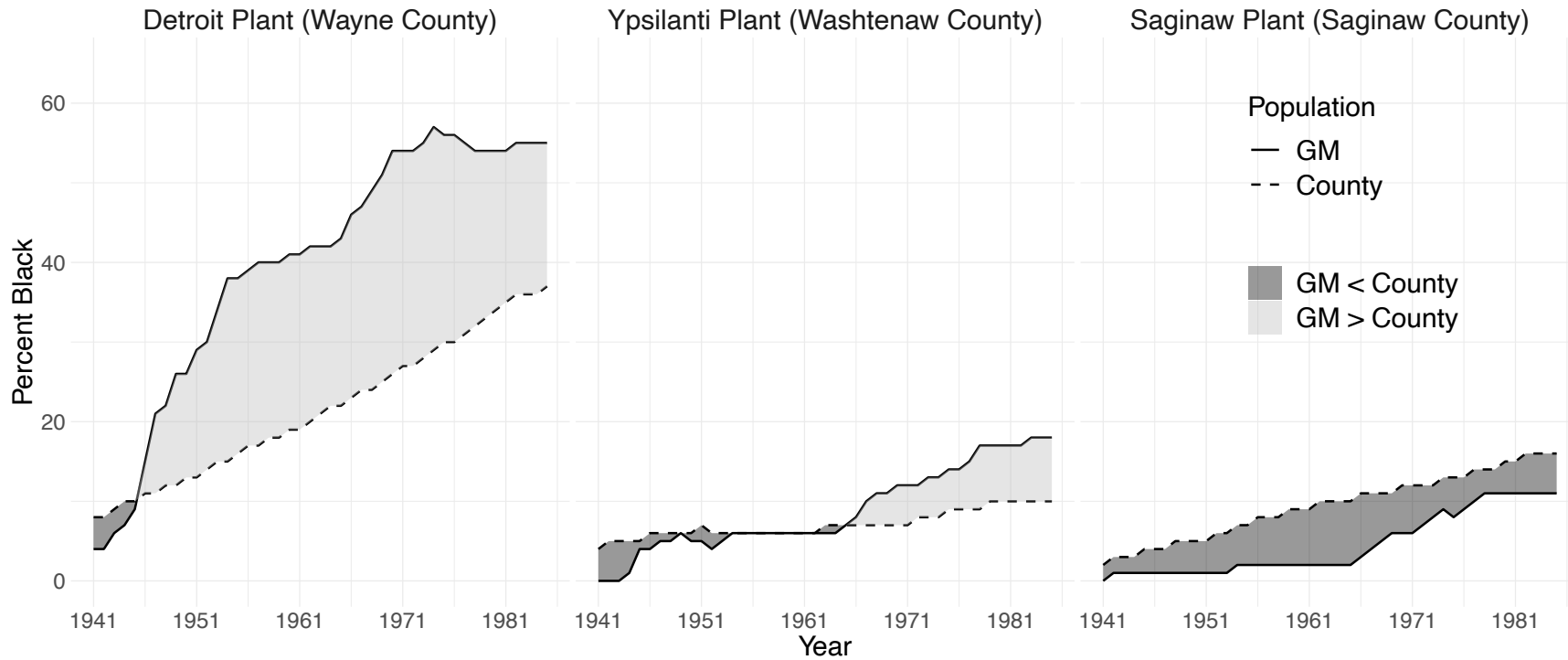


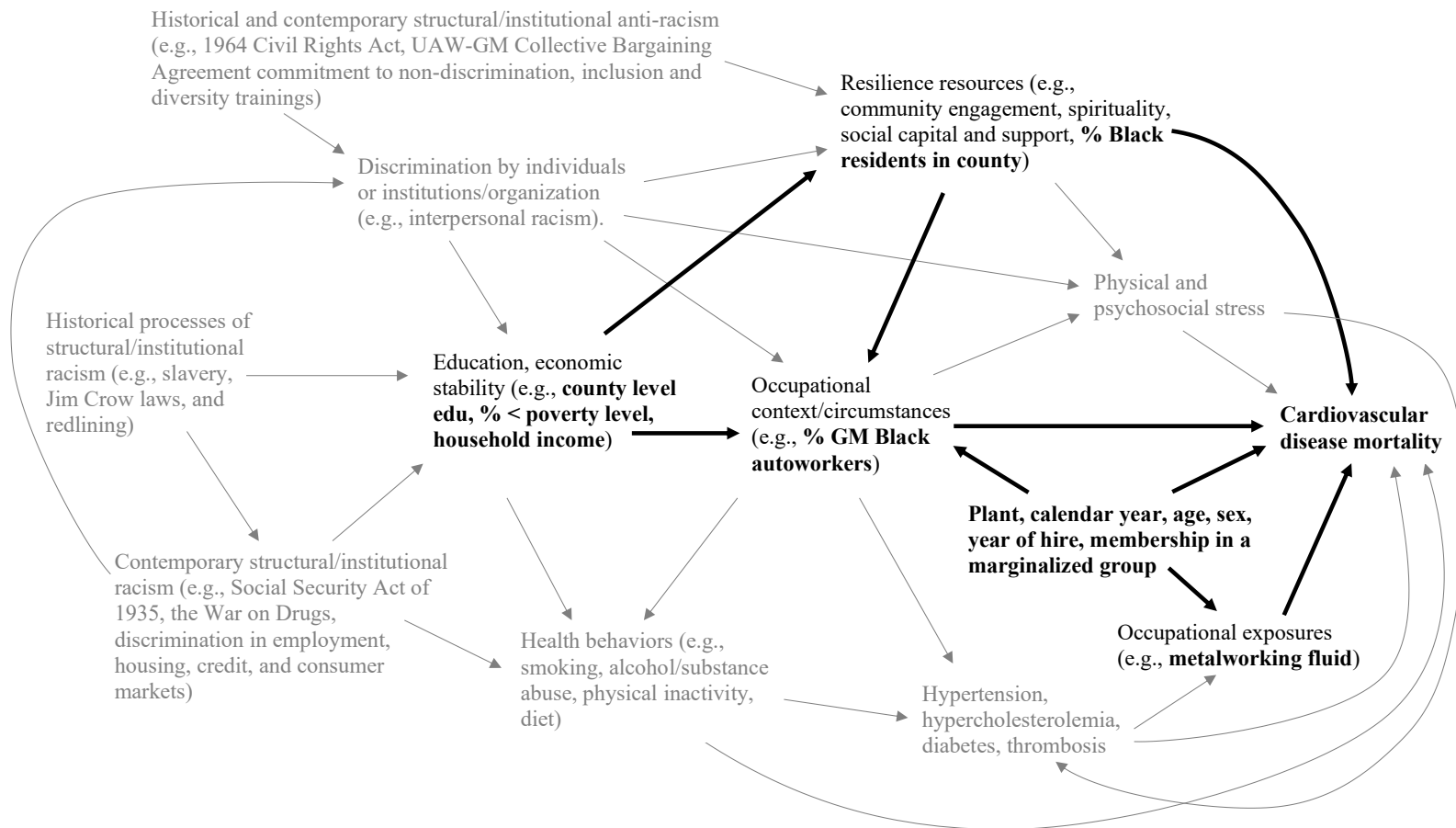
The Impact of Increasing Workforce Racial Diversity on Black-White Disparities in Cardiovascular Disease: A Longitudinal Cohort Study.¹

by Hilary L. Colbeth², Corinne A. Riddell, Marilyn D. Thomas, Mahasin S. Mujahid, Ellen A. Eisen

