

IIACADEME

SEMI-ANNUAL JOURNAL OF INFORMATION TECHNOLOGY

Awards Received by II Advisors

■ Air Force Research Laboratory (AFRL) Information Directorate (RI) Annual Heritage Day Awards

- Jason A. Moore received the Raymond P. Urtz Award. Mr. Moore's nomination will be forwarded to AFRL for consideration for the Commander's Cup (Individual) Award.
- The Space Team, including Information Institute (II) advisors Dr. Joseph B. Raquepas, Carolyn B. Sheaff, Jason A Moore, and Dr. Erik P. Blasch received the John A. Graniero Award. The team nomination will be forwarded to AFRL for consideration for the Commander's Cup (Team) Award.
- Dr. Nathaniel A. Gemelli received the AFRL Leadership (Individual) Award. Dr. Gemelli's nomination will be forwarded to AFRL for consideration for the AFRL Leadership (Individual) Award.
- Dr. Qing Wu received the Joseph J. Naresky Award
- The AFRL/RI TTCP Team including II advisors Douglas G. Smith, and Dr. Lauren M. Huie-Seversky received the AFRL International (Team) Award. The team nomination will be forwarded to AFRL for consideration for the AFRL International (Team) Award.
- Steven L. Drager received the Ralph I. Cole Scientist/Engineer of the Year. Mr. Drager's nomination will be forwarded to AFRL for consideration for the AFRL Science and Technology Management Award.
- Dr. Charles A. K. Kamhoua and Dr. Kevin A. Kwait received the Fred I. Diamond Award.
- Dr. Charles A. K. Kamhoua received the RI Basic Research Award. Dr. Kamhoua's nomination will be forwarded to AFRL for consideration for the AFRL Science and Technology Achievement (Individual) Award.
- The IHURT Team including II advisors Dr. Walter D. Bennette, and Christopher W. Banas received the RI Research and Technology Team Award: The team nomination will be forwarded to AFRL for consideration for the AFRL Science and Technology Achievement (Team) Award.
- Dr. Paul M. Alsing received the Harry Davis Award. Dr. Alsing's nomination will be forwarded to AFRL for consideration for the AFRL Senior Leadership (Individual) Award.

■ Air Force-Level Award Recipient

- Dr. Paul Alsing is the Air Force-level winner for the 68th Annual Arthur S. Flemming Award for Basic Science.



Our Mission

Strengthen and Expand Information Technology Research within the Information Directorate.

Develop collaborative relationships among and between the academic members and the Information Directorate.

Increase research emphasis in areas of information technologies critical to the Information Directorate's mission.

This Issue

- P1 Awards
- P2 Success Stories
- P2 Program Schedule

<http://www.wpafb.af.mil/Welcome/Fact-Sheets/Display/Article/836756>

Ph: 315.330.4775
Fax: 315.330.4547
rrs.iweb@us.af.mil



INFORMATION INSTITUTE

26 Electronic Parkway - Rome, NY 13441 • <http://www.wpafb.af.mil/Welcome/Fact-Sheets/Display/Article/836756>
rrs.iweb@us.af.mil • Ph: 315.330.4775 • Fax: 315.330.4547

Approved For Public Release [88ABW-2017-2645] Distribution Unlimited

Issue #3

■ New IEEE standard working group has its roots in the AFRL/RI Information Institute

The development of engineering standards is part and parcel of the engineering career field. Without standards for process, design, protocol and maintenance, the technical world becomes "ad hoc", at the mercy of unexpected adversaries such as harsh environments, real-world scenarios and/or bad actors intent on causing systems to fail.

This situation was no different in the summer of 2008, when Professor Kamesh Namuduri's research proposal was selected for conducting collaborative work on-site at the Information Directorate of the Air Force Research Laboratory. Specifically, Dr. Namuduri's proposal was in response to a research topic written by Mr. Brent Holmes, a government researcher at the directorate who sponsored and collaborated with Dr. Namuduri. The issue at hand was the need for communications protocols to handle the new paradigm of mobile airborne communications nodes, operating in contested environments. Their collaborative work was in the area of Zero Knowledge Proof based protocols for authentication of nodes in airborne networks [1].

