Emotion Dysregulation across the Lifespan. My program of research is devoted to understanding the emergence, development, and clinical correlates of emotion dysregulation, beginning before birth and continuing across the lifespan (Crowell et al., 2015). Emotion dysregulation is a transdiagnostic vulnerability factor associated with poor adaptation to stressors, internalizing and externalizing psychopathology, and health risk behaviors such as self-injurious behaviors and substance use (Crowell et al., 2020). It is characterized by difficulty (1) identifying, understanding, or accepting emotional experiences, (2) controlling impulsive behaviors when distressed, and/or (3) flexibly modulating emotional responses to meet situational demands (*Kaufman et al., 2015). The developmental origins of emotion dysregulation begin *in utero*, potentiated by fetal exposures to maternal psychopathology and her associated health risk behaviors (*Lin et al, 2019). These early experiences shape infant neurodevelopment, which is measurable within hours after birth (*Ostlund et al., 2019).

In the first years of life, emotion regulation is a dyadic process, shaped by ongoing dynamic interactions between infant temperament and caregiver behaviors (*Vlisides-Henry et al., 2020). These co-regulation processes support emerging child self-regulation skills across the first years of life by promoting increasingly independent skills for regulating behaviors and emotions (*Hughes et al., 2012). By preschool, poor self-regulation has measurable biological correlates, including differences in sympathetic and parasympathetic nervous system functioning among preschoolers with externalizing psychopathology relative to typical controls (Crowell et al., 2006). In middle childhood, youth become more effective reporters of their own emotion regulation capacity and children whose physiological responses to stress improve across this developmental stage also report fewer difficulties with emotion regulation in early adolescence (*Vasilev et al., 2009). However, adolescence presents new dyadic challenges and increases risk for the emergence of depression, self-injurious thoughts and behaviors (SITBs), and personality disorder traits (Crowell et al., 2012). Across several studies, we have found that risk for SITBs is elevated among youth with high biological sensitivity, which can include reduced respiratory sinus arrhythmia (RSA), low peripheral serotonin levels, or weaker positive voltage (Pe) deflections following behavioral errors (Crowell et al., 2005; 2008; *Kaufman et al., 2018). Importantly, we have found that risk is highest among biologically vulnerable youth who also experience social and familial risk factors. For example, family dynamics characterized by invalidation of emotions and conflict escalation increase SITB risk (Crowell et al., 2008; 2013; 2017). In contrast, when mothers and adolescents practice validation skills based on a single session of training, there are observable improvements in psychophysiological reactivity (*Kaufman et al., 2020). These findings are consistent with a developmental psychopathology perspective on risk and resilience.

Developmental Psychopathology. Broadly, my work is informed by the developmental psychopathology perspective. Developmental psychopathologists are interested in how biological and psychosocial processes transact across development to shape both risky and resilient trajectories. As a scholar, my work has explored psychopathology from a developmental psychopathology perspective across many diverse life stages. However, I have long been interested in understanding risky developmental trajectories beginning before birth. This interest led to my current NIH-funded program of research (Crowell & Conradt, MPIs). This project, "Emotion dysregulation across generations: Identifying early developmental and clinical indicators of risk," involves following *N*=324 mother-child dyads from pregnancy through 18-months postpartum. Pregnant women are enrolled along a uniform distribution on self-reported emotion dysregulation, which over-represents women who are both high and low on this trait. Women complete a

comprehensive prenatal battery to assess behavioral, psychophysiological, and self-reported stress, emotion dysregulation, and psychopathology. Fetal heart rate variability is also recorded prenatally, as an early index of risk for emotion dysregulation. Within 24 hours of birth, babies undergo a reliable and valid newborn neurobehavioral exam designed to detect emerging signs of dysregulation (e.g., high arousal and low self-regulation). At 7- and 18-months postpartum, mother-child pairs complete a number of validated dyadic tasks that reliably elicit co-regulation and/or dysregulation. Data collection for this project is ongoing and we have had to make adjustments to account for pandemic-related disruptions. Namely, we have shifted all of our laboratory visits to home-based protocols, which has required an investment in remote psychophysiology equipment and fetal heart rate monitors (a protocol paper detailing our remote data collection procedures is currently under review; *Gao et al., resubmitted).

Although data collection is ongoing, our team has published a number of manuscripts based upon our first 162 mother-child dyads, which includes 8 empirical papers and 3 conceptual papers based on the premise of our grant. As of June 2021, we also have 4 empirical papers under review and several other manuscripts that are nearing completion. Thus, the lab has been incredibly productive, even during this challenging year. Building upon our NIH project, our team was recently awarded another developmental psychopathology-informed grant from the American Foundation for Suicide Prevention. With this project (Crowell, PI), we will follow 150 pregnant women from the third trimester to 4-months postpartum. Pregnant women will be selected based upon current suicide ideation plus a lifetime history of SITBs (n=100) or no SITBs but matched for emotion dysregulation (n=50). The goal of this project is to better understand suicide and self-harm risk at the transition to motherhood, which is a vulnerable and understudied stage in a woman's lifespan.

Mentorship and Team Science. Over the past 5 years, my efforts have increasingly shifted to mentoring students and junior scholars. For example, as of June 2021, seven of my twelve 2021 manuscripts (i.e., published or in press) are with trainees who are under my direct supervision, two are with students who I co-mentored, and three are with junior colleagues. This commitment to my trainees is core to my philosophy as an academic (see also Teaching and Service statements). I also have a strong record of collaborative/team science research. This is reflected in my profile as a co-investigator on multiple NIH-funded grants. These projects include a study on infants with Neonatal Opioid Withdrawal Syndrome (NOWS; Conradt, PI), a project testing the effectiveness of Rumination-Focused Cognitive Behavioral Therapy (RF-CBT) among adolescents with recently remitted depression (Langenecker, PI), and several recently completed projects with collaborators locally and nationally (e.g., Mezulis, Price, Kerig, & Coon). As a co-investigator, I contribute expertise in emotion dysregulation, psychopathology, suicide risk, and autonomic psychophysiology.

Future Directions. In the coming years, I plan to continue my developmental psychopathology-informed program of research to better understand risk for psychopathology across the lifespan. I intend to continue submitting applications to the NIH and other prominent funding agencies in order to support this line of inquiry. The overarching goal of my research is to prevent severe psychological suffering by understanding early developmental indicators of risk and through early intervention. A related goal is to reduce the stigma of psychopathology by supporting healthy development, especially among women and children.