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PRINTING LIVING TISSUES

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The ability to pattern biomaterials in planar and three-dimensional forms is of critical importance for several applications, including drug safety screening, tissue engineering and repair. 3D printing enables one to rapidly design and fabricate soft materials in arbitrary patterns without the need for expensive tooling, dies, or lithographic masks. In this talk, our efforts to creating vascularized living tissues via 3D bioprinting will be described. I will present recent advances in the design of cell-laden inks, extracellular matrices and fugitive (vascular) inks for 3D bioprinting of vascularized, heterogeneous cell-laden tissue constructs with as well as ongoing efforts to characterize these 3D living tissues.