

**BIOGRAPHICAL SKETCH**

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NAME Yardena Samuels		POSITION TITLE Associate Professor	
eRA COMMONS USER NAME (credential, e.g., agency login)			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Cambridge University, Cambridge, UK	B.Sc.	1990-1993	Natural Sciences, Pathology
Hebrew University of Jerusalem, Israel	M.Sc.	1994-1997	Immunology and Cancer Research
Imperial College, London, UK	PhD.	1999-2002	Cancer Research
Johns Hopkins University School of Medicine	Postdoc	2003-2006	Cancer Genetics

**A. Positions and Honors**Research Experience

1993-1994 Research Biologist, Medical Unit, Israeli Defense Forces  
 1998-1999 Senior Research Assistant, Intelligene Biotech, Israel  
 2002-2003 Postdoctoral Fellow, Ludwig Institute for Cancer Research, Imperial College, London, UK  
 2003-2006 Postdoctoral Fellow, Johns Hopkins University School of Medicine  
 2006-2012 Investigator (Tenure-Track), NHGRI, National Institutes of Health  
 2013-present Associate Professor, Weizmann Institute of Science

Other Professional Activities

2010 Member of the Scientific Program Committee, AACR Annual Meeting 2011  
 2011-present Member, NHGRI Bioinformatics Services Advisory Committee  
 2011-present Member, NHGRI Non-Tenure Promotion Committee Membership  
 2011-present Member, Earl Stadtman Investigator Search Committee  
 2011-present Reviewer, Israel Cancer Research Fund  
 2011-present Panel of Expert Advisers for the Nature Index  
 2012-present Professional Advisory Panel, Joanna M. Nicolay Melanoma Foundation  
 2012-present Member, The Cancer Genome Atlas (TCGA) Melanoma Tumor Working Group  
 2012 Member of the Scientific Program Committee, AACR Annual Meeting 2013  
 2012 Member of the Education Committee, AACR Annual Meeting 2013  
 2012 Tumor Cell Biology Study Section *Ad Hoc* Reviewer  
 2012 The Wellcome Trust, Scientific Review Panel

Editorial Board

2011 Frontiers in Molecular and Cellular Oncology, Frontiers in Oncology  
 2011 Frontiers in of Cancer Genetics  
 2012 Pigment Cell and Melanoma Research  
 2012 Journal of Investigative Dermatology

Honors

2006 Alfred Blalock, Young Investigators' Day award, Johns Hopkins School of Medicine  
 2009 Genome Technology top 25 Young Investigator award

**B. Selected peer-reviewed publications in the field of melanoma (from a total of 36 publications)**

1. Avraham A, Jung S, **Samuels Y**, Seger R, Ben-Neriah Y: Co-stimulation-dependent activation of a JNK-kinase in T lymphocytes. *Eur J Immunol* 1998, 28:2320-2330.
2. **Samuels-Lev Y**, O'Connor DJ, Bergamaschi D, Trigiante G, Hsieh JK, Zhong S, Campargue I, Naumovski L, Crook T, Lu X: ASPP proteins specifically stimulate the apoptotic function of p53. *Mol Cell* 2001, 8:781-794.
3. Bergamaschi D, **Samuels Y**, O'Neil NJ, Trigiante G, Crook T, Hsieh JK, O'Connor DJ, Zhong S, Campargue I, Tomlinson ML, Kuwabara PE, Lu X: iASPP oncoprotein is a key inhibitor of p53 conserved from worm to human. *Nat Genet* 2003, 33:162-167.
4. Bergamaschi D, **Samuels Y**, Jin B, Duraisingham S, Crook T, Lu X: ASPP1 and ASPP2: common activators of p53 family members. *Mol Cell Biol* 2004, 24:1341-1350.
5. **Samuels Y**, Wang Z, Bardelli A, Silliman N, Ptak J, Szabo S, Yan H, Gazdar A, Powell SM, Riggins GJ, Willson JK, Markowitz S, Kinzler KW, Vogelstein B, Velculescu VE: High frequency of mutations of the PIK3CA gene in human cancers. *Science* 2004, 304:554.
6. Broderick DK, Di C, Parrett TJ, **Samuels YR**, Cummins JM, McLendon RE, Fults DW, Velculescu VE, Bigner DD, Yan H: Mutations of PIK3CA in anaplastic oligodendrogliomas, high-grade astrocytomas, and medulloblastomas. *Cancer Res* 2004, 64:5048-5050.
7. Parsons DW, Wang TL, **Samuels Y**, Bardelli A, Cummins JM, DeLong L, Silliman N, Ptak J, Szabo S, Willson JK, Markowitz S, Kinzler KW, Vogelstein B, Lengauer C, Velculescu VE: Colorectal cancer: mutations in a signalling pathway. *Nature* 2005, 436:792.
8. **Samuels Y**, Diaz LA, Jr., Schmidt-Kittler O, Cummins JM, DeLong L, Cheong I, Rago C, Huso DL, Lengauer C, Kinzler KW, Vogelstein B, Velculescu VE: Mutant PIK3CA promotes cell growth and invasion of human cancer cells. *Cancer Cell* 2005, 7:561-573.
9. Bergamaschi D, **Samuels Y**, Sullivan A, Zvelebil M, Breysens H, Bisso A, Del Sal G, Syed N, Smith P, Gasco M, Crook T, Lu X: iASPP preferentially binds p53 proline-rich region and modulates apoptotic function of codon 72-polymorphic p53. *Nat Genet* 2006, 38:1133-1141.
10. Huang CH, Mandelker D, Schmidt-Kittler O, **Samuels Y**, Velculescu VE, Kinzler KW, Vogelstein B, Gabelli SB, Amzel LM: The structure of a human p110alpha/p85alpha complex elucidates the effects of oncogenic PI3Kalpha mutations. *Science* 2007, 318:1744-1748.
11. Rago C, Huso DL, Diehl F, Karim B, Liu G, Papadopoulos N, **Samuels Y**, Velculescu VE, Vogelstein B, Kinzler KW, Diaz LA, Jr.: Serial assessment of human tumor burdens in mice by the analysis of circulating DNA. *Cancer Res* 2007, 67:9364-9370.
12. Solomon DA, Kim JS, Cronin JC, Sibenaller Z, Ryken T, Rosenberg SA, Ransom H, Jean W, Bigner D, Yan H, **Samuels Y**, Waldman T: Mutational inactivation of PTPRD in glioblastoma multiforme and malignant melanoma. *Cancer Res* 2008, 68:10300-10306. [PMC2760967](#)
13. Palavalli LH, Prickett TD, Wunderlich JR, Wei X, Burrell AS, Porter-Gill P, Davis S, Wang C, Cronin JC, Agrawal NS, Lin JC, Westbroek W, Hoogstraten-Miller S, Molinolo AA, Fetsch P, Filie AC, O'Connell MP, Banister CE, Howard JD, Buckhaults P, Weeraratna AT, Brody LC, Rosenberg SA, **Samuels Y**: Analysis of the matrix metalloproteinase family reveals that MMP8 is often mutated in melanoma. *Nat Genet* 2009, 41:518-520. [PMC2748394](#)

14. Lopez-Otin C, Palavalli LH, **Samuels Y**: Protective roles of matrix metalloproteinases: from mouse models to human cancer. *Cell Cycle* 2009, 8:3657-3662. [PMC3164587](#)
15. Cronin JC, Wunderlich J, Loftus SK, Prickett TD, Wei X, Ridd K, Vemula S, Burrell AS, Agrawal NS, Lin JC, Banister CE, Buckhaults P, Rosenberg SA, Bastian BC, Pavan WJ, **Samuels Y**: Frequent mutations in the MITF pathway in melanoma. *Pigment Cell Melanoma Res* 2009, 22:435-444. [PMC2728363](#)
16. Solomon DA, Kim JS, Yang XR, Tucker MA, Goldstein AM, **Samuels Y**, Waldman T: Lack of inherited mutations of PTPRD in familial melanoma and melanoma-astrocytoma syndrome. *Pigment Cell Melanoma Res* 2009, 22:489-491. [PMC2758084](#)
17. Prickett TD, Agrawal NS, Wei X, Yates KE, Lin JC, Wunderlich JR, Cronin JC, Cruz P, Rosenberg SA, **Samuels Y**: Analysis of the tyrosine kinome in melanoma reveals recurrent mutations in ERBB4. *Nat Genet* 2009, 41:1127-1132. [PMC2897709](#)
18. Ericson K, Gan C, Cheong I, Rago C, **Samuels Y**, Velculescu VE, Kinzler KW, Huso DL, Vogelstein B, Papadopoulos N: Genetic inactivation of AKT1, AKT2, and PDPK1 in human colorectal cancer cells clarifies their roles in tumor growth regulation. *Proc Natl Acad Sci U S A* 2010, 107:2598-2603. [PMC2823889](#)
19. Wei X, Prickett TD, Vilorio CG, Molinolo A, Lin JC, Cardenas-Navia I, Cruz P, Rosenberg SA, Davies MA, Gershenwald JE, Lopez-Otin C, **Samuels Y**: Mutational and functional analysis reveals ADAMTS18 metalloproteinase as a novel driver in melanoma. *Mol Cancer Res* 2010, 8:1513-1525. [PMC3058631](#)
20. Rudloff U, **Samuels Y**: A growing family: Adding mutated Erbb4 as a novel cancer target. *Cell Cycle* 2010, 9.
21. **Samuels Y**, Waldman T: Oncogenic mutations of PIK3CA in human cancers. *Curr Top Microbiol Immunol* 2010, 347:21-41. [PMC3164550](#)
22. Davies MA, **Samuels Y**: Analysis of the genome to personalize therapy for melanoma. *Oncogene* 2010, 29:5545-5555. [PMC3169242](#)
23. Wei X, Moncada-Pazos A, Cal S, Soria-Valles C, Gartner J, Rudloff U, Lin JC, Rosenberg SA, Lopez-Otin C, **Samuels Y**: Analysis of the disintegrin-metalloproteinases family reveals ADAM29 and ADAM7 are often mutated in melanoma. *Hum Mutat* 2011, 32:E2148-2175. [PMC3103704](#)
24. Wei X, Walia V, Lin JC, Teer JK, Prickett TD, Gartner J, Davis S, Stemke-Hale K, Davies MA, Gershenwald JE, Robinson W, Robinson S, Rosenberg SA, **Samuels Y**: Exome sequencing identifies GRIN2A as frequently mutated in melanoma. *Nat Genet* 2011, 43:442-446. [PMC3161250](#)
25. Solomon DA, Kim T, Diaz-Martinez LA, Fair J, Elkahloun AG, Harris BT, Toretsky JA, Rosenberg SA, Shukla N, Ladanyi M, **Samuels Y**, James CD, Yu H, Kim JS, Waldman T: Mutational inactivation of STAG2 causes aneuploidy in human cancer. *Science* 2011, 333:1039-1043.
26. Prickett TD, Wei X, Cardenas-Navia I, Teer JK, Lin JC, Walia V, Gartner J, Jiang J, Cherukuri PF, Molinolo A, Davies MA, Gershenwald JE, Stemke-Hale K, Rosenberg SA, Margulies EH, **Samuels Y**: Exon capture analysis of G protein-coupled receptors identifies activating mutations in GRM3 in melanoma. *Nat Genet* 2011, 43:1119-1126.

Program Director/Principal Investigator (Last, First, Middle):

27. **Samuels Y**, Bardelli A, Lopez-Otin C: The Cancer Genome. In DeVita VT., Lawrence TS., Rosenberg, S.A., (eds): *Cancer: Principles & Practice of Oncology*, 9<sup>th</sup> ed. 2011, Lippincott Williams & Wilkins.
28. Parker SC, Gartner J, Cardenas-Navia I, Wei X, Ozel Abaan H, Ajay SS, Hansen NF, Song L, Bhanot UK, Killian JK, Gindin Y, Walker RL, Meltzer PS, Mullikin JC, Furey TS, Crawford GE, Rosenberg SA, Samuels Y\*, Margulies EH\*: **Mutational signatures of de-differentiation in functional non-coding regions of melanoma genomes.** *PLoS Genet* 2012, **8**:e1002871. (\*co-corresponding authors)
29. Prickett T, **Samuels Y**: Molecular Pathways: Dysregulated Glutamatergic Signaling Pathways in Cancer. *Clin Cancer Res* 2012.

### **C. Research Support**

#### Completed Research Support

- 2003 EMBO-European Molecular Biology Organization, "Transcriptional roles of HIF1- $\alpha$  and p53 during hypoxia-mediated apoptosis". (2003-2006)
- 2008 NIH Bench-to-Bedside Award, "Predicting the response to treatment using gene mutation profiling in metastatic melanoma patients." Estimated Total Direct Costs: \$ 100,000. (2008-2010)
- 2008 The Harry J. Lloyd Charitable Trust "Mutational analysis of the phosphatase gene family in cutaneous malignant melanoma." Estimated Total Direct Costs: \$ 84,000. (2008-2009)
- 2010 Eli Lilly "Whole Genome/Exome Sequencing of Melanoma". Estimated Direct Costs: \$225,000, (2010-2011)

#### 2006-2012 NIH Intramural Support