Channel Islands
CALIFORNIA STATE UNIVERSITY

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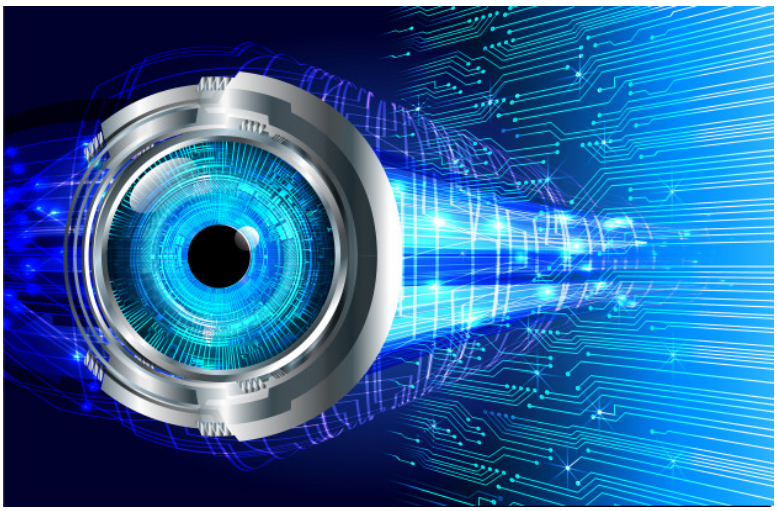
INSTRUCTIONALLY RELATED ACTIVITIES
CHANNEL ISLANDS

Graduate Mathematics Seminar

Analysis and Control of Porous Media Flows with Applications in Ocular Perfusion

Dr. Lorena Bociu

NC State University



Abstract: Fluid flows through deformable porous media are relevant for many applications in biology, medicine and bio-engineering, including tissue perfusion and fluid flow inside cartilages and bones. We are interested in perfusion inside the eye and its connection to the development of glaucoma. Mathematically, the problem translates into the study of a nonlinear poroelastic system, which is a system of PDEs of mixed parabolic-elliptic type. We answer questions related to ocular tissue biomechanics via well-posedness, sensitivity analysis, and optimal control for the PDE coupled system applied to the eye.

When: Monday, April 5, 2021, 6:00 – 7:00 pm
Where: Zoom