Executive Summary - Project team Ace with ACEs

Overview
ACEs are Adverse Childhood Experiences. ACEs are negative, impactful experiences such as abuse, neglect, and other traumatic experiences for those under 18.

What we are primarily interested in is how ACEs are linked to chronic health conditions, especially those related to the heart, later in children’s lives. ACEs can lead to low life potential and even early death.

Using wearable technology (such as smart watches) as well as linked mobile devices (smartphones), we’d like to find a way to help children detect ACE moments and find a way to help resolve or mitigate the effects/trauma of those ACEs.

Note: This project will primarily deal with the responding to a detected ACE.

Target Users
This project will largely concentrate on children aged 11-14. This age range typically constitutes a more emotionally self-aware population.

Value
Effects on the heart (especially spikes in cortisol levels) is one area of impact that hopefully can be mitigated.

There is a wide opportunity for impact since the issues related to ACEs are so prevalent and widespread. We ideally can help children find healthy ways to mitigate negative effects by themselves through growing healthy habits in cases of an ACE.

We can even combine EDA and motion sensing to try an make detection of ACEs more accurate (since users could simply just be running).

Functionality
Our target users who have wearable devices/smart watches will have their heart rates and activity monitored. That data is then streamed to our mobile application (potentially cross-platform, but primarily iOS).

When an ACE is detected, our mobile application will be triggered, bringing on a multitude of possible methods to mitigate the negative effects of the ACE (from providing meditation exercises, to phoning a friend, etc.). These methods will be personalized to the user and are and should be quite open-ended.
Current potential ideas for app responses/interventions: - visualizations - music - video/video streaming - breathing - positive affirmations - meditation (e.g. Calm) - caregiver hotline (family member, trusted person, etc.) - others

**Technical Recommendation**

Mobile devices will come down to two platforms: - iOS - Android

We will be focusing on iOS, but are highly considering cross-platform development. Thus, possible frameworks for development include: - Swift/Objective-C (iOS only) - Flutter/Dart (iOS & Android) - Xojo (iOS & Android)

Additionally, potential use case of a database may be needed. In this case, possible services include: - AWS - Firebase