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UCLA Chicano Studies Research Center Media Release

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Biological markers reveal hate speech on conservative talk radio raises stress and anxiety levels, UCLA study shows

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A team of UCLA researchers has been able to quantify increased stress and anxiety levels in a group of listeners exposed to hate speech on conservative talk radio. The report, *Using Biological Markers to Measure Stress in Listeners of Commercial Talk Radio*, established that a methodology employing biological markers can help determine the physiological and psychological effects of hate speech.

In the pilot study, released by the UCLA Chicano Studies Research Center (CSRC), researchers examined saliva samples to evaluate changes associated with volunteer listeners' exposure to a broadcasted segment selected from a commercial talk radio program previously analyzed in a CSRC study [*Quantifying Hate Speech on Commercial Talk Radio: A Pilot Study*]. The segment was selected because it was particularly dense in indexical terms targeting vulnerable groups. Salivary cortisol, testosterone, and a selected set of Th1 and Th2 cytokines were analyzed and correlated against clinical anxiety parameters obtained from the same subjects before and after the experimental intervention.

The findings show a statistically significant correlation between changes in clinical anxiety and the production of salivary cortisol in listeners who were exposed to hate speech content on commercial talk radio. The study reveals no significant correlations between the other biomarkers studied.

"One of the more surprising findings," says CSRC Director Chon Noriega, a co-author of the study, "is that the correlation between listener's anxiety and the production of cortisol does not appear to be specific to a subject's race/ethnicity, nativity, or ideological alignment with talk radio programs. In other words, the potential health impact seems to be a general effect on all listeners."

The report recommends further research that increases the sample size and adds a control group in order to determine the correlation between hate speech and the biomarkers studied.

Using Biological Markers to Measure Stress in Listeners of Commercial Talk Radio is the third and final study in a series led by the CSRC investigating hate speech—speech that expresses prejudice against ethnic, racial, religious, and/or sexual minorities—in politically conservative talk radio programs. The first study, *Quantifying Hate Speech on Commercial Talk Radio: A Pilot Study*, used qualitative

content analysis to examine hate speech in commercial broadcasting that targets vulnerable groups. The second study, *Social Networks for Hate Speech: Commercial Talk Radio and New Media*, analyzed the social networks that form around the hosts of radio talk shows. All studies and related press coverage to date are available at: <http://www.chicano.ucla.edu/research/HateSpeech.asp>

This pilot study is supported in part by the National Hispanic Media Coalition through a grant from the W. K. Kellogg Foundation. The study represents a strategic partnership between the UCLA Chicano Study Research Center, the National Hispanic Media Coalition, and the Clinical and Translational Sciences Institute at Harbor-UCLA Medical Center.

The UCLA Chicano Studies Research Center was established in 1969 and is part of the Institute of American Cultures. Current research areas also include archival preservation, arts and culture, economic security, education, and public health.

UCLA is California's largest university, with an enrollment of nearly 38,000 undergraduate and graduate students. The UCLA College of Letters and Science and the university's 11 professional schools feature renowned faculty and offer more than 337 degree programs and majors. UCLA is a national and international leader in the breadth and quality of its academic, research, health care, cultural, continuing education, and athletic programs. Six alumni and five faculty have been awarded the Nobel Prize.

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