

---

## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

---

NAME Carl H. June, M.D.	POSITION TITLE Professor		
eRA COMMONS USER NAME CHJUNE			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
United States Naval Academy, Annapolis, MD	B.S.	1971	Biology
Baylor College of Medicine, Houston, TX	M.D.	1979	Medicine

### A. Positions and Honors.

#### Positions and Employment

1978-1979	Research Fellow, World Health Organization Immunology Research and Training Center, Geneva, Switzerland
1979-1980	Internship: Basic Medicine, National Naval Medical Center, Bethesda, Maryland
1980-1982	Teaching Fellow, Department of Medicine, Uniformed Services, University of the Health Sciences, Bethesda, MD
1980-1982	Residency: Internal Medicine, National Naval Medical Center, Bethesda, Maryland
1982-1983	Instructor, Department of Medicine, Uniformed Services University
1982-1983	Chief Resident: Internal Medicine, National Naval Medical Center, Bethesda, Maryland
1983-1985	Fellow in Oncology, University of Washington and Fred Hutchinson Cancer Research Center, Seattle, Washington
1986-1990	Assistant Professor, Department of Medicine, Uniformed Services
1990-1995	Associate Professor, Department of Medicine, Uniformed Services
1995-1999	Professor, Department of Medicine, Uniformed Services University of
1999-2001	Professor of Molecular and Cellular Engineering, University of Pennsylvania School of Medicine
2001-present	Professor of Pathology and Laboratory Medicine, University of Pennsylvania School of Medicine
2004-present	Professor of Medicine, University of Pennsylvania School of Medicine

#### Other Experience and Professional Memberships

1999-present	American Society of Gene Therapy Chair, Genetic Vaccines Committee (2005-2007)
2007-present	Foundation for the Accreditation of Cellular Therapy Member, Board of Directors (2007-present)
1986-present	American Society Hematology Chair, Scientific Committee on Lymphocyte Biology (2002-2005)
2007-present	International Society for Biologic Therapies Elected, Board of Directors, 2008
1995-present	Clinical Immunology Society President, 2009-2010

#### Honors

1978	Michael E. DeBakey Scholar award for the Outstanding Medical Student, Baylor College of Medicine
1992-2006	American Society for Clinical Investigation
1996	Legion of Merit, US Navy
1996	Dexter Conrad Award, Office of Naval Research, Navy's highest award for Scientific Achievement
1997	Frank Brown Berry Prize in Federal Medicine
2001	Burroughs Wellcome Fund Award: visiting professor in the basic medical sciences

2002	Lifetime Achievement Award, Leukemia and Lymphoma Society of America
2002	William Osler Award, University of Pennsylvania School of Medicine
2005	Federal Laboratory Award for Excellence in Technology Transfer
2005-2009	Bristol-Myers Squibb Freedom to Discover Award
2006	American Association of Physicians

## B. Selected peer-reviewed publications (in chronological order).

(Selected from > 250 peer-reviewed publications)

