

### Undergraduate Research Position 1

**Project description:** Our group is currently developing extremely high-throughput biosensors using opto-mechanical resonators. An undergraduate researcher is needed to help fabricate microresonators, to develop flow control apparatus, and perform Comsol simulations in relation to this project. Our recent papers on the topic can be found here – <http://bahl.mechse.illinois.edu/research.html#OMFR>

**Requirements:** Ability to dedicate >20 hours per week in the summer. Basic coursework on fluid mechanics.

**Bonus assets (not essential):** Prior experience with CAD software (e.g. Solidworks) and finite element simulation (e.g. Comsol). Experience with implementing control systems. Background in signal processing (transforms, filtering, coding). Interest in pursuing research through the 2017-18 school year.

**Point of contact:** Jeewon Suh (Graduate student, [jsuh15@illinois.edu](mailto:jsuh15@illinois.edu))

**Items to submit:** Your CV and unofficial transcript.

### Undergraduate Research Position 2

**Project description:** Our group is exploring techniques by which the flow of sound waves can be manipulated in arrayed structures – to produce topological and nonreciprocal phenomena. We are currently looking for an undergraduate researcher to work closely with a postdoctoral researcher on the design, manufacture, and testing of magnetic oscillators related to this project. Link to an informal article on our effort - <http://engineering.illinois.edu/news/article/18835>

**Requirements:** Ability to dedicate >15 hours per week in the summer. Background in mechanics/dynamics. Background in basic electrostatics and magnetostatics (level of Physics 212). Experience with in CAD software (e.g. Solidworks).

**Bonus assets (not essential):** Experience with operational amplifiers circuits. Background in signal processing (transforms, filtering, coding). Basic experience with circuits and soldering. Interest in pursuing research through the 2017-18 school year.

**Point of contact:** Dr. Inbar Grinberg (Postdoctoral researcher, [inbar28@illinois.edu](mailto:inbar28@illinois.edu)).

**Items to submit:** Your CV and unofficial transcript.

### Undergraduate Research Position 3

**Project description:** We are pursuing experimental research on microwave isolators and circulators for signal routing in spatiotemporally varying circuits. We are currently looking for an undergraduate researcher to support this effort.

**Requirements:** Ability to dedicate >15 hours per week in the summer. Electromagnetics course (ECE 329 or equivalent) and familiarity with wave propagation and transmission lines.

**Bonus assets (not essential):** Experience with microwave circuit design and analysis, and with circuit simulation software (ADS, HFSS). Background in signal processing (transforms, filtering, coding). Interest in pursuing research through the 2017-18 school year.

**Point of contact:** Christopher Peterson (Graduate student, cwpeter2@illinois.edu).

**Items to submit:** Your CV and unofficial transcript.