

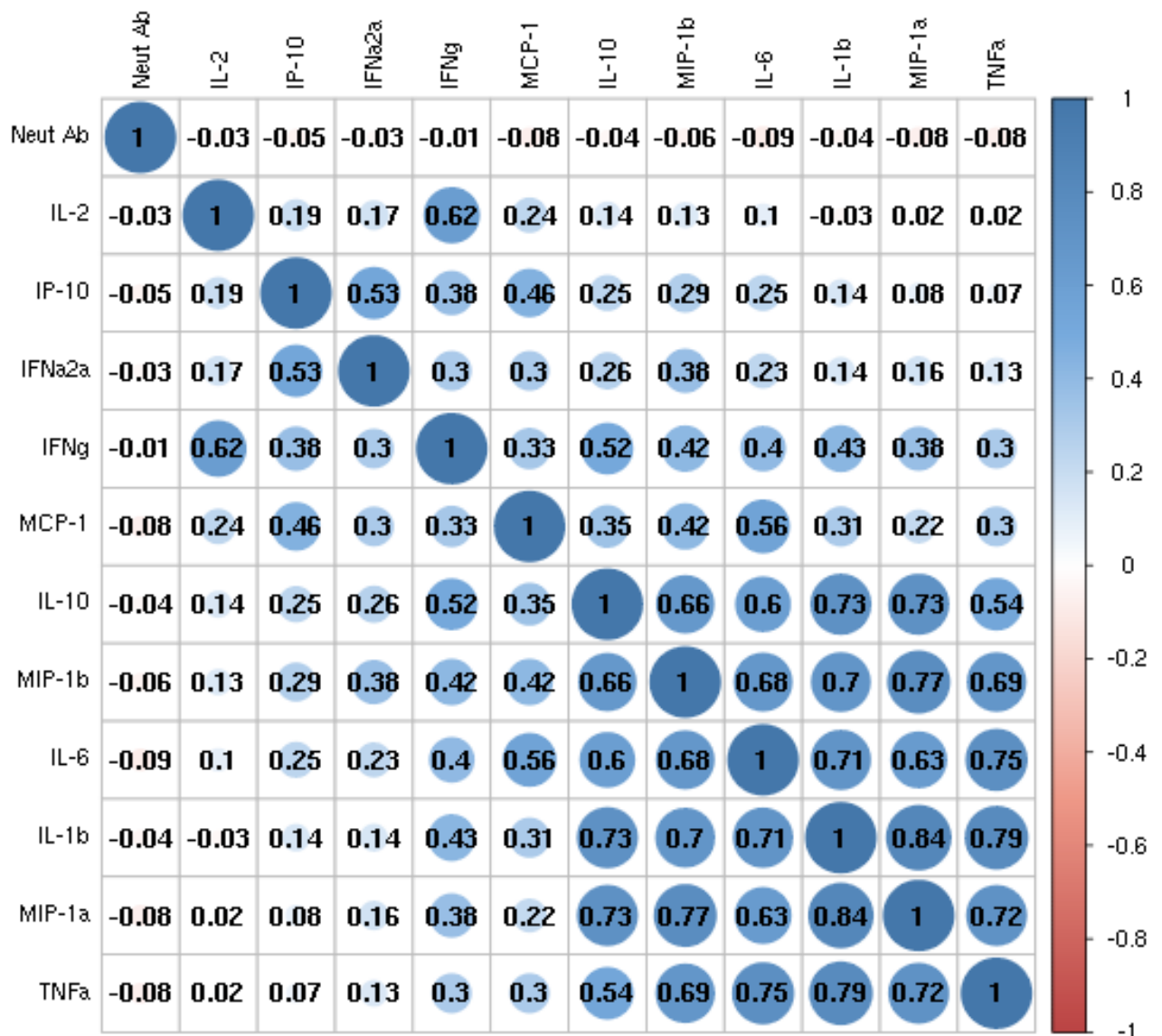
Supplemental Materials

Supplemental Table 1. Significant MuV-specific immune outcomes associated with demographic and clinical characteristics for the entire cohort.

