

CURRICULUM VITAE

The Johns Hopkins University School of Medicine

Andrew H. Karaba

9/1/2023

DEMOGRAPHIC AND PERSONAL INFORMATION

Current Appointments

2021-present Assistant Professor of Medicine in the Division of Infectious Diseases – Johns Hopkins University
2021-present Attending at The Johns Hopkins Hospital
2022-present Associate Director of the Basic/Translational Research Core of the Transplant Research Center at the Johns Hopkins University School of Medicine

Education and Training

2003-2007 B.A. with honors in Integrated Science, Biology, and Chemistry, Northwestern University/Evanston, IL
2007-2013 Ph.D. in Virology (Thesis advisor: Richard Longnecker, Ph.D.), Northwestern University/Chicago, IL
2007-2015 M.D. Feinberg School of Medicine, Northwestern University/Chicago, IL, Suma cum laude
2015-2017 Osler Medical Training Program, Johns Hopkins Hospital/Baltimore, MD
2017-2020 Infectious Diseases Fellowship, Johns Hopkins University/Baltimore, MD

Professional Experience *(in chronological order, earliest first)*

2021-present Assistant Professor of Medicine, Johns Hopkins University/Baltimore, MD
2022-present Associate Director of Basic/Translational Research, Transplant Research Center, Johns Hopkins University School of Medicine/Baltimore, MD

PUBLICATIONS:

*Corresponding and/or senior author

‡ co-first author

Original Research [OR]

1. Tuma J, Tonzani S, Schatz GC, **Karaba AH**, Lewis FD. Structure and Electronic Spectra of DNA Mini-hairpins with G n:C nStems. *J Phys Chem B*. 2007;111(45):13101-13106. doi:[10.1021/jp072303m](https://doi.org/10.1021/jp072303m)
2. Mccullagh M, Zhang L, **Karaba AH**, Zhu H, Schatz GC, Lewis FD. Effect of Loop Distortion on the Stability and Structural Dynamics of DNA Hairpin and Dumbbell Conjugates. *J Phys Chem B*. 2008;112(36):11415-11421. doi:[10.1021/jp802378a](https://doi.org/10.1021/jp802378a)
3. **Karaba AH**, Kopp SJ, Longnecker R. Herpesvirus entry mediator and nectin-1 mediate herpes simplex virus 1 infection of the murine cornea. *Journal of Virology*. 2011;85(19):10041-10047. doi:[10.1128/JVI.05445-11](https://doi.org/10.1128/JVI.05445-11)
4. **Karaba AH**, Cohen LK, Glaubach T, Kopp SJ, Reichel JL, Yoon HH, Zheng XT, Muller WJ. Longitudinal Characterization of Herpes Simplex Virus (HSV) Isolates Acquired From Different Sites in an Immune-Compromised Child: A New HSV Thymidine Kinase Mutation Associated With Resistance. *Journal of the Pediatric Infectious Diseases Society*. Published online May 3, 2012. doi:[10.1093/jpids/pis009](https://doi.org/10.1093/jpids/pis009)
5. **Karaba AH**, Kopp SJ, Longnecker R. Herpesvirus entry mediator is a serotype specific determinant of pathogenesis in ocular herpes. *Proc Natl Acad Sci USA*. Published online November 26, 2012. doi:[10.1073/pnas.1216967109](https://doi.org/10.1073/pnas.1216967109)
6. Kopp SJ, **Karaba AH**, Cohen LK, Banisadr G, Miller RJ, Muller WJ. Pathogenesis of neonatal herpes simplex 2 disease in a mouse model is dependent on entry receptor expression and route of inoculation. *Journal of Virology*. Published online October 24, 2012. doi:[10.1128/JVI.01849-12](https://doi.org/10.1128/JVI.01849-12)
7. Kopp SJ, Ranaivo HR, Wilcox DR, **Karaba AH**, Wainwright MS, Muller WJ. Herpes simplex virus serotype and entry receptor availability alter CNS disease in a mouse model of neonatal HSV. *Pediatr Res*. 2014;76(6):528-534. doi:[10.1038/pr.2014.135](https://doi.org/10.1038/pr.2014.135)

