

CURRICULUM VITAE

Alexander Ploss, Ph.D.

Princeton University, Department of Molecular Biology
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A. Education/Training

INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
University of Tübingen, Germany	B.S.	1999	Biochemistry
University of Washington, Seattle	(Ph.D.)	1999-2000	Biochemistry/Immunology
Memorial Sloan-Kettering Cancer Center	(M.S.)	2001	Immunology
University of Tübingen, Germany	M.S.	2001	Immunology/Biochemistry
Weill Graduate School of Medical Sciences of Cornell University/Memorial Sloan-Kettering Cancer Center	Ph.D.	2004	Immunology
The Rockefeller University	Postdoc	2004-2008	Virology/Immunology

B. Positions and Honors.

1999-2000	Visiting Ph.D. Student, Howard Hughes Medical Institute, University of Washington, Seattle, WA, Department of Immunology (Alexander Rudensky)
2000	Graduate Research Associate, German Cancer Research Center, Heidelberg, Germany, Department of Applied Tumor Virology (Harald zur Hausen)
2001-2004	Ph.D. Student, Weill Graduate School Medical Sciences of Cornell University/Memorial Sloan-Kettering Cancer Center, NY, NY Immunology Program, Laboratory of Antimicrobial Immunity (Thesis advisor: Eric G. Pamer)
2004-2008	Postdoctoral Associate/Fellow, Laboratory of Virology & Infectious Disease, Center for the Study of Hepatitis C, The Rockefeller University (Charles M. Rice)
2008-2009	Research Associate, Laboratory of Virology & Infectious Disease, Center for the Study of Hepatitis C, The Rockefeller University (Charles M. Rice)
2009-2013	Research Assistant Professor, Laboratory of Virology & Infectious Disease, Center for the Study of Hepatitis C, The Rockefeller University
01/13-06/13	Research Associate Professor, Laboratory of Virology & Infectious Disease, Center for the Study of Hepatitis C, The Rockefeller University
07/2013-pres.	Assistant Professor, Department of Molecular Biology, Princeton University
10/2013-pres.	Member, Cancer Institute of New Jersey
12/2013-pres.	Faculty Affiliate, Program in Global Health and Health Policy, Princeton University
05/2014-pres.	Faculty Affiliate, Center for Health and Wellbeing, Princeton University

Other Professional Activities

Ad hoc reviewer for

2005-present	Antimicrobial Agents&Chemotherapy, Journal of Experimental Medicine, Journal of Hepatology
2006-present	Journal of Virology, Hepatology
2009-present	PloS ONE, Virology
2010-present	Antiviral Research, BMC International Health and Human Rights, Clinical and Vaccine Immunology, PLoS Pathogens
2011-present	Nature Reviews Genetics, Journal of Viral Hepatitis, Nature Protocols, Immunology and Cell Biology
2012-present	Nature Reviews Immunology, Nature Medicine, Science Translational Medicine
2013-present	Science, Gut, Journal of Clinical Investigation, Alternatives to Animal Experimentation (Altex),

2014-present Nature Communications, Stem Cell Reports, Journal of Virological Methods, Immunology Letters, Cellular and Molecular Gastroenterology and Hepatology

2013-2014 Guest Editor, Journal of Immunological Methods
 2014-2015 Section Editor, Current Opinion of Virology
 2015-present Reviews Editor, Virology

2010-2013 Consultant, APATH LLC.
 2014 Member of the PCSK9 - Inhibition HCV Scientific Advisory Board, Regeneron Pharmaceuticals/Sanofi
 2014-present Member of the HBV Cure Scientific Advisory Board, Gilead Sciences

2011 Grant reviewer for National Research Agency (Agence National de la Recherche), France
 2011 Reviewer for the IOM&NRC of the National Academies report on “Chimpanzees in Biomedical and Behavioral Research: Assessing the Necessity”

2011-present Adhoc grant reviewer for the National Institute for Allergy and Infectious Disease (NIAID)
 2013 Member of the organizing committee for the 2013 IOM Neuroscience Forum workshop on “Speeding Therapeutics towards First-in-Human Trials for Nervous System Disorders”, Washington, D.C.

2013 Co-organizer for the 2013 symposium on “HCV animal models and vaccine development” sponsored by European Union, Tallinn, Estonia.

2013 Adhoc grant reviewer for the German Research Foundation (Deutsche Forschungsgemeinschaft)

2014 Adhoc grant reviewer for Ghent University (Belgium) Industrial Research Fund
 2014-present Adhoc grant reviewer for the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK)

2015 Member of the International Scientific Committee for the 5th International Workshop on Humanized Mice in 2016

Professional memberships

2010-present American Association for the Advancement of Science (AAAS)
 The Society for Clinical and Translational Science (CTS)

2011-present Infectious Diseases Society of America (IDSA)
 HIV Medicine Association (HIVMA)
 New York Academy of Science
 American Association for the Study of Liver Diseases

2014-present American Society of Virology
 American Society of Microbiology

2015-present German Society for Virology (Gesellschaft für Virologie)

Honors

1999-2002 Studienstiftung des deutschen Volkes (German National Merit Foundation)
 2002 Prize for the best Diplomthesis (MS equivalent) awarded by the Association of Biochemists of Tübingen, Germany

2003-2004 Cancer Research Institute pre-doctoral fellowship
 2005-2006 Kimberly Lawrence-Netter Cancer Research Discovery Fund Award
 2009 Best poster presentation during Rockefeller University graduate student recruitment

2010-present Contributing member of the Faculty of 1000 (Biology)

2011-2012 Astellas Young Investigator Award by the Infectious Disease Society of America
 2012-2013 American Liver Foundation Gregg Allman Liver Scholar Award
 2015 Merck Irving S. Sigal Memorial Award of the American Society of Microbiology
 2015 Löffler-Frosch Prize of the German Society of Virology
 2015 Viruses Young Investigator Award, Runner-up

