IDENTIFYING INFORMATION:

NAME: CHURCH, GEORGE

POSITION TITLE: Professor of Genetics

PRIMARY ORGANIZATION AND LOCATION: Harvard Medical School, Boston, Massachusetts, United States

Professional Preparation:

ORGANIZATION AND LOCATION	DEGREE (if applicable)	RECEIPT DATE	FIELD OF STUDY
UCSF, San Francisco, California, United States	Postdoctoral Fellow	08/1986	Stem Cells and Genomics
Harvard University, Cambridge, Massachusetts, United States	PHD	06/1984	Biochemistry and Molecular Biology
Duke University, Durham, North Carolina, United States	BA	10/1974	Zoology and Chemistry

Appointments and Positions**

1998 - present	Professor of Genetics , Harvard Medical School, Boston, Massachusetts, United States
2022 - present	Advisor, Integra TX, Barcelona , Not Applicable, N/A, Spain
2020 - present	Advisor, QihanBio, Hangzhou, Not Applicable, N/A, China
2018 - present	Advisor, SniprBiome, Copenhagen , Not Applicable, N/A, Denmark
2018 - present	Advisor, RejuvenateBio, San Diego, California, United States
2017 - present	Visiting Professor, MIT Media Lab (Course: MAS.S61), Cambridge, Massachusetts, United States
2017 - present	Advisor, Regenesis Institute, Shenzhen, Not Applicable, N/A, China
2017 - present	Advisor, PlexResearch, GRObio, CellinoBio, Cambridge, Massachusetts, United States
2016 - present	Co-Director, Consortium for Space Genetics, Harvard Medical School, Boston, Massachusetts, United States
2016 - present	Advisor, Inari, Xgenomes, Cambridge, Massachusetts, United States
2015 - present	Advisor, TierraBio, San Leandra, California, United States
2015 - present	Advisor, Curii, Somerville, Massachusetts, United States
2014 - present	Advisor, ReadCoor (now part of 10X Genomics), Cambridge, Massachusetts, United States
2013 - present	Advisor, Editas, HelixNano, Cambridge, Massachusetts, United States
2008 - present	Founding Core Faculty & Lead, Synthetic Biology, Wyss Institute for Biologically Inspired Engineering, Boston, Massachusetts, United States
2008 - present	Advisor , Alacris Theranostics GmbH , Berlin , Not Applicable, N/A, Germany
2007 - present	Advisor, BGI, Shenzhen, Not Applicable, N/A, China

2006 - present	Senior Associate Faculty Member , Broad Inst. of Harvard & MIT , Cambridge, Massachusetts, United States
2005 - present	Director, Personal Genome Project , Boston, Massachusetts, United States
2005 - present	Editorial Board, Molecular Systems Biology, Heidelberg, Not Applicable, N/A, Germany
2005 - present	Editorial Board, Scientific American , New York , New York, United States
2001 - present	Review Committee, NHGRI, BISTI, Pioneer grant, NHLBI BEE, NAS , Bethesda , Maryland, United States
1998 - present	Director, Lipper Center for Computational Genetics , Boston, Massachusetts, United States
1988 - present	Faculty Member, HMS & MIT Health Sciences and Technology, Boston, Massachusetts, United States
1987 - present	Director , DOE Technology development center , Washington, District of Columbia, United States
2017 - 2019	Advisor, Alibaba DAMO Academy , Hangzhou, Not Applicable, N/A, China
2004 - 2020	Director, NIH NHGRI Center of Excellence in Genomic Science (MGIC, CCV, CGEO), Boston, Massachusetts, United States
1994 - 1997	Review Committee, National Center for Human Genome Research, Bethesda , Maryland, United States
1990 - 1990	Review Committee, NIH Genome Study Section, Bethesda , Maryland, United States
1988 - 1994	Review Committee, Department of Energy Genome Project , Washington, District of Columbia, United States
1986 - 1998	Assistant/Associate Professor of Genetics, Harvard Medical School, Boston, Massachusetts, United States
1986 - 1997	Investigator , Howard Hughes Medical Institute , Boston, Massachusetts, United States
1985 - 1986	Life Sciences Research Foundation Fellow, Anatomy, UCSF, San Francisco , California, United States
1984 - 1984	Scientist , Biogen Research Corporation, Cambridge, Massachusetts, United States
1976 - 1976	Review Committee, National Science Foundation Program , Alexandria , Virginia, United States
1974 - 1975	Predoctoral Fellow, National Science Foundation , Alexandria , Virginia, United States

