

CURRICULUM VITAE
BENHUR LEE, M.D.

Current Address Icahn School of Medicine at Mount Sinai
One Gustave L. Levy Place, #1124
New York, NY 10029
Benhur.Lee@mssm.edu

Nationality U.S. Permanent Resident
Citizenship Singapore

Education
1990-1995 **M.D. (AΩA), Yale University School of Medicine, CT**
1984-1988 **B.Sc. (Magna cum laude), Santa Clara University, CA**

Medical License **Medical Board of California**
A78476 (Active)

Board Certification **American Board of Pathology, Clinical Pathology**
10/2000

Positions

2014 **Professor, Department of Microbiology**
Ward-Coleman Chair in Microbiology
Icahn School of Medicine at Mount Sinai, New York

2011 **Professor, Step II (UCLA)**
(3-year acceleration)

2009 **Associate Professor, Step III (UCLA)**

2007 **Associate Professor, Step II (UCLA)**
(Tenure, 2-year acceleration)

2003 **Attending Physician, Transfusion Medicine Service**
Hospital Privileges at UCLA and Santa Monica Hospital

2001 **Assistant Professor, Step III, joint appointment in**
Primary **Department of Microbiology, Immunology, & Molecular Genetics,**
Secondary **Department of Pathology & Laboratory Medicine,**
University of California, Los Angeles (UCLA)

1997-2001 **Post-doctoral research, Laboratory of Dr. Robert W. Doms**
University of Pennsylvania, Philadelphia, PA

1996-1997 **Chief Resident, Department of Pathology & Laboratory Medicine**
Hospital of the University of Pennsylvania, Philadelphia, PA

1995-2000 **Resident (PGY1-5), Department of Pathology & Laboratory Medicine,**
Hospital of the University of Pennsylvania, Philadelphia, PA

Honors and Awards

- 1988 (1) Magna cum laude, (2) Sourisseau prize for Outstanding Achievement in the Study of Philosophy, (3) Bolton Memorial Award for Outstanding Biology Major, (4) Phi Beta Kappa, (5) Chamberlain Award for Best Research Presentation at 13th Annual West Coast Biological Sciences Undergraduate Research Conference; **Santa Clara University**
- 1995 (1) Farr Scholar, (2) Gardner Prize for Most Outstanding Thesis, (3) Alpha Omega Alpha (National Medical Honor Society); **Yale University School of Medicine**
- 1998-2003 NIH Mentored Clinical Scientist Development Award (KO8)
- 1999 Leonard Berwick Residency Teaching Award, **University of Pennsylvania**
- 2000-2004 Burroughs Wellcome Fund Career Development Award
- 2001-2002 Frontiers of Science Award, HHMI/Office of the Dean, UCLA
- 2002-2005 Culpepper Biomedical Scholar Award, Rockefeller Brothers Fund
- 2006 Dolph Adams Award (Most Highly Cited Research Paper in *J. Leuk Biol.* from 2001-2006)
- 2010 Highest Scoring Grant for the California Institute for Regenerative Medicine (CIRM) Basic Biology Awards II (2010-2013) (www.cirm.ca.gov)
- 2011 International Advisory Board Member, International Congress of Virology, Sapporo, Japan 2011
- 2012 International Plenary Speaker, “Beyond Coreceptor Usage: How the Efficiency of CD4/CCR5 usage impacts the biological and pathogenic phenotype of HIV” *Australian Centres for HIV and Hepatitis Research (ACH²)* Adelaide, Australia, June 4-6, 2012
- 2012 International Keynote Speaker, “New Paradigms for Broad Spectrum Antiviral Strategies”, *Singapore International Conference on Dengue and Emerging Infection*, Singapore, Nov 21-23
- 2014-2017 Program Committee, annual *ASM Biodefense and Emerging Infectious Disease Conference*
- 2015- Appointed Scientific Advisor, Standards Working Group, California Institute of Regenerative Medicine (SWG, CIRM)

Media

- 2005 NIH News Release by NIAID Director, “*Scientists Discover How Nipah Virus Enters cells*”, July 6, 2005
- 2010 Featured in *Scientific American* (June 2010) “Thinking on the Envelope: Finding a Medical “Silver Bullet” to disable Many of the World’s Deadliest Viruses” (<http://www.scientificamerican.com/article.cfm?id=broad-spectrum-anti-viral>)
- 2011 Featured in *BBC World News*, Discovery series on Broad Spectrum Antivirals, broadcasted on Dec 21, 2011 <<http://www.bbc.co.uk/programmes/p00m1c6l>>
- 2010 -2014 Research featured on NIAID Biodefense Regional Centers of Excellence (RCE) website (<http://www.niaid.nih.gov/labsandresources/resources/rce/Pages/default.aspx>)
- 2010-2014 Research featured on NIAID’s Biology of HIV Homepage (<http://www.niaid.nih.gov/topics/hivaids/understanding/biology/Pages/biology.aspx>)

- 2014 Press release by *Nature Communications* (NPG) (week of Nov 18)
“Virology: Henipavirus spillover from bats to humans”
http://www.nature.com/ncomms/press_releases/ncomms1114.html
- 2015 Press release by PNAS, **New & Newsworthy**: PNAS Article Highlights (week of March 30) “Evaluating viral spillover into Humans”
http://www.pnas.org/site/media/selections_3_30_15.xhtml#prehistoric

FUNDING

1R01AI123449-01A1 (PI: Benhur Lee) 10/01/2016 – 09/30/2021
NIH/NIAID (pending, 3% score)
Tropism, pathogenicity, and potential for zoonotic spillover of emergent henipa- and henipa-like viruses

This grant focuses on comparative structure-function analysis of emergent henipa- and henipa-like viruses in order to evaluate the pathogenicity and potential for zoonotic spillover of an increasingly diverse spectrum of henipaviruses.

1R01 AI125536-01 Benhur Lee (PI) 06/24/2016 - 05/31/2021
NIH/NIAID

SUMO and ubiquitin modifications in henipavirus matrix trafficking and function

The overall objective of this grant is to understand how cognate SUMO and ubiquitin proteasome pathway components coordinately regulate the complex intracellular trafficking behavior of henipavirus matrix proteins, and to uncover the functional role(s) that these post-translational modifications play in the virus replicative life cycle.

NSF 1516675 Thomas Chou (PI) 09/15/2015 – 08/31/2018

NSF/Division of Mathematical Sciences/Mathematical Biology

Mathematical Modeling and Quantification of Viral Entry Assays

This research will develop the quantitative framework needed for quantifying existing experimental measurements of infectivity. This research will model, under various experimental conditions, the physical process of viral entry into cells. A model for how experimental variables affect the measured infectivities will allow different experiments, performed in different laboratories under different conditions, to be compared with each other.

Role: Co-PI

CHDI A-9882 Benhur Lee (PI) 10/01/2015 – 03/31/2018

CHDI Foundation, Inc. (<http://chdifoundation.org>)

Retargeting Viral Systems for Increasing CNS Transduction

This research contract supports the development of viral vectors for CNS targeted gene therapy. The research leverages the PI’s expertise in lentiviral as well as paramyxovirus (Sendai and NDV) vectors, and explores high-risk innovative strategies for enhancing blood brain barrier transcytosis.

R21 AI115226 Benhur Lee (PI) 12/01/2014 - 11/31/2016

Functional interrogation of paramyxovirus genomes with efficient reverse genetics

This grant uses a highly efficient reverse genetics system and other novel approaches to perform genome wide interrogation of selected paramyxoviruses.

R21/R33 AI102267 Alexander Freiberg (PI) 7/01/2012 - 6/30/2014 (R21)

NIH/NIAID

7/01/2014 - 6/30/2017 (R33)

Bioavailable proteasome inhibitors as broad-spectrum antivirals

This grant explores the potential of 1st and 2nd generation proteasome inhibitors already in clinical trials for their antiviral activity.

Role: co-PI

NHMRC APP1086178 Paul R Gorry (Chief Investigator-A) 12/01/2014 - 11/30/2017

Australian Government National Health and Medical Research Council

Envelope Glycoprotein Determinants of HIV-1 Subtype C Tropism and Pathogenicity

Prof Benhur Lee (CI-B) developed the 293-Affinofile assay and produced the VERSA mathematical modeling platform that will be used in Aims 1 and 4 to characterize the entry efficiency of Envs associated with HIV-1 subtype C disease progression.

Role: CI-B (Chief-Investigator-B)

EMBO Fellowship (ALTF 628-2015) Ruth Watkinson (PI) 09/01/2016 - 08/31/2018

EMBO (Heidelberg, Germany)

How do Paramyxovirus matrix proteins exploit ubiquitin and SUMO pathways for matrix trafficking and viral replication?

Role: Sponsor

COMPLETED (within the last 5 years)

F32 AI 100498 Mickey Pentecost (PI) 02/01/2013-1/31/2015

NIAID, NIH

(Priority Score: 10)

SUMO and ubiquitin modifications in Nipah virus matrix trafficking and function

Role: Sponsor

RO1 AI069317 (PI: Benhur Lee)

02/01/07-01/31/13 (NCTE)

NIH/NIAID

Envelope-receptor interactions in Nipah and Hendra virus pathobiology

This grant explores the molecular interactions between Nipah and Hendra attachment envelope proteins and its receptors (ephrinB2 and B3). This grant focuses entirely on the attachment glycoprotein (NiV-G) and its interaction with cognate receptors.

U01 AI082100 (PI: Benhur Lee)

05/01/09-04/30/14

NIH/NIAID

(\$2,260,076)

Broad spectrum therapeutics that target the viral membrane.

This multi-institutional grant seeks to optimize a lead candidate antiviral compound that targets the viral membrane and prevents viral cell fusion & entry.

U54 AI065359 (PI: Alan Barbour, Subproject PI: Benhur Lee) **05/01/09-04/30/14**
NIH/NIAID (\$768,480)

Pacific Southwest RCE for Biodefense & Emerging Infectious Diseases Research

Dr. Benhur Lee is a sub-project PI in the Viral Zoonosis section of this center grant. His project is entitled “Nipah and Hendra virus entry and budding.”

RB2-01571 (PI: Benhur Lee) **08/01/10-07/31/13**
California Institute for Regenerative Medicine (\$900,000)

The EphrinB2/EphB4 axis in regulating hESC pluripotency and differentiation

This grant uses a unique arsenal of reagents based on the Nipah virus envelope glycoproteins to interrogate the role of the ephrinB2/ephB4 axis in regulating human embryonic stem cell fate.

R21 AI092218 (PI: Benhur Lee) **06/01/10-05/31/12**
NIH/NIAID (\$275,000)

Quantifying differential CD4 and CCR5 usage patterns amongst HIV-1/SIV strains

This grant supports quantitative and mechanistic studies into how differential efficiency of CD4/CCR5 usage may correlate with aspects of viral pathogenesis.

UO1 AI070495 (PI: Benhur Lee) **08/01/06-07/31/10**
NIH/NIAID (\$2,205,306)

Small molecule inhibitors of Nipah and Hendra virus infection

This grant seeks support for the development of small molecule antagonists that block Nipah and Hendra virus entry.