C. Publications

(Pre-)doctoral research period

1. Reuss F.U., Heber R., **Ploss A.**, Berdel B. (2001) Amphotropic murine leukemia virus replication in human mammary epithelial cells and the formation of cytomegalovirus-promoter recombinants, *Virology* 291: 91-100.
2. Kerksiek K.M., **Ploss A.**, Leiner I., Busch D.H., Pamer E.G. (2003) H2-M3 restricted T cells: persistence and activation without expansion, *The Journal of Immunology*, 170: 1862-9.
3. **Ploss A.**, Lauvau G., Contos B., Kerksiek K.M., Lenz L.L., Bevan M.J., Pamer E.G. (2003) Promiscuity of MHC class Ib restricted T cell responses, *The Journal of Immunology*, 171: 5948-55. PMC2791464
4. **Ploss A.**, Pamer E.G. (2004) Memory, in S.H.E. Kaufmann (Ed.) *Novel Vaccination Strategies*, WILEY-VCH, Weinheim, New York, pp.73.
5. Wong P., Lara-Tejero M., **Ploss A.**, Pamer E.G. (2004) Rapid development of T cell memory, *The Journal of Immunology*, 172: 7239-45.
6. Dao T., Guo D., **Ploss A.**, Stolzer A., Saylor C., Boursalian T., Im J.S., Sant'Angelo D. (2004) Development of CD1d-restricted NKT cells in the mouse thymus, *European Journal of Immunology* 34: 3542-52.
7. **Ploss A.**, Pamer E.G. (2005) Immunologic Memory. *In: Meyers, R.A., ed. Encyclopedia of Molecular Cell Biology and Molecular Medicine*, WILEY-VCH Verlag GmbH & Co., Weinheim. p. 383.
8. **Ploss A.**, Tran A., Menet E., Leiner I., Pamer E.G. (2005) Cross-recognition of N-formyl methionine peptides is a general characteristic of H2-M3 restricted CD8+ T cells, *Infection and Immunity*, 73: 4423-6. PMC1168546
9. **Ploss A.**, Leiner I., Pamer E.G. (2005) Distinct regulation of H2-M3 restricted memory T cell responses in lymph node and spleen, *Journal of Immunology*, 175: 5998-6005.
10. Biswas P.S., Pedicord V., **Ploss A.**, Menet E., Leiner I., Pamer E.G. (2007) Pathogen-specific CD8 T cell responses are directly inhibited by IL-10, *Journal of Immunology*, 179: 4520-8.

Studies completed during postdoctoral period

11. Lindenbach B.D., Meuleman P., **Ploss A.**, Vanwolleghem T., Syder A.J., McKeating J.A., Lanford R.E., Feinstone S.M., Major M.E., Leroux-Roels G., Rice C.M. (2006) Cell culture-grown hepatitis C virus is infectious *in vivo* and can be re-cultured *in vitro*, *Proc Natl Acad Sci*, 103: 3805-9. PMC1533780
12. **Ploss A.***, Evans M.J.*, Gaysinskaya V.A., Panis M., You H., de Jong Y.P., Rice C.M. (2009) Human occludin is a hepatitis C virus entry factor required for infection of mouse cells, *Nature*, 457: 882-6. PMC2762424
13. Strowig T.*, Gurer C.*, **Ploss A.**, Liu Y.F., Arrey F., Sashihara J., Koo G., Rice C.M., Young J.W., Chadburn A., Cohen J.I., Münz C. (2009) Priming of protective T cell responses against virus-induced tumors in mice with human immune system components. *Journal of Experimental Medicine*, 206: 1423-34. PMC2715061
14. Legrand N.*, **Ploss A.*** Balling R., Becker P.D., Borsotti C., Brezillon N., Debarry J., de Jong Y., Deng H., Di Santo J.P., Eisenbarth S., Eynon E., Flavell R.A., Guzman C.A., Huntington N.D., Kremersdorf D., Manns M.P., Manz M.G., Mention J.J., Ott M., Rathinam C., Rice C.M., Rongvaux A., Stevens S., Spits H., Strick-Marchand H., Takizawa H., van Lent A.U., Wang C., Weijer K., Willinger T., Ziegler P. (2009) Humanized mice for modeling human infectious disease: challenges, progress, and outlook. *Cell Host Microbe*, 6: 5-9.
15. **Ploss A.** and Rice, C.M. (2009) Towards a small model for Hepatitis C. *EMBO Reports*, 10: 1220-7. PMC2775186
16. Akondy R.S., Monson N.D., Miller J.D., Edupuganti S., Teuwen D., Wu H., Quyyumi F., Garg S., Altman J.D., Del Rio C., Keyserling H.L., **Ploss A.**, Rice C.M., Mulligan M.J., Orenstein, W.A., Ahmed R. (2009) The yellow fever virus vaccine induces a broad and polyfunctional human memory CD8+ T Cell response. *Journal of Immunology*, 183: 7919-30. PMC3374958
17. **Ploss A.***, Khetani S.K.*, Jones C.T., Syder A.J., Trehan, K., Gaysinskaya, V.A., Mu, K.M., Ritola, K., Rice C.M., Bhatia S.N. (2010), Persistent hepatitis C virus infection in microscale primary human hepatocyte cultures. *Proc Natl Acad Sci U S A.*, 107: 3141-5. PMC2840339

18. Jones C.T., Catanese M.T., Law L.M.J., Khetani S.R., Syder A.J., **Ploss A.**, MacDonald M.R., Bhatia S.N., Rice, C.M. (2010) Real-time imaging of hepatitis C virus infection using a fluorescent cell-based reporter system, *Nature Biotechnology*, 28: 167-71. PMC2828266

