

CAMB-601	<b>Advanced Virology</b>	Mondays 2-3 pm, 209 Johnson Pavilion. Course director: Claude Krummenacher krumm@biochem.dental.upenn.edu Faculty: Susan Weiss, Paul Lieberman, Jeff Bergelson	<b>Fall 2007</b>	
Date	Theme	Articles	Experts	Presenters
Session 1 9/10/2007	Introduction	The Cha-Cha-Cha theory of scientific discovery. <b>D.E. Koshland Jr.</b> 2007. Science, 317: 761-762.	<b>Claude Krummenacher</b>	-----
session 2 9/17/07	"Slippery slope" Classic:  Modern:	<b>Brierley, I., M. E. Bournsnel, M. M. Binns, B. Bilimoria, V. C. Blok, T. D. Brown, and S. C. Inglis.</b> 1987. An efficient ribosomal frame-shifting signal in the polymerase-encoding region of the coronavirus IBV. EMBO J 6:3779.  <b>Zust, R., L. Cervantes-Barragan, T. Kuri, G. Blakqori, F. Weber, B. Ludewig, and V. Thiel.</b> 2007. Coronavirus Non-Structural Protein 1 Is a Major Pathogenicity Factor: Implications for the Rational Design of Coronavirus Vaccines. PLoS Pathog 3:e109.	<b>Susan Weiss</b>	
session 3 9/24/07	"Dogma breaker I: Nucleic acids" Classic:  Modern:	<b>Temin, H. M., and S. Mizutani.</b> 1970. RNA-dependent DNA polymerase in virions of Rous sarcoma virus. Nature 226:1211. <b>Baltimore, D.</b> 1970. RNA-dependent DNA polymerase in virions of RNA tumour viruses. Nature 226:1209. <i>Both papers compiled by Weiss, R.</i> 1998. Viral RNA-dependent DNA polymerase RNA-dependent DNA polymerase in virions of Rous sarcoma virus. Rev Med Virol 8:3. <b>Li, Y. J., T. Macnaughton, L. Gao, and M. M. Lai.</b> 2006. RNA-templated replication of hepatitis delta virus: genomic and antigenomic RNAs associate with different nuclear bodies. J Virol 80:6478.	<b>TBA</b>	
session 4 10/8/07	"Transcriptional cap" Classic:  Modern:	<b>Ahola, T., and L. Kaariainen.</b> 1995. Reaction in alphavirus mRNA capping: formation of a covalent complex of nonstructural protein nsP1 with 7-methyl-GMP. Proc Natl Acad Sci U S A 92:507-11.  <b>Parrish, S., W. Resch, and B. Moss.</b> 2007. Vaccinia virus D10 protein has mRNA decapping activity, providing a mechanism for control of host and viral gene expression. Proc Natl Acad Sci USA 104:2139.	<b>Rick Bushman</b>	

<p>session 5 10/15/07</p>	<p><b>"Blossom and vaccination"</b></p> <p><b>Most Classic:</b></p> <p><b>Modern:</b></p>	<p><b>Jenner E.</b> An Inquiry Into the Causes and Effects of the Variolæ Vaccinæ, Or Cow-Pox. 1798, Further Observations on the Variolæ Vaccinæ, or Cow-Pox. 1799, A Continuation of Facts and Observations Relative to the Variolæ Vaccinæ, or Cow-Pox. 1800. <a href="http://www.bartleby.com/38/4/1001.html">http://www.bartleby.com/38/4/1001.html</a></p> <p><b>Shiver, J. W., et al.</b> 2002. Replication-incompetent adenoviral vaccine vector elicits effective anti-immunodeficiency-virus immunity. Nature 415:331-5.</p>	<p><b>David Weiner</b></p>	
<p>session 6 10/22/07</p>	<p><b>"Lytic Rep"</b></p> <p><b>Classic:</b></p> <p><b>Modern:</b></p>	<p><b>Hammerschmidt, W., and B. Sugden.</b> 1988. Identification and characterization of oriLyt, a lytic origin of DNA replication of Epstein-Barr virus. Cell 55:427.</p> <p><b>Colletti, K. S., K. E. Smallenburg, Y. Xu, and G. S. Pari.</b> 2007. Human cytomegalovirus UL84 interacts with an RNA stem-loop sequence found within the RNA/DNA hybrid region of oriLyt. J Virol 81:7077.</p>	<p><b>Paul Lieberman</b></p>	
<p>session 7 10/29/07</p>	<p><b>" The acid effects"</b></p> <p><b>Classic:</b></p> <p><b>Modern:</b></p>	<p><b>White, J., and A. Helenius.</b> 1980. pH-dependent fusion between the Semliki Forest virus membrane and liposomes. Proc Natl Acad Sci U S A 77:3273.</p> <p><b>Chandran, K., N. J. Sullivan, U. Felbor, S. P. Whelan, and J. M. Cunningham.</b> 2005. Endosomal proteolysis of the Ebola virus glycoprotein is necessary for infection. Science 308:1643.</p>	<p><b>Bob Doms</b></p>	
<p>session 8 11/5/07</p>	<p><b>"No simple retrovirus"</b></p> <p><b>Classic:</b></p> <p><b>Modern:</b></p>	<p><b>Marrack, P., E. Kushnir, and J. Kappler.</b> 1991. A maternally inherited superantigen encoded by a mammary tumour virus. Nature 349:524.</p> <p><b>Choi, Y., J. W. Kappler, and P. Marrack.</b> 1991. A superantigen encoded in the open reading frame of the 3' long terminal repeat of mouse mammary tumour virus. Nature 350:203.</p> <p><b>Mertz, J. A., M. S. Simper, M. M. Lozano, S. M. Payne, and J. P. Dudley.</b> 2005. Mouse mammary tumor virus encodes a self-regulatory RNA export protein and is a complex retrovirus. J Virol 79:14737.</p>	<p><b>Susan Ross</b></p>	

