

# Call for papers

## Green Computing, Networking, and Communications Symposium (GCNC) ICNC 2018

Maui, Hawaii, USA, March 5-8, 2018

<http://www.conf-icnc.org/2018/>

### Symposium Co-chairs

Aaron Striegel, University of Notre Dame, USA [striegel@nd.edu](mailto:striegel@nd.edu)

Shaoren Wu, Ball State University, USA, [swu@bsu.edu](mailto:swu@bsu.edu)

Fabrizio Granelli, University of Trento, Italy, [fabrizio.granelli@unitn.it](mailto:fabrizio.granelli@unitn.it)

### Scope

Green computing has been one of the important topics of research in recent years due to its potential economic and environmental impact. Recent studies have shown that Information and Communication Technology (ICT) and computing resources account for 2% to 10% of the world's power consumption, and is quickly growing due to the ever-increasing proliferation of electronic devices. To reduce the carbon-footprint and improve the environmental sustainability, novel paradigms, methods, techniques, and systems are needed to develop green computing and communication technologies, with focus on high-energy efficiency, lowering the dependence on energy sources that lead to greenhouse gas emissions, better re-use of resources and materials, and the use of renewable energy resources.

The ICNC Green Computing, Networking, and Communications Symposium aims at bringing together researchers and visionaries from academia, research laboratories, and industries working towards the ultimate goal of green ICT. To this end, this symposium solicits original theoretical, experimental, and design approaches that can cope with this paradigm shift towards green computing. The symposium also solicits the application of computing, communications, and networking technologies towards the development of sustainable energy systems that may include modernization of the electric power grid and the integration of distributed energy resources. Topics of interest include, but are not limited to the following:

- Green computing models, simulations, designs, and paradigms
- Green ICT operation with renewable energy
- Green materials and devices
- Green communication in 5G systems
- Green wired/wireless transmission technologies and physical layer approaches
- Green optical communications, switching and networking
- Green wireless cellular networks
- Energy-efficient routers and switches
- Green cloud computing communications protocols
- Green management of data centers
- Novel network concepts and architectures to reduce the overall footprint of ICT
- Cognitive principles to reduce energy and/or resource consumption in wireline/ wireless networks
- Power-efficient cooling and air-conditioning systems for communications and computing
- Context-based green management & green awareness
- Economy and pricing for green communication and services
- Measurement and profiling of energy consumption
- Power consumption trends and reduction in communications
- Security and privacy in green communication networks
- Societal impacts of green communication solutions
- Standardization, policy and regulation for green communications and computing
- Green high-performance computing and applications
- Cross-layer optimization of green networking infrastructures

- Energy-aware software-defined network
- Energy-aware algorithms and protocols
- Energy harvesting based communications, computing, and control
- Ambient energy harvesting, models, prediction, storage, and recycling
- Energy-efficient networking and computing infrastructures
- Energy-efficient multimedia systems
- Life-cycle assessment of energy consumption
- Life-cycle analysis of communication and computing equipment, especially with energy harvesting
- Climate and ecosystem monitoring
- Integration of distributed energy resources and EVs utilizing ICT
- Design, analysis, and realization of smart grid
- Applications of energy efficient systems such as green Body Area Networks
- Implementations, test-beds and experimental results for green communications and computing
- Quality-of-service provisioning in green ICT
- Ultra-low power IoT sensing, communications and networking

## Submission Guidelines

Please follow the author instructions at <http://www.conf-icnc.org/2018/author.htm>

Direct paper submission for this symposium can be found at <http://www.conf-icnc.org/2018/cfp.htm>

## Short biography of co-chairs

### Aaron Striegel

Prof. Aaron Striegel is currently an Associate Professor and serves as Associate Chair in the Department of Computer Science & Engineering at the University of Notre Dame. He also serves on the Executive Committee of the Wireless Institute at the University of Notre Dame. Prof. Striegel received his Ph.D in 2002 in Computer Engineering at Iowa State University under the direction of Dr. G. Manimaran. Prof. Striegel's research interests focus on instrumenting the wireless networked ecosystem to gain insight with respect to user behavior and optimizing network performance. Flagship projects of Prof. Striegel include the NetSense, NetHealth projects involving the instrumentation and analysis of data from hundreds of smartphones and wearables over a nearly six year period of continuous data streaming. Further research interests of Prof. Striegel include heterogeneous network optimization (cellular, WiFi), content distribution via edge device pre-staging, and network security dynamics. He has published over one hundred peer-reviewed papers in the literature with multiple best paper awards including USENIX LISA, IEEE Healthcom, and HotPlanet. Throughout his career, Prof. Striegel has been able to fund his work with research and equipment funding from NSF, NIH, DARPA, Keck Futures Institute, and numerous industrial entities (Google, Sprint, Nokia, Intel, HP, Sun). Prof. Striegel has also served in various roles in the community including recently serving as the general chair of ICCCN 2016, chair of HotPlanet 2016, and the publication co-chair of INFOCOM 2016.

### Shaoen Wu

Prof. Shaoen Wu is currently an Assistant Professor in the Department of Computer Science at Ball State University. He has been early promoted to Associate Professor effective from August 2017. He received the Ph.D. degree in computer science from Auburn University in 2008. Prof. Wu was an Assistant Professor with the School of Computing, University of Southern Mississippi, a Research Scientist with ADTRAN Inc., and a Member of Technical Staff with Bell Laboratories. His current research interests include smart health, smart and connected systems, wireless and mobile networking, cyber-physical systems, and cloud computing. Prof. Wu has served on the chairs and the committees of various conferences including the IEEE INFOCOM, ICC, and Globecom, and an Editor for several journals such as IEEE Internet of Things Journal. He was a recipient of the Best Paper Award of the IEEE ISCC 2008 and the ANSS 2011.

### Fabrizio Granelli

Fabrizio Granelli is Associate Professor at the Dept. of Information Engineering and Computer Science

(DISI) of the University of Trento (Italy) and IEEE ComSoc Director for Online Content. He received the «Laurea» (M.Sc.) degree in Electronic Engineering from the University of Genoa, Italy, in 1997, with a thesis on video coding, awarded with the TELECOM Italy prize, and the Ph.D. in Telecommunications from the same university, in 2001. Since 2000 he is carrying on his research and didactical activities (currently Associate Professor in Telecommunications) at the Dept. of Information Engineering and Computer Science – University of Trento (Italy) and coordinator of the Networking Laboratory. Between 2004 and 2015 for a total of six months, he was visiting professor at the State University of Campinas (Brazil). In 2016, he was visiting professor at the University of Tokyo (Japan). He was a IEEE ComSoc Distinguished Lecturer for the period 2012-15 (2 terms) and Delegate for Education at DISI in the period 2015-17. He is author or co-author of more than 170 papers published in international journals, books and conferences, focused on networking, with particular reference to network performance modeling, cross-layering, wireless networks, cognitive radios and networks, green networking and smart grid communications.