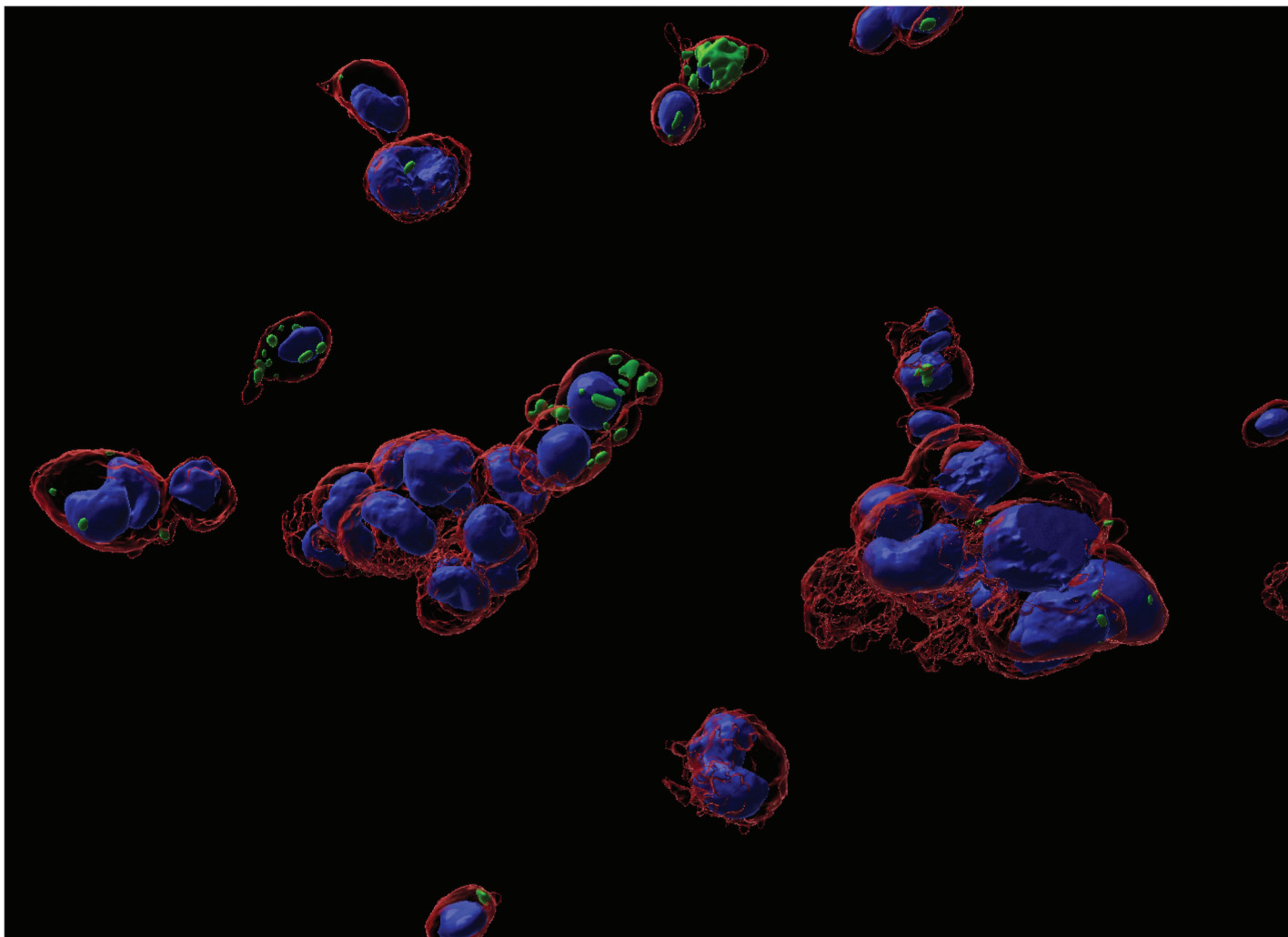


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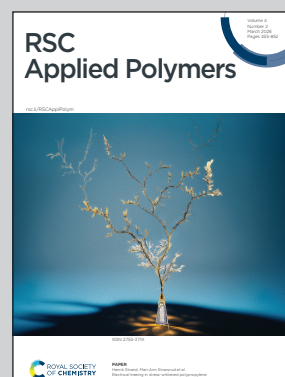
Showcasing research from Professor April Kloxin's laboratory, Chemical and Biomolecular Engineering, University of Delaware, USA.

High-throughput bioprinted 3D cultures for probing host-pathogen interactions in bioinspired microenvironments

Immune cells respond not only to pathogens and therapeutics, but also to the physical properties of their surrounding microenvironment in tissues within the human body. Our work develops high-throughput 3D biomaterial culture systems to study how immune cells respond to bacterial infection in tissue-like microenvironments. Using synthetic extracellular matrices printed with the RASTRUM bioprinter, we investigated macrophage responses to *Pseudomonas aeruginosa*. We observed differences in the magnitude of both bacterial clearance and inflammatory responses across matrices with fibrotic-like versus healthy-like stiffness, highlighting how microenvironment properties can shape early immune responses.

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As featured in:



See Jodi Graf, DeVonte Moore *et al.*, *RSC Appl. Polym.*, 2026, **4**, 543.