

CURRICULUM VITAE

Name: Sheila Marie Keating
Position: Director of Immunology, GigaGen, Inc.
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EDUCATION

1991 – 1995	College of the Holy Cross, Worcester, MA	BA Biology
1997 – 1998	Tulane School of Public Health and Tropical Medicine, New Orleans, LA	MSPH Epidemiology and Tropical Medicine
2002 – 2006	Weatherall Institute of Molecular Medicine, Open University, Centre for Vaccinology and Tropical Medicine, Oxford University, Oxford, UK Advisor: Professor Adrian Hill	PhD Immunology
2007 – 2008	Institute of Child Health, University College London, London, UK Advisors: Professor David Goldblatt and Dr. Helen Baxendale	Fellow Immunology

LICENSES, CERTIFICATION: *not applicable*

PRINCIPAL POSITIONS HELD

2000 – 2002	Johns Hopkins University, School of Medicine, Baltimore, MD; Core Immunology Laboratory, HIV Prevention Trials Network (HPTN)	Senior Research Program Coordinator
2002 – 2005	Nuffield Department of Medicine, University of Oxford, Oxford, UK; Malaria Vaccine Program	Lead Immunologist (July 2003 to July 2004)
2008 – 2012	Blood Systems Research Institute, San Francisco, California	Director, Core Immunology Laboratory; Scientist I
2012 – 2016	Blood Systems Research Institute, San Francisco, California	Director, Core Immunology Laboratory; Scientist II
2009 - 2016	University of California, San Francisco, CA	Staff Research Associate
2017 – 2018	Blood Systems Research Institute (BSRI), San Francisco, California	Director, Core Immunology Laboratory, Senior Scientist
2018 – present	Blood Systems Research Institute (BSRI), San Francisco, California	Adjunct Investigator
2017 – present	University of California, San Francisco, CA	Adjunct Associate Professor
2018 – present	GigaGen, Inc.	Director of Immunology

HONORS AND AWARDS

- 2005 Dorothy Price Medal for Immunology, National University Ireland, Maynooth, County Kildare, Ireland
2010 CFAR Women and HIV Junior Scholar Award
2011 CHAVI Young Investigator

KEYWORDS/AREAS OF INTEREST

HIV, malaria, *Trypanosoma cruzi*, Chagas, HCV, HBV, virus, infectious diseases, cellular immunology, humoral immunity, cytokines, memory immune responses, biomarkers, HIV co-morbidity, HIV associated neurocognitive dysfunction (HAND), cross-sectional HIV incidence, HIV Cure, vaccines; cancer immunotherapy

PROFESSIONAL ACTIVITIES

2016 – 2018, Member of the Technical Advisory Group for HCV Elimination, Tbilisi, Georgia National CDC of Georgia and US CDC

CLINICAL: *not applicable*

PROFESSIONAL ORGANIZATIONS

- 2005 – 2010 British Society of Immunology, Individual Member
2005 – present American Society of Tropical Medicine, Individual Member
2008 – present American Association of Blood Banks, Individual Member
2008 – present American Association of Immunology, Individual Member
2013-2015 International Cytokine and Interferon Society, Individual Member

SERVICE TO PROFESSIONAL PUBLICATIONS

Nature Communications (1), PlosOne (3), Journal of Pharmaceutical and Biomedical Analysis (1), AIDS (2), JAIDS (1), BMC Infectious Disease (1)

2016 Editor, Frontiers in Immunology and Public Health

INVITED PRESENTATIONS

INTERNATIONAL:

- 2004 Cultured ELISPOT Measure Memory T Cells following Malaria Vaccination and Correlate with Protection against sporozoite Challenge. British Society of Immunology Meeting, Harrogate, UK.
2006 Detailed cellular analysis of memory responses to pneumococcal conjugate and polysaccharide vaccines. European Congress of Immunology, Paris, France.
2014 Cerebrospinal Fluid and Blood Inflammatory Biomarkers are Differentially Elevated in HIV and Neurological disease. Keystone Banff, Canada.

