Benjamin T. Chiaro

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Education

- **University of California - Santa Barbara** — Santa Barbara, CA
  Ph.D. in Physics, Advisor John Martinis — *Expected 2020*
- **University of California - Santa Barbara** — Santa Barbara, CA
  Master of Science in Physics, Advisor: John Martinis — *2015*
- **University of Wisconsin - Madison** — Madison, WI
  Bachelor of Science in Physics, mentor: Chun Lin — *2006*

Experience

- **University of California - Santa Barbara** — Santa Barbara, CA
  Graduate Student Researcher - On site at Google Quantum Hardware Lab — *2017 - Present*
  - **Entanglement dynamics of a many-body localized system**:
  - **Hamiltonian recovery**:
  - **Machine learning physical device model from analog quantum dynamics**:
  - **Interface with theory collaborators**: Configure superconducting qubit experiments Calibrate superconducting qubit devices with tunable frequencies and interactions Develop and execuite multi-qubit quantum algorithms
- **University of California - Santa Barbara** — Santa Barbara, CA
  Graduate Student Researcher — *2011 - 2017*
  - Room temperature deposition of sputtered TiN films for superconducting coplanar waveguide resonators SUST 27, 015009 (2014). arXiv:1306.2966 Demonstrated highest quality factor coplanar waveguide resonators in the literature at that time.
  - Dielectric surface loss in superconducting resonators with flux-trapping holes Publication: *SUST 29, 10 (2016). arXiv:1607.05841* Article awarded "SUST highlights of 2016"
  - Precision noise metrology of a quantum system: Increased measurement band by two orders of magnitude
  - Developed high-fidelity, two-qubit adiabatic controlled-Z gate with tunable coupling
- **University of California - Santa Barbara** — Santa Barbara, CA
  Teaching Assistant — *2010 - 2011*
  - **Honors experimental physics**:
- **Opticomp Corporation** — Zephyr Cove, NV
  Junior Test Engineer — *2007 - 2010*
  - **Responsibilities: Wafer level device testing**:
- **University of Wisconsin - Madison** — Madison, WI
  Student Research Assistant - Atomic Collisions Group, Advisor Chun Lin — *2003-2007*
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Technical Skills

- **Scientific programming**: python, numpy, scipy, pandas, matplotlib
  - data acquisition, analysis, and presentation.
  - Numerical simulations of quantum dynamics
- **Electronic test and measurement**
- **Materials science and device fabrication**, Reactive UHV sputter deposition, Inductively coupled plasma etching, optical lithography
- **Cryogenics**: Adiabatic demagnetization refridgerator, Dilution refridgerator

Presentations

- **Contributed presentations: APS March Meeting 2012 - 2020**: Selected Topics: High quality factor TiN resonators, Precision noise metrology of a superconducting qubit, High fidelity two qubit gates with tunable coupling
- **Invited presentation: Quantum Science Symposium Europe 2018**: Title: "gmon superconducting qubits: a programmable, high fidelity quantum simulation platform"