Studies completed in faculty positions at the Rockefeller University

19. De Jong Y.P., Rice C.M., **Ploss A.** (2010), New horizons for studying human hepatotropic infections, *Journal of Clinical Investigation*, 120: 650-3. PMC2827969
20. Kohaar I., **Ploss A.**, Korol E., Mu K., Schoggins J.W., O'Brien T., Rice C.M., Prokunina-Olsson L. (2010). Splicing diversity of human *OC4N* gene and its biological significance for hepatitis C virus (HCV) entry. *Journal of Immunology*, 84: 6987-94. PMC2898237
21. Sheahan T., Jones C.T., **Ploss A.** (2010) Advances and challenges in studying hepatitis C virus in its native environment, *Expert Review of Gastroenterology and Hepatology*, 4: 541-50.
22. Gerold, G., Rice, C.M., **Ploss, A.** (2010) Teaching new tricks to an old foe: murinizing Hepatitis C virus, *Hepatology*, 52: 2233-6.
23. De Jong, Y.P., Rice, C.M., **Ploss, A.** (2010) Evaluation of combination therapy against hepatitis C virus infection in human liver chimeric mice, *Journal of Hepatology*, 54: 848-50.
24. Billerbeck, E., Barry W.T., Mu, K., Dorner, M., Rice, C.M., **Ploss, A.** (2011), Development of human CD4+FoxP3+ regulatory T cells in human stem cell factor-, granulocyte-macrophage colony-stimulating factor-, and interleukin-3-expressing NOD-SCID IL2Rγ(null) humanized mice, *Blood*, 117: 3076-86, PMC3062310
25. Washburn M.L., Bility M.T., Kovalev G.I., Zhang L., Jiang Q., Buntzman A., Frelinger J., Barry W.T., **Ploss A.**, Rice C.M., Su L. (2011) A humanized mouse model to study hepatitis C virus infection, immune response, and liver disease, *Gastroenterology*, 40: 1334-44. PMC3066273
26. Dorner, M., Horwitz, J.A., Robbins, J., Barry, W.T., Mu, K., Jones, C.T., Schoggins, Catanese, M.T., J.W., Burton, D.R., Law, M., Rice, C.M., **Ploss, A.** (2011) A genetically humanized mouse model for hepatitis C virus infection, *Nature*, 474: 209-211. PMC3159410
27. Andrus L., Marukian S., Jones C.T., Catanese M.T., Sheahan T.P., Schoggins J.W., Barry W.T., Dustin L.B., Trehan K., **Ploss A.**, Bhatia S.N., Rice C.M. (2011) Expression of paramyxovirus V proteins promotes replication and spread of hepatitis C virus in cultures of primary human fetal liver cells. *Hepatology*, 54: 1901-12. PMC3233237
28. Marukian S., Andrus L., Sheahan T.P. Charles E.D., **Ploss A.**, Rice C.M., Dustin L.B. (2011), Hepatitis C virus induces interferon-λ and interferon-stimulated genes in primary liver cultures, *Hepatology*, 54: 1913-23. PMC3219820
29. Dorner M. **Ploss A.** (2011) Deconstructing hepatitis C virus infection in humanized mice, *Annals of the New York Academy of Sciences*, 1245: 59-62.
30. Scull M.A., Ploss A. (2012) Exiting from uncharted territory: Hepatitis C virus assembles in mouse cell lines, *Hepatology*, 55: 645-8. PMC3270883
31. Schwartz R.E.*, Trehan K*, Andrus L., **Ploss A.**, Rice C.M., Duncan S.A., Bhatia S.N. (2012) Modeling hepatitis C Virus infection using human induced pluripotent stem cells, *Proceedings of the National Academy of Science.*, 109: 2544-8. PMC3289320
32. Meng X., Schoggins J.W., Rose L., Cao J., **Ploss A.**, Rice C.M., Xiang Y. (2012) C7L family of poxvirus host-range genes inhibit antiviral activities induced by 2 Type I interferons and interferon regulatory factor 1, *Journal of Virology*, 86: 4538-47. PMC3318637
33. **Ploss A.* ****, Evans M.* ** (2012) Hepatitis C virus entry, *Current Opinion in Virology*, 2: 14-9. PMC3311996
34. Giang E., Dorner M., Dreux M., Evans M.J., Chisari F.V., Rice C.M., **Ploss A.**, Burton D.R., Law M. (2012), Human broadly neutralizing antibodies to the envelope glycoprotein complex of hepatitis C virus, *Proceedings of the National Academy of Science*, 109: 6205-10. PMC3341081
35. **Ploss A.* ****, Dubuisson J.* ** (2012) New advances in the molecular biology of hepatitis C virus infection: towards the identification of new treatment targets, *Gut*. 61 Suppl 1:i25-i35.
36. Vaughan A.M., Kappe S.H.I., **Ploss A**, Mikolajczak S.** (2012) Development of humanized mouse models to study human malaria parasite infection. *Future Microbiology*, 7: 657-65.
37. Schoggins J.W., Dorner M., Feulner M., Imanaka N., Murphy M.Y., Pouzol S., Panis M., **Ploss A.**, Rice C.M. (2012) Dengue reporter viruses reveal viral dynamics in interferon receptor-deficient mice and

