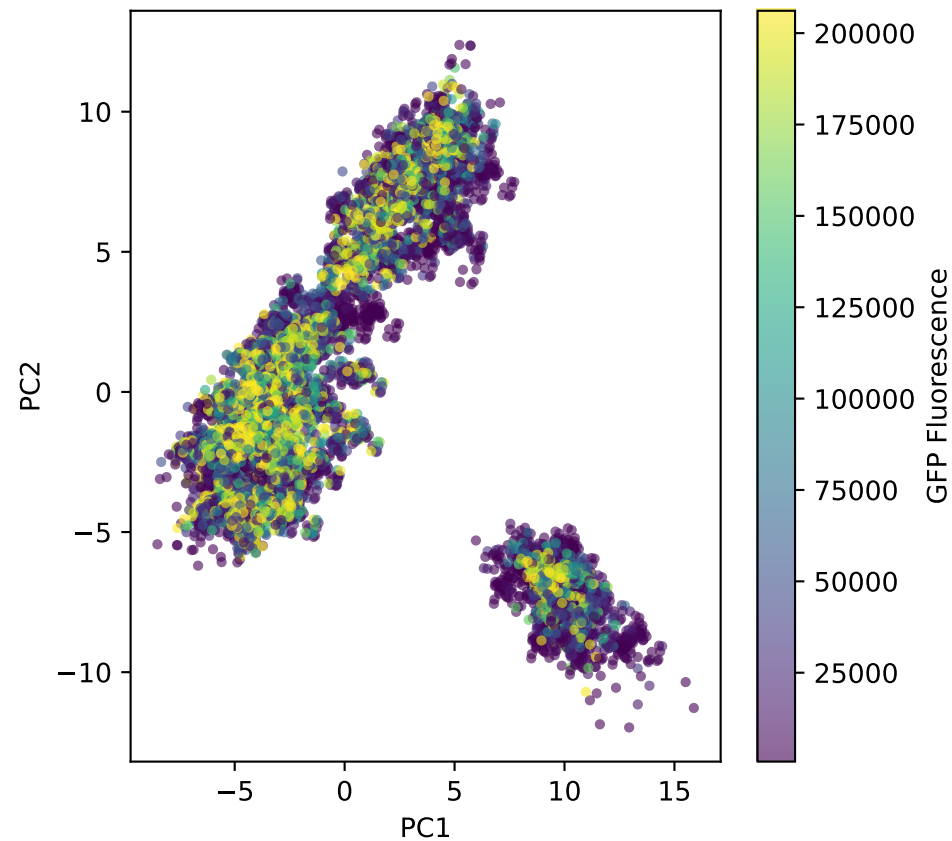
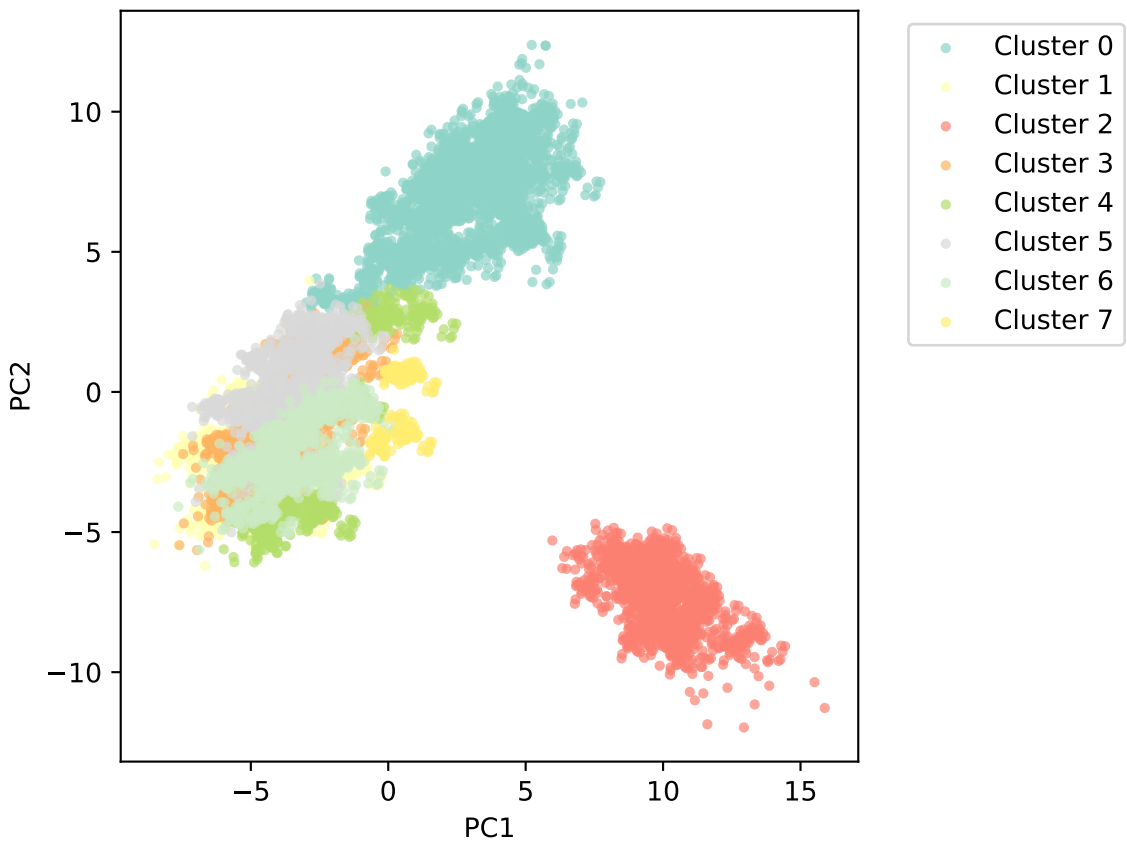


