Jacob Glanville

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SUMMARY Computational immuno-engineer

EXPERIENCE Co-founder & CSO, Distributed Bio, San Francisco, CA (2012-current)

- Designed AbGenesis Repertoire algorithms & analytical platform
- Architected and led the development of SuperHuman libraries
- Created Tumbler affinity maturation technology
- Created mass humanization technology
- Created universal vaccine technology and led development

Principal Scientist. Pfizer Inc. South San Francisco, CA (2008-2012)

- Developed methods for BCR and TCR repertoire characterization
- Developed & published methods for antibody library optimization
- Developed & patented methods for IP protection with NGS sequencing
- Founded “antibody.pfizer.com” used daily by hundreds of Pfizer researchers
- Received 2010 Pfizer achievement award

Programmer Analyst. Sjolander Laboratory, UC Berkeley, CA (2005-2007)

- Developed PhyloFacts genome family clustering workflow in Perl/Python
- Developed & published phylogenomic analysis workflow resource

Laboratory Assistant. Thomson Laboratory, UC Berkeley, CA (2000-2002)

- Authored HLA population genetics drift simulator in C
- Presented equivalency metrics between HLA typing assays

EDUCATION Computational and Systems Immunology PhD
Stanford School of Medicine, Stanford University
Stanford University, 06/02/2017
Co-advised by Mark Davis and Scott Boyd
2015 Gates Grant Awardee - Computational and Systems Immunology
2016 Gates Grant Awardee - Computational and Systems Immunology

MCB - Genetics, Genomics, and Development BA
University of California at Berkeley, Spring 2006
Co-advised by Glenys Thomson and Kimmen Sjolander
Gompertz Fellow

INSTRUCTION

Stanford Immuno 206a “Computational and Systems Immunology”
Guest lecturer, Spring 2017

Stanford Immuno 209 “Translational Immunology”
Guest lecturer, Winter 2016

Stanford Immuno 206a “Computational and Systems Immunology”
Guest lecturer, Spring 2015

Stanford Immuno 206a “Computational and Systems Immunology”

Instructor, Spring 2014

Stanford Immuno 310 “Applied Computational Immunology”
Instructor & class founder, Fall 2013

Stanford Immuno 202 “Advanced Immunology II”
Guest lecturer, Winter 2014, 2015, 2016

PUBLICATION **J Glanville***, Huang Huang*, et al. "Identifying specificity groups in the T cell receptor repertoire." *Nature* (2017).

J Glanville*, T Kuo*, HC von Büdingen* et al, “Naive antibody gene-segment frequencies are heritable and unaltered by chronic lymphocyte ablation”, *Proceedings of the National Academy of Sciences*, 2011

J Glanville*, W Zhai*, J Berka* et al, “Precise determination of the diversity of the combinatorial library gives insight into the human immunoglobulin repertoire,” *Proceedings of the National Academy of Sciences*, 2009

J Glanville et al, “Berkeley Phylogenomics Group web servers: resources for structural phylogenomic analysis”, *Nucleic acids research*, 2007

Glanville, J., et al. "Deep sequencing in library selection projects: what insight does it bring?." *Current opinion in structural biology* 33 (2015): 146-160.

W Zhai*, **J Glanville*** et al, “Synthetic antibodies designed on natural sequence landscapes”, *Journal of Molecular Biology*, 2011

A Han, **J Glanville** et al. "Linking T-cell receptor sequence to functional phenotype at the single-cell level." *Nature biotechnology* (2014).

M Birnbaum, et al. "Deconstructing the Peptide-MHC Specificity of T Cell Recognition." *Cell* 157.5 (2014): 1073-1087.

J Ryan, R Hovde, **J Glanville**, et al. "Successful immunotherapy induces previously unidentified allergen-specific CD4+ T-cell subsets." *Proceedings of the National Academy of Sciences* (2016): 201520180.

C Watson, **J Glanville**, and W Marasco. "The Individual and Population Genetics of Antibody Immunity." *Trends in Immunology* (2017).

