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| 14. ABSTRACT The objective of this proposal is to enhance the instrumentation of FIU's ElectroMagnetics Lab (EMLab) directed by Dr. Georgakopoulos and create a state-of-the art lab that will support the following: (a) Dr. Georgakopoulos' funded research on reconfigurable antennas and wireless power transfer, (b) other research on advanced electromagnetic technologies that support the mission of ARO and DoD, (c) undergraduate and graduate education on antennas and electromagnetics, and (d) training of students as well as industry, military and DoD personnel on antennas and electromagnetics. | | | | | |
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| | | | | 19b. TELEPHONE NUMBER 305-348-1262 | |

Report Title

Final Report: Antennas and Electromagnetics Instrumentation for Research and Education

ABSTRACT

The objective of this proposal is to enhance the instrumentation of FIU's ElectroMagnetics Lab (EMLab) directed by Dr. Georgakopoulos and create a state-of-the-art lab that will support the following: (a) Dr. Georgakopoulos' funded research on reconfigurable antennas and wireless power transfer, (b) other research on advanced electromagnetic technologies that support the mission of ARO and DoD, (c) undergraduate and graduate education on antennas and electromagnetics, and (d) training of students as well as industry, military and DoD personnel on antennas and electromagnetics.

The broader impact of this instrumentation involves the creation of a state-of-the-art EMLAB in Florida that will serve as a technical hub attracting new academic and industry collaborators, fostering new opportunities for cross-disciplinary and multi-institutional research, and supporting the growth of a strong and diverse U.S. workforce. The proposed instrumentation comprises of: (a) a StarLab antenna measurement system, (b) a Dimatix DMP 2831 materials printer for inkjet printing of novel antennas and RF circuits on substrates, and (c) a 10 MHz to 50 GHz Agilent PNA network analyzer.

Enter List of papers submitted or published that acknowledge ARO support from the start of the project to the date of this printing. List the papers, including journal references, in the following categories:

(a) Papers published in peer-reviewed journals (N/A for none)

| <u>Received</u> | <u>Paper</u> |
|-----------------|--------------|
|-----------------|--------------|

TOTAL:

Number of Papers published in peer-reviewed journals:

(b) Papers published in non-peer-reviewed journals (N/A for none)

| <u>Received</u> | <u>Paper</u> |
|-----------------|--------------|
|-----------------|--------------|

TOTAL:

Number of Papers published in non peer-reviewed journals:

(c) Presentations

Number of Presentations: 0.00

Non Peer-Reviewed Conference Proceeding publications (other than abstracts):

Received Paper

TOTAL:

Number of Non Peer-Reviewed Conference Proceeding publications (other than abstracts):

Peer-Reviewed Conference Proceeding publications (other than abstracts):

Received Paper

TOTAL:

Number of Peer-Reviewed Conference Proceeding publications (other than abstracts):

(d) Manuscripts

Received Paper

TOTAL:

Number of Manuscripts:

Books

Received Book

TOTAL:

Received

Book Chapter

TOTAL:

Patents Submitted

Patents Awarded

Awards

Graduate Students

| <u>NAME</u> | <u>PERCENT SUPPORTED</u> |
|------------------------|--------------------------|
| FTE Equivalent: | |
| Total Number: | |

Names of Post Doctorates

| <u>NAME</u> | <u>PERCENT SUPPORTED</u> |
|------------------------|--------------------------|
| FTE Equivalent: | |
| Total Number: | |

Names of Faculty Supported

| <u>NAME</u> | <u>PERCENT SUPPORTED</u> |
|------------------------|--------------------------|
| FTE Equivalent: | |
| Total Number: | |

Names of Under Graduate students supported

| <u>NAME</u> | <u>PERCENT SUPPORTED</u> |
|------------------------|--------------------------|
| FTE Equivalent: | |
| Total Number: | |

Student Metrics

This section only applies to graduating undergraduates supported by this agreement in this reporting period

The number of undergraduates funded by this agreement who graduated during this period: 0.00

The number of undergraduates funded by this agreement who graduated during this period with a degree in science, mathematics, engineering, or technology fields:..... 0.00

The number of undergraduates funded by your agreement who graduated during this period and will continue to pursue a graduate or Ph.D. degree in science, mathematics, engineering, or technology fields:..... 0.00

Number of graduating undergraduates who achieved a 3.5 GPA to 4.0 (4.0 max scale):..... 0.00

Number of graduating undergraduates funded by a DoD funded Center of Excellence grant for Education, Research and Engineering:..... 0.00

The number of undergraduates funded by your agreement who graduated during this period and intend to work for the Department of Defense 0.00

The number of undergraduates funded by your agreement who graduated during this period and will receive scholarships or fellowships for further studies in science, mathematics, engineering or technology fields:..... 0.00

Names of Personnel receiving masters degrees

NAME

Total Number:

Names of personnel receiving PHDs

NAME

Total Number:

Names of other research staff

NAME

PERCENT SUPPORTED

FTE Equivalent:

Total Number:

Sub Contractors (DD882)

Inventions (DD882)

Scientific Progress

Dr. Georgakopoulos has coordinated the purchasing and installation of the all the proposed instrumentation for his Electromagnetics Lab. The status of each instrument is as follows:

- (a) StarLab antenna measurement system (purchased and installed)
- (b) Dimatix DMP 2831 materials printer for inkjet printing of novel antennas and RF circuits on substrates (purchased and installed)
- (c) 10 MHz to 50 GHz Agilent PNA network analyzer (purchased and installed)

Technology Transfer