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**Cells on Gels: Cell Behavior at the Air-Gel Interface** CHRISTOPHER O'BRYAN, TRISTAN HORMEL, TAPOMOY BHATTACHARJEE, W. SAWYER, THOMAS ANGELINI, University of Florida — Numerous different types of cells are often grown at air-liquid interfaces. For example, a common way to create cell spheroids is to disperse cells in a droplet of liquid media that hangs from the lid of a culture dish – the “hanging drop” method. Some types of epithelial cells form monolayers at the bottom of hanging drops, instead of spheroids. Corneal epithelial cells stratify and exhibit a tissue-like phenotype when attached to liquid permeable culture surfaces positioned at the air-liquid media interface (air-lifted culture). These widely used culture methods make experimentation challenging – imaging through hanging drops and air-lifted culture dishes is prohibitive. However, similar results may be achieved by culturing cells on hydrogel surfaces at the air-gel interface. In this talk we will describe a method for culturing cells at air-gel interfaces. We seed human corneal epithelial cells (hTCEpi) onto the surfaces of hydrogel networks and jammed microgels, exposed to air. Preliminary observations of cell behavior at the air-gel interface will be presented.

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