

MMI 291 Seminar Series

Current Theme: Interdisciplinary Research
Spring Quarter 2025 – CRN 47397

Friday Seminar at 12:10-1 p.m.

Genome and Biomedical Sciences Facility, Room 1005

“Nutrition is Linked to Immunity Against Bacterial Pathogens via the NRAMP1 Metal Transporter”

Research Bio

“My long-term research interest is in understanding the molecular basis by which susceptibility to pathogens as well as inflammatory pathologies are linked to *Nramp1* in humans and animals. I leverage both microbial and host genetic systems to uncover mechanisms of immunity and microbial pathogenesis during host-pathogen interactions. My lab aims to combine classical immunological techniques with a systems approach to gain mechanistic insights on the contributions of neutrophil diversity in host responses to bacterial infections. We leverage animal models of infection, molecular biology and flow cytometry to investigate how phagocytes cooperatively contribute to immunity against bacterial pathogens. My work integrates systems and genetic approaches using small animal and tissue culture models to understand how NRAMP1 by neutrophils and macrophages contributes to modulating inflammatory responses during infectious and non-infectious pathologies.”

Publications

Lokken-Toyli K.L.*, **Diaz-Ochoa, V.E.***, Camacho L., Stull-Lane A.R., Van Hecke E.R., Mooney J.P., Muñoz A.D., Walker G.T., Hampel D., Jiang X., Labuda, J.C., Depew C.E., McSorly, S.J., Stephensen C.B., Tsois R.M. “Vitamin A deficiency impairs neutrophil-mediated control of *Salmonella* via SLC11A1 in mice”. *Nature Microbiology* (2024) <https://doi.org/10.1038/s41564-024-01613-0>

Hiyoshi, H., English, B.C., **Diaz-Ochoa, V.E.**, Wangdi, T., Zhang, L.F., Sakaguchi, M., Haneda, T., Tsois, R.M., Baumler, A.J. “Virulence factors perforate the pathogen-containing vacuole to signal efferocytosis”. *Cell Host & Microbe*. 2022 30(2) <https://doi.org/10.1016/j.chom.2021.12.001>.

Stull-Lane, A.R., Lokken-Toyli, K.L., **Diaz-Ochoa, V.E.**, Walker G.T., Cevallos S.A., Winter A.L.N., Muñoz, A.D., Yang, G., Velazquez E.M., Wu C.Y., Tsois, R.M., “Vitamin A supplementation boosts control of antibiotic-resistant *Salmonella* infection in malnourished mice”. *PLoS Neglected Tropical Diseases*. 2020 Oct 2;14(10):e0008737. doi: 10.1371/journal.pntd.0008737.

April
18



Vladimir Diaz-Ochoa, Ph.D.

Assistant Professor
CAMPOS Faculty Scholar
Department of Pathology,
Microbiology and Immunology
University of California, Davis

April 18, 2025
12:10 – 1 p.m.

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Genome and
Biomedical Sciences
Facility, Room 1005

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In-person presentation

Medical Microbiology and
Immunology
School of Medicine

Seminar Contact:
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We hope to see you there!