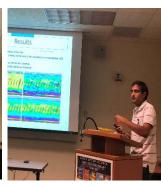Four Student from CUNY, New York and UTEP, El Paso participated in the 2018 JPSS SPARKS Program in NOAA NCWCP, IMSG, Inc., and University of Maryland, College Park, MD – June 11 to August 17, 2018



## The Rationale
Recent studies and surveys reveal that it is critically important to transform and align our graduate education training to include and focus not only *academic-driven workforce* but also *non-academic STEM workforce*. Most students who graduate with an advanced degree (Masters and/or PhDs) do not acquire much-needed professional skillsets desired by the potential employers – particularly federal agencies and the private sector/industries.

## NOAA's Investment
Through NOAA JPSS' investment, JPSS-Students Professional & Academic Readiness with Knowledge in Satellites (SPARKS) were created in 2016 to provide hands-on experiential learning opportunities with critical core competency training for students in both science and software that are inherent to the JPSS mission. IM Systems Group served as a bridge between the CUNY classroom and the NOAA environment by providing intensive computer programming from IMSG staff, seeking NOAA mentors who volunteered their time to provide knowledge and guidance to the JPSS SPARKS interns to work on short-term projects for the JPSS mission. Through this

initiative, students gain an understanding of both JPSS science and the skills sought by the JPSS workforce at NOAA and private sectors.

## JPSS SPARKS Architecture

Students were provided multi-day workshops in C++ and Fortran 90, which even today are heavily used in NOAA's operational environment. They were also provided multi-day workshops in scripting languages such as Perl and Python, and IMSG staff accommodated a lesson in IDL to aid students with mentored projects in that language. Students were also given a plethora of lectures for the JPSS instruments, products, and applications, along with discussions on algorithm reviews, configuration management, and coding standards that provide security to the many algorithms delivered to operations.

Ultimately, this program provides students with a glimpse into the NOAA workforce. The program is designed to inspire students to pursue research that relates to the JPSS mission, to consider a NOAA-related career, and to educate them on some of the skills that are sought for satellite science and software engineering.

## JPSS SPARKS - 2018

The Phase II of JPSS SPARKS initiative was successfully launched in summer 2018. Three graduate students Arun Ravi, Ysabel Bannon from City College of New York and Christopher Bombach from University of Texas, El Paso, and one Undergraduate student Dilchand Nauth were recruited by the NOAA CREST center at the City College of New York.

## JPSS-SPARKS II and Beyond

After successful completion of the SPARKS internship, these interns will return to the NOAA CREST center at CUNY and the CREST partner institution at UTEP to continue their research and future career goals aligned with NOAA JPSS mission sciences. They will also present their research at the Annual JPSS science meeting during August 27-30, 2018. Ysabel Banon who is also a NOAA CREST fellow will be presenting her research at the upcoming AGU conference in fall 2018.