

Center for Quantum Networks

NSF Engineering Research Center



Expanding Participation

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UNIVERSITY OF
MARYLAND

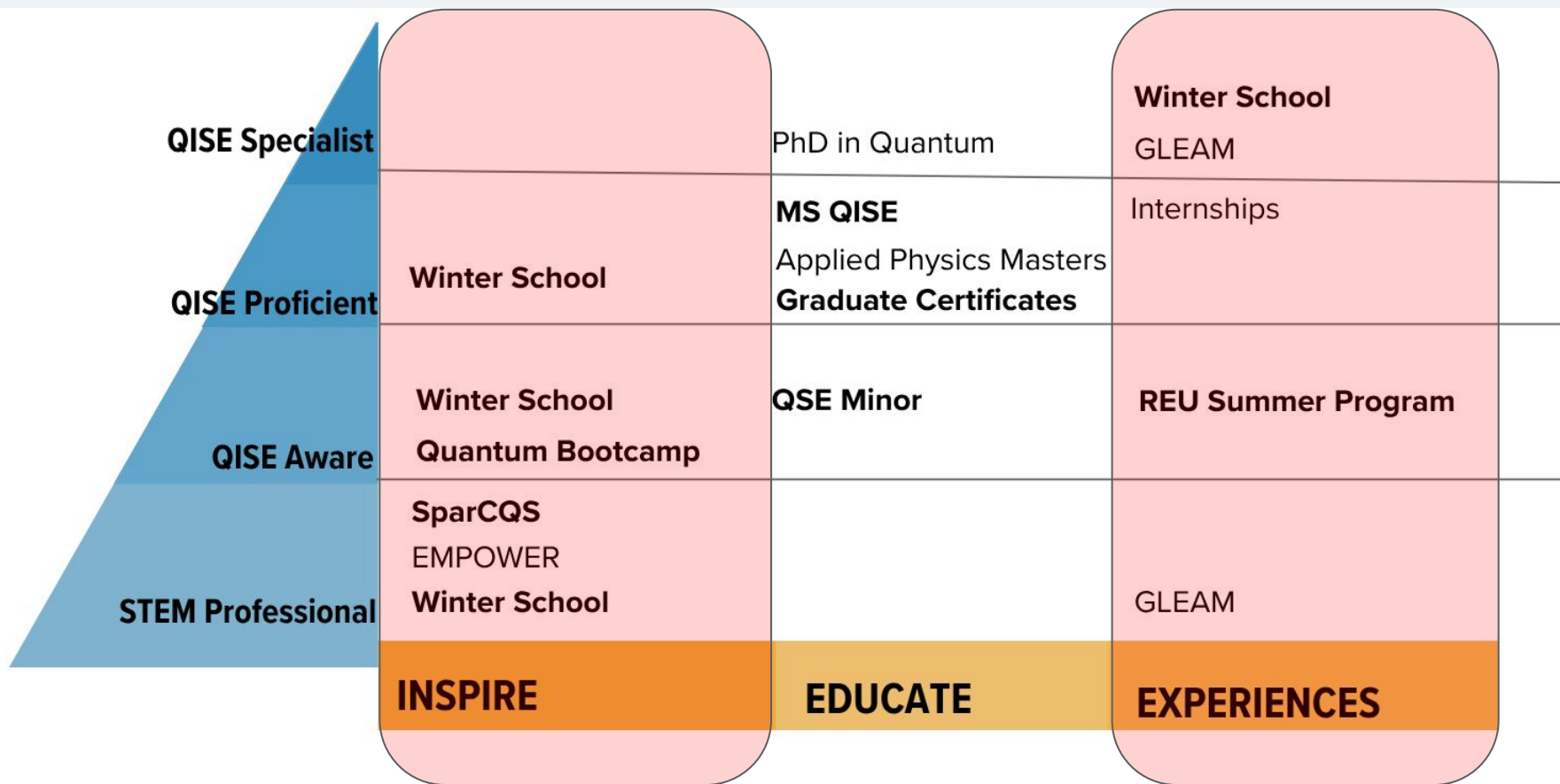
University of
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Core Activities