What Dr. Namuduri didn't realize during his summer tenure at the directorate, is that his proposal response and his summer collaborations would help eventually lead to him becoming the Chair of a new communications protocol standard working group, for IEEE 1920.1 Standards for Aerial Networks and Communications. See also IEEE Press Release: <http://standards.ieee.org/news/2016/aerial_network_communications_working_group.html>

The goal of the working group and the standards being developed is to create protocols to allow unmanned and manned aerial vehicles to interoperate safely and effectively in the formation of aerial network communications. Often these vehicles are entering and leaving the immediate vicinity of the network, and need to be both self and mutually aware of each other, to avoid collision while providing communication capabilities in highly dynamic scenarios such as experienced by first-responders. This technology is a key enabler for handling emergency and natural disaster type situations, with parallel uses within the Air Force.

[1] K. Namuduri, B. Holmes (AFRL), R. Cody (AFRL) and T. Humiston (AFRL), "Active Trust Model for Airborne Networks", NATO conference on Information Assurance for Emerging and Future Military Systems, Slovenia, October 2008.

Addendum

Professor Namuduri is currently (as of summer 2016) collaborating with RITF/Dr. Amjad Soomro; the result of these recent collaborations includes initial verbal agreements of interest in pursuing an Educational Partnership Agreement with the University of North Texas, as a potential member of the Information Institute.



Kamesh Namuduri received his B.S. degree in Electronics and Communication Engineering from Osmania University, India, in 1984, M.S. degree in Computer Science from University of Hyderabad in 1986, and Ph.D. degree in Computer Science and Engineering from University of South Florida in 1992. Currently, he is with the Electrical Engineering Department at University of North Texas as an Associate Professor. Over the past eight years, his research is focused on aerial networking and communications. Along with several colleagues, he

has been organizing a series of workshops in this domain since 2011. He is serving as the chair for the newly formed IEEE Standards Working Group (IEEE 1920.1: Aerial Communications and Networking Standards). He is serving as a co-editor for an upcoming book on "Unmanned Aerial Vehicle Networks" that will be published by the Cambridge University Press in summer 2017. He has published over one hundred research articles during his career. He is leading the Smart and Connected Community project on "Deployable Communication Systems" in collaboration with the Government, public, and private organizations. This project was demonstrated twice during the Global City Teams Challenge hosted jointly by the National Institute of Standards and Technology and US Ignite in 2015 and 2016.



Amjad Soomro is a Senior Computer Engineer in AFRL/RITF. He earned his doctorate in electrical engineering from U. of Maryland at College Park, MD. He has been a major contributor in IEEE 802.11 family of standards introducing protocols for Quality of Service Enhancements, Spectrum and Transmit Power Management and Fast Roaming extensions. He was awarded Certificates of Appreciation by IEEE standards body for his outstanding contributions to the standard. He has been granted 27 patents and more than 12 publications in major journals. His

research interests include wireless, physical layer, routing, signaling, and application layer protocols. Prior to joining AFRL/RITF he worked at Philips Research, North America and Hewlett Packard.

VISITING FACULTY RESEARCH PROGRAM SCHEDULE

■ 2017

- **January 22:** VFRP application competition closed
- **Mid-March:** VFRP selection notification
- **April 7:** VFRP selectees acceptance letters due
- **April 28:** Contracts completed
- **May 8:** VFRP and SFFP begin
- **May 31:** First Summer Program Introduction/ Orientation
- **May 29:** Memorial Day (HOLIDAY)
- **June 13-14:** Autonomous Networking Technology Symposium (ANTS) Sponsored by AFCEA
- **June 21:** Second Summer Program Introduction
- **July 4:** Independence Day (HOLIDAY)
- **July 11:** Information Institute Technical Networking Interchange & Poster Session
- **July 18:** Call for Extension Grant Proposals
- **July 20:** End of Year Technical Offsite Exercise (TOE)
- **July 28:** Extension Grant Proposals Due
- **September 4:** Labor Day (HOLIDAY)
- **September 22:** VFRP ends; Summer Research Associate's Final Reports Due
- **September 30:** All VFRP Advisor Reviewed Final Reports due
- **October 31:** Extension Grant Final Reports Due

The Final Invoice or Extension Grant Final Invoice will not be submitted for payment until a copy of the reviewed and desensitized Final Report by the Advisor for technical and security release, a Report of Inventions and Subcontracts form (DD FORM 882) and the Summer Research Survey is received by the Information Institute Office.