8. Edwards RG, Kopp SJ, **Karaba AH**, Wilcox DR, Longnecker R. Herpesvirus entry mediator on radiation-resistant cell lineages promotes ocular herpes simplex virus 1 pathogenesis in an entry-independent manner. *mBio*. 2015;6(5):e01532-15. doi:[10.1128/mBio.01532-15](https://doi.org/10.1128/mBio.01532-15)
9. **Karaba AH**, Blair PW, Martin K, Saheed MO, Carroll KC, Borowitz MJ. The Effects of a Systemwide Diagnostic Stewardship Change on West Nile Virus Disease Ordering Practices. *Open Forum Infect Dis*. 2019;6(12). doi:[10.1093/ofid/ofz488](https://doi.org/10.1093/ofid/ofz488) [SI/QI]
10. Gladstone DE, Kim BS, Mooney K, **Karaba AH**, D'Alessio FR. Regulatory T Cells for Treating Patients With COVID-19 and Acute Respiratory Distress Syndrome: Two Case Reports. *Annals of Internal Medicine*. Published online July 6, 2020. doi:[10.7326/L20-0681](https://doi.org/10.7326/L20-0681)
11. **Karaba AH**, Figueroa A, Massaccesi G, Botto S, DeFilippis VR, Cox AL. Herpes simplex virus type 1 inflammasome activation in proinflammatory human macrophages is dependent on NLRP3, ASC, and caspase-1. *PLOS ONE*. 2020;15(2):e0229570. doi:[10.1371/journal.pone.0229570](https://doi.org/10.1371/journal.pone.0229570)
12. Ignatius EH, Wang K, **Karaba AH**, Robinson M, Avery RK, Blair P, Chida N, Jain T, Petty BG, Siddiqui Z, Melia MT, Auwaerter PG, Xu Y, Garibaldi BT. Tocilizumab for the Treatment of COVID-19 Among Hospitalized Patients: A Matched Retrospective Cohort Analysis. *Open Forum Infectious Diseases*. 2021;8(1). doi:[10.1093/ofid/ofaa598](https://doi.org/10.1093/ofid/ofaa598)
13. **Karaba AH**, Zhou W, Hsieh LL, Figueroa A, Massaccesi G, Rothman RE, Fenstermacher KZJ, Sauer L, Shaw-Saliba K, Blair PW, Robinson ML, Leung S, Wesson R, Alachkar N, El-Diwany R, Ji H, Cox AL. Differential Cytokine Signatures of SARS-CoV-2 and Influenza Infection Highlight Key Differences in Pathobiology. *Clinical Infectious Diseases*. 2021;(ciab376). doi:[10.1093/cid/ciab376](https://doi.org/10.1093/cid/ciab376)
14. **Karaba AH**, Figueroa A, Werbel WA, Dioverti MV, Steinke SM, Ray SC, Cox AL, Avery RK. Interleukin-18 and tumor necrosis factor- α are elevated in solid organ transplant recipients with possible cytomegalovirus end-organ disease. *Transplant Infectious Disease*. 2021;n/a(n/a). doi:[10.1111/tid.13682](https://doi.org/10.1111/tid.13682)
15. Peart Akindede N, Kouo T, **Karaba AH**, Gordon O, Fenstermacher KZJ, Beaudry J, Rubens JH, Atik CC, Zhou W, Ji H, Tao X, Vaidya D, Mostafa H, Caturegli P, Blair PW, Sauer L, Cox AL, Persaud D. Distinct Cytokine and Chemokine Dysregulation in Hospitalized Children with Acute COVID-19 and Multisystem Inflammatory Syndrome with Similar Levels of Nasopharyngeal SARS-CoV-2 Shedding. *The Journal of Infectious Diseases*. 2021;(jjab285). doi:[10.1093/infdis/jjab285](https://doi.org/10.1093/infdis/jjab285)
16. Ruddy JA, Boyarsky BJ, Bailey JR, **Karaba AH**, Garonzik-Wang JM, Segev DL, Durand CM, Werbel WA. Safety and antibody response to two-dose SARS-CoV-2 messenger RNA vaccination in persons with HIV. *AIDS*. Published online 2021. doi:[10.1097/QAD.0000000000003017](https://doi.org/10.1097/QAD.0000000000003017)
17. Ruddy JA, Boyarsky BJ, Werbel WA, Bailey JR, **Karaba AH**, Garonzik-Wang JM, Segev DL, Durand CM. Safety and antibody response to the first dose of SARS-CoV-2 messenger RNA vaccine in persons with HIV. *AIDS*. 2021;Publish Ahead of Print. doi:[10.1097/QAD.0000000000002945](https://doi.org/10.1097/QAD.0000000000002945)
18. Woldemeskel BA, **Karaba AH**, Garliss CC, Beck EJ, Wang KH, Laeyendecker O, Cox AL, Blankson JN. The BNT162b2 mRNA Vaccine Elicits Robust Humoral and Cellular Immune Responses in People Living with HIV. *Clinical Infectious Diseases*. 2021;(ciab648). doi:[10.1093/cid/ciab648](https://doi.org/10.1093/cid/ciab648)
19. **Karaba AH***, Zhu X, Benner SE, Akindo O, Eby Y, Wang KH, Saraf S, Garonzik-Wang JM, Klein SL, Bailey JR, Cox AL, Blankson JN, Durand CM, Segev DL, Werbel WA, Tobian AAR. Higher Proinflammatory Cytokines Are Associated With Increased Antibody Titer After a Third Dose of SARS-CoV-2 Vaccine in Solid Organ Transplant Recipients. *Transplantation*. 2022;106(4):835-841. doi:[10.1097/TP.0000000000004057](https://doi.org/10.1097/TP.0000000000004057)
20. **Karaba AH**, Zhu X, Liang T, Wang KH, Rittenhouse AG, Akindo O, Eby Y, Ruff JE, Blankson JN, Abedon AT, Alejo JL, Cox AL, Bailey JR, Thompson EA, Klein SL, Warren DS, Garonzik-Wang JM, Boyarsky BJ, Sitaras I, Pekosz A, Segev DL, Tobian AAR, Werbel WA. A third dose of SARS-CoV-2 vaccine increases neutralizing antibodies against variants of concern in solid organ transplant recipients. *American J Transplantation*. Published online January 18, 2022;ajt.16933. doi:[10.1111/ajt.16933](https://doi.org/10.1111/ajt.16933)