NATIONAL:

- 2004 Malaria and Memory: Characterizing Long-lasting Cellular Immune Responses, Oxford University Tropical Network Meeting, Kilifi, Kenya.
2009 Pathogenic SIVmac251 infection of rhesus macaques is associated with a striking acute-phase systemic cytokine response paralleling that observed in acute HIV-1 infection, CHAVI Retreat, Durham, NC.
2010 Optimization and Calibration of Less Sensitive and Avidity Modified Protocols for the VITROS Immunodiagnostic Products Anti-HIV1+2 assay for Detection of Early HIV Infections and Incidence Estimation, HIV Diagnostics, Orlando, FL.

2010 Systemic Cytokine Levels Correlate with Disease Outcome in Chronic HIV Infection.
CFAR, Chicago, IL

REGIONAL:

2008-2015 Department of Experimental Medicine, UCSF, San Francisco, CA
Blood Systems Research Institute, San Francisco, CA
2013-2015 REDS II, Scientific Advisory Board Meeting
EQAPOL Scientific Advisory Board Meeting
2009 Women’s Interagency HIV Study Inservice, San Francisco, CA

CME COURSES ATTENDED: *not applicable*

GOVERNMENT AND OTHER PROFESSIONAL SERVICE:

October 2016 Panel member – CDC Task force on HCV elimination, Tbilisi, Georgia

PUBLIC SERVICE

2015 – 2017 Board Member, Parent Teacher Association, Jose Ortega Elementary School, SFUSD
2014 – present Grant Writer, Fundraising for JOES (Art Program, Social Worker, Science and Literacy Consultant Fundraising)
2014 – present Grant Writer and fundraising event coordinator (Read-a-thon)
2010 – 2012 Parent Outreach and Events Committee member at Friends of Saint Francis Preschool

LABORATORY SKILLS

VIVARIUM: None

Tissue Processing: 20 years of experience working with primary cells and tissue processing. Trained in BSL2 tissue culture and infectious agents.

TEACHING AND MENTORING

PREDOCTORAL STUDENTS SUPERVISED OR MENTORED:

Dates	Name	Program or School	Role	Current Position
2010	Samantha Shum	UCB undergraduate	Summer intern	Consultant, Kaiser Permanente
2010	Jeffrey MacArthur	Post-undergraduate	Summer intern	Research Associate, Celgene
2013	Juliet Matgen	USC undergraduate	Summer intern	USC undergraduate
2014	Sophia Evans	UCB undergraduate	Summer intern	U Washington, Medical Student
2015	Patrick Huang	Institute of Blood Transfusion Guangzhou Blood Center, Guangdong province, China	International Fellow	Institute of Blood Transfusion

