

Curriculum Vitae
Melis Anahtar, MD, PhD

Date: June 3, 2017

Education

- MD** Harvard Medical School, 2009 - 2017
MD: Harvard/MIT Health Sciences and Technology (HST) Program, *cum laude*
- PhD** Harvard University, Immunology, 2011-2015
PhD advisors: Douglas S. Kwon and Bruce D. Walker
- MSc** University of Oxford, Master of Science (MSc) in Integrated Immunology, 2009.
- SB** Massachusetts Institute of Technology, Mechanical Engineering with Biomedical Engineering, 2008. GPA 5.0/5.0

Postdoctoral Training

07/2017-06/2020 Resident in Clinical Pathology at Massachusetts General Hospital

Selected Research Experiences

- 09/2011 – 06/2015 Graduate Student with Dr. Douglas S. Kwon and Bruce D. Walker, Ragon Institute of MGH, MIT, and Harvard, Cambridge, MA.
- 03/2009 – 07/2009 MSc Student Researcher with Prof. David Jackson, Weatherall Institute of Molecular Medicine, Oxford, England.
- 2006, 2007, 2008 Summer Intern, supervised by Dr. William A. Gahl and Dr. Marjan Huizing Medical Genetics Branch, National Human Genome Research Institute, National Institutes Of Health, Bethesda, MD.
- 09/2007 – 05/2008 Undergraduate Thesis Student, supervised by Prof. Sangeeta Bhatia and Dr. Yin Ren. Laboratory For Multiscale Regenerative Technologies, MIT, Cambridge, MA.
- 09/2005 – 05/2007 Undergraduate Researcher, supervised by Prof. Ian Hunter and Dr. Cathy Hogan, Bioinstrumentation Laboratory, MIT, Cambridge, MA.
- 2002, 2003 Summer Student Researcher, supervised by Prof. Mehmet Toner and Dr. Palaniappan Sethu, Massachusetts General Hospital, Boston, MA.

Grants/Awards

- 2017 Leon Reznick Memorial Prize for excellence and accomplishments in research, Harvard Medical School
- 2017 Harvard President's Innovation Challenge, Finalist with Day Zero Diagnostics
- 2017 MIT Sloan Healthcare Innovations Prize, Audience Choice (\$1,000) with Day Zero Diagnostics
- 2016-17 Selected member of the Harvard Life Lab
- 2015-17 Selected member of Harvard Innovation Lab's Venture Incubation Program
- 2016 Harvard Business School Alumni New Ventures Competition, Winner of the New England Region for Day Zero Diagnostics (\$10,000 prize)
- 2014 Academy of Achievement, International Achievement Summit delegate
- 2013 Young Investigator Scholarship for the Conference on Retroviruses and Opportunistic Infections (CROI) 2014
- 2012 TEDMED Front-line Full Scholarship Recipient
- 2010 **Paul and Daisy Soros Fellowship Recipient**

2008 **NIH Medical Scientist Training Program (MSTP) Fellowship recipient**
 2008 USA TODAY's All-USA College Academic First Team Member
 2007 **Rhodes Scholarship Recipient**
 2007 Marshall Scholarship Finalist
 2008 MIT Wunsch Foundation Silent Hoist and Crane Award for Academic Excellence
 2008 MIT John C. and Elizabeth J. Chato Award for Excellence in Bioengineering
 2007 MIT Society of Women Engineers Graduating Senior \$2000 Scholarship
 2007 Finalist, Glamour's Top 10 College Women Competition
 2007 L'Oreal "Beauty of Giving" Award
 2006 2nd Place, Merck-MIT BE-BMES Poster Contest
 2007 Lord Foundation Undergraduate Research Opportunities Program Fund
 2005 Recipient of the Cathy Comeau (1987) Memorial Fund
 2004 Finalist; Intel Science Talent Search
 2004 1st Place in Engineering, Intel Science and Engineering Fair

Peer Reviewed Publications (* indicates equal contribution)

