruit trees near homes and that their foraging behavior represents a MARV spillover risk to humans. Finally, a recent study demonstrated that ERBs experimentally co-infected with MARV and an ERB-specific orthonairovirus shed significantly more MARV than monoinfected ERBs, thereby increasing the risk of MARV spillover. In conclusion, comprehensive characterization of zoonotic pathogen-natural reservoir systems is critical in understanding how zoonotic pathogens are transmitted to humans and developing evidence-based strategies to mitigate spillover.

**LCDR Marsha Samson:** **Responsive regulatory approach for artificial intelligence (AI) use in drug development**

The integration of artificial intelligence (AI) technologies across all stages of the drug development lifecycle is accelerating the delivery of safe and effective treatments. As this data-driven technology continues to rapidly evolve across the landscape of drug development, a responsive regulatory approach is warranted to calibrate the requirements needed to meet safety and evidentiary standards. This responsive regulatory approach can be based on an assessment of model risk (estimated by examining AI models’ influence on regulatory decision-making and the potential consequences of wrong decisions if the model is inaccurate). This responsive regulatory approach is rooted in an in-depth understanding of the specific application context and calibrates regulatory requirements according to model risk. Principles of trustworthy and responsible AI serve as the foundation for responsive policy development and provide valuable considerations for both AI tool developers and regulators. Several principles have been proposed for the use of AI in healthcare, but none are specifically tailored for drug development. These principles underscore the importance of leveraging multidisciplinary expertise in the development of AI to ensure that the model is addressing a meaningful drug development need. The principles also highlight the importance of bias mitigation by ensuring that the results from AI models are generalizable to the intended patient population, and that the underlying datasets used to train these models are representative of the target population. Transparency is another core principle that demands the availability of clear and contextually relevant information on the model’s intended use, performance of the model, and characteristics of the data used to train and test the model. These principles, among others, can guide the creation of a responsive policy, and support the development of model credibility standards and guidelines for AI use in drug development. Scientific discussion around this approach as a potential framework for AI oversight and regulation, without adding unnecessary burden to developers or regulators, is warranted.
LT Muhammad B. Altaf: **Implementation of Empower/NuGenesis Software Data Management System in New York Medical Products Laboratory Workflow**

In 2021, the Food and Drug Administration began an agency wide effort to modernize its technical infrastructure. The overall goal was to facilitate a framework that promotes collaborative efforts between the agency divisions and FDA clients. To support the Modernization Act of 2021, the New York Laboratory Medical Products (NYLMP) proceeded with the integration of Waters Corporation electronic data management software systems, Empower and NuGenesis. Empower and NuGenesis software enables the digitization of the laboratory environment for efficient dissemination of information. The application of this software aligns with government mandates and strategic plans, as the National Archives and Records Administration will no longer accept new transfers of permanent or temporary analog records. The laboratory will utilize an electronic laboratory notebook (ELN), which is 100% web-based, enabling lab managers and scientists to seamlessly share data and results throughout the agency. Samples, data collection, data management, and instrument reports can all be managed from one centralized location. NYLMP is currently performing routine pharmaceutical analysis to test drug products from the Depart of Defense Shelf-Life Extension Program (SLEP), employing Waters Corp. software. Empower is mainly used for chromatographic processes such as assays, impurities, and identification analyses. NuGenesis allows for the use of a scientific data management system (SDMS) for the retrieval, compilation, and review of data from a suite of analytical instrumentation such as balances and pH meters. A successful implementation of Empower and NuGenesis will help the laboratory reduce errors in transcription, increase productivity, increase regulatory compliance, achieve a higher level of data integrity, and increase efficiency by improving sample turnaround and data review times. NYLMP has completed 5 SLEP projects utilizing the newly implemented Empower/NuGenesis software. This integration has streamlined the review of over 5,000 pages of analytical data and reports from a previously paper to fully electronic format.

LT Brina McAleney: **Gender Affirming Care in a Correctional Setting**

In the United States, transgender individuals currently face many challenges, most notably access informed medical care. These struggles have contributed to transgender individuals experience higher prevalence rates of mental health issues, substance use concerns, and suicide rates (American Psychological Association). As a solution to this disparity, the gender-affirming care model, was established for providers to deliver informed care to transgender individuals. Gender-affirming care is a supportive form of healthcare, consisting of an array of services (e.g., medical, surgical, mental health, and non-medical services) to support and affirm an individual's gender identity. In an attempt to minimize the access disparity within the correctional setting, the Bureau of Prisons created the Transgender Offender Manual to educate both health providers and correctional officers on care of that population. This policy provides guidance to staff in dealing with the unique issues that arise when working with transgender inmates (e.g., how to pat searches), ensure transgender inmates can access programs and services that meet their needs as appropriate (e.g., gender appropriate commissary, hormone therapy, electrolysis, gender affirming surgery), and prepare them to return to the community. Further ensuring that informed care is provided to that population, all correctional staff are provided with training on this policy on an annual basis.
After attending this session, participants will be able to:

1. Describe field investigations for zoonotic diseases.
2. Describe novel technologies and regulatory approach.
3. Describe gender affirming care.

