

## CURRICULUM VITAE

### NAME

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Silke Paust, Ph.D.  
 The Jackson Laboratory for Genomic Medicine  
 10 Discovery Drive, Farmington, CT 06032

### DEPARTMENT OF PRIMARY APPOINTMENT

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8/2023- Professor, The Jackson Laboratory for Genomic Medicine, Farmington, CT

### ACADEMIC APPOINTMENTS

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<b>Dates</b>	<b>Title and Institution</b>
2023 -	<b>Professor</b> , The Jackson Laboratory for Genomic Medicine, Farmington, CT
2018 - 2023	<b>Associate Professor</b> , Department of Immunology and Microbiology, The Scripps Research Institute, La Jolla, CA
2013 –2018	<b>Assistant Professor</b> , Department of Pediatrics / Baylor College of Medicine, and Texas Children’s Hospital, Houston, TX
2013 –2018	<b>Adjunct Assistant Professor</b> , Baylor College of Medicine, Houston, TX Department of Molecular Virology and Baylor College of Medicine, Houston, TX Microbiology

### PROFESSIONAL EXPERIENCE

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2018 - 2023	<b>Member</b> , The San Diego Center for Precision Immunotherapy in the Moores Cancer Center, UC San Diego, San Diego, CA
2018 - 2023	<b>Member</b> , Center for Aids Research, San Diego, CA
2017 – 2018	<b>Member</b> , Executive Committee, Translational Biology and Molecular Medicine Graduate Program, BCM
2016 –2018	<b>Member</b> , Center for Metagenomics and Baylor College of Medicine, Houston, TX Microbiome Research
2015 –2018	<b>Member</b> , Dan L Duncan Cancer Center Baylor College of Medicine, Houston, TX
2014 –2018	<b>Chair</b> , Center for Human Immunobiology Texas Children’s Hospital, Houston, TX Seminar Series
2014 –2018	<b>Member</b> , Digestive Disease Center Baylor College of Medicine, Houston, TX
2013 –2016	<b>Member</b> , Center for Aids Research Baylor College of Medicine, Houston, TX
2012 – 2013	<b>Instructor</b> , Division of Immunology, Harvard Medical School, Boston, MA

## EDUCATION

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Year	Degree	Field of Study	Institution
2005-2011	Post-doc Fellow	Immunology	Harvard University, Boston, MA
2000-2005	Ph.D.	Immunology	Harvard University, Boston, MA
1997-2000	M.S.	Biomedical Sciences	Washington University, St. Louis, MO
1993-1997	B.S.	Biochemistry	University of Wisconsin-Madison, WI

### Ph.D. Thesis

06/2005 **Title:** Engagement of B7.1 on Effector T cells Inhibits Autoimmune Disease.  
**Thesis Advisor:** Dr. Harvey Cantor, Baruj Benacerraf Professor of Microbiology & Immunobiology, The Dana Farber Cancer Institute, Harvard Medical School, Boston, MA.

## PRINT AND ORAL SCHOLARSHIP

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### Publications

*Peer-reviewed journal articles during faculty appointment at The Scripps Research Institute:*

1. Spencer-Clinton JL, Vogt MB, Kneubehl AR, Hibl BM, **Paust S**, Rico-Hesse R. Sialokinin in mosquito saliva shifts human immune responses towards intracellular pathogens. *PLoS Negl Trop Dis*, 2023 Feb 3; 17(2): e0011095. doi:10.1371/journal.pntd.0011095. PMID: 36735632
2. Abeynaike SA, Huynh TR, Mehmood A, Kim, T, Frank KS, Gao K, Zalfa C, Gandarilla A, Shultz L, **Paust S\***. Human Hematopoietic Stem Cell Engrafted IL-15 Transgenic NSG Mice Support Robust NK Cell Responses and Sustained HIV-1 Infection. *Viruses*, 2023 Jan 27; 15(2):365. doi: 10.3390/v15020365. PMID: 36851579  
**Roles:** Conceptualization, S.P.; Formal analysis, S.A.A., T.R.H., T.K. and S.P.; Funding, S.P. and L.S.; Investigation, S.A.A., T.R.H., A.M., T.K., K.F., K.G., C.Z., A.G. and S.P.; Methodology, S.A.A., T.R.H., T.K., C.Z. and S.P.; Project administration, S.P.; Resources, S.P. and L.S.; Supervision, S.P.; Validation, S.A.A., T.R.H. and S.P.; Visualization, S.A.A., T.R.H., A.M. and S.P.; Writing—original draft preparation, S.A.A., T.R.H., K.F., A.M., L.S. and S.P. All authors have read and agreed to the published version of the manuscript.
3. Smith DM, Schafer JR, Tullius B, Witkam L, **Paust S\***. Natural killer cells for antiviral therapy. *Sci Transl Med*. 2023 Jan 4; doi: 10.1126/scitranslmed.abl5278. Epub 2023 Jan 4. PMID: 36599006.  
**Roles:** Conceptualization, Validation, Visualization, Writing - original draft, and Writing - review & editing
4. Aviles-Padilla K, Angelo LS, Fan D, **Paust S\***. CXCR6+ and NKG2C+ Natural Killer Cells Are Distinct with Unique Phenotypic and Functional Attributes Following Bone Marrow Transplantation. *Front Immunol*. 2022 Jun 29;13:886835. doi: 10.3389/fimmu.2022.886835. PMID: 35844621  
**Roles:** SP performed conceptualization. KA-P, LA, and SP performed formal analysis. SP performed funding acquisition. KA-P and LA conducted the investigation. The methodology was designed by KA-P, LA, DF, and SP. SP performed project administration and supervision. SP provided resources. KA-P, LA, and SP performed validation. KA-P and SP performed visualization. The writing of the original draft was performed by KA-P and SP. Revisions were performed by SP. All authors

contributed to the article and approved the submitted version.

5. Morales-Mantilla DE, Kain B, Le DT, Flores AR, **Paust S**, and King KY. Hematopoietic stem and progenitor cells improve survival from sepsis by boosting immunomodulatory cells. *Elife*. 2022 Feb 15;11:e74561. doi: 10.7554/eLife.74561. PMID: 35166205
6. Angelo LS, Hogg GD, Abeynaike S, Bimler L, Vargas-Hernandez A, **Paust S\***. Phenotypic and Functional Plasticity of CXCR6<sup>+</sup> Peripheral Blood NK Cells. *Front Immunol*. 2022 Jan 31;12:810080. doi: 10.3389/fimmu.2021.810080. eCollection 2021.PMID: 35173710  
**Roles:** Conceptualization was performed by SP. Formal analysis was performed by LA, GH, SA, LB, AV-H, and SP. Funding acquisition was performed by SP. Investigation was performed by LA, GH, and SA. Methodology was designed by LA, GH, SA, AV-H, and SP. Project administration and supervision was performed by SP. Validation was performed by LA, GH, SA, and SP. Visualization was performed by LA, SA, and SP. Writing was performed by LA, SA, and SP. All authors contributed to the article and approved the submitted version.
7. Le DT, Huynh TR, Burt BM, Van Buren G, Abeynaike SA, Zalfa C, Nikzad R, Kheradmand F, Tyner JJ, **Paust S\***. Natural killer cells and cytotoxic T lymphocytes are required to clear solid tumor in a patient-derived xenograft. *JCI Insight*. 2021 Jun 3:140116. doi: 10.1172/jci.insight.140116. PMID: 34081628  
**Roles:** Conceptualization was performed by SP. Formal analysis was performed by DTL, TRH, SAA, and SP. Funding acquisition was performed by SP, GVB, FK, and TRH. Investigation was performed by DTL, TRH, BB, GVB, SAA, CZ, RN, and SP. Methodology was designed by DTL, TRH, BB, GVB, RN, and SP. Project administration was performed by SP. Resources were provided by BB, GVB, and JJT. Supervision was performed by SP. Validation was performed by DTL, TRH, SAA, RN, and SP. Visualization was performed by SP. Writing was performed by SP, TRH, and FK. Statement of the method used in assigning the authorship order among co–first authors: DTL and TRH share the title of first authors. The original manuscript was submitted for peer review in 2019, with DTL as the sole first author. At that time, DTL was no longer a member of the Paust Laboratory due to moving from Baylor College of Medicine to TSRI in September 2018. The reviewers requested substantial revisions. Because these revisions could not be performed by DTL, TRH reestablished the LUAD-TIL-PDX at TSRI, performed the reviewer-requested experiments, and analyzed data, and SP and DTL revised the manuscript and addressed the reviewer comments. Thereby, DTL’s and TRH’s contributions have equally contributed to the acceptance of the revised manuscript for publication, and they will share the co–first author position. DTL’s name is listed first, as DTL contributed more data than TRH to the final version accepted for publication.
8. Zalfa C, **Paust S\***. Natural Killer Cell Interactions with Myeloid Derived Suppressor Cells in the Tumor Microenvironment and Implications for Cancer Immunotherapy. *Front Immunol*. 2021 May 5;12:633205. doi: 10.3389/fimmu.2021.633205. eCollection 2021.PMID: 34025641  
**Roles:** CZ and SP conceptualized the content and wrote the article. All authors contributed to the article and approved the submitted version.
9. Abeynaike S, **Paust S\***. Humanized Mice for the Evaluation of Novel HIV-1 Therapies. *Front Immunol*. 2021 Apr 1;12:636775. doi: 10.3389/fimmu.2021.636775. eCollection 2021. PMID: 33868262  
**Roles:** SA and SP conceptualized the content of and wrote the article. All authors contributed to the article and approved the submitted version.