- sensitivity to interferon effectors *in vitro*, Proceedings of the National Academy of Science, 109: 14610-5. PMC3437900
38. Vaughan A.M., Mikolajczak S.A. Wilson E.M. Grompe M., Kaushansky A., Camargo N. Bial J., **Ploss A.**, Kappe S.H.I. (2012) Complete *Plasmodium falciparum* liver-stage development in liver-chimeric mice, Journal of Clinical Investigation, 122: 3618-28. PMC3461911
 39. Pietzsch J., Gruell H., Bournazos A., Donovan B.M., Seaman M.S., Ravetch J.V., **Ploss A.**, Nussenzweig M.C. (2012) A mouse model for HIV-1 entry, Proceedings of the National Academy of Science, 109: 15859-64. PMC3465400
 40. Klein F., Halper-Stromberg A., Horwitz J.A., Gruell H., Scheid J.F., Bournazos S., Mouquet H., Spatz L.A., Diskin R., Abadir A., Dorner M., Billerbeck E., Labitt R.N., Gaebler C., Marcovecchio P., Incesu R.B., Eisenreich T.R., Bieniasz P.D., Seaman M.S., Bjorkman P.J., Ravetch J.V., **Ploss A.**, Nussenzweig M.C. (2012), HIV therapy by a combination of broadly neutralizing antibodies in humanized mice, Nature, 492: 118-22. PMC3809838
 41. **Ploss A.** (2012) Hepatitis C virus and use of reverse genetics in drug design, in A. Bridgen (Ed.) Chapter 3: Reverse Genetics of RNA Viruses: Applications and Perspectives, pages 64-90, Wiley-Blackwell
 42. Dorner M., Rice C.M., **Ploss A.** (2013) Study of hepatitis C virus entry in genetically humanized mice, Methods. 59: 249-57. PMC3652663
 43. Sandmann L., **Ploss A.** (2013) Barriers of hepatitis C virus interspecies transmission, Virology, 435: 70-80. PMC3523278
 44. Shi C. **Ploss A.** (2013) Hepatitis C virus vaccines in the era of new direct-acting antivirals, Expert Reviews in Hepatology and Gastroenterology, 7: 171-85.
 45. Billerbeck E., de Jong Y. P., Dorner M., de la Fuente C, **Ploss A.** (2013) Animal models for hepatitis C, in Current Topics in Microbiology and Immunology: Hepatitis C Virus: From molecular virology to antiviral therapy, ed. Ralf Bartenschlager, 369: 49-86.
 46. Horwitz* J.A., Dorner M.*, Friling T., Donovan B.M., Vogt A., Loureiro J., Oh T., Rice C.M., **Ploss A.** (2013) Expression of heterologous proteins flanked by NS3-4A cleavage sites within the hepatitis C virus polyprotein, Virology, 439: 23-33. PMC3620014
 47. Guernonprez P., Helft J., Claser C., Deroubaix S., Karanje H., Gazumyan A., Darasse-Jèze G., Telerman S.B., Breton G., Schreiber H.A., Frias-Staheli N., Billerbeck E., Dorner M., Rice C.M., **Ploss A.**, Klein, F., Swiecki, M., Colonna, M., Kamphorst, A.O., Meredith, M., Niec, R., Takacs, C., Mikhail, F., Hari, A., Bosque, D., Eisenreich, T., Merad, M., Shi, Y., Ginhoux, F., Rénia, L., Urban, B.C., Nussenzweig, M.C. (2013) Inflammatory FIt3l is essential to mobilize dendritic cells and for T cell responses during *Plasmodium* infection, Nature Medicine, 19(6): 730-8.
 48. Vogt A., Scull M.A., Friling T., Horwitz J.A., Donovan B.M., Dorner M., Gerold G., Labitt R.N., Rice C.M., **Ploss A.** (2013) Recapitulation of the hepatitis C virus life-cycle in engineered murine cell lines. Virology, 444(1-2):1-11, PMID:PMC3755106
 49. Gruell H., Bournazos S., Ravetch J.V., **Ploss A.**, Nussenzweig M.C., Pietzsch J. (2013) Antibody and antiretroviral pre-exposure prophylaxis prevent cervicovaginal HIV-1 infection in a transgenic mouse model. The Journal of Virology, 87(15):8535-44. PMC3719827
 50. Dorner M., Horwitz J.A.*, Donovan B.M.*, Labitt R.N., Budell W.C., Friling T., Vogt A., Catanese M.T., Satoh T., Kawai T., Akira S., Law M., Rice C.M.**, **Ploss A.**** (2013) Completion of the entire hepatitis C virus life-cycle in genetically humanized mice, Nature, 501(7466):237-41, PMID:PMC3858853
 51. Billerbeck E., Horwitz J.A., Labitt R., Vega K., Budell W.C., Friling T., Koo G.C., Rice C.M., **Ploss A.** (2013), Characterization of Human Antiviral Adaptive Immune Responses during Hepatotropic Virus Infection in HLA-Transgenic Human Immune System Mice, The Journal of Immunology, 191:1753-1764. PMC3735836
 52. Anggakusuma Colpitts, C.C., Schang L.M., Rachmawati H., Frentzen A., Pfaender S., Behrendt P., Brown R.J., Bankwitz D., Steinmann J., Ott M., Meuleman P., Rice C.M., **Ploss A.**, Pietschmann T., Steinmann E. (2013) Turmeric curcumin inhibits entry of all hepatitis C virus genotypes into human liver cells. Gut. 63(7):1137-49
 53. Horwitz, J.A., Halper-Stromberg, A., Mouquet, H., Gitlin, A.D., Tretiakova, A., Eisenreich, T.R., Gravemann, S. Buning, H., Kaiser, R., Seaman, M.S., Wlison, J., Billerbeck, E., Dorner, M., Rice, C.M., **Ploss, A.**, Bjorkman, P., Klein F., Nussenzweig, M.C. (2013) Enhanced HIV-1 suppression and sustained viremia

control by combining broadly neutralizing antibodies and antiretroviral drugs, *Proc Natl Acad Sci U S A*. 110(41):16538-43. PMC3799352