09:45 - 10:00
**Morning Break**
*Moderator: LCDR Folasade Kembi*

10:00 - 11:00
**Keynote Speaker**
*Dr. Zhigang (Shay) Xie*
*Moderator: LCDR Rebecca Levine; CDR Kate Morris*

Enhancing Mental Health for People with Functional Disabilities: Advancing Healthcare Access, Quality, and Outcomes

After attending this session, participants will be able to:

1. Describe the mental health disparities between individuals with functional disabilities and those without disabilities in the United States.
2. Describe the effects of recent healthcare reforms in the U.S. on these disparities.
3. Describe potential solutions aimed at mitigating and reducing the observed disparities.

11:00 - 13:00
**Exclusive Exhibit Hall Time**

Please join us in the Exhibit Hall to meet with our event Sponsors and Exhibitors.
*Wednesday, June 26, 2024 13:00 - Wednesday, June 26, 2024 14:30*

13:00 - 14:30
**Lunch - with SciPAC 40th Anniversary Toast**
*CAPT Sukhminder K. Sandhu; CDR Zewditu Demissie*
*Moderator: LCDR Alesha Harris*

14:30 - 15:25
**Connections / Networking**
*CDR NaTasha Hollis; CDR Colleen Scott; LCDR Marisa Hast*
*Moderator: CAPT Seth Green*
Connecting officers and Networking

After attending this session, participants will be able to:

1. Describe how to build cross-agency connections between officers.
2. List two opportunities for networking.

15:30 - 16:15
Abstracts - Afternoon
CAPT Sara B. Newman; CAPT Michelle Tsai; LCDR Nicholas Deputy; LCDR Krisin Marks; LCDR Patrick Sears; LT Emilie Bouda
Moderator: CDR Maroya Walters; LCDR Michelle Hughes

SciPAC and Corps – a five part session:
LCDR Kristin Marks: The Scientist Officer Bibliography: An Evolving Wealth of Knowledge
Scientist Officers excel in diverse scientific fields, spanning from psychology to nutrition, epidemiology to regulatory science, and beyond. Some of their impactful work is disseminated through publications and presentations. The annual SciPAC Bibliography is a compilation of Scientist Officers’ products, highlighting their breadth of expertise, scientific reach, and public health impact. The SciPAC Bibliography has been a collaborative effort between the Science Subcommittee Bibliography Team and the Visibility Subcommittee Publications Team and, since being initiated in 2010, has evolved to enhance its scope and efficiency. Historically, scientific products were collected via email submission from Scientist Officers and manual searches of scientific literature databases (e.g., Scopus). In 2023, the compilation process was updated to maximize capture and increase efficiencies. First, all rostered Scientist Officers were invited to provide their scientific products through a REDCap survey. For Scientist Officers without a recorded response, an automated query was used to identify scientific products indexed in the National Library of Medicine’s MEDLINE database. Following manual review, products from the survey and automated query were combined. Leveraging a structured data collection tool improved Scientist Officer submissions and implementing the automated query method decreased burden on the team. Utilizing the MEDLINE database also enabled the 2022 Bibliography to incorporate an index of Medical Subject Heading terms, allowing readers to quickly identify publications associated with topics of interest. The 2022 Bibliography contains over 700 scientific products, highlighting Scientist Officers’ crucial role in public health emergency responses such as the COVID-19 pandemic response and the Multinational Mpox Response. It provides a glimpse of how Scientist Officers have advanced the scientific field, whether at their agencies or on the frontlines of deployments and is the basis for multiple products that highlight Scientist Officers’ work to SciPAC and USPHS Leadership. The Bibliography serves as an example of how Scientist Officers identify and incorporate novel approaches to improve existing products and maximize value and efficiency.

LT Emilie Bouda: The Laboratory Leadership Service Fellowship trains high-caliber scientists to become leaders in public health service
The Centers for Disease Control and Prevention (CDC) Laboratory Leadership Service (LLS) program is a two-year fellowship that trains doctoral scientists to become leaders in public health laboratories. The LLS program was established in 2015 to develop future public health laboratory leaders to protect the public’s health, safety, and security through excellence in laboratory sciences. The LLS offers training in laboratory management, quality, safety, scientific communication, bioinformatics, leadership, and response to public health threats. Fellows are assigned to CDC and jurisdictional public health laboratories. Fellows may submit an expedited application (prior to onboarding) for commission into the United States Public Health Service (USPHS) Commissioned Corps or onboard as Title 42 full-time equivalent employees. Though this is a viable path into the USPHS, many laboratory doctoral scientists do not know about this fellowship program at CDC. USPHS laboratory scientist officers are expected to be public health leaders and promote excellence in laboratory sciences in the various roles we serve across many agencies. With the emergence of novel infectious agents that threaten public health, dedicated leaders in laboratory sciences are needed to protect, promote, and advance the health and safety of our nation. At the end of this presentation, attendees will have more awareness of the LLS program, identify opportunities that exist for LLS fellows, and gain insight into the personal experiences of a current LLS fellow. Attendees will learn that LLS fellows are a great asset to the USPHS and the future of public health in the United States.