10. Patel RR, Wolfe SA, Bajo M, Abeynaïke S, Pahng A, Borgonetti V, D'Ambrosio S, Nikzad R, Edwards S, **Paust S**, Roberts AJ, Roberto M. IL-10 normalizes aberrant amygdala GABA transmission and reverses anxiety-like behavior and dependence-induced escalation of alcohol intake. *Prog Neurobiol.* 2021 Apr;199:101952. doi: 10.1016/j.pneurobio.2020.101952. Epub 2020 Nov 13. PMID: 33197496
11. Murphy-Schafer AR, **Paust S\***. Divergent Mast Cell Responses Modulate Antiviral Immunity During Influenza Virus Infection. *Front Cell Infect Microbiol.* 2021 Feb 19;11:580679. doi: 10.3389/fcimb.2021.580679. eCollection 2021. PMID: 33680987  
**Roles:** AM-S and SP conceptualized the content of and wrote the article. All authors contributed to the article and approved the submitted version.
12. Frank K, Abeynaïke S, Nikzad R, Patel RR, Roberts AJ, Roberto M, **Paust S\***. Alcohol dependence promotes systemic IFN- $\gamma$  and IL-17 responses in mice. *PLoS One.* 2020 Dec 21;15(12):e0239246. doi: 10.1371/journal.pone.0239246. eCollection 2020. PMID: 33347446  
**Roles:** Conceptualization, Formal analysis, Funding acquisition, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – review & editing
13. Bimler L, Ronzulli SL, Song AY, Johnson SK, Jones CA, Kim T, Le DT, Tompkins SM, **Paust S\***. Matrix Protein 2 Extracellular Domain-Specific Monoclonal Antibodies Are an Effective and Potentially Universal Treatment for Influenza A. *Journal of Virology.* 2020 Dec 2:JVI.01027-20. doi: 10.1128/JVI.01027-20. PMID: 33268521  
**Roles:** L.B., S.M.T., and S.P. designed experiments. L.B., S.L.R., A.Y.S., S.K.J., C.A.J., T.K., and D.T.L. performed experiments. L.B., S.L.R., S.K.J., C.A.J., T.K., S.M.T., and S.P. analyzed data. L.B. wrote the manuscript. L.B., S.L.R., S.M.T., and S.P. edited the manuscript.
14. Mace EM, **Paust S**, Conte MI, Baxley RM, Schmit MM, Patil SL, Guilz NC, Mukherjee M, Pezzi AE, Chmielowiec J, Tatineni S, Chinn IK, Akdemir ZC, Jhangiani SN, Muzny DM, Stray-Pedersen A, Bradley RE, Moody M, Connor PP, Heaps AG, Steward C, Banerjee PP, Gibbs RA, Borowiak M, Lupski JR, Jolles S, Bielinsky AK, Orange JS. Human NK cell deficiency as a result of biallelic mutations in MCM10. *Journal of Clinical Investigation.* 2020 Oct 1;130(10):5272-5286. doi:10.1172/JCI134966. PMID: 32865517
15. Frank K, **Paust S\***. Dynamic Natural Killer Cell and T Cell Responses to Influenza Infection. *Frontiers in Cellular and Infection Microbiology - Microbes and Innate Immunity.* 2020 Aug 18;10:425. doi: 10.3389/fcimb.2020.00425. eCollection 2020. PMID: 32974217.  
**Roles:** EMM, JSO, AKB, SP, and JRL designed experiments and interpreted data. EMM, JSO, AKB, and SP wrote the manuscript. MIC, RMB, MMS, ST, AEP, NCG, M Mukherjee, SP, PPB, and SLP performed experiments and analyzed data. Exome sequencing and data analysis were performed as part of immunodeficiency cohort testing at BHCMG, and the proband in the current publication is individual 68.1 in ref. 31, in which MCM10 was designated potential novel gene 4. IKC, ZCA, SNJ, ASP, RAG, and DMM performed exome sequencing and exome data analyses. SJ, PPC, AGH, M Moody, CS, and REB guided clinical evaluation of the patient and supervised clinical care. SP conceptualized, designed, and performed experiments for reconstitution of NSG mice with patient iPS cells. MB and JC designed, performed, and validated reprogramming of patient cells to iPS cells.

16. Lo HC, Xu Z, Kim IS, Pingel G, Aguirre S, Kodali S, Liu J, Zhang W, Muscarella AM, Hein SM, Krupnick AS, Neilson JR, **Paust S**, Rosen, JM, Wang H, Zhang XHF. Resistance to natural killer cell immunosurveillance confers a selective advantage to polyclonal metastasis. *Nat Cancer*. 2020 Jul;1(7):709-722. doi: 10.1038/s43018-020-0068-9. Epub 2020 Jun 1. PMID: 35122036
17. Bimler L, Song AY, Le DT, Murphy Schafer A, **Paust S\***. AuNP-M2e + sCpG vaccination of juvenile mice generates lifelong protective immunity to influenza A virus infection. *Immunity and Ageing* 2019;16:23. doi: 10.1186/s12979-019-0162-y. eCollection 2019. PMID: 31507643; PMCID: PMC6720989.
18. Nikzad R, Angelo LS, Aviles-Padilla K, Le DT, Singh VK, Bimler L, Vukmanovic-Stejic M, Vendrame E, Ranganath T, Simpson L, Haigwood NL, Blish CA, Akbar AN, **Paust S\***. Human natural killer cells mediate adaptive immunity to viral antigens. *Science Immunology*. 2019 May 10;4(35). doi: 10.1126/sciimmunol.aat8116. PubMed PMID: 31076527; PubMed Central PMCID: PMC6636344.  
**Roles:** LB, AS, and SP analyzed data. SP performed serum transfer experiment. SP provided funding and designed study. LB wrote manuscript. LB, AMS, and SP edited manuscript. All authors read and approved the final manuscript.
19. Angelo LS, Bimler LH, Nikzad R, Aviles-Padilla K, **Paust S\***. CXCR6<sup>+</sup> NK Cells in Human Liver and Spleen Possess Unique Phenotypic and Functional Capabilities. *Frontiers in Immunology*. 2019; 10:469. doi: 10.3389/fimmu.2019.00469. eCollection 2019. PubMed PMID: 30941128; PubMed Central PMCID: PMC6433986.  
**Roles:** SP directed the research and designed experiments. LA, RN, and KA-P performed the experiments. LA, LB, and SP analyzed the data, and LA and SP wrote the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.
- Peer-reviewed journal articles during faculty appointment at Baylor College of Medicine:*
20. Keitel WA, Voronca DC, Atmar RL, **Paust S**, Hill H, Wolff MC, Bellamy AR. Effect of recent seasonal influenza vaccination on serum antibody responses to candidate pandemic influenza A/H5N1 vaccines: A meta-analysis. *Vaccine*. 2019 Sep 3;37(37):5535-5543. doi:10.1016/j.vaccine.2019.04.066. Epub 2019 May 31. Review. PubMed PMID: 31160101.
21. You R, DeMayo FJ, Liu J, Cho SN, Burt BM, Creighton CJ, Casal RF, Lazarus DR, Lu W, Tung HY, Yuan X, Hill-McAlester A, Kim M, Perusich S, Cornwell L, Rosen D, Song LZ, **Paust S**, Diehl G, Corry D, Kheradmand F. IL17A Regulates Tumor Latency and Metastasis in Lung Adeno and Squamous SQ.2b and AD.1 Cancer. *Cancer Immunol Res*. 2018 Jun;6(6):645-657. doi: 10.1158/2326-6066.CIR-17-0554. Epub 2018 Apr 13. PubMed PMID: 29653981; PubMed Central PMCID: PMC6342490.
22. Vogt MB, Lahon A, Arya RP, Kneubehl AR, Spencer Clinton JL, **Paust S**, Rico-Hesse R. Mosquito saliva alone has profound effects on the human immune system. *PLoS Negl Trop Dis*. 2018 May;12(5):e0006439. doi: 10.1371/journal.pntd.0006439. eCollection 2018 May. PubMed PMID: 29771921; PubMed Central PMCID: PMC5957326.
23. Liang D, Tian L, You R, Halpert MM, Konduri V, Baig YC, **Paust S**, Kim D, Kim S, Jia F, Huang S, Zhang X, Kheradmand F, Corry DB, Gilbert BE, Levitt JM, Decker WK. AIMp1 Potentiates TH1

Polarization and Is Critical for Effective Antitumor and Antiviral Immunity. *Front Immunol.* 2017;8:1801. doi: 10.3389/fimmu.2017.01801. eCollection 2017. PubMed PMID: 29379495; PubMed Central PMCID: PMC5775236.

