Integrating Nanoplasmonic-based heating with Digital droplet PCR for Rapid and Highly-sensitive Diagnostics

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Using digital diagnostics is a better approach to diagnose disease such as COVID-19. Our goal is to focus on translating the double emulsion generation into a PDMS-based device. We are using polydimethylsiloxane (PDMS) which is a polymer used for fabrication and prototyping of microfluidic chips, to fabricate a microfluidic device to enable easy connections of leak-proof fluidic connections.
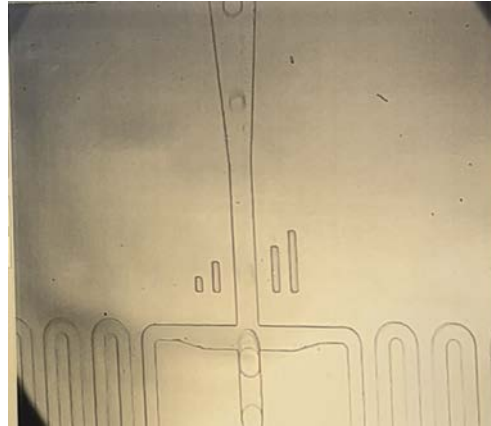

Figure on the left is a PDMS device forming double emulsions. On the right Katelyn is pouring PDMS onto a wafer mold in the SMCR lab at Harvard University.

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Katelyn Wilson is a graduate in Biology from Crownpoint, New Mexico at Navajo Technical University. The Harvard REU program helped me participate in my first research experience which inspired me to continue doing research in the future. I had an amazing time in Cambridge and experience in the Weitz lab this summer. My mentors helped me improve my skills in the lab and gain experience in the lab. I am truly grateful for this opportunity and plan on sharing my knowledge with the undergrads at my University.

Figure 1: left to right, Jean Serrano (mentor), Katelyn (mentee), Layla (mentee), Yang (mentor).