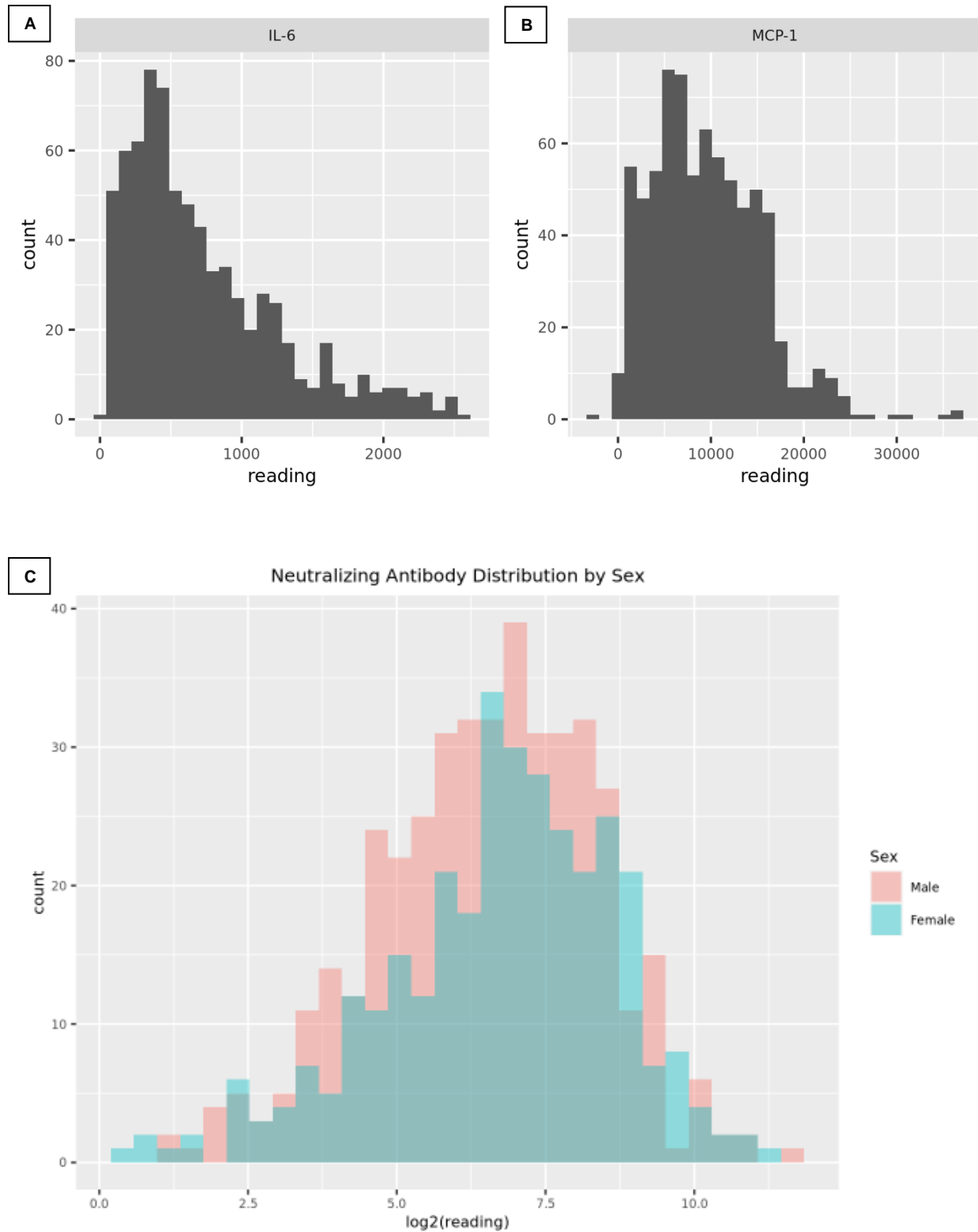
Variable	Immune Outcome	P - value
Age at Enrollment	IL-2	0.003
	IFN γ	0.011
	IP-10	0.046
	MCP-1	0.009
Age at First MMR Vaccination	NA	NS
Age at Second MMR Vaccination	MIP-1 α	5.1e -05
	MIP-1 β	0.001
Time from Second Vaccination to Enrollment	MIP-1 α	0.0003
	MIP-1 β	0.014
Sex		

	Neutralizing antibody	0.099
	IFN γ	0.031
	TNF α	0.0003
	IL-1 β	0.032
	IL-6	0.028
	MIP-1 α	4.4e-05
	MIP-1 β	0.001
Self-Reported Ethnicity		
Not Hispanic	NA	NS
Hispanic	NA	NS
Unknown	NA	NS