24. Moreno-Smith M, Lakoma A, Chen Z, Tao L, Scorsone KA, Schild L, Aviles-Padilla K, Nikzad R, Zhang Y, Chakraborty R, Molenaar JJ, Vasudevan SA, Sheehan V, Kim ES, **Paust S**, Shohet JM, Barbieri E. p53 Nongenotoxic Activation and mTORC1 Inhibition Lead to Effective Combination for Neuroblastoma Therapy. *Clin Cancer Res.* 2017 Nov 1;23(21):6629-6639. doi: 10.1158/1078-0432.CCR-17-0668. Epub 2017 Aug 18. PubMed PMID: 28821555; PubMed Central PMCID: PMC5959272.
  25. **Paust S**, Blish CA, Reeves RK. Redefining Memory: Building the Case for Adaptive NK Cells. *J Virol.* 2017 Oct 15;91(20). doi: 10.1128/JVI.00169-17. Print 2017 Oct 15. Review. PubMed PMID: 28794018; PubMed Central PMCID: PMC5625515.
  26. Decker WK, da Silva RF, Sanabria MH, Angelo LS, Guimarães F, Burt BM, Kheradmand F, **Paust S\***. Cancer Immunotherapy: Historical Perspective of a Clinical Revolution and Emerging Preclinical Animal Models. *Front Immunol.* 2017;8:829. doi: 10.3389/fimmu.2017.00829. eCollection 2017. Review. PubMed PMID: 28824608; PubMed Central PMCID: PMC5539135.
- Roles:** WD, RS, LA, FG, BB, FK, and SP wrote the manuscript, MS gathered references for the “PDX models for the study of cancer immunotherapies,” section of the article, and SP generated the figure and table.
27. da Silva RF, Yoshida A, Cardozo DM, Jales RM, **Paust S**, Derchain S, Guimarães F. Natural Killer Cells Response to IL-2 Stimulation Is Distinct between Ascites with the Presence or Absence of Malignant Cells in Ovarian Cancer Patients. *Int J Mol Sci.* 2017 May 17;18(5). doi: 10.3390/ijms18050856. PubMed PMID: 28513532; PubMed Central PMCID: PMC5454809.
  28. Tao W, Hurst BL, Shakya AK, Uddin MJ, Ingrole RS, Hernandez-Sanabria M, Arya RP, Bimler L, **Paust S**, Tarbet EB, Gill HS. Consensus M2e peptide conjugated to gold nanoparticles confers protection against H1N1, H3N2 and H5N1 influenza A viruses. *Antiviral Res.* 2017 May;141:62-72. doi: 10.1016/j.antiviral.2017.01.021. Epub 2017 Feb 2. PubMed PMID: 28161578; PubMed Central PMCID: PMC5572660.
  29. Mace EM, Bigley V, Gunesch JT, Chinn IK, Angelo LS, Care MA, Maisuria S, Keller MD, Togi S, Watkin LB, LaRosa DF, Jhangiani SN, Muzny DM, Stray-Pedersen A, Coban Akdemir Z, Smith JB, Hernández-Sanabria M, Le DT, Hogg GD, Cao TN, Freud AG, Szymanski EP, Savic S, Collin M, Cant AJ, Gibbs RA, Holland SM, Caligiuri MA, Ozato K, **Paust S**, Doody GM, Lupski JR, Orange JS. Biallelic mutations in IRF8 impair human NK cell maturation and function. *J Clin Invest.* 2017 Jan 3;127(1):306-320. doi: 10.1172/JCI86276. Epub 2016 Nov 28. PubMed PMID: 27893462; PubMed Central PMCID: PMC5199714.
  30. Bissig KD, **Paust S**, Barzi M. Liver is liver and blood is blood, and finally the twain have met. *J Hepatol.* 2016 Aug;65(2):245-8. doi: 10.1016/j.jhep.2016.05.018. Epub 2016 May 21. PubMed PMID: 27221221.

31. Konduri V, Li D, Halpert MM, Liang D, Liang Z, Chen Y, Fisher WE, **Paust S**, Levitt JM, Yao QC, Decker WK. Chemo-immunotherapy mediates durable cure of orthotopic *Kras*<sup>G12D</sup>/*p53*<sup>-/-</sup> pancreatic ductal adenocarcinoma. *Oncoimmunology*.2016;5(9):e1213933. doi: 10.1080/2162402X.2016.1213933. eCollection 2016. PubMed PMID: 27757308; PubMed Central PMCID: PMC5048769.
32. Sekine T, Marin D, Cao K, Li L, Mehta P, Shaim H, Sobieski C, Jones R, Oran B, Hosing C, Rondon G, Alsuliman A, **Paust S**, Andersson B, Popat U, Kebriaei P, Muftuoglu M, Basar R, Kondo K, Nieto Y, Shah N, Olson A, Alousi A, Liu E, Sarvaria A, Parmar S, Armstrong-James D, Imahashi N, Molldrem J, Champlin R, Shpall EJ, Rezvani K. Specific combinations of donor and recipient KIR-HLA genotypes predict for large differences in outcome after cord blood transplantation. *Blood* 2016 Jul 14;128(2):297-312. doi: 10.1182/blood-2016-03-706317. Epub 2016 May 31. PubMed PMID: 27247137; PubMed Central PMCID: PMC4946205.
33. Halpert MM, Konduri V, Liang D, Chen Y, Wing JB, **Paust S**, Levitt JM, Decker WK. Dendritic Cell-Secreted Cytotoxic T-lymphocyte-associated Protein-4 Regulates the T-cell Response by Downmodulating Bystander Surface B7. *Stem Cells Dev*.2016 May 15;25(10):774-87. doi: 10.1089/scd.2016.0009. Epub 2016 May 2. PubMed PMID: 26979751; PubMed Central PMCID: PMC4870609.
34. **Paust S**, Bettini M. Daring to learn from humanized mice. *Blood*. 2015 Jun 18;125(25):3829-31. doi: 10.1182/blood-2015-04-639435. PubMed PMID: 26089378.

*Peer-reviewed journal articles during post-doctoral fellowship at Harvard Medical School:*

35. Riol-Blanco L, Ordovas-Montanes J, Perro M, Naval E, Thiriot A, Alvarez D, **Paust S**, Wood JN, von Andrian UH. Nociceptive sensory neurons drive interleukin-23-mediated psoriasiform skin inflammation. *Nature*. 2014 Jun 5;510(7503):157-61. doi: 10.1038/nature13199. Epub 2014 Apr 23. PubMed PMID: 24759321; PubMed Central PMCID: PMC4127885.
36. Majewska-Szczepanik M\*, **Paust S\***, von Andrian UH, Askenase PW, Szczepanik M. Natural killer cell-mediated contact sensitivity develops rapidly and depends on interferon- $\alpha$ , interferon- $\gamma$  and interleukin-12. *Immunology*. 2013 Sep;140(1):98-110. doi: 10.1111/imm.12120. PubMed PMID: 23659714; PubMed Central PMCID: PMC3809710. \*equal contribution first author
37. **Paust S**, von Andrian UH. Natural killer cell memory. *Nat Immunol*. 2011 Jun;12(6):500-8. doi: 10.1038/ni.2032. Review. PubMed PMID: 21739673.
38. **Paust S**, Gill HS, Wang BZ, Flynn MP, Moseman EA, Senman B, Szczepanik M, Telenti A, Askenase PW, Compans RW, von Andrian UH. Critical role for the chemokine receptor CXCR6 in NK cell-mediated antigen-specific memory of haptens and viruses. *Nat Immunol*. 2010 Dec;11(12):1127-35. doi: 10.1038/ni.1953. Epub 2010 Oct 24. PubMed PMID: 20972432; PubMed Central PMCID: PMC2982944.
39. **Paust S**, Senman B, von Andrian UH. Adaptive immune responses mediated by natural killer cells. *Immunol Rev*. 2010 May;235(1):286-96. doi: 10.1111/j.0105-2896.2010.00906.x. Review. PubMed PMID: 20536570; PubMed Central PMCID: PMC2911633.

