LSU
School of Veterinary Medicine

Office of Research and Graduate Education

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Campus Correspondence

To: SVM Faculty, Advanced Studies Students, Professional Students, Post-Doctoral Researchers, House Officers and Residents

From: Dr. Emi Sasaki, Phi Zeta, Tau Chapter President (2023-2024)

Date: January 4, 2024 Re: **CALL FOR ABSTRACTS PHI ZETA RESEARCH EMPHASIS DAY**

The Phi Zeta Research Emphasis Day will be held on Wednesday, February 28th, 2024. The organizing committee would like to invite all faculty, post-doctoral researchers, advanced studies students, and professional students to submit abstracts for this event. All presentations will be in poster format. ***Although summer scholars do not need to reformat their posters for Phi Zeta, they do need to submit an abstract.***

Eligibility for Award Competition: SVM Graduate Students, Professional Students, Postdoctoral researchers or non-SVM students mentored by an SVM faculty member.

Posters presented in-person by advanced studies students, professional students and postdoctoral researchers will be judged by a panel of scientists for monetary prizes in the major categories:

- Research
  - Post-doctoral researchers
  - Dissertation (PhD) students
  - Master students
  - House officer / Resident (non-PhD / non-master)
  - Veterinary students
  - Undergraduate
- Case report

*The prizes will be adjusted based on number of presentations.

Category Winners (1st place) three-minute abstract presentation.
As part of the scheduled events on Phi Zeta Research Day, following announcement of the first-place winner of each category, they will be asked to present their research poster in a 3-minute session at the awards ceremony. This timeline is brief and will be supplemented by a PowerPoint slide of their poster. The goal is to make an "elevator pitch" of their research to the attendees, to highlight their work. Therefore, every presenter in the competition should prepare a 3- minute talk, in advance.

The committee also encourages the participation of SVM faculty members. *Faculty wishing to display their posters only need to submit the names of the authors, abstract title(s) and the number of poster boards.*

This year abstracts and posters should be submitted online using http://posterabstract.lsu.edu hyperlink. Please log in to the portal by using your LSU username and password. You will receive a confirmation email upon submission. *The site only works when users are connected to the LSU network. Please be on site or use LSU intranet to upload your poster and abstract*

This portal will open on Monday, January 15th and the deadline for abstract submissions is 5:00 p.m., Wednesday, February 14th. *Please note that, under any circumstance, abstracts submitted after the deadline will not be accepted*. **Please read the Abstract Guidelines carefully.** Submitted abstracts will be used to prepare an electronic Phi Zeta Research Emphasis Day Program that will be available ahead of the meeting online. Abstracts will be distributed to a panel of SVM scientists in advance of the poster presentation, which will consistent of up to 10 minutes of in-person interaction with 2 judges.

This event is an exceptional opportunity for individuals in the SVM scientific community to present the results of their research efforts to other members of the SVM and LSU communities. It serves as an important showcase for SVM Research Enterprise. We anticipate the presence of the Provost and Vice Provost for Research and Economic Development from the main campus.

Important Dates to Remember

- Abstracts: Due by 5:00 P.M., Wednesday, 2/14/2024 (upload to **http://posterabstract.lsu.edu**)
- Poster upload to the portal: Due by 5:00 P.M. Friday, 2/23/2024 (upload to **http://posterabstract.lsu.edu**)
- Hang posters by 2/27/2024 in the morning (1st floor central corridor)
- Wine and Cheese Reception on 2/27/2024 in the evening by the posters.
- Phi Zeta Research Emphasis Day: Wednesday, 02/28/2024

Please do not hesitate to contact Dr. Sasaki (emi@lsu.edu), Dr. Cremer (jcremer@lsu.edu), Dr. Ogundele (ogundele@lsu.edu) for additional information.

Guidelines for Abstract Preparation

- Advanced studies, professional, and undergraduate students as well as post-doctoral researchers should submit abstracts under appropriate category and sub-category **on the online-abstract submission portal**. Faculty wishing to present posters should submit the author names, abstract title(s), and number of poster boards.

