

Eric Edward Bryant, PhD

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Education & Experience

- 2011—'18 **PhD, Columbia University**
Department: [GSAS Biological Sciences](#)
Thesis: [Systems genetics of DNA damage tolerance — cisplatin, RAD5 & CRISPR-mediated nonsense](#)
Mentor: [Rodney Rothstein](#)
Co-Mentor: [Alberto Ciccia](#)
Committee: [Songtao Jia](#), [Elizabeth Miller](#) & [Matthew Weitzman](#)
Keywords: Systems genetics / Genetic interaction networks / Landscape enrichment analysis / Synthetic lethality / DNA replication, recombination & repair / Chromosome mobility / CRISPR iSTOP / Bioinformatics / R programming
- 2009—'11 **Gene Oracle, Research Assistant**
Role: De-novo gene synthesis & degenerate codon library construction. Pipeline management and development.
Manager: [Shannon Phan](#)
- 2006—'09 **BS, University of California Los Angeles**
Department: [UCLA Microbiology, Immunology & Molecular Genetics](#)
- 2004—'06 **West Valley College**
Department: [WVC Biology](#)

Software

- 2019 **[screenmill R package](#): capture, annotate, quantify, review and analyze time-series colony growth.** This package was used for colony quantification and interaction analysis in Bryant et al. [2019](#). A nice example analysis using screenmill can be found in [Figure 1D](#).
- 2017 **[iSTOP R package](#): design guides to introduce stop codons with CRISPR-mediated base editors.** This package was written to facilitate guide design for Billon et al. [2017](#). iSTOP can be configured to generate any desired missense mutation using any hypothetical base editor.

Teaching

- 2013 **Columbia University, Teaching Assistant for Molecular Biology**
Professors: [Songtao Jia](#) & [Ron Prywes](#)
- 2012 **Columbia University, Teaching Assistant for Cell Biology**
Professors: [Elizabeth Miller](#) & [Chloë Bulinski](#)

Awards

- 2018 Departmental distinction for PhD dissertation defense
- 2017—'18 TL1 NIH training grant, clinical and translational research
- 2016—'17 T32 NIH training grant, cancer biology
- 2013—'15 T32 NIH training grant, biological sciences
- 2013 James Howard McGregor award (student with unusual promise as a teacher of zoology)

Member

- 2012—'18 [New York Academy of Sciences: Genome Integrity Discussion Group](#)
- 2012—'18 [Genetics Society of America](#)
- 2006—pres. [NOLS Alumni](#)

Publications

Lead contribution

- 2019-09-26 Rad5 dysregulation drives hyperactive recombination at replication forks resulting in cisplatin sensitivity and genome instability.
Bryant EE, Šunjevarić I, Berchowitz L, Rothstein R, Reid RJD.
Nucleic Acids Research. 2019 Sep 26;47(17):9144–9159
[PMID: 31350889](#) – [PMCID: PMC6753471](#) – [DOI: 10.1093/nar/gkz631](#)
- 2019-01-09 Systems genetics of DNA damage tolerance – Cisplatin, *RAD5* & CRISPR-mediated nonsense.
Bryant EE.
Columbia University.
[DOI: 10.7916/d8-k1do-kb09](#)
- 2017-09-21 CRISPR-mediated base editing enables efficient disruption of eukaryotic genes through induction of STOP codons.
Billon P*, **Bryant EE***, Joseph SA, Nambiar TS, Hayward SB, Rothstein R, and Ciccia A.
Molecular Cell. 2017 Sep 21;67(6):1068–1079.e4
[PMID: 28890334](#) – [PMCID: PMC5610906](#) – [DOI: 10.1016/j.molcel.2017.08.008](#)
*co-first authors

Supporting contribution

- 2019-10-01 DNA damage triggers increased mobility of chromosomes in G1 phase cells.
Smith MJ, **Bryant EE**, Joseph FJ, Rothstein R.
Molecular Biology of the Cell. 2019 Oct 1;30(21):2620–2625
[PMID: 31483739](#) – [PMCID: PMC6761769](#) – [DOI: 10.1091/mbc.E19-08-0469](#)
- 2018-09-01 Increased chromosomal mobility after DNA damage is controlled by interactions between the recombination machinery and the checkpoint.
Smith MJ, **Bryant EE**, Rothstein R.
Genes & Development. 2018 Sep 1;32(17-18):1242–1251
[PMID: 30181361](#) – [PMCID: PMC6120718](#) – [DOI: 10.1101/gad.317966.118](#)
- 2016-10-01 A synthetic dosage lethal genetic interaction between CKS1B and PLK1 is conserved in yeast and human cancer cells.
Reid RJD, Du X, Šunjevarić I, Rayannavar V, Dittmar J, **Bryant EE**, Maurer M, and Rothstein R.
Genetics. 2016 Oct 1;204(2):807–819
[PMID: 27558135](#) – [PMCID: PMC5068864](#) – [DOI: 10.1534/genetics.116.190231](#)