R01 AI 060694 (PI:Linda Baum, co-PI: Benhur Lee) **05/01/05-04/31/10**
NIH/NIAID (\$1,250,000)

Nipah virus pathobiology & effects on innate immunity

This is in response to a Bioterrorism RFA **PA-03-080** (Biodefense and Emerging Infectious Disease Research Opportunities). Nipah virus is Category C priority pathogen. This grant focuses on the innate immune systems effects of galectin-1 and the glycobiology of Nipah virus entry as it relates to galectin-1 mediated inhibition.

RO1 AI52021 (PI) **8/1/02-7/31/08** (NCTE)
NIAID (\$1,250,000)

Studies on DC-SIGN interactions with HIV and SIV

This grant will fund studies into the structural, immunological, and cell biological basis for DC-SIGN's *cis*- and *trans*-infection functions.

BIBLIOGRAPHY

BIBLIOMETRICS:

- **ORCID ID:** 0000-0003-0760-1709
- **h index = 46, SCOPUS Author ID:8128481100**
 - Publications: **127 (in SCOPUS)**
 - Average Citations per article (1996-2015): **53**
 - Median Citation per article (1996-2015): **26**

Complete List of Published Work in MyBibliography:

<http://www.ncbi.nlm.nih.gov/myncbi/browse/collection/40454155/?sort=date&direction=descending>

Peer-reviewed Papers

1. **Lee, B.**, Matera, G., Ward, D., and Craft, J. (1996). Association of RNase MRP with RNase P in higher ordered structures in the nucleolus: a possible coordinate role in ribosome biogenesis. *Proc Natl Acad Sci USA* 93:11471-11476
2. Rucker, J., Edinger, A.L., Sharron, M., Samson, M., **Lee, B.**, Berson, J., Yi, Y., Collman, R., Doranz, B., Parmentier, M., Doms, R. (1997). Utilization of chemokine receptors, orphan receptors, and herpesvirus encoded receptors by diverse human and simian immunodeficiency viruses. *J Virol* 71: 8999-9007.
3. Edinger, A.L., Mankowski, J.L.*, Doranz, B.J.*, Margulies, B.J.*, **Lee, B.***, Rucker, J., Sharron, M., Hoffman, T.L., Berson, J.F., Zink, M.C., Hirsch, V.M., Clements, J.E., Doms, R.W. (1997) CD4-independent, CCR5-dependent infection of brain capillary endothelial cells by neurovirulent SIV. *Proc Natl Acad Sci USA* **94**: 14742-14747.
***Contributed equally**
4. **Lee, B.**, Rucker, J., Doms, R.W., Tsang, M., Hu, X., Dietz, M., Bailer, R., Montaner, L.J., Gerard, C., Sullivan, N., Sodroski, J., Stanchev, T.S., Broeder, C. (1998) β -chemokine MDC and HIV-1 Infection. *Science* **281**: 487
5. **Lee, B.**, Doranz, B.J., Rana, S., Y. Yi., M. Mellado, J.M.R. Frade, C. Martinez-A., S.J. O'Brien, M. Dean, R. Collman, Doms, R.W. (1998) Influence of the CCR2-V64I polymorphism on HIV-1 coreceptor activity and chemokine receptor function of CCR2b, CCR3, CCR5, and CXCR4. *J Virol* **72**: 7450-7458.
6. Edinger, A.L., Hoffman, T.L., Sharron, M., **Lee, B.**, O'Dowd, B., Doms, R.W. (1998) Use of GPR1, GPR15, STRL33 as coreceptors by diverse HIV-1 and SIV-1 envelope proteins. *Virology* **249**: 367-378.
7. Edinger, A.L., Hoffman, T. L., Sharron, M., **Lee, B.**, Yi., Y., Mitrovic, B., Faulds, D., Collman, R., Hesselgesser, J., Horuk, R., Doms, R. W. (1998) An orphan seven transmembrane domain receptor expressed widely in brain functions as a coreceptor for HIV-1 and SIV. *J Virol* **72**: 7934-7940.

8. Martin, M.P., Dean, M., Smith, M.W., Winkler, C., Gerrard, B., **Lee, B.**, Doms, R.W., Michael, N.L., Margolick, Buchbinder, S., Goedert, J.J., O'Brien, T.R., Hilgartner, M.W., Hoots, K., Vlahov, D., O'Brien, S.J., Carrington, M. (1998) Genetic acceleration of AIDS progression by a promoter variant of CCR5. *Science* **282**: 907-910
9. Albright, A.V., Shieh, J.T.C., Itoh, T., **Lee, B.**, Pleasure, D., O'Connor, M.J., Doms, R.W., Gonzalez-Scarno, F. (1999) Microglia express CCR5, CXCR4, and CCR3, but of these, CCR5 is the principal coreceptor for HIV-1 dementia isolates. *J Virol* **73**: 205-213
10. **Lee, B.**, Ratajczak, J., Doms, R.W., Gewirtz, A.M., Ratajczak, M.Z. (1999) HIV-1 coreceptor/chemokine receptor expression on normal human hematopoietic cells: biologic implications for HIV-1 infection. *Blood* **93**: 1145-1156
11. Hariharan, D., Douglas, S.D., **Lee, B.**, Lai, J.P., Campbell, D.E., Ho, W.Z. (1999) Interferon-gamma upregulates CCR5 expression in cord and adult blood mononuclear phagocytes. *Blood* **93**: 1137-1144
12. **Lee, B.**, Sharron, M., Blanpain, C., Doranz, B.J., Vakili, J., Seto, P., Guy, H.R., Durrell, S.R., Parmentier, M., Chang, C.N., Tsang, M., Doms, R.W. (1999) Epitope mapping of CCR5 reveals multiple conformational states and distinct structures involved in chemokine and coreceptor function. *J Biol Chem* **274**:9617-9626
13. **Lee, B.**, Sharron, M., Montaner, L.J., Weissman, D., and Doms R.W. (1999) Quantification of CD4, CCR5 and CXCR4 levels on lymphocyte subsets, dendritic cells, and differentially conditioned monocyte-derived macrophages. *Proc Natl Acad Sci USA* **96**: 5215-5220
14. Blanpain, C., **Lee, B.**, Vakili, J., Doranz, B.J., Govaerts, C., Migeotte, I., Detheux, M., Vassart, G., Doms, R.W., Parmentier, M. (1999) Extracellular disulfide bonds of CCR5 are required for chemokine binding, but dispensable for its HIV-1 coreceptor activity. *J Biol Chem*, **274**: 18902-18908.
15. Zhang, Q., **Lee, B.**, Korecka, M., Li, G., Weyland, C., Eck, S., Gessain, A., Arima, N., Shaw, L., Luger, S., Kamoun, M., Wasik, M.A. (1999). Differences in phosphorylation of the IL-2R associated Jak/STAT proteins between HTLV-I(+), IL-2 independent and IL-2-dependent cell lines and uncultured leukemic cells from patients with adult T-cell lymphoma/leukemia (ATLL). *Leukemia Res*, **23**: 373-384
16. Blanpain, C., Migeotte, I., **Lee, B.**, Vakili, J., Doranz, B.J., Govaerts, C., Vassart, G., Doms, R.W., Parmentier, M. (1999) CCR5 binds multiple CC-chemokines: MCP-3 acts as a natural antagonist. *Blood*, **94**: 1899-1905
17. Wang, Z., **Lee, B.**, Murray, J.L., Bonneau, F., Sun, Y., Schweickart, V., Zhang, T., Peiper, S.C. (1999) CCR5 HIV-1 co-receptor activity: role of cooperativity between residues in N-terminal extracellular and intracellular domains. *J Biol Chem*, **274**: 28413-28419

18. Honczarenko, M. Douglas, R.S., Mathias, C., **Lee, B.**, Ratajczak, M.Z., Silberstein, L.E. (1999) SDF-1 responsiveness does not correlate with CXCR4 expression levels of developing human bone marrow B cells. *Blood* **94**: 2990-2998.
19. Majka, M., Rozmyslowicz, T., **Lee, B.**, Murphy, S.L., Pietrzkowski, Z., Gaulton, G.N., Silberstein, L., Ratajczak, M.Z. (1999) Bone marrow CD34+ cells and megakaryoblasts secrete β -chemokines that block infection of hematopoietic cells by M-tropic R5 HIV. *J Clin Invest*, **104**:1739-1749.
20. Chan, E. F., Dowdy, Y. G., **Lee, B.**, McKenna, W. G., Fox, K. R., Levy, R. J., Wasik, M. A., Rook, A. H. (1999) A novel chemotherapeutic regimen (interferon alfa, zidovudine, and etretinate) for adult T-cell lymphoma resulting in rapid tumor destruction. *J Am Acad Dermatol* **40**: 116-21.
21. **Lee, B.***, Bailer, R.T.*, Montaner, L.J. (2000) IL-13 complements with TNF- α to inhibit dual-tropic HIV-1 in primary macrophages by reduction of surface expression of CD4, CCR5, CXCR4 and post-entry viral gene expression. *Eur J Immunol*, **30**: 1340-1349.
***Contributed equally**
22. Majka, M., Ratajczak, J., **Lee, B.**, Honczarenko, M., Doulas, R., Kowalska, M.A., Silberstein, L., Gewirtz, A.M., Ratajczak, M.Z. (2000) The role of HIV related chemokine receptors and chemokines in human erythropoiesis in vitro. *Stem Cells*, **18**: 128-138.
23. Pohlman, S., **Lee, B.**, Meister, S., Krumbiegel, M., Leslie, G., Doms, R.W., Kirchoff, F. (2000) Simian immunodeficiency virus utilizes human but not rhesus macaque STRL33 for efficient entry. *J Virol*, **74**: 5075-5082.
24. Sharron, M., Pohlman, S., Price, K., Tsang, M., Kirchoff, F., Doms, R.W.*, and **Lee, B.*** (2000) Characterization of STRL33 expression and coreceptor activity on primary peripheral blood lymphocytes. *Blood*, **96**: 41-49. ***Corresponding Authors**
25. Blanpain, C., **Lee, B.**, Tackeou, M., Puffer, B., Boom, A., Libert, F., Sharron, M., Wittamer, Vassart, G., Doms, R.W., Parmentier, M. (2000) Multiple non-functional alleles of CCR5 are frequent in various human populations. *Blood*, **96**: 1638-1644.
26. Puffer BA, Sharron M, Coughlan CM, Baribaud F, McManus CM, **Lee B**, David J, Price K, Horuk R, Tsang M, Doms RW. (2000) Expression and coreceptor function of APJ for primate immunodeficiency viruses. *Virology*, **276**:435-44
27. Pohlmann S, Soilleux EJ, Baribaud F, Leslie GJ, Morris LS, Trowsdale J, **Lee, B**, Coleman N, Doms RW. (2001) DC-SIGNR, a DC-SIGN homologue expressed in endothelial cells, binds to human and simian immunodeficiency viruses and activates infection in trans. *Proc Natl Acad Sci USA*. **98**:2670-2675.