HV Büdingen, T Kuo, S Marina, C Belle, L Apeltein, **J Glanville** et al. “B cell exchange across the blood-brain barrier in multiple sclerosis.” *The Journal of Clinical Investigation* 122.12 (2012): 4533.

C Mahon, M Lamburt, **J Glanville**, et al. “Comprehensive interrogation of a minimalist synthetic CDR-H3 library and its ability to generate antibodies with therapeutic potential.” *Journal of Molecular Biology* (2013).

J Benichou, **J Glanville** et al. "The Restricted DH Gene Reading Frame Usage in the Expressed Human Antibody Repertoire Is Selected Based upon its Amino Acid Content." *The Journal of Immunology* 190.11 (2013): 5567-5577.

A Han, E Newell, **J Glanville**, et al. “Dietary gluten triggers concomitant activation of CD4+ and CD8+ T cells and g/d T cells in celiac disease.” *Proceedings of the National Academy of Sciences* 110.32 (2013): 13073-13078.

S D’Angelo, **J Glanville**, et al. “The antibody mining toolbox: An open source tool for the rapid analysis of antibody repertoires.” *mAbs*. Vol. 6. No. 1. Landes Bioscience, 2013.

Liberman, Gilad, et al. “Multi step selection in Ig H chains is initially focused on CDR3 and then on other CDR regions.” *Frontiers in immunology* 4 (2013).

Liberman, Gilad, et al. “Estimate of Within Population Incremental Selection Through Branch Imbalance in Lineage Trees.” *Nucleic Acids Research* (2015).

Jackson, Katherine JL, et al. "Human responses to influenza vaccination show seroconversion signatures and convergent antibody rearrangements." *Cell host & microbe* 16.1 (2014): 105-114.

Qi, Qian, et al. "Diversity and clonal selection in the human T-cell repertoire." *Proceedings of the National Academy of Sciences* 111.36 (2014): 13139-13144.

Frigotto, Laura, et al. "Codon-Precise, Synthetic, Antibody Fragment Libraries Built Using Automated Hexamer Codon Additions and Validated through Next Generation Sequencing." Antibodies 4.2 (2015): 88-102.

Xiao, Liang, et al. "A catalog of the mouse gut metagenome." Nature Biotechnology 33.10 (2015): 1103-1108.

Looney, Timothy J., et al. "Human B-cell isotype switching origins of IgE." Journal of Allergy and Clinical Immunology (2015).

Leighton, Philip A., et al. "A diverse repertoire of human immunoglobulin variable genes in a chicken B cell line is generated by both gene conversion and somatic hypermutation." Frontiers in immunology 6 (2015).

Wei, Yu-Ling, et al. "A highly focused antigen receptor repertoire characterizes γδ T cells that are poised to make IL-17 rapidly in naive animals." Frontiers in immunology 6 (2015).

Avnir, Yuval, et al. "IGHV1-69 polymorphism modulates anti-influenza antibody repertoires, correlates with IGHV utilization shifts and varies by ethnicity." *Scientific reports* 6 (2016).

Yeung, Yik Andy, et al. "Germline-encoded neutralization of a Staphylococcus aureus virulence factor by the human antibody repertoire." *Nature Communications* 7 (2016): 13376.

Levin, Mattias, et al. "Persistence and evolution of allergen-specific IgE repertoires during subcutaneous specific immunotherapy." *Journal of Allergy and Clinical Immunology* 137.5 (2016): 1535-1544.

Glanville, J., et al. "Deep sequencing in library selection projects: What insight does it bring?." *Current opinion in structural biology* 33 (2015): 146-160.

Watson, Corey T., et al. "Comment on “A Database of Human Immune Receptor Alleles Recovered from Population Sequencing Data”." *The Journal of Immunology* 198.9 (2017): 3371-3373.

Steiniger, Sebastian CJ, et al. "Comparative analysis of the feline immunoglobulin repertoire." *Biologicals* 46 (2017): 81-87.