Combinatorial Library Analysis Report  
Page 1: Full Library vs Filtered Library PCA Analysis  
Generated: 20250828\_163119

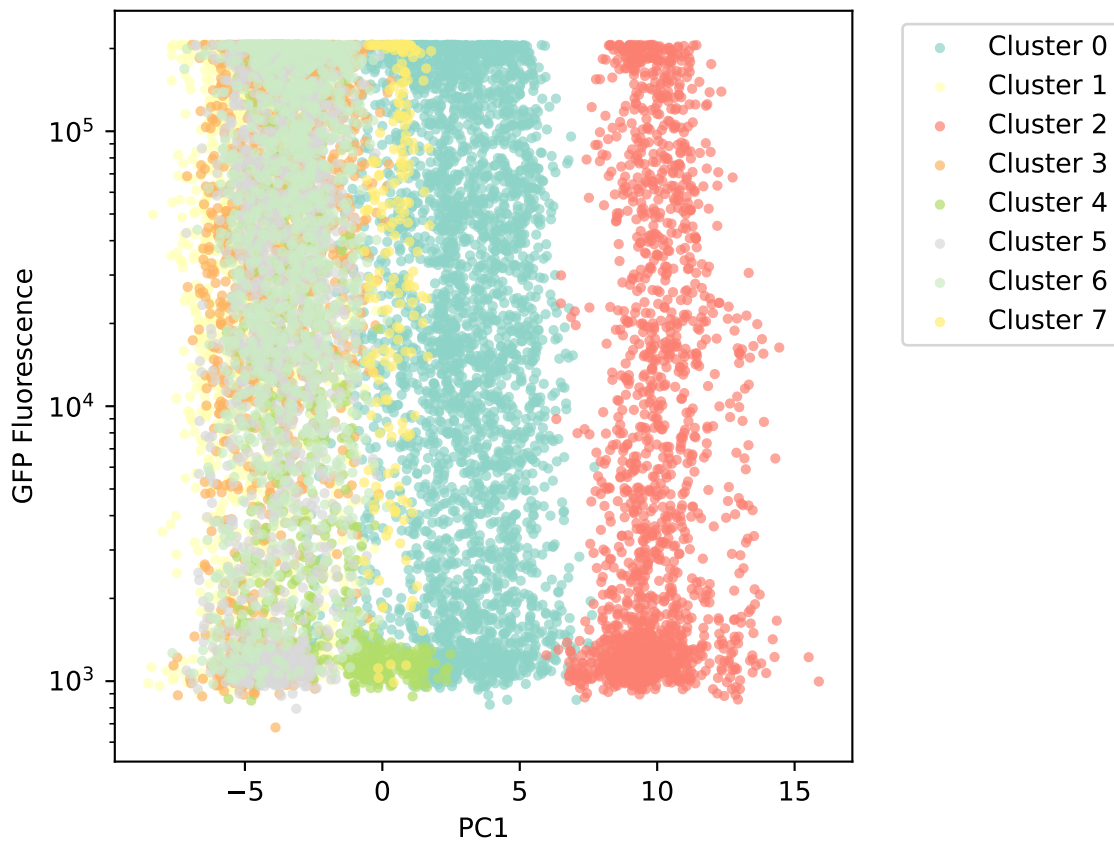
Full Library: PC1 vs PC2 by Intensity  
(n=12,048)



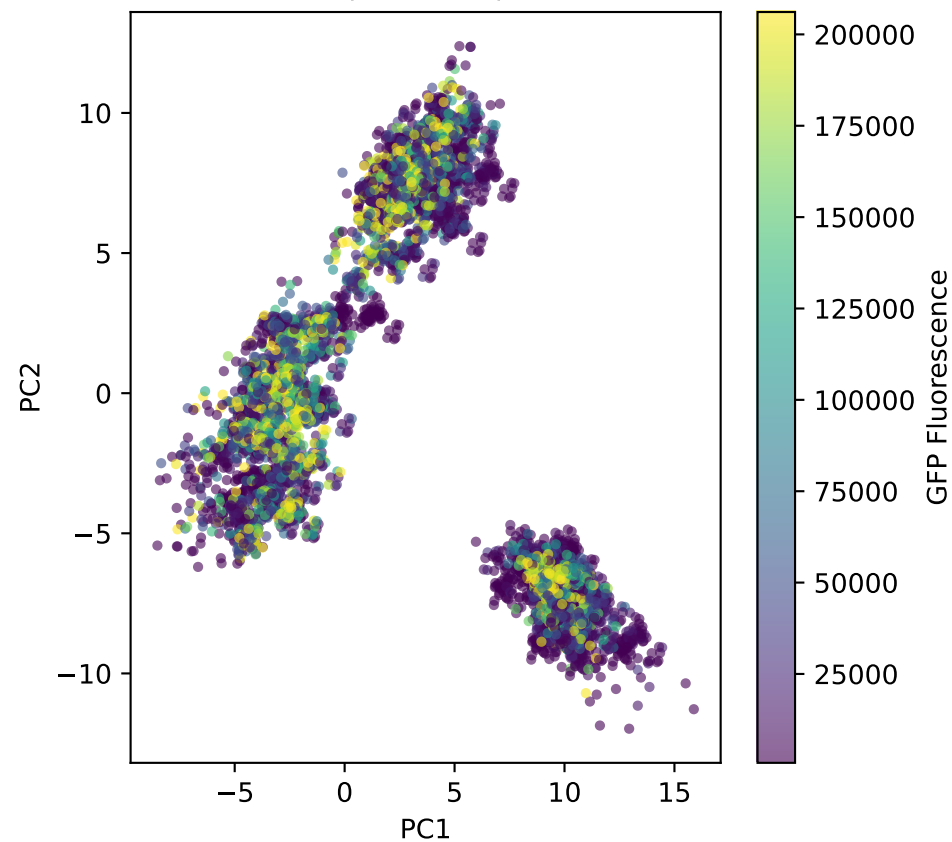
Full Library: PC1 vs PC2 by Cluster  
(n=12,048)