1. Levine BL, Bernstein WB, Aronson NE, Schlienger K., Cotte J, Perfetto S, Humphries MJ, Ratto-Kim S, Bix DL, Steffens C, Landay A., Carroll RG, June CH. (2002). Adoptive transfer of costimulated CD4+ T cells induces expansion of peripheral T cells and decreased CCR5 expression in HIV infection Nature Medicine 8(1): 47-53
2. Rapoport, Aaron P. Stadtmauer, Edward A. Aqui, Nicole. Badros, Ashraf. Cotte, Julio. Chrisley, Lisa. Veloso, Elizabeth. Zheng, Zhaohui. Westphal, Sandra. Mair, Rebecca. Chi, Nina. Ratterree, Bashi. Pochran, Mary Francis. Natt, Sabrina. Hinkle, Joanne. Sickles, Cheryl. Sohal, Ambika. Ruehle, Kathleen. Lynch, Christian. Zhang, Lei. Porter, David L. Luger, Selina. Guo, Chuanfa. Fang, Hong-Bin. Blackwelder, William. Hankey, Kim. Mann, Dean. Edelman, Robert. Frasc, Carl. Levine, Bruce L. Cross, Alan. June, Carl H. (2005). Restoration of immunity in lymphopenic individuals with cancer by vaccination and adoptive T-cell transfer.[see comment]. Nature Medicine 11(11): 1230-7
3. Levine, BL, Humeau, LM, Boyer, J, MacGregor, RR, Rebello, T, Lu, X, Binder, GK, Slepushkin, V, Lemiale, F, Mascola, JR, Bushman, FD, Dropulic, B, June, CH. (2006). Gene transfer in humans using a conditionally replicating lentiviral vector. Proceedings of the National Academy of Sciences of the United States of America 103(46): 17372-7
4. Porter, DL. Levine, BL. Bunin, N, Stadtmauer, EA, Luger, SM, Goldstein, S, Loren, A, Phillips, J, Nasta, S, Perl, A, Schuster, S, Tsai, D, Sohal, A, Veloso, E, Emerson, S, June, CH. (2006). A phase 1 trial of donor lymphocyte infusions expanded and activated ex vivo via CD3/CD28 costimulation. Blood 107(4): 1325-31
5. Zhang, Hua. Snyder, Kristen M. Suhoski, Megan M. Maus, Marcela V. Kapoor, Veena. June, Carl H. Mackall, Crystal L. (2007). 4-1BB is superior to CD28 costimulation for generating CD8+ cytotoxic lymphocytes for adoptive immunotherapy. Journal of Immunology 179(7): 4910-8
6. Serman, Daniel H. Recio, Adri. Carroll, Richard G. Gillespie, Colin T. Haas, Andrew. Vachani, Anil. Kapoor, Veena. Sun, Jing. Hodinka, Richard. Brown, Jennifer L. Corbley, Michael J. Parr, Michael. Ho, Mitchell. Pastan, Ira. Machuzak, Michael. Benedict, William. Zhang, Xin-qiao. Lord, Elaina M. Litzky, Leslie A. Heitjan, Daniel F. June, Carl H. Kaiser, Larry R. Vonderheide, Robert H. Albelda, Steven M. Kanther, Michelle. (2007). A phase I clinical trial of single-dose intrapleural IFN-beta gene transfer for malignant pleural mesothelioma and metastatic pleural effusions: high rate of antitumor immune responses. Clinical Cancer Research 13(15 Pt 1): 4456-66
7. Rossi, John J. June, Carl H. Kohn, Donald B. (2007). Genetic therapies against HIV. [Review] [32 refs] Nature Biotechnology 25(12): 1444-54
8. Lenzi, Renato. Edwards, Robert. June, Carl. Seiden, Michael V. Garcia, Michael E. Rosenblum, Michael. Freedman, Ralph S. (2007). Phase II study of intraperitoneal recombinant interleukin-12 (rhIL-12) in patients with peritoneal carcinomatosis (residual disease < 1 cm) associated with ovarian cancer or primary peritoneal carcinoma. Journal of Translational Medicine 5: 66
9. Hexner, EO, Danet-Desnoyers, GH, Zhang, Y, Frank, DM, Riley, JL, Levine, BL, Porter, DL, June, CH. Emerson, SG. (2007). Umbilical cord blood xenografts in immunodeficient mice reveal that T cells enhance hematopoietic engraftment beyond overcoming immune barriers by stimulating stem cell differentiation. Biology of Blood & Marrow Transplantation 13(10): 1135-44
10. Czerniecki, Brian J. Koski, Gary K. Koldovsky, Ursula. Xu, Shuwen. Cohen, Peter A. Mick, Rosemarie. Nisenbaum, Harvey. Pasha, Terry. Xu, Min. Fox, Kevin R. Weinstein, Susan. Orel, Susan G. Vonderheide, Robert. Coukos, George. DeMichele, Angela. Araujo, Louis. Spitz, Francis R. Rosen, Mark. Levine, Bruce L. June, Carl. Zhang, Paul J. (2007). Targeting HER-2/neu in early breast cancer development using dendritic cells with staged interleukin-12 burst secretion. Cancer Research 67(4): 1842-52
11. Suhoski, MM. Golovina, TN, Aqui, NA, Tai, VC. Varela-Rohena, A, Milone, MC, Carroll, RG, Riley, JL, June, CH. (2007). Engineering artificial antigen-presenting cells to express a diverse array of co-

