

## SAMUEL A. INVERSO, PhD

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### ABOUT

An experienced interdisciplinary leader with a demonstrated history of success, and experience in technology and life sciences. Collaboratively built company from founding through funding rounds, \$350 million acquisition by and integration with 10x Genomics during a pandemic. Formed and ran cross-functional teams of molecular biologists, software engineers, and bioinformaticians in large scale multi-year multi-million-dollar projects. Oversaw more than \$30 million in funding from pharma, universities, and the federal government. Excels and enjoys building and communicating strategic frameworks that bridge science and business perspectives.

Business Development | Commercial Development | Product Management | Data Science | In situ sequencing | Computer Science | Neuroscience | Image Analysis | NGS | Bioinformatics | FISSEQ | Machine Learning

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### PROFESSIONAL EXPERIENCE

**Harvard University**, Wyss Institute, Boston, MA, USA 2021-present  
*Director of Business Development, Partnerships*

**ReadCoor Inc.**, Cambridge, MA, USA 2019-2020  
*Co-founder & Vice President of Global Partnerships*

- ♦ Collaboratively built company from founding through to \$350 million acquisition by 10x Genomics
- ♦ Headed product vision of Sales, Business Development, and Marketing/Communications, and orchestration with cross-functional teams in Bio, Software, and Hardware Engineering; reported directly to CEO
- ♦ Reconciled product management across Bio, Software, Hardware, and Sales to ensure meeting business goals
- ♦ Analyzed market of spatial sequencing, competitive landscape, and customer needs to focus commercial strategy
- ♦ Created and delivered value driven presentations for instrument sales, partnerships, and brand awareness

*Co-founder & Director of Sponsored Research* 2016-2019

- ♦ Built and managed external business affairs including contract negotiation, budget, and customer satisfaction
- ♦ Principal Investigator of multi-million-dollar grants and contracts with institutes, government, and pharma, such as The Chan-Zuckerberg Initiative, IARPA, WAVE Life Sciences, and Bill & Melinda Gates Foundation
- ♦ Researched, implemented, and advised software development in primary analysis: pipeline development, low-rank sparse deconvolution (BaSIC), wavelet filtering, object finding, blind deconvolution, customer data specifications; and secondary analysis: k-d tree all-pairs nearest neighbor target co-occurrence, dimensionality reduction (UMAP, Truncated SVD, HDBSCAN), and customer facing tutorials
- ♦ Spearheaded business development through identifying and soliciting corporate and academic collaborators

**Harvard University**, Wyss Institute, Boston, MA, USA 2013-2016  
*Staff Software Engineer*, under Richard Terry and George Church

- ♦ On the Advanced Technology Team at the Wyss as both Software Engineer and Scientist.
- ♦ Managed and lead many projects including IARPA MICrONS multi-institute consortia to map 1mm cube of a mouse brain at the synaptic level with Fluorescent in-situ sequencing (FISSEQ)
- ♦ Coordinated 10+ academic collaborations for FISSEQ, including writing grants with them, sample tracking from arrival through data return, and bioinformatics of the results
- ♦ Developed and maintained image analysis pipeline for processing multi-TB data sets from the in house build ARC-GT FISSEQ sequencer (C++/Python)
- ♦ Bioinformatics of transcriptome from many FISSEQ samples, including human cancer and normal tissue, mouse, cell culture, and C. elegans
- ♦ Aided Scientists, Postdocs, and Graduate Students in data analysis, experimental planning, and produced software with their input to help them in daily tasks, e.g. image analysis GUI to determine if colonies are clonal (MATLAB), R scripts to analyze data, python bioinformatics

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- ◆ Daily laboratory coordination including sample management, vendors/suppliers, laboratory orders, data sharing of large data sets, and data analysis
- ◆ Wet bench work optimizing FISSEQ protocol for the mouse brain
- ◆ Encoded a movie in DNA, “A trip to the Moon” (700MB) with Technicolor, George Church, and Brian Turczyk  
Performed the bioinformatics for library construction and troubleshooting, Credited

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## PRIOR EXPERIENCE

**Massachusetts Institute of Technology Media Lab Europe**, Dublin, Ireland 2003-2005  
*Research Associate*

**Rochester Institute of Technology**, Rochester, NY 2001-2003  
*Research Assistant & Teaching Assistant*

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## EDUCATION AND TRAINING

**Postdoctoral Fellow**, Department of Neuroscience  
Pasteur Institute, Paris, France

**Doctor of Philosophy**, Neuroscience  
The Australian National University, Canberra, AU

**Master of Science**, Computer Science  
Rochester Institute of Technology, Rochester, NY, USA

**Bachelor of Science**, Computer Science  
Rochester Institute of Technology, Rochester, NY, USA

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## GRANTS AND AWARDS

Bill & Melinda Gates Foundation, Tissue Viral Reservoir Spatial Biomarkers. Role: Co-PI, PI Jacob Estes, Oregon Health & Sciences University	\$Undisclosed, ReadCoor, 2019-2020
NIH, Defining Mechanisms of Viral Persistence in Situ at the Single-Cell Level. Role: Co-PI, PI Jacob Estes, Oregon Health & Sciences University	\$Undisclosed, ReadCoor, 2019-2020
Chan-Zuckerburg Initiative, Spatial Transcriptomics of Cortical Cell Types. Role: PI	\$Undisclosed, ReadCoor, 2017-2019
WAVE Life Sciences, Inc., Fluorescent in situ Sequencing Therapeutics. Role: PI	\$Undisclosed, ReadCoor, 2017-2019
W.M. Keck Foundation, FISSEQ C. elegans metabolomics Role: Co-investigator, PI Eyleen O'Rourke, U of Virginia	\$1.2 million, ReadCoor, 2017-2019
Bill & Melinda Gates Foundation, In situ sequencing for pathogen identification. Role: PI	\$2.5 million, ReadCoor, 2016-2019
NIH S10, Shared Instrumentation Grant for a FISSEQ sequencer. Role: Co-authored proposal, PI George Church	\$598,000, Harvard, 2016-2017
Machine Intelligence from Cortical Networks (MICrONS), IARPA Role: Co-investigator, PI George Church	\$21 million, Harvard & ReadCoor, 2016-2018
Harvard Medical School Tool's and Technology Role: Co-authored proposal, PI George Church	\$200,000, Harvard, 2014