PEER REVIEWED PUBLICATIONS

1. Patke DS, Langan SJ, Carruth LM, Keating SM, Sabundayo BP, Margolick JB, Quinn TC, Bollinger RC. Association of Gag-specific T lymphocyte responses during the early phase of human immunodeficiency virus type 1 infection and lower virus load set point. *J Infect Dis.* 2002 Oct 15; 186(8):1177-80. PMID: 12355372
2. Keating SM, Bollinger RC, Quinn TC, Jackson JB, Carruth LM. Cross-clade T lymphocyte-mediated immunity to HIV type 1: implications for vaccine design and immunodetection assays. *AIDS Res Hum Retroviruses.* 2002 Sep 20; 18(14):1067-79. PMID: 12396458
3. Moorthy VS, Imoukhuede EB, Keating S, Pinder M, Webster D, Skinner MA, Gilbert SC, Walraven G, Hill AV. Phase 1 evaluation of 3 highly immunogenic prime-boost regimens, including a 12-month reboosting vaccination, for malaria vaccination in Gambian men. *J Infect Dis.* 2004 Jun 15; 189(12):2213-9. PMID: 15181568
4. Moorthy VS, Imoukhuede EB, Milligan P, Bojang K, Keating S, Kaye P, Pinder M, Gilbert SC, Walraven G, Greenwood BM, Hill AS. A randomised, double-blind, controlled vaccine efficacy trial of DNA/MVA ME-TRAP against malaria infection in Gambian adults. *PLoS Med.* 2004 Nov;1(2):e33. PMID: 15526058
5. McShane H, Pathan AA, Sander CR, Keating SM, Gilbert SC, Huygen K, Fletcher HA, Hill AV. Recombinant modified vaccinia virus Ankara expressing antigen 85A boosts BCG-primed and naturally acquired antimycobacterial immunity in humans. *Nat Med.* 2004 Nov; 10(11):1240-4. PMID: 15502839
6. Walther M, Dunachie S, Keating S, Vuola JM, Berthoud T, Schmidt A, Maier C, Andrews L, Andersen RF, Gilbert S, Poulton I, Webster D, Dubovsky F, Tierney E, Sarpotdar P, Correa S, Huntcooke A, Butcher G, Williams J, Sinden RE, Thornton GB, Hill AV. Safety, immunogenicity and efficacy of a pre-erythrocytic malaria candidate vaccine, ICC-1132 formulated in Seppic ISA 720. *Vaccine.* 2005 Jan 4; 23(7):857-64. PMID: 15603885
7. Vuola JM, Keating S, Webster DP, Berthoud T, Dunachie S, Gilbert SC, Hill AV. Differential immunogenicity of various heterologous prime-boost vaccine regimens using DNA and viral vectors in healthy volunteers. *J Immunol.* 2005 Jan 1;174(1):449-55. PMID: 15611270
8. Webster DP, Dunachie S, Vuola JM, Berthoud T, Keating S, Laidlaw SM, McConkey SJ, Poulton I, Andrews L, Andersen RF, Bejon P, Butcher G, Sinden R, Skinner MA, Gilbert SC, Hill AV. Enhanced T cell-mediated protection against malaria in human challenges by using the recombinant poxviruses FP9 and modified vaccinia virus Ankara. *Proc Natl Acad Sci U S A.* 2005 Mar 29;102(13):4836-41. PMID: 15781866
9. Gilbert SC, Moorthy VS, Andrews L, Pathan AA, McConkey SJ, Vuola JM, Keating SM, Berthoud T, Webster D, McShane H, Hill AV. Synergistic DNA-MVA prime-boost vaccination regimes for malaria and tuberculosis. *Vaccine.* 2006 May 22;24(21):4554-61. PMID: 16150517
10. Keating SM, Bejon P, Berthoud T, Vuola JM, Todryk S, Webster DP, Dunachie SJ, Moorthy VS, McConkey SJ, Gilbert SC, Hill AV. Durable human memory T cells quantifiable by cultured enzyme-linked immunospot assays are induced by heterologous prime boost immunization and correlate with protection against malaria. *J Immunol.* 2005 Nov 1; 175(9):5675-80. PMID: 16237057
11. Dunachie SJ, Walther M, Vuola JM, Webster DP, Keating SM, Berthoud T, Andrews L, Bejon P, Poulton I, Butcher G, Watkins K, Sinden RE, Leach A, Moris P, Tornieporth N, Schneider J, Dubovsky F, Tierney E, Williams J, Heppner DG Jr, Gilbert SC, Cohen J, Hill AV. A clinical trial of prime-boost immunisation with the candidate malaria vaccines RTS,S/AS02A and MVA-CS. *Vaccine.* 2006 Apr 5;24(15):2850-9. PMID: 16434127

