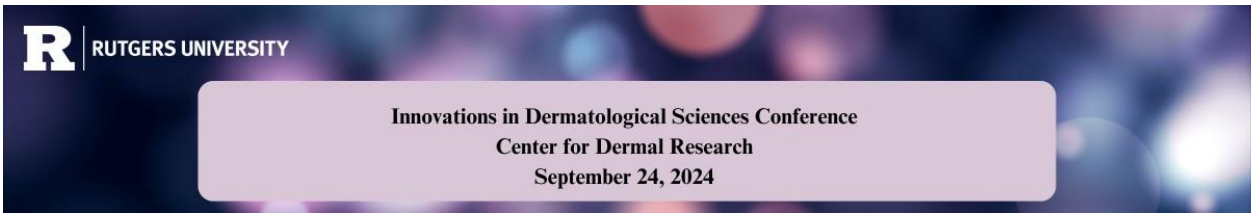

"Spatial distribution assessment of topically applied submicron drug precipitants on cadaver human scalp"

Speaker: Dr. JP Therrien

ABSTRACT: Distribution profiles of topically applied drugs in histological skin sections can be obtained by using a quantitative imaging technique such as Matrix Assisted Laser Desorption/Ionization Mass Spectrometry (MALDI-MS) imaging. In this study submicron drug precipitants of a Janus kinase (JAK) inhibitor were suspended in dimethicone. Human cadaver scalp skin was mounted on a special tension cell and finite dosed with 7.5 µl of JAK inhibitor suspension. Six hours after dosing the cell mounted skin was washed to remove all formulation residue from skin. From the dermis side of the full thickness scalp skin an 8 mm punch biopsy was taken, and flash frozen in liquid nitrogen. Serial 10 µm cryosections were taken with every other section being H&E stained and microscopically examined while adjacent sections were retained for potential MALDI analysis. For the sections that clearly cut through the hair bulb region, quantitative depth profiles of the drug in skin and qualitative MSI/H&E stain overlays were acquired by MALDI image analysis. The results indicated follicular targeting of the suspended JAK inhibitor.