PATENT

J GLANVILLE, “EPITOPE FOCUSING BY VARIABLE EFFECTIVE ANTIGEN SURFACE CONCENTRATION”

A RAJPAL, D STONE, **J GLANVILLE**, W ZHAI. “ANTI-NOTCH-1 ANTIBODIES.”

D FOLETTI, J RIGGERS, **J GLANVILLE**, ET AL. “STAPHYLOCOCCUS AUREUS SPECIFIC ANTIBODIES AND USES THEREOF.”

A HAN, **J GLANVILLE**, M DAVIS. “SINGLE CELL ANALYSIS OF T CELLS USING HIGH-THROUGHPUT MULTIPLEX AMPLIFICATION AND DEEP SEQUENCING”

J GLANVILLE. “METHOD FOR MASS HUMANIZATION OF RABBIT ANTIBODIES”

J GLANVILLE. “METHODS FOR MASS HUMANIZATION OF NON-HUMAN ANTIBODIES”

EXPOSITION

2018 Keynote Speaker: Gordon GRS/GRC Antibody Biology and Engineering
2018 Speaker: Annual World Protein & Peptide Conference

2017 Speaker: International Conference of Immunology 2017
2017 Speaker: 2nd World Congress of Biosimilars
2017 Speaker: Roche Symposium
2017 Speaker: LakePharma Protein Symposium
2017 Speaker: Bioprocess International West
2017 Speaker: Stanford Computational and Systems Immunology
2017 Speaker: Antibody and Protein Therapeutics Summit
2017 Speaker: PEGS
2017 Speaker: Gates Grand Challenges

2016 Speaker: EBI EMBL Workshop
2016 Speaker: IBC (2 talks)
2016 Speaker: PEGS
2016 Speaker: Gates Grand Challenges
2016 Speaker: Cuba Immunotherapy
2016 Speaker: NIH CTOT
2016 Speaker: Stanford U19-Gates Grand Challenges review
2016 Speaker: Translational Immunology 209, Stanford University
2016 Speaker: Advanced Immunology 201, Stanford University
2016 Speaker: Mount Sinai Seminar Speaker
2016 Speaker: Amgen Seminar Speaker

2015 Speaker: IBC
2015 Speaker: PEGS Europe
2015 Speaker: Alexion Antibody Day
2015 Speaker: LakePharma Antibody Engineering Symposium
2015 Speaker: Protein Engineering Summit, Europe (PEGS) (2 talks)
2015 Speaker: 3rd Annual Protein Engineering Symposium
2015 Speaker: Genentech Seminar Speaker
2015 Speaker: Protein Engineering Summit (PEGS)
2015 Speaker: OATV – Machine Learning Meets DNA
2015 Speaker: PepTalk Antibody Engineering

2014 Speaker: IBC
2014 Speaker: IRMACS
2014 Speaker: Harvard Ragon Institute Seminar Speaker
2014 Speaker: Stanford Immunology Retreat
2014 Speaker: Next Generation Protein Therapeutics IBC
2014 Speaker: Protein Engineering Summit (PEGS)
2014 Speaker: Gordon Antibody Biology and Engineering

2013 Speaker: Protein Engineering Summit (PEGS)
2013 Speaker: Stanford Immunology Asilomar Retreat
2013 Speaker: Molecular Medicine Tri-CON
2013 Speaker: Molecular Medicine Tri-CON Short course

2012 Speaker: Antibody Engineering/Antibody Therapeutics IBC
2012 Speaker: Stanford Photonics Research Center Symposium
2012 Speaker: Next Generation Sequencing Conference, Prague
2012 Speaker: Drug Discovery and Development Leaders Summit
2012 Speaker: Antibody Design and Discovery Conference
2012 Speaker: Protein Engineering Summit (PEGS)
2012 Speaker: CHI Tri-Medical Conference

2011 Speaker: Copenhagenomics
2011 Speaker: 4th Protein Therapeutic Discovery Conference
2011 Speaker: CHI Tri-Medical Conference

2010 Speaker: 20th World Molecular Engineering Network
2010 Speaker: X-Gen Congress
2010 Speaker: CHI TRI-Medical Conference

2006 Speaker: California Metagenomics workshop