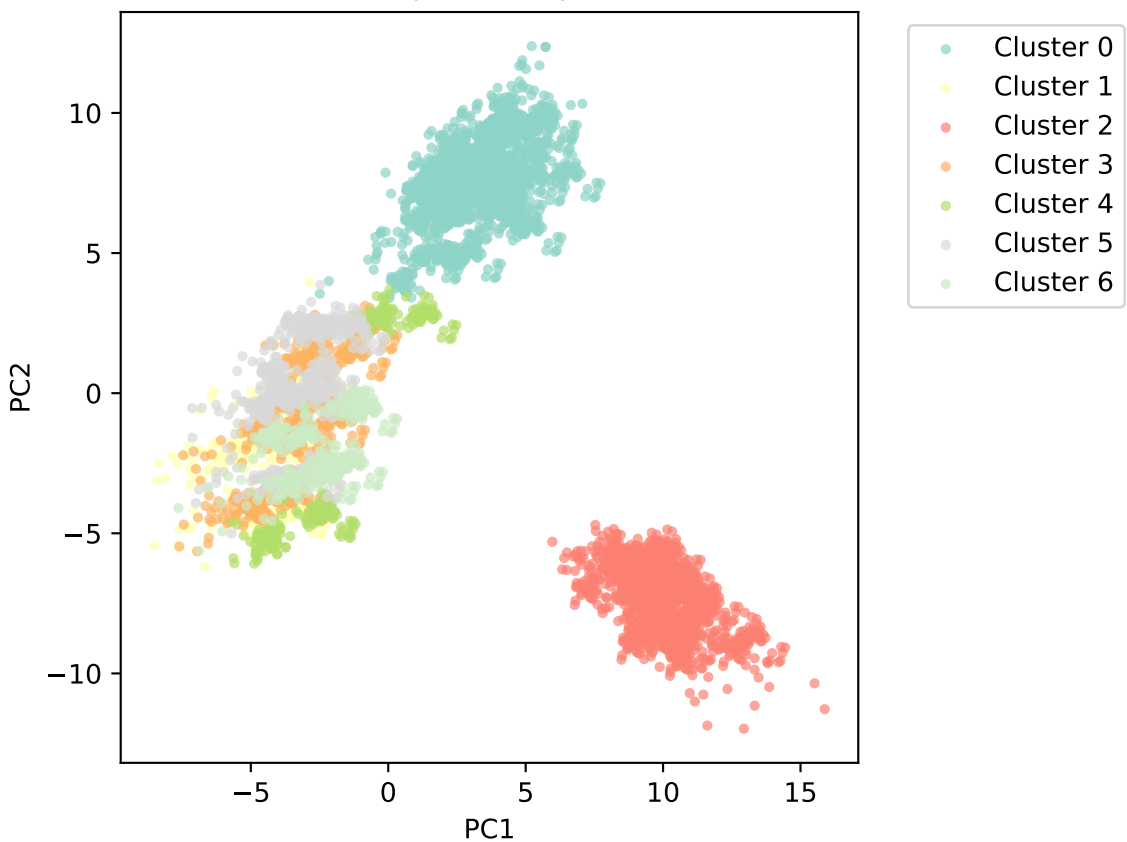
Full Library: PC1 vs Intensity by Cluster  
(n=12,048)



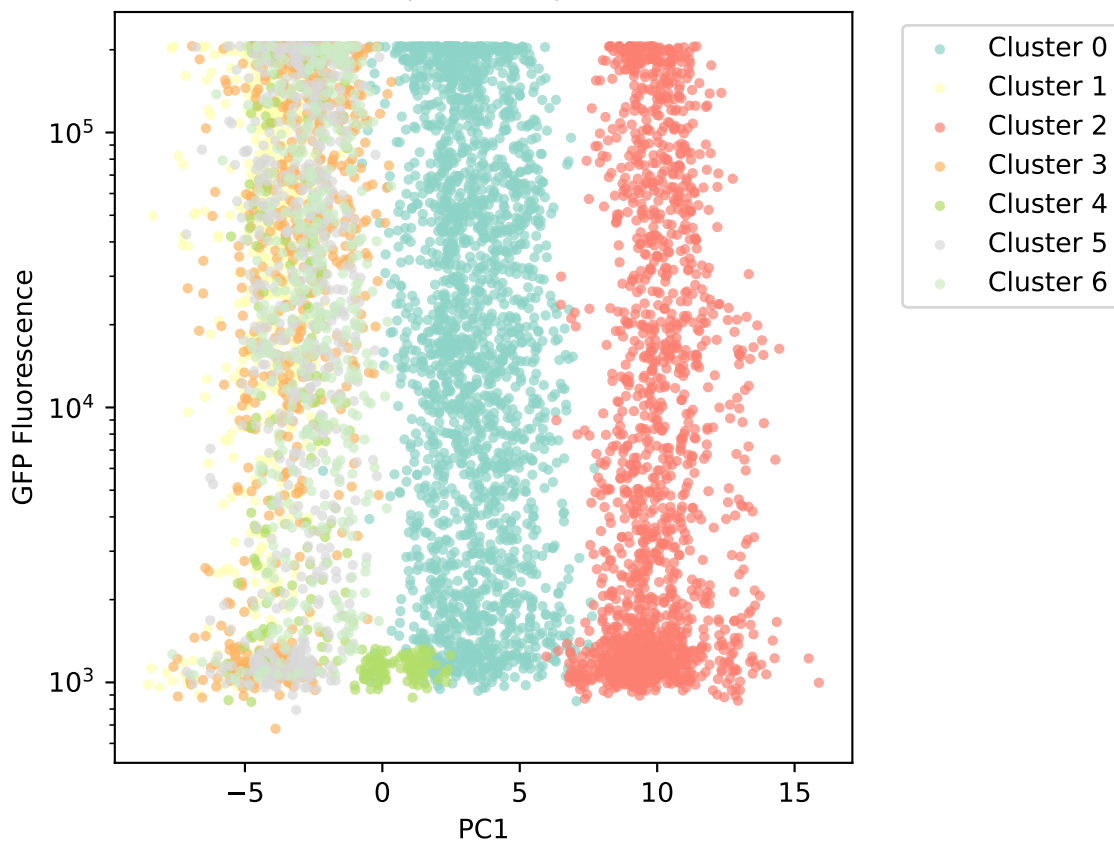
Filtered Library: PC1 vs PC2 by Intensity  
(n=6,319)



