

# Molecular Genetics & Microbiology Graduate Program Newsletter

Winter 2015 Vol. 8, No. 4



## 📖 2015 Publications

**Bhagwat, A.S.**, and Vakoc, C.R. 2015. Targeting transcription factors in cancer. *Trends in Cancer* (1): 53-65.

**Chahales, P.**, and Thanassi, D.G. 2015. Structure, function, and assembly of adhesive organelles by uropathogenic bacteria. *Microbiology Spectrum* 3(5).

**Chahales, P.**, and Thanassi, D.G. 2015. A more flexible lipoprotein sorting pathway. *Journal of Bacteriology* 197(10): 1702-1704.

**Chung, L.K.**, and Bliska, J.B. Yersinia vs host immunity: how a pathogen evades or elicits protective responses. *Current Opinion in Microbiology* 29: 56-62.

**Espaillet, M.P.**, Adada, M.M., Shamseddine, A.A., Hannun, Y.A., and Obeid, L.M. 2015. Ceramide and sphingosine-1-phosphate in cancer, two faces of the sphinx. *Translational Cancer Research* doi: 10.3978/j.issn.2218-676X.2015.10.01

Farnoud, A.M., **Bryan, A.M.**, Kechichian, T., Luberto, C., and Del Poeta, M. 2015. The granuloma response controlling cryptococcosis in mice depends on the SK1-S1P pathway. *Infection and Immunity* 83(7): 2705-2713.

Jain, N., Bouklas, T., Gupta, A., Varshney, A.K., **Orner, E.P.**, and Fries, B.C. 2015. ALL2, a homologue of ALL1, has a distinct role in regulating pH homeostasis in the pathogen *Cryptococcus neoformans*. *Infection and Immunity* 84(2): 439-451.

**Medici, N.P.**, and Del Poeta, M. 2015. New insights on the development of fungal vaccines: from immunity to recent challenges. *Memorias do Instituto Oswaldo Cruz* 110: 1-8.

**Minkah, N.**, Macaluso, M., Oldenburg, D.G., Paden, C.R., White, D.W., McBride, K.M., and Krug, L.T. 2015. Absence of the uracil DNA glycosylase of murine gammaherpesvirus 68 impairs replication and delays the establishment of latency in vivo. *Journal of Virology* 89(6): 3366-3379.

## ✦ 2015 Publications (continued)

Mor, V., Rella, A., Farnoud, A.M., Singh, A., Munshi, M., **Bryan, A.**, Naseem, S., Konopka, J.B., Ojima, I., Bullesbach, E., Ashbaugh, A., Linke, M.J., Cushion, M., Collins, M., Ananthula, H.K., Sallans, L., Desai, P.B., Widerhold, N.P., Fothergill, A.W., Kirkpatrick, W.R., Patterson, T., Wong, L.H., Sinha, S., Giaver, G., Nislow, C., Flaherty, P., Pan, X., Cesar, G.V., de Melo Tavares, P., Frases, S., Miranda, K., Rodrigues, M.L., Luberto, C., Nimricher, L., and Del Poeta, M. 2015. Identification of a new class of antifungals targeting the synthesis of fungal sphingolipids. *MBio* 6: e00647.

Mukherjee, K., **Gardin, J.**, Fitcher, B., and Leatherwood, J. Rrp6 has distinct catalytic and structural functions in the exosome of *S. pombe*. Submitted.

Pham, T., Henderson, N.S., **Werneberg, G.T.**, Thanassi, D.G., Delcour, A.H. Electrostatic networks control plug stabilization in the PapC usher. Submitted.

Rella, A., Mor, V., Farnoud, A.M., Singh, A., Shamseddine, A.A., **Ivanova, E.**, Carpino, N., Montagna, M.T., Luberto, C., and Del Poeta, M. 2015. role of sterylglucosidase 1 (Sgl1) on the pathogenicity of *Cryptococcus neoformans*: potential applications for vaccine development. *Frontiers in Microbiology* 6: 836.

Rubin, E.T., **Werneberg, G.T.**, Pales Espinosa, E., Thanassi, D.G., and Allam, B. Identification and characterization of peptidases secreted by quahog parasite unknown (QPX), the protistan parasite of hard clams. Submitted.

Schoberle, T.J., **Chung, L.K.**, McPhee, J.B., Bogin, B., and Bliska, J.B. Uncovering an important role for YopJ in the inhibition of caspase-1 in activated macrophages and promoting *Yersinia pseudotuberculosis* virulence. *Infection and Immunity*, in revision.

Sohn, S.Y., **Bridges, R.G.**, and Hearing, P. 2015. Proteomic analysis of ubiquitin-like posttranslational modifications induced by the adenovirus E4-ORF3 protein. *Journal of Virology* 89(3): 1744-1755.

Vink, E.I., **Zheng, Y.**, Yeasmin, R., Stamminger, T., Krug, L.T., and Hearing, P. 2015. Impact of adenovirus E4-ORF3 oligomerization and protein localization on cellular gene expression. *Viruses* 7: 2428-2449.