- stimulatory molecules. Molecular Therapy 15(5): 981-8
12. Plesa, G, Dai, J, Baytop, C, Riley, JL, June, CH, O'Doherty, U. (2007). Addition of deoxynucleosides enhances human immunodeficiency virus type 1 integration and 2LTR formation in resting CD4+ T cells. Journal of Virology 81(24): 13938-42
  13. June, Carl H. (2007). Principles of adoptive T cell cancer therapy. [Review] [125 refs] Journal of Clinical Investigation 117(5): 1204-12
  14. June, Carl H. (2007). Adoptive T cell therapy for cancer in the clinic. [Review] [131 refs] Journal of Clinical Investigation 117(6): 1466-76
  15. Christian, Natalie A. Milone, Michael C. Ranka, Shraddha S. Li, Guizhi. Frail, Paul R. Davis, Kevin P. Bates, Frank S. Therien, Michael J. Ghoroghchian, P Peter. June, Carl H. Hammer, Daniel A. (2007). Tat-functionalized near-infrared emissive polymersomes for dendritic cell labeling. Bioconjugate Chemistry 18(1): 31-40
  16. Riley, James L. June, Carl H. (2007). The road to recovery: translating PD-1 biology into clinical benefit. Trends in Immunology 28(2): 48-50
  17. Wallace A, Kapoor V, Sun J, Mrass P, Weninger W, Heitjan DF, June C, Kaiser LR, Ling LE, Albelda SM. (2008). Transforming growth factor-beta receptor blockade augments the effectiveness of adoptive T-cell therapy of established solid cancer. Clin Cancer Res. 14 (12): 3966-74
  18. Lotze MT, Mapara MY, June CH. (2008). Tumor immunology and immunotherapy. In Clinical Immunology: principles and practice. : 1181-1198
  19. Suhoski MM, Perez EE, Heltzer ML, Laney A, Shaffer LG, Saitta S, Nachman S, Spinner NB, June CH, Orange JS. (2008). Monosomy 1p36 uncovers a role for OX40 in survival of activated CD4+ T cells. Clin Immunol. 128: 181-9
  20. Carroll,R.G., Carpenito,C., Shan,X., net-Desnoyers,G., Liu,R., Jiang,S., Albelda,S.M., Golovina,T., Coukos,G., Riley,J.L., Jonak, Z.L., June, C.H. (2008). Distinct effects of IL-18 on the engraftment and function of human effector CD8 T cells and regulatory T cells PLoS ONE 3(9): e3289-98
  21. Basu, S, Golovina, T, Mikheeva, T, June, CH, Riley, JL. (2008). Cutting edge: Foxp3-mediated induction of pim 2 allows human T regulatory cells to preferentially expand in rapamycin. Journal of Immunology 180(9): 5794-8
  22. Perez EE, Wang J, Miller JC, Jouvenot Y, Kim KA, Liu O, Wang N, Lee G, Bartsevich VV, Lee YL, Guschin DY, Rupniewski I, Waite AJ, Carpenito C, Carroll RG, Orange JS, Urnov FD, Rebar EJ, Ando D, Gregory PD, Riley JL, Holmes MC, June CH. (2008). Establishment of HIV-1 resistance in CD4+ T cells by genome editing using zinc-finger nucleases. Nat Biotechnol. 7: 808-16
  23. Varela-Rohena A, Molloy PE, Dunn SM, Li Y, Suhoski M, Carroll RG, Milicic A, Mahon T, Suttton DH, June CH, Jakobsen BK, Sewell AK, Riley JL 2008. Control of HIV-1 immune escape by CD8 T cells expressing enhanced T-cell receptor. Nature Med. 14(12): 1390-5.
  24. Carpenito C, Milone MC, Hassan,R., Simonet JC, Lakhali M, Suhoski MM, Varela-Rohena A, Haines KM, Heitjan DF, Albelda SM, Carroll RG, Riley JL, Pastan I, and June CH 2009. Control of large established tumor xenografts with genetically re-targeted human T cells containing CD28 and CD137 domains. Proc Natl Acad Sci U S A 106:3360-3365.
  25. Milone MC, Fish,J., Carpenito C, Carroll RG, Binder GK, Teachey,D., Samanta M, Lakhali M, Danet-Desnoyers G, Gloss B, Campana,D., Riley JL, Grupp,S.A., and June CH 2009. Chimeric receptors containing CD137 signal transduction domains mediate enhanced survival of T cells and increased anti-leukemic efficacy in vivo. Mol Ther. [Epub ahead of print] doi:10.1038/mt.2009.83. PMID: 19384291
  26. Rapoport,A.P., Stadtmauer EA, Aquino,N., Vogl,D., Chew,A., Fang H-B, Janofsky S, Yeager,K., Veloso E, Zheng Z, Milliron,T., Westphal S, Cotte J, Huynh H, Cannon A, Yanovich,S., Akpek G, Tan M, Virts K, Riehle K, Harris C, Philip S, Vonderheide RH, Levine BL, and June C.H. 2009. Rapid immune recovery and GVHD-like engraftment syndrome following adoptive transfer of costimulated autologous T cells. Clin Can Res 15(13) 4499-507 PMID: 19509133
  27. Riley JL, June CH, and Blazar BR 2009. Human T Regulatory Cell Therapy: Take a Billion and Call Me in the Morning. Immunity 30(5) 656-65. PMID: 19464988