Filtered Library: PC1 vs PC2 by Cluster  
(n=6,319)



Filtered Library: PC1 vs Intensity by Cluster  
(n=6,319)



# Cluster Family Analysis (Full Library)

## CLUSTER FAMILY ANALYSIS (Full Library)

### Cluster 0 (n=3185):

Promoters: BioFAB Promoters: 89.8%; Nopromoter: 3.5%; lacUV5: 3.5%; pTrc\*: 3.3%

RBS: BioFAB RBS: 50.1%; Anderson RBS: 29.1%; Salis RBS: 11.6%; Other RBS: 6.8%; BioBrick RBS: 2.4%

### Cluster 1 (n=1686):

Promoters: BioFAB Promoters: 93.4%; galP1: 6.6%

RBS: BioFAB RBS: 51.5%; Anderson RBS: 30.3%; Salis RBS: 9.7%; Other RBS: 6.3%; BioBrick RBS: 2.2%

### Cluster 2 (n=1664):

Promoters: Anderson Promoters: 100.0%

RBS: BioFAB RBS: 49.6%; Anderson RBS: 28.8%; Salis RBS: 11.7%; Other RBS: 7.2%; BioBrick RBS: 2.6%

### Cluster 3 (n=1598):

Promoters: BioFAB Promoters: 100.0%

RBS: BioFAB RBS: 51.1%; Anderson RBS: 30.0%; Salis RBS: 10.3%; Other RBS: 6.5%; BioBrick RBS: 2.0%

### Cluster 4 (n=835):

Promoters: BioFAB Promoters: 89.8%; pT7A1: 10.2%

RBS: BioFAB RBS: 51.3%; Anderson RBS: 30.8%; Salis RBS: 9.8%; Other RBS: 6.0%; BioBrick RBS: 2.2%

### Cluster 5 (n=1596):

Promoters: BioFAB Promoters: 100.0%

RBS: BioFAB RBS: 51.6%; Anderson RBS: 29.8%; Salis RBS: 10.1%; Other RBS: 6.5%; BioBrick RBS: 2.1%

### Cluster 6 (n=1269):

Promoters: BioFAB Promoters: 100.0%

RBS: BioFAB RBS: 51.8%; Anderson RBS: 30.2%; Salis RBS: 9.4%; Other RBS: 6.6%; BioBrick RBS: 2.0%

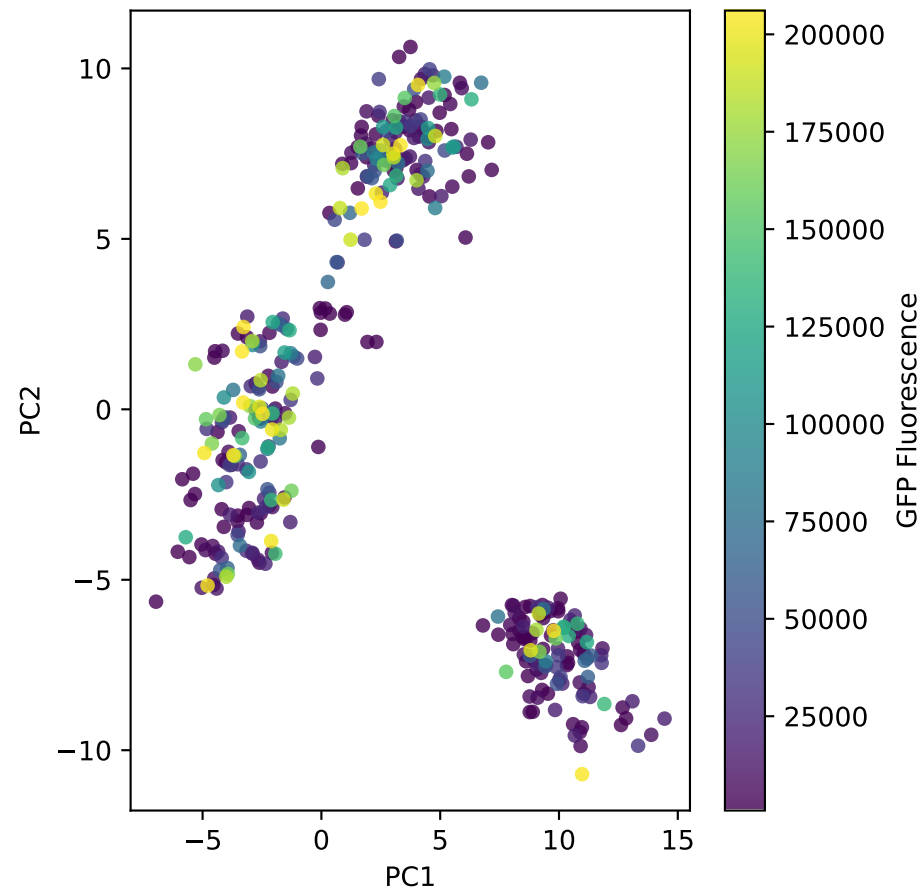
### Cluster 7 (n=215):