12. Bejon P, Mwacharo J, Kai OK, Todryk S, Keating S, Lang T, Gilbert SC, Peshu N, Marsh K, Hill AV. Immunogenicity of the candidate malaria vaccines FP9 and modified vaccinia virus Ankara encoding the pre-erythrocytic antigen ME-TRAP in 1-6 year old children in a malaria endemic area. *Vaccine*. 2006 May 29;24(22):4709-15. PMID: 16621181
13. Walther M, Thompson FM, Dunachie S, Keating S, Todryk S, Berthoud T, Andrews L, Andersen RF, Moore A, Gilbert SC, Poulton I, Dubovsky F, Tierney E, Correa S, Huntcooke A, Butcher G, Williams J, Sinden RE, Hill AV. Safety, immunogenicity, and efficacy of prime-boost immunization with recombinant poxvirus FP9 and modified vaccinia virus Ankara encoding the full-length Plasmodium falciparum circumsporozoite protein. *Infect Immun*. 2006 May;74(5):2706-16. PMID: 16622207
14. Imoukhuede EB, Berthoud T, Milligan P, Bojang K, Ismaili J, Keating S, Nwakanma D, Keita S, Njie F, Sowe M, Todryk S, Laidlaw SM, Skinner MA, Lang T, Gilbert S, Greenwood BM, Hill AV. Safety and immunogenicity of the malaria candidate vaccines FP9 CS and MVA CS in adult Gambian men. *Vaccine*. 2006 Oct 30;24(42-43):6526-33. PMID: 16842888
15. Bejon P, Kai OK, Mwacharo J, Keating S, Lang T, Gilbert SC, Peshu N, Marsh K, Hill AV. Alternating vector immunizations encoding pre-erythrocytic malaria antigens enhance memory responses in a malaria endemic area. *Eur J Immunol*. 2006 Aug;36(8):2264-72. PMID: 16856208
16. Bejon P, Keating S, Mwacharo J, Kai OK, Dunachie S, Walther M, Berthoud T, Lang T, Epstein J, Carucci D, Moris P, Cohen J, Gilbert SC, Peshu N, Marsh K, Hill AV. Early gamma interferon and interleukin-2 responses to vaccination predict the late resting memory in malaria-naïve and malaria-exposed individuals. *Infect Immun*. 2006 Nov;74(11):6331-8. PMID: 16966412
17. Dunachie SJ, Walther M, Epstein JE, Keating S, Berthoud T, Andrews L, Andersen RF, Bejon P, Goonetilleke N, Poulton I, Webster DP, Butcher G, Watkins K, Sinden RE, Levine GL, Richie TL, Schneider J, Kaslow D, Gilbert SC, Carucci DJ, Hill AV. A DNA prime-modified vaccinia virus ankara boost vaccine encoding thrombospondin-related adhesion protein but not circumsporozoite protein partially protects healthy malaria-naïve adults against Plasmodium falciparum sporozoite challenge. *Infect Immun*. 2006 Oct;74(10):5933-42. PMID: 16988273
18. Bejon P, Mwacharo J, Kai O, Mwangi T, Milligan P, Todryk S, Keating S, Lang T, Lowe B, Gikonyo C, Molyneux C, Fegan G, Gilbert SC, Peshu N, Marsh K, Hill AV. A phase 2b randomised trial of the candidate malaria vaccines FP9 ME-TRAP and MVA ME-TRAP among children in Kenya. *PLoS Clin Trials*. 2006 Oct 20;1(6):e29. PMID: 17053830
19. Bejon P, Mwacharo J, Kai O, Todryk S, Keating S, Lowe B, Lang T, Mwangi TW, Gilbert SC, Peshu N, Marsh K, Hill AV. The induction and persistence of T cell IFN-gamma responses after vaccination or natural exposure is suppressed by Plasmodium falciparum. *J Immunol*. 2007 Sep 15;179(6):4193-201. PMID: 17785859
20. Todryk SM, Pathan AA, Keating S, Porter DW, Berthoud T, Thompson F, Klenerman P, Hill AV. The relationship between human effector and memory T cells measured by ex vivo and cultured ELISPOT following recent and distal priming. *Immunology*. 2009 Sep;128(1):83-91. PMID: 19689738
21. Baxendale HE, Keating SM, Johnson M, Southern J, Miller E, Goldblatt D. The early kinetics of circulating pneumococcal-specific memory B cells following pneumococcal conjugate and plain polysaccharide vaccines in the elderly. *Vaccine*. 2010 Jul 5;28(30):4763-70. PMID: 20471437
22. Liu J, Keele BF, Li H, Keating S, Norris PJ, Carville A, Mansfield KG, Tomaras GD, Haynes BF, Kolodkin-Gal D, Letvin NL, Hahn BH, Shaw GM, Barouch DH. Low-dose mucosal simian immunodeficiency virus infection restricts early replication kinetics and transmitted virus variants in rhesus monkeys. *J Virol*. 2010 Oct;84(19):10406-12.