- The abstracts should be submitted as **a single-spaced document**. The font should be at least 10 characters per inch (font size 12) and the page should have a minimum of one-inch margins on all sides. **The abstract body is limited to 250 words** (*Note that the 250-word limit does NOT include the title, authors, and departmental information*). **Please copy and paste the abstract body from a Microsoft word document.** The abstract should contain the sections as described below (see examples on page 4):

    - Title: Adequately describe the study **(to be consistent, please capitalize the first letter of each word in your title. For example, "Guidelines for Abstract and Poster Preparation").**

    - Authors: Include all authors. **(To be consistent, please list the authors' names using the initials for the first name followed by the last name and list the participant's name in bold, e.g, J. Smith).**

    - Rationale: State the rationale for the study and provide appropriate background information and hypothesis or objectives. Indicate the objective and purpose of the research, the hypothesis that was tested or a description of the problem being evaluated or analyzed.

    - Methods: Clearly describe the technique(s) and statistical analyses employed in this investigation. Describe the study duration/setting/location, study population, study design, data collection, and methods of analysis employed.

    - Results: Clearly presented and consistent with the experimental methods and design. Present as clearly and in as much detail as possible the observations/outcome of the study. Please summarize specific results.

- Conclusions: Accurate interpretation of results within the context of the original hypotheses/objective(s). Explain the significance of the findings/outcome of the study for prevention, treatment, care and/or support, and future implications of the findings.

- Significance/Impact/Implications: Place the results and conclusions of the investigation within the context of our current knowledge of the subject area.

- **Abstracts are due by 5:00 P.M., 2/14/2024.**

- **Your abstract is not successfully submitted until you receive confirmation e-mail after clicking the final submit button. If you do not receive confirmation e-mail in your inbox or junk folder, please contact us.**

Guidelines for Poster Preparation:

- The maximum size of each printed poster is **3 feet (36 inches)** high by **4 feet (48 inches)** wide.
- Poster printing is available at the LSU Print Desk, 3rd floor of LSU Library (main campus), Room 305. https://www.lsu.edu/it_services/serv_op/service_mgmt/service-desk/printdesk.php
- To hang the posters in the designated location, please use 3M Command™ Poster strips on the back of the poster.
- **A PowerPoint file of the poster must be uploaded to the submission portal in anticipation of potential awards (i.e. for the 3 minute "elevator pitch presentation" by 1st place winners)**

Guidelines for Poster Judging

- Judges are chosen from members of both the scientific and veterinary practitioner community from the LSU SVM.

- Although judges participating in the research emphasis day will be identified as a group, the identity of judges responsible for reviewing specific posters will NOT be released.

- When possible, judges are assigned to posters using a computer random number generator. Judge assignments are then manually reviewed to make sure that no judge reviews their own (or their students') posters.

- Judge assignments are also reviewed to make sure that the same judge does not review the same student multiple times, and that "pairs" of judges are not assigned to review multiple posters together.

- Judges will provide a numeric score of each poster. These scores will then be tallied electronically. The posters in each category will then be ranked and this ranking will be used to determine first, second, and third place posters.

- Specific written commentary is encouraged and may be provided by the reviewers. This will be made available to the poster presenters, although it will not itself factor into the ranking process.

- If a presenter wishes to see their raw score after the competition, they will be allowed to do so although the score alone may not convey much information. However, the presenters will NOT be allowed to view the scores of others.

- No more than one prize will be awarded to a presenter despite multiple presentations.

- Abstracts from previously published work will be disqualified prior to judging in the PhD student and postdoctoral categories.

Sample abstracts are enclosed for additional information.

Template abstract 1 - Research

Differentiation of Canine Induced Pluripotent Stem Cells into Neural Progenitor Cells

XXXX
Laboratory for XXX, Department of XXX, XXX University

Background and Rationale: New advances in stem cell technology, including induced pluripotent stem cells (iPSC), offers new hope for patients with neurological disease and spinal cord injuries. Therefore, we evaluated the ability of canine iPSC to be differentiated into neural progenitor cells (NPC) in vitro as a precursor to clinical trials in dogs with spinal cord injury.

Approach: iPSC were generated from canine fibroblasts and characterized based on phenotype, gene expression analysis, lineage differentiation, and teratoma formation. Canine iPSC were then induced to differentiate into NPC by culture in defined medium supplemented with specific growth factors. NPC were characterized by phenotype, flow cytometry, immunofluorescence, and gene expression analysis.

Results: Canine iPSC could be readily induced to differentiate into NPC following 2-3 weeks in culture. Specific culture conditions led to enrichment of NPC for cells with characteristics of oligodendrocytes, astrocytes and neurons. NPC did not form teratomas in mice, whereas the parental iPSC cells did.

Conclusions/Implications: Canine iPSC can be induced to form NPC in vitro by altering cell culture conditions, cell substrate, and addition of specific growth factors. These studies provide evidence that iPSC technology can be used to generate NPC for use in neural regeneration in dogs with neurological injuries.

