Video: Computational behavioral science develops tools, methods to reach children with autism

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Lexie is an active, healthy 2-year-old and already lending a hand, or more specifically her wrist, to science. She's helping researchers test sensors designed to gauge something particularly difficult to measure scientifically—emotional responses. The wrist sensor Lexie is wearing provides immediate feedback on the electrical changes in the skin that increase with her perspiration. With support from the National Science Foundation (NSF), teams across the country like this one are working to advance a new field of research called computational behavioral science.

Computer scientist Rosalind Picard of the Massachusetts Institute of Technology (MIT) is developing wearable sensors to measure the subtle changes that naturally occur in the body during social interactions. Picard's group focuses largely on children with autism and other nonverbal learning disabilities that make it difficult for them to understand and communicate their emotions, and to be understood. Among the technologies Picard's group has developed is a new creative learning platform for the digital age called StoryScape, an open and customizable platform for creating animated storybooks that can interact with the physical world. It is available free on Android devices.

Another team, led by computer scientist Jim Rehg at the Georgia Institute of Technology, is developing new methods to monitor subtle behaviors, such as eye movements, using wearable cameras. Rehg's

research group is testing a range of sensors on children, some of whom are on the autism spectrum, with the goal of designing new tools for autism research and more effective treatment.

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