28. Blanpain, C., V. Wittamer, J. M. Vanderwinden, A. Boom, B. Renneboog, **B. Lee**, E. Le Poul, L. El Asmar, C. Govaerts, G. Vassart, R. W. Doms, and M. Parmentier. (2001) Palmitoylation of CCR5 is critical for receptor trafficking and efficient activation of intracellular signaling pathways. *J Biol Chem*, **276**: 23795-23804
29. Pohlmann, S., F. Baribaud, **B. Lee**, G. J. Leslie, M. D. Sanchez, K. Hiebenthal-Millow, J. Munch, F. Kirchhoff, and R. W. Doms. (2001) DC-SIGN interactions with human immunodeficiency virus type 1 and 2 and simian immunodeficiency virus. *J Virol*, **75**:4664-72.
30. Moonis M., **Lee, B.**, Bailer, R.T., Luo, Q., Montaner, L.J. (2001) CCR5 and CXCR4 surface expression associated with X4 and R5 HIV-1 infection yet not replication in Th1 and Th2 cells. *AIDS*, **15**: 1941-1949.
31. Lin, G., **Lee, B.**, Haggarty, B.S., Doms, R.W., and Hoxie, J.A. (2001) CD4-independent use of Rhesus CCR5 by human immunodeficiency virus Type 2 implicates an electrostatic interaction between the CCR5 N terminus and the gp120 C4 domain. *J Virol*, **75**:10766-10778.
32. Soilleux, E.J., Morris, L. S., **Lee, B.**, Pöhlmann, S., Doms, R.W., Trowsdale, J., Coleman, N. (2001) Placental expression of DC-SIGN may mediate intrauterine vertical transmission of HIV. *J Pathol*, 195:586-592.
33. **Lee, B.***, Leslie G., Soilleux, E., O'Doherty, U., Baik, S., Levroney, E., Flummerfelt, K., Swiggard, W., Coleman, N., Malim, M., Doms, R.W.*(2001) Cis-expression of DC-SIGN allows for more efficient HIV/SIV entry via CD4 and coreceptor. *J Virol*, **75**:12028-12038. * **corresponding author**
34. Soilleux, E.J., Morris, L.S., Leslie, G., Chehimi, J., Qi, L., Levroney, E., Montaner, L.J., Doms, R.W., Weissman, D., Coleman, N., **Lee, B.** (2002) Constitutive and induced expression of DC-SIGN on macrophages and dendritic cell subpopulation in situ and in vitro. *J Leuk Biol*, **71**: 445-457.
 - **Dolph Adams Award 2006** for Most Highly Cited Research Paper in *J. Leuk Biol.* from 2001-2006
35. Soilleux EJ, Morris, LS, Rushbrook S, **Lee B**, Coleman N (2002) Expression of human immunodeficiency virus (HIV)-binding lectin DC-SIGNR: Consequences for HIV infection and immunity. *Hum Pathol* **33**:652-9
36. Hong, P.W-P., Flummerfelt, K.F., deParseval, A., Elder, J.H., **Lee, B.** (2002) HIV envelope (gp120) binding to DC-SIGN and primary dendritic cells is carbohydrate dependent but does not involve 2G12 or cyanovirin binding sites: implications for structural analyses of gp120-DC-SIGN binding. *J Virol* **76**: 12855-12865

37. deParseval, A., Su, S.V., Elder, J.H., **Lee, B.** (2003) Specific interaction of feline immunodeficiency virus surface glycoprotein with human DC-SIGN. *J Virol*, **78**: 2597-2600
38. Su, S.V., Hong, P. W-P., Baik, S. , Negrete, O., Gurney, K. **Lee, B.** (2004) DC-SIGN binds to HIV-1 gp120 in a distinct but overlapping fashion compared to ICAM-2 and ICAM-3. *J Biol Chem* **279**: 19122-19132
39. Gurney, K, Elliot, J., Nassanian, H., Song, C., Soilleux, E., McGowan, I., Anton, P.A., **Lee, B.** (2005) Binding and transfer of human immunodeficiency virus by DC-SIGN+ cells in human rectal mucosa. *J Virol*, **79**: 5762-5773.
40. K. Morizono, Y. Xie, G.-E. Ringpis, M. Johnson, H. Nassanian, **B. Lee**, L. Wu and I. S. Y. Chen. (2005) Lentiviral vector re-targeting to P-glycoprotein on metastatic melanoma via intravenous injection. *Nat Med*, **11**:346-352.
41. EL Levroney, HC Aguilar, JA Fulcher, L Kohatsu, KE Pace, M Pang, KB Gurney, LG Baum and **B Lee**. (2005) Novel innate immune functions for galectin-1: galectin-1 inhibits cell fusion by Nipah virus envelope glycoproteins and augments dendritic cell secretion of proinflammatory cytokines. *J Immunol*, **175**(1):413-20.
42. OA Negrete, EL Levroney, HC Aguilar, A Bertolotti-Ciarlet, R Nazarian, S Tajyar, **B Lee**. (2005) EphrinB2 is the entry receptor for Nipah Virus, an emergent deadly paramyxovirus. *Nature*, **436**:401-405
- Highlighted by *ASM News*, 2005, Vol. 71:402
 - Main subject of Chief Editorial Page, "From the Editor's Desk" (2005) *Matrix Biology*, **24**:387-388
 - Recommended as a "Must Read": *Faculty of 1000 Biology*: evaluations for Negrete OA et al *Nature* 2005 Jul 21 436 (7049) :401-5
<http://www.f1000biology.com/article/16007075/evaluation>
 - Highlighted by *ASBMB Today*, August 2005, page 6-7 (American Society of Biochemistry and Molecular Biology)
43. OA Negrete, MC Wolf, HC Aguilar, S Enterlein, W Wang, E Mühlberger, A Bertolotti-Ciarlet, R Flick, and **B Lee**. (2006) Two Key Residues in EphrinB3 are Critical for its Use as an Alternative Receptor for Nipah Virus. *PLOS Pathogens*, **2**:e7.
- Recommended by *Faculty of 1000*
<http://www.f1000biology.com/article/16477309/evaluation>
44. RM Schowalter, MA Wurth, HCAguilar, **B Lee**, CL Moncman, RO McCann, RE Dutch. (2006) Rho-GTPase activity modulates paramyxovirus fusion protein-mediated cell-cell fusion. *Virology*, **350**:323-34.

45. HC Aguilar, KA Matreyek, CM Filone, ST Hashimi, EL Levroney, SV Su, A Berttoloti-Ciarlet, OA Negrete, DY Choi, I McHardy, JA Fulcher, SV Su, MC Wolf, L Kohatsu, LG Baum, and **B Lee**. (2006) N-glycans on the Nipah virus fusion protein protect the virus against antibody neutralization but reduce membrane fusion and viral entry. *J Virol*, 80:4878-4889.
46. JA Fulcher, ST Hashimi, EL Levroney, M Pang, KB Gurney, LG Baum, and **B Lee** (2006) Galectin-1 matured human monocyte-derived dendritic cells have enhanced migration through extracellular matrix. *J Immunol*, 177:216-26.
47. FJ Maldonado-Arocho, JA Fulcher, **B Lee**, KA Bradley (2006) Anthrax oedema toxin induces anthrax toxin receptor expression in monocyte-derived cells. *Mol Microbiol*, 61:324-37
48. PW Hong, S Nguyen, S Young, SV Su, **B Lee** (2007) Identification of the Optimal DC-SIGN site on Human Immunodeficiency Virus Type I gp120. *J Virol*, 81:8325-36.
49. HC Aguilar, KA Matreyek, DY Choi, CM Filone, S Young, **B Lee**. (2007) Polybasic KKR motif in the cytoplasmic tail of Nipah virus fusion protein modulates membrane fusion by inside-out signalling. *J Virol*, 85:4520-32.
50. OA Negrete, D Chu, HC Aguilar, and **B Lee**. (2007) Single amino acid changes in the Nipah and Hendra virus attachment glycoprotein distinguishes ephrinB2 from ephrinB3 usage. *J Virol*, 81:10804-14 Jul 25 [epub ahead of print].
51. H Nassanian, AM Sanchez, A Lo, KA Bradley, and **B Lee**. (2007) Efficient construction of an inverted minimal H1 promoter driven siRNA expression cassette: Facilitation of Promoter and siRNA sequence exchange. *PLoS ONE*, 2(1):e767
52. HC Aguilar, ZA Ataman, V Aspericeuta, AQ Fang, M Shroub, OA Negrete, RA Kammerer, and **B Lee**. (2008) A novel receptor-induced activation site in the Nipah virus attachment glycoprotein (G) involved in triggering the fusion glycoprotein (F). *J Biol Chem*, 284:16287-35. Epub 2008 Nov 19 PMC2615506
53. PW Hong, MR Ninonuevo, **B Lee**, C Lebrilla, L Bode (2009) Human milk oligosaccharides reduce HIV-1 gp120 binding to dendritic cell specific ICAM3-grabbing non-integrin DC-SIGN. *British Journal of Nutrition*, 101:482-486.
54. KG Lassen, MA Lobritz, JR Bailey, SH Johnston, S Nguyen, **B Lee**, RF Siliciano, M Markowitz, JN Blankson³, and EJ Arts. (2009) Elite suppressor-derived HIV-1 envelope glycoproteins exhibit reduced entry efficiency and kinetics. *PLoS Pathogens*, 5(4):e1000377 epub 2009 Apr 10 PMC2661022
55. ST Hashimi, JA Fulcher, MH Chang, LGov, S Wang, and **B Lee** (2009) MicroRNA profiling identifies miR-34a and miR-21 and their target genes JAG1 and WNT1 in the

- co-ordinate regulation of dendritic cell differentiation. *Blood*, 114:404-14. Epub 2009 Apr 27 PMC2927176
56. P Pugach, N Ray, PJ Klasse, E Michael, RW Doms, **B Lee**, JP Moore (2009) Inefficient entry of vicriviroc-resistant HIV-1 via the inhibitor-CCR5 complex at low cell surface CCR5 densities. *Virology*, 10:296-302. Epub 2009 Mar 10 PMC2674391
57. A Tamin, BH Harcourt, MK Lo, JA Roth, MC Wolf, **B Lee**, H Weingartl, J-C Audonnet, WJ Bellini and PA Rota (2009) Development of a Neutralization Assay for Nipah Virus Using Pseudotype Particles, *J Virol Methods*, 160:1-6. Epub 2009 Mar 9 PMC2704486
58. MC Wolf, Y Wang, AN Freiberg, HC Aguilar, MR Holbrook and **B Lee**. (2009) A catalytically and genetically optimized beta-lactamase-matrix based assay for sensitive, specific, and higher throughput analysis of native henipavirus entry characteristics. *Virology*, 6:119 (Epub 2009 Jul 31). PMC2727953
59. J. A. Fulcher, M. H. Chang, S. Wang, T. Almazan, S. T. Hashimi, A. Eriksson, X. Wen, M. Pang, L. G. Baum, R. R. Singh, **B. Lee**. (2009) Galectin-1 co-clusters CD43/CD45 on dendritic cells and regulates cell activation and migration via Syk and PKC signaling pathways. *J Biol Chem**, 284:26860-70. Epub 2009 Jul 27. PMC2785374
*(Journal Cover Sep 25 2009 issue)
60. S.H. Johnston, M.A. Lobritz, S. Nguyen, K. Lassen, Y.J. Bryson, E.J. Arts, T. Chou. **B. Lee**. (2009) A quantitative affinity profiling system that reveals distinct CD4 and CCR5 usage patterns amongst HIV-1 and SIV strains. *J Virol**, 83:11016-26. Epub 2009 Aug 19 PMC2772777
*(Journal Cover Nov 1 2009 issue)
61. C. Agrawal-Gamse, F.-H. Lee, B. Haggarty, Y. Yi, **B. Lee**, R. G. Collman, J.A. Hoxie, R.W. Doms, M.M. Laakso (2009) Adaptive mutations in a V3-truncated HIV-1 envelope restore function by improving interactions with CD4. *J Virol*, 83:11005-15. Epub 2009 Aug 19 PMC2772790
62. M. Liang, K. Morizono, N. Pariente, M. Kamata, **B. Lee**, and I. S.Y. Chen (2009) Targeted transduction via CD4 by lentiviral vector uses a clathrin-mediated entry pathway. *J Virol*, 83:13026-31. Epub 2009 Sep 30. PMC2786851
63. AN Freiberg, M. N. Worthy, **B Lee**, MR Holbrook (2009) Combinatorial chloroquine and ribavirin treatment does not prevent death in a hamster model of Nipah and Hendra virus infection. *J Gen Virol*, 91:765-72. Epub 2009 Nov 4 PMC2888097
64. S Shimizu, P Hong, B Arumugam, L Pokomo, J Boyer, N Koizumi, P Kittipongdaja, A Chen, G Bristol, Z Galic, JA Zack, O Yang, ISY Chen, **B Lee**, DS An (2010) A highly efficient short hairpin RNA potently down-regulates CCR5 expression in systemic

lymphoid organs in the hu-BLT mouse model. *Blood*, 115:1534-44. Epub 2009 Dec 17
PMC2830759