23. Baxendale HE, Johnson M, Keating SM, Ashton L, Burbidge P, Woodgate S, Southern J, Miller E, Goldblatt D. Circulating pneumococcal specific plasma and memory B cells in the elderly two years after pneumococcal conjugate versus polysaccharide vaccination. *Vaccine*. 2010 Oct 4;28(42):6915-22. PMID: 20708698
24. Dunachie SJ, Berthoud T, Keating SM, Hill AV, Fletcher HA. MIG and the regulatory cytokines IL-10 and TGF- β 1 correlate with malaria vaccine immunogenicity and efficacy. *PLoS One*. 2010 Sep 3;5(9):e12557. PMID: 20838432
25. Letvin NL, Rao SS, Montefiori DC, Seaman MS, Sun Y, Lim SY, Yeh WW, Asmal M, Gelman RS, Shen L, Whitney JB, Seoighe C, Lacerda M, Keating S, Norris PJ, Hudgens MG, Gilbert PB, Buzby AP, Mach LV, Zhang J, Balachandran H, Shaw GM, Schmidt SD, Todd JP, Dodson A, Mascola JR, Nabel GJ. Immune and Genetic Correlates of Vaccine Protection Against Mucosal Infection by SIV in Monkeys. *Sci Transl Med*. 2011 May 4;3(81):81ra36. PMID: 21543722
26. Keating SM, Golub ET, Nowicki M, Young M, Anastos K, Crystal H, Cohen MH, Zhang J, Greenblatt RM, Desai S, Wu S, Landay AL, Gange SJ, Norris PJ; Women's Interagency HIV Study. The effect of HIV infection and HAART on inflammatory biomarkers in a population-based cohort of women. *AIDS*. 2011 Sep 24;25(15):1823-32. PMID: 21572306
27. Kassanjee R, Welte A, McWalter TA, Keating SM, Vermeulen M, Stramer SL, Busch MP. Seroconverting blood donors as a resource for characterising and optimising recent infection testing algorithms for incidence estimation. *PLoS One*. 2011;6(6):e20027. PMID: 21694760
28. Eriksson EM, Milush JM, Ho EL, Batista MD, Holditch SJ, Keh CE, Norris PJ, Keating SM, Deeks SG, Hunt PW, Martin JN, Rosenberg MG, Hecht FM, Nixon DF. Expansion of CD8+ T cells lacking Sema4D/CD100 during HIV-1 infection identifies a subset of T cells with decreased functional capacity. *Blood*. 2012 Jan 19;119(3):745-55. PMID: 22134167
29. Selvarajah S, Keating S, Heitman J, Lu K, Simmons G, Norris PJ, Operskalski E, Mosley JW, Busch MP. Detection of host immune responses in acute phase sera of spontaneous resolution versus persistent hepatitis C virus infection. *J Gen Virol*. 2012 Aug;93(Pt 8):1673-9. PMID: 22535775
30. Keating SM, Hanson D, Lebedeva M, Laeyendecker O, Ali-Napo NL, Owen SM, Stramer SL, Moore RD, Norris PJ, Busch MP. Lower-sensitivity and avidity modifications of the vitros anti-HIV 1+2 assay for detection of recent HIV infections and incidence estimation. *J Clin Microbiol*. 2012 Dec;50(12):3968-76. PMID: 23035182
31. Henrich TJ, Hu Z, Li JZ, Sciaranghella G, Busch MP, Keating SM, Gallien S, Lin NH, Giguel FF, Lavoie L, Ho VT, Armand P, Soiffer RJ, Sagar M, Lacasce AS, Kuritzkes DR. Long-term reduction in peripheral blood HIV type 1 reservoirs following reduced-intensity conditioning allogeneic stem cell transplantation. *J Infect Dis*. 2013 Jun 1;207(11):1694-702. PMID: 23460751
32. Batista MD, Tincati C, Milush JM, Ho EL, Ndhlovu LC, York VA, Kallas EG, Kalil J, Keating SM, Norris PJ, Chang D, Unemori P, Leslie KS, Maurer T, Liao W, Nixon DF. CD57 expression and cytokine production by T cells in lesional and unaffected skin from patients with psoriasis. *PLoS One*. 2013;8(2):e52144. PMID: 23468834
33. Alencar CS, Sabino EC, Carvalho SM, Leao SC, Carneiro-Proietti AB, Capuani L, Oliveira CL, Carrick D, Birch RJ, Gonçalez TT, Keating S, Swanson PA, Hackett J Jr, Busch MP; NHLBI Retrovirus Epidemiology Donor Study-II (REDS-II), International Component. HIV genotypes and primary drug resistance among HIV-seropositive blood donors in Brazil: role of infected blood donors as sentinel populations for