Template abstract 2 - Research

Key Role For Scavenger Receptor B-I In The Integrative Physiology Of Host Defense During Bacterial Pneumonia

K.M. XXX, M.B. XXX,
Department of XXXXXXXXXXXXXX

Rationale: Scavenger Receptor B-I (SR-BI) is a multi-recognition receptor mostly studied in the arena of atherosclerosis due to its role in cellular uptake of cholesterol ester from high density lipoprotein (HDL). Recently, SR-BI has also been reported to play a role in clearance of lipopolysaccharide (LPS) from the plasma.

Methods: SR-BI+/+ and SR-BI-/- mice were infected intratracheally with *Klebsiella pneumoniae* (Kp), or challenged with aerosolized LPS. Survival, leukocyte influx into the airspace, bronchoalveolar lavage fluid (BALF) cytokines, and bacterial CFUs in lung and blood were quantified. Bactericidal function of neutrophils (PMNs) was evaluated.

Results: Compared to SR-BI+/+ counterparts, SR-BI-/- mice suffered markedly increased mortality during pneumonia, in conjunction with higher bacterial burden in lung and blood, deficient induction in the plasma of the stress glucocorticoid corticosterone, higher serum cytokines, and increased peripheral organ injury. SR-BI-/- mice had significantly enhanced PMN recruitment to the airspace as well as increased BALF TNF-α, G-CSF, and CXCL5 after pulmonary exposure to either Kp or LPS. This was associated with defective clearance of LPS from the SR-BI-/- airway and increased cytokine production by SR-BI-/- macrophages. SR-BI-/- PMNs displayed decreased phagocytosis and a dramatic defect in intracellular bacterial killing.

Conclusions: SR-BI is central regulator of the integrated pulmonary host defense response through multiple interacting mechanisms, including modulation of alveolar cytokine induction, PMN recruitment, and PMN function.

Template abstract 3 - Research

Pharmacokinetics and Pharmacodynamics of an Extended Release Buprenorphine Formulation in Dogs

XXXX
Department of XXX, College of Veterinary Medicine, XXX University,

Rationale: The options for effective and safe long-term post-operative analgesia in canine patients are very limited. The purpose of this study was to describe the pharmacokinetics and pharmacodynamics of an extended- release buprenorphine (ERB) formulation in healthy adult dogs. We hypothesized that plasma concentrations associated with therapeutic efficacy would be maintained for 72 hours after a single subcutaneous administration of ERB.

Methods: Six healthy mixed breed dogs were administered either ERB (0.2 mg/kg SQ) or intravenous buprenorphine (IVB, 0.02 mg/kg) in a prospective, randomized, blinded, positive control crossover study. Blood samples were collected and analyzed for plasma buprenorphine concentrations using ultra high pressure liquid chromatography/mass spectrometry. Thermal withdrawal latency, sedation scores, and vital signs were obtained at predetermined intervals for 6 days in each study period.

Results: Maximum plasma concentrations (median, range) of buprenorphine in dogs receiving ERB was 5 (4.3- 11.0) ng/mL, which occurred at 8 (4-36) hours (Tmax). Therapeutic plasma concentrations (>1 ng/mL) occurred from 0.5 to 72 hours after administration in most (5/6) dogs. Thermal withdrawal latency was significantly prolonged for 48 hours in dogs after ERB administration and for up to 4 hours when dogs received IVB. Sedation scores were not significantly different in dogs receiving IVB or ERB, and no serious adverse effects were seen in either treatment group.

Conclusions/significance: These results suggest that a single dose of 0.2 mg/kg ERB is safe, provides consistent therapeutic plasma concentrations, and exhibits prolonged analgesia in healthy dogs.

Template abstract 4 - Research

Low Lung Injury Score Predicts Under-Recognition Of Acute Respiratory Distress Syndrome

X.M. XXX, C.B. XXX,
Department of XXXXXXXXX

Rationale: Low-tidal volume ventilation (LTVV) has been shown to significantly reduce mortality in patients with acute respiratory distress syndrome (ARDS). We investigated the rate of clinician recognition of ARDS in a single center and sought to identify clinical factors associated with under-recognition of ARDS.

Methods: From a prospective cohort of 363 patients admitted from the emergency department to the intensive care unit (ICU), we identified 72 patients who met Berlin criteria for ARDS as determined by review of chest radiographs and clinical information from the first 5 days in the ICU. We then tested the association of clinician recognition of ARDS with patient-level clinical variables and used backward stepwise multivariable logistic regression to identify independent predictors of ARDS recognition.

