

HEMI/MSEE Impact Research Workshop and Short Course

[July 17-21](#) | [Registration \(link\)](#).

Johns Hopkins University's Hopkins Extreme Materials Institute (HEMI), in collaboration with the Materials Science in Extreme Environments (MSEE) University Research Alliance, will host a workshop and short course on impact research experiments in July 2023. The emphasis of the event will be on impact research experiments performed using gas guns, powder guns, and electromagnetic launchers.

The three-day workshop will provide an overview of the fundamental physics and mechanics associated with impact research experiments. The emphasis of the workshop will be on lecture-style presentations introducing the fundamentals of shock wave propagation, material response to impact, and modeling approaches. Limited to 50 participants.

The two-day short course will provide participants with an opportunity for hands-on setup and execution of a gas gun experiment in HEMI's Hypervelocity Facility for Impact Research Experiments (HyFIRE). Limited to 15 participants.

Brief overview of event:

Workshop Day 1 (July 17, 2023) – Keynote (Prof. Naresh Thadhani [Ga Tech]): State-of-the-art in experiments. Instruction (Prof. KT Ramesh [JHU]): four hours on 1D wave/shock wave propagation, jump conditions, and x-t diagrams. DoD program manager (Dr. David Lambert [AFRL]) talk on needs and opportunities. Student poster session and reception. HyFIRE tours.

Workshop Day 2 (July 18, 2023) – Keynote (Dr. Saryu Fensin [LANL]): State-of-the-art in material response. Instruction (Prof. Ghatu Subhash [UFL]): four hours on material response to impact and shock (yield, equations of state, Hugoniot, spall). DoD program manager (Dr. Scott Schoenfeld [ARL]) talk on needs and opportunities. Student/PM networking and poster sessions. HyFIRE tours.

Workshop Day 3 (July 19, 2023) – Keynote (Dr. Nathan Barton [LLNL]): State-of-the-art in constitutive modeling. Instruction (Dr. Eric Herbold [LLNL]): four hours on numerical and constitutive modeling. DoD program manager talk on needs and opportunities.

Short Course Days 1 and 2 (July 20 and 21, 2023) – Setup, execution, and analysis of impact research experiments using JHU's HyFIRE (Prof. Mark Foster, Mr. Velat Kilic, Mr. Justin Moreno, Mr. Matt Shaeffer [JHU]). Emphasis on impact experiments and diagnostics (PDV, high-speed imaging, flash X-ray) of interest to MSEE.

Registration Fees: Workshop – \$500 for students, \$1000 for professionals.



HEMI

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MATERIALS SCIENCE IN
EXTREME ENVIRONMENTS
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