Abstract Submitted
for the APR18 Meeting of
The American Physical Society

Exploring relevance using the perspective of interacting systems
ABHILASH NAIR, VASHTI SAWTELLE, Michigan State University — National policy recommendations and major requirements position physics reasoning and content knowledge as being essential and relevant to students earning a degree in STEM or a career in the health sciences. Meanwhile, research has documented that students typically demonstrate an unfavorable shift in attitudes toward physics and leave the physics classroom stating that physics is less connected to the world than when they started the course. Students unfavorable responses to items on these measures are often interpreted as students not perceiving the relevance of physics to the different facets of their lives: the real world, their everyday life, their personal interests, or their future careers. The juxtaposition of policy with students experiences positions research on relevance as a critical need in physics education research. We present new research on understanding relevance of physics by taking a systems-view to characterize connections and relationships between physics and students' lives that are not captured by current theory. Utilizing case studies of students in an introductory physics for the life-sciences course, we present how a systems-view of students connections to physics develops a richer account of the ways in which students may find physics relevant.

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Date submitted: 12 Jan 2018 Electronic form version 1.4