molecular surveillance of HIV. *J Acquir Immune Defic Syndr*. 2013 Jul 1;63(3):387-92. PMID: 23507660

34. Yuki SA, Boritz E, Busch M, Bentsen C, Chun TW, Douek D, Eisele E, Haase A, Ho YC, Hütter G, Justement JS, Keating S, Lee TH, Li P, Murray D, Palmer S, Pilcher C, Pillai S, Price RW, Rothenberger M, Schacker T, Siliciano J, Siliciano R, Sinclair E, Strain M, Wong J, Richman D, Deeks SG. Challenges in detecting HIV persistence during potentially curative interventions: a study of the Berlin patient. *PLoS Pathog*. 2013;9(5):e1003347. PMID: 23671416
35. Fleck S, Bautista G, Keating SM, Lee TH, Keller RL, Moon-Grady AJ, Gonzales K, Norris PJ, Busch MP, Kim CJ, Romero R, Lee H, Miniati D, MacKenzie TC. Fetal production of growth factors and inflammatory mediators predicts pulmonary hypertension in congenital diaphragmatic hernia. *Pediatr Res*. 2013 Sep;74(3):290-8. PMID: 23770923
36. Li S, Wu Y, Keating SM, Du H, Sammet CL, Zadikoff C, Mahadevia R, Epstein LG, Ragin AB. Matrix metalloproteinase levels in early HIV infection and relation to in vivo brain status. *J Neurovirol*. 2013 Oct;19(5):452-60. PMID: 23979706
37. Shikuma CM, Barbour JD, Ndhlovu LC, Keating SM, Norris PJ, Budoff M, Parikh N, Seto T, Gangcuangco LM, Ogata-Arakaki D, Chow D. Plasma monocyte chemoattractant protein-1 and tumor necrosis factor- α levels predict the presence of coronary artery calcium in HIV-infected individuals independent of traditional cardiovascular risk factors. *AIDS Res Hum Retroviruses*. 2014 Feb;30(2):142-6. PMID: 23984974
38. Jalbert E, Crawford TQ, D'Antoni ML, Keating SM, Norris PJ, Nakamoto BK, Seto T, Parikh NI, Shikuma CM, Ndhlovu LC, Barbour JD. IL-1B enriched monocytes mount massive IL-6 responses to common inflammatory triggers among chronically HIV-1 infected adults on stable anti-retroviral therapy at risk for cardiovascular disease. *PLoS One*. 2013 Sep 25;8(9):e75500. PMID: 24086545
39. Curtis KA, Longosz AF, Kennedy MS, Keating S, Heitman J, Laeyendecker O, Owen SM. Inter-laboratory assessment of a prototype multiplex kit for determination of recent HIV-1 infection. *PLoS One*. 2013 Oct 17;8(10):e77765. PMID: 24147075
40. Keating SM, Heitman JD, Wu S, Deng X, Stramer SL, Kuhns MC, Mullen C, Norris PJ, Busch MP. Cytokine and chemokine responses in the acute phase of hepatitis B virus replication in naive and previously vaccinated blood and plasma donors. *J Infect Dis*. 2014 Mar;209(6):845-54. PMID: 24158960
41. Pilcher CD, Louie B, Facente S, Keating S, Hackett J Jr, Vallari A, Hall C, Dowling T, Busch MP, Klausner JD, Hecht FM, Liska S, Pandori MW. Performance of rapid point-of-care and laboratory tests for acute and established HIV infection in San Francisco. *PLoS One*. 2013 Dec 12;8(12):e80629. PMID: 24349007
42. Sanchez AM, DeMarco CT, Hora B, Keinonen S, Chen Y, Brinkley C, Stone M, Tobler L, Keating S, Schito M, Busch MP, Gao F, Denny TN. Development of a contemporary globally diverse HIV viral panel by the EQAPOL program. *J Immunol Methods*. 2014 Jul;409:117-30. PMID: 24447533
43. Barbour JD, Jalbert EC, Chow DC, Gangcuangco LM, Norris PJ, Keating SM, Heitman J, Nagamine L, Seto T, Ndhlovu LC, Nakamoto BK, Hodis HN, Parikh NI, Shikuma CM. Reduced CD14 expression on classical monocytes and vascular endothelial adhesion markers independently associate with carotid artery intima media thickness in chronically HIV-1 infected adults on virologically suppressive anti-retroviral therapy. *Atherosclerosis*. 2014 Jan;232(1):52-8. PMID: 24401216
44. Shikuma CM, Chow DC, Gangcuangco LM, Zhang G, Keating SM, Norris PJ, Seto TB, Parikh N, Kallianpur KJ, Nakamoto BK, Nagamine LS, Ndhlovu LC, Barbour JD. Monocytes expand with immune dysregulation and is associated with insulin resistance in older individuals with chronic HIV. *PLoS One*. 2014 Feb 27;9(2):e90330.