65. MC Wolf, AN Freiberg, T Zhu, Z Akyol-Ataman, A Grock, PW Hong, J Li, NF Watson, AQ Fang, HC Aguilar, M Patteo, AN Honko, R Damoiseaux, JP Miller, SE Woodson, S Chantasirivisal, V Fontanes, OA Negrete, P Krogstad, A Dasgupta, A Moscona, LE Hensley, SE Whelan, KF Faull, MR Holbrook, ME Jung, **B Lee** (2010) A broad-spectrum antiviral targeting entry of enveloped viruses. *Proc Natl Acad Sci USA*, 107:3157-62. Epub 2010 Jan 28 PMC2840368
- Highlighted by Dr. Anthony Fauci, Director of NIAID, as quoted in British Medical Journal 2010; 340:c800 Epub Feb 10 2010
(http://www.bmj.com/cgi/content/full/340/feb10_2/c800)
 - Featured in Nature/SciBX (Feb 25 2010, Vol 3, No. 8), “Pushing the viral envelope”, one of three News Analysis stories on the week’s most important translational research papers from across the life science literature.
(www.nature.com/scibx/journal/v3/n8/index.html)
 - Recommended by *Faculty of 1000 Biology*
(<http://f1000biology.com/article/id/2513957/evaluation>)
 - Highlighted by *Nature Reviews Microbiology*, Vol 8, 250. “In the News: Antiviral panacea?” (April 2010)
(<http://www.nature.com/nrmicro/journal/v8/n4/full/nrmicro2348.html>)
 - Featured in *Scientific American* online: “Thinking on the Envelope: Finding a Medical “Silver Bullet” to disable Many of the World’s Deadliest Viruses”
(<http://www.scientificamerican.com/article.cfm?id=broad-spectrum-anti-viral>)
 - “Research Feature” on NIAID’s Biology of HIV Homepage (Apr 28 2010)
(<http://www.niaid.nih.gov/topics/hivaids/understanding/biology/Pages/biology.aspx>)
66. LM Loftin, MF Kienzle, Y Yi, **B Lee**, F-H. Lee, L Gray, PR Gorry and RG Collman. (2010) Constrained use of CCR5 on CD4+ lymphocytes by R5X4 HIV-1: Efficiency of Env-CCR5 interactions and low CCR5 expression determine a range of restricted CCR5-mediated entry. *Virology*, 402:135-48. (Epub 2010 Apr 9) PMC2872044
67. JM Pfaff, CB Wilen, JE Harrison, JF Demarest, **B Lee**, RW Doms, JC Tilton. (2010) HIV-1 resistance to CCR5 antagonists associated with highly efficient use of CCR5 and altered tropism on primary CD4+ T-cells. *J Virol*, 84:6505-14. (Epub 2010 Apr 21) PMC2903254
68. J Sterjovski, M Roche, M.J Churchill, A Ellett, W Farrugia, LR Gray, D Cowley, P Pombourios, **B Lee**, SL Wesselingh, AL Cunningham, PA Ramsland, PR Gorry (2010) An altered and more efficient mechanism of CCR5 engagement contributes to macrophage tropism of CCR5-using HIV-1 Envelopes. *Virology*, 404:269-78. (Epub 2010 Jun 8) PMC3096480
69. K Morizono, A Ku, Y Xie, A Harui, SKP Kung, MD Roth, **B Lee**, ISY Chen (2010) Redirecting lentiviral vectors pseudotyped with Sindbis virus-derived envelope proteins

- to DC-SIGN by modification of N-linked glycans of envelope proteins. *J Virol*, 84(14):6923-34 (Epub 2010 May 19) PMC2898243
70. OB Garner, HC Aguilar, JA Fulcher, EL Levroney, R Harrison, L Wright, LR Robinson, V Aspericueta, M Panico, SM Haslam, HR Morris³, A Dell, **B Lee***, LG Baum* (2010) Endothelial galectin-1 binding to specific glycans inhibits Nipah virus fusion protein maturation, mobility and function to block syncytia formation. *PLoS Pathogens*, 6:e1000993. (Epub 2010 Jul 15) PMC2904771
*Contributed equally
71. HC Aguilar, V Aspericueta, LR Robinson, K Aanensen, **B Lee** (2010) A quantitative and kinetic fusion-protein triggering assay can discern distinct steps in the Nipah virus membrane fusion cascade. *J Virol*, 84:8033-41. (Epub 2010 Jun 2) PMC2916531
72. YE Wang, A Park, M Lake, M Pentecost, B Torres, TE Yun, MC Wolf, MR Holbrook, AN Freiberg, **B Lee**. (2010) Ubiquitin-regulated nuclear-cytoplasmic trafficking of Nipah virus matrix protein is important for viral budding. *PLoS Pathogens*, 6(11): e1001186. (Epub 2010 Nov 11) PMC2978725
73. M Roche, MR Jakobsen, J Sterjovski, A Ellett, F Posta, **B Lee**, B Jubb, M Westby, SR Lewin, PA Ramsland, MJ Churchill and PR Gorry (2011) HIV-1 escape from the CCR5 inhibitor maraviroc associated with an altered and less efficient mechanism of gp120-CCR5 engagement that attenuates macrophage-tropism. *J Virol*, 85:4330-42 (Epub 2011 Feb 23) PMC3126252
74. K Morizono, Y Xie, T Olafsen, **B Lee**, A Dasupta, AM Wu, ISY Chen. (2011) The soluble serum protein Gas6 bridges virion envelope phosphatidylserine to the TAM receptor tyrosine kinase Axl to mediate viral entry. *Cell Host & Microbe*, 9:286-98. PMC3095852
- Preview: Viral Apoptotic Mimicry Party: P.S. Bring Your Own Gas6, J Mercer, *Cell Host & Microbe*, 2011, 9:255-257.
75. JB Johnson, HC Aguilar, **B Lee**, GD Parks (2011) Interaction of human complement with viral particles containing the Nipah virus glycoproteins. *J Virol*, 85:5940-8 (Epub 2011 Mar 30) PMC3126306
76. AM Mirza, HC Aguilar, Q Zhu, PJ Mahon, PA Rota, **B Lee**, RM Iorio. (2011) Triggering the Newcastle disease virus fusion protein by binding to Nipah virus receptors. *J Biol Chem*, 286:17851-60 (Epub 2011Apr 1) PMC3093860
77. S Bi, P. W.-P. Hong, **B Lee***, and LG Baum* (2011) Galectin-9 binding to cell surface protein disulfide isomerase regulates redox environment to enhance T cell migration and HIV entry. *Proc Natl Acad Sci USA*, 108:10650-5. (Epub 2011 Jun 13) PMC3127870
*co-corresponding authors
- Highlighted by DailyRx.com (<http://www.dailyrx.com/news-article/hiv-impacted-sugar-binding-protein-14097.html>)

78. M Roche, MR Jakobsen, A Ellett, H Salimisedabad, B Jubb, M Westby, **B Lee**, SR Lewin, MJ Churchill, PR Gorry (2011) HIV-1 predisposed to acquiring resistance to maraviroc (MVC) and other CCR5 antagonists in vitro has an inherent low-level ability to utilize MVC-bound CCR5 for entry. *Retrovirology* 8:89 (Epub 2011 Nov 7) PMC3217884
79. D Maar, B Harmon, D Chu, B Schulz, HC Aguilar, **B Lee***, OA Negrete*. (2012) Cysteines in the stalk of the Nipah virus G glycoprotein are located in a distinct subdomain critical for fusion activation. *J Virol*, 86:6632-42 (Epub 2012 Apr 11) PMC3393546
* **Contributed equally**
80. S Biering, A Huang, AT Vu, LR Robinson, B Bradel-Tretheway, E Choi, **B Lee***, and H Aguilar*. (2012) N-glycans on the Nipah Virus Attachment Glycoprotein Modulate Fusion and Viral Entry as they Protect against Antibody Neutralization, *J Virol*, 86:11991-2002 (Epub 2012 Aug 22) PMC3486489
* **Contributed equally**
81. H Salimi, M Roche, N Webb, L Gray, K Chikere, J Sterjovski, A Ellett, S Wesselingh, P Ramsland, **B Lee**, M Churchill, and P Gorry. (2013) Macrophage-tropic HIV-1 variants from brain demonstrate alterations in the way gp120 engages both CD4 and CCR5. *J Leuk Biol*, 93:113-26 (Epub 2012 Oct 17) PMC3525831
82. K Palomares, O Pernet, F Vigant, K Chikere, P Hong, SP Sherman, B Van Handel, M Patterson, DS An, WE Lowry, HKA Mikkola, K Morizono, AD Pyle, **B Lee** (2013) Nipah virus envelope pseudotyped lentiviruses efficiently target ephrinB2+ stem cell populations *in vitro* and bypass the liver sink when administered *in vivo*. *J Virol*, 87:2094-108. (Epub 2012 Nov 28) PMC3571488
83. S Liu, R Aliyari, K Chikere, G Li, MD Marsden, JK Smith, O Pernet, H Guo, R Nusbaum, JA Zack, AN Freiberg, L Su, **B Lee**, and G Cheng (2013) Interferon-Inducible Cholesterol-25-Hydroxylase Broadly Inhibits Viral Entry by Production of 25-Hydroxycholesterol. *Immunity*, 38(1): 92-105. (Epub 2012 Dec 27) PMC3698975
• Preview: Sterol-izing Innate Immunity, C Wilkins and M Gale, *Immunity*, 2013, 38:3-5.
84. Q Zhu, S Biering, A Mirza, B Grasseschi, P Mahon, **B Lee**, H Aguilar, and R Iorio (2013) Individual N-glycans added at intervals along the stalk of the Nipah virus G protein prevent fusion, but do not block the interaction with the homologous F protein. *J Virol*, 87(6): 3119-29. (Epub 2013 Jan 2) PMC3592174
85. Z Parker, S Iyer, C Wilen, N Parrish, K Chikere, F-H Lee, C Didigu, R Berro, PJ Klasse, **B Lee**, J Moore, G Shaw, B Hahn, and R Doms (2013) Transmitted/Founder and Chronic HIV-1 Envelope Proteins are Distinguished by Differential Utilization of CCR5. *J Virol*, 87(5): 2401-11. (Epub 2012 Dec 26) PMC3571396
86. M Roche, H Salimi, R Duncan, BL Wilkinson, K Chikere, MS Moore, NE Webb, H Zappi, J

