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Sleep disorders are common and negatively impact our quality of life and biological health. Yet, how the brain encodes the need for restorative sleep is poorly understood. Dr. Leah Elias will investigate the cellular circuits and molecular signals that encode sleep pressure in [Dr. Seth Blackshaw's lab](#) at Johns Hopkins University School of Medicine. Using single nucleus RNA sequencing, Dr. Elias has identified a cluster of neurons that are activated by sleep deprivation. Furthermore, she has identified candidate genes that are differentially regulated in response to sleep deprivation. She will leverage these findings to mechanistically dissect sleep signals in the brain at the cellular and molecular levels. Dr. Elias' research has important implications for the basic biology of sleep and may reveal novel therapeutic targets for sleep and metabolic disorders.

As a PhD student in [Dr. Ishmail Abdus-Saboor's lab](#) at the University of Pennsylvania, Dr. Elias studied the neural circuitry controlling social touch. Specifically, she identified a new pathway that [connects social touch in the skin to reward circuits in the brain](#). With this background in neural circuitry, Dr. Elias will now investigate how the need for sleep is encoded in the brain.

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