**Quantum Computing User Forum**

Location: Iran Thomas Auditorium, Building 8600, Room A-103, Oak Ridge National Laboratory

Hosts: Travis Humble (humblets@ornl.gov) and Alex McCaskey (mccaskeyaj@ornl.gov)

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| **Thursday, April 25, 2019** | | |
| Time | **Event** | **Speaker** |
| 9:00 am | Welcome | Travis Humble,  Oak Ridge National Laboratory |
| **9:30** | **Session 1: Software and Systems** | Chair: Alex McCaskey,  Oak Ridge National Laboratory |
| 9:50 | [Automatically Translating Quantum Gates to Adiabatic Programs](https://www.dropbox.com/sh/k5ncvq9flkfsdir/AAB8xki87PZlhNDgZ0aDYVFKa?dl=0&preview=Frank_Mueller.pdf) | Frank Mueller,  North Carolina State University |
| 10:10 | [Classical Code In, Optimization Problem Out](https://www.dropbox.com/sh/k5ncvq9flkfsdir/AAB8xki87PZlhNDgZ0aDYVFKa?dl=0&preview=Scott_Pakin.pdf) | Scott Pakin,  Los Alamos National Laboratory |
| 10:30 | [Qiskit: Opening Quantum Computing Research](https://www.dropbox.com/sh/k5ncvq9flkfsdir/AAB8xki87PZlhNDgZ0aDYVFKa?dl=0&preview=Erick_Winston.pdf) | Erick Winston,  IBM |
| 10:50 | [Improving Reliability of NISQ Machines by Exploiting Variability in Error-Rates](https://www.dropbox.com/sh/k5ncvq9flkfsdir/AAB8xki87PZlhNDgZ0aDYVFKa?dl=0&preview=Swamit+Tannu.pptx) | Swamit Tannu,  Georgia Tech |
| **11:00** | **Poster Session with Working Lunch** | Chair: Raphael Pooser,  Oak Ridge National Laboratory |
| **1:00** | **Session 2: Scientific Applications** | Chair: Eugene Dumitrescu,  Oak Ridge National Laboratory |
| 1:00 | [Coupled cluster downfolding techniques for quantum computing: efficient dimensionality reduction of electronic Hamiltonians for chemical systems](https://www.dropbox.com/sh/k5ncvq9flkfsdir/AAB8xki87PZlhNDgZ0aDYVFKa?dl=0&preview=Karol_Kowalski.pdf) | Karol Kowalski,  Pacific Northwest National Laboratory |
| 1:20 | [QAOA Local Search Algorithm for Graph Community Detection](https://www.dropbox.com/sh/k5ncvq9flkfsdir/AAB8xki87PZlhNDgZ0aDYVFKa?dl=0&preview=Yuri_Alexeev.pdf) | Yuri Alexeev,  Argonne National Laboratory |
| 1:40 | Qiskit Aqua: A Library of Quantum Algorithms and Applications | Marco Pistoia,  IBM |
| 2:00 | [Useful Quantum Simulation: How classical and quantum computers can team up to tackle matters of substance](https://www.dropbox.com/sh/k5ncvq9flkfsdir/AAB8xki87PZlhNDgZ0aDYVFKa?dl=0&preview=Andrew_Baczewski.pdf) | Andrew Baczewski,  Sandia National Laboratories |
| 2:20 | [Optimization and quantum machine learning with PennyLane](https://www.dropbox.com/sh/k5ncvq9flkfsdir/AAB8xki87PZlhNDgZ0aDYVFKa?dl=0&preview=Nathan_KIlloran.pdf) | Nathan Killoran,  Xanadu |
| 2:40 | [Minimally-Entangling State Preparation](https://www.dropbox.com/sh/k5ncvq9flkfsdir/AAB8xki87PZlhNDgZ0aDYVFKa?dl=0&preview=Martin_Savage.pdf) | Martin Savage,  University of Washington |
| 3:00 | [Progress with the Multistate, Contracted Variant of the Variational Quantum Eigensolver](https://www.dropbox.com/sh/k5ncvq9flkfsdir/AAB8xki87PZlhNDgZ0aDYVFKa?dl=0&preview=Rob_Parrish.pdf) | Robert Parrish,  QC Ware |
| **3:30** | **Break** |  |
| **4:00** | **Session 3: Numerical Modeling and Simulation** | Chair: Dmitry Liakh,  Oak Ridge National Laboratory |
| 4:00 | [Simulator of Quantum Network Communication: A Framework for Designing Reliable, Scalable, and Secure Quantum Networks](https://www.dropbox.com/sh/k5ncvq9flkfsdir/AAB8xki87PZlhNDgZ0aDYVFKa?dl=0&preview=Martin_Suchara.pdf) | Martin Suchara,  Argonne National Laboratory |
| 4:20 | Benchmark NISQ Devices using State-of-the-art Classical Tools | Salvatore Mandara,  NASA Ames - Stinger Ghaffarian Technologies |
| **4:40** | **User Forum Discussion** | Moderator: Travis Humble |
| 5:00 | Adjourn |  |