Promoters: PLTETol: 51.2%; pLlac01: 48.8%

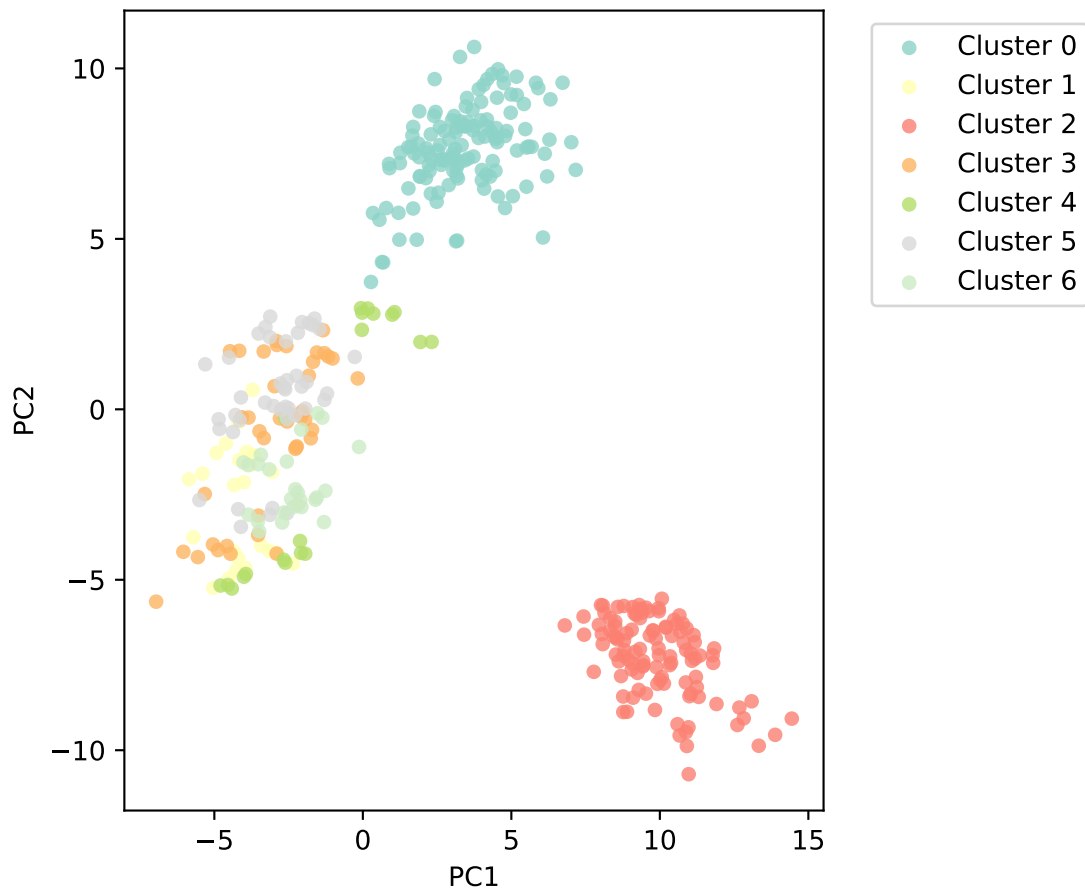
RBS: BioFAB RBS: 50.7%; Anderson RBS: 29.8%; Salis RBS: 11.2%; Other RBS: 6.5%

Selected Variants Analysis

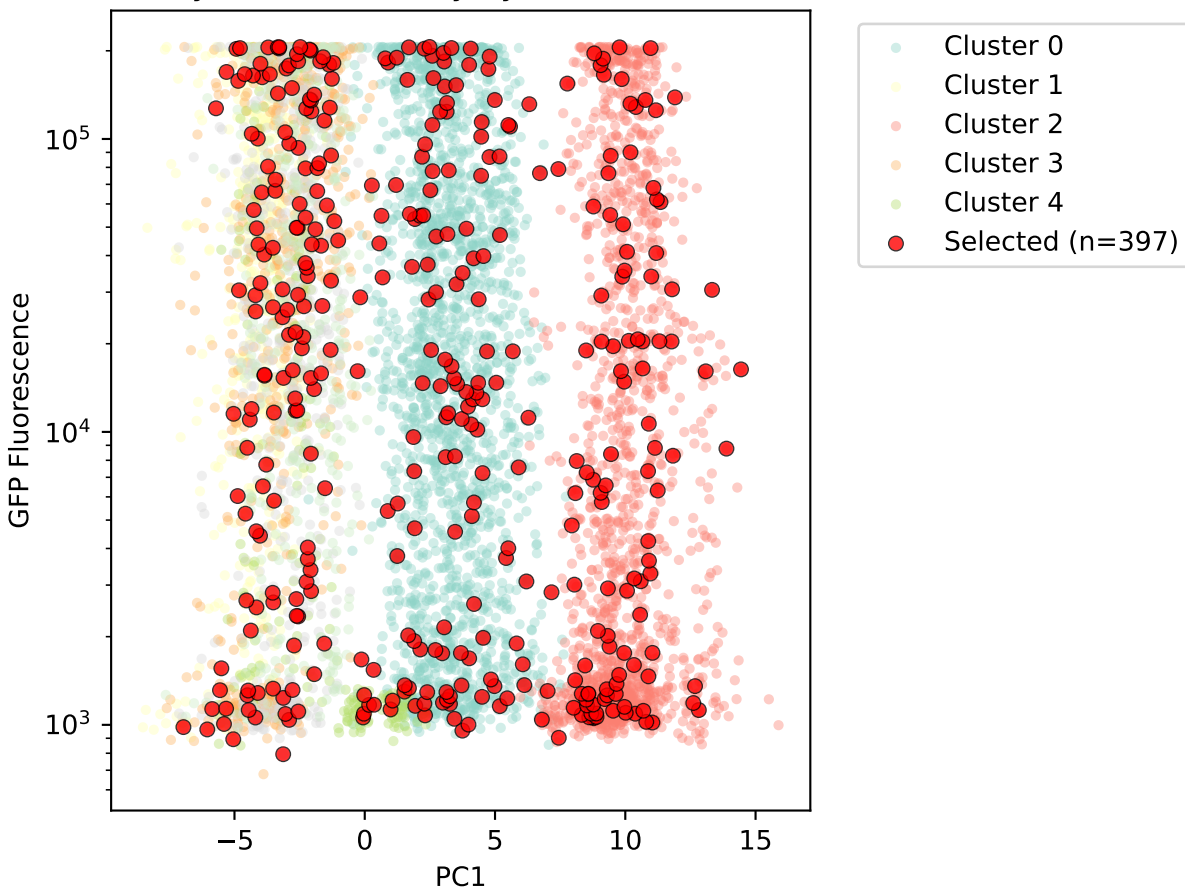
Selected Variants: PC1 vs PC2 by Intensity  
(n=397)



