

## 2<sup>nd</sup> Semiannual Government Workshop on 2D Materials

BRICC in Arlington, VA - March 22, 2019

8:00-8:30	Arrival and Registration		
8:30-8:40	Welcome remarks		Tim Bunning - Chief Scientist, Materials and Manufacturing Directorate, AFRL
8:40-9:10	2D Frontiers Keynote		Prof. Pulickel Ajayan - Rice University
9:10-9:30	Brief 2D Overviews		Chairs from AFRL, NRL, ARL, NIST
<b>AM1: Synthesis and Processing</b>			
9:40-9:55	NRL	Jeremy Robinson	A new platform for networked 2D materials
9:55-10:10	AFRL	Ali Jawaid	Large scale liquid exfoliation of layered TMD's and surface modification
10:10-10:25	NRL	Kathy McCreary	Synthesis of monolayer MoS <sub>2</sub> by direct liquid injection process
10:25-10:40	NIST	Christina Hacker	Controllable wide-range n- and p-doping of TMDC monolayers
10:40-10:55	ARL	Michael D. Valentin	Synthesis and characterization of novel TMD: Rhenium Disulfide
<b>AM2: Characterization and Modeling</b>			
11:05-11:20	NIST	Joe Stroscio	STM/STS on graphene quantum dots
11:20-11:35	AFRL	Ruth Pachter	Prediction of the optical properties of 2D materials by first principles calculations
11:35-11:50	NIST	Andrea Centrone	Nanoscale IR spectroscopy (PTIR) for analyzing contaminants in 2D heterostructures and phonon-polariton in 2D materials
11:50-12:05	NIST	Kevin Garrity	First principles prediction of magnetic topological phases in layered Bi <sub>2</sub> MnSe <sub>4</sub> compound
12:05-12:20	NRL	Igor Mazin	Theory of magnetic interactions in CrI <sub>3</sub>
12:20-12:35	NIST	Amber McCreary	Spin-phonon coupling, spin waves, and other magnetic phenomena in layered XPS3 materials via raman spectroscopy
<b>12:35-1:25 Lunch and Poster Session from AM1 and AM2</b>			
<b>PM1: Heterostructures and Devices</b>			
1:25-1:40	ARL	Sina Najmaei	Cross-plane carrier transport in van der Waals layered materials
1:40-1:55	NRL	Matt Rosenberger	Quantum Caligraphy: writing single photon emitters in 2D materials
1:55-2:10	NRL	Saujan Sivaram	Spatially resolved laser defect passivation and PL enhancement in MoS <sub>2</sub>
2:10-2:25	ARL	Peter Wilson	Plasma-doped 2D van der Waals materials & heterostructures
2:25-2:40	AFRL	Larry Drummy	In-operando characterization of graphene biosensors
2:40-2:55	AFRL	Josh Henderickson	Single photon emission in WSe <sub>2</sub>
2:55-3:10	ARL	Kate Price	Ultra-thin high-K dielectrics and interfaces in MoS <sub>2</sub> van-der Waals field effect transistors
<b>PM2: Future Research and Applications</b>			
3:20-3:35	AFRL	Steve Kim	Sensing of human performance with 2D materials
3:35-3:50	ARL	Matt Chin	Graphene plasmonics for THz
3:50-4:05	AFRL	Benji Maruyama	Autonomous research systems (ARES) for 2D materials
<b>4:05-4:55 Poster Session from PM1 and PM2</b>			