were calculated using DeepLabCut outputs and were used to train RF and HMM models with equal number of states, separately. The per-frame predictions from RF and HMM models were then passed to a second HMM model layer ("reHMM"). The outputs of the reHMM layer showed improved interpretability over the initial HMM output, and improved the capacity to analyze temporal aspects of behavior. Finally, we combined the reHMM model outputs with selected positional features to train a third-layer HMM model ("reHMM+"). This reHMM+ three-layer hybrid model unveiled distinctive behavioral patterns that mice displayed in the presence of predator odors. We conclude that this layered, hybrid machine learning workflow represents a balanced approach for improving the depth and reliability of ML classifiers in chemosensory and other behavioral contexts.

133 **Genetics Of Bitter Taste Sensitivity In People Of Different Ancestries**

Katherine A. Bell[1], Mackenzie E. Hannum[1], Cailu Lin[1], Amy Huang[1], Akane Kikuchi[1], Shanice L. James[1], Vicente A. Ramirez[1,2], Ha Nguyen[1], Paule V. Joseph[3,4], Emilia Leszkowicz[5,6], Carol Christensen[1], Danielle R. Reed[1]

[1]Monell Chemical Senses Center, Philadelphia, PA, United States, [2]Department of Public Health, University of California Merced, Merced, CA, United States, [3]Sensory Science and Metabolism Unit, Biobehavioral Branch, Division of Intramural Research, National Institute of Nursing Research, National Institutes of Health, Department of Health and Human Services, Bethesda, MD, United States, [4]Division of Intramural Research, National Institute of Alcohol Abuse and Alcoholism, National 12 Institutes of Health, Bethesda, MD, United States, [5]Department of Animal and Human Physiology, University of Gdansk, Gdansk, *, Poland, [6]School of Psychology, Cardiff University, Cardiff, *, United Kingdom

To learn more about bitter perception in genetically diverse human groups, we investigated person-to-person differences in the bitterness of five medications and the relationship of perception to bitter receptor genotypes. Among participants selected were those living in the US or Canada who were recent immigrants from many countries worldwide (N=223). We studied drugs used to treat diseases in low-resource settings (i.e., praziquantel, tenofovir alafenamide, amodiaquine, and moxifloxacin) plus propylthiouracil and collected a saliva sample from each participant for genetic analyses using the Global Diversity Array. Person-to-person differences in the bitterness of these medicines were common and the individual ratings of all drugs except propylthiouracil were highly correlated ($r=0.30\text{-}0.55$, $p<1x10^{-5}$), indicating a shared common determinant of these person-to-person bitterness differences. Consistent with this observation, ongoing genetic analyses show a similar pattern, with variants of bitter receptors explaining the individual differences in bitterness ratings for these four medications (albeit at a nominal significance; $p<0.05$, $n=124$). In particular, genetic variants in *TAS2R2P*, a gene originally but perhaps prematurely annotated as a pseudogene, are associated with bitterness perception for the same four medications. Data collection is ongoing to target additional diverse groups and provide insight into genetic and sensory relationships.

134 **Psychophysical And Psychohedonic Sweetness Functions Have A Similar Shape Across Familiar And Unfamiliar Foods In Dutch Consumers**

Eva M. Cad[1], Claudia S. Tang[2], Monica Mars[1], Katherine M. Appleton[2], Kees de Graaf[1]

[1]University and Research, Wageningen, *, Netherlands, [2]Bournemouth University, Bournemouth, *, United Kingdom

People typically like sweet foods, but dislike unfamiliar foods. However, it is unclear whether or not psychophysical (concentration-intensity) and psychohedonic (concentration-pleasantness) sweetness functions have a similar shape across familiar and unfamiliar foods. The main objective of this analysis was to investigate the effect of familiarity on the psychophysical and psychohedonic sweetness functions in equivalent liquid, semi-solid and solid foods. Twenty eight participants (11 M, 17 F; mean age 23.4 ± 4.2 y) evaluated the familiarity, perceived sweetness intensity (both 100-unit VAS) and preference (Ranking on a Scale) of 3 familiar and 3 unfamiliar sweet foods, each varying in 5 levels of sweetness. Unfamiliar foods, created by the addition of unfamiliar flavourings and colourings, were perceived as being less familiar than familiar ones ($M_{familiar}=77.5$; $M_{unfamiliar}=46.4$, $F(1,139)=66.5$, $p<0.001$). Perceived sweetness intensity increased linearly across sweetness concentration levels for all foods (*concentration*, $F(4,803)=387.6$, $p<0.001$), with unfamiliar foods on average being perceived as sweeter than familiar ones across all sweetness levels (*familiarity*, $F(1,803)=17.1$, $p<0.001$). Preferences were generally higher for familiar foods (*familiarity*, $F(1,803)=38.1$, $p<0.001$) and differed across sweetness levels (*concentration*, $F(4,803)=24.9$, $p<0.001$). However, there were no effects of familiarity on the shape of the psychophysical sweetness (*concentration x familiarity*, $F(4,803)=0.9$, $p=.85$) nor on the psychohedonic sweetness function (*concentration x familiarity*, $F(4,803)=0.7$, $p=.55$). These results indicate that familiarity, manipulated by flavour and colour, affects sweetness intensity and liking, but not the shape of psychophysical and psychohedonic sweetness functions.

135 **Bitter-Sweet: An Examination Of Taste On Person Perception**

Rachel S. Herz[1], Caitlin M. Cunningham[2], Theresa L. White[2]

[1]Brown University, Providence, RI, United States, [2]Le Moyne College, Syracuse, NY, United States

Few studies have examined whether the basic tastes of a food that we consume alters interpersonal behavior. Eating candy has been reported to increase agreeableness (Meier et al., 2012), presumably due to the sweet taste, though past experiences with post-ingestive consequences from calories is also possible. Bitter drinks, such as tea, coffee, and grapefruit juice have been reported to increase hostile behavior (Sagioglou & Greitemeyer, 2014) and alter financial decision making (Cai et al., 2017). However, many questions remain in this area of research,