21. Mitchell J, Kim J, Alejo JL, Chiang TPY, **Karaba AH**, Blankson JN, Aytenfisu TY, Chang A, Abedon AT, Avery RK, Tobian AA, Massie AB, Levan ML, Warren DS, Garonzik-Wang JM, Segev DL, Werbel WA. Humoral and Cellular Immune Response to a Third Dose of SARS-CoV-2 Vaccine in Kidney Transplant Recipients Taking Belatacept. *Transplantation*. 2022; Publish Ahead of Print. doi:[10.1097/TP.0000000000004100](https://doi.org/10.1097/TP.0000000000004100)
22. **Karaba AH***, Johnston TS, Aytenfisu TY, Akinde O, Eby Y, Ruff JE, Abedon AT, Alejo JL, Blankson JN, Cox AL, Bailey JR, Klein SL, Pekosz A, Segev DL, Tobian AAR, Werbel WA. A Fourth Dose of COVID-19 Vaccine Does Not Induce Neutralization of the Omicron Variant Among Solid Organ Transplant Recipients With Suboptimal Vaccine Response. *Transplantation*. 2022;106(7):1440-1444. doi:[10.1097/TP.0000000000004140](https://doi.org/10.1097/TP.0000000000004140)
23. Woldemeskel BA, Garliss CC, Aytenfisu TY, Johnston TS, Beck EJ, Dykema AG, Frumento N, Wright DA, Yang AH, Damanakis AI, Laeyendecker O, Cox AL, Mostafa HH, **Karaba AH**, Blankson JN. SARS-CoV-2 -specific immune responses in boosted vaccine recipients with breakthrough infections during the Omicron variant surge. *JCI Insight*. Published online April 7, 2022. doi:[10.1172/jci.insight.159474](https://doi.org/10.1172/jci.insight.159474)
24. Woldemeskel BA, Garliss CC, Aytenfisu TY, Johnston TS, Cox AL, **Karaba AH**, Blankson JN. Discordant Antibody and T-Cell Responses to the Severe Acute Respiratory Syndrome Coronavirus 2 Omicron Variant in Coronavirus Disease 2019 Messenger RNA Vaccine Recipients. *Clinical Infectious Diseases*. Published online April 19, 2022:ciac305. doi:[10.1093/cid/ciac305](https://doi.org/10.1093/cid/ciac305)
25. Figueiredo JC, Hirsch FR, Kushi LH, Nembhard WN, Crawford JM, Mantis N, Finster L, Merin NM, Merchant A, Reckamp KL, Melmed GY, Braun J, McGovern D, Parekh S, Corley DA, Zohoori N, Amick BC, Du R, Gregersen PK, Diamond B, Taioli E, Sariol C, Espino A, Weiskopf D, Gifoni A, Brien J, Hanege W, Lipsitch M, Zidar DA, McAlearney AS, Wajnberg A, LaBaer J, Lewis EY, Binder RA, Moormann AM, Forconi C, Forrester S, Batista J, Schieffelin J, Kim D, Biancon G, VanOudenhove J, Halene S, Fan R, Barouch DH, Alter G, Pinninti S, Boppana SB, Pati SK, Latting M, **Karaba AH**, Roback J, Sekaly R, Neish A, Brincks AM, Granger DA, Karger AB, Thyagarajan B, Thomas SN, Klein SL, Cox AL, Lucas T, Furr-Holden D, Key K, Jones N, Wrammerr J, Suthar M, Yu Wong S, Bowman NM, Simon V, Richardson LD, McBride R, Krammer F, Rana M, Kennedy J, Boehme K, Forrest C, Granger SW, Heaney CD, Knight Lapinski M, Wallet S, Baric RS, Schifanella L, Lopez M, Fernández S, Kenah E, Panchal AR, Britt WJ, Sanz I, Dhodapkar M, Ahmed R, Bartelt LA, Markmann AJ, Lin JT, Hagan RS, Wolfgang MC, Skarbinski J. Mission, Organization and Future Direction of the Serological Sciences Network for COVID-19 (SeroNet) Epidemiologic Cohort Studies. *Open Forum Infectious Diseases*. Published online April 27, 2022:ofac171. doi:[10.1093/ofid/ofac171](https://doi.org/10.1093/ofid/ofac171)
26. Chiang TP, Alejo JL, Mitchell J, Kim JD, Abedon AT, **Karaba AH**, Thomas L, Levan ML, Garonzik-Wang JM, Avery RK, Pekosz A, Clarke WA, Warren DS, Tobian AAR, Massie AB, Segev DL, Werbel WA. Heterologous Ad.26.COV2.S versus homologous BNT162b2/mRNA-1273 as a third dose in solid organ transplant recipients seronegative after two-dose mRNA vaccination. *American J Transplantation*. Published online May 3, 2022:ajt.17061. doi:[10.1111/ajt.17061](https://doi.org/10.1111/ajt.17061)
27. Shapiro JR, Sitaras I, Park HS, Aytenfisu TY, Caputo C, Li M, Lee J, Johnston TS, Li H, Wouters C, Hauk P, Jacobsen H, Li Y, Abrams E, Yoon S, Kocot AJ, Yang T, Huang Y, Cramer SM, Betenbaugh MJ, Debes AK, Morgan R, Milstone AM, **Karaba AH**, Pekosz A, Leng SX, Klein SL. Association of frailty, age, and biological sex with SARS-CoV-2 mRNA vaccine-induced immunity in older adults. *Clinical Infectious Diseases*. Published online May 24, 2022:ciac397. doi:[10.1093/cid/ciac397](https://doi.org/10.1093/cid/ciac397)
28. **Karaba AH**, Johnston TS, Aytenfisu TY, Woldemeskel BA, Garliss CC, Cox AL, Blankson JN. Low neutralisation of the omicron BA.2 sublineage in boosted individuals who had breakthrough infections. *The Lancet Microbe*. Published online June 2022:S266652472200180X. doi:[10.1016/S2666-5247\(22\)00180-X](https://doi.org/10.1016/S2666-5247(22)00180-X)
29. Woldemeskel BA, **Karaba AH**, Garliss CC, Beck EJ, Aytenfisu TY, Johnston TS, Laeyendecker O, Cox AL, Blankson JN. Decay of coronavirus disease 2019 mRNA vaccine-induced immunity in people with HIV. *AIDS*. 2022;36(9):1315-1317. doi: [10.1097/QAD.0000000000003263](https://doi.org/10.1097/QAD.0000000000003263)
30. **Karaba AH***, Zhou W, Li S, Aytenfisu TY, Johnston TS, Akinde O, Eby Y, Abedon AT, Alejo JL, Qin CX, Thompson EA, Garonzik-Wang JM, Blankson JN, Cox AL, Bailey JR, Klein SL, Pekosz A, Segev DL, Tobian AAR, Werbel WA. Impact of Seasonal Coronavirus Antibodies on SARS-CoV-2 Vaccine Responses in Solid Organ Transplant Recipients. *Clinical Infectious Diseases*. Published online August 12, 2022:ciac652. doi:[10.1093/cid/ciac652](https://doi.org/10.1093/cid/ciac652)

