Results: At 120 volts, the sensor with the gain of 64,931 sensed 1.3 microvolts on a hog leg as the leg was 100 centimeters away from an energized simulated power line, and 17.5 microvolts as the leg was moved to 1 centimeter to the wire. As the leg contacted the bare wire, the sensor measured 473.7 microvolts with the reduced gain of 3,135. At 9,000 volts, with the gain adjusted to 571, the sensor sensed 90.9 to 2,456.4 microvolts as the leg was moved the same distance as above.

Conclusions: The electrode/electronic setup has enough sensitivity and dynamic range to detect hog legs' electrical proximity and contact to an energized power line.

Session: **G2.0**
Title: Workplace Violence Risk Factors
Moderator: Hope Tiesman

G2.1
Title: Place Characteristics of Industries at High Risk for Worker Homicide
Authors: **Ta M**, Marshall S, Kaufman J, Land K, Casteel C, Loomis D

Introduction: Social influences on violence have implications for workplace exposure to violence. This study aimed to identify area-based socioeconomic factors related to presence of workplaces belonging to industries at high risk for worker homicide.

Methods: North Carolina workplaces were assigned to 2000 United States Census block groups (BGs) based on spatial location. Census BGs (n = 3925) comprised the unit of analysis and were categorized as containing none (referent), high (> 15%), medium (11%–15%), or low (1%–10%) proportions of high risk workplaces (HRWP), defined as industries reported in the literature to be at high risk for homicide. Thirty Census-derived variables were selected a priori as potentially predictive of violence and summarized using factor analysis. Three factors were extracted: poverty/deprivation, human/economic capital, and transience/instability. Multinomial logistic regression was used to assess the association between quartiles of the BG-level factor scores (mutually adjusted for each other) and the proportion of HRWP in each BG.

Results: All three factors (poverty/deprivation, human/economic capital, and transience/instability) were independent predictors of the proportion of HRWP. Increasing level of poverty/deprivation and transience/instability were associated with a higher proportion of HRWP (OR = 1.98, 95% CI: 1.47, 2.67 for 4th vs. 1st quartile of poverty/deprivation and OR = 1.77, 95% CI: 1.31, 2.37 for 4th vs. 1st quartile of transience/instability, comparing high to no HRWP). Increasing human/economic capital, on the other hand, was associated with a lower proportion of HRWP (OR = 0.65, 95% CI: 0.49, 0.87 for 4th vs. 1st quartile comparing high to no HRWP).

Conclusions: Areas with more poverty and transience, and less human capital, contain a higher proportion of HRWP. Social processes leading to diminished social control likely play a role in this relationship.

G2.2
Title: Burnout: The Risk of Physical Assault
Authors: **Pinder ED**, Gerberich SG, Alexander BH, Church TR, Hansen J-IC, Ryan AD

Introduction: Burnout, which can emerge from chronic stressors, has been associated with absenteeism and lower organizational commitment, cardiovascular disease, and sleep disturbances. Burnout is defined as an affective reaction to ongoing stress caused by the gradual depletion over time of an individual's energetic resources. These reactions in teachers can include negative attitude and cynicism towards students. Teachers may repeatedly react to disruptive and aggressive students with criticism and punishment, rather than using positive attention to control a situation. This can potentially lead to anger and defiance among students and, consequently, cause them to attack teachers. While burnout has been assessed in teachers, it has not been examined previously as a possible risk factor for physical assault.

Methods: A nested case-control study of licensed Minnesota educators (n = 290 cases and n = 867 controls) examined burnout, using the Shirom-Melamed Burnout Measure Version 2, as a risk factor for physical assault. Cases reported at least one physical assault in the past 12 months and reported on exposures from the month prior to assault. Controls reported on exposures from a randomly selected period of time in which they worked. Potentially confounding variables were selected for multiple logistic regression analyses, using directed acyclic graphs; re-weighting adjusted for nonresponse and unknown eligibility biases.

Results: Compared to those reporting "Infrequently" experiencing feelings of burnout, the risk of physical assault was increased for those indicating "Always" (OR = 2.64, 0.94–7.4), "Frequently" (OR = 1.71,

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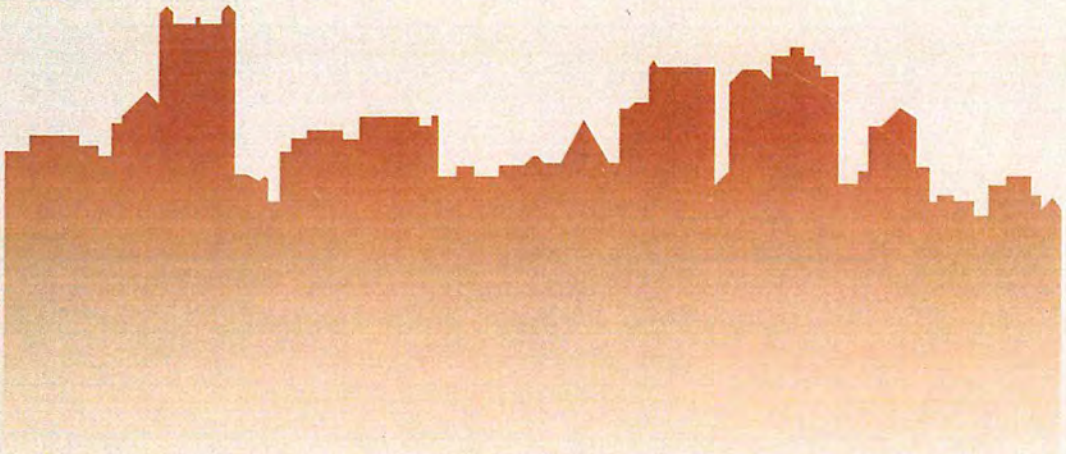

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