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## SKILLS

Business:	Work collaboratively in cross-functional teams in fast-paced technical environments, manage multiple competing priorities, budget, strong interpersonal, organizational, analytical, communication and presentation skills, recognizing talent, and team building
Lab:	Cryosectioning, Animal Handling, Stereotaxic injection of Lentivirus, AAV, Sindbis,

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and Amyloid $\beta$ . RNA/DNA extraction, PCR, IHC. FISSEQ, Confocal and 2-photon microscopy,  
Experiment Design, Basic Lab techniques hazardous/carcinogenic chemical handling, etc  
Python, C++, C, R, image analysis, data analysis, machine learning, bioinformatics

Computer:

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### PUBLICATIONS (SELECTED)

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- ♦ Turczyk, B. M., Busby, M., Martin, A. L., Daugharthy, E. R., Myung, D., Terry, R. C., **Inverso, S.**, Kohman, R. E., Church, G. C. Spatial Sequencing: Perspective. *J. Biomolecular Techniques*, 2020, 31(2), 44–46.
- ♦ Blawat M., Gaedke K., Huetter I., Chen XM., Turczyk B., **Inverso S.**, Pruitt B., Church G. Forward Error Correction for DNA Data Storage. (full paper) International Conference on Computational Science, San Diego, CA, USA, June 6-8, 2016.
- ♦ **Inverso S. A.**, Xin-Lin G., Henriksson L., Vanni S., James A. C. From Evoked Potentials to Cortical Currents: Resolving V1 and V2 Components Using Retinotopy Constrained Source Estimation without fMRI. (full paper) *Human Brain Mapping*, 2016, 37(5):1696-1709.
- ♦ Lee J. H., Daugharthy E. R., Scheiman J., Kalhor R., Yang J. L., Ferrante T. C., Terry R., Jeanty S. S. F., Li C., Amamoto R., Peters D. T., Turczyk B. M., Marblestone A. H., **Inverso S. A.**, Bernard A., Mali P., Rios X., Aach J., Church G. M., Highly Multiplexed Subcellular RNA Sequencing in Situ. *Science*, 3/21/2014, 343(6177):1360-1363.
- ♦ Valley M. T., Henderson L. G., **Inverso S. A.**, and Lledo PM., “Adult Neurogenesis Produces Neurons with Unique GABAergic Synapses in the Olfactory Bulb”, *J. of Neuroscience*, Sept. 11, 2013, 33(37):14660-14665.
- ♦ **Inverso S. A.**, Goh X. L., James A. J., Slowing Vision: Pattern Pulse MultiFocal Visual Evoked Potential (PPmfVEP) timing dilation under Isoluminant and Luminance Contrast Conditions (poster) *Vision Science Society 2009*.
- ♦ Costanza E., **Inverso S. A.**, Allen R., Maes P., “EMG For Subtle, Intimate Interfaces”, in Lumsden J. (Ed.), *Handbook of Research on User Interface Design and Evaluation for Mobile Technology* (book chapter), pp. 524-542, Information Science Reference, 2008
- ♦ **Inverso S. A.**, Doolan B., James A. J., Real-time Influence of Interocular Transfer During Binocular Rivalry (poster) *Vision Down Under 2007*, Palm Cove, QLD, Australia, July 19-22, 2007.
- ♦ Costanza E., **Inverso S. A.**, Allen R., Maes P., “Intimate Interfaces in Action: Assessing Usability and Subtlety of EMG-based Motionless Gestures.” (full paper) *Proc. CHI2007*, April 2007, San Jose, CA, USA.
- ♦ Costanza E., **Inverso S. A.**, Pavlov E., Allen R., Maes P. “eye-q: Eyeglass Peripheral Display for Subtle Intimate Notifications.” (full paper) *Proc. of MobileHCI 2006*, September 2006, Espoo, Finland.
- ♦ Bayliss, J. D. and **Inverso, S. A.** "Automatic Error Correction Using P3 Response Verification for a Brain-Computer Interface." (full paper) *Proc. 11th International Conference on Human-Computer Interaction* July 22-27, 2005, Las Vegas, NV. Mahwah: Lawrence Erlbaum Associates. 2005.
- ♦ Costanza, E., **Inverso, S. A.**, and Allen, R. "Toward Subtle Intimate Interfaces for Mobile Devices Using an EMG Controller." (full paper) *Proc. of CHI2005*, Portland, Oregon, USA. 2005.
- ♦ Bayliss, J. D., **Inverso, S. A.**, and Tentler, A. “Changing the P300 Brain-Computer Interface.” *Journal of CyberPsychology & Behavior* 7.6:694-704, 2004.
- ♦ **Inverso, S. A.**, Hawes, N., Kelleher, J., Allen, R., and Haase, K. “Think and Spell: Context-Sensitive Predictive Text for an Ambiguous Keyboard Brain-Computer Interface.” *J. Biomedizinische Technik* 49 S. 1: 53-54, 2004.