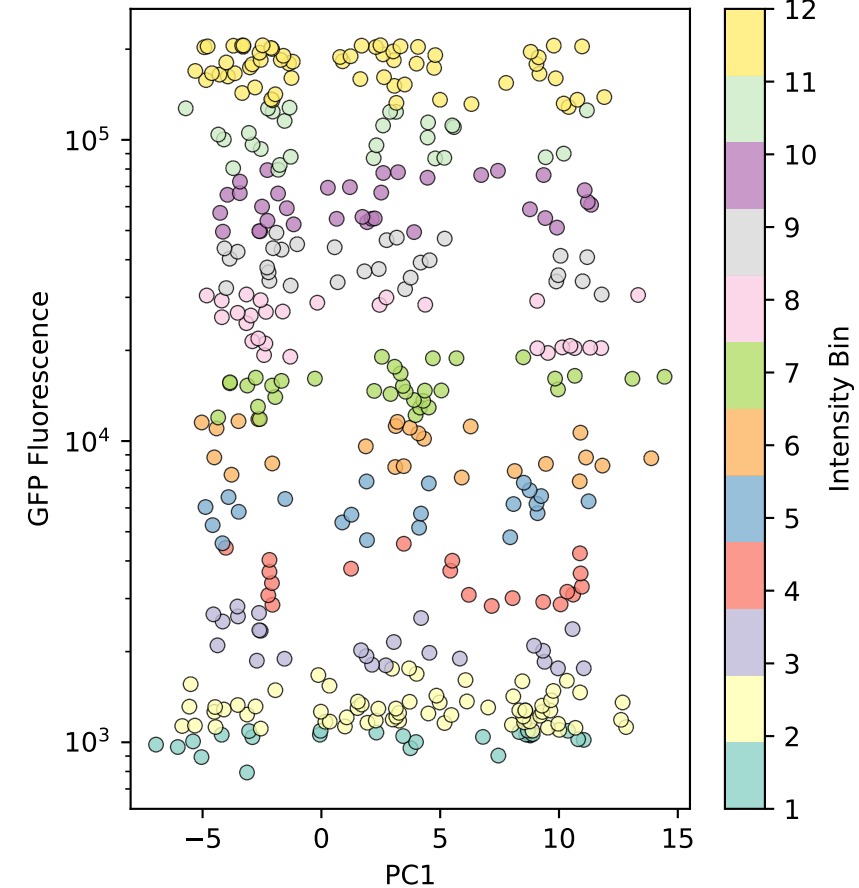
Selected Variants: PC1 vs PC2 by Cluster  
(n=397)



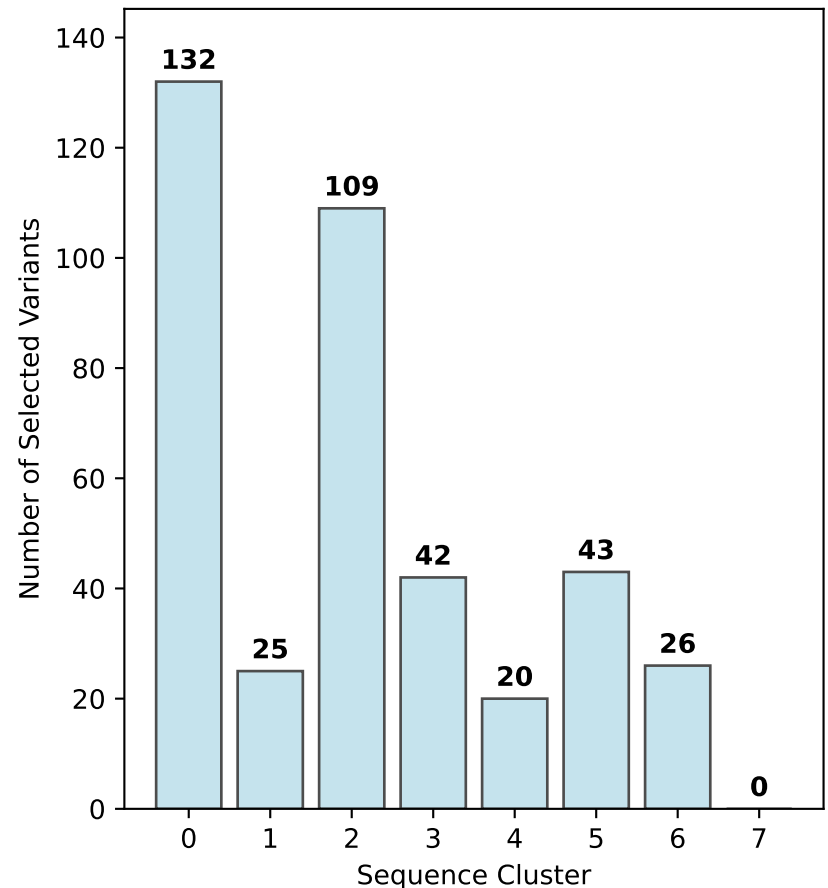
PC1 vs Intensity: Filtered Library by Cluster & Selected Variants