- Sterjovski, J Flynn, A Ellet, LR Gray, **B Lee**, Becky Jubb, M Westby, PA Ramsland, SR Lewin, RJ Payne, MJ Churchill, PR Gory. (2013) A common mechanism of clinical HIV-1 resistance to e CCR5 antagonist maraviroc despite divergent resistance levels and lack of common gp120 resistance mutations. *Retrovirology*, 10:43 PMC3648390
87. JK Flynn, G Paukovics, MS Moore, A Ellett, LR Gray, R Duncan, H Salimi, B Jubb, M Westby, DF Purcell, SR Lewin, **B Lee**, MJ Churchill, PR Gorry, M Roche. (2013) The magnitude of HIV-1 resistance to the CCR5 antagonist maraviroc may impart a differential alteration in HIV-1 tropism for macrophages and T-cell subsets. *Virology*, 442:51-8.
88. F Vigant, J Lee, A Hollmann, LB Tanner, Z Akyol-Ataman, T Yun, G Shui, HC Aguilar, D Zhang, D Meriwether, G Roman-Sosa, LR Robinson, TL Juelich, H Buczkowski, S Chou, MA Castanho, MC Wolf, JK Smith, A Banyard, M Kielian, S Reddy, MR Wenk, M Selka, NC Santos, AN Freiberg, ME Jung, **B Lee**. (2013) A mechanistic paradigm for broad-spectrum antivirals that target virus-cell fusion. *PLoS Pathogens*, 9(4): e1003297. PMC3630091
- Profiled on F1000 Prime by Dr. Michael Kurilla (Director of the Office of Biodefense Research Affairs)
 - Achieved “Hidden Jewels” Rank on F1000 Prime
89. Ping LH, Joseph SB, Anderson JA, Abrahams MR, Salazar-Gonzalez JF, Kincer LP, Treurnicht FK, Arney L, Ojeda S, Zhang M, Keys J, Potter EL, Chu H, Moore P, Salazar MG, Iyer S, Jabara C, Kirchherr J, Mapanje C, Ngandu N, Seoighe C, Hoffman I, Gao F, Tang Y, Labranche C, **Lee B**, Saville A, Vermeulen M, Fiscus S, Morris L, Karim SA, Haynes BF, Shaw GM, Korber BT, Hahn BH, Cohen MS, Montefiori D, Williamson C, Swanstrom R; CAPRISA Acute Infection Study and the Center for HIV-AIDS Vaccine Immunology Consortium. (2013) Comparison of Viral Env Proteins From Acute and Chronic Infections of Subtype C Human Immunodeficiency Virus Type 1 Identifies Differences In Glycosylation and CCR5 Utilization and Suggests A New Strategy For Immunogen Design. *J Virol*. 87:7218-33. PMC3700278
90. SB Joseph, KT. Arrildt, AE Swanstrom, G Schnell, **B Lee**, JA Hoxie and R Swanstrom (2014) Quantification of Entry Phenotypes of Macrophage-Tropic HIV-1 Across a Wide Range of CD4 Densities. *J Virol*, 8:1858-69. PMC3911544
91. F Vigant, A Hollmann, J Lee, NC Santos, ME Jung, **B Lee**. (2014) The rigid amphipathic fusion inhibitor dUY11 acts through photosensitization of viruses. *J Virol*, 88:1849-53. PMC3911596
92. A Hollman, MA Castanho, **B Lee**, NC Santos (2014) Singlet oxygen effects on lipid membranes critically mediates activity of membrane targeting broad-spectrum viral fusion inhibitors. *Biochemical Journal*, 459:161-70.
93. O Pernet, SM Beaty, **B Lee**. (2014) Functional rectification of the newly described African henipavirus fusion glycoprotein (Gh-M74a). *J Virol*, 88(9):5171-6. PMC3993810

94. A Park, ST Won, M Pentecost, **B Lee**. (2014) CRISPR/Cas9 allows efficient and complete knock-in of a destabilization domain-tagged essential protein in a human cell line, allowing rapid knockdown of protein function. *PLoS ONE*, 9(4):e95101 PMC3990584
95. K Chikere, N Webb, T Chou, PR Gorry, **B Lee**. (2014) Distinct pathophysiological HIV-1 phenotypes associated with transmission, neutralization resistance and subtype specificity identified by quantitative, high-throughput receptor affinity profiling. *Retrovirology* 11: 48 | doi: 10.1186/1742-4690-11-48. PMC4230403
- “Highly Accessed” designation on BioMed Central
96. O Pernet, B Schneider, SM Beaty, M Lebreton, T Yun, A Par, C Ramirez, Thomas Bowden, AN Freiberg, ND Wolfe, **B Lee**. (2014) Evidence for Henipavirus spillover into human populations in Africa. *Nature Communications*, 5:5342 doi: 10.1038/ncomms6342 PMC4237230.
- Press release by NPG
http://www.nature.com/ncomms/press_releases/ncomms1114.html
- Featured in:
- [Bats may hold henipavirus threat for west africa](#) –
 - MedicalXpress
 - [Chances for outbreaks of another african viral infection rising](#) –
 - Newswise
 - ['spillover' of henipaviruses into humans underway, study finds](#) –
 - The Medical News
 - [Chances for outbreaks of another african viral infection are increasing](#)
 - Infection Control Today
 - [Out of africa ... hiv, ebola, ?? \(cme/ce\)](#) –
 - MedPageToday.com
 - [New viral concern in africa: henipaviruses](#) –
 - Digital Journal
97. TE Yun*, A Park*, TE Hill, O Pernet, SM Beaty, TL Juelich, JK Smith, L Zhang, YE Wang, F Vigant, P Wu, AN Freiberg*, **B Lee***. (2015) Efficient reverse genetics reveals genetic determinants of budding and fusogenic differences between Nipah and Hendra virus and enables real-time monitoring of viral spread in small animal models of henipavirus infection. *J Virol*, 89:1242-53 PMC4300668
98. OB Garner, T Yun, O Pernet, HC Aguilar, A Park, TA Bowden, AN Freiberg, **B Lee***, LG Baum*. (2015) Timing of galectin-1 exposure differentially modulates Nipah virus entry and syncytia formation in endothelial cells. *J Virol*, 89:2520-9 PMC4325760
*corresponding authors
99. M Pentecost, AA Vashisht, T Lester, T Voros, SM Beaty, A Park, YE Wang, TE Yun, AN Freiberg, JA Wohlschlegel, **B Lee** (2015) Evidence for ubiquitin-regulated nuclear and subnuclear trafficking among *Paramyxovirinae* matrix proteins. *PLoS Pathogens*,

11(3):e1004739 PMC4363627

100. **B Lee***, O Pernet, AA Ahmed, A Zeltina, SM Beaty, TA Bowden* (2015) Molecular recognition of human ephrinB2 cell surface receptor by an emergent African henipavirus. *Proc Natl Acad Sci USA*, **112**: E2156-65 10.1073/pnas.1501690112. PMC4418902
*co-corresponding authors
 - **New & Newsworthy**, PNAS Article Highlights (week of April 30) “Evaluating viral spillover into Humans”
 - **Highlighted by PNAS Editors** “In This Issue” Apr 28, 2015
 - **“Host cell-entry mode of African henipavirus could be its Achilles heel”**
 - <http://healthmedicinet.com/news/host-cell-entry-mode-of-african-henipavirus-could-be-its-achilles-heel/>
 - <http://phys.org/news/2015-04-host-cell-entry-mode-african-henipavirus.html>
101. A Hollman, S Goncalves, MT Augusto, MA Castanho, **B Lee**, NC Santos. (2015) Effects of singlet oxygen generated by a broad-spectrum viral fusion inhibitor on membrane nanoarchitecture. *Nanomedicine* 2015 Mar 17. pii: S1549-9634(15)00064-7. PMC4476930
102. S Thiemann, JH Man, MH Chang, **B Lee**, LG Baum (2015) Galectin-1 regulates tissue exit of specific dendritic cell populations. *J Biol Chem* 290 (37): 22662-77. PMC4566239
103. BO Fulton, D Sachs, SM Beaty, ST Won, **B Lee**, P Palese, NS Heaton (2015) Mutational analysis of measles virus suggests constraints on antigenic variation of the glycoproteins. *Cell Reports*, 11: 1-8. PMC4464907
104. V Borisevich V, **B Lee**, A Hickey, B Debuyscher, CC Broder, H Feldmann H, B Rockx (2015) Escape from monoclonal antibody neutralization affects henipavirus fitness in vitro and in vivo. *J Infect Dis*, 2015 Sep 10. Pii:jiv449 [Epub ahead of print]
105. NE Webb, DC Montefiori, **B Lee** (2015) Dose-response slope of HIV broadly neutralizing antibodies: a critical determinant of therapeutic potency and breadth. *Nat Commun*, 6:8443 PMC4588098
 - Recommended by F1000Prime
106. K Xu, YP Chan, B Bradel-Tretheway, Z Akyol-Ataman, Y Zhu, S Dutta, L Yan, Y Feng, LF Wang, G Skinotis, B Lee, ZH Zhou, CC Broder, HC Aguilar, DB Nikolov. (2015) Crystal structure of the pre-fusion Nipah virus fusion glycoprotein reveals a novel hexamer-of-trimers assembly. *PLoS Pathogens*, 11(12):e1005322 PMC4672880
107. A Park, T Yun, TE Hill, T Ikegami, TL Juelich, JK Smith, L Zhang, AN Freiberg, **B Lee**. (2016) Optimized P2A for reporter gene insertion into Nipah virus results in efficient