31. Teles MS, Lushniak S, Po-Yu Chiang T, Bailey JR, Gebo KA, **Karaba AH**, Durand CM, Segev DL, Connolly CM, Werbel WA. Immunogenicity and Reactogenicity Following 2- and 3-Dose SARS-CoV-2 Vaccination in Persons With HIV. *J AIDS Journal of Acquired Immune Deficiency Syndromes*. 2023;92(1):e1-e1. doi:[10.1097/QAI.0000000000003112](https://doi.org/10.1097/QAI.0000000000003112)
32. **Karaba AH**, Kim JD, Chiang TPY, Alejo JL, Sitaras I, Abedon AT, Eby Y, Johnston TS, Li M, Aytenfisu T, Hussey C, Jefferis A, Fortune N, Abedon R, Thomas L, Habtehyimer F, Ruff J, Warren DS, Avery RK, Clarke WA, Pekosz A, Massie AB, Tobian AAR, Segev DL, Werbel WA. Neutralizing activity and 3-month durability of tixagevimab and cilgavimab prophylaxis against Omicron sublineages in transplant recipients. *American Journal of Transplantation*. Published online January 2023:S1600613522247789. doi:[10.1016/j.ajt.2022.11.002](https://doi.org/10.1016/j.ajt.2022.11.002)
33. **Karaba AH**, Johnston TS, Beck E, Laeyendecker O, Cox AL, Klein SL, Sullivan DJ. Endemic Human Coronavirus Antibody Levels Are Unchanged after Convalescent or Control Plasma Transfusion for Early Outpatient COVID-19 Treatment. *mBio*. Published online January 10, 2023:e03287-22. doi:[10.1128/mbio.03287-22](https://doi.org/10.1128/mbio.03287-22)
34. Alejo JL, Kim JD, Chiang TPY, Avery RK, **Karaba AH**, Jefferis A, Warren DS, Massie AB, Tobian AAR, Segev DL, Werbel WA. Patient-reported outcomes after Tixagevimab and Cilgavimab pre-exposure prophylaxis among solid organ transplant recipients: Safety, effectiveness, and perceptions of risk. *Clinical Transplantation*. Published online February 2023. doi:[10.1111/ctr.14913](https://doi.org/10.1111/ctr.14913)
35. Werbel WA, **Karaba AH**, Chiang TPY, Massie AB, Brown DM, Watson N, Chahoud M, Thompson EA, Johnson AC, Avery RK, Cochran WV, Warren D, Liang T, Fribourg M, Huerta C, Samaha H, Klein SL, Bettinotti MP, Clarke WA, Sitaras I, Rouphael N, Cox AL, Bailey JR, Pekosz A, Tobian AAR, Durand CM, Bridges ND, Larsen CP, Heeger PS, Segev DL. Persistent SARS-CoV-2-specific immune defects in kidney transplant recipients following third mRNA vaccine dose. *American Journal of Transplantation*. Published online March 2023. doi:[10.1016/j.ajt.2023.03.014](https://doi.org/10.1016/j.ajt.2023.03.014)
36. Thompson EA, Ngecu W, Stoddart L, Johnston TS, Chang A, Cascino K, Alejo JL, Abedon AT, Samaha H, Rouphael N, Tobian AAR, Segev DL, Werbel WA, **Karaba AH**, Blankson JN, Cox AL. Heterologous versus homologous boosting regimens elicit qualitatively distinct, BA.5-cross reactive T cells in transplant recipients. *JCI Insight*. Published online April 27, 2023. doi:[10.1172/jci.insight](https://doi.org/10.1172/jci.insight)
37. Abedon AT, Chiang TPY, **Karaba AH**, Alejo JL, Chahoud M, Hussey C, Lopes JF, Hussain S, Larsen CP, Durand CM, Heeger PS, Segev DL, Clarke WA, Werbel WA. Letter to the editor: “hook” (prozone) effect in sars-cov-2 anti-spike binding antibody levels following vaccination, infection, or monoclonal antibody in solid organ transplant recipients. *Clinical Transplantation*. 2023;37(8):e15044. doi:[10.1111/ctr.15044](https://doi.org/10.1111/ctr.15044)

Review Articles [RA]

- Cihakova D, Streiff MB, Menez SP, Chen TK, Gilotra NA, Michos ED, Marr KA, **Karaba AH**, Robinson ML, Blair PW, Dioverti MV, Post WS, Cox AL, R Antar AA. High-value laboratory testing for hospitalized COVID-19 patients: a review. *Future Virology*. Published online September 21, 2021. doi:[10.2217/fvl-2020-0316](https://doi.org/10.2217/fvl-2020-0316)
- Kumar A, Stavarakis G, **Karaba AH***. Herpesviruses and Inflammasomes: One Sensor Does Not Fit All. *mBio*. 2022; e01737-21. doi:[10.1128/mbio.01737-21](https://doi.org/10.1128/mbio.01737-21)

Case Reports [CR]

- Czech MM, Dioverti MV, **Karaba AH**, Jain T, Talluru SM, Sunshine JC, Kang J, Parrish N, Kates OS. Disseminated Tuberculosis With an Atypical Cutaneous Manifestation in a Hematopoietic Cell Transplant Patient in the Early Posttransplant Period: Case Report and Review of the Literature. *Open Forum Infectious Diseases*. 2022;9(12):ofac643. doi:[10.1093/ofid/ofac643](https://doi.org/10.1093/ofid/ofac643)

Book Chapters, Monographs [BC]

- Karaba, AH** Clinical Fellowship and Postdoctoral Training. In: Eisenberg, M.J., Cox, A.L., eds. *The Essential MD-PhD Guide*. McGraw Hill, 2021; chapter 25.
- Zhou, T.W., **Karaba, AH** Choosing the Right Residency, Applying, and Interviewing. In: Eisenberg, M.J., Cox, A.L., eds. *The Essential MD-PhD Guide*. McGraw Hill, 2021; chapter 22.

