Poster #13
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Title of Research: Cutaneous Melanoma in Iowa Exhibits Spatial Clustering by Stage and Sex
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Introduction/Purpose:
Cutaneous melanoma (CM) is known to vary geographically. Several studies have examined the geography of melanoma, but no such study has been performed in Iowa, where CM incidence has been above the national average for seven of the last ten years. Iowa is also a largely agricultural state where heavy fertilizer and pesticide use and arsenic contamination (all known or suspected carcinogens) have raised concerns about environmental health issues. Objectives are to visualize CM rates in Iowa from 2000-2010 by stage and sex, to identify hot spots or clusters that could indicate locations of increased risk, and to identify potentially important environmental correlates.

Experimental Design:
CM rates for White, non-Hispanic adults (20 years and older) diagnosed between 2000 and 2010 are mapped by sex and SEER Summary Stages grouped into early- and late-stages. Hot Spot analysis is performed using the Getis-Ord Gi* statistic and results mapped. Cluster detection is performed in SaTScan and environmental correlates such as proximity to arsenic contamination, access to dermatologists, and access to tanning salons are identified.

Results:
Hot Spot Analysis revealed a number of local hot spots throughout the state, and cluster detection found 6 significant non-overlapping clusters while controlling for sex, 5 in the early-stage group and 1 in the late-stage group. CM clusters in Iowa are not found in urban areas, four of the six have lower than state-average access to dermatologists, half have greater access to tanning salons, and 4 have greater density than average of wells testing above the EPA's Maximum Contaminant Level for arsenic.

Conclusions:
Clusters of increased risk and environmental correlates were identified that warrant further investigation. The ability to identify areas of elevated cancer rates and potential environmental causes is of great interest both to researchers and to public health professionals who seek help targeting intervention and care programs.