The Office of Research & Sponsored Programs

Research at The University of Scranton: **Fall 2020**

Research Recharged

Externally Submitted Grant Proposals

	Fiscal Year 19/20	18/19
CAS	**27**	**18**
Asian Studies	1	1
Biology	3	4
Chemistry	7	8
Computing Science	1	0
English & Theater	0	1
History	1	0
Hope Horn Gallery	1	1
Philosophy	1	0
Physics/EE	7	0
Sociology, Criminal Justice & Criminology	2	1
Theology/Religious Studies	2	0
World Lang. & Culture	1	2
KSOM	**3**	**9**
Accounting	2	8
Economics/Finance	0	1
Operations & Information Management	1	0
LIBRARY	**0**	**0**
PCPS	**17**	**30**
Counseling & Human Services	0	3
Dean's Office	3	11
Health Administration & Human Resources	0	1
Leahy Clinic	7	4
Occupational Therapy	2	1
Nursing	1	2
Physical Therapy	0	1
University of Success	4	7
STAFF	**13**	**10**

The **listing of externally submitted grant proposals** represents all external proposals submitted through the Office of Research and Sponsored Programs (ORSP) for the Fiscal Years 2019-2020 and 2018-2019.

Of these grants, 26 (from 2019-2020) and 33 (from 2018-2019) originated from the Director of Corporate and Foundation Relations. These grants flowed through the ORSP for compliance and budget review as required by University policy.

Research as a High Impact Practice (rHIP)

ORSP is pleased to announce again the availability of funding to promote high-quality faculty-mentored experiences in research and scholarship for our undergraduate students. Proposals are expected to support faculty-student research projects that focus on the creation of an undergraduate research/scholarship experience for the student resulting in student learning outcomes, such as inquiry and analysis, critical and creative thinking, and foundations and skills for lifelong learning.

Proposals for rHip funding are **due** to ORSP by **October 19, 2020**. A detailed request for proposal (RFP) is forthcoming. Average award is $500.

Nathaniel A. Frissell, Ph.D.

Research Spotlight

Dr. Nathaniel Frissell is a space physicist who joined The University of Scranton Department of Physics and Engineering as an assistant professor in Fall 2019. His interest in space physics and electrical engineering started when he was in middle school and first discovered the hobby of amateur (ham) radio through his involvement in scouting. He earned his B.S. in Physics and Music Education from Montclair State University, and then his M.S. and Ph.D. in Electrical Engineering from the Super Dual Auroral Radar Network (SuperDARN) laboratory at Virginia Tech. Just before coming to Scranton, he worked as a post-doc and then research professor at the New Jersey Institute of Technology Center for Solar-Terrestrial Physics.

Dr. Frissell's research interests focus on the ionosphere and ionospheric radio wave propagation. The ionosphere, an electrically charged layer of the upper atmosphere, enables global communications on shortwave (2-30 MHz) radio frequencies without man-made infrastructure between the transmitter and receiver. The ionosphere is highly variable due to influences from both space and the lower atmosphere. Communications can either be disturbed or enhanced due to phenomena such as solar flares, geomagnetic storms, auroral activity, and traveling ionospheric disturbances associated with atmospheric gravity waves. By studying the disturbances to these communications, it is possible to remotely sense ionospheric physical processes.

A great deal of Dr. Frissell's work is conducted using a citizen science approach. Dr. Frissell founded and now leads the Ham Radio Science Citizen Investigation (HamSCI, hamsci.org), a group that works to foster collaborations between the professional geospace research and amateur radio communities. These collaborations occur through NSF sponsored projects and workshops, regular telecons, and e-mail groups. Currently, Dr. Frissell and the University of Scranton serve as the lead principal investor of HamSCI's Personal Space Weather Station project, a $1.3 million collaborative NSF award to develop a network of new ground-based instruments that will help citizens contribute better measurements to space science and amateurs better understand radio propagation to their local station.

This collaborative amateur radio and citizen science-based approach to research allows Dr. Frissell to heavily involve Scranton students from multiple levels and majors. Dr. Frissell advises multiple undergraduate students on ionospheric research projects, while also working to pair these students with expert mentors from the HamSCI community. With the help of a number of interested and enthusiastic students, Dr. Frissell also recently formed the W3USR University of Scranton Amateur Radio Club. W3USR serves as a fun environment for students to learn about radio and ionospheric science in a hands-on manner.

In addition to his work with HamSCI and the Personal Space Weather Station, Dr. Frissell continues to work in the area of medium scale traveling ionospheric disturbance (MSTID) research. He is a Co-Investigator on a recently selected NASA Living With a Star team to study the causes of hemispheric asymmetries in observed MSTIDs. He is also a member of an International Space Science Institute (ISSI) team working to resolve the generation mechanisms of MSTIDs.