PMID: 24587328

45. Henrich TJ, Hanhauser E, Marty FM, Sirignano MN, Keating S, Lee TH, Robles YP, Davis BT, Li JZ, Heisey A, Hill AL, Busch MP, Armand P, Soiffer RJ, Altfeld M, Kuritzkes DR. Antiretroviral-free HIV-1 remission and viral rebound after allogeneic stem cell transplantation: report of 2 cases. *Ann Intern Med.* 2014 Sep 2;161(5):319-27. PMID: 25047577
46. Kassanjee R, Pilcher CD, Keating SM, Facente SN, McKinney E, Price MA, Martin JN, Little S, Hecht FM, Kallas EG, Welte A, Busch MP, Murphy G; Consortium for the Evaluation and Performance of HIV Incidence Assays (CEPHIA). Independent assessment of candidate HIV incidence assays on specimens in the CEPHIA repository. *AIDS.* 2014 Oct 23;28(16):2439-49. PMID: 25144218
47. O-charoen P, Ndhlovu LC, Gangcuangco LM, Keating SM, Norris PJ, Ng RC, Mitchell BI, Shikuma CM, Chow DC. Albuminuria is associated with elevated acute phase reactants and proinflammatory markers in HIV-infected patients receiving suppressive combination antiretroviral therapy. *AIDS Res Hum Retroviruses.* 2014 Dec;30(12):1185-91. PMID: 25205472
48. Ragin AB, Wu Y, Gao Y, Keating S, Du H, Sammet C, Kettering CS, Epstein LG. Brain alterations within the first 100 days of HIV infection. *Ann Clin Transl Neurol.* 2015 Jan;2(1):12-21. PMID: 25642430
49. Lanteri MC, Vahidnia F, Tan S, Stapleton JT, Norris PJ, Heitman J, Deng X, Keating SM, Brambilla D, Busch MP, Custer B; NHLBI REDS III Study. Downregulation of Cytokines and Chemokines by GB Virus C After Transmission Via Blood Transfusion in HIV-Positive Blood Recipients. *J Infect Dis.* 2015 May 15;211(10):1585-96. PMID: 25425697
50. Potter DR, Baimukanova G, Keating SM, Deng X, Chu JA, Gibb SL, Peng Z, Muench MO, Fomin ME, Spinella PC, Kozar R, Pati S. Fresh frozen plasma and spray-dried plasma mitigate pulmonary vascular permeability and inflammation in hemorrhagic shock. *J Trauma Acute Care Surg.* 2015 Jun;78(6 Suppl 1):S7-S17. PMID: 26002267
51. Keating SM, Deng X, Fernandes F, Cunha-Neto E, Ribeiro AL, Adesina B, Beyer AI, Contestable P, Custer B, Busch MP, Sabino EC; NHLBI Retrovirus Epidemiology Donor Study-II (REDS-II), International Component. Inflammatory and cardiac biomarkers are differentially expressed in clinical stages of Chagas disease. *Int J Cardiol.* 2015 Nov 15;199:451-9. PMID: 26277551
52. Williams B, Livak B, Bahk M, Keating SM, Adeyemi OM. Short Communication: SCD14 and SCD163 Levels Are Correlated with VACS Index Scores: Initial Data from the Blunted Immune Recovery in CORE Patients with HIV (BIRCH) Cohort. *AIDS Res Hum Retroviruses.* 2016 Feb;32(2):144-7. PMID: 26366931
53. Zungsontiporn N, Ndhlovu LC, Mitchell BI, Stein JH, Kallianpur KJ, Nakamoto B, Keating SM, Norris PJ, Souza SA, Shikuma CM, Chow DC. Serum amyloid P (SAP) is associated with impaired brachial artery flow-mediated dilation in chronically HIV-1 infected adults on stable antiretroviral therapy. *HIV Clin Trials.* 2015 Nov;16(6):228-35. PMID: 26777795
54. Hodowanec A, Williams B, Hanson B, Livak B, Keating S, Lurain N, Adeyemi OM. Soluble CD163 But Not Soluble CD14 Is Associated with Cytomegalovirus Immunoglobulin G Antibody Levels in Virologically Suppressed HIV+ Individuals. *J Acquir Immune Defic Syndr.* 2015 Dec 15;70(5):e171-4. PMID: 26569178
55. Jin J, Liss NM, Chen DH, Liao M, Fox JM, Shimak RM, Fong RH, Chafets D, Bakkour S, Keating S, Fomin ME, Muench MO, Sherman MB, Doranz BJ, Diamond MS, Simmons G. Neutralizing Monoclonal Antibodies Block Chikungunya Virus Entry and Release by Targeting an Epitope Critical to Viral Pathogenesis. *Cell Rep.* 2015 Dec