Results: Within 7 days of meeting diagnostic criteria for ARDS, 40% of patients had clinical documentation of the diagnosis of ARDS; 51% had ARDS mentioned as part of a differential diagnosis; and 40% had discussion of LTVV strategies in the medical record. Overall, 53% of patients with ARDS had either recognition of ARDS or discussion of LTVV in their medical record. Clinician diagnosis of ARDS was associated with implementation of LTVV (<8 mL/kg IBW) within 2 days of meeting diagnostic criteria (mean TV 7.3 vs. 8.5 mL/kg IBW, p=0.03).

Conclusions: Clinician recognition of ARDS remains poor, with many cases going unrecognized. Severity of ARDS as measured by Lung Injury Score was the strongest predictor for clinician recognition of ARDS. Clinician recognition of ARDS was associated with use of LTVV strategies.

Template abstract 5 – Case report

Extramedullary Plasmacytoma in a Hamster

X. XXX, X.X XXX
Department of XXXXXXXXX

Background: An extramedullary plasmacytoma is a neoplastic proliferation of plasma cells arising from outside of the bone marrow. It is a relatively common tumor in old dogs and occurs most frequently on the skin and mucous membranes. Salivary gland plasmacytomas are extremely rare within all species.

Case Description: A 1.5-year-old, intact female Syrian hamster (*Mesocricetus auratus*) showed respiratory distress and a ventral cervical mass was palpated. Due to the overall poor prognosis, the animal was humanely euthanized and submitted for necropsy. On gross examination a subcutaneous, round, loosely attached, semi-firm mass measuring approximately 1 cm in diameter was identified at the ventral neck region. Histopathologic examination of the cervical mass revealed neoplastic proliferation of mononuclear cells with plasmacytoid morphology adjacent to and infiltrating the submaxillary salivary gland. The neoplastic cells were positive for CD79a and negative for CD3. Based on the diagnostic test results and histopathologic evaluation of the mass tissue sections, a diagnosis of an extramedullary plasmacytoma was determined. In addition, the neoplastic cells were occasionally surrounded by moderate amounts of amorphous eosinophilic material, which was negative for Congo red stain and Periodic acid–Schiff.

Summary: This is a case report of an extramedullary plasmacytoma in a hamster arising from the submaxillary salivary gland. Prior reports of extramedullary plasmacytomas originating in Syrian hamster salivary glands suggests a predisposition to development of plasmacytic tumors in this location.

Template abstract 6 – Case report

Pulmonary Toxoplasmosis in a Dog

X. XXX, X.X XXX
Department of XXXXXXXXX

Background: Toxoplasmosis is a worldwide disease caused by *Toxoplasma gondii,* which is an obligate intracellular parasite. *T. gondii* infects virtually all species of warm-blooded animals, including humans, as intermediate hosts. Domestic cats and other Felidae are the definitive hosts that excrete oocysts. Toxoplasmosis is seen most frequently in young animals, often facilitated by immunosuppression. Clinical signs of toxoplasmosis may be localized to the respiratory, neuromuscular, or gastrointestinal systems, or may be related to generalized infection. Canine toxoplasmosis is similar to infection with *Neospora caninum*; toxoplasmosis is more prevalent in cats, while neosporosis is seen more frequently in dogs.

Results: A 9-year-old, spayed female, Pit-bull dog presented for behavior changes, anorexia, and respiratory distress. She had been treated with radiation therapy for a pituitary macroadenoma three months prior to presentation. Thoracic radiographs revealed severe nodular pattern in the lungs. Metastatic neoplasia or fungal pneumonia was suspected. Due to poor prognosis, the dog was humanely euthanized and submitted for necropsy. Grossly, all lung lobes contained multifocal, white, firm, nodules ranging in size from 0.2 to 2.0 cm diameter. Microscopic examination revealed the nodules to consist of densely cellular pyogranulomatous inflammation associated with multifocal areas of necrosis. Intralesional macrophages frequently contained basophilic, 2-4 µm, round to oval protozoal zoites within cytoplasmic vacuoles. Immunohistochemical stains for *T. gondii* antibody were moderately positive. PCR performed on the formalin-fixed, paraffin-embedded lung tissue was positive for *T. gondii*.

Conclusion: Pulmonary toxoplasmosis is generally a diffuse, interstitial disease, whereas this dog had an unusual, multi-nodular, pyogranulomatous presentation.