54. Frias-Staheli N., Dorner M., Marukian S., Billerbeck E., Labitt R.N., Rice C.M., **Ploss A.** (2014) Characterization of dengue virus-induced immunity and disease in humanized BLT mice, *The Journal of Virology*, 88(4):2205-18, PMID:PMC3911540
55. Sheahan, T.P., Imanaka, N., Marukian, S., Dorner, M., **Ploss, A.**, Rice, C.M. (2014) Transcriptomic Analysis of Primary Human Hepatocytes Infected with Hepatitis C Virus Reveals Distinct Defects in the Antiviral Program Associated with IL28B Polymorphisms, *Cell Host & Microbe*, 15(2):190-202

Studies completed while at Princeton University

56. von Schaewen, M., **Ploss, A.** (2014) Animal models of hepatitis C: What can we look forward to, *Antiviral Research*, 104:15-22
57. von Schaewen, M., Ding, Q., **Ploss, A.** (2014) Visualization of hepatitis C virus infection in humanized mice *Journal of Immunological Methods*, Epub ahead of print
58. Billerbeck, E., Labitt, R.N., Vega, K., Frias-Staheli, N., Dorner, M., Xiao, J., Rice, C.M., **Ploss, A.** (2014) Insufficient IL-12 signaling favors differentiation of human CD4⁺ and CD8⁺ T cells into GATA-3⁺ and GATA-3⁺T-bet⁺ subsets in humanized mice, *Immunology*, 143(2):202-18
59. **Ploss, A.** (2014) Mouse models for human infectious diseases, *Journal of Immunological Methods*, 410:1-2
60. de Jong, Y.P., Dorner, M., Mommersteeg, M.C., Xiao, J.W., Balazs, A.B., Robbins, J.B., Vega, K., Labitt, R.N., Donovan, B.M., Giang, E., Krishnan, A., Chiriboga, L., Charlton, M.R., Burton, D.R., Baltimore, D., Law, M., Rice, C.M., **Ploss, A.** (2014) Broadly neutralizing antibodies abrogate established hepatitis C virus infection, *Science Translational Medicine*, 6(254):254ra129
61. Strowig, T, Ploss, A. (2014) Plasmodium falciparum parasite development in humanized mice: liver and blood stages, in *Humanized mice for HIV Research*, ed. Larisa Y. Poluektova, manuscript in press
62. Strick-Marchand, H., **Ploss, A.** (2014) Dual reconstituted mice for hepatotropic pathogens, in *Humanized mice for HIV Research*, ed. Larisa Y. Poluektova, manuscript in press
63. Lacek, K., Urbanowicz, R.A., Troisea, F., De Lorenzo, C., Severino, V., Di Maro, A., Tarr, A.W., Ferrara, F., Hollmann, A., **Ploss, A.**, Santos, N.C., Temperton, N., Ball, J.K., Nicosia, A., Cortese, R., Pessi, A. (2014) Engineered Polyreactivity dramatically potentiates antiviral activity in HIV, but not Influenza antibodies, *Journal of Biological Chemistry*
64. Ding, Q., von Schaewen, M., **Ploss, A.** (2014) Hepatitis C virus entry and implications for host tropism, *Cell Host & Microbe*, 16(12):562-568
65. Gaska, J., **Ploss, A.** (2015) Analysis of viral pathogenesis in humanized mice, *Current Opinion in Virology* [Epub ahead of print]
66. Siu, E., **Ploss, A.** (2014) Generation of humanized mouse models for human malaria, manuscript in preparation, *Annals of the New York Academy of Sciences*, in press
67. Gardner, M.R*, Kattenhorn, L.M.*, Kondur, H.R, von Schaewen, M., Dorfman, T., Chiang, J.J., Haworth, K.G., Decker, J.M., Alpert, M.D., Bailey, C.C, Fellingner, C.H., Joshi, V.R, Fuchs, S.P., Martinez-Navio, J.M., Quinlan, B.D., Yao, A.Y., Mouquet, H., Gorman, J., Zhang, B., Pognard, P., Nussenzweig, M.C., Burton, D.R., Kwong, P.D., Piatak Jr., M., 14, Lifson, J.D., Gao, G., Desrosiers, R.C., Evans, D.T., Hahn, B.H., **Ploss, A.**, Cannon, P.M., Seaman, M.S., Farzan, M. (2014) AAV-expressed eCD4-Ig durably protects rhesus macaques from multiple SHIV challenges, *Nature*, manuscript accepted
68. Scull, M.A., Shi, C., de Jong, Y.P., Gerold, G., von Schaewen, M., Donovan, B.M., Labitt, R.N., Horwitz, J.A., Hrebikova, G., Xiao J.W., Flatley, B.¹, Fung, C., Chiriboga, L., Walker, C.M., Evans, D., Rice, C.M., **Ploss A.** (2014) Suppression of the Host Immune Response Enables Persistent HCV Infection in Rhesus Macaque Hepatocytes In Vitro and In Vivo, manuscript in revision
69. Stoddard, M. Li, H., Wang, S., Saeed, M., Andrus, L., Ding, W., Jiang, X., Learn, G., von Schaewen, M., Wen, J., Goepfert, P., Hahn, B., **Ploss, A.**, Rice, C.M., Shaw, G. (2015) Identification, Molecular Cloning, and Analysis of Full-Length Hepatitis C Virus Transmitted/Founder Genotypes 1, 3, and 4, *eLife* accepted
70. von Schaewen, M., **Ploss, A.** (2014) New Animal Models of Hepatitis C, ed. Christopher Walker, Stanley Lemon, Takaji Wakita, Tatsuo Miyamura, manuscript in preparation
71. von Schaewen, M., Dorner, M., Hüging, K., Horwitz, J.A., Gerold, G., Rice, C.M., Meuleman, P., Pietschmann, T., **Ploss, A.** (2014) Expanding the host range of hepatitis C virus through viral adaptation, manuscript in preparation