*Peer-reviewed journal articles during graduate school (Harvard University Ph.D. and Washington University St. Louis (M.S.))*

40. **Paust S**, Cantor H. Regulatory T cells and autoimmune disease. *Immunol Rev.* 2005 Apr;204:195-207. doi: 10.1111/j.0105-2896.2005.00247.x. Review. PubMed PMID: 15790360.
41. McCarty N, **Paust S**, Ikizawa K, Dan I, Li X, Cantor H. Signaling by the kinase MINK is essential in the negative selection of autoreactive thymocytes. *Nat Immunol.* 2005 Jan;6(1):65-72. doi: 10.1038/ni1145. Epub 2004 Dec 19. PubMed PMID: 15608642.
42. **Paust S**, Lu L, McCarty N, Cantor H. Engagement of B7 on effector T cells by regulatory T cells prevents autoimmune disease. *Proc Natl Acad Sci U S A.* 2004 Jul 13;101(28):10398-403. doi: 10.1073/pnas.0403342101. Epub 2004 Jul 2. PubMed PMID: 15235129; PubMed Central PMCID: PMC478583.
43. Plas DR, Williams CB, Kersh GJ, White LS, White JM, **Paust S**, Ulyanova T, Allen PM, Thomas ML. Cutting edge: the tyrosine phosphatase SHP-1 regulates thymocyte positive selection. *J Immunol.* 1999 May 15;162(10):5680-4. PubMed PMID: 10229799.
44. Blasioli J, **Paust S**, Thomas ML. Definition of the sites of interaction between the protein tyrosine phosphatase SHP-1 and CD22. *J Biol Chem.* 1999 Jan 22;274(4):2303-7. doi: 10.1074/jbc.274.4.2303. PubMed PMID: 9890995

## Preprint

Bimler LH, Kim T, Ronzulli SL, Song AY, Johnson SK, Jones CA, Tomkins SM, **Paust S**. M2e-specific monoclonal antibody cocktails against influenza A virus are superior to individual monoclonal antibody treatments, universally effective, and viral escape mutant resistant. *BioRxiv 486847.* [Preprint] May 27, 2023. doi: <https://doi.org/10.1101/2022.04.02.486847>

**Roles:** SP and SMT conceptualized the project. SP, SMT, LB, and TK developed methodologies and designed experiments. LB, SLR, TK, AYS, SKJ, and CAJ performed experiments. SP, SMT, LB, SLR, and TK, AYS, SKJ, and CAJ analyzed data. LB and TK visualized data. SP and SMT acquired funding for the study and administered and supervised the project in their respective laboratories. SP, LB, and TK wrote the manuscript. SP, LB, TK, and SMT edited the manuscript.

## Oral Presentations

### *Invited Lectures and Presentations*

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|------|---|
| 2023 | <i>Supercharging Natural Killer cells to destroy solid tumors.</i> Duke University School of Medicine, Department of Medicine, Division of Innate and Comparative Immunology, Center for Human Systems Immunology Seminar Series. Virtual |
| 2022 | <i>Supercharging the immune system to destroy tumors.</i> Front Row Lecture Series, Scripps Research, La Jolla, CA. virtual.  |
| 2022 | <i>NK cells as a cure for pancreatic cancer.</i> The La Jolla Immunology Conference, La Jolla, USA.   |
| 2022 | <i>NK cells as a cure for pancreatic cancer.</i> The 19th meeting of the Society for Natural Immunity & NK2018, Florida, USA.   |
| 2021 | <i>A Novel Immunocompetent PDX Model for Preclinical Testing of Pancreatic Cancer Therapies.</i> UC Pancreatic Cancer Consortium seminar, virtual due to Covid19  |
| 2021 | <i>NK cell responses to viruses and tumors.</i> Immunology Seminar Series, University of  |



- Michigan, Ann Arbor, MI; virtual due to Covid19
- 2021 *Novel Syngeneic Immune-Cell Solid-Tumor PDX Mice for Superior Preclinical Studies.* PREDiCT: Tumor Models for Immuno-Oncology Summit 2021, virtual due to Covid19.
- 2020 *NK cell memory.* FOCIS – Innate Immunity, virtual due to Covid19
- 2020 *NK cells and CTLs are required to clear solid tumor in a novel model of patient-derived-xenograft.* Innate Killer Summit 2020, virtual due to Covid19
- 2019 *Human NK cells mediate immunological memory to viruses.* 18th Meeting of the Society for Natural Immunity & NK2019, Luxembourg, Luxembourg.
- 2019 *NK cells and CTL are required for successful combination immunotherapy in a xenograft model of human lung cancer.* The Scripps Research Institute Faculty Lecture Series, San Diego, 2019
- 2019 *Human Natural Killer Cells Mediate Adaptive Immunity to Viral Antigens.* The Scripps Research Institute's Immunology Faculty Retreat, San Diego, CA
- 2019 *NK cells and CTL are required for successful combination immunotherapy in a xenograft model of human lung cancer.* The Salk Institute Cancer Symposium 2019 - Tumor Evolution and Heterogeneity, San Diego, 2019
- 2019 *NK cells and CTL are required for successful combination immunotherapy in a xenograft model of human lung cancer.* Immunology of Human Diseases Symposium, Santa Fe, NM
- 2018 *Novel Natural Killer Cell-based Immunotherapies to Treat Viral Infections and Cancer.* The Scripps Research Institute, Department of Immunology Seminar Series, La Jolla, CA
- 2018 *Novel Natural Killer Cell-based Immunotherapies to Treat Viral Infections and Cancer.* Columbia University, Department of Pathology Seminar Series, NY, NY
- 2018 *Human NK cells mediate adaptive immune responses to viral antigens.* The 17th meeting of the Society for Natural Immunity & NK2018, San Antonio, TX
- 2018 *Human Natural Killer Cells Mediate Adaptive Immunity to Viral Antigens.* Immunology Graduate Program Seminar Series, Baylor College of Medicine, Houston, TX
- 2018 *The Human Microbiome and Immune Response to HIV.* The Texas Medical Center Digestive Disease Center Seminar Series, Houston, TX
- 2018 *Human Natural Killer Cells Mediate Adaptive Immunity to Viral Antigens.* Center for Cell and Gene Therapy Seminar Series, Baylor College of Medicine, Houston, TX
- 2017 *Innate Immune Regulation of the Natural Killer Cell Response to Influenza A.* The 2<sup>nd</sup> Biannual Shearer Symposium, Houston, TX
- 2017 *Novel Treatment Concepts for Influenza A Virus Infection via Checkpoint Immunotherapy.* Grand Rounds Infectious Diseases, The University of Texas Health Science Center, Houston, TX
- 2017 *Novel Treatment Concepts for Influenza A Virus Infection via Checkpoint Immunotherapy.* Special Seminar, Department of Biochemistry, Texas Health Science Center, Houston, TX
- 2017 *Novel Treatment Concepts for Influenza A Virus Infection via Checkpoint Immunotherapy.* Grand Rounds, Infectious Diseases, Stanford University School of Medicine, Stanford, CA
- 2017 *Novel Treatment Concepts for Influenza A Virus Infection via Checkpoint Immunotherapy.* A Symposium on Synthetic Immunity, Santa Fe, NM
- 2017 *Molecular Origin of NK memory.* Innate Immune Memory, Cambridge, UK
- 2016 *Mast Cell Mediated Regulation of the Immune Response to Influenza A.* Digestive Disease Center, Baylor College of Medicine, Houston TX.
- 2016 *Humanized Mice as a Translational Research Tool.* Integrative Molecular Biomedical

- Graduate Program Annual Retreat
- 2016 *Mast Cells and Dendritic Cells Regulate Influenza A specific NK Memory in Mice.* Immunology Seminar Series, MD Anderson Cancer Center, Houston, TX.
- 2016 *Mast Cells and Dendritic Cells Regulate Influenza A specific NK Memory in Mice.* Immunology Seminar Series, Graduate Program in Immunology, Baylor College of Medicine, Houston, TX.
- 2015 *NK cell memory to HIV.* 15th Meeting of the Society for Natural Immunity & NK2015, Montebello, Canada.
- 2015 *NK cell memory in conventional cloned and humanized mice.* Immunology Graduate Program Seminar Series, Stanford University School of Medicine, Stanford, CA
- 2015 *NK cell memory in cloned and humanized mice.* 2015 CIS Annual Meeting, Houston, TX.
- 2015 *Mast Cells and Dendritic Cells Regulate Influenza A specific NK Memory in Mice.* Immunology Seminar Series, Texas Children's Hospital, Houston, TX.
- 2015 *NK memory in convectional, cloned, and humanized mice.* CAGT and Dean L. Duncan Cancer Center Seminar Series, Baylor College of Medicine, Houston, TX.
- 2015 *NK memory to HIV.* Digestive Disease Center, Baylor College of Medicine, Houston TX.
- 2015 *NK memory in convectional, cloned, and humanized mice.* Immunology Seminar Series, Texas Children's Hospital, Houston, TX.
- 2014 *NK cell memory to experimental HIV vaccines in cloned and humanized mice.* HIV Vaccines: Adaptive Immunity and Beyond. Banff, Canada.
- 2014 *Vaccine Induced Memory NK Cells Protect from Lethal Influenza Infection.* Innate Immunity to Viral Infections, Keystone symposia, Keystone, CO.
- 2014 *NK memory to influenza A and HIV.* Molecular Virology and Microbiology Seminar Series, Baylor College of Medicine, Houston, TX. Center for Human Immunobiology Seminar Series, Texas Children's Hospital, Houston, TX.
- 2014 *NK memory to infectious diseases.* Department of Tropical Medicine, Houston, TX.
- 2013 *Natural Killer cell mediated adaptive immunity in trans-nuclear mice and humanized mice.* 14th Meeting of the Society for Natural Immunity & NK 2013, Heidelberg, Germany
- 2013 *Adaptive immunity mediated by Natural Killer cells.* MASIR 2013, Dubrovnik, Croatia.
- 2012 *Adaptive immunity mediated by Natural Killer cells.* NK 2012 Frankfurt, Germany.
- 2012 *NK cell mediated adaptive immunity in mice and humanized mice.* AIDS vaccine 2012, Boston, MA.
- 2012 *Natural Killer cells mediate adaptive immune responses to contact sensitizers and antiviral vaccines.* AAI 2012, Boston, MA.
- 2012 *Natural Killer cell mediated adaptive immunity is transferrable by Somatic Cell Nuclear Transfer.* 13<sup>th</sup> Meeting of the Society of Innate Immunity and NK2012, Asilomar, CA.
- 2011 *Adaptive immunity mediated by Natural Killer cells.* NK 2011, Mainz, Germany.
- 2011 *Critical role for CXCR6 in Natural Killer cell mediated adaptive immunity to HIV and Influenza.* Department of Pathology, Harvard Medical School, Boston, MA.
- 2010 *Adaptive immunity mediated by Natural Killer cells.* 12th Meeting of the Society for Natural Immunity & NK2010, Dubrovnik, Croatia.
- 2010 *Critical role for CXCR6 in Natural Killer cell mediated adaptive immunity to viruses.* HIV Vaccines Keystone Conference; Banff, Canada.
- 2010 *Critical Role for CXCR6 in Natural Killer cell mediated adaptive immunity to viruses.* NIH Workshop on HIV Vaccine development, NIH, MD.
- 2010 *Adaptive immunity mediated by Natural Killer cells.* Open Forum Seminar Series, Children's Hospital Boston, MA.