Other Publications:

Editorials [ED]

1. Queen J, Karaba S, Albin J, **Karaba A**†, Howard-Anderson J, Skinner N, Herman JD, Paras ML, Melia MT. The Time is Now: A Call for Renewed Support of Infectious Disease Physician-Scientist Trainees in the COVID-19 Era. *The Journal of Infectious Diseases*. 2021;(jiab162). doi:[10.1093/infdis/jiab162](https://doi.org/10.1093/infdis/jiab162)

Media Releases or Interviews [MR]

1. Parshley L. How long does the coronavirus last inside the body? *National Geographic*. Published online June 3, 2020. <https://www.nationalgeographic.com/science/article/how-long-does-coronavirus-last-inside-the-body-cvd>

2. Rodricks D. Neglecting those most vulnerable to COVID-19 renders us all vulnerable. *Baltimore Sun*. <https://www.baltimoresun.com/opinion/columnists/dan-rodricks/bs-ed-rodricks-1222-vulnerable-americans-covid-variants-20211221-2af26rjkqbacff6a5ppmjok2xa-story.html>. Published December 21, 2021.

3. Lee J. Pandemic Year 3: Infectious Disease Experts Weigh In, *Snopes.com*. <https://www.snopes.com/news/2022/02/02/experts-on-pandemic-year-3/>. Published February 2, 2022.

4. Ho P-C. Smarter: Would You Get Sick From Not Wearing Enough Clothes? *Consumer Reports*. <https://www.consumerreports.org/health/common-cold/smarter-would-you-get-sick-from-not-wearing-enough-clothes-a9227821912/>. Published December 21, 2022.

FUNDING

EXTRAMURAL Funding

2009-2010	Training Program in Viral Replication Fellowship T32 AI060523
2011	Infectious Disease Society of America Medical Scholars Fellowship
2012-2013	Northwestern University Clinical and Translational Sciences Fellowship TL1 5TL1RR025739
2018-2020	Research Training in Microbial Diseases T32 AI007291-28 NIAID Direct Costs: \$359,982 PI: Sara Cosgrove Role: Trainee
2020-present	Johns Hopkins Excellence in Pathogenesis and Immunity Center for SARS-CoV-2 (JH-EPICS) U54 CA260492-01 NCI Direct Costs: \$4,067,207 PI: Sabra Klein and Andrea Cox Role: Co-I, no percent effort as was overfunded
2021-present	Modulation of Herpes Simplex Virus Pathogenesis by Leucine Rich Repeat Kinase 2 K08 AI156021 NIAID Direct Costs: \$184,000 Role: PI, 75% effort
2021-present	COVID Protection After Transplant (CPAT) Multicenter Adaptive Trial U01 AI138897-04S1 NIAID Direct Costs: \$4,536,103 PI: Christine Durand Role: Co-I, 10% effort
2023-present	Kidney Transplantation from Donors with HIV: Impact on Rejection and Long-term Outcomes

U01AI177211-01
NIAID
Direct Costs: \$1,072,382
PI: Christine Durand
Role: Co-I, 2% effort

INTRAMURAL Funding

2019 Physician Scientist Training Program Microgrant
Johns Hopkins University
Direct Costs: \$5,000
Role: PI

2021 JHU SOM Institute for Clinical and Translational Research Clinician Scientist Award
Johns Hopkins University
Direct Costs: \$80,000
Role: PI

CLINICAL ACTIVITIES

Clinical Focus

My clinical practice focuses on preventing, diagnosing, and treating infectious diseases in patients who are immunosuppressed due to chemotherapy, bone marrow transplantation, or solid organ transplantation.

Certification

Medical, other state/government licensure

8/7/2018 Maryland, D86045

Boards, other specialty certification

8/2018 Internal Medicine, 388709

12/2020 Infectious Disease, 388709

Clinical (Service) Responsibilities

2/2021-10/2021 *Outpatient Attending Physician*, Transplant and Oncology Infectious Diseases Clinic (Bartlett)
Half-day per week

2/2021-present *Inpatient Attending Physician*, The Johns Hopkins Transplant and Oncology Infectious Diseases
Consult Service (Tucker), 6 weeks per year

EDUCATIONAL ACTIVITIES

Teaching

Classroom instruction

2009-2013 **Medical Student Tutor**

Feinberg School of Medicine, Chicago, IL

Taught review sessions for first and second year medical students and provided one-on-one tutoring for first and second year students

2009-2011 **Teaching Assistant, Medical Microbiology Laboratory**

Feinberg School of Medicine, Chicago, IL

Helped run and teach the microbiology lab course for 2nd year medical

2022-present **Faculty Discussant**

2022 – 2023 Johns Hopkins University School of Medicine
Genes to Society – Management of COVID-19 Seminar

2023 Johns Hopkins University School of Medicine
Clinical Cases Session

- 2020-present **Lecturer**
 2020 “Approach to Gram Positive Bacteremia” Lecture to the Osler Residency
- 2022-present Johns Hopkins University School of Medicine
 Graduate Immunology (ME:250.719)
- 2023 “Viral Infections in Immunocompromised Hosts” Lecture to the Osler Residency

