OPEN POSITION: POSTDOCTORAL RESEARCHER

PROJECT: "3D NANOPRINTING-ENABLED BIOINSPIRED SEISMIC VIBRATION SENSORS"

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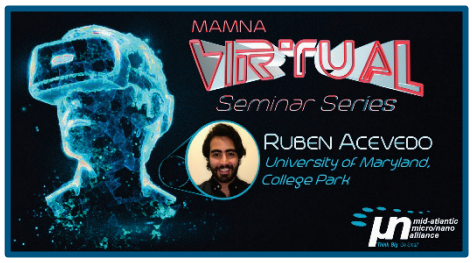
Co-PI: Brendan Hanrahan, Ph.D.
Materials Engineer, U.S. Army Research Laboratory

PROJECT OVERVIEW

Did you know that a bull elephant grumble can be felt by the herd ~20 km away? The **goal** of this project is to mimic the incredible performance of the Pacinian corpuscle mechanoreceptor cell—found in mammalian skin—by combining the **3D nanoprinting** approach, "two-photon direct laser writing (DLW)", with **MEMS** strategies (*e.g.*, mechanical sensors & actuators, sensor packaging) to pioneer an entirely new paradigm in sensing systems: **3D nanoprinting-enabled bioinspired arrayed seismic vibration sensors**. *The following YouTube seminars include additional information on the underlying concepts:*

"Toward 3D Nanoprinted Microcapsules"



"Vibration Sensing the Mammalian Way"

WHAT PRIOR EXPERIENCE IS DESIRED?

As the key project deliverables stem from prototyping arrayed seismic vibration sensors, field testing the concept, and technology transition, previous expertise in the areas of MEMS, mechanical sensors & actuators, sensor packaging, seismology and/or potentially geology. Prior experience with DLW, while certainly beneficial, is *not* a requirement as these skills will be attained as part of the postdoctoral training.

WHAT ARE THE LOGISTICS?

The position duration is for 1.5 to 2 years, which entails working under the advisement of Prof. Sochol within the Mechanical Engineering Dept. at UMD and in collaboration with Dr. Hanrahan—who will serve as a Co-Advisor—at ARL Adelphi (both locations are **< 10 miles from Washington, DC**). The position start date is negotiable, but must begin in **Fall 2020**.

WHAT ARE THE REQUIREMENTS?

- **U.S. Citizen eligible for security clearance.** The work performed at UMD will not require a clearance, but obtaining access to government facilities (*e.g.*, ARL) requires eligibility for security clearance.
- Able to commit to the full **1.5-to-2-year tenure** with the required **start date in Fall 2020** or earlier.
- **Strong personal/professional qualities** (*e.g.*, excellent written/verbal communication skills, driven, thoughtful, committed, independent-minded, meticulous, self-starter, strategic long-term thinking, *etc.*).

HOW TO APPLY?

Email Prof. Sochol @ rsochol@umd.edu with your *CV* and cover letter by **August 15th**.

A. JAMES CLARK SCHOOL OF ENGINEERING

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