Products

Products Most Closely Related to the Proposed Project

1. Alon S, Goodwin DR, Sinha A, Wassie AT, Chen F, Daugharthy ER, Bando Y, Kajita A, Xue AG, Marrett K, Prior R, Cui Y, Payne AC, Yao CC, Suk HJ, Wang R, Yu CJ, Tillberg P, Reginato P, Pak N, Liu S, Punthambaker S, Iyer EPR, Kohman RE, Miller JA, Lein ES, Lako A, Cullen N, Rodig S, Helvie K, Abravanel DL, Wagle N, Johnson BE, Klughammer J, Slyper M, Waldman J, Jané-Valbuena J, Rozenblatt-Rosen O, Regev A, Church GM, Marblestone AH, Boyden ES. Expansion sequencing: Spatially precise in situ transcriptomics in intact biological systems. Science. 2021 Jan 29;371(6528) PubMed Central PMCID: PMC7900882.

2. Koseki S, Hong L, Yudistyra V, Stan T, Tysinger E, Silverstein R, Kramme C, Amrani N, Savic N, Pacesa M, Rodriguez TS, Ponnapati M, Jacobson J, Church G, Truant R, Jinek M, Kleinstiver B, Sontheimer E, Chatterjee P. PAM-Flexible Genome Editing with an Engineered Chimeric Cas9. Res Sq. 2023 Mar 7; PubMed Central PMCID: PMC10029082.

3. Nyerges A, Vinke S, Flynn R, Owen SV, Rand EA, Budnik B, Keen E, Narasimhan K, Marchand JA, Baas-Thomas M, Liu M, Chen K, Chiappino-Pepe A, Hu F, Baym M, Church GM. A swapped genetic code prevents viral infections and gene transfer. Nature. 2023 Mar;615(7953):720-727. PubMed Central PMCID: PMC10151025.

4. Perry E, Weber J, Pataranutaporn P, Volf V, Gonzalez LM, Nejad S, Angleton C, Chen JE, Gabo A, Jammalamadaka MSS, Kuru E, Fortuna P, Rico A, Sulich K, Wawrzyniak D, Jacobson J, Church G, Kong D. How to grow (almost) anything: a hybrid distance learning model for global laboratory-based synthetic biology education. Nat Biotechnol. 2022 Dec;40(12):1874-1879. PubMed PMID: 36510008.

Other Significant Products, Whether or Not Related to the Proposed Project
1. Ng AHM, Khoshakhlagh P, Rojo Arias JE, Pasquini G, Wang K, Swiersy A, Shipman SL, Appleton E, Kiaee K, Kohman RE, Vernet A, Dysart M, Leeper K, Saylor W, Huang JY, Graveline A, Taipale J, Hill DE, Vidal M, Melero-Martin JM, Busskamp V, Church GM. A comprehensive library of human transcription factors for cell fate engineering. Nat Biotechnol. 2021 Apr;39(4):510-519. PubMed Central PMCID: PMC7610615.

2. Smullen M, Olson M, Reichert J, Dawes P, Murray L, Baer C, Wang Q, Readhead B, Church G, Lim E, Chan Y. Reliable multiplex generation of pooled induced pluripotent stem cells. Cell Reports Methods. 2023 August 31. Available from: https://doi.org/10.1016/j.crmeth.2023.100570

Synergistic Activities
1. Integrating machine learning (ML) with large synthetic libraries to improve properties of industrial proteins quickly & efficiently (via Gen9/Gingko, Nabla Bio, Agilent/Twist)

2. Using ML for multiplex testing of millions of viral capsids (DNA barcodes) for delivery and protein barcoding (Co-founder of Manifold and Dyno)

3. Currently developing 10,000-fold lower cost whole chromosome synthesis and testing for prokaryotic and eukaryotic cells.

4. Developing a radically new Library-on-library screen method for extensive/comprehensive antibody-antigen pairs (and other binding families)

Certification:
When the individual signs the certification on behalf of themselves, they are certifying that the information is current, accurate, and complete. This includes, but is not limited to, information related to domestic and foreign appointments and positions. Misrepresentations and/or omissions may be subject to prosecution and liability pursuant to, but not limited to, 18 U.S.C. §§ 287, 1001, 1031 and 31 U.S.C. §§ 3729-3733 and 3802.

**Dr. Church has disclosed (in this Biosketch) key positions, appointments and affiliations however, listing details of all of Dr. Church's affiliations and appointments would exceed the 3 page Biosketch limit, as required by the sponsor. Please contact Dr. Church for further information -- or see website at: v.ht/PHNc