Selected Variants: PC1 vs Intensity by Bin



Selected Variants by Sequence Cluster

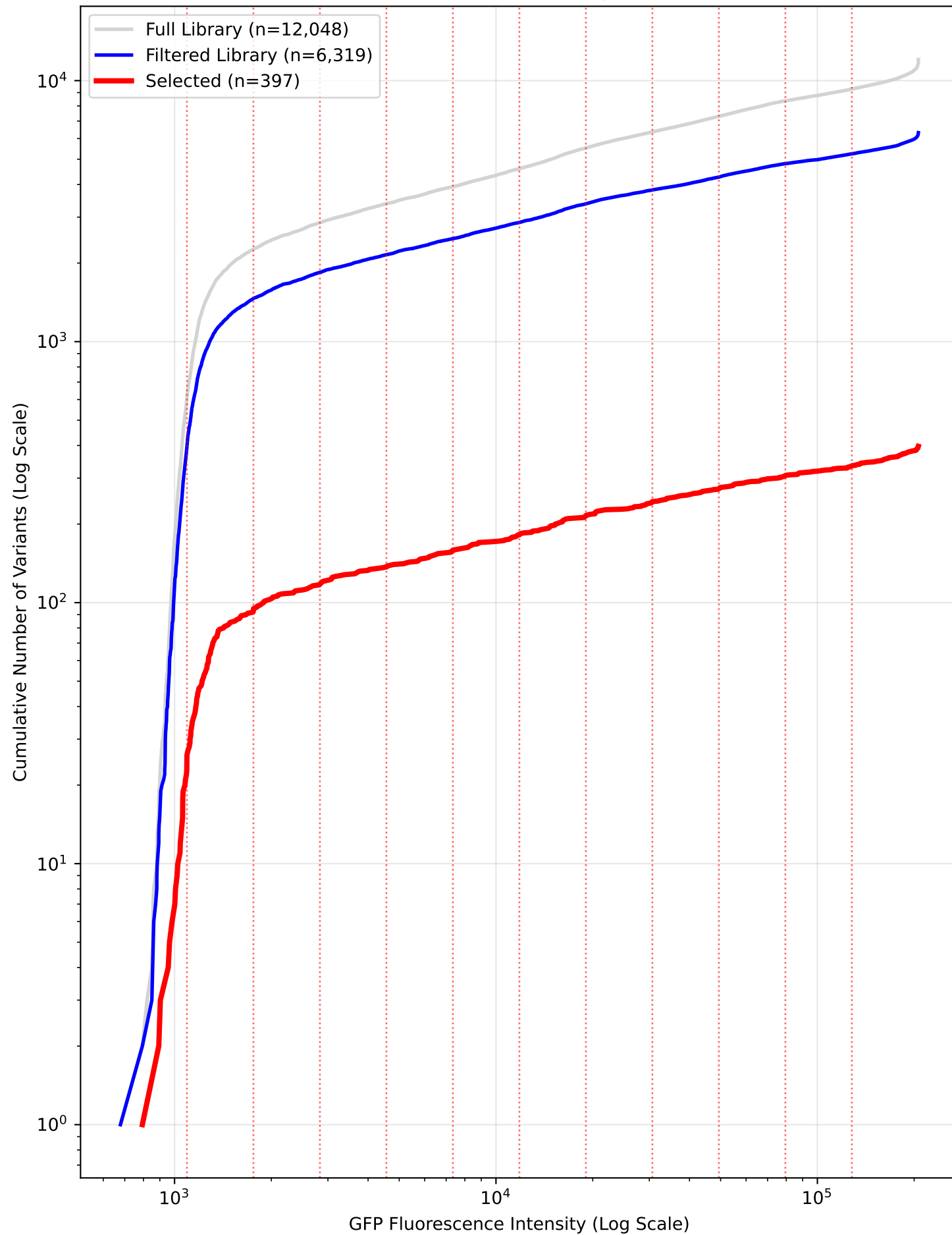


Selected Variants: Location Summary

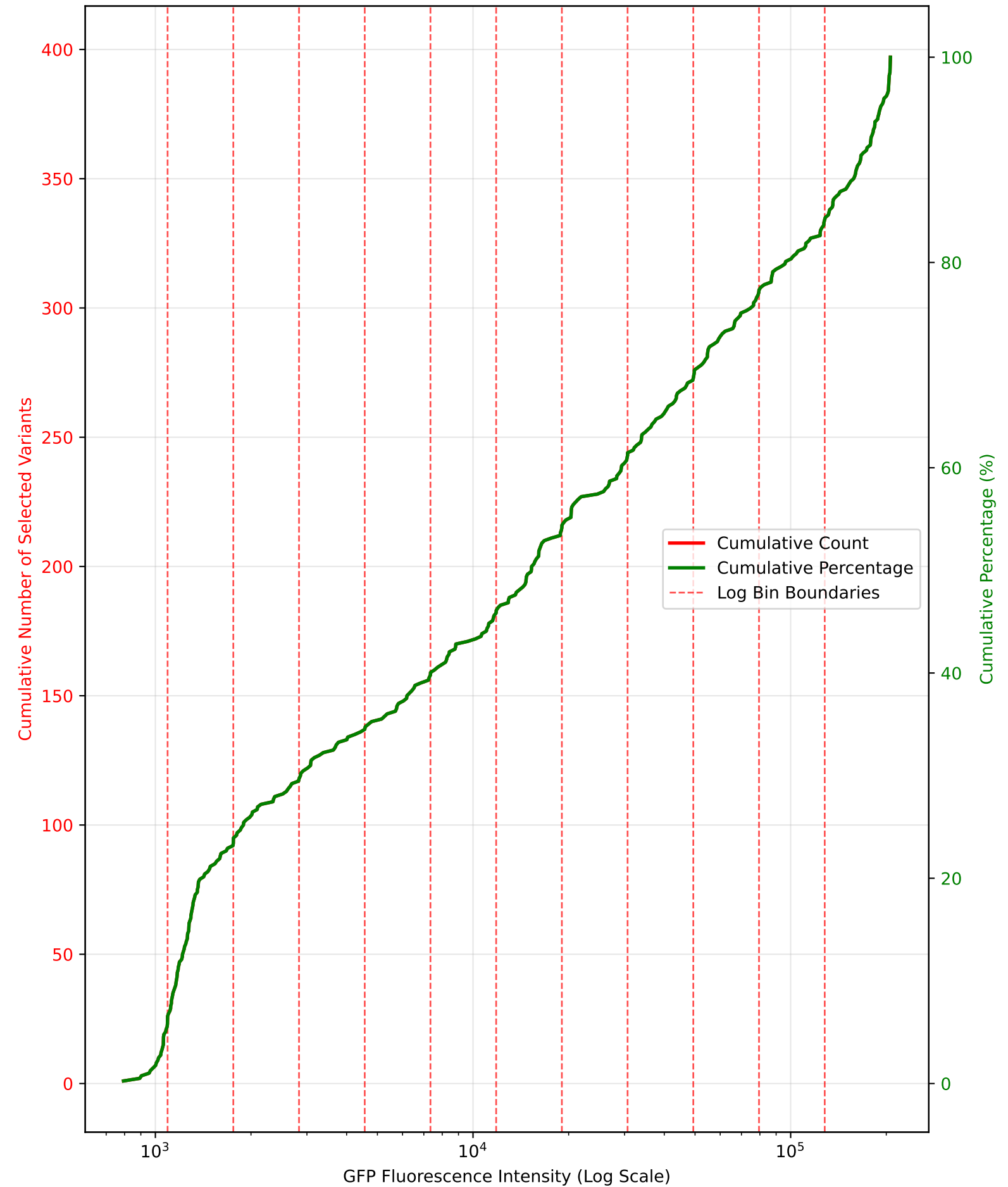
Metric	Value
Total Selected	397
Intensity Range	793.9 - 206095.5
Mean Intensity	47889.4
Median Intensity	15278.8
Clusters Represented	7
Bins Represented	12
Length Range (bp)	51 - 70

