BIOGRAPHICAL SKETCH

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NAME: Solow-Cordero, David Edward

eRA COMMONS USER NAME (credential, e.g., agency login): User Name: SOLOW-CORDERO, DAVID
User ID: DESOLOW

POSITION TITLE: Director, High-Throughput Bioscience Center

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	Completion Date MM/YYYY	FIELD OF STUDY
Massachusetts Institute of Technology	B.S.	1986-1990	Biology
University of California at Berkeley	Ph.D.	1990-1995	Molecular and Cellular Biology

A. Personal Statement

I have over 20 years of experience in both Biotech and Academia running High-Throughput Screening labs. Since its inception in 2003, I have been running the Stanford University High-Throughput Bioscience Center (HTBC), whose mission is to provide researchers with the ability to run high-throughput chemical, siRNA, cDNA, and high-content screens for the purpose of drug and/or target discovery, and to automate processes involved with Next Generation Sequencing in collaboration with the Stanford Functional Genomics Facility. The HTBC is a Stanford University School of Medicine core facility and was created by the Department of Chemical and Systems Biology (formerly Molecular Pharmacology). The HTBC is also a shared resource for the Stanford Cancer Institute. The HTBC has the capability to run fully automated high-throughput screens for both cell-based and enzyme/protein based screens and even can run fully automated high-content screens. I manage all the day-to-day operations of the HTBC including acting as project manager for all screens, maintaining the databases and servers, experimental design, development, validation and testing, robotic programming, and all decision making on major instrumentation purchases as well as all financial matters. Under my leadership, projects performed in the HTBC have resulted in over 100 publications, dozens of patent applications, and a few start up Biotech companies. Discoveries in the HTBC have also been featured on NPR and on the front page of the San Francisco Chronicle.

Expertise: High-Throughput Screening, Drug Discovery, Assay Development, Laboratory Automation, siRNA Screening, High-Content Screening, Data Analysis, Cheminformatics

1. Matheny CJ, Wei MC, Bassik MC, Donnelly AJ, Kampmann M, Iwasaki M, Piloto O, Solow-Cordero DE, Bouley DM, Rau R, Brown P, McManus MT, Weissman JS, Cleary ML. Next-Generation NAMPT Inhibitors Identified by Sequential High-Throughput Phenotypic Chemical and Functional Genomic. Chem Biol. 2013 Nov 21;20(11):1352-63. Epub 2013 Oct 31. PMID: 24183972
2. Chan, D.A., Sutphin, P.D., Nguyen, P., Turcotte, S., Lai, E.W., Banh, A., Reynolds, G.E., Chi, J.T., Wu, J., Solow-Cordero, D.E., Bonnet, M., Flanagan, J.U., Bouley, D.M., Graves, E.E., Denny, W.A., Hay, M.P., Giaccia, A.J. Targeting GLUT1 and the Warburg Effect in Renal Cell Carcinoma by Chemical Synthetic Lethality. Sci Transl Med. Aug 3;3(94):94ra70 (2011). PMID: 21813754

3. Paulsen, R.D., Soni, D.V., Wollman,R., Hahn, A.T., Yee, M.C., Guan, A., Hesley, J.A., Miller, S.C., Cromwell, E.F., Solow-Cordero, D.E., Meyer, T., Cimprich, K.A. A Genome-wide siRNA Screen Reveals Diverse Cellular Processes and Pathways that Mediate Genome Stability. Mol. Cell 35(2): 228-239 (2009). PMID: 19647519

B. Positions and Honors

Positions and Employment

1986	Lab Technician, Bayer, Inc. Elkhart IN
1987	Research Assistant, Bayer, Inc. Elkhart, IN
1988-1990	Undergraduate Researcher, Prof. Anthony J. Sinskey, MIT, Dept. of Biology
1990-1995	Graduate Student, Prof. Michael J. Chamberlin, University of California at Berkeley, Dept. of Molecular and Cellular Biology
1995-1999	Scientist, Head of Screening, FibroGen, Inc. South San Francisco, CA
1999-2003	Principal Scientist, High Throughput Screening (HTS) and Informatics, Ceretek, LLC. South San Francisco, CA
2003-	Director, High-Throughput Bioscience Center (HTBC), Stanford University School of Medicine, Dept. of Chemical & Systems Biology

Honors and Awards

1986-1987	National Hispanic Scholar, MIT
1991-1992	University Fellowship, University of California at Berkeley
2005-2007 & 2010	Study Section, Solicitation of Assays for High Throughput Screening (HTS) in the Molecular Libraries Screening Centers Network (NIH, MLSCN)
2006-2007	Member, Education Committee, Society for Biomolecular Sciences (SBS)
2009	Study Section, Instrumentation and Systems Development, Bioengineering Sciences & Technologies Integrated Review Group, Temporary Member (NIH, CSR)
2009	Study Section, Assay Development for High-Throughput Molecular Screening (NIH)

C. Contribution to Science

1. As an undergraduate student at the Massachusetts Institute of Technology I worked with Dr. John Archer in the laboratory of Professor Anthony J. Sinskey in the Biology department. My work consisted of discovering a mutant *Corynebacterium glutamicum* in which the homoserine dehydrogenase enzyme was no longer allosterically inhibited by l-threonine. After MIT I obtained my PhD at the University of California at Berkeley in the laboratory of Professor Michael J. Chamberlin in the Department of Molecular and Cellular Biology. I studied the mechanism of transcription of rifampicin resistant *Escherichia coli* RNA polymerase.