Clinical instruction

- 2015-2017 **Internal Medicine Resident**
 Taught 3rd and 4th year medical students on their internal medicine clerkships at JHU
- 2017-2018 **Infectious Diseases Fellow**
 Taught 3rd and 4th year medical students from JHU and other institutions rotating at JHU on their Infectious Diseases electives
- 2019-present **Medical Student Preceptor**
 Teach clinical skills to 2nd year medical students at JHU as part of the Transition to the Wards Course
- 2021-present **Lecturer for MedStar Residency**
 Taught topics on infectious diseases in immunosuppressed patients to internal medicine residents in the MedStar residency program in Baltimore, MD
- 2022-present **Faculty Discussant, Firm Grand Rounds**
 Provided infectious diseases perspective at Osler Medicine Firm Grand Rounds

CME instruction

JHMI/Regional

- Lecturer, Johns Hopkins Division of Infectious Diseases Grand Rounds Case Presentations:
- 7/25/2017 VZV Encephalitis in a Dialysis Patient
- 11/6/2017 Disseminated Histoplasmosis in a Returning Traveler
- 12/11/2017 *Listeria* Meningitis in a Multiple Myeloma Patient
- 3/5/2018 Stomach Cancer Presenting as a Liver Abscess
- 3/13/2018 Mondor’s Disease in a Lactating Woman
- 7/10/2018 *Pneumococcal* Meningitis in a Woman on Steroids
- 7/24/2018 Disseminated Kaposi’s Sarcoma as an initial presentation of HIV
- 5/16/2019 A Case of Disseminated Histoplasmosis - 13th Annual Infectious Diseases Update for Primary Care and Hospital Medicine

National

- 6/1/2023 Faculty, Applying Evidence-Based Strategies to Prevent CMV Disease in Solid Organ Transplant Recipients, PRIME Education, Inc., Online Asynchronous

Mentoring

Pre-doctoral Advisees /Mentees

- 9/2018-8/2020 **Alexis Figueroa**, doctoral diversity program scholar, currently a Johns Hopkins MSTP student
 Co-author on OR publications 11, 13, and 14 above.
- 6/2021-8/2021 **Ayush Kumar**, summer research student, currently a veterinary student at Ontario Veterinary College
 Co-author on RA publication 2 above.
- 9/2022-6/2023 **Tihitina Aytenfisu**, doctoral diversity program scholar, currently a Johns Hopkins MSTP student
 Co-author on OR publications 21, 22, 23, 24, 27, 28, 29, 30, and 32 above.

Thesis Committees

2023 Willow Rock, Biochemistry, Cellular and Molecular Biology (BCMB), thesis title, committee member

RESEARCH ACTIVITIES

Research Focus

My research focuses broadly on understanding interactions between viruses and the immune system. This has included basic research into the mechanisms of inflammasome activation (a critical component of the innate immune system) by HSV-1 and SARS-CoV-2, inflammatory cytokines as markers of specific disease phenotypes in CMV and SARS-CoV-2, and the humoral response to SARS-CoV-2 in special populations including solid organ transplant recipients and people living with HIV.

Research Program Building / Leadership

- 2005-2007 **Undergraduate Research**
Northwestern University, Department of Chemistry
Advisor: Fred Lewis, PhD
Structural and Thermodynamic Properties of DNA
- 2009-2013 **Ph.D. Student**
Northwestern University, Department of Microbiology-Immunology
Advisor: Richard Longnecker, PhD
Pathogenesis of HSV-1 Ocular Infections
- 2018-2020 **Infectious Diseases Fellow**
Johns Hopkins University
Advisor: Andrea Cox, MD, PhD
Inflammasome Regulation in Viral Infections
- 2021-present **Assistant Professor**
Johns Hopkins University
Mentor: Andrea Cox, MD, PhD
Innate Immune Activation in Viral Infections
- 2022-present **Associate Director for Basic/Translational Research**
Transplant Research Center
Johns Hopkins University
Co-lead the basic and translational research activities of the center

SYSTEM INNOVATION AND QUALITY IMPROVEMENT ACTIVITIES

System Innovation and Quality Improvement efforts within JHMI:

- 2017 WNV testing Diagnostics QI project at JHMI
Helped eliminate CSF PCR assay in favor of CDC recommended MAC-ELISA
- 2020-present Faculty Editor for Chapter on Antibiotics for the Osler Residency Survival Guide

ORGANIZATIONAL ACTIVITIES

Institutional Administrative Appointments

- 2015-2017 Member of the Feedback Committee for the Osler Medical Training Program
- 2018-2019 Co-Founder and Vice-chair of Communications of The Clinical Fellows Council
- 2019-2020 Vice-chair of Finance of The Clinical Fellows Council
- 2020-2021 Co-writer/COVID-19 Inflammatory Markers Working Group
- 2020-present Contributor/COVID-19 Treatment Guidance Working Group
- 2022-present Member/Intern Selection Committee, Osler Medical Training Program
- 2022-present Associate Director, Basic/Translational Research, Transplant Research Center
- 2023 Infectious Diseases Pharmacist Interview Committee
- 2023 Letermovir Formulary Faculty Sponsor

Journal peer review activities

2020	<i>Journal of Clinical Investigation</i>
2020	<i>Immunological Research</i>
2021	<i>PLoS Pathogens</i>
2021-present	<i>American Journal of Transplantation</i>
2021-present	<i>Transplantation</i>
2022	<i>eLife</i>
2022	<i>Annals of Medicine</i>
2022-present	<i>Open Forum Infectious Diseases</i>
2022	<i>Antimicrobial Agents and Chemotherapy</i>
2022	<i>Nature Communications</i>
2022	<i>Frontiers in Microbiology</i>
2022	<i>Frontiers in Medicine</i>
2022-present	<i>Clinical Infectious Diseases</i>
2022-present	<i>The Journal of Infectious Diseases</i>
2023	<i>British Journal of Clinical Pharmacology</i>
2023	<i>Science Translational Medicine</i>

