

CAMB 708 Syllabus – Spring 2026

Instructors: Katie Bar, MD and Ron Collman, MD

This will be one semester half-credit class, held every other week, that is research paper-based utilizing the current literature in HIV virology, pathogenesis and cure research. The class will have a journal club format with attendance and participation open to the full Penn student & postdoc community (“teach-your-peers”). Each presentation should include background literature summary with key prior work in the field; a data-based presentation and analysis of the paper under review; and a summary with suggestions for future directions. Enrolled students will be responsible for 2 presentations over the duration of the half-year course, are expected to participate in discussion of each paper presented by others, and will manage the coordination of presentations by other participants as well as bi-weekly paper selection in conjunction with the instructors.

Enrolled Student Responsibilities

1. Present a paper approximately once every 6-8 weeks (exact schedule will depend on number of enrolled students).
2. For the classes when another student is presenting the paper, participate via presentation and discussion of at least one figure per paper - and being ready to present/discuss additional figures if needed, if too few other students are able to discuss the figure.
3. Manage the email list and be sure students are notified a week in advance of the paper and presenter (and provide the information to CFAR Program Manager Mandi Bell for distribution on the email list)
4. Maintain the list of possible papers compiled by the instructors, removing those covered, and make available to all participating students.
5. Ensure that papers covered are entered into the online listing of articles presented.
6. Work with the other enrolled students to:
 - a. ensure that every session is covered on the schedule by an enrolled or other participating student (schedule at least 6 weeks in advance)
 - b. manage the list of possible papers that the instructors will provide, or for papers that you or other students identify, ensure the papers selected are appropriate and broadly distributed among topics via discussion with instructors, and not duplicative of previously presented papers
 - c. working with the instructors, identify and invite 1-2 guest faculty members to participate in each class – which requires at least 1 week advance notice for scheduling
 - d. ensure that papers are selected and distributed to the email list at least one week in advance
 - e. one of the enrolled students should meet with any non-enrolled student scheduled to present to review the structure of the presentations (eg, background, introduction, figures, conclusions, critique, etc.)
 - f. Maintain current the online listing of papers that have been presented

Syllabus: Papers are selected as the course progresses. What follows is a listing of previous class papers covered, to serve as examples:

Zhou Z, Guo J, Hetrick B, Tiwari S, Haikerwal A, et al. (2024) Characterization of a CXCR4 antagonist TIQ-15 with dual tropic HIV entry inhibition properties. <i>PLOS Pathogens</i> 20(8): e1012448. https://doi.org/10.1371/journal.ppat.1012448
Patel, M., Panja, S., Zaman, L.A. et al. CCR5-ligand decorated rilpivirine lipid-based nanoparticles for sustained antiretroviral responses. <i>Nat Commun</i> 16, 513 (2025). https://doi.org/10.1038/s41467-024-55544-9
McMyn NF, Varriale J, Fray EJ, et al. The latent reservoir of inducible, infectious HIV-1 does not decrease despite decades of antiretroviral therapy. <i>J Clin Invest.</i> 2023;133(17):e171554. Published 2023 Sep 1. doi:10.1172/JCI171554

