John Everett, PhD

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Professional summary

Bioinformatics director leading research projects in the areas of retroviral and AAV gene therapies.
Work with scientists and clinicians to evaluate more than 15 human gene therapy trials, develop custom informatics pipelines, and drive projects using techniques such as CRISPR targeting, 16S taxonomic assignments, RNAseq profiling, and viral integration analyses. Extensive experience in managing large scale production pipelines, research programmers, and research projects spanning multiple disciplines including human gene therapy, genetics, molecular biology, protein science, and structural biology. Authored / co-authored more than 65 peer reviewed publications.

Professional Experience

Bioinformatics Director and Project Manager
University of Pennsylvania | May 2016 - Present

- Manage bioinformaticians to drive research projects for commercial and academic clients.
- Perform informatic analyses for multiple companies including Novartis, Spark therapeutics, Encoded therapeutics.
- Develop and deploy informatic pipelines for retroviral / AAV gene therapies, tracking the emergence SARS-Cov-2 variants, taxonomic assignments, RNAseq profiling, and genomic sequencing.
- Track and evaluate patient samples for more than 15 human gene therapy trials.
- Develop novel approaches for sequencing and characterizing AAV integration events.
- Expert in data management, cloud computing, and best software practices.

Assistant Research Professor
Rutgers University | Jun 2010 – May 2016

- Developed a robust web based LIMS integrating bench top data collection, robotics and bioinformatics for the NorthEast Structural Genomics consortium (NESG).
- Built public data repositories for protein production, NMR, X-Ray crystallography and SAXS data.
- Served as the NESG expert bioinformatician in the NIH BioInformatics Group.
- Determined the atomic structures and functions of eukaryotic touch receptor protein complexes.
- Mentored research theses in the areas of bioinformatics and structural biology.

NESG Protein Production Pipeline and Project Manager
Rutgers University, NESG | Jun 2008 – Jun 2015

- Managed the $60M NIH funded NESG protein production pipeline involving some 20 molecular biologists, protein scientists, and technicians to create and characterize more than 75,000 protein expression constructs. This pipeline included the cloning, fermentation, purification, characterization, and structure determination of proteins from more than 100 organisms leading to the determination of more than 1,000 NMR and X-Ray protein structures.
- Directed the curation and distribution of extensive collections of DNA, cell cultures, and protein samples
- Managed software developers, database developers, and system administrators.
- Standardized community data exchange formats and disseminated large volumes of protein production and structure determination data to public repositories.
- Coordinated research projects across more than 10 research institutions involving more than 50 researchers. Research projects included:
  - Structural coverage and homology modeling of protein sequence space
  - Structure determination of key human cancer proteins
  - Structure determination of engineered proteins

Education

PhD in Biochemistry | Rutgers University / UMDNJ 2007
BA in Biochemistry & Psychology | Rutgers University 1998

Additional skills

- Programming languages: R, PERL, Python
- Databases and cloud computing: MySQL, AWS
- Laboratory skills: cloning technologies, protein expression technologies, protein refolding and purification technologies, and protein NMR technologies

Select publications

Full list of 65 publications: https://www.ncbi.nlm.nih.gov/myncbi/john.everett.1/bibliography/public

Nguyen GN & Everett JK (co-first author), [et al]. A long-term study of AAV gene therapy in dogs with hemophilia A identifies clonal expansions of transduced liver cells. **Nature Biotechnology**. 2021Jan;39(1):47-55.

Everett JK [et al]. SARS-CoV-2 Genomic Variation in Space and Time in Hospitalized Patients in Philadelphia. **mBio.** 2021 Jan 19;12(1):e03456-20.

Fraietta JA, [et al, including Everett JK] . Disruption of TET2 promotes the therapeutic efficacy of CD19-targeted T cells. **Nature**. 2018 Jun;558(7709):307-312.

Kohn DB, [et al, including Everett JK]. Lentiviral gene therapy for X-linked chronic granulomatous disease. **Nature Medicine**. 2020 Feb;26(2):200-206.

Boulad F, [et al, including Everett JK] . Lentiviral globin gene therapy with reduced-intensity conditioning in adults with β-thalassemia: a phase 1 trial. **Nature Medicine.** 2022 Jan;28(1):63-70.

Magnani A, [et al, including Everett JK]. Long-term safety and efficacy of lentiviral hematopoietic stem/progenitor cell gene therapy for Wiskott-Aldrich syndrome. **Nature Medicine.** 2022 Jan;28(1):71-80.

Narayan V, [et al, including Everett JK]. PSMA-targeting TGFβ-insensitive armored CAR T cells in metastatic castration-resistant prostate cancer: a phase 1 trial. **Nature Medicine.** 2022 Apr;28(4):724-734.

Boël G, [et al, including Everett JK]. Codon influence on protein expression in E. coli correlates with mRNA levels. **Nature**. 2016 Jan 21;529(7586):358-363.

Price WN 2nd, [et al, including Everett JK]. Understanding the physical properties that control protein crystallization by analysis of large-scale experimental data. **Nature Biotechnology**. 2009 Jan;27(1):51-7. PMID: 19079241.

Everett JK, [et al]. A community resource of experimental data for NMR / X-ray crystal structure pairs. **Protein Science.** 2016 Jan;25(1):30-45.

Everett JK, [et al]. Primer Prim'er: a web based server for automated primer design. **J Struct Funct Genomics**. 2004; 5(1-2):13-21