Yurovsky, A., **Gardin, J.**, Skiena, S., and Fitcher, B. Codons and codon pairs found in the Shine-Dalgarno sequence are depleted from *E. coli* coding regions, but not from the coding regions of other prokaryotes. Submitted.

Zhang, Y., **Tam, J.W.**, Mena, P., van der Velden, A.W., and Bliska, J.B. 2015. CCR2+ inflammatory dendritic cells and translocation of antigen by type III secretion are required for the exceptionally large CD8+ T cell response to the protective YopE69-77 epitope during *Yersinia* infection. *PLoS Pathogens* 11(10): e1005167.

## ✦ 2015 Publications (continued)

Wang, E., Kawaoka, S., Roe, J.S., Shi, J., Hohmann, A.F., Xu, Y., **Bhagwat, A.S.**, Suzuki, Y., Kinney, J.B., and Vakoc, C.R. 2015. The transcriptional cofactor TRIM33 prevents apoptosis in B-lymphoblastic leukemia by deactivating a single enhancer. *eLife* e06377.

**Werneburg, G.T.**, Henderson, N.S., Portnoy, E.B., Sarowar, S., Hultgren, S.J., Li, H., and Thanassi, D.G. 2015. The pilus usher controls protein interactions via domain masking and is functional as an oligomer. *Nature Structure and Molecular Biology* 22: 540-546.

## ✦ 2015 Conference Presentations

**Bridges, R.** Identification of Ubiquitin-like Post-translational Modifications Induced by the Adenovirus E4-orf3 Protein. 115<sup>th</sup> General Meeting of the American Society for Microbiology. May 30 - June 2, 2015, New Orleans, LA.

**Chung, L.K.**, Schmidt, V.A., and Bliska, J.B. IQGAP1 is Important for the Secretion of IL-1 $\beta$  in Macrophages and is Targeted by *Yersinia pestis* Type III Effector YopM. Keystone Symposium on Innate Immunity and Determinants of Microbial Pathogenesis. April 19-24, 2015. Olympic Valley, CA.

**Espallat, M.P.** Defining the Role of acid Ceramidase in Ulcerative Colitis and the Inflammatory Response. International Ceramide Conference Sphingolipid Club Joint Meeting. May 6 - 10, 2015. Cesme, Turkey.

**Kopping, E.J.**, and Thanassi, D.G. TolC-dependent Modulation of Host Cell Death by *F. novicida*. 8<sup>th</sup> International Conference on Tularemia. September 28 - October 1, 2015.

**Kopping, E.J.**, and Thanassi, D.G. Contributions of TolC-dependent Export Pathways to *Francisella novicida* Drug Sensitivity and Host Cell Death Modulation. 115<sup>th</sup> General Meeting of the American Society for Microbiology. May 30 - June 2, 2015, New Orleans, LA.

**Minkah, N.K.**, Van Skike, N., Oldenburg, D.G., White, D.W., and Krug, L.T. Loss of the Gammaherpesvirus vFGAM ORF75A Tegument Protein Reduces Replication in Macrophages and is Deleterious to Latency Establishment *In Vivo*. 40th International Herpesvirus Workshop, Gammaherpesvirus Satellite Workshop. July 25 - 29, 2015. Boise, ID.

Minkah, N.K., **Van Skike, N.**, Oldenburg, D.G., White, D.W., and Krug, L.T. Loss of the Gammaherpesvirus vFGAM ORF75A Tegument Protein Reduces Replication in Macrophages and is Deleterious to Latency Establishment *In Vivo*. 40th International Herpesvirus Workshop, Gammaherpesvirus Satellite Workshop. July 25 - 29, 2015. Boise, ID.

**Nomakuchi, T.**, Rigo, R., Aznarez, I., and Krainer, A.R. Antisense-oligonucleotide-directed inhibition of nonsense-mediated mRNA decay. RNA and Oligonucleotide Therapeutics Meeting. April 10 - 13, 2015. Cold Spring Harbor, NY.

**Nomakuchi, T.**, Rigo, R., Aznarez, I., and Krainer, A.R. Antisense-oligonucleotide-directed inhibition of nonsense-mediated mRNA decay. 20<sup>th</sup> Annual RNA Society Meeting. May 26 - 31, 2015. Madison, WI.

**Nomakuchi, T.**, Rigo, R., Aznarez, I., and Krainer, A.R. Antisense-oligonucleotide-directed inhibition of nonsense-mediated mRNA decay. Eukaryotic mRNA Processing Meeting. August 18 - 22, 2015. Cold Spring Harbor, NY.

**Nomakuchi, T.**, Rigo, R., Aznarez, I., and Krainer, A.R. Antisense-oligonucleotide-directed inhibition of nonsense-mediated mRNA decay. 11<sup>th</sup> Annual Meeting of the Oligonucleotide Therapeutics Society. October 11 - 14, 2015. Leiden, The Netherlands.

**Werneberg, G.T.**, Henderson, N.S., and Thanassi, D.G. 2015. Dissecting the Usher-Chaperone-Subunit Interactions during Pilus Biogenesis in *Escherichia coli*. 23<sup>rd</sup> Congress of the International Union of Biochemistry and Molecular Biology. Foz Do Iguacu, Brazil.

