

## Gina M. Quan

### Address

One Washington Square  
San José, California 95192-0106

**Current Position** **Assistant Professor** (Spring 2019-Present)  
Department of Physics and Astronomy  
San José State University

**Education** **University of Maryland, College Park**  
Ph.D. Physics (Fall 2012-Summer 2017)

**University of California, Berkeley**  
B.A. Physics with High Honors (Spring 2012)

**Previous Positions** **Postdoctoral Research Associate** (Summer 2017 - Fall 2018)  
Center for STEM Learning, University of Colorado at Boulder  
*Supervisors: Dr. Joel C. Corbo, Dr. Daniel Reinholz, Dr. Noah Finkelstein*

**Graduate Research Assistant** (Fall 2012 - Spring 2017)  
University of Maryland, College Park  
*Supervisors: Dr. Andrew Elby, Dr. Ayush Gupta, Dr. Chandra Turpen*

**Awards**  
**UMD Graduate Student Distinguished Service Award** - Finalist (Spring 2017)  
**UMD Outstanding Graduate Assistant**- Department of Physics (Spring 2016)  
**NSF Graduate Research Fellowship Program**- Honorable Mention (Spring 2014)  
**UC Berkeley Physics Department Service Award**- Recipient (May 2012)  
**UC Berkeley Dean's List** - Recipient (Fall 2011)  
**IBM Thomas J. Watson Scholarship** - Recipient (Fall 2008-Spring 2012)

### Teaching Experience

**Assistant Professor**  
*San José State University*

- Physics 50: Introductory Calculus-Based Mechanics
- Physics 50: Introductory Calculus-Based Electricity & Magnetism
- Physics 20: Invitation to Physics & Astronomy
- Science Education 174: Training to Teach Science

**Teaching Assistant & Curriculum Design**  
*University of Maryland, College Park*

- Engineering Learning Assistant Pedagogy Course (Fall 2016)
- Summer Girls Physics Summer Camp (Summer 2013, Summer 2014)
- PHYS299B: Developing a Physics Toolbox (Spring 2013, Spring 2014)
- UNIV100: The Physics Student in the University (Fall 2012, Fall 2013)

**High School Student Teacher** (Spring 2011- Fall 2011)  
*Berkeley High School, El Cerrito High School*

**Books** Ngai, C., Corbo, J. C., Falkenberg, K. L., Geanious, C., Pawlak, A., Pilgrim, M. E., **Quan, G. M.**, Reinholz, D. L., Smith, C., Wise, S., (2020) *Facilitating Change in Higher Education: the Departmental Action Teams Model*.

**Refereed Publications** Ngai, C., Corbo, J. C., **Quan, G. M.**, Falkenberg, K., Geanious, C., Pawlak, A., Pilgrim, M. E., Reinholz, D. L., Smith, C., Wise, S. *Developing the Departmental Action Team Theory of Change*. In *Transforming Institutions: Accelerating Systemic Change in Higher Education*).

Sohr, E. R., Gupta, A., Johnson, B. J., **Quan, G. M.** *Examining the dynamics of decision making when designing curriculum in partnership with students: How should we proceed?*. *Physical Review—Physics Education Research*  
<https://doi.org/10.1103/PhysRevPhysEducRes.16.020157>.

Ngai, C., Pilgrim, M. E., Reinholz., D. L., Corbo, J. C., **Quan, G. M.**. *Developing the DELTA: Capturing cultural changes in undergraduate departments*. (2020) *CBE—Life Sciences Education*. <https://doi.org/10.1187/cbe.19-09-0180>

**Quan, G.**, Gupta, A., *Tensions in the Productivity of Design Task Tinkering*. (2019) *Journal of Engineering Education*. <https://doi.org/10.1002/jee.20303>

**Quan, G.**, Corbo, J., Falkenberg, K., Finkelstein, N., Geanious, C., Ngai, C., Pