

## CURRICULUM VITAE

**Name:** David Alan Quigley

**Positions:** Assistant Adjunct Professor  
UCSF Department of Epidemiology and Biostatistics  
Bioinformatics Programmer III  
UCSF Helen Diller Family Comprehensive Cancer Center

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San Francisco CA, 94158  
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### EDUCATION

1994-1998	Carleton College, Northfield MN	B.A.	<i>Magna cum laude,</i> Computer Science
2004-2006	Columbia University, New York NY	M.A.	<i>with honors,</i> Biomedical Informatics
2011-2014	University of Oslo, Oslo	Ph.D.	Genetics

### PRINCIPAL POSITIONS HELD

1998-1999	Software Architects, Inc.	Consultant
1999-2002	CBS Marketwatch.com Inc.	Software Developer
2002-2004	Orrick, Herrington, & Sutcliffe L.L.P.	Software Developer
2004-2006	Columbia University	Graduate Research Assistant
2006-Now	University of California San Francisco	Staff Scientist
2015-Now	University of California San Francisco	Assistant Adjunct Professor

### HONORS AND AWARDS

1994	National Merit Scholar
1997	Mortar Board Honor Society
2011	Named a Young Investigator of the Year by <i>Genome Technology</i>
2014	AACR Scholar in Training award
2015	Research Allocation Program Award, UCSF HDFCCC
2017	Prostate Cancer Foundation Young Investigator Award
2017	BRCA foundation Young Investigator Award

### KEYWORDS / AREAS OF INTEREST

Genetics, Genomics, Bioinformatics, Cancer Biology, prostate cancer, BRCA2, PARP inhibitors, whole genome sequencing, expression Quantitative Trait Loci

## **PROFESSIONAL ACTIVITIES**

### **PROFESSIONAL ORGANIZATIONS**

#### **Memberships**

2011-Now American Association for Cancer Research  
2011-2015 European Association for Cancer Research  
2011-2015 Genetics Society of America  
2015-Now Associate Member, Helen Diller Family Comprehensive Cancer Center

### **SERVICE TO PROFESSIONAL PUBLICATIONS AND FOUNDATIONS**

2009-Now *Ad hoc* reviewer for European Urology, Journal of Clinical Investigation, Journal of Clinical Oncology: Precision Medicine, PLoS Genetics, Cell Systems, Clinical Cancer Research, Journal of Investigative Dermatology, Molecular Carcinogenesis, Bioinformatics, PLoS ONE, Physiological Genomics, Scientific Reports, WIRESystems Biology & Medicine, Carcinogenesis, Journal of Cancer Research and Clinical Oncology, The Melanoma Foundation, Oncotarget

### **INVITED PRESENTATIONS**

2009 Johns Hopkins Hospital Visual Neuroscience Training Program  
2014 UCSF Breast Oncology Program Seminar  
2015 UCSF Department of Epidemiology and Biostatistics  
2017 Prostate Cancer Foundation DNA Damage Working Group  
2017 UCSF Prostate Cancer Program Scientific Retreat  
2018 UCSF Prostate Cancer Program Scientific Retreat  
2018 University of Minnesota Masonic Cancer Center

### **PROFERRED PRESENTATIONS**

2010 Cold Spring Harbor Systems Biology: Networks  
2012 Norwegian Biochemical Society Annual Meeting  
2012 Genetics Society of America, Mouse Molecular Genetics meeting  
2014 AACR Workshop on Cellular Heterogeneity in the Tumor Microenvironment

## UNIVERSITY AND PUBLIC SERVICE

### School of Medicine

- 2010-Now Founder & Co-organizer, *Quantitative Biology Discussion Group*  
(monthly invited lectures on quantitative methods in biology)
- 2017-Now Co-organizer, Prostate Cancer Foundation DNA Damage Working Group

## TEACHING AND MENTORING

### Postgraduate and Other Courses

- 2018 Instructor, Society of Gynecologic Oncology's national webinar series
- 2017 Invited didactic instructor, UCSF Hematology/Oncology Fellows
- 2015-2016 Course Director, Introduction to Biostatistics PSPG 273  
(taken by incoming students in BMS, PSPG, and Epi/Biostat programs).  
Wrote all course material, directed three graduate students who assisted  
with individual topics and problem sets.
- 2014, 2015 UCSF Biomedical Science graduate program, invited lecture in the  
Computational Biology and Biostatistics seminar series

## RESEARCH AND CREATIVE ACTIVITIES

### RESEARCH AWARDS

#### Present

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| Young Investigator Award (Quigley)<br>BRCA Foundation<br><i>Identifying and overcoming PARPi resistance in metastatic prostate cancer</i>                              | 01/01/18-12/31/19<br>\$111,333 |
| Cloud Credit Pilot Award (Quigley)<br>NIH/NIAID<br><i>Developing non-invasive biomarkers of DNA Repair Defects and PARP inhibitor sensitivity</i>                      | 09/01/17-08/31/18<br>\$29,500  |
| Young Investigator Award (Quigley)<br>Prostate Cancer Foundation<br><i>Modeling &amp; overcoming PARP inhibitor resistance in castration-resistant prostate cancer</i> | 07/01/17-06/30/20<br>\$225,000 |
| P30 CA082103 (Co-investigator, PI F. Feng)<br>NCI<br><i>Developing Noninvasive Biomarkers to Assess Prostate Cancer Response &amp; Resistance</i>                      | 09/01/16-08/31/17<br>\$750,000 |

Challenge Award (Co-investigator, PI L. Fong) Prostate Cancer Foundation <i>Combination Radio-Immunotherapy for Oligometastatic Prostate Cancer</i>	06/01/17-05/31/19 \$1,000,000
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Breast Cancer Research Foundation (Ashworth) Breast Cancer Research Foundation <i>Functional &amp; molecular profiling for the identification of E-cadherin synthetic lethalties</i>	10/1/16-9/3/17 \$208,333
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CA0097133 (Key Personnel, PI M. Korn) <i>Targeting BRCAness in Gastric Cancer</i>	07/01/16-6/30/19 \$399,552
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**Past**

UCSF Pilot for Junior Investigators in Basic and Clinical/Translational Sciences (Quigley) <i>Sensitizing cells to PARP inhibition by conditional BRCA haploinsufficiency</i>	01/01/15-12/31/15 \$37,500
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UCSF Open Access Publishing Fund recipient UCSF	06/15/2015 \$1,897
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U01 CA141455 (Key personnel, PI A. Balmain) NIH/NCI <i>Science Leadership and Integration</i>	09/01/09-08/31/14 \$503,092
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NNX09AM52G (Key personnel, PI M. Barcellos-Hoff) NASA <i>NRA/NASA Specialized Centers of Research: Carcinogenesis and Central Nervous System Risk from Space Radiation.</i>	07/01/09-06/30/14 \$302,097
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U01 CA84244 (Key Personnel, PI A. Balmain) NIH/NCI <i>A Systems Genetics Analysis of Cancer Risk, Progression and Therapeutic Response</i>	09/01/2009-03/31/14 \$540,319
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Breath Away from the Cure (Key personnel, PI A. Balmain) Bonnie Adario Foundation <i>A Systems Genetics approach to individualized lung cancer diagnosis and therapy</i>	03/01/07-02/28/12 \$250,000
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DE-SC0003679 (Key Personnel, PI A. Balmain) DOE <i>A system genetics approach to identify low dose radiation-induced lymphoma susceptibility genes.</i>	02/15/10-02/14/13 \$211,375
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Web Services Grant (Quigley)	09/01/09-09/01/10
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Amazon.com  
Systems Genetics of Lung Cancer

\$4000

### PEER REVIEWED PUBLICATIONS

1. Kundaje A, Lianoglou S, Li X, Quigley D, Arias M, Wiggins CH, Zhang L, Leslie C. Learning regulatory programs that accurately predict differential expression with MEDUSA. *Annals of the New York Academy of Sciences*. 2007 Dec;1115:178-202.
2. Li S, Sack R, Vijmasi T, Sathe S, Beaton A, Quigley D, Gallup M & McNamara N. Antibody Protein Array Analysis of the Tear Film Cytokines. *Optometry & Vision Science*. 2008 Aug;85(8):653-60.
3. Quigley DA, To MD, Pérez-Losada J, Pelorosso F, Mao J, Nagase H, Ginzinger D, & Balmain A. Genetic architecture of mouse skin inflammation and tumor susceptibility. *Nature*. 2009 Mar 26;458(7237):505-8.
4. Quigley DA & Balmain A. Systems genetics analysis of cancer susceptibility: from mouse models to humans. *Nature Reviews: Genetics*. 2009 Sep;10(9) 651-7.
5. Clement J, Pérez-Losada J, Quigley DA, Kim I, Delrosario R, Kuang-Yu J, Bosch A, Lluch A, Mao J, & Balmain A. Deletion of the PER3 gene on chromosome 1p36 in recurrent ER-positive breast cancer. *Journal of Clinical Oncology*. 2010 Aug;28(23): 3770-8.
6. Quigley DA, To MD, Kim IJ, Lin KK, Albertson DG, Sjolund J, Pérez-Losada J, Balmain A. Network Analysis of Skin Tumor Progression Identifies a Rewired Genetic Architecture Affecting Inflammation and Tumor Susceptibility. *Genome Biology*. 2011 Jan 18;12(1):R5.
7. Connolly EC, Saunier EF, Quigley D, Luu MT, de Sapio A, Hann B, Yingling JM, Akhurst RJ. Outgrowth of drug-resistant carcinomas expressing markers of tumor aggression after long term T $\beta$ RI/II kinase inhibition with LY2109761. *Cancer Research*. 2011 Mar 15;71(6):2339-49.
8. Lalitha P, Shapiro B, Loh A, Fothergill A, Prajna N, Srinivasan M, Oldenburg C, Quigley DA, Chidambaram J, McLeod S, Acharya N & Lietman T. Amphotericin B and natamycin are not synergistic in vitro against *Fusarium* and *Aspergillus* spp isolated from keratitis. *British Journal of Ophthalmology*. 2011 May;95(5):744-5.
9. Chan MF, Sack R, Quigley DA, Sathe S, Vijmasi T, Li S, Holsclaw D, Strauss EC, McNamara NA. Membrane Array Analysis of Tear Proteins in Ocular Cicatricial Pemphigoid. *Optometry & Visual Science*. 2011 Aug;88(8):1005-9.

10. To MD, Quigley D, Mao J, Rosario R, Hsu J, Hodgson G, Jacks T, & Balmain A. Progressive genomic instability in the FVB/KrasLA2 mouse model of lung cancer. *Molecular Cancer Research*. 2011 Oct;9(10):1339-45.
11. Benzinou M, Clermont FF, Letteboer TG, Kim JH, Espejel S, Harradine KA, Arbelaez J, Luu MT, Roy R, Quigley D, Higgins MN, Zaid M, Aouizerat BE, van Amstel JK, Giraud S, Dupuis-Girod S, Lesca G, Plauchu H, Hughes CC, Westermann CJ & Akhurst RJ. Mouse and human strategies identify PTPN14 as a modifier of angiogenesis and hereditary haemorrhagic telangiectasia. *Nature Communications*. 2012 Jan 10;3:616.
12. Wong C, Yu J, Quigley DA, To M, Jen Kuang-Yu, Huang P, Del Rosario R & Balmain A. Inflammation and Hras Signaling Control Epithelial-mesenchymal Transition during Skin Tumor Progression. *Genes and Development*. 2013 Mar 15;27(6):670-82.
13. Kim IJ, Quigley D, To M, Jen, Pham P, Lin K, Jo B, Jen K, Raz D, Kim J, Mao JH, Jablons D & Balmain A. Rewiring of human lung cell lineage and mitotic networks in lung adenocarcinomas. *Nature Communications*. 2013 Apr 16; 4:1701.
14. Kang HC, Quigley D, Kim IJ, Wakabayashi Y, Ferguson-Smith MA, D'Alessandro M, Lane EB, Akhurst RJ, Goudie DR, Balmain A. Multiple Self-Healing Squamous Epithelioma (MSSE): Rare Variants in an Adjacent Region of Chromosome 9q22.3 to known TGFBR1 Mutations Suggest a Digenic or Multilocus Etiology. *Journal of Investigative Dermatology*. 2013 Jul;133(7):1907-10.
15. Quigley DA, Fiorito E, Nord S, Van Loo P, Alnæs G, Fleischer T, Tost J, Vollan HK, Tramm T, Overgaard J, Bukholm IR, Hurtado A, Balmain A, Børresen-Dale A, & Kristensen V. The 5p12 breast cancer susceptibility locus affects *MRPS30* expression in estrogen-receptor positive tumors. *Molecular Oncology*. 2014 Mar;8(2):273-84.
16. Sjölund J, Pelorosso FG, Quigley DA, Delrosario R, Balmain A. Identification of Hipk2 as an essential regulator of white fat development. *Proceedings of the National Academy of Sciences*. 2014 May 20;111(20):7373-8.
17. Yang YL, Hung MS, Wang Y, Ni J, Mao JH, Hsieh D, Au A, Kumar A, Quigley D, Fang LT, Yeh CC, Xu Z, Jablons DM, You L. Lung Tumorigenesis in a Conditional Cul4A Transgenic Mouse Model. *Journal of Pathology*. 2014 Jun;233(2):113-23.
18. Silwal-Pandit L, Vollan HK, Chin S, Rueda O, McKinney S, Osako T, Quigley D, Kristensen V, Aparicio S, Børresen-Dale A, Caldas C, Langerod A. TP53 mutation spectrum in breast cancer is subtype specific and has distinct prognostic relevance. *Clinical Cancer Research*. 2014 Jul 1;20(13):3569-80.
19. Hackett C, Quigley DA, Wong R, Chen J, Cheng C, Song Y, Wei J, Pawlikowska L, Bao Y, Goldenberg D, Nguyen K, Gustafson W, Rallapalli S, Cho Y, Cook J, Kozlov S, Mao J,

- Van Dyke T, Kwok P, Kahn J, Balmain A, Fan Q, Weiss W. Expression Quantitative Trait Loci and Receptor Pharmacology Implicate Arg1 and the GABA-A Receptor as Therapeutic Targets in Neuroblastoma. *Cell Reports*. 2014. Nov 6;9(3):1034-46.
20. Westcott PM, Halliwill KD, To MD, Rashid M, Rust AG, Keane TM, Delrosario R, Jen KY, Gurley KE, Kemp CJ, Fredlund E, Quigley DA, Adams DJ, Balmain A. The mutational landscapes of genetic and chemical models of Kras-driven non-small cell lung cancer. *Nature*. 2015 Jan 22;517(7535):489-92.
21. Quigley D, Silwal-Pandit L, Dannenfels R, Langerød A, Vollan HK, Vaske C, Siegel J, Troyanskaya O, Chin S, Caldas C, Balmain A, Børresen-Dale A, Kristensen V. Lymphocyte invasion in IC10/Basal-like breast tumors is associated with wild-type TP53. *Molecular Cancer Research*. 2015 Mar;13(3):493-501.
22. Chen J, Hackett CS, Zhang S, Song YK, Bell RJA, Molinaro AM, Quigley DA, Balmain A, Song JS, Costello JF, Gustafson WC, Van Dyke T, Kwok PY, Khan J, Weiss WA. The genetics of splicing in neuroblastoma. *Cancer Discovery*. 2015 Apr;5(4):380-95.
23. Letteboer TG, Benzinou M, Merrick CB, Quigley DA, Zhau K, Kim IJ, To MD, Jablons DM, van Amstel JK, Westermann CJ, Giraud S, Dupuis-Girod S, Lesca G, Berg JH, Balmain A, Akhurst RJ. Genetic variation in the functional ENG allele inherited from the non-affected parent associates with presence of pulmonary arteriovenous malformation in hereditary hemorrhagic telangiectasia 1 (HHT1) and may influence expression of PTPN14. *Frontiers in Genetics*. 2015 Mar 12;6:67.
24. Quigley DA. *equalizer* reduces SNP bias from Affymetrix microarrays. *BMC Bioinformatics*, 2015, 16:238 (30 July 2015).
25. Quigley DA, Kristensen V. Predicting prognosis and therapeutic response from interactions between lymphocytes and tumor cells. *Molecular Oncology*, 2015 Dec; 9(10):2054-2062
26. Campbell J, Ryan C, Brough R, Bajrami I, Pemberton H, Chong I, Costa-Cabral S, Frankum J, Gulati A, Holme H, Miller R, Postel-Vinay S, Rafiq R, Wei W, Williamson C, Quigley DA, Tym J, Al-Lazikani B, Fenton T, Natrajan R, Strauss S, Ashworth A & Lord C. Large Scale Profiling of Kinase Dependencies in Cancer Cell Lines. *Cell Reports*. 2016 Mar 15;14(10):2490-501.
27. Quigley DA, Tahiri A, Lüders T, Riis M, Balmain A, Anne-Lise Børresen-Dale, Bukholm IR, Kristensen V. Age, estrogen, and immune response in breast adenocarcinoma and adjacent normal tissue. *Oncoimmunology*, 2017 Aug 10;6(11):e1356142. doi: 10.1080/2162402X.2017.1356142.

28. Quigley DA, Kandyba E, Huang P, Halliwill K, Sjölund, Pelorosso F, Wong C, Hirst G, Wu D, Delrosario R, Kumar A, Balmain A. Gene expression architecture of mouse dorsal and tail skin reveals functional differences in inflammation and cancer. *Cell Reports*, 2016, Jul 26; 16(4):1153-65.
29. Quigley DA\*, Alumkal JJ\*, Wyatt A, Kothari V, Foye A, Lloyd P, Aggarwal R, Kim W, Lu E, Schwartzman J, Beja K, Annala M, Das R, Diolaiti M, Pritchard C, Thomas G, Tomlins S, Knudsen K, Lord C, Ryan C, Youngren K, Beer T, Ashworth A, Small E, Feng FY. Analysis of circulating cell-free DNA identifies multi-clonal heterogeneity of *BRCA2* reversion mutations associated with resistance to PARP inhibitors. *Cancer Discovery*, 2017, Sep;7(9):999-1005. doi: 10.1158/2159-8290.
30. Ilkhanizadeh S, Sabelström H, Miroshnikova Y, Frantz A, Zhu W, Idilli A, Lakins J, Schmidt C, Quigley D, Fenster T, Yuan E, Trzeciak J, Saxena S, Lindberg O, Mouw J, Burdick J, Magnitsky S, Berger M, Philips J, Arosio D, Sun S, Weaver V, Weiss WA, & Persson A. Antisecretory Factor-mediated Inhibition of Cell Volume Dynamics Produces Anti-tumor Activity in Glioblastoma. *Molecular Cancer Research*, 2018, Feb 5. pii: molcanres.0413.2017. doi: 10.1158/1541-7786
31. Gonzalez V, Samusik N, Chen T, Savig E, Aghaeepour A, Quigley DA, Huang Y, Giangarra V, Borowsky A, Hubbard N, Chen S, Han G, Ashworth A, Kipps T, Berek J, Nolan G, & Fantl W. Commonly Occurring Cell Subsets in High-Grade Serous Ovarian Tumors Identified by Single-Cell Mass Cytometry. *Cell Reports*, 2018, Feb 13;22(7):1875-1888. doi: 10.1016/j.celrep.2018.01.053.
33. Quigley D\*, Dang, H\*, Zhao S\*, Lloyd P, Aggarwal R, Alumkal J, Foye A, Kothari V, Perry M, Bailey M *et al.* Genomic Hallmarks and Structural Variation in Metastatic Prostate Cancer. *Cell*, *online*. doi: 10.1016/j.cell.2018.06.039.
34. Lu E, Thomas G, Chen Y, Wyatt AW, Lloyd P, Youngren J, Quigley D; Bergan R, Bailey S, Beer T, Feng FY, Small EJ, Alumkal JJ. DNA Repair Gene Alterations and PARP Inhibitor Response in Metastatic Castration-Resistant Prostate Cancer Patients. *Journal of the National Comprehensive Cancer Network*, 2018, *in press*.

#### **NON-PEER REVIEWED PUBLICATIONS**

1. Quigley D. RNA-seq Permits a Closer Look at Normal Skin and Psoriasis Gene Networks. *Journal of Investigative Dermatology*. 2014 Jul;134(7):1789-91. (Invited commentary)