Professional Societies

2018-present	Member, Infectious Diseases Society of America (IDSA)
2023	IDWeek Abstract reviewer
2018-present	American Society for Transplantation (AST)
2018-present	Member (AST)
2021-present	Member, Committee on Resistant Pathogens (AST ID-COP)
2021-present	Member, The Transplantation Society (TTS)
2021-present	Member, American Society for Microbiology (ASM)
2022-present	Member, International Immunocompromised Host Society

Conference Organizer

JHMI/Regional None

National None

International

4/23 Transplant Infectious Disease Society Meeting, Australia

Session Chair

JHMI/Regional None

National

10/22 Session co-chair, Infectious Diseases Society of America, ID Week, Washington D.C.

International

None

Consultantships

2021	Roche Diagnostics, consultant on feasibility and utility of SARS-CoV-2 diagnostics in special populations
2023	Hologic Inc., consultant on viral assays

RECOGNITION

Awards, Honors

2007	Phi Beta Kappa
2014	Alpha Omega Alpha
2014	Phi Rho Sigma Dennis Award for outstanding achievement in required 3rd year clerkships, Northwestern University, Feinberg School of Medicine

- 2015 Graduated Summa Cum Laude and Magna Cum Laude in Scientia Experimentalis from Northwestern University, Feinberg School of Medicine
- 2015 Department of Medicine Chairman's Award, Northwestern University, Feinberg School of Medicine
- 2015 John P. Phair Award for excellence in the infectious disease clerkship, Northwestern University, Feinberg School of Medicine
- 2018 Distinguished Teaching Society Member, Johns Hopkins University School of Medicine
- 2019 IDWeek Trainee Travel Grant
- 2020 Infectious Disease Community of Practice Travel Reimbursement Grant for American Transplant Congress
- 2020 IDWeek Trainee Travel Grant

Invited Talks

JHMI

- 2018 "The Role of Herpesvirus Entry Mediator and Nectin-1 in Ocular Herpes Simplex Virus Infections," Viral Oncology Group Meeting at JHU
- 2019 "Disseminated Histoplasmosis in a Returning Traveler" Case Presentation at Baltimore "Pus Club" Meeting
- 2020 "IL-6 in COVID-19: A Laboratory Perspective" JHU Infectious Diseases Division Grand Rounds
- 2022 "CMV in Solid Organ Transplant Recipients" JHU MSTP Herlong Rounds
- 2022 "Covid: Is the Worst Behind Us or In Front of Us?" Center for Innovative Medicine Seminar
- 2022 "SARS-CoV-2 Vaccines in Solid Organ Transplant Recipients: In Search of the Perfect Boost" Dept. of Molecular & Comparative Pathobiology Seminar
- 2023 "SARS-CoV-2 Vaccines in Solid Organ Transplant Recipients: Chasing a Moving Target" Department of Medicine Grand Rounds
- 2023 "SARS-CoV-2 Vaccine Responses Among Solid Organ Transplant Recipients: Is There a Perfect Boost?" Division of Allergy Immunology Seminar Series

National

- 2012 "Exploring HSV Receptors in the Cornea" Chicago Area Virology Association Annual Meeting, Chicago, IL.
- 2021 "SARS-CoV-2 Vaccine Safety and Immunogenicity in Solid Organ Transplant Recipients" National Institutes of Health Clinical and Translational Serology Task Force Round Table
- 2022 "Inflammasome Activation in Viral Infection: Friend or Foe?" Infectious Diseases Grand Rounds at The University of Arizona

International

- 2022 "SARS-CoV-2 Vaccines in Solid Organ Transplant Recipients: In Search of the Perfect Boost" National Centre for Infectious in Cancer, Melbourne Australia
- 2022 "Vaccine Effectiveness in Transplant Recipients" Kidney Week, American Society of Nephrology, Orlando, FL

OTHER PROFESSIONAL ACCOMPLISHMENTS

Oral/Podium Presentations

- 2011 "HVEM and Nectin-1 Mediate Infection of the Murine Cornea" International Herpesvirus Workshop, Gdansk, Poland.
- 2012 "HSV-1 and HSV-2 Have Different Receptor Requirements for Infection of the Murine Cornea" International Herpesvirus Workshop, Calgary, Canada.

- 2022 “Pre-Vaccine Antibodies Against Seasonal Coronaviruses are Associated with Decreased Antibody Response to Two-Dose SARS- CoV-2 mRNA Vaccination in Solid Organ Transplant Recipients” SeroNet National Investigator’s Meeting, Bethesda, MD
- 2022 “B Cells Fit for Germinal Center Activity Predict Response to a Third Dose of SARS-CoV-2 Vaccine in Solid Organ Transplant Recipients” American Transplant Congress, Boston, MA
- 2023 “Bivalent SARS-CoV-2 mRNA Booster Vaccines in Transplant Recipients Improve Neutralization of Omicron Sublineages” American Transplant Congress, San Diego, CA
- 2023 “Detectable Spike Antigen Following Third mRNA SARS-CoV-2 Vaccination Is Not Associated With Antibody Development In Kidney Transplant Recipients” American Transplant Congress, San Diego, CA