Pitchai FNN, Tanner EJ, Khetan N, Vasen G, Levrel C, Kumar AJ, Pandey S, Ordonez T, Barnette P, Spencer D, Jung SY, Glazier J, Thompson C, Harvey-Vera A, Son HI, Son HI, Strathdee SA, Holguin L, Urak R, Burnett J, Burgess W, Busman-Sahay K, Estes JD, Hessel A, Fennessey CM, Keele BF, Haigwood NL, Weinberger LS. Engineered deletions of HIV replicate conditionally to reduce disease in nonhuman primates. Science. 2024 Aug 9;385(6709):eadn5866. doi: 10.1126/science.adn5866. Epub 2024 Aug 9. PMID: 39116226; PMCID: PMC11545966.
Jain J, Pham TNQ, Begum S, Romero-Medina MC, Bellini N, Li Y, Dallaire F, Béland K, Patey N, Guimond JV, Haddad É, Zhai Y, Cohen ÉA. Bivalent SMAC mimetic APG-1387 reduces HIV reservoirs and limits viral rebound in humanized mice. iScience. 2024 Nov 27;27(12):111470. doi: 10.1016/j.isci.2024.111470. PMID: 39758987; PMCID: PMC11699618.
Gurgo, C., Fenizia, C., McKinnon, K. et al. Expression of HIV from a 1-LTR circular DNA in the absence of integration. Retrovirology 22, 2 (2025). https://doi.org/10.1186/s12977-025-00658-1
George AF, Neidleman J, Luo X, Frouard J, Elphick N, Yin K, Young KC, Ma T, Andrew AK, Ezeonwumelu IJ, Pedersen JG, Chaillon A, Porrachia M, Woodworth B, Jakobsen MR, Thomas R, Smith DM, Gianella S, Roan NR. Anatomical, subset, and HIV-dependent expression of viral sensors and restriction factors. Cell Rep. 2025 Jan 28;44(1):115202. doi: 10.1016/j.celrep.2024.115202. Epub 2025 Jan 10. PMID: 39798087; PMCID: PMC11829653.
Itell HL, Guenthoer J, Humes D, Baumgarten NE, Overbaugh J. Host cell glycosylation selects for infection with CCR5- versus CXCR4-tropic HIV-1. Nat Microbiol. 2024 Nov;9(11):2985-2996. doi: 10.1038/s41564-024-01806-7. Epub 2024 Oct 3. PMID: 39363105; PMCID: PMC12335854.
Mitchell JL, Buranapraditkun S, Gantner P, Takata H, Dietze K, N'guessan KF, Pollara J, Nohara J, Muir R, Kroon E, Pinyakorn S, Tulmethakaan N, Manasnayakorn S, Chottanapund S, Thantiworasit P, Prueksakaew P, Ratnaratorn N, Puttamaswin S, Nuntapinit B, Fox L, Haddad EK, Paquin-Proulx D, Phanuphak P, Sacdalan CP, Phanuphak N, Ananworanich J, Hsu D, Vasana S, Ferrari G, Chomont N, Trautmann L, . 2025. Activation of CXCR3+ Tfh cells and B cells in lymph nodes during acute HIV-1 infection correlates with HIV-specific antibody development. J Virol 99:e01532-24. https://doi.org/10.1128/jvi.01532-24
Labaronne E, Décimo D, Bertrand L, Guiguet L, Sohler TJM, Cluet D, Vivet-Boudou V, Chaves Valadão AL, Dahoui C, François P, Hatin I, Lambotte O, Samri A, Autran B, Etienne L, Goujon C, Paillart JC, Namy O, Ramirez BC, Ohlmann T, Moris A, Ricci EP. Non-AUG HIV-1 uORF translation elicits specific T cell immune response and regulates viral transcript expression. Nat Commun. 2025 Feb 18;16(1):1706. doi: 10.1038/s41467-025-56772-3. PMID: 39966383; PMCID: PMC11836288.
Ardeshir A, O'Hagan D, Mehta I, Shandilya S, Hopkins LL, Adamson L, Kuroda MJ, Hahn PA, da Costa LAB, Fuchs SP, Martinez-Navio JM, Gardner MR, Van Rompay KKA, Magnani DM, Lifson JD, Gao G, Farzan M, Desrosiers RC, Das J, Martins MA. Determinants of successful AAV-vectored delivery of HIV-1 bNAbs in early life. Nature. 2025 Jul 30. doi: 10.1038/s41586-025-09330-2. Epub ahead of print. PMID: 40739359.
Gonelli CA, King HAD, Ko S, Fennessey CM, Iwamoto N, Mason RD, Heimann A, Flebbe DR, Todd JP, Foulds KE, Keele BF, Lifson JD, Koup RA, Roederer M. Antibody prophylaxis may mask subclinical SIV infections in macaques. Nature. 2025 Mar;639(8053):205-213. doi: 10.1038/s41586-024-08500-y. Epub 2025 Feb 5. PMID: 39910294; PMCID: PMC11882457.
Bhagchandani SH, Yang L, Lam JH, Maiorino L, Ben-Akiva E, Rodrigues KA, Romanov A, Suh H, Aung A, Wu S, Wadhera A, Chakraborty AK, Irvine DJ. Two-dose priming immunization amplifies humoral immunity by synchronizing vaccine delivery with the germinal center response. Sci Immunol. 2024 Sep 20;9(99):eadl3755. doi: 10.1126/sciimmunol.adl3755. Epub 2024 Sep 20. PMID: 39303017.
Joag V, Bimber BN, Quarnstrom CF, Bollimpelli VS, Schenkel JM, Fraser KA, Bertogliat M, Soerens AG, Stolley JM, O'Flanagan SD, Rosato PC, Gavil NV, Künzli M, Mitchell JS, Legere T, Jean S, Upadhyay AA, Kang CY, Gibbs J, Yewdell JW, Fife BT, Park H, Hansen SG, Bosinger SE, Barber GN, Skinner PJ, Vezys V, Hunter E, Picker LJ, Amara RR, Masopust D. Primate resident memory T cells activate humoral and stromal immunity. Immunity. 2025 Oct 14;58(10):2541-2555.e6. doi: 10.1016/j.immuni.2025.09.009. PMID: 41092897; PMCID: PMC12614499.