- ribosomal skipping and wild-type lethality. *J Gen Virol*, 2016 Jan 18. doi: 10.1099/jgv.0.000405. [Epub ahead of print]
108. A Zeltina, TA Bowden, **B Lee** (2016) Emerging Paramyxoviruses: Receptor Tropism and Zoonotic Potential. *PLoS Pathogens* 12(2):e1005390
109. S Speer, B Payelle-Brogard , S Buta , Z Li , F Vigant , TJ Gardner , M Hermann , J Duehr , OSanal , N Mansouri , P Tabarsi, D Mansouri, V Francois-Newton, C Daussy, MR Rodriguez, DJ Lenschow, AN Freiberg , D Tortorella, **B Lee**, A Garcia-Sastre, S Pellegrini, and D Bogunovic. (2016) Human ISG15 is stabilised by USP18 and loss-of-function mutation leads to increased antiviral immunity. *Nat Commun*, 7:11496. PMC4873964
110. A Park, T Yun, F Vigant, O Pernet, ST Won, BE Dawes, W Bartkowski, AN Freiberg, **B Lee** (2016) Nipah virus C protein recruits Tsg101 to promote the efficient release of virus in an ESCRT-dependent pathway. *PLoS Pathogens*, 12(5): e1005659. PMC4874542
111. B Mistry, MR D’Orsogna, NE Webb, **B Lee**, T Chou. (2016) Quantifying the sensitivity of HIV-1 viral entry to receptor and coreceptor expression. *J Phys Chem B* 2016 May 20 [Epub ahead of print]
112. A Park, P Hong, S Won, P Thibault, F Vigant, K Oguntuyo, J Taft, **B Lee**. (2016) Sendai virus, an RNA virus with no risk of genomic integration, delivers CRISPR/Cas9 for efficient gene editing. *Molecular Therapy – Methods and Clinical Development*, in press.
113. I Rissanen, AA Ahmed, P Hong, S Nambulli, WP Duprex, **B Lee**, TA Bowden. (2016) Structural and functional rationale for differential receptor-tropism of the emergent henipa-like Mòjiāng virus. *Nat Commun*, in revision.
114. P Bharaj, YE Wang, BE Dawes, TE Yun, A Park, B Yen, CF Basler, AN Freiberg, **B Lee*** and R Rajsbaum*. (2016) The matrix protein of Nipah virus targets the E3-ubiquitin ligase TRIM6 to inhibit the IKKε kinase-mediated type-I IFN antiviral response. *PLoS Pathogens*, in revision.
*co-corresponding authors

Invited Reviews and Book Chapters:

1. **Lee, B.**, and Craft, J. (1995). Molecular structure and function of autoantigens in systemic sclerosis. *Intl Rev Immunol* 12:129-144.
2. **Lee, B.**, Doranz, B.J., Ratajczak, M.Z., Doms, R. W. (1998) An intricate web: chemokine receptors, HIV infection and hematopoiesis. *Stem Cells* 16: 79-88.
3. **Lee, B.**, Montaner, L.J. (1998) Immune Modulators in HIV-1 Disease in *Human Immunodeficiency Virus: Biology, Immunology and Molecular Biology*, ed. N. Saksena, Medical Systems S.P.A., Genova, Italy.

4. **Lee, B.**, and Montaner, L.J. (1999) Chemokine immunobiology in HIV-1 pathogenesis. *J Leuk Biol* **65**:552-562.
5. **Lee, B.** and Doms, R.W. (2002) Quantification of HIV/SIV coreceptor expression. In *Cellular Aspects of HIV Infection*, eds. Andrea Cossarizza & David R. Kaplan, John Wiley and Sons, Inc, New York, New York.
6. Su, S.V., Gurney, K.B., and **Lee, B.** (2003) Sugar and Spice: Viral Envelope-DC-SIGN interactions in HIV pathogenesis. *Curr HIV Res*, **1**:87-100.
7. **Lee, B.** (2007) “Envelope-receptor interactions in Nipah virus pathobiology” in *The Biology of Emerging Viruses*, ed. Sunil Lal, *Annals of the New York Academy of Sciences*, 1102:51-65
8. Wolf, M., Negrete, O.A., and **Lee, B.** (2007) “Pathobiology of Henipavirus Entry: insights into therapeutic strategies.” *Future Virology*, **2**:267-82
9. Aguilar, H. and **Lee, B.** (2011) “Emerging paramyxoviruses: molecular mechanisms and antiviral strategies”. *Expert Reviews in Molecular Medicine*, **13**:e6. PMC3253018
10. Vigant, F. and **Lee, B.** (2011) Hendra and Nipah infections: Pathology, Models and Potential Therapies. *Infectious Disease: Drug Targets*, **11**:315-36 (Epub 2011 Apr 13) PMC3253017
11. **Lee, B.** and Akyol Ataman, Z. (2011) “Modes of paramyxovirus fusion: a Henipavirus perspective” *Trends in Microbiology*, **19**:389-399 (Epub 2011 Apr 19) PMC3264399
12. Wang, Y. E., Pernet, O. and **Lee, B.** (2012) Regulation of the nucleocytoplasmic trafficking of viral and cellular proteins by ubiquitin and small ubiquitin-related modifiers. *Biology the Cell*, **104**: 121-38. PMC3625690
13. Pernet O, Wang YE, **Lee B.** (2012) Henipavirus receptor usage and tropism. *Current Topics in Microbiology and Immunology*, **359**:59-78 PMC3587688
14. K Chikere, Chou T, Gorry PR and **Lee B.** (2013) Beyond Coreceptor Usage: How the Efficiency of CD4/CCR5 usage impacts the biological and pathogenic phenotype of HIV. *Virology*, **435**:81-91. PMC3522187
15. Baum LG, Garner, OB, Schaefer K, **Lee B.** (2014) Microbial-host interactions are positively and negatively regulated by galectin-glycan interactions. *Frontiers in Immunology*, Vol 5 | Article 284 | **1-8**. PMC4061488
16. Vigant F, Santos NC and **Lee B.** (2015) Broad Spectrum Antivirals against Virus Fusion. *Nature Reviews Microbiology*, **13**(7):426-37 PMC4554337

17. Webb NE and **Lee B** (2015) Quantifying CD4/CCR5 Usage Efficiency of HIV-1 Env Using the Affinofile System in *Methods Molecular Biology*, 1354: 3-20 Vinayaka R. Prasad and Ganjam V. Kalpana (Eds): **HIV Protocols**
18. Beaty SM and **Lee B** (2016) Constraints on the genetic and antigenic variability of measles virus. *Viruses*, 8, 109; doi:10.3390/v8040109. (Epub 21 April 2016)
19. Watkinson RE, **Lee B** (2016) Nipah virus matrix protein: Expert hacker of cellular machines. *FEBS Letters*, 2016 Jun 28. doi: 10.1002/1873-3468.12272. [Epub ahead of print]

Invited Commentaries and Perspectives

1. **Lee, B.**, Ataman Z.A., and Jin, L. (2008) News & Views, “Evil versus ‘Eph-ective’ use of ephrin-B2” *Nature Structural & Molecular Biology*, 15:540-543.
2. Vigant, F, Jung, M.E., and **Lee, B.** (2010) Commentary, “Positive Reinforcement for Viruses” *Chemistry and Biology*, 17:1049-51. PMC2998992
3. **Lee, B.** (2011) Focus article, “Containing the *Contagion*: Treating the Virus that Inspired the Film” *Science Translational Medicine*, 3:105fs6. PMC3345275
4. Lukas B Tanner, **Lee, B.** (2013) Preview, “The Greasy Response to Virus Infections” *Cell Host & Microbe*, 13:375-7. PMC3654690
5. **Lee, B.** (2013) Commentary, “Amping up PAMPs: another sensor for another PAMP” *Proc Natl Acad Sci USA*, 110:19183-4. PMC3845105

Invited Guest Editor (Book Series)

1. Benhur Lee and Paul Rota (Editors), (2012), Henipavirus: Ecology, Molecular Virology, and Pathogenesis. *Current Topics in Microbiology and Immunology*, Vol 359

PATENTS (filed or pending):

1. “Henipavirus receptor and uses thereof” PCT/US2006/023618
2. “Novel Antiviral Agents for Enveloped Viruses” PCT/US2009/047854; 13/000,310
3. “Broad spectrum antiviral and antiparasitic agents” PCT/US2011/032336; 13/640,732
 - **US Patent 9139575** issued 09/22/2015 (Lee et al.)
 - MDB Capitol Group (www.mdb.com) currently in licensing negotiations
4. “Nipah virus envelope pseudotyped lentiviruses and methods of use thereof” PCT/US13/32197; 61/615,534
 - PCT/US2013/032197 (U.S. Patent Application Serial No: 14/387,371)
 - WO 2013/148327 A1 (International Publication Date: 03 Oct 2013) WIPO|PCT
 - U.S National Stage Application based on PCT/US2013/032178 filed on **September 23, 2014** (U.S. Patent Application Serial No: 14/387,371)

5. “A Novel Rapid and Highly Sensitive cell based system for the detection and characterization of HIV” (U.S. Patent Application Serial No: 14/385,824)

- PCT/US2013/032178 (U.S. Patent Application Serial No: 14/385,824)
- WO 2013/142341 A1 (International Publication Date: 26 Sep 2013) WIPO|PCT
- U.S National Stage Application based on PCT/US2013/032178 filed on **September 17, 2014** (U.S. Patent Application Serial No: 14/385,824)

INVITED PRESENTATIONS/SEMINARS (SELECTED)

- 2001** “Mechanism of HIV Attachment and Entry: Insights into Pathogenesis and Therapeutic Opportunities”, *Protein Design Labs, Inc.*, Fremont, California.
- 2001** “DC-SIGN facilitated HIV/SIV Infection in *trans* and in *cis*: New paradigms for viral pathogenesis”, October 17th, 2001, Neurosciences seminar series, *The Scripps Research Institute*, San Diego, California.
- 2001** “HIV Attachment: New Paradigms for Viral Pathogenesis and Novel Opportunities for Therapeutic Interventions”, December 13th, 2001, *UCLA AIDS Institute Annual Research Symposium*
- 2002** “DC-SIGN on Dendritic Cells”, May 3rd to 5th, 2002, *Second Collaborative Research Seminar on HIV and Other Viral Inhibitors*, The Waldorf Astoria, New York, New York
- 2002** “DC-SIGN facilitated HIV/SIV infection in *trans* and in *cis*: new paradigms for viral pathogenesis”, *2002 FASEB Summer Conference on "Microbial Pathogenesis: Mechanisms of Infectious Diseases"*, Snowmass, CO, August 10-15, 2002.
- 2003** “The IL-10/IL-12 axis and the regulation of DC-SIGN expression in Human Gut Mucosa”, *2003 International HIV Symposium*, Palm Springs, CA, March 6-9
- 2003** “Defining the Binding Determinants of DC-SIGN Interactions with gp120, ICAM-2 and ICAM-3” *2003 International Meeting on Viruses and Glycans*, Göteborg, Sweden, June 15-18.
- 2003** “Cell fusion and syncytia formation is mediated by oligosaccharide determinants of Nipah virus envelope F and G glycoproteins and can be blocked by lectins” *Glycobiology 2003*, San Diego, Dec 3-6.
- 2004** “Sugar & Spice: Dendritic Cells, Lectins & Viral Pathogenesis” *University of California, Irvine, Microbiology & Molecular Genetics Research Seminar series*, May 4th, 2004