NA – not applicable, NS – not significant

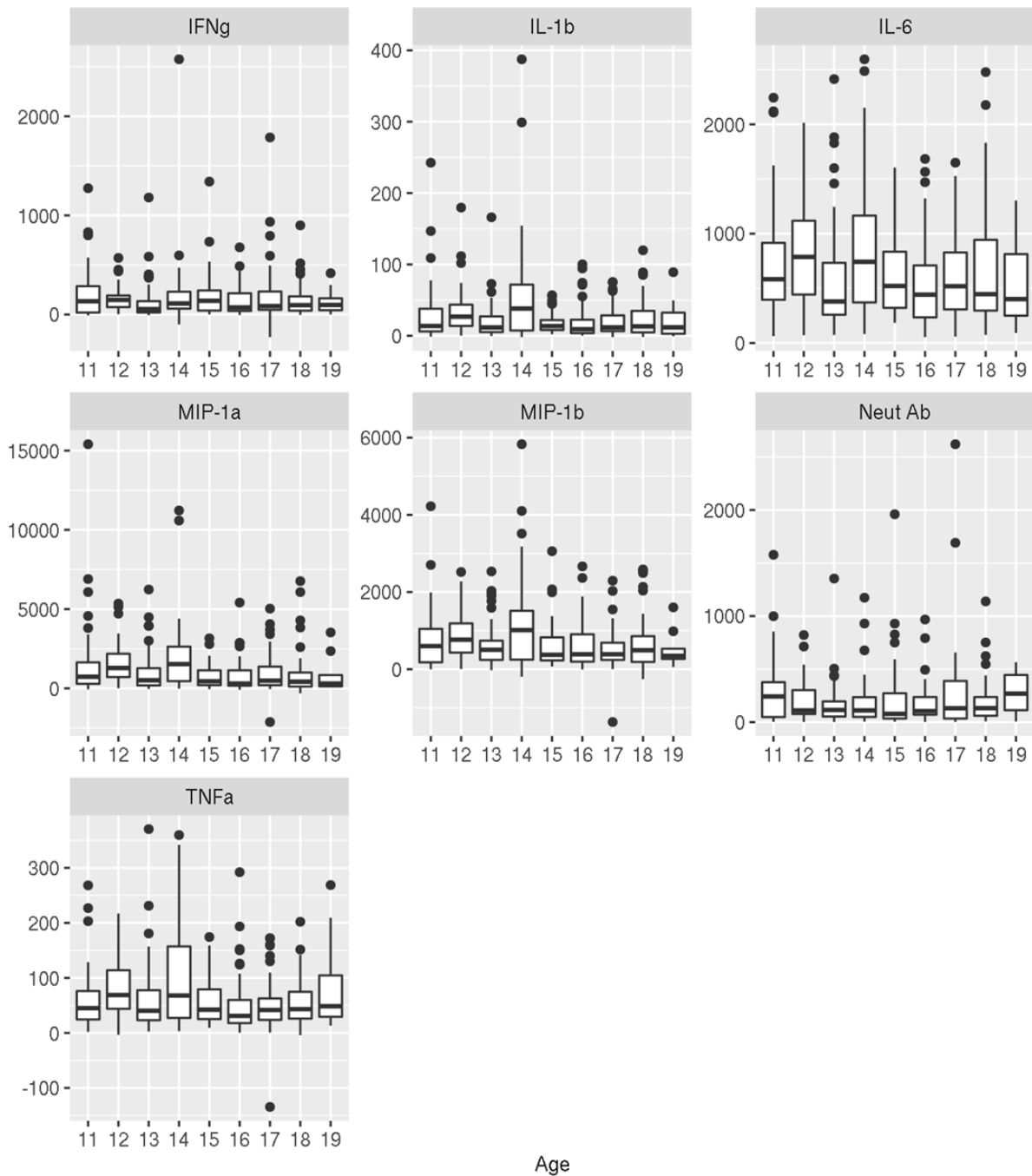


Supplemental Figure 1. MuV-specific immune outcome pairwise correlation plot. Pearson's correlation coefficient (r) values are indicated. r values >0 , positively correlated, are indicated in blue; r values <0 , negatively correlated, are indicated in red.



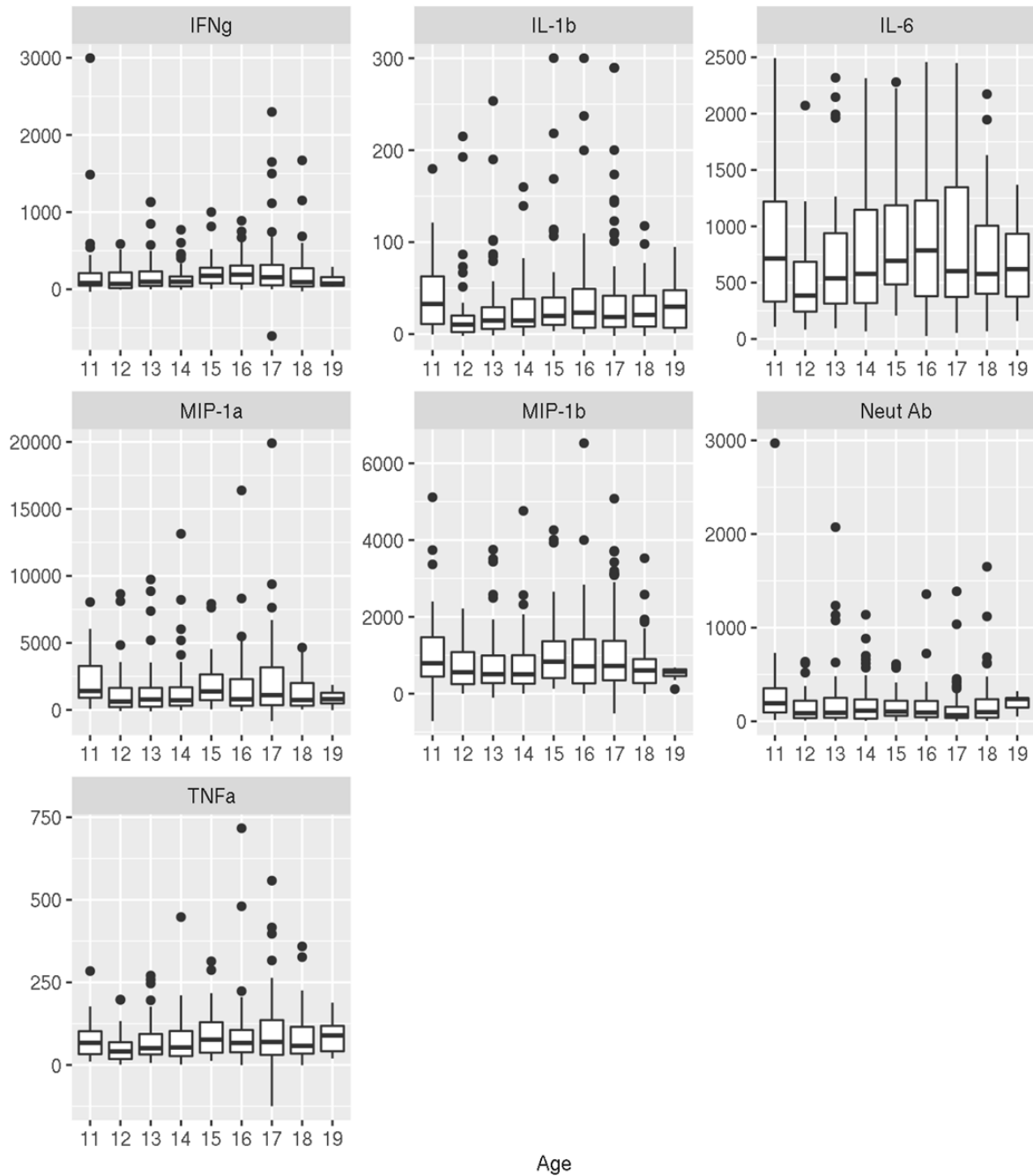
Supplemental Figure 2. (A) IL-6 MuV-specific cell-mediated distributions (stim-unstim) for entire cohort. (B) MCP-1 MuV-specific cell-mediated distributions (stim-unstim) for entire cohort. (C) MuV-specific neutralizing antibody overlaid histogram transformed on Log2. Use only to assess distribution, as there are more men than women in the cohort.

Supplemental Figure 3. Mumps-specific Immune Outcomes in Females



Supplemental Figure 3. Female participants were divided into 1 year age bins to evaluate mumps-specific immune responses by age. The solid dark line in each plot represents the median secretion of the indicated chemokine or cytokine. The upper and lower bound of the box represent the upper and lower quartile. The whiskers extend to down to the 10th percentile and up to the 90th percentile.

Supplemental Figure 4. Mumps-specific Immune Outcomes in Males



Supplemental Figure 4. Male participants were divided into 1 year age bins to evaluate mumps-specific immune responses by age. The solid dark line in each plot represents the median secretion of the indicated chemokine or cytokine. The upper and lower bound of the box represent the upper and lower quartile. The whiskers extend to down to the 10th percentile and up to the 90th percentile.

Immune Outcome	p-value Females ≤ 12 vs ≥ 13	p-value Males ≤ 14 vs ≥ 15
Neutralizing Ab	0.12	0.40
IL-1b	0.019	0.048
IL-6	0.033	0.006
IFN γ	0.12	0.001
MIP-1 α	0.0024	0.11
MIP-1 β	0.043	0.045
TNF α	0.12	0.0026

Immune outcomes in younger and older participants were compared using a two-sided Wilcoxon rank sum test with continuity correction.