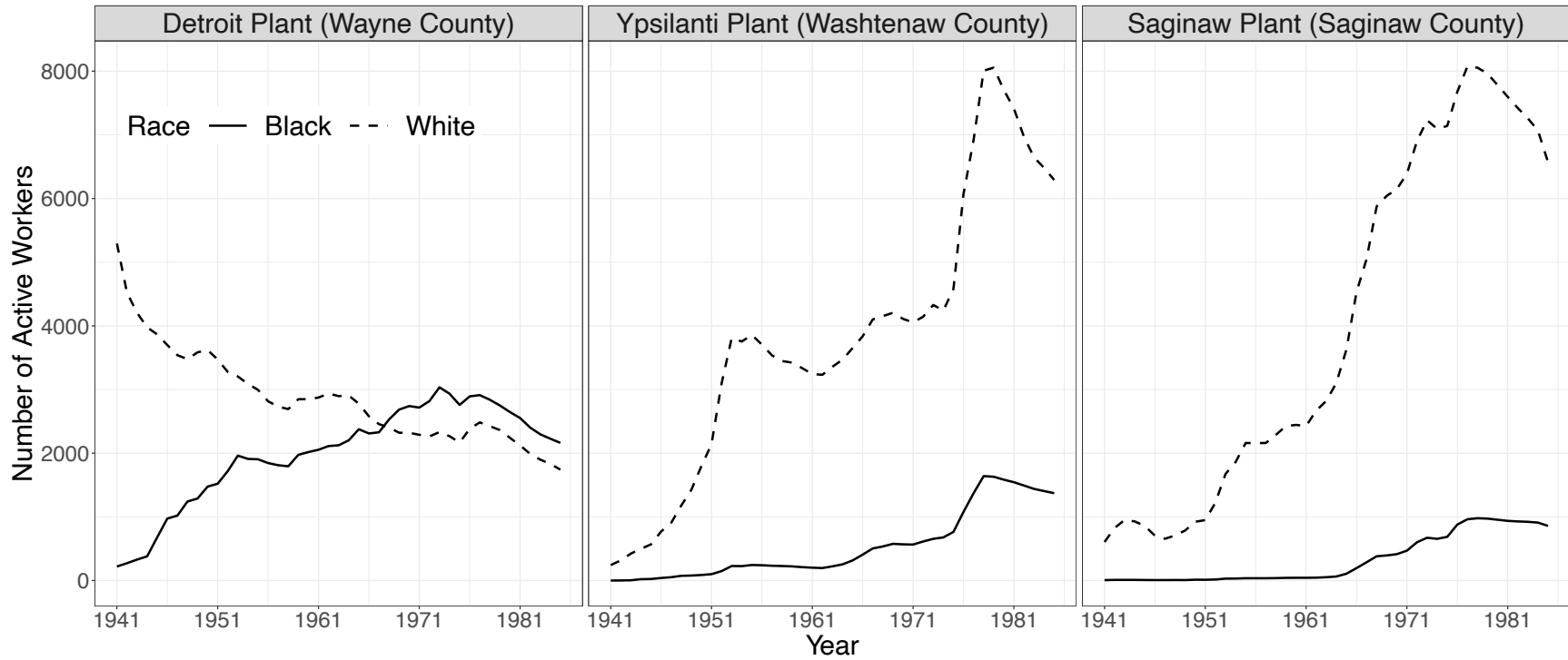
1. Supplement
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eFigure 1. Percent Black active United-Autoworkers General Motors (UAW-GM) cohort workers in each year, by plant, and the percent Black residents in each year, by the Michigan county in which each plant was located (1941-1985). The percent Black workers at GM are represented by the solid lines and the percent Black of county residents are represented by the dashed lines. When the percent Black at GM was below the county, the difference is filled by dark grey and when GM percent Black workers is greater than the county, the difference is light grey.



eFigure 2. Directed acyclic graph (DAG) depicting the anticipated relationships between the exposure (% GM Black autoworkers) in each plant and year and the individual-level outcome (cardiovascular disease mortality), including the historical and contemporary processes that contribute to or push back against systemic racism, in all its forms. The pathways measured in the study are represented in bolded black arrows with this study’s specifically measured variables in bolded black font. The contributing but unmeasured nodes and pathways are represented in grey arrows and font.



eFigure 3. Number of active United Autoworkers – General Motors cohort workers in each year, by race and plant (1941-1985). Black autoworkers are represented by the solid lines and White workers are represented by the dashed lines.

eTable 1. Subdistribution hazard ratios (sdHR) and 95% Confidence Intervals (CI) for cardiovascular disease in relation to levels of racial composition among UAW-GM autoworkers, by race and restricted to the Detroit plant (1941-2015)

| Annual average racial diversity (% Black workers) | | | | |
|---|--------------|------|------------|--|
| | No. of cases | sdHR | 95% CI | |
| BLACK WORKERS^a | | | | |
| Low | 484 | 1.00 | - | |
| Moderate | 502 | 0.94 | 0.82, 1.08 | |
| High | 485 | 0.77 | 0.66, 0.90 | |
| WHITE WORKERS^b | | | | |
| Low | 1,299 | 1.00 | - | |
| Moderate | 1,338 | 1.10 | 1.00, 1.20 | |
| High | 1,297 | 1.09 | 1.00, 1.20 | |

Abbreviations: United Autoworkers-General Motors (UAW-GM).

^a Low (0-19.08), moderate (19.09-28.85), and high (28.86-57.00); ^b low (0-3.42), moderate (3.43-19.41), and high (19.42-57.00). Estimates of average annual racial diversity were calculated in each person-year as the cumulative exposure divided by time since hire. All models were adjusted for sex, calendar year, year of hire, total cumulative metalworking fluid (mg/m³-year), cumulative percent Black residents, percent below the poverty level, median household income, and percent with a Bachelor's degree or higher.

eTable 2. Subdistribution hazard ratios (sdHR) and 95% Confidence Intervals (CI) for cardiovascular disease in relation to levels of racial composition among UAW-GM autoworkers, by race and restricted to the Ypsilanti and Saginaw plants (1941-2015)

| Annual average racial diversity (% Black workers) | | | | |
|---|--------------|------|------------|--|
| | No. of cases | sdHR | 95% CI | |
| BLACK WORKERS^a | | | | |
| Low | 121 | 1.00 | - | |
| Moderate | 129 | 0.71 | 0.53, 0.95 | |
| High | 123 | 0.61 | 0.44, 0.84 | |
| WHITE WORKERS^b | | | | |
| Low | 1,349 | 1.00 | - | |
| Moderate | 1,389 | 0.78 | 0.72, 0.85 | |
| High | 1,352 | 0.70 | 0.63, 0.77 | |

Abbreviations: United Autoworkers-General Motors (UAW-GM).

^a Low (0-4.94), moderate (4.94-8.82), and high (8.82-17.73); ^b (0-2.83), (2.83-5.98), and (5.98-17.89). All models were adjusted for plant, sex, calendar year, year of hire, total cumulative metalworking fluid (mg/m³-year), cumulative percent Black residents, percent below the poverty level, median household income, and percent with a Bachelor's degree or higher.

eTable 3. Adjusted hazard ratios restricted to the Detroit plant male autoworkers, by race, for cardiovascular disease and its subtypes in association with exposure to average intensity percent Black UAW-GM autoworkers (1941-2015)

| Annual average racial diversity (% Black workers) | Cardiovascular Disease | | |
|---|------------------------|------|------------|
| | No. of cases | HR | 95% CI |
| BLACK MALE WORKERS^a | | | |
| Low | 465 | 1.00 | - |
| Moderate | 479 | 0.95 | 0.82, 1.09 |
| High | 464 | 0.77 | 0.66, 0.89 |
| WHITE MALE WORKERS^b | | | |
| Low | 1,294 | 1.00 | - |
| Moderate | 1,332 | 1.11 | 1.01, 1.21 |
| High | 1,292 | 1.00 | 0.91, 1.10 |

Abbreviations: United Autoworkers-General Motors (UAW-GM); hazard ratio (HR); confidence interval (CI). ^a Low (0-19.2), moderate (19.3-28.9), and high (29.0-57.0); ^b (0-3.4), (3.5-19.4), and (19.5-57). Estimates of average annual racial diversity were calculated in each person-year as the cumulative exposure divided by time since hire. All models were adjusted for calendar year, year of hire, total cumulative metalworking fluid (mg/m³-year), cumulative percent Black residents, percent below the poverty level, median household income, and percent with a Bachelor's degree or higher.

eTable 4. Adjusted hazard ratios restricted to the Ypsilanti and Saginaw male autoworkers, by race, for cardiovascular disease and its subtypes in association with exposure to average intensity percent Black UAW-GM autoworkers (1941-2015)

| Annual average racial diversity (% Black workers) | Cardiovascular Disease | | |
|---|------------------------|------|------------|
| | No. of cases | HR | 95% CI |
| BLACK MALE WORKERS ^a | | | |
| Low | 104 | 1.00 | - |
| Moderate | 107 | 0.69 | 0.52, 0.93 |
| High | 102 | 0.50 | 0.37, 0.70 |
| WHITE MALE WORKERS ^b | | | |
| Low | 1,198 | 1.00 | - |
| Moderate | 1,232 | 0.74 | 0.67, 0.81 |
| High | 1,196 | 0.65 | 0.59, 0.71 |

Abbreviations: United Autoworkers-General Motors (UAW-GM); hazard ratio (HR); confidence interval (CI). ^a Low (0-3.7), moderate (3.8-5.8), and high (5.9-17.6); ^b (0-2.9), (3.0-5.0), and (5.1-17.6). Estimates of average annual racial diversity were calculated in each person-year as the cumulative exposure divided by time since hire. All models were adjusted for plant, calendar year, year of hire, total cumulative metalworking fluid (mg/m³-year), cumulative percent Black residents, percent below the poverty level, median household income, and percent with a Bachelor's degree or higher.