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Supplementary Materials for

Addressing census data problems in race imputation via fully Bayesian Improved Surname Geocoding and name supplements

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Fig. S1
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Census Tally	White	Black	Hispanic	Asian	Other
Non-zero counts	89.2%	92.4%	94.9%	91.4%	58.9%
Overall	89.8%	91.7%	91.9%	82.2%	59.0%

Table S1: Area under the receiver operating characteristic curve (AUROC) for BISG predictions of individual race, using Census blocks to set racial prior distributions. Overall AUROC values (second row) are lower for all non-white racial groups than are AUROC values for individuals living in blocks for which the racial prior for those groups is nonzero (first row).

Name Matched?	White	Black	Hispanic	Asian	Other
No	79.4%	85.5%	78.1%	71.3%	55.9%
Yes	90.3%	91.8%	92.2%	82.3%	59.1%
Overall	89.8%	91.7%	91.9%	82.2%	59.0%

Table S2: Area under the receiver operating characteristic curve (AUROC) for BISG predictions of individual race, using Census blocks to set racial prior distributions. Predictive performance among individuals whose last names cannot be matched to the `WRU` name dictionary (first row) is significantly worse than among individuals for whom a match is found (second row). The discrepancy is more than ten percentage points for White, Hispanic, and Asian voters.

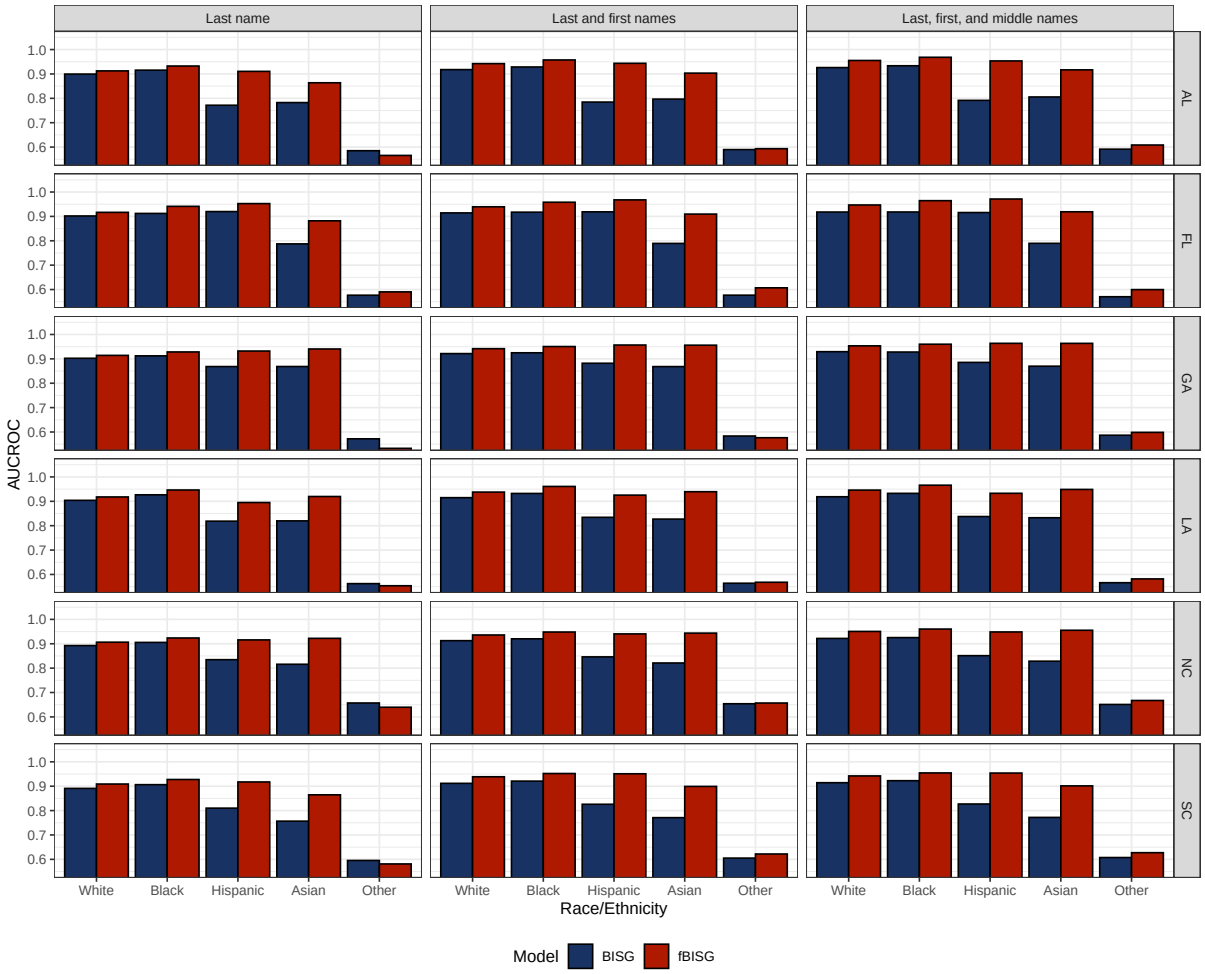

Figure S1: Area under the receiver operating characteristic curve (AUROC) for race predictions obtained using the standard BISG (blue) and fBISG (red) methods, by state. The results are based on progressively more name information, starting with the L2-augmented surname dictionary (left-most panel). Higher values indicate better predictive accuracy. Overall, the same patterns we observed when considering all states combined are evident when we disaggregate accuracy by state: additional name information improves accuracy, especially when using fBISG.