Posters

- 2011 **Karaba, A.H.**; Kopp, S.J.; Longnecker, R. “HVEM and Nectin-1 Mediate Ocular HSV-1 Infection in Mice” American Physician Scientist Association Annual Meeting, Chicago, IL.
- 2011 Kopp, S.J.; Cohen, L.K.; **Karaba, A.H.**; Muller, W.J. “Herpes simplex virus entry receptors affect neurologic disease and dissemination after intranasal infection of newborn mice” Pediatric Academic Societies Annual Meeting, Denver, CO.
- 2011 **Karaba, A.H.**; Kopp, S.J.; Longnecker, R. “HVEM and Nectin-1 Mediate Herpes Simplex Virus type 1 Infection of Murine Cornea” International Herpesvirus Workshop. Gdansk, Poland.
- 2012 **Karaba, A.H.**; Kopp, S.J.; Longnecker, R. “HSV-1 and HSV-2 have different receptor requirements for infection of the murine cornea” American Physician Scientist Association Annual Meeting, Chicago, IL and International Herpesvirus Workshop. Calgary, Canada.
- 2012 Kopp, S.J.; **Karaba, A.H.**; Muller, W.J. “Pathogenesis of neonatal herpes simplex virus-2 disease in a mouse model is dependent on entry receptor expression and route of inoculation” International Herpesvirus Workshop. Calgary, Canada.
- 2013 **Karaba, A.H.**; Kopp, S.J.; Longnecker, R. “Investigating the role of herpesvirus entry mediator (HVEM) in the pathogenesis of ocular herpes simplex virus (HSV) infections” NCTS Predoctoral Programs Meeting, Rochester, MN.
- 2013 Kopp, S.J., **Karaba, A.H.**, Wilcox, D.R., and Muller, W.J. “Herpes simplex virus serotype and entry receptor availability alter CNS disease in a mouse model of neonatal HSV” 38th Annual International Herpesvirus Workshop. Grand Rapids, MI
- 2015 Edwards, R.G., Kopp, S.J., **Karaba, A.H.**, Longnecker, R. “HVEM on radiation-resistant cell types promotes ocular HSV-1 pathogenesis in an entry-independent manner.” American Society for Virology 34th Annual Meeting, Ontario, Canada.
- 2015 Edwards, R.G., Kopp, S.J., **Karaba, A.H.**, Longnecker, R. 2015. “Entry and immunomodulation: exploring the dual roles of the HVEM receptor in ocular herpes simplex virus 1.” American Physician Scientists Association 11th Annual Meeting, Chicago, IL.
- 2016 **Karaba, A.H.**; Manesh, R.S. “A Confusing Pericardial Effusions” Mulholland Mohler Resident Meeting of the Maryland Chapter of the American College of Physicians. Baltimore, MD.
- 2019 **Karaba, A.H.**; Figueroa, A.; Cohen L.K.; He, X.; Ross, C.A.; Smith, W.W.; Cox, A.L. “The G2019S Leucine-rich Repeat Kinase 2 Mutation Enhances the Pathological Response to HSV-1 After Corneal Infection” 8th Annual IDSA/NIAID Infectious Diseases Research Careers Meeting. Bethesda, MD.

- 2019 **Karaba, A.H.**; Figueroa, A.; Cohen L.K.; He, X.; Ross, C.A.; Smith, W.W.; Cox, A.L. “The G2019S Leucine-rich Repeat Kinase 2 Mutation Enhances the Pathological Response to HSV-1 After Corneal Infection” 44th Annual International Herpesvirus Workshop. Knoxville, TN.
- 2019 **Karaba, A.H.**; Blair, P.W.; Martin, K.; Saheed, M.O.; Carroll, K.C.; and Borowitz, M.J. “The Effects of a Systemwide Diagnostic Stewardship Change on West Nile Virus Disease Ordering Practices” IDWeek. Washington, DC.
- 2020 **Karaba, A.H.**; Figueroa, A.; Ray, S.C.; Avery, R.K.; Cox, A.L. “Proinflammatory Cytokines Including IL-18 Correlate with Cytomegalovirus DNAemia in Solid Organ Transplant Recipients” American Transplant Congress. Philadelphia, PA.
- 2020 **Karaba, A.H.**; Figueroa, A.; Ray, S.C.; Avery, R.K.; Cox, A.L. “Elevations in TNF α and IL-18 are Associated with Increased Risk of Probable Cytomegalovirus Tissue Invasive Disease in Solid Organ Transplant Recipients” IDWeek. Philadelphia, PA.
- 2022 **Karaba AH**, Zhu X, Benner SE, Akinde O, Eby Y, Wang KH, Saraf S, Garonzik-Wang JM, Klein SL, Bailey JR, Cox AL, Blankson JN, Durand CM, Segev DL, Werbel WA, Tobian AAR. “Higher Proinflammatory Cytokines are Associated with Increased Antibody Titer After a Third Dose of SARS-CoV-2 Vaccine in Solid Organ Transplant Recipients” American Transplant Congress, Boston, MA
- 2022 **Karaba AH**, Zhou W, Li S, et.al. “Pre-Vaccine Antibodies Against Seasonal Betacoronaviruses are Associated with Decreased Antibody Response to SARS-CoV-2 mRNA Vaccination in Solid Organ Transplant Recipients” American Transplant Congress, Boston, MA
- 2022 **Karaba AH**, Zhu X, Liang T, Wang KH, Rittenhouse AG, Akinde O, Eby Y, Ruff JE, Blankson JN, Abedon AT, Alejo JL, Cox AL, Bailey JR, Thompson EA, Klein SL, Warren DS, Garonzik-Wang JM, Boyarsky BJ, Sitaras I, Pekosz A, Segev DL, Tobian AAR, Werbel WA. “A Third Dose of SARS-CoV-2 Vaccine Increases Neutralizing Antibodies Against Variants of Concern in Solid Organ Transplant Recipients” American Transplant Congress, Boston, MA