72. Perin, P.M.S., Haid, S., Brown, R., Schulze, K., Colpitts, C.C., Zeilinger, C., von Schaewen, M., Heller, B., Vercauteren, K., Luxenburger, E., Andoadis, Y., Kirschning, A., Schang, L.M., Müller, R., Guzmán, C.A., Randall, G., Meuleman, P., **Ploss, A.**, Pietschmann, T. (2014) Flunarizine, a clinically approved T-type calcium channel inhibitor, prevents Hepatitis C Virus (HCV) membrane fusion in a genotype-dependent manner, manuscript in preparation
73. Winer, B.Y., **Ploss, A.** (2015) Determinants of hepatitis B virus species tropism, Current Opinion in Virology, manuscript in preparation
74. Douam, F., Winer, B.Y., Gaska, J., von Schaewen, M., Ding, Q., **Ploss, A.** (2015) Annual Reviews in Genetics, manuscript in preparation
- * these authors contributed equally; ** co-corresponding authors

Patent applications

1. **Ploss A.**, Khetani S.R., Jones C.J., Rice C.M., Bhatia S.N. (2008) Micropatterned co-culture systems as infectious disease analysis platforms. US patent application number: US 61/78,683
This invention is based on the development and optimization of micropatterned primary hepatocyte culture systems for pharmacological and toxicological analysis as well as for drug efficacy test against human pathogens, including hepatitis A, B, C, δ , E viruses and Plasmodium spp.)
2. De Jong, Y.P., Dorner, M., Rice, C.M., Burton, D.R., Law, M., **Ploss, A.** (2012) Engineering Protective Immunity Against Hepatitis C Virus. US patent application number: US 61/709,644

Granted patents

3. **Ploss A.**, Evans M.J., Rice C.M. (2009) New Entry Factor, occludin, US patent number: US 12/299,439
This patent claims the use of occludin as a target to prevent, mitigate or inhibit HCV infection. It further covers the development of a genetically modified rodent rendered permissive to HCV glycoprotein mediated entry or infection by expression of human occludin.

D. (Invited) oral presentations:

1. **Promiscuity of MHC class Ib restricted T cell responses**, The 2nd Immunology Meeting for Graduate Students, Northeast Region, Cornell University, Ithaca, NY, USA, September, 2002
2. **T cell memory potential is programmed by thymic development**, Annual Meeting of the American Association of Immunologist, Denver, CO, USA, May 2003
3. **Memory T cell expansion upon Re-encountering Antigen: Differences between MHC Class Ia and Ib Restricted CD8+ T cells**, 23rd Vincent DuVigneaud Symposium, New York, NY, USA, May 2004
4. **Creation of small animal models for Hepatitis C virus infection and immunity**, Center for the Study of Hepatitis C, The Rockefeller University, New York, USA, February 13, 2007
5. **Creation of small animal models for Hepatitis C virus infection and immunity**, The Children's Hospital of Philadelphia, Gene and Cell Therapy Affinity Group Research Seminar Series, Philadelphia, USA, April 28, 2008
6. **Generation of patient-specific hepatocytes for the genetic analysis of susceptibility to hepatitis C virus infection**, Center for the Study of Hepatitis C, The Rockefeller University, New York, USA, May 13, 2008
7. **Generation of human liver chimeric mice and its applications for human hepatotropic infections**, Bill & Melinda Gates Foundation, Grand Challenges in Global Health #4, Scientific Progress Meeting, Versailles France, May 27, 2008
8. **Novel Insight into Hepatitis C virus infection**, 19th Annual Meeting of the "Gesellschaft für Virologie" (GfV, Society for Virology), Leipzig, Germany, March 21, 2009
9. **Human occludin is a Hepatitis C virus entry factor required for infection of mouse cells**, 2nd International Workshop on Humanized Mice, Amsterdam, The Netherlands, April 5, 2009
10. **Creation of humanized mice for the study of human infectious diseases**, Aaron Diamond AIDS Research Center, New York, NY, USA, August 31, 2009
11. **Breaking species barriers: New models for studying pathogenesis of human infectious diseases**, The Rockefeller University, New York, NY, USA, September 17, 2009

12. **Creation of humanized mouse models for human hepatotropic infections**, Bill & Melinda Gates Foundation, Grand Challenges in Global Health, 5th Annual Meeting, Arusha, Tanzania, October 19-21, 2009
13. **Impact of alternative splicing of human occludin on hepatitis C virus entry**, 16th International Symposium on Hepatitis C and related viruses, Nice, France, October 4, 2009
14. **Persistent HCV infection in microscale primary human hepatocyte cultures**, 16th International Symposium on Hepatitis C and related viruses, Nice, France, October 6, 2009
15. **Prospects for a Small Animal Model for HCV**, HEPDART 2009 Frontiers in Drug Development for Viral Hepatitis, Big Island, Hawaii, USA, December 7, 2009
16. **Studying hepatitis C virus infection and immunity in humanized mouse models**, 3rd Workshop Humanized SCID Mouse Models: Stem Cells, Cancer, & Viral Pathogenesis, Belhurst Castle, Geneva NY, May 13, 2010
17. **Breaking species barriers: Studying hepatitis C virus infection in small animal models**, Hannover Medical School, Hannover, Germany June 9, 2010
18. **Humanized mice for the liver**, 3rd International Workshop for Humanized Mice, Hannover, Germany, June 12, 2010
19. **A genetically humanized, immunocompetent mouse model for Hepatitis C virus infection**, 17th International Meeting on Hepatitis C Virus and Related Viruses, Yokohama, Japan, September 10, 2010
20. **Dissecting Hepatitis C virus infection and immunity in vivo**, Heidelberg Virology Seminars, German Cancer Research Center/University of Heidelberg, Heidelberg, Germany, December 7th, 2010
21. **Breaking species barriers: Studying human viral infections in small animal models**, Department of Microbiology, Mount Sinai School of Medicine, New York, NY, USA, January 4th, 2011
22. **Analysis of Hepatitis C virus entry in vivo**, TargetMeeting: Pathogenesis mechanisms of virus entry and replication, Online conference, February 5th, 2011
23. **Analysis of Hepatitis C virus infection in primary hepatocytes and small animal models**, Gastroenterology Unit, Massachusetts General Hospital/Harvard Medical School, Boston, MA, USA, February 15th, 2011
24. **Analysis of Hepatitis C Virus Infection and Immunity in Small Animal Models**, Division of Viral Diseases Seminar Series, National Institutes of Health, Bethesda, MD, February 17th, 2011
25. **Analysis of Hepatitis C Virus Infection and Pathogenesis in Small Animal Models**, 3rd JCA-AACR Special Joint Conference, Tokyo, Japan, March 2nd, 2011
26. **Animal models for Hepatitis C**. 46th Annual Meeting of the European Association for the Study of the Liver, Berlin, Germany, March 31st, 2011
27. **Development of in vivo Models for the Pre-Clinical Assessment of Hepatitis C Virus Therapeutics**, Cambridge Healthcare Institute's 6th Annual Drug Discovery Chemistry meeting, San Diego, CA, USA, April 13th, 2011
28. **Development of humanized mice for human malaria**, Research Advances in Malaria: Resistance to Existing Drugs and New Drug Development, Tres Cantos, Spain, June 3rd, 2011
29. **Analysis of hepatitis C virus infection in small animal models**, National Institutes of Health, Bethesda, MD, USA, July 6th, 2011
30. **Genetic dissection of hepatitis C virus infection**, FASEB Summer Research Conference, Saxton River, VT, USA, July 19th, 2011
31. **Humanized mice for the study of human infectious diseases**, National Academy of Science, Washington, DC, USA, August 11th, 2011