**Werneberg, G.T.**, and Thanassi, D.G. 2015. The Uropathogenic *Escherichia coli* Pilus Usher Controls Protein Interactions via Domain Masking and is Functional as an Oligomer. Western Section of the American Urological Association 91<sup>st</sup> Annual Meeting. Indian Wells, CA.

## 2015 Awards

**Bridges, R.** 2015. Travel Award, \$500. *American Society for Microbiology*.

**Bridges, R.** 2015. Distinguished Service Award, \$350. *Department of Molecular Genetics and Microbiology*.

**Chahales, P.** 2015. Best Poster Award. *Department of Molecular Genetics and Microbiology*.

**Chung, L.** 2015. Distinguished Travel Award, \$1,500. Graduate Student Organization, Stony Brook University.

**Kopping, E.J.** 2015. Travel Award, \$500. *American Society for Microbiology*.

**Kopping, E.J.** 2015. Travel Award, 500 GBP. *Tularemia International Society*.

**Kopping, E.J.** 2015. Outstanding Poster Presentation, 100 GBP. *Tularemia International Society*.

**Chung, L.** 2015. Ruth L. Kirschstein National Research Service Award for Individual Predoctoral Fellows (F31). National Institutes of Allergy and Infectious Diseases.

## 2015 Awards

**Chung, L.** 2015. Grant-in-Aid of Research Award, \$100. *Sigma Xi*.

**Espaillet, M.P.** 2015. Ruth L. Kirschstein National Research Service Award for Individual Predoctoral Fellows (F31). National Institutes of Health.

**Nomakuchi, T.** 2015. Ruth L. Kirschstein National Research Service Award for Individual Predoctoral Fellows (F30). National Institute of Neurological Disorders and Stroke.

**Nomakuchi, T.** 2015. Travel Award. *Oligonucleotide Therapeutics Society*.

**Patel, V.** 2015. Ruth L. Kirschstein National Research Service Award for Individual Predoctoral Fellows (F30). National Institutes of Allergy and Infectious Diseases.

**Werneberg, G.** 2015. Best Poster Award. *Department of Molecular Genetics and Microbiology*.

**Zheng, Y.** 2015. Abraham's Award for Outstanding Achievement by a Graduate Student, \$500. *Department of Molecular Genetics and Microbiology*.

## Dissertation Defense Announcement

Glenn Werneburg will defend his dissertation on Friday January 29, 2016. His seminar will take place at 10 AM in Life Sciences room 038.

## 2015 Graduations

**Dr. Peter Chahales, PhD** (David Thanassi's laboratory); Peter is continuing his work in the Thanassi lab as a postdoctoral fellow while interviewing for positions.

**Dr. Nana Minkah, PhD** (Laurie Krug's laboratory); Nana is now a postdoctoral fellow in the laboratory of Dr. Stefan Kappe at the Center for Infectious Disease Research, Seattle, WA.

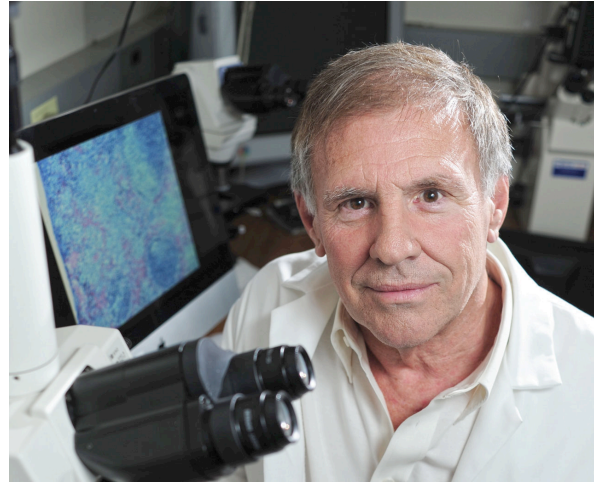
**Dr. Alexis Santana, PhD** (Laurie Krug's laboratory); Alexis is conducting postdoctoral research in the laboratory of Dr. John Carucci in the Department of Dermatology, NYU.

**Dr. Jason Tam, PhD** (Adrianus van der Velden's laboratory); Jason has accepted a postdoctoral research position with Dr. Jenny Ting in the Lineberger Comprehensive Cancer Center at the University of North Carolina Chapel Hill.

**Dr. Yueting Zheng, PhD** (Patrick Hearing's laboratory); Ting will continue her work in the P. Hearing laboratory while interviewing for postdoctoral positions.

## ✦ Congratulations

Distinguished Professor Jorge Benach was elected to lifetime honorary membership in the American Society for Rickettsiology in recognition of his many significant contributions to the field of vector-borne pathogens.



## ✦ Save the Date - MGM Symposium in Honor of Jorge Benach

A one-day symposium will be held on Friday October 28, 2016 to honor the career and scientific achievements of Dr. Jorge Benach who is stepping down from the position of Chair of the Department of Molecular Genetics and Microbiology after ten years of leadership.