Powered by **QuESTs** - Quantum Engineering and Science Teams

1. Retreats
2. Graduate Leaders in Engineering Advising and Mentoring (GLEAM) Program
3. Cross-campus student exchange program
4. Community Outreach via SPARCQS
5. Quantum Community of Practice



QuESTs

Quantum Engineering and Science Teams are intended to create a sense of inclusion and belonging among CQN members by:

- Having a focus on culture and development in CQN, not on research.
- Creating teams of CQN members who would not have opportunities to work together otherwise.
- Teaming up students with staff, PIs, senior researchers, and industry partners.
- Bringing together CQN members across campuses, industries, and labs.





Summer Student + Postdoc Retreat



- Annual summer retreat hosted by SPLC
 - Cross-thrust technical interchanges via talks/posters/sidebars
 - Rotates through CQN campuses (MIT: 2022, UArizona: 2023)
 - LT/faculty involvement only for coordination and overview talks as needed



All Member Winter Retreat

Annual all member retreat

- Hosted at various CQN institutions
 - Invite local collaborators to join
- Updates from all pillars and thrusts
- Host external and industry advisory boards
- Formal and informal idea exchange





Graduate Leaders in Engineering and Academic Mentoring (GLEAM)

- High-school research experience program
 - Funded by UMD College of Engineering
 - Call for project proposals sent out to UMD Engineering (G) students
 - MD high school students rank order projects in available list
 - GLEAM coordinator maps high school students to grad students
- Outcomes
 - HS students work 10-15 hours a week, write thesis+poster, earn grade
 - Grad students get mentorship experience, earn \$500 award
 - Monthly professional development events
 - 25-26 Cohort: 23 students





Cross Organization Student Exchanges

- Academic cross-campus research exchanges
 - Helaman Flores (Summer 2023): BYU → MIT [resonator design for photon coupling]
 - Yongzhou Xue (Sept 2023): UA → MIT [SiV-PIC memory devices]
 - Jake Navas (Summer 2023): NAU → UMass [QN tomography]
 - Emily Van Milligen (Fall 2024, Spring 2025): UA → UMass
 - C2C Exchanges
- University $\longleftrightarrow$ Industry research exchanges
 - Michael Bullock [internship]: UA → L3Harris
 - Miles Ackerman [industry collaboration]: UA → Qunett
 - Panos Prampanos [internship]: Yale → Cisco

SparCQS

Sparking Curiosity in Quantum Science

- Brings the world of quantum science to the community
 - Interacted with thousands of individuals
 - Across the southwest
 - Hands on demos





Community of Practice

- Workshops
 - SIPQNP
 - ERVA
 - QNAR2.0
 - Quantum and Astronomy
- Hack a thons + Schools
 - **Q³ Initiative**
 - QNumerics Summer School
 - **Arizona Quantum Boot Camp**
 - Winter School





Community of Practice

- Quantum Quest in partnership with Girl Scouts of Arizona
- Community College webinar
- Project scoping workshops
 - ARO MURI topic exploration: for Quantum Network Science [2019] and Quantum Control [2020]
 - NQVL [December 2020]
 - Quantum Photonics Workshop [UMD, November 2025]



Impact

- SparCQS inspired **IrelandQCI Quantum & Answers Trailer**
- Career progressions within CQN lifetime
 - Narayanan (postdoc -> faculty)
 - Stefan (student w Liang, Postdoc w Dirk, faculty at UMass)
 - Anjolie (REU w Ines+Matt, UG student w Saikat)
- Careers post CQN
 - Danny Watkins (Pima community college → CQN REU with Karl B. → Flatrock Wealth Partners)
 - Sandra (REU with Ines+Matt → UG at USC)
 - Ashlesha (UA→PsiQuantum), Prajit (UMD→ RTX-BBN), Eneet (UA→ Cisco), Brandt (CONNECT), Connall (Belfast→UMD)
- Increased quantum and quantum adjacent resources