56. Chow D, Kohorn L, Souza S, Ndhlovu L, Ando A, Kallianpur KJ, Byron MM, Baumer Y, Keating S, Shikuma C. Atazanavir use and carotid intima media thickness progression in HIV: potential influence of bilirubin. *AIDS*. 2016 Feb 20;30(4):672-4. PMID: 26825035
57. Zungsontiporn N, Tello RR, Zhang G, Mitchell BI, Budoff M, Kallianpur KJ, Nakamoto BK, Keating SM, Norris PJ, Ndhlovu LC, Souza SA, Shikuma CM, Chow DC. Non-Classical Monocytes and Monocyte Chemoattractant Protein-1 (MCP-1) Correlate with Coronary Artery Calcium Progression in Chronically HIV-1 Infected Adults on Stable Antiretroviral Therapy. *PLOS One*. 2016 Feb 11;11(2):e0149143. PMID: 26867220
58. Norris PJ, Zhang J, Worlock A, Nair SV, Anastos K, Minkoff HL, Villacres MC, Young M, Greenblatt RM, Desai S, Landay AL, Gange SJ, Nugent CT, Golub ET, Keating SM. Systemic Cytokine Levels Do Not Predict CD4(+) T-Cell Recovery After Suppressive Combination Antiretroviral Therapy in Chronic Human Immunodeficiency Virus Infection. *Open Forum Infect Dis*. 2016 Feb 8;3(1):ofw025. PMID:26966697
59. Chow D, Kohorn L, Souza S, Ndhlovu L, Ando A, Kallianpur KJ, Byron MM, Baumer Y, Keating S, Shikuma C. Atazanavir use and carotid intima media thickness progression in HIV: potential influence of bilirubin. *AIDS*. 2016 Feb 20;30(4):672-4. PMID: 26825035
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