

# Computational Mechanics Research Laboratory (CMRL) Johns Hopkins University

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**Seeking Outstanding Applicants from Mech., Civil, Mat. Sci., Aero. Engineering, Physics etc. for Ph.D. in Engineering with full Fellowship/Research Assistantship**  
E-mail Prof. Ghosh for more information

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**Prof. Somnath Ghosh**

Departments of Civil Engineering, Mechanical Engineering and Materials & Science Engineering  
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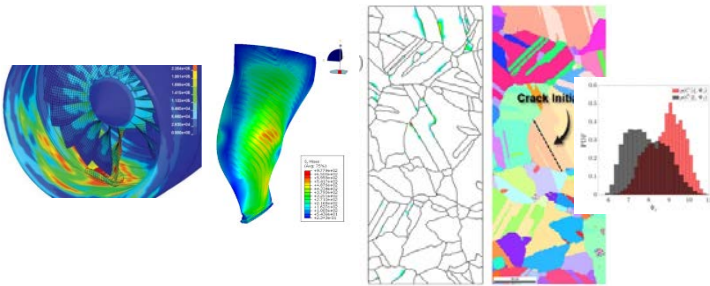
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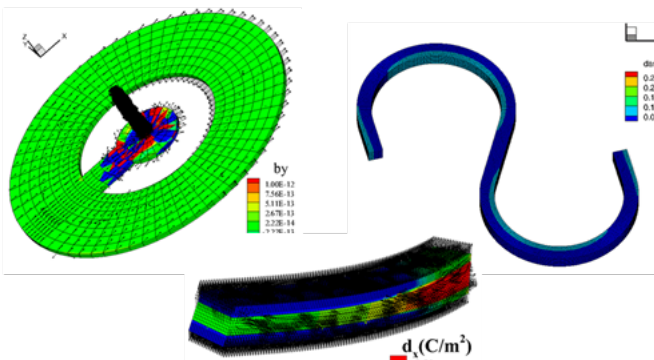
CMRL at Johns Hopkins University is involved in a large and diverse computational research program, with significant national and international recognition.

*Computational Mechanics is a mature discipline in Science and Engineering that develops computational methodologies to characterize, predict and simulate physical events.*

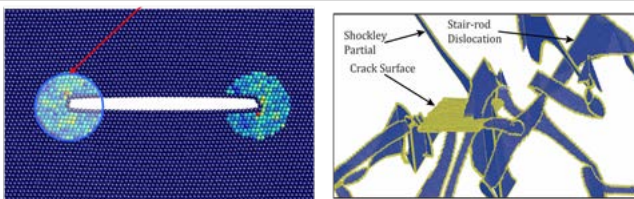
## Data-Driven Modeling of Fatigue Cracking in Metallic Materials



## Magnetic-Piezo-Electric-Mechanical Problems for Antenna and Sensors



## Atomistic Modeling of Crack Evolution and Homogenization



## Fields of Research in CMRL

- ◆ Data-Driven Modeling, Machine Learning and AI
- ◆ Multiple length/time scale and multiphysics modeling
- ◆ Uncertainty Quantification & Machine Learning
- ◆ Additive Manufacturing & Materials processing
- ◆ Mechanical-electro-magnetic problems antenna and sensor applications
- ◆ Fatigue and failure modeling of metallic materials
- ◆ Multiple scale damage modeling of composite materials
- ◆ Atomistic simulations of polymeric and metallic materials
- ◆ Novel computational model development
- ◆ Biomaterials, bio-implant and prosthetics



## Data-Driven Multiscale Modeling of Failure in Woven Composites Materials