    a. Archer, J.A., Solow-Cordero, D.E., Sinskey, A.J. A C-terminal deletion in *Corynebacterium glutamicum* homoserine dehydrogenase abolishes allosteric inhibition by l-threonine. Gene. 107: 53-59 (1991). PMID: 1743520
    b. Altmann, C.R., Solow-Cordero, D.E., Chamberlin, M.J. RNA cleavage and chain elongation by *Escherichia coli* DNA-dependent RNA polymerase in a binary enzyme-RNA complex. Proc. Natl. Acad. Sci. USA. 91: 3784-3788 (1994). PMID: 7513426

2. After obtaining my Ph.D. from UC Berkeley, I went to work for two startup Biotechnology companies. At these companies I first learned about High-Throughput Screening technologies. At FibroGen, I was responsible for setting up the cheminformatic database and the HTS lab. My work there resulted in two publications involving the regulation and discovery of inhibitors of bone morphogenetic protein-1/procollagen C-proteinase. I then became the first employee at Ceretek, where my responsibilities included beginning all operations and establishing the screening group, including purchasing all the

instrumentation and creating and maintaining the cheminformatics databases. Our work at Ceretek led to several patent applications on modulators of Edg receptors (G-protein coupled receptors).

a. Lee, S., Solow-Cordero, D.E., Kessler, E., Takahara, K., and Greenspan, D.S. Transforming growth factor-b regulation of bone morphogenetic protein-1/procollagen C-proteinase and related proteins in fibrogenic cells and keratinocytes. J. Biol. Chem. 272: 19059-19066 (1997). PMID: 9228090
b. Turtle, E., Chow, N., Yang, C., Sosa, S., Bauer, U., Brenner, M., Solow-Cordero, D., Ho, W.B. Design and synthesis of procollagen C-proteinase inhibitors. Bioorg Med Chem Lett. 2012 Dec 15;22(24):7397-401. doi: 10.1016/j.bmcl.2012.10.067. Epub 2012 Oct 24. PMID: 23134659

Patent Applications

c. 9 Applications: G Shankar, D Solow-Cordero, J Spencer, C Gluchowski. Methods of treating conditions associated with an Edg-1, Edg-2, Edg-4 and Edg7 receptors. 2003-2007.

One issued US Patent:

d. Solow-Cordero, D. Shankar, G., J.V. Spencer, and C. Gluchowski. Methods of treating conditions associated with an Edg-3 receptor. 7,208,502 April 24, 2007.

3. I returned to academia in 2003 to start the High-Throughput Bioscience Center (HTBC) at Stanford University. I set up all the screening operations, allowing Stanford researchers to perform high-throughput small molecule screens, whole human genome siRNA knockdown screens, and high-content imaging screens. Over 45 different Principal Investigators have run over 100 high-throughput screens in which I was responsible for assay design, programming the robots, managing the screen, performing the data analysis, and designing and performing the retest and dose response assays of the hits. Over 100 publications have resulted from usage of the HTBC and several publications in which I was a co-author are presented below as well as patent applications and issued patents.

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a. Bender KO, Garland M, Ferreyra JA, Hryckowian AJ, Child MA, Puri AW, Solow-Cordero DE, Higginbottom SK, Segal E, Banaei N, Shen A, Sonnenburg JL, Bogyo M. A small-molecule antivirulence agent for treating Clostridium difficile infection. Sci Transl Med. 2015 Sep 23;7(306):306ra148. doi: 10.1126/scitranslmed.aac9103. Epub 2015 Sep 23. PubMedID: 26400909
b. Spiekerkoetter E, Tian X, Cai J, Hopper RK, Sudheendra D, Li CG, El-Bizri N, Sawada H, Haghighat R, Chan R, Haghighat L, de Jesus Perez V, Wang L, Reddy S, Zhao M, Bernstein D, Solow-Cordero DE, Beachy PA, Wandless TJ, Ten Dijke P, Rabinovitch M. FK506 activates BMPR2, rescues endothelial dysfunction, and reverses pulmonary hypertension. J Clin Invest. 2013 Aug;123(8):3600-13. doi: 10.1172/JCI65592. Epub 2013 Jul 15. PMID: 23867624
c. Chan, C.T., Reeves, R.E., Geller, R., Yaghoubi, S.S., Hoehne, A., Solow-Cordero, D.E., Chiosis, G., Massoud, T.F., Paulmurugan, R., Gambhir, S.S. Discovery and validation of small-molecule heat-shock protein 90 inhibitors through multimodality molecular imaging in living subjects. Proc Natl Acad Sci U S A. Sep 11;109(37):E2476-85. Epub Aug15 (2012). PMID: 22895790

One issued US Patent:

d. E Spiekerkoetter, M Rabinovitch, PA Beachy, D Solow-Cordero. Use of FK506 for the Treatment of Pulmonary Arterial Hypertension. 9,474,745 October 25, 2016

Complete List of Published Work:

https://www.ncbi.nlm.nih.gov/pubmed/?term=Solow-Cordero

D. Additional Information: Research Support

Ongoing Research Support

NIH/NCI 5P30CA124435 (Beverly Mitchell-PI) 06/04/2007 - 05/31/2021
Stanford Cancer Institute
The major goal of this project is to build on institutional strengths in both technology development and translational research to foster interdisciplinary collaborations amongst eight programs: Cancer Biology, Radiation Biology, Cancer Stem Cells, Cancer Imaging and Early Detection, Translational Oncology, Lymphoma & Leukemia, Immunology and Immunotherapy of Cancer and Population Science. Shared resources support the investigations in experimental and clinical research.

Completed Research Support

None