**INFOCOM NetSciQCom 2022**

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**Quick Information**

* The NetSciQCom workshop is part of [INFOCOM 2022](https://infocom2022.ieee-infocom.org/)
* Submission limit: **6 pages**
* Submit deadline: **11-January-2022**
* Submit your paper: [**TBD**](https://infocom2022.ieee-infocom.org/)

**Welcome!**

The First **IEEE International Workshop on Network Science for Quantum Communication Networks** (CINS) will be held virtually in conjunction with [**INFOCOM 2022**](https://infocom2022.ieee-infocom.org/).

**Scope**

Along with advances in the Quantum Computing domain, Quantum Communication has also made significant strides in the last twenty years, starting with DARPA Quantum Network effort in the first decade of the twenty-first century. The pace of advances in Quantum Communication/Networking has accelerated significantly in the second decade with efforts all across the world on advancing this important technology. Major efforts are currently underway, not only in the United States, but also in countries such as China, India, U.K., The Netherlands and Singapore.

Network Science has been used to model the structure and dynamics of a wide variety of large-scale complex networks, including Internet connectivity, the WWW, peer-to-peer networks, and online social networks. The concepts from Network Science can play an equally important role in Quantum Communication as it has played in the classical communication. The topic of this workshop will be of particular relevance to the INFOCOM community, as Quantum Communication technology is going to play a major role in the computer communication in the future. Consequently, it’s extremely important to understand the physics of quantum communication, the higher layer protocols of classical communication as well as tools and techniques from Network Science to derive comprehensive benefit from the Quantum Communication technology.

A deeper understanding of interplay between multiple disciplines can only be achieved through closer interaction between physicists, mathematicians, network scientists and communication network designers. The goal of this workshop is to provide a forum for this diverse group of researchers to come together and exchange ideas leading to insights into the design of robust and complex quantum communication networks of the future.

**Call for Papers**

We solicit papers addressing the fundamental concepts and applications of network science, particularly as it intersects with the design of Quantum Communication Networks. We welcome theoretical approaches and data-driven approaches, as well as position papers. Topics of interest include, but are not limited to:

* Modelling, design and analysis of complex and interdependent (classical and quantum) communication networks
* Information diffusion and knowledge transfer in networks, propagation studies, routing, traffic modelling
* Algorithms for static, time-varying, and dynamic communication networks
* Network robustness, phase transitions, security, privacy, trust in quantum communication networks
* Economic aspects of Quantum Communication Networks, incentives, marketing
* Quantum information theory - Entanglement-assisted multi-user quantum channels, Quantum error correction
* Quantum repeaters, multipath and multiflow routing of entanglement, manipulating graph states, quantum network coding

**Important Dates**

* **Submission Deadline: January 11, 2022**
* Acceptance Notification: February 18, 2022
* Camera Ready: February 28, 2022
* Workshop Date: TBD

**Submission Details**

Papers should contain original material, i.e., that has not been previously published or currently submitted elsewhere. Manuscripts must be limited to **6 pages** in IEEE 8.5x11 conference format, and formatted in strict accordance with the IEEE Communications Society author guidelines. All submissions will be handled electronically. The accepted and presented papers will be published in the IEEE INFOCOM 2022 workshop proceedings and appear in IEEE Xplore. Submissions must be submitted electronically in printable PDF form, via the submission site at: [**TBD**](https://infocom2022.ieee-infocom.org/)

**Committee**

* **Steering Committee**

[Dr. Nageswara Rao](http://www.cise.ufl.edu/~mythai/), Oak Ridge National Laboratory

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* **Web Chairs**

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