**CAPT Michelle Tsai: Understanding Deployment Health in the United States Public Health Service Commissioned Corps**

The COVID-19 Pandemic brought about a significant increase in the deployment tempo of the United States Public Health Service (USPHS) Commissioned Corps. Officers were activated and expected to be ready both physically and psychologically and deploy multiple times a year for deployment lengths exceeding the prior average of two weeks. Medical Affairs was consistently consulted for injured and ill rostered officers requiring emergent medical waivers or demobilization. During this time, the scope of service provision expanded to include medical screenings, policy recommendations, procedure changes, and implementing the use of tools to improve reporting of health issues. The surge of deployments and the accompanying medical and social issues raised by a pandemic highlighted the necessary collaboration between the Readiness and Deployment Branch and the Medical Affairs Branch (MAB). Due to the expansion of service provision, MAB created a permanent position, Deployment Medical Officer (currently changed to Deployment Health Officer), in 2021 to track trends, prevent illness and injury, and protect unhealthy officers from being deployed. The collaboration between these two branches has resulted in developing standard of practices regarding illness and injury when deployed and tools to improve assessing officers’ health status throughout the deployment cycle. Prioritizing the health and wellbeing of deployed officers is integral to mission success. Additional resources have been invested to provide health support and consultation services to the officers and Commissioned Corps Headquarters leadership through the deployment continuum and to ensure that the USPHS Commissioned Corps a more resilient and ready force. Following this presentation, the participant will be able to: 1. Define force health protection and deployment health; 2. Describe the role of Deployment Health Officer (aka Deployment Medical Officer) within the Medical Affairs Branch; and 3. Identify health-related activities and measures
undertaken to minimize and address health risks associated with the three phases of deployment.

*CAPT Sara B. Newman: Climate Action, Readiness, and Equity (CARE): Opportunities for USPHS Commissioned Corps to Make a Greater Impact on Climate Change*

Although the USPHS Commissioned Corps is the only Uniformed Service in the United States that has yet to develop force-specific guidelines or plans related to climate change, U.S. Public Health Service Commissioned Corps officers (PHS Officers) are ideally situated to have broad reaching impact to address the health and equity impacts of our changing climate due to: 1. The widely dispersed location of PHS Officers, stationed across ~38 HHS and non-HHS Federal Agencies, with duty stations across the US and globally. 2. PHS Officers’ expertise and involvement in a broad range of health-related activities, including health policy, research, health education, direct patient care to underserved populations. 3. PHS Officers’ deployment roles during climate-related public health disasters, as well as preparedness, response, and recovery activities. 4. The unique ability for ‘health’ to serve as a universal motivator to stimulate climate action given the significant health threats climate change is causing. Even without a coordinated plan, many PHS Officers are engaged in climate-related work from volunteering for a Temporary Duty (TDY) at the HHS Office of Climate Change and Health Equity, deploying to hurricanes, wildfires, and other extreme-weather related disasters, or providing direct patient care to patients and communities on the front lines of climate-related disasters. These impactful efforts could benefit from greater coordination to improve public health outcomes given the enormity of climate related stressors. In 2023, a diverse group of concerned and motivated current and retired PHS Officers proposed the CARE Initiative: to inspire climate action and health equity through education and outreach to PHS Officers to enhance capacity and readiness for Officers to address the growing threat of climate-related disasters where they live, work and respond. The CARE initiative is ready to support the USPHS Commissioned Corps as our service moves forward to meet the greatest public health challenge of our time. Please hear about this initiative led by our scientists!

*LCDR Patrick Sears: Radical Acceptance in the Deployment Environment*

The deployment environment can be an emotionally difficult time. Officers are away from their family and friends, detached from their ordinary routines, and are challenged to adapt to the operational tempo of the mission. During such times, officers may be cognitively scattered and find themselves with many worries, concerns, and frustrations. When the objects of these worries, concerns, and frustrations are outside of the direct control of deployed officers, exacerbated stress and increased feelings of ineffectiveness may follow. During this experiential presentation, LCDR Patrick Sears will guide Scientist officers through a radical acceptance exercise to assist them in focusing on the two things that are always under a person’s control: their own thoughts and their own choices.

After attending this session, participants will be able to:

1. Describe efforts to improve compilation of scientist officer bibliography.
2. Describe initiatives to address the growing threat of climate-related disasters.
3. Describe updates and examples to address deployment health and well-being.
16:15 - 16:30
Afternoon Break
Moderator: LCDR Michelle Lin

16:30 - 17:20
SciPAC Mentoring Session
LCDR Neali Lucas
Moderator: LCDR Suresh Jayasekara; LCDR Neali Lucas

Mentorship for Scientist Officers—Career advice that advances professional growth

After attending this session, participants will be able to:
1. Describe mentorship avenues for professional educational training and development.
2. Recall career guidance on obtaining increasing responsibility, leadership, and billets.
3. Describe two insights on approaches for impactful officership.

17:20 - 17:30
SciPAC Closing Remarks
CAPT Sukhminder Sandhu; CDR Zewditu Demissie
Moderator: LCDR Alaine Knipes; LCDR Folasade Kembi