- 2004** “A Sweet-tooth for pathogens: Lectins of the innate immune system and viral pathogenesis” *University of Pennsylvania Microbiology Research Seminar Series*, October 6th, 2004
- 2005** “‘Eph’-fective Pirates: use of ephrinB ligands as entry receptors for the lethal and emergent Nipah and Hendra viruses” *Scripps Research Institute, Pathogenesis Affinity Group Seminar Series*, Dec 5th, 2005.
- 2006** “‘Eph’-fective Pirates: use of ephrinB ligands as entry receptors for the lethal and emergent Nipah and Hendra viruses” *University of Manchester, Wellcome Center for Matrix Biology*, July 6th, 2006
- 2006** “Pathobiology of Nipah versus Hendra Virus Entry” *Institut Pasteur, Paris, France*, October 10th, 2006
- 2006** “The Glycobiology of Nipah Virus Entry”, Session VI: Glycans in microbial pathogen-host interactions, November 17th, 2006, *Society for Glycobiology Annual Meeting*
- 2007** “Pathobiology of Nipah versus Hendra Virus Entry”, *Gordon Conference on Chemical and Bioterrorism Defense*, Jan 14-19, 2007, Ventura, CA
- 2007** “Nipah Virus: The Deadliest Virus You’ve Never Heard Of”, *Yale University, Section on Microbial Pathogenesis Seminar Series*, March 8, 2007
- 2007** “The conformational cascade during paramyxoviral fusion: insights from the Nipah virus system”, Negative Strand RNA Virus 2007 Meeting, *Northwestern University*, Evanston, IL, Sept. 16-20, 2007
- 2007** “Insights from the Deadliest Disease You’ve Never Heard Off: Nipah Virus pathogenesis and the paramyxoviral fusion cascade”, NERCE/BEID (New England Regional Center of Excellence/Biodefense and Emerging Infectious Disease) Seminar Series, *Harvard University*, Oct. 17, 2007
- 2008** “Henipaviruses & Bat Reservoirs”, Symposium on zoonotic reservoirs, 6th *ASM Biodefense Conference*, Baltimore, Maryland, Feb 24-28, 2008
- 2008** “A quantitative metric reveals differential CD4/CCR5 usage patterns amongst HIV-1 and SIV strains” Virus Receptors Symposia (V69), *IUMS 2008, 14th International Congress of Virology*, Istanbul, Turkey, Aug 10-15, 2008
- 2009** “Beyond Coreceptor Usage: Viral Pathogenesis and the efficiency of CD4/CCR5 usage” Leaders in AIDS Research seminar series, *Case Western Reserve University, Center for AIDS Research*, Cleveland, Ohio, April 9, 2009.

- 2009** “A broad spectrum antiviral that targets entry of enveloped viruses” Research Seminar Series, Center for Virus Research, *University of California, Irvine*, April 17, 2009.
- 2009** “Henipavirus Entry and Budding” *Pacific-Southwest Regional Center of Excellence (PSWRCE) for Biodefense*, Annual Meeting, April 25, 2009
- 2009** “Knowing When You’re Ready to Publish”, Education and Career Development Workshop, *American Society of Virology 28th Annual Meeting*, Vancouver, Canada. July 14, 2009
- 2009** “Pseudotyped viruses and Viral-like particle assays for improved diagnostics of highly virulent viruses” The Next-Generation Technologies for Biodetection and Diagnostics Workshop, *Sandia National Laboratory*, Livermore, CA, Dec 10, 2009
- 2010** “A new mechanistic paradigm for a class of broad spectrum antivirals active against enveloped viruses”, **Plenary Lecture** (Session 2), *6th National Regional Centers of Excellence for Biodefense meeting*, Las Vegas, NV, April 11-13, 2010
- 2010** “A new mechanistic paradigm for a class of broad spectrum antivirals active against enveloped viruses”, Symposium on **Developments in Biodefense Technology Platforms**, *8th annual Biodefense Vaccines & Therapeutics conference*, June 14-17, 2010.
- 2010** “Novel inhibitors against enveloped virus entry: a new mechanistic paradigm”, *11th Annual Symposium on Antiviral Drug Resistance: Targets and Mechanisms*, 7-10 November 2010, Hershey, PA
- 2011** “Virus Entry & Budding: Insights from Nipah virus, the Deadliest Virus You’ve Never Heard Of”, *Vanderbilt University*, Microbiology and Immunology Seminar Series, 25 Jan, 2011, Nashville, TN
- 2011** “Nuclear-cytoplasmic trafficking of the Nipah virus matrix protein: functional and pathogenic correlates” Pathogenesis Affinity Group seminar, *The Scripps Research Institute*, Mar 29, 2011, La Jolla, CA
- 2011** “Virus Entry & Budding: Insights from Nipah virus, the Deadliest Virus You’ve Never Heard Of” co-hosted by *Centers of Disease Control & Emory University*, Microbiology & Molecular Genetics Seminar, 4 Apr, 2011, Atlanta, GA
- 2011** “The Matrix Revisited”, *University of Pennsylvania*, Alumni Day Speaker, Microbiology Seminar Series, 27 April, 2011, Philadelphia, PA
- 2011** “Broad spectrum antiviral approaches”, *Viruses and Cells Gordon Research Conference*, Il Ciocco, Barga, Italy, 29 May-3 Jun, 2011

- 2011** “Intracellular sojourn of the Nipah virus matrix protein: functional and pathogenic correlates” Cellular Microbiology, *FASEB Summer Research Conference "Microbial Pathogenesis: Mechanisms of Infectious Disease"* Jul 24-29, 2011, Snowmass, CO
- 2011** **Featured interview**, *BBC World News*, Discovery series on Broad Spectrum Antivirals, Julian Siddle, Producer, broadcasted on Dec 21, 2011
<<http://www.bbc.co.uk/programmes/p00m1c6l>>
- 2012** “Virus Entry & Budding: Insights from Nipah virus, the Deadliest Virus You’ve Never Heard Of” *Virginia Tech Life Science Seminars (VTLSS)*, Virginia Tech, Blacksburg, Virginia, Feb 2-3, 2012
- 2012** “Evil versus 'Eph-ective' Use of Ephrin-B2: Re-purposing the Nipah virus envelope for targeted gene therapy” *CHDI Foundation, Inc.*, Los Angeles, Feb 16, 2012
- 2012** “Mechanistic Basis for Broad Spectrum Antivirals that Target Virus-Cell Fusion” *Keystone Symposium on Cell Biology of Virus Entry, Replication and Pathogenesis*, Whistler, British Columbia, Mar 27-31, 2012
- 2012** “Broad-spectrum antivirals targeting virus-cell fusion: a new mechanistic paradigm.” *4th International Singapore Lipid Symposium, National University of Singapore*, Mar 13-16, 2012.
- 2012** “Beyond Coreceptor Usage: How the *Efficiency* of CD4/CCR5 usage impacts the biological and pathogenic phenotype of HIV” **Keynote Speaker**, *Australian Centres for HIV and Hepatitis Research (ACH²)* Adelaide, Australia, June 4-6, 2012
- 2012** “A Mechanistic Paradigm for Broad-Spectrum Antivirals that Target Virus-Cell Fusion” **Plenary Speaker**, joint session of *ACH² and 9th Asian-Pacific Congress of Medical Virology*, Adelaide, Australia, June 6-8, 2012
- 2012** “Novel strategies for Henipavirus therapeutics” *Joint APCMV-NHMRC Henipavirus Workshop*, Adelaide, Australia June 8, 2012
- 2012** “High Throughput Receptor Affinity Profiling Reveals Distinct Entry Efficiency Patterns amongst HIV-1 isolates that Correlate with Pathogenic and Biological Phenotypes” *Southern California ASM*, San Diego, CA, Nov 3, 2012
- 2012** “New Paradigms for Broad Spectrum Antiviral Strategies” **Keynote Speaker**, *Singapore International Conference on Dengue and Emerging Infections*, Singapore, Nov 21-23, 2012
- 2012** “Nipah virus entry and budding: translating basic insights into broader applications and therapies” *Duke-NUS*, Singapore Nov 19, 2012

- 2012** “The Matrix Revisited: Novel Non-Structural Functions of the Henipavirus Matrix Protein” *Infectious Diseases & Immunity Colloquium, University of Texas Medical Branch in Galveston, Texas*, Dec 18, 2012
- 2013** “The Henipavirus matrix protein: not just a supporting actor”, *Microbiology Research Seminar series, Mount Sinai School of Medicine, New York, NY*, Jan 22, 2013
- 2013** “Forging New Paradigms: Broad Spectrum Antivirals against Enveloped Viruses” **Plenary speaker**, *Society for General Microbiology Spring Conference, United Kingdom, Manchester*, Mar 25-28, 2013
- 2013** “New Paradigms for Broad Spectrum Antivirals against Enveloped Viruses” *Cambridge Healthtech Institute’s Inaugural Symposium on Antiviral Drug Discovery, San Diego, CA*, April 15, 2013
- 2013** “Henipaviruses: Not So New, Not So Rare; yet so Much to Learn”, *Duke/Duke-NUS Symposium, Insights and Solutions for Emerging Infectious Diseases, Durham, NC*, Apr 22-23, 2013
- 2013** “Forging New Paradigms: Varieties of Broad Spectrum Antivirals” **Keynote Speaker**, *Mount Sinai-NYU School of Medicine Joint Training Program in Virus-Host Interactions, New York, NY*, Jul 18-19, 2013
- 2013** “Forging New Paradigms: Varieties of Broad Spectrum Antivirals” **Keynote Speaker**, *Univ Southern California Dept of Microbiology Annual Retreat*, Sep 20, 2013.
- 2014** “Out of Africa: a tale of two viruses”, *Basic Science Symposium, Fred Hutchinson Cancer Research Center, Seattle, Washington*, Mar 25, 2014
- 2014** “Out of Africa: Emerged and Emerging Viruses” *Seminar Series in Virology, Department of Microbiology, University of Chicago, Chicago, IL*, Apr 23, 2014
- 2014** “Efficient reverse genetics reveal novel aspects of henipavirus ecology and pathobiology” *NIH Integrated Research Facility (BSL4), Ft. Detrick, Maryland*, Jul 16, 2014.
- 2014** “Isogenic comparisons of chimeric recombinant henaipviruses reveal functional differences between Nipah and Hendra virus matrix and envelope glycoproteins” *Early Events in Virus Infection, Monte Verita, Ascona, Switzerland*, Aug 25-28, 2014.
- 2014** “Conservation of ubiquitin-regulated nuclear-cytoplasmic trafficking among *Paramyxovirinae* matrix proteins”, *Joint International Symposium on Mechanisms of Cellular Compartmentalization (SFB593) Philipps Universität Marburg*, Sep 24-26, 2014.