- 2010 *Critical Role for CXCR6 in NK cell mediated adaptive immunity to HIV and Influenza.* Center for the Study of Inflammatory Bowel Disease, MGH, Boston, MA.
- 2010 *Critical role for CXCR6 in Natural Killer cell mediated adaptive immunity to HIV and Influenza.* Invited Speaker, 10th Annual Symposium "Innate Immunity in HIV Pathogenesis and Vaccine Development", Harvard University Center For AIDS Research, Boston, MA.
- 2009 *Adaptive immunity mediated by Natural Killer cells.* Departmental Seminar Series of the Immune Disease Institute, Boston, MA.
- 2009 *Critical role for CXCR6 in Natural Killer cell mediated adaptive immunity to viruses.* 39th International Meeting of the Japanese Society of Immunology, Osaka, Japan.
- 2009 *Adaptive immunity mediated by Natural Killer cells.* Department of Pathology, Harvard Medical School, Boston, MA.
- 2008 *T and B cell independent adaptive immune responses mediated by Natural Killer cells.* NK and NKT Cell Biology, Keystone, CO.
- 2007 *Molecular target of regulatory T cells: Engagement of B7 on effector T cells inhibits expansion and autoimmune disease.* Department of Allergy and Clinical Immunology, Yale University, New Haven, CT.
- 2004 *Molecular target of regulatory T cells: Engagement of B7 on effector T cells inhibits expansion and autoimmune disease.* DFCI-BWH-JDC Immunology Seminar Series, Boston, MA.
- 2003 *Molecular target of regulatory T cells: Engagement of B7 on effector T cells inhibits expansion and autoimmune disease.* Harvard University Immunology Retreat, Loon Mountain, N.H.

## GRANTS

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### Current Grants

- 1R01AI174590-01A1- Paust (PI)** 08/02/2023- 07/31/2027  
 Sponsor: National Institute of Health (NIH/NIAID)  
 Direct Cost Per year: \$556,728  
*Novel mechanisms regulating immunity to respiratory virus infection*
- R01AI154138-01A1 – PI WU; Role: Co-I** 07/01/2021 - 06/30/2026  
 Sponsor: National Institute of Health (NIH/NIAID)  
 Direct cost per year: \$23,264  
*Exploring Siglec-glycan ligand interactions using chemoenzymatic approaches*  
 This project is to use a combination of chemoenzymatic, biochemical, and genetic tools to study Singlec biology and its therapeutic implication.
- R01 AI-161014-01 - Paust (PI)** 03/18/2021- 2/28/2026  
 Sponsor: National Institute of Health (NIH/NIAID)  
 Direct cost per year: \$498,991  
*How antigen exposure shapes the subsequent NK cell response to HIV*  
 This study will identify the NK functional subsets that are most responsive to HIV, and their mechanisms of host protection from HIV disease, providing the rationale to develop novel vaccines that exploit the antiviral effector functions of NK cells to protect humans from HIV infection while avoiding harmful activity.

**1R01CA254268-01A1 - PI White; Role: Co-I** 01/01/2021-12/31/2025

Sponsor: National Institute of Health (NIH/NCI)

Direct cost per year: \$39,207

*Combining Irreversible Electroporation with Immunotherapy for the Systemic Treatment of Pancreatic Cancer.*

The goal of this project is to evaluate Irreversible Electroporation with Immunotherapy for the Systemic Treatment of Pancreatic Cancer, using mouse and humanized mouse models of pancreatic cancer.

**R21 AI170555 - Paust (PI)** 07/01/2022 - 06/30/2024

Sponsor: National Institute of Health (NIH/NIAID)

\$275,000 Total Grant

Direct cost per year: \$125,000

*Control of HIV-induced MDSC expansion and immunosuppression by cytotoxic lymphocytes.*

This study will identify the mechanisms NK and CTLs use to control MDSC expansion upon HIV infection, providing the rationale to develop novel immunotherapy approaches to reduce MDSC mediated immune suppression during HIV cure therapies.

**R01 AI-130065 - Paust (PI) (former)** 01/18/2017-12/31/2022

(Current No Cost Extension)

Sponsor: National Institute of Health (NIH/NIAID)

Direct cost per year: \$498,913

*Mechanisms of Protection of Universal Therapeutic Antibodies to Influenza A*

The goal of this project is to develop a universal prophylactic or therapeutic agent to prevent or treat influenza A infection and associated pathologies.

**Completed Grants****1 R01 AI116282 - Paust (PI)** 02/01/2014 – 01/31/2021

Sponsor: NIH

\$450,839/year

*Harnessing NK Memory to Protect Against HIV Infection*

The goal of this proposal is to examine the potential of a novel oral pollen-grain-based HIV envelope vaccine to elicit HIV-1 specific mucosal immunological memory in Natural Killer cells, which may result in the development of a protective HIV vaccine.

**The Barry S. Smith Memorial Pancreatic Cancer Research Award - Paust (PI)**

02/01/2018 – 01/31/2019

Sponsor: Dan L Duncan Comprehensive Cancer Center at Baylor College of Medicine \$50,000

*Curing Pancreatic Cancer with NK Cell Immunotherapy*

The goal of this proposal is to develop novel immunotherapies to elicit clinically relevant NK cell-mediated antitumor responses to pancreatic adenocarcinoma in vivo.

Role: PI

**The Helis Medical Foundation Baylor College of Medicine Collaboration Award - Paust (PI)**

Sponsor: The Helis Medical Foundation

04/01/2016 - 03/31/2019

*Natural Killer Cell Immunotherapy to Cure Lung Cancer*

\$900,000

The goal of this proposal is to develop novel immunotherapies to elicit clinically relevant Natural Killer cell-mediated antitumor responses.

Role: PI

**1 R01 AI116282-S1 - Paust (PI)**

02/01/2017 – 01/31/2018

Sponsor: NIH

\$42,000

*Harnessing NK Memory to Protect Against HIV Infection*

Research Supplements to Promote Diversity in Health-Related Research (Administrative Supplement)

Role: PI

**AIDS/HIV Research Supplement to SPORE in Lymphoma to P50 CA 126752 - PI Heslop****Role on SPORE Supplement: PI (Paust)**

Sponsor: National Cancer Institute (NCI)

09/01/2017 - 08/31/2018

*Curing Chronic HIV Infection with Adoptive Natural Killer Immunotherapy*

\$600,000

The goal of this project is to determine whether Natural Killer cell-based adoptive immunotherapy can be exploited to eradicate the latent viral reservoir in patients with HIV.

**R56 AI124788 – Paust/Blish (MPIs)**

04/01/2017 - 03/31/2018

Sponsor: National Institute of Health (NIH/NIAID)

\$583,299

*Shaping NK Repertoires and HIV Responsiveness via Antigen Exposure*

The goal of this proposal is to determine how antigen exposure shapes NK cell diversity and NK responses to HIV. This will provide the rationale to develop novel vaccines that exploit the antiviral activity of NK cells to protect humans from HIV infection while avoiding detrimental activity.

**P30 DK056338-14 DDC PILOT - Paust (PI)**

04/01/2017 - 03/31/2018

Sponsor: NIH

\$35,000

*The Human Microbiome and Immune Response to HIV*

The goal of this proposal is to examine the interplay between the human microbiome and changes in its composition and the human immune response to HIV, which may aid in the development of a protective HIV vaccine and effective cure strategy.