32. **Modeling human hepatotropic infections in vivo: hepatitis C and malaria**, Seattle Biomed, Seattle, WA, USA, September 12th, 2011
33. **A Comparison of Genetic Modification and Transplantation Approaches to Study Hepatitis C in Humanized Mouse Models**, New York Academy of Sciences, New York, NY, USA, September 16th, 2011
34. **Analysis of hepatitis C virus infection in primary cell culture systems and animal models**, The Rockefeller University Infectious Disease Biology retreat, Chappaqua, NY, USA, September 17th, 2011
35. **Drug discovery for hepatitis C virus**, Mercy Medical Center, Baltimore, MD, USA, September 23rd, 2011
36. **Breaking species barriers: Studying human infectious diseases in small animal models**, The Rockefeller University, Seminars in Clinical Research, New York, NY, USA, October 12th, 2011
37. **Development of a humanized mouse model for human malaria infection**, 3rd International Workshop on Humanized Mice, Pittsburgh, PA, USA, October 29, 2011
38. **New systems to study hepatitis C virus**, Annual meeting of the American Association for the Study of Liver Diseases, San Francisco, CA, USA, November 6th, 2011
39. **Dissection of hepatitis C virus infection in humanized mice**, The Scripps Research Institute, San Diego, CA, November 8th, 2011
40. **Modeling human infectious disease in humanized mice for basic biology and preclinical applications**, Life Sciences Summit, New York, NY, USA, November 16th, 2011
41. **Modeling Human Infectious Diseases In Vivo: Opportunities and Challenges of Human-Animal Chimeras**, Grand Rounds Department of Health Evidence and Policy, Mount Sinai School of Medicine, New York, NY, USA, January 10th, 2012
42. **Modeling human hepatotropic infections in vivo: hepatitis C and malaria**, Signature Interdisciplinary Program in Allergy, Immunology and Infectious Disease, University of South Florida, Tampa, FL, USA, June 1th, 2012
43. **Modeling human hepatotropic infections by animal engineering**, Vaccine and Infectious Disease Division's (VIDD) Faculty Seminar Series, Fred Hutchinson Cancer Research Center, Seattle, WA, USA, June 19th, 2012
44. **Genetically humanized mice for hepatitis C virus infection**, 14th International Symposium on Viral Hepatitis and Liver Disease, Shanghai, China, June 25th, 2012
45. **Pre-clinical genetically humanized animal models for hepatitis C infection**, Liver and Digestive Health Seminar Series, University College of London, London, Great Britain, September 25th, 2012
46. **Analysis of human hepatotropic infections in humanized mice**, 4th Twincore Symposium "Innovative animal models in infection research and immunology", Hannover, Germany, September 27th, 2012
47. **Studying hepatitis C virus infection and immunity in genetically humanized mice**, Karolinska Institute, Stockholm, Sweden, October 1st, 2012
48. **Characterizing human hepatotropic pathogens in humanized mice**, University of Zurich, Zurich, Switzerland, October 2nd, 2012
49. **Genetically humanized mouse models for hepatitis C virus infection**, University of Tartu, Tartu, Estonia, October 3rd, 2012
50. **Analysis of human hepatotropic infections in humanized mice**, SUNY Downstate Medical Center, Molecular and Cellular Biology Seminar Series, November 14th, 2012
51. **Breaking species barriers: Studying human hepatotropic infections in humanized mice**, Princeton University, Princeton, NJ, November 26th, 2012
52. **HCV virology and animal models**, 2012 Penn Center for Viral Hepatitis Symposium on HCV and Co-infections: New Insights and Emerging Therapies, Philadelphia, November 28th, 2012
53. **Breaking species barriers: analysis of human hepatotropic infections in humanized mice**, Columbia University, New York, NY, January 10th, 2013
54. **Study of human hepatotropic pathogens in humanized mice**, The Scripps Research Institute, Jupiter, FL, January 18th, 2013