<p>session 9 11/12/07</p>	<p>"Putting viruses to a good use" Classic:</p>	<p><b>Zinkernagel, R. M., and P. C. Doherty.</b> 1974. Restriction of in vitro T cell-mediated cytotoxicity in lymphocytic choriomeningitis within a syngeneic or semiallogeneic system. <i>Nature</i> 248:701.</p>	<p><b>Glenn Rall</b></p>	
<p>session 10 11/19/07</p>	<p>"Suppressing tumor suppression" Classic:</p>	<p><b>Sarnow, P., Y. S. Ho, J. Williams, and A. J. Levine.</b> 1982. Adenovirus E1b-58kd tumor antigen and SV40 large tumor antigen are physically associated with the same 54 kd cellular protein in transformed cells. <i>Cell</i> 28:387.</p>	<p><b>Rob Ricciardi</b></p>	
<p>session 11 11/26/07</p>	<p>"Tapping into immune evasion" Classic:</p>	<p><b>Fruh, K., K. Ahn, H. Djaballah, P. Sempe, P. M. van Endert, R. Tampe, P. A. Peterson, and Y. Yang.</b> 1995. A viral inhibitor of peptide transporters for antigen presentation. <i>Nature</i> 375:415.</p> <p><i>Hill, A., P. Jugovic, I. York, G. Russ, J. Bennink, J. Yewdell, H. Ploegh, and D. Johnson.</i> 1995. <i>Herpes simplex virus turns off the TAP to evade host immunity. Nature</i> 375:411.</p>	<p><b>Harvey Friedman</b></p>	
<p>session 12 12/3/07</p>	<p>"Dogma breaker II: proteins" Classic:</p>	<p><b>Meyer, R. K., M. P. McKinley, K. A. Bowman, M. B. Braunfeld, R. A. Barry, and S. B. Prusiner.</b> 1986. Separation and properties of cellular and scrapie prion proteins. <i>Proc Natl Acad Sci U S A</i> 83:2310.</p>	<p><b>Roz Eisenberg</b></p>	
	<p>Modern:</p>	<p><b>TBA</b></p>		
	<p>Modern:</p>	<p><b>Georger, B., J. Grill, P. Opolon, J. Morizet, G. Aubert, M. J. Terrier-Lacombe, B. Bressac De-Paillerets, M. Barrois, J. Feunteun, D. H. Kirn, and G. Vassal.</b> 2002. Oncolytic activity of the E1B-55 kDa-deleted adenovirus ONYX-015 is independent of cellular p53 status in human malignant glioma xenografts. <i>Cancer Res</i> 62:764.</p>		
	<p>Modern:</p>	<p><b>Aisenbrey, C., C. Sizun, J. Koch, M. Herget, R. Abele, B. Bechinger, and R. Tampe.</b> 2006. Structure and dynamics of membrane-associated ICP47, a viral inhibitor of the MHC I antigen-processing machinery. <i>J Biol Chem</i> 281:30365.</p>		
	<p>Modern:</p>	<p><b>Deleault, N. R., B. T. Harris, J. R. Rees, and S. Supattapone.</b> 2007. Formation of native prions from minimal components in vitro. <i>Proc Natl Acad Sci U S A</i> 104:9741-6.</p>		