**R01AI099483-05 - PI Rico-Hesse; Role: Co-I**

Sponsor: NIH

12/12/2012 - 11/3/2017

Mosquito Saliva in Dengue Virus Pathogenesis

\$18,500 (salary only)

The goal of this project is to evaluate the effects of the mosquito sialome on dengue virus pathogenesis

**ASH Bridge Award - Paust (PI)**

06/15/2015 – 04/31/2016

Sponsor: American Society of Hematology Molecular Origin of NK memory

\$150,000

The purpose of this grant is to elucidate the molecular origin of human NK cell memory to vaccine and pathogen derived antigens using genomic science.

**DLDCC Award - Paust (PI)**

06/15/2015 – 04/31/2016

Sponsor: Dan L Duncan Cancer Center

\$50,000

Adoptive Natural Killer Cell Mediated Lung Cancer Immunotherapy

**P30 AI036211-20 CFAR Pilot Award - Paust (PI)**

05/01/2015 – 04/31/2016

Sponsor: National Institute of Health (NIH/NIAID)

\$35,000

Curing Chronic HIV Infection with Adoptive Natural Killer Cell Immunotherapy

**Alkek Pilot Award - Paust (PI)**

9/01/2014 – 08/31/2015

Sponsor: Albert and Margaret Alkek Foundation, Houston, TX

\$100,000

*Harnessing M2e-Specific Monoclonal Antibodies as Influenza A Therapeutics*

The goal of this proposal is to develop and characterize novel patentable and clinically relevant influenza A matrix protein 2 extracellular domain-specific monoclonal antibody-based therapeutics for the treatment of Influenza A infection.

**Pediatrics Pilot Award Baylor College of Medicine -Paust (PI)** 07/01/2014 – 06/30/2015

Sponsor: Baylor College of Medicine \$50,000

*Evaluation of a novel oral HIV vaccine*

The goal of this project is to evaluate the efficacy of a novel pollen-based oral HIV vaccine.

**30-DK079638 - Paust (PI)** 07/01/2014 - 06/30/2015

Sponsor: Pilot/Feasibility Program of the Diabetes Research Center at Baylor College of Medicine

National Scientific Participation \$30,000

*Harnessing iPSC-derived pancreatic  $\beta$  islets and humanized mice to fight type 1 diabetes*

The goal of this project is the identification of the autoimmune pathways that underlie pancreatic  $\beta$  cell destruction in humans, using induced pluripotent stem cells and humanized mouse models.

**PATENTS**

US Patent Application No: 2013/0101,597

Title: MODULATION OF NK CELL ANTIGEN SPECIFIC EFFECTOR ACTIVITY BY  
MODULATION OF CXCR6 (CD186)

Provisional Filing Date: 2011

Inventor(s): Silke Paust

**OTHER PROFESSIONAL ACCOMPLISHMENTS**

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**Invited Peer Reviewer**

2018 Science Immunology  
2018 Nature Reviews Immunology  
2018 Nature Immunology  
2015 Frontiers Innate Immunity  
2015 PLOS Medicine  
2015 PLOS Pathogen  
2015 PLOS One  
2015 Journal of Immunology  
2015 Science Translational Medicine  
2015 Blood  
2014 Journal of Allergy and Clinical Immunology  
2013 Vaccine  
2011 Immunotherapy  
2011 Cancer Immunology & Immunotherapy

**Foundation Grant Peer Reviewer**

2018 – Sir Henry Dale Foundation Grants, UK  
2017 - Medical Research Council, UK  
2016 - US-Israel Binational Science Foundation (BSF)  
2015 - Digestive Disease Center, Baylor College of Medicine

**NIH Study Section Reviewer**

- 2021- Reviewer, IHD  
 2021 Ad hoc reviewer, NIH, CMIB  
 2020 Ad hoc reviewer, NIH, ZAI1-KJK-X-J3 Review Meeting to discuss Emergency Awards (R01/R21) for COVID-19/SARS-CoV-2 applications  
 2020 Ad hoc reviewer, NIH, IHD  
 2019 Ad hoc reviewer, NIH, HIVD  
 2019 Ad hoc reviewer, NIH, IHD  
 2018 Ad hoc reviewer, Special Emphasis Panel (ZAI1-MFH-M-J1) to review U01 applications received in response to: Impact of Initial Influenza Exposure on Immunity in Infants  
 2018 Ad hoc reviewer, HIV/AIDS Vaccine (VACC) study section 2018-05 council round  
 2016 Ad hoc reviewer, Special Emphasis Panel to review applications received in response to: Zika and Immunoplasticity  
 2015 Ad hoc reviewer, RFADE15-003 Approaches to Eliminate HIV & Opportunistic Pathogens from Oral Reservoirs  
 2014 Ad hoc reviewer, PAR14-206 HIV Vaccine Research and Design (HIVRAD) Program

**Invited Editorial Responsibilities****Associate Editor**

Frontiers in Cancer Immunity and Immunotherapy

**Review Editor**

Frontiers in Molecular Innate Immunity

Frontiers in NK and Innate Lymphoid Cell Biology

**Guest Editor**

The Journal of Leukocyte Biology

Frontiers in Immunology

**Organization of National or International Meetings**

- 2020-2021 Member of the local organizing committee, The La Jolla Immunology Conference 2020 – postponed due to Covid19  
 2018 - 2019 Member of the scientific organizing committee, Immunology and Therapy of Human Diseases, July 28-31, 2019 in Santa Fe, NM  
 2017 - 2018 Organizer, NK2018 - The 17th meeting of the Society for Natural Immunity; May 28-June 1, 2018. San Antonio, TX  
 2016 - 2017 Member of the scientific organizing committee, A Symposium on Synthetic Immunity, July 10-14, 2017 Santa Fe, NM  
 2012 Member of the local organizing committee, AIDS vaccine 2012, Boston, MA

**TEACHING INFORMATION**

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**Educational Leadership Roles**

- 2017 Member, Graduate School of Biomedical Sciences Strategic Planning Curriculum Sub-Committee

**Didactic Coursework**

*Courses Taught at The Scripps Research Institute, La Jolla, CA:*

Month/Year	Course Title	
05/2022	Virology – Innate Immunity	1 hour

01/2020	Natural Killer Cell and Innate Lymphoid Cell Biology	1 hour
10/2021	Human versus Mouse Immunology	1 hour
05/2021	Virology – Innate Immunity	1 hour
05/2021	Cancer Biology – Immunotherapy	1 hours
10/2020	Human versus Mouse Immunology	1 hour
01/2020	Natural Killer Cell and Innate Lymphoid Cell Biology	1 hour
10/2019	Human versus Mouse Immunology	1 hour

*Courses Taught at MD Anderson Cancer Center, Houston, TX:*

<b>Month/Year</b>	<b>Course Title</b>	
02/2018	Immunology I NKs and ILCs	2 hours
02/2017	Immunology I NKs and ILCs	2 hours

*Courses Taught at Baylor College of Medicine, Houston, TX:*

<b>Month/Year</b>	<b>Course Title</b>	
07/2018	Clinical Aspects of Immunology	3 hours
06/2017	Clinical Aspects of Immunology	3 hours
06/2017	TBMM Animal Models of Human Disease	2 hours
04/2017	Innate Immunity	2 hours
01/2017	BCM NIH Ethics course	3 hours
06/2016	TBMM Animal Models of Human Disease	1 hour
06/2016	Clinical Aspects of Immunology	3 hours
04/2016	BCM NIH Ethics course	3 hours
02/2016	Immunology II	3 hours
10/2015	BCM NIH Ethics course	1 hour
06/2015	TBMM Animal Models of Human Disease	1 hour
06/2015	Clinical Aspects of Immunology	3 hours
04/2015	BCM NIH Ethics course	3 hours
02/2015	Immunology II	3 hour
06/2014	TBMM Animal Models of Human Disease	1 hour
06/2014	Clinical Aspects of Immunology	3 hours
10/2013	BCM NIH Ethics course	1 hour

### **Curriculum Development Work**

*Course(s)/Curricula to Which Contributions Have Been Made:*

1. Immunology II, Baylor College of Medicine, Houston, TX
2. Clinical Aspects of Immunology, Baylor College of Medicine, Houston, TX
3. Animal Models of Human Disease, Baylor College of Medicine, Houston, TX
4. Innate Immunity, Baylor College of Medicine, Houston, TX

### **Non-didactic Teaching**

*Clinical Fellow Training*

2020 -	Dr. Tridu Huynh, Internal Medicine/Physician-Scientist Track, Scripps Health and The Translational Institute at The Scripps Research Institute, La Jolla, CA
2017	Dr. Craig Belon, currently Clinical Assistant Professor in Anesthesiology, Baylor College of Medicine, Houston, TX