1. Gosmann C, **Anahtar MN**, Handley SA, Farcasanu M, Abu-Ali G, Bowman BA, Padavattan N, Desai C, Droit L, Moodley A, Dong M, Chen Y, Ismail N, Ndung'u T, Ghebremichael MS, Wesemann DR, Mitchell C, Dong KL, Huttenhower C, Walker BD, Virgin HW, Kwon DS. (2015) "Lactobacillus-Deficient Cervicovaginal Bacterial Communities Are Associated with Increased HIV Acquisition in Young South African Women". *Immunity*, 2017 Jan 17; 46 (1): 29-37. PMID: 28087240.
2. Byrne EH*, **Anahtar MN***, Cohen KE, Moodley A, Padavattan N, Ismail N, Bowman B, Olson GS, Mabhula A, Leslie A, Ndung'u T, Walker BD, Ghebremichael MS, Dong KL, Kwon DS. "The association of injectable progestin-only contraceptives with HIV acquisition and HIV target cell frequency in the female genital tract in South African women: a prospective cohort study." *Lancet Infectious Diseases*, 2016 Apr; 16 (4): 441-8. PMID 26723758.
3. **Anahtar MN**, Bowman BA, Kwon DS. "Efficient nucleic acid extraction and 16S rRNA gene sequencing for bacterial community characterization." *Journal of Visualized Experiments*, 2016 Apr 14; Issue 110. PMID 27168460.
4. **Anahtar MN**, Byrne EH, Doherty KE, Bowman BA, Yamamoto H, Soumillon M, Padavattan N, Ismail N, Moodley A, Sabatini M, Ghebremichael MS, Nusbaum C, Huttenhower C, Virgin HS, Ndung'u T, Dong KL, Walker BD, Fichorova RN, and Kwon DS. "Cervicovaginal microbiota modulate host inflammatory responses in the female genital tract". *Immunity*, 2015 May 19; 42 (5): 965–976. PMID 25992865.
5. Varadarajan N, Kwon DS, Law KM, Ogunniyi AO, **Anahtar MN**, Richter JM, Walker BD, Love JC. "Rapid, efficient functional characterization and recovery of HIV-specific human CD8+ T cells using microengraving." *PNAS*, 2012 Mar 6; 109(10):3885-90. PMID 22355106.
6. Streeck H, Kwon DS, Pyo A, Flanders M, Chevalier MF, Law, K., Julg B, Trocha K, Jolin JS, **Anahtar MN**, Lian J, Toth I, Brumme, Z, Chang JJ, Caron T, Rodig SJ, Milner DA, Piechoka-Trocha A, Kaufmann DE, Walker BD, Altfeld M. "Epithelial adhesion molecules inhibit HIV-1-specific CD8+ T-cell functions." *Blood*, 2011 May 12; 117(19):5112-22. PMID 21403126.
7. Aptekar JW, Cassidy MC, Johnson AC, Lee MY, Ogier AC, Vo C, **Anahtar MN**, Ren Y, Bhatia SN, Ramanathan C, Cory DG, Hill AL, Mair RW, Rosen M, Walsworth RL, Marcus CM. Silicon nanoparticles as hyperpolarized magnetic resonance imaging agents. *ACS Nano*, 2009 3(12), 4003-8. PMID 19950973.
8. Sethu P, **Anahtar M**, Moldawer LL, Tompkins RG, Toner M. Continuous flow microfluidic device for rapid erythrocyte lysis. *Analytical Chemistry*, 2004 76(21), 6247-53. PMID 15516115.

9. Hogan NC, **Anahtar MN**, Taberner AJ, Hunter IW. (2017) "Delivery of immunoreactive antigen using a controllable needle-free jet injector." *Journal of Controlled Release*, 2017 May 4; 258: 73-80.

Non-peer reviewed scientific or medical publications/materials in print or other media

1. **Anahtar M**. "Needle-free injectors as a sustainable alternative to syringes." *MIT International Review*. 2 (2008).
2. Luckyanova M & **M Anahtar**. "Developing world prosthetics." *MIT Undergraduate Research Journal*. 17 (2008) 16.
3. **Anahtar M** & P Baranay. "The slope of biology: an interview with Eric Lander." *MIT Undergraduate Research Journal*. 16 (2007) 18.
4. **Anahtar M**. "Hold the Phone?" MIT OpenCourseWare Website. March 8, 2007.
5. **Anahtar M**. "Microfluidic device for rapid isolation of pure leukocyte populations." *MIT Undergraduate Research Journal*. 12 (2005) 33.

Theses

1. Ph.D. Thesis: **Anahtar MN**. "The contribution of cervicovaginal microbiota and hormonal contraceptives to genital inflammation and HIV acquisition risk." May 13, 2015. Thesis Supervisors: Prof. Douglas Kwon and Prof. Bruce Walker.
2. M.Sc. Thesis: **Anahtar M**. "The role of lymphatic endothelial cells in innate immunity: Podoplanin as a ligand for neutrophil trafficking in lymphatic vessels and hyaluronan degradation products as Toll-like receptor agonists in lymphatic endothelium." August 8, 2009. Thesis Supervisor: Prof. David Jackson.
3. S.B. Thesis: **Anahtar M**. "Designing and characterizing hyperpolarizable silicon nanoparticles for Magnetic Resonance Imaging." May 9, 2008. Thesis Supervisor: Prof. Sangeeta Bhatia.

Abstracts, Poster Presentations and Invited Talks

1. **Anahtar MN**. "Impact of the vaginal microbiome on HIV acquisitions: lessons from a South African cohort." Talk given on March 23, 2016 at the Broad Institute Infectious Disease and Microbiome Seminar.
2. **Anahtar MN**. "Pitching your startup." Talk given on Feb. 27, 2017 at Wellesley College as part of the Neuroengineering seminar (NEUR 333).
3. **Anahtar MN**. "Impact of the vaginal microbiome on HIV acquisitions: lessons from a South African cohort." Talk given on December 2, 2016 at the Yale Clinical Pathology Conference.
4. **Anahtar MN**. "The role of cervicovaginal bacteria in genital inflammation and HIV acquisition." Talk given on November 9, 2016 at the Tufts Medical Center HIV/AIDS Conference.
5. **Anahtar MN**. "The role of cervicovaginal bacteria in genital inflammation and HIV acquisition." Talk given on November 1, 2016 at the Harvard School of Public Health's Center for Biostatistics in AIDS Research.
6. **Anahtar MN**. "The role of cervicovaginal bacteria in genital inflammation and HIV acquisition." Talk given on August 24, 2016 at the MGH Laboratory & Molecular Medicine Conference.
7. **Anahtar MN**, Deruaz M, Bowman B, Tager AM, Kwon DS. "Double stranded RNA stimulates IL-1 β secretion in cervical epithelial cells via the inflammasome." Poster presented at the 2014 Conference on Retroviruses and Opportunistic Infections.
8. Corleis B, Deruaz M, Olson G, Lisanti A, Bowman B, Cho JL, Medoff B, **Anahtar MN**, Vrbanac V, Tager AM, Kwon DS. "Severe depletion of lung CD4 T cells during HIV infection impairs

CD4 dependent macrophage activation.” Poster presented at the 2014 Conference on Retroviruses and Opportunistic Infections.

9. Gaiha G, **Anahtar M**, Rossin E, Walker B. “Determination of structural constraint with the HIV proteome through analysis of amino acid microenvironments.” Poster presented at the 2012 AIDS Vaccine conference.
10. **Anahtar M**. “Characterizing protective mucosal immune responses to HIV.” Talk given on March 3, 2012 at the 2012 Turkish American Scientists and Scholars Association conference.
11. Ziegler SG, Siegenthaler MP, Adams D, Wahl CE, Groden C, **Anahtar M**, Markello TC, Gahl WA. “A lack of heterozygosity linkage region resulting in rare medial arterial calcification in five siblings.” Abstract presented at the 2009 American Society of Human Genetics conference.
12. Gradstein L, Fitzgibbon EJ, Huizing M, **Anahtar M**, Hejtmancik JF, Tang J, Caruso R, Blain D, Brooks BP. “Albinism without nystagmus in a family with temperature-sensitive tyrosinase polymorphism mimicking x-linked ocular albinism.” Abstract for 2008 Israel Society of Eye and Vision Research Conference.
13. Markello TC, **Anahtar M**, Bernardini I, Gochuico BB, O’Brien K, Golas GA, Gahl WA. “Serum levels of the KL-6 epitope of MUC1 correlate with pulmonary fibrosis in Hermansky-Pudlak syndrome.” Abstract for the 2007 American Society of Human Genetics Conference.
14. Hogan NC, Taberner AJ, **Anahtar MN**, Hunter IW. “Delivery of immunoreactive antigen using a lorentz-force actuated jet injector.” Abstract for the 2007 Innovation in Drug Delivery Conference.

Leadership

- 2013 Co-chair of the “HIV transmission at the female genital tract” session at the HIV Prevention Workshop in Durban, South Africa
- 2012 Co-organizer of the Turkish American Scientists and Scholars Association conference, March 3-4, Washington, DC.
- 2009-13 Co-coordinator of the HST Women’s Group
- 2009 Science editor of the Oxonian Review
- 2004-08 Blogger for the MIT Undergraduate Admissions website
- 2006-07 Editor-in-chief of the MIT Undergraduate Research Journal

Teaching and Mentoring Experience

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| 2015 | HST.175: Immunology
Teaching assistant
Medical and graduate students | Harvard Medical School |
| 2014 | Harvard University CFAR Workshop
on Metagenomics and Transcriptomics
Teaching assistant
Technicians through senior faculty | Harvard Medical School |
| 2014 | HST.175: Immunology
Head teaching assistant
Medical and graduate students | Harvard Medical School |
| 2013 | HST.175: Immunology
Head teaching assistant
Medical and graduate students | Harvard Medical School |
| 2012 | HST.175: Immunology
Head teaching assistant
Medical and graduate students | Harvard Medical School |

2012	Immunology Summer Program Teaching assistant Undergraduate students	Harvard University
2012	Imm.302qc Clinical Immunology Teaching assistant Graduate students	Harvard University
2011	HST.175: Immunology Head teaching assistant Medical and graduate students	Harvard Medical School
2010	HST.175: Immunology Discussion leader Medical and graduate students	Harvard Medical School

Industry Experience

2016-	Co-founder of Day Zero Diagnostics
2015	Scientific consultant for Flagship Ventures
2012-2015	Scientific consultant for Enumeral Biomedical Inc.

Committee Service

2009-	MIT Distinguished Fellowships Committee
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Professional Societies

2016-	Harvard Medical School Aesculapian Club
2009-	Massachusetts Medical Society
2008-	Phi Beta Kappa
2008-	Pi Tau Sigma
2007-	Tau Beta Pi