OFFICIAL ABSTRACT and CERTIFICATION

# Individual Variability in Working Memory of C57B16 Male Mice in Response to Repeated Variable Social Stress (RVSS)

Katherine Winter
Paul D. Schreiber High School, Port Washington, NY, United States

This paper focused on individual behavioral differences in the response to social stress of male C57Bl6 mice. We found that a subset of mice demonstrated increased working memory in response to the social stress as compared to the non-stressed controls, while another subset demonstrated a decrease in working memory. Further exploration into these subsets revealed that ,the increased working memory subset, or stress positive responders as demonstrated increased grooming behavior. It was seen that overall, both subsets of demonstrated a decrease in anxiety during an open field and elevated plus maze test. Interestingly, those animal that demonstrated the decrease in working memory following the repeated stress also had an mice that underwent repeated variate social stress (RVSS) performed better than the control mice on behavior tests. This was indicative of the presence of coping mechanisms within the mice. After splitting the mice by performance on a working memory test it is clear that there was a stress positive and negative group. The negative group had a decreased working memory. In addition, the stress negative group increase in had a preference for sucrose consumption whereas the stress positive group preferred a social buffer.as possible coping mechanisms, while the stress positive subset sought out social interaction.

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