# Cumulative Distribution and Selection Analysis

Cumulative Distribution Comparison  
Full vs Filtered vs Selected with Log10 Bin Boundaries

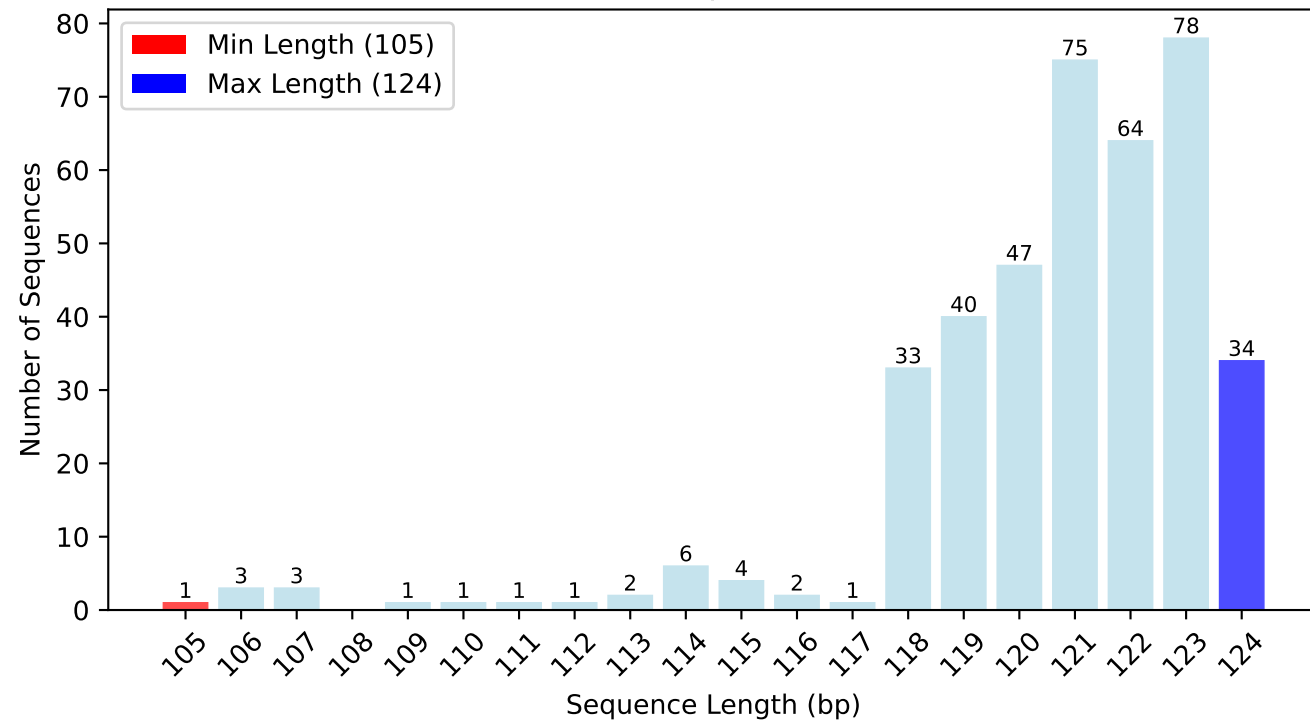


Selected Variants: Cumulative Distribution  
(n=397 variants)



# Ready-to-Order Sequence Length Analysis

Exact Length Value Counts  
(n=397,  $\mu=120.6$ )



Sequence Component Length Breakdown