- 2015** “Dose response slope of HIV broadly neutralizing antibodies is a critical determinant of therapeutic potency and breadth” *Los Alamos HIV Neutralizing Antibody Modeling Workshop*, Los Alamos National Labs, New Mexico, May 21, 2015
- 2015** “Synthetic Virology: a renaissance for structure-function studies” *Oxford University, Division of Structural Biology Seminar*, Oxford, U.K., Jun 22, 2015.
- 2015** “Whole genome transposon mutagenesis of Measles, Mumps and Sendai virus suggests constraints on antigenic variation of the glycoproteins” **Keynote Speaker**, *4th Measles-Rubella Mini Symposium*, Decatur, Georgia, Oct 6-7, 2015
- 2015** “Henipaviruses: Not so rare, much more diverse, still too dangerous (?)” *NEIDL research seminar series*, Boston University, Boston, MA, Nov 4, 2015
- 2016** “Out of Africa: something always new” Washington State University, *Distinguished Lecture Series in Immunology and Infectious Diseases*, Pullman, WA, Mar 22, 2016
- 2016** “Out of Africa: Emerging Paramyxoviruses” Princeton University, Infectious Disease Dynamics Group Research Seminar, Princeton, NJ, Apr 13, 2016
- 2016** “CRISPR-Cas9 Mediated Efficient and Complete Knock-In of Destabilization Domain-Tags Allows for Reversible and Regulated Knock-Out of Protein Function” *Protein Expression System Engineering*, part of CHI’s 12th Annual Protein Engineering Summit (PEGS), Boston, MA, Apr 28-29, 2016
- 2016** “Emerging Paramyxoviruses: henipaviruses and beyond” Albert Einstein College of Medicine, Microbiology Seminar series, May 9, 2016
- 2016** “Hijacking of cellular pathways by the Nipah virus matrix protein: insights into paramyxovirus biology from the deadliest virus you’ve never heard of.” **International Symposium Invitation**, FEBS 2016, Symposium on “Host-pathogen interactions” Kusadasl, Turkey. Sept 3-8, 2016

Editorial Board Member/Editorial Advisory Board

ACS Infectious Disease (2015 - 2018) Editorial Advisory Board (EAB) Member
PLoS Pathogens (**Associate Editor** 2014 – 2015; **Section Editor** 2015 - present)

Journal of Virology (2007 - present)

Virology (2014 – present)

mBio (02/2016, Guest Editor)

mSphere (07/01/2015 – 06/30/2018, initial term)

Current Topics in Microbiology and Immunology

- Guest Editor for Special Issue on “Ecology, Molecular & Cell Biology, and Pathogenesis of Henipavirus”, pub. Springer, 2012

Ad-hoc Reviewer

AIDS Research & Human Retroviruses, Archives of Virology
Biochemie, Blood, Clinical Immunology
Cell Host & Microbe, Cell Reports, Cellular Immunology, Cellular Microbiology
EMBO Journal, FASEB Journal
Gene Therapy, Genome Biology
Infection, Genetics & Evolution, International Journal of Biochemical Sciences
Journal of Biodefense & Bioterrorism
Journal of Clinical Investigation
Journal of General Virology
Journal of Immunology
Journal of Infectious Disease
Journal of Innate Immunity
Journal of Leukocyte Biology
Journal of Molecular Biology
mBio. mSphere
Molecular Therapy – Nucleic Acids
Nature Structural & Molecular Biology
Nature Microbiology, Nature Nanotechnology
Nature Reviews, Immunology
Nature Reviews, Microbiology
Nucleic Acid Research
PLoS Pathogens, PLoS Medicine
PNAS
Retrovirology
Science Translational Medicine, Scientific Reports
Vaccine, Virology, Virology Journal, Virus Research

Extramural Grant Reviews

NIH

1. NIH AMCB (AIDS Molecular and Cell Biology) Study Section— Ad hoc member
2. NIH HIV/AIDS Vaccines (VACC) Study Section— Ad hoc member
3. NIH SBIR/STTR Study Section— Special Review Panel
4. NIH MID (Microbiology and Infectious Disease) Special Emphasis Panel— **Standing Member**, 2007-2012
5. NIH Cell Biology IRG--Ad hoc Specialty Reviewer
6. NIH Special Emphasis Panels – ZAI1 LG-M J2/J3, Partnerships for Biodefense RFA, 2010
7. NIH ARRA RC1 Special Emphasis Panels (HIV related), 2009
8. NIH Special Emphasis Panel ZAI1 AWA-M (S1 & S2; phase 1&2), International Collaborations in Infectious Diseases Research (ICIDR) U01 and U19s, RFA AI 14-001, 2014
9. NIH/NCI Special Emphasis Panel ZCA1 GRB-S (M1) S for Outstanding Investigator Award (R35), 3/24/15 - 3/26/15

10. NIAID MID 1 (K and T awards), 2/18/2016
11. NIH ZRG1 IDM-W (50) R for US-China Program for Collaborative Biomedical Research (R01), 7/15/2016

Non-NIH

1. Ohio Agricultural Research and Development Center (OARDC)--Research Enhancement Competitive Grants Program, ad hoc reviewer (Nov 2008)
2. South African National Research Foundation—Ad hoc reviewer
3. Stichting Aids Fonds, The Netherlands--Ad hoc reviewer,
4. Board of the Netherlands Foundation for the Advancement of Tropical Research (WOTRO), Integrated Programs—Program Project, ad-hoc reviewer
5. A*MIDEX (Aix-Marseille University Excellence Initiative), Program Project, Ad Hoc reviewer (Jul 2014)

CLINICAL DUTIES (UCLA)

Attending Physician (Transfusion Medicine) at UCLA Medical Center with additional privileges at UCLA/Santa Monica Hospital (2003-2013)

Other Services (Extramural)

- (1) Subject Matter Expert (SME) for Bioterrorism Threat Risk Assessment (BTRA) parameters, National Biodefense Analysis and Countermeasures Center (NBACC), Department of Homeland Security, 2010.
- (2) International Advisory Board, XV International Congress of Virology, Sapporo, Japan, Sep 11-16, 2011
- (3) Appointed **Scientific Advisor to Standards Working Group, California Institute of Regenerative Medicine (SWG, CIRM)**, 2015 – present
- (4) Program Committee member, ASM Biodefense and Emerging Infectious Disease Conference, 2014 - 2017

Service on Institutional Committees

MSSM (2014 onwards):

- (1) **Institutional Biosafety Committee**, 7/2014 -
- (2) **Institutional DURC (Dual Use Research of Concern) committee**, 09/2015 –
- (3) **Executive Laboratory Safety Committee**, 03/2016 –
- (4) MD/PhD Admissions Committee, 9/2015 –
- (5) Pre-clinical advisor to 1st-2nd year MSTP students, 11/2015 –
- (6) Graduate Curriculum Committee, 8/2014 –

UCLA (2001-2013):

- (1) AIDS Institute Executive Steering Committee, 2005-2007
- (2) Graduate Committee, Dept. of MIMG, 2002 - 2013
- (3) MSTP (M.D./Ph.D.) Admissions Committee, 2003 - 2013
- (4) ACCESS Virology & Gene Therapy Affinity group leader, 2009 - 2013
- (4) **Embryonic Stem Cell Research Oversight Committee**, 2005 - 2013
- (5) UCLA Dept. MIMG Faculty Search Committee for Shaper Family Career Development Chair, 2007
- (6) UCLA School of Public Health Faculty Search Committee for Founding Director of Global Center for Infectious Diseases, 2010
- (7) UCLA Global Bio Lab, Faculty Executive Committee, School of Public Health, 2010 - 2013
- (8) UCLA David Geffen School of Medicine Strategic Planning Initiative, Research Design Team member, 2010.
- (9) UCLA Dept. Path & Lab Med, Faculty Search Committee for Rebecca Smith Chair, 2013

TEACHING (MSSM)

Microbiology Laboratory Course (Medical Students) (Spring, 2014), Section Faculty facilitator

Microbiology Laboratory Course (Medical Students) (Spring 2015 -), Overall course Director

TEACHING (UCLA)

- M229** Molecular Mechanisms of Host-Pathogen Interactions (Spring)
▪ Course instructor
- M107** Viral Pathogenesis (Spring) (4 units)
▪ Course Director, sole instructor
- M261** Molecular & Cellular Immunology
▪ “HIV: Neutralizing Antibody Responses and Mucosal Immunology”
▪ 3x 1.25 hr lecture & 1 literature discussion
- C234** Ethics and Accountability in Biomedical Research (Faculty Facilitator)
Fall, 2002, Spring 2003, 2004, 2005, 2009, 2011

Ph.D. Dissertation Committees (MSSM)

- (1) Alesha Grant (Mentor: Adolfo Garcia-Sastre)
- (2) Megan Edwards (Mentor: Chris Basler) (Defended May 29, 2015)
- (3) Benjamin Fulton, (Mentor: Peter Palese)
- (4) Natasha Moshinka (Mentor: Ivan Mirazzi)
- (5) Ryan O’Hanlon (Mentor: Megan Shaw)
- (6) Leighland Feinman (Mentor: Megan Shaw) (Defended Sep 21, 2015)
- (7) Jennifer Hamilton (Mentor: Peter Palese)
- (8) Nicole Glennon (Mentor: Megan Shaw)
- (9) James Duehr (Mentor: Florian Krammer)

- (10) Lum Zony (Mentor: Benjamin Chen)
- (11) Gayathri Vijayakumar (Mentor: Peter Palese)
- (12) John Heard (Masters program, Mentor: Benjamin tenOever)

Ph.D. Dissertation Committees (UCLA)

- 45 students from 2001-2013.

Post-doctoral Fellows

- (1) Kevin B. Gurney (3/01/02 to 7/31/04) (Immunology T32 AI07126)
 - presently **Director, Cell based Assay center for excellence @Merck**
- (2) Stephen V. Su (10/01/01 to 11/01/05)
 - presently **Principal Scientist @Moderna Therapeutics**
- (3) Hector C. Aguilar (Post-doc, 4/15/03 to 07/31/07)
 - Assistant Researcher, 08/07 to 06/11
 - presently **Assistant Professor, Dept. of Veterinary Microbiology and Pathology, Washington State University, Pullman, WA**
 - accelerated tenure, Associate Professor effective 07/01/2016
- (4) Zeynep Akyol-Ataman (10/02/06 to 10/31/11),
 - presently **Instructor, Chapman University, Orange, CA**
- (5) [Patrick Hong](#) (07/01/08 to 9/21/11) (Rheumatology T32)
 - presently, Lab manager, Lee Lab at ISMMS
- (6) [Frederic Vigant](#) (12/01/08 to present) (**TRANSFERRED TO MSSM**)
 - presently senior post-doc on CHDI funded research contract
- (7) Mickey Pentecost (02/01/10 to 01/31/15)
 - 9/10-8/12: Virology & Gene Therapy T32 AI060567
 - 02/01/13-01/31/15: F32 AI100498 (**Priority Score: 10**)
 - presently, **Principal Scientist at Cell Care Therapeutics**
- (8) Olivier Pernet (01/05/2011 to 06/30/2014)
 - presently Assistant Researcher at UCLA
- (9) Woytek Bartkowski (May 2013 to Jun 2014)
- (10) [Arnold Park](#) (Aug 2014 – present)
- (11) [Patricia Thibault](#) (Feb 2015 – present)
- (12) [Ruth Watkinson](#) (Sep 2015 – present) EMBO Long-term fellowship

Clinical Fellows (Research Training)

- (1) Samantha Johnston, M.D. (7/1/05 to 6/15/08) (VGT T32 AI060567)
 - Pediatrics Infectious Disease Fellow (no previous bench experience)
 - presently **Staff Physician**, Division of Infectious Diseases at Children's Hospital & Research Center Oakland (CHRCO)
- (2) Shirley Delair, M.D. (07/01/07 to 06/15/10) (Haitian-American)
 - Pediatrics Infectious Disease Fellow (no previous bench experience)
 - presently **Assistant Professor**, Pediatric Infectious Diseases, University of Nebraska Medical Center; Director of Pediatric residency Global Health Program

Past Graduate Students (UCLA)

- 14 graduate students at UCLA 2001-2013

Current Graduate Students (MSSM)

- (1) [Shannon Beaty](#) (started 7/11) (MPTG T32 AI007323) (VTG @MSSM)
-transferred to MSSM
- (2) [Kristopher Azarm](#) (started 7/2015) (VTG @MSSM)