*Research Fellow Training*

- 2023 - Dr. Naushad Khan, Department of Immunology and Microbiology, The Scripps Research Institute, La Jolla, CA
- 2019 - Dr. Teha Kim, Department of Immunology and Microbiology, The Scripps Research Institute, La Jolla, CA
- 2019 - 2022 Dr. Cristina Zalfa, Department of Immunology and Microbiology, The Scripps Research Institute, La Jolla, CA
- 2017 - 2020 Dr. Ashleigh Murphy Schafer, Center for Human Immunobiology, Baylor College of Medicine, Houston, TX and Department of Immunology and Microbiology, The Scripps Research Institute, La Jolla, CA
- 2017 - 2018 Dr. Vipul Singh, Center for Human Immunobiology, Baylor College of Medicine, Houston, TX
- 2014 - 2015 Dr. Ravi Aria, Center for Human Immunobiology, Baylor College of Medicine, Houston, TX
- 2013 - 2017 Dr. Mayra Shanley, Center for Human Immunobiology, Baylor College of Medicine, Houston, TX

*Rotation Student Training*

- 2023 Ms. *Nadine Berenst*, The Skaggs Graduate School of Chemical and Biological Sciences at Scripps Research, La Jolla, CA
- 2022 Ms. *Ananya Dutta Mou*, The Skaggs Graduate School of Chemical and Biological Sciences at Scripps Research, La Jolla, CA
- 2022 Ms. *Bailing Zhang*, The Skaggs Graduate School of Chemical and Biological Sciences at Scripps Research, La Jolla, CA
- 2021 Mr. *Varaang Bhandula*, The Skaggs Graduate School of Chemical and Biological Sciences at Scripps Research, La Jolla, CA
- 2020 none; due to Covid19 lockdown
- 2019 Mr. *Abeera Mehmood*, The Skaggs Graduate School of Chemical and Biological Sciences at Scripps Research, La Jolla, CA
- 2019 Ms. *Jessica Woolf*, The Skaggs Graduate School of Chemical and Biological Sciences at Scripps Research, La Jolla, CA
- 2019 Mr. *Kefei Gao*, The Skaggs Graduate School of Chemical and Biological Sciences at Scripps Research, La Jolla, CA
- 2019 Ms. *Kayla Frank*, The Skaggs Graduate School of Chemical and Biological Sciences at Scripps Research, La Jolla, CA
- 2018 Mr. *Bradley Pingel*, Graduate Immunology Program rotation, Baylor College of Medicine, Houston, TX
- 2018 Ms. *Dominique Armstrong*, Translational Biology and Molecular Medicine (TBMM) Graduate Program rotation, Baylor College of Medicine, Houston, TX
- 2017 Ms. *Bailee Kain*, Translational Biology and Molecular Medicine (TBMM) Graduate Program rotation, Baylor College of Medicine, Houston, TX
- 2015 Ms. *Cinnamon Hardee*, Translational Biology and Molecular Medicine (TBMM) Graduate Program rotation, Baylor College of Medicine, Houston, TX
- 2015 Mr. *Patric Chen*, Molecular Virology and Microbiology Graduate Program rotation, Baylor College of Medicine, Houston, TX
- 2014 Ms. *Anubama Rajan*, Molecular Virology and Microbiology Graduate Program rotation, Baylor College of Medicine, Houston, TX

2014 Mr. *Jansen Smith*, Molecular Virology and Microbiology Graduate Program rotation, Baylor College of Medicine, Houston, TX

*Graduate Student Training*

2016 - 2017 Mr. *Rodrigo da Silva*, Exchange Student, Brazil

2015 - 2018 Mr. *Duy Tri Le*, Graduate Immunology Program rotation, Baylor College of Medicine, Houston, TX (Mr. Le did not move with the Paust lab to TSRI in 2018)

2015-2016 Ms. *Emily Haines*, Graduate Program in Pharmacology rotation, Baylor College of Medicine, Houston, TX

2016 Mr. *Siusen Fong*, NIH National Institute of General Medical Sciences PREP post-bac program Graduate student, Baylor College of Medicine, Houston TX

2014 - 2015 *Blake Heath*, NIH National Institute of General Medical Sciences PREP post-bac program. Graduate student in immunology at the University of Michigan, Ann Arbor, Michigan.

*Thesis mentor – The Scripps Research Institute, La Jolla, CA*

2022 - Ms. *Bailing Zhang*, The Skaggs Graduate School of Chemical and Biological Sciences at Scripps Research, La Jolla, CA

2020 - Mr. *Abeera Mehmood*, The Skaggs Graduate School of Chemical and Biological Sciences at Scripps Research, La Jolla, CA

2019 - Mr. *Kefei Gao*, The Skaggs Graduate School of Chemical and Biological Sciences at Scripps Research, La Jolla, CA

2019 - Ms. *Kayla Frank*, The Skaggs Graduate School of Chemical and Biological Sciences at Scripps Research, La Jolla, CA

2018 - 2023 Mr. *Shawn Abeynaike*, The Skaggs Graduate School of Chemical and Biological Sciences at Scripps Research, La Jolla, CA

*Thesis mentor – Baylor College of Medicine*

2014 - 2019 Ms. *Lynn Bimler*, Graduate Immunology Program rotation, Baylor College of Medicine, Houston, TX

2014 - 2018 Ms. *Rana Nikzad*, Translational Biology and Molecular Medicine (TBMM) Graduate Program, Baylor College of Medicine, Houston, TX

2014 - 2019 Mr. *Kevin Aviles-Padilla*, Integrative Molecular and Biomedical Sciences Graduate Program rotation, Baylor College of Medicine, Houston, TX

*Qualifying exam committee – Baylor College of Medicine*

2017 Mr. *Michael Lam*, PI: Dr. Jordan Orange BCM, Translational Biology and Molecular Medicine (TBMM) Graduate Program

2017 Member, Qualifying Exam committee BCM, Graduate Program in Immunology

Mr. *Yu Li*, PI: Dr. George Makedonas

2016 Member, Qualifying Exam committee BCM, Graduate Program in Immunology

Ms. *Cecelia Poli* PI: Dr. Jordan Orange

2016 Member, Qualifying Exam committee BCM, Graduate Program in Immunology

Ms. *Justin Gunesch*, PI: Dr. Emily Mace

2016 Member, Qualifying Exam committee BCM, IMBS Graduate Program

Ms. *Mu Wang*, PI: Dr. Michael Lewis

2015 Member, Qualifying Exam committee BCM, MVM Graduate Program

Ms. *Megan Vogt*, PI: Dr. Rico-Hesse

2014	Member, Qualifying Exam committee Mr. <i>Lee Call</i> , PI: Dr. Dough Burrin	BCM, Translational Biology and Molecular Medicine (TBMM) Graduate Program
2014	Member, Qualifying Exam committee Ms. <i>Kassandra Peterson</i> , PI: Dr. Rico-Hesse	BCM, Graduate Program in Molecular Virology and Microbiology (MVM)
2014	Member, Qualifying Exam committee Ms. <i>Winnie Tung</i> , PI: Dr. David Corry	BCM, Graduate Program in Immunology
2014	Member, Qualifying Exam committee Ms. <i>Papiya Sinha</i> , PI: Dr. Jordan Orange	BCM, Graduate Program in Immunology

*Thesis advisory/qualifying exam committee –The Scripps Research Institute, La Jolla, CA*

2022 -	Member, Ph.D. thesis advisory committee Mr. <i>Joon Ahn</i> . PI: Dr. James Voss	TSRI, Skaggs Graduate Program
2022 -	Member, Ph.D. thesis advisory committee Ms. <i>Olivia Swanson</i> . PI: Dr. Bill Schief	TSRI, Skaggs Graduate Program
2021 -	Member, Ph.D. thesis advisory committee Ms. <i>Jessica Woolf</i> . PI: Dr. Dennis Burton	TSRI, Skaggs Graduate Program
2020 -	Member, Ph.D. thesis advisory committee Ms. <i>Courtney Hegner</i> , PI: Dr. Mark Sundrud	TSRI, Skaggs Graduate Program
2020 - 2022	Chair, Ph.D. thesis advisory committee Mr. <i>Siddhartha Sharma</i> , PI: Dr. Luc Teyton	TSRI, Skaggs Graduate Program
2020 -	Member, Ph.D. thesis advisory committee Ms. <i>Kenna Nagy</i> , PI: Dr. Luc Teyton	TSRI, Skaggs Graduate Program
2019 - 2023	Member, Ph.D. thesis advisory committee Ms. <i>Katharina Duecker</i> , PI: McHeyzer-Williams	TSRI, Skaggs Graduate Program
2019 - 2021	Member, Ph.D. thesis advisory committee Ms. <i>Amanda Robinson</i> , PI: McHeyzer-Williams	TSRI, Skaggs Graduate Program