55. **Development of humanized mouse model for the study of human hepatotropic pathogens**, The Jackson Laboratory, Bar Harbor, ME, January 24th, 2013
56. **Analysis of hepatitis C virus infection in humanized mice**, State University of New York, Syracuse, NY, April 25, 2013
57. **Breaching species barriers: development of animal models for hepatitis C virus infection and pathogenesis**, Symposium on HCV animal model and vaccine development, Tallinn, Estonia, May 17th, 2013
58. **Humanized mouse models**, 8th HepCAM Meeting, Cambridge, MA, June 28th, 2013
59. **Genetically humanized mice for the study of Hepatitis C**. 5th Israeli Molecular Liver Conference, Tel Aviv, Israel, July 10th, 2013
60. **Determinants of hepatitis C virus interspecies tropism**. The Weizmann Institute, Rehovot, Israel, July 14th, 2013
61. **Analysis of Liver Diseases in Humanized mice**. Humanized Mice in Translational Biomedical Research, The Jackson Laboratory, Bar Harbor, Maine, September 23rd, 2013
62. **Challenges with the development of immune competent mouse models for hepatitis C**. EASL Monothematic Conference, Lyon, France, November 29, 2013
63. **Feasibility of Producing a Fully Immunocompetent Animal Model for HCV Infection**. HEPDART 2013 Frontiers in Drug Development for Viral Hepatitis, Big Island, Hawaii, USA, December 9, 2013
64. **Breaking species barriers: Studying human infectious diseases in humanized mice**, Princeton University, Department of Ecology and Evolutionary Biology, February 19, 2014
65. **Analysis of viral hepatitis in humanized mice**, Zhejiang University, Hangzhou, China, February 25, 2014
66. **Characterization of viral and parasitic pathogens in humanized mice**, Naval Medical Research Unit 6, Lima, Peru, March 27, 2014
67. **Generation of mouse models for viral hepatitis**, Gilead Sciences, Foster City, CA, March 31, 2014
68. **Breaching species barriers of HCV: Lessons for HBV?**, Baruch Blumberg Institute, Doylestown, PA, April 3, 2014
69. **Development of preclinical models for hepatitis C**, Rosalind Franklin University Medical School, Chicago, IL, April 15, 2014
70. **Generation of humanized mouse models for malaria**. New York Academy of Sciences, New York, NY, April 25, 2014.
71. **Defining and overcoming barriers of hepatitis C virus species tropism**. (Plenary talk) American Society for Microbiology 114th General Meeting, Boston, MA, May 19th 2014
72. **Generation of Animal Models for Hepatitis C**. Determinants of Elimination and Persistence of Hepatitis Viruses, German Cancer Research Center, Heidelberg, Germany, May 20th, 2014
73. **Insights in human infectious diseases from humanized mice**. Princeton University, Department of Molecular Biology Reunion seminar, Princeton, NJ, May 30th, 2014
74. **Humanized mouse model for hepatitis C virus infection and immunity**, Division of Gastroenterology and Liver Diseases, Albert Einstein College of Medicine, New York, NJ, June 11th, 2014
75. **Advances in HCV Virology**, US-Georgia Program-Development Workshop, on HIV/AIDS, TB and Hepatitis, Tbilisi, Georgia, June 17th, 2014
76. **Utility of humanized mouse model for the of study hepatitis C virus infection and immunity**, Center for Inflammation and Immunity, Rutgers University, Newark, NJ, June 20th, 2014
77. **Breaking species barriers: shedding light on the host tropism of hepatitis C virus**, Plenary talk (The Eli Lilly and Company Lecturer), American Society of Virology Annual Meeting, Fort Collins, CO, June 22nd, 2014
78. **Broadening the species tropism of hepatitis C virus through genetic adaptation**, Department of Microbiology & Immunology Seminar Series, Jefferson Medical College, Philadelphia, PA, September 16, 2014
79. **Impact of broadly neutralizing antibodies on hepatitis C virus infection**, Symposium on "Infection and Cancer", German Cancer Research Center, Heidelberg, Germany, December 12th, 2014
80. **New animal models for studying persistent hepatitis virus infections**, 17th International Conference on Emerging Infectious Diseases (EID), Taipei, Taiwan, January 25th, 2015

81. **HCV animal models in antiviral drug and vaccine development**, Falk workshop: Viral hepatitis – from bench to bedside, Munich, Germany, January 29th, 2015
82. **Dissection of tropical viral and parasitic diseases in humanized mice**, Center for Infectious Disease Dynamics, Pennsylvania State University, PA, February 5th, 2015

E. Service

- Committees:
 - 2014-present: Member of the Princeton University Institutional Animal Care and Use Committee (IACUC)
 - Member of the 2013-2014 MolBio faculty search committee “host & microbes”
 - Member of the 2013-2014 faculty committee on corporate relations
 - 2013-present: Member of the MolBio graduate admissions committee
 - Member of the 2014 MolBio faculty committee on innovation in funding
 - Co-chair of the 2013 scientific retreat of the Department of Molecular Biology
 - Chair of the 2014 scientific retreat of the Department of Molecular Biology
 - Graduate research thesis committees: Nicolas Morante (Burdine lab, 2013-present), Oliver Huang (Enquist lab, 2014-present)
 - Reviewer for 2014 Myhrvold-Havranek Graduate Fellowship for Innovative Thinking in Mathematics, Physics or Molecular Biology
 - Examiner for Ph.D. and MD/Ph.D. qualifying exams (2013-present)
 - Fellow of Forbes College, Princeton University (04/2014-09/2014)
 - Faculty Advisor, Forbes College, Princeton University (09/2014-present)
- University teaching
 - MOL 340 Molecular and Cellular Immunology, fall 2014, offered every year
 - GHP 400 / WWS 382 / MOL 499 / EEB 400 Seminar in Global Health and Health Policy (with Drs. Shenk and Mahmoud), spring 2015
 - MOL 516 Genetics of Multicellular Organisms (with Drs. Gavis and Rose), spring 2014