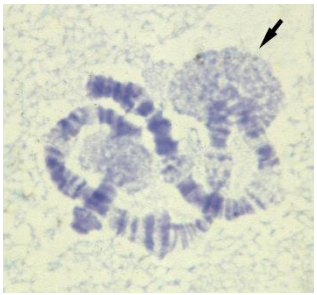
PLEASE POST

BROWN UNIVERSITY

Postdoc Position



DNA puffs

Identification of cis-elements and trans-acting factors for locus-specific DNA re-replication

DNA amplification is a hallmark of many cancers, but the initiating events are difficult to study in cancer cells. As a model system, we use the giant polytene chromosomes of the fly *Sciara* where developmentally regulated locus-specific DNA amplification occurs via re-replication at the 18 "DNA puffs". How do these rogue origins at DNA puffs overcome the normal cellular controls against re-replication? We will investigate this in our newly funded NIH grant. The results may also elucidate the initiating events for DNA amplification in cancer cells.

Postdoc applicants should submit the following:

(1) Cover letter stating

-Hands-on experience in molecular biology (list methods used);
-Your long-term career goals;
-Date of availability to begin postdoc research (eg, fall/winter 2017).

(2) Curriculum vitae (including publications and awards/honors)

(3) Three reference letters (ask your referees to E-mail their letter to Susan_Gerbi@Brown.edu)

Brown University is a vibrant intellectual community with many cross-disciplinary interactions. Providence RI is a delightful city that is 1 hour from Boston, 2 hours from New Haven and 4 hours from New York City.

Susan A. Gerbi; George Eggleston Professor of Biochemistry
Brown University Division of Biology and Medicine
Department of Molecular Biology, Cell Biology and Biochemistry
Sidney Frank Hall room 260; 185 Meeting Street
Providence, RI 02912 USA

Dr. Gerbi was the founding Chair of her department. Her many honors include past-President of the American Society for Cell Biology and a Fellow of AAAS. In 2017 she received the George Beadle award from the Genetics Society of America. She has held leadership roles at the national level in best practices for graduate student and postdoctoral training: **(a)** Chair of FASEB Conference on Graduate Education, **(b)** Founding member and Chair of the AAMC Graduate Research Education and Training (GREAT) Group and has published several papers in this area [e.g., Gerbi et al, **Science** 292: 1489-1490; Garrison et al, **FASEB J** 30: 41-44].

Her lab developed the method of Replication Initiation Point mapping that allowed the start site of DNA synthesis to be identified for the first time at the nucleotide level in eukaryotes [Bielinsky and Gerbi, **Science** 279: 95-98 and **Molec. Cell** 3: 477-486]. The Gerbi lab initiated the use of λ-exonuclease to enrich replicating DNA, and this method is now widely used by many groups, including

as the basis for NS-seq to discover and map replication origins genome-wide. Dr. Gerbi's interest in genomics stems back to her graduate student days with Dr. Joe Gall at Yale where she was part of the team that developed the method of *in situ* hybridization to map genes on chromosomes.

Some Recent Papers from the Gerbi Lab:

Foulk MS, Urban JM, Casella C and Gerbi SA (2015) Characterizing and controlling intrinsic biases of Lambda exonuclease in nascent strand sequencing reveals phasing between nucleosomes and G-quadruplex motifs around a subset of human replication origins. ***Genome Res.*** 25: 725-735.

Urban JM, Foulk MS, Casella C and Gerbi SA (2015) The hunt for origins of DNA replication in multicellular eukaryotes. ***F1000 Prime Rep.*** 7: 30.

Gerbi, SA (2015) Beginning at the end: DNA replication within the telomere. ***J. Cell Biol.*** 210: 177-179.

Doris SM, Smith DR, Beamesderfer JN, Raphael BJ, Nathanson JA and Gerbi SA (2015) Universal and domain-specific sequences in 23S-28S ribosomal RNA identified by computational phylogenetics. ***RNA*** 21:1719-1730.

Yamamoto Y, Bliss J and Gerbi SA (2015) Whole organism genome editing: targeted large DNA insertion via ObLiGaRe nonhomologous end-joining *in vivo* capture. **G3 – *Genes, Genomes and Genetics*** 5:1843-1847.

Urban JM, Bliss J, Lawrence CE and Gerbi SA (2015) Sequencing ultra-long DNA molecules with the Oxford Nanopore MinION. **BioRxiv** doi: http://dx.doi.org/10.1101/019281

Garrison HH, Justement LB and Gerbi SA (2016) Biomedical science postdocs: an end to the era of expansion. ***FASEB J.*** 30: 41-44.

Additional papers in submission include long read sequencing and assembly of the Sciara genome.

Rhode Island: The Ocean State

Brown University

Providence, RI

The Gerbi Lab
https://www.brown.edu/research/labs/gerbi/

Sidney Frank Hall for Life Sciences