*Thesis advisory committee – Baylor College of Medicine*

2017 - 2018	Chair, Ph.D. Thesis advisory committee Ms. <i>Cheng-Yen</i> , PI: Dr. Farrah Kheradmand	BCM, Immunology Graduate Program
2017 - 2018	Member, Ph.D. Thesis advisory committee Mr. <i>Daniel E. Morales-Mantilla</i> , PI: Dr. Katherine King	BCM, Immunology Graduate Program
2017 - 2018	Member, Ph.D. Thesis advisory committee Ms. <i>Brittani Blunck</i> , PI: Dr. Brian Gilbert	BCM, MVM Graduate Program
2017 - 2018	Member, Ph.D. Thesis advisory committee Ms. <i>Feiyan Mo</i> PI: Dr. Malcom Brenner	BCM, TBMM Graduate Program
2017 - 2018	Member, Ph.D. Thesis advisory committee Mr. <i>Michael Lam</i> , PI: Dr. Jordan Orange	BCM, TBMM Graduate Program
2017 - 2018	Member, Ph.D. Thesis advisory committee Ms. <i>Brooke Prinzing</i> PI: Dr. Steven Gottschalk	BCM, TBMM Graduate Program
2017 - 2018	Member, Ph.D. Thesis advisory committee Mr. <i>Brandon Ngai</i> PI: Dr. Leonid Metelitsa	BCM, TBMM Graduate Program
2015 - 2017	Member, Ph.D. Thesis advisory committee Ms. <i>Jennifer Voltz</i> , PI: Dr. Dean Lee	UT, Graduate Program in Immunology Graduate School of Biomedical Sciences
2015 - 2018	Member, Ph.D. Thesis advisory committee Ms. <i>Megan Vogt</i> , PI: Dr. Rico-Hesse	BCM, MVM Graduate Program Virology and Microbiology (MVM)
2014 - 2017	Member, Ph.D. Thesis advisory committee Mr. <i>Lee Call</i> PI: Dr. Dough Burrin	BCM, TBMM Graduate Program

2014 - 2017	Member, Ph.D. Thesis advisory committee Ms. <i>Kassandra Peterson</i> , PI: Dr. Loyd	BCM, MVM Graduate Program Virology and Microbiology (MVM)
2014 - 2017	Member, Ph.D. Thesis advisory committee Ms. <i>Jolie Schaffer</i> , PI: Dr. Dean Lee	UT, Graduate Program in Immunology Graduate School of Biomedical Sciences

### Other Pertinent Information

Developing Investigative Scholar's Program (DISP) Undergraduate Student Mentoring at Texas Children's Hospital and Baylor College of Medicine in collaboration with Rice University

2016 - 2018	Ms. <i>Dwight Fan</i> , DISP Program for Rice U undergraduate volunteers, Center for Human Immunobiology, Department of Pediatrics, Baylor College of Medicine, Houston, TX.
2016 - 2017	Mr. <i>Arun Kane</i> DISP Program for Rice U undergraduate volunteers, Center for Human Immunobiology, Department of Pediatrics, Baylor College of Medicine, Houston, TX.
2015 - 2018	Ms. <i>Amber Song</i> , DISP Program for Rice U undergraduate volunteers, Center for Human Immunobiology, Department of Pediatrics, Baylor College of Medicine, Houston, TX.
2015 - 2018	Mr. <i>Anveet Janwadkar</i> DISP Program for Rice U undergraduate volunteers, Center for Human Immunobiology, Department of Pediatrics, Baylor College of Medicine, Houston, TX.
2014 - 2015	<i>Daniel Zhang</i> , DISP Program for Rice University undergraduate volunteers, Center for Human Immunobiology, Department of Pediatrics, Baylor College of Medicine, Houston, TX.
2013 - 2015	Mr. <i>Graham Hogg</i> , DISP Program for Rice University undergraduate volunteers, Center for Human Immunobiology, Department of Pediatrics, Baylor College of Medicine, Houston, TX. Research technician I, Baylor College of Medicine and Texas Children's Hospital, Houston, TX.

### AWARDS AND HONORS

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Year	Name of Honor/Prize and Awarding Organization
2019 - 2020	<b>Member of the scientific organizing committee</b> , Immunology and Therapy of Human Diseases, August 12-16, 2020 in Santa Fe, NM
2018 - 2019	<b>Member of the scientific organizing committee</b> , Immunology and Therapy of Human Diseases, July 28-31, 2019 in Santa Fe, NM
2017 - 2018	<b>Organizer</b> , NK2018 - The 17th meeting of the Society for Natural Immunity; May 28-June 1, 2018; San Antonio, TX
2016 - 2017	<b>Member of the scientific organizing committee</b> , A Symposium on Synthetic Immunity, July 10-14, 2017 Santa Fe, NM
2014	<b>Women &amp; Diversity Paper of the Year Award</b> from the Society of Leukocyte Biology & FASEB, <b>for the most highly cited publication</b> in innate immunity of the past five years
2012-2013	<b>T32 NIH training grant</b> , Transfusion Biology and Cellular Therapies
2012	<b>Local organizing committee member</b> , AIDS vaccine 2012, Boston, MA
2012	<b>Travel award</b> : NK2012 meeting of the Society of Natural Immunity, Asilomar, CA
2010-2011	<b>Postdoctoral Fellowship</b> of the Ragon Institute of Harvard, MIT & MGH, Boston, MA
2010	<b>HMS Travel Fellowship</b> ; Harvard Medical School, Boston, MA
2008	<b>Keystone Symposia Fellowship</b> : NK and NKT cell biology, Keystone, CO
2007-2009	<b>Postdoctoral Fellowship</b> of the Irvington Institute Fellowship Program of the Cancer Research Institute, New York, NY
2004	The <b>Hauser Award</b> for outstanding achievement in scientific research and teaching throughout graduate school training, Harvard University, Boston, MA

## SERVICE CONTRIBUTIONS

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### Other Professional Activities (National/International)

2022 -	Scientific Consultant, The Genomics Institute of the Novartis Research Foundation, San Diego, CA
2021 -	Scientific Advisory Board member, Shoreline Biotechnology, San Diego, CA
2020 -	Scientific Advisory Board, Integrative Neuroscience Initiative on Alcoholism Neuroimmune (INIA-N) Consortium, NIH, NIAAA
2020 -	Scientific Advisory Board member, Qihan Biotechnology, Co., Ltd., Hangzhou, China
2020 -	Scientific Consultant, Qihan Biotechnology, Co., Ltd., Hangzhou, China
2020 - 2022	Scientific Consultant, Poseida Therapeutics Inc., San Diego, CA
2020 - 2022	Scientific Consultant, Kiadis Pharma NV, a Sanofi Company, The Netherlands

### Professional Educational Development

Year	Name of Honor/Prize and Awarding Organization	
2019	Title IX Responsible Employee training	1 hour
2018	Writing, Communicating, and Publishing in Science	9 hours
2018	Management and Leadership in Academia Workshop	9 hours
2017	NIH Research Mentor Training	4 hours
2017	Pathway to Promotions Workshop	1.5 hours
2016	Norton Rose Fulbright Education Award Workshop	1 hour
2016	Pathway to Promotions Workshop	1.5 hours
2015	Successful Grant Writing Workshop	8 hours
2015	Scientific Writing Workshop	8 hours
2015	Center for Aids Research Mentoring Workshop	4 hours
2014	Postbaccalaureate Research Education Program Mentoring Workshop	4.5 hours

### Administrative Assignments and Committees

*Department or Center Administration, Committees, etc.*

2020 - 2023	Chair, Immunology Intradepartmental Seminar Series, The Scripps Research Institute, La Jolla, CA
2014 - 2018	Chair, Center for Human Immunobiology Seminar Series, TCH, Houston, TX

*Institution-wide or School Administration, Committees, etc.*

Year	Activity	Location and Level of Effort
2022 - 2023	Member, Immunology Postdoctoral training grant (T32) Executive Committee, The Scripps Research Institute, La Jolla, CA	
2019 - 2020	Member of the Admissions Committee of the Skaggs Graduate Program in Chemical and Biomedical Sciences, The Scripps Research Institute, La Jolla, CA	
2018 - 2023	Faculty of the Skaggs Graduate Program in Chemical and Biomedical Sciences, The Scripps Research Institute, La Jolla, CA	
2017- 2018	Member, Executive Committee, Translational Biology and Molecular Medicine Graduate Program, BCM	
2017	Member, Graduate School of Biomedical Sciences Strategic Planning - Curriculum Sub-Committee	
2017 - 2018	Member, Executive Committee, TBMM Graduate Program, BCM	

2017	Member, Admissions Committee Translational Biology and Molecular Medicine (TBMM) Graduate Program, BCM	
2016	Prospective Graduate Student Interviews	BCM, Graduate Program in Immunology
2015	Prospective Graduate Student Interviews	BCM, Graduate Program in Immunology
2014	Prospective Graduate Student Interviews	BCM, Graduate Program in Immunology

**National, Regional or Local Participation in Professional or Voluntary Organizations**

2018 –	Member, Center for Aids Research, San Diego, CA
2014 – 2018	Member, Center for Aids Research, Houston, TX
2014 –	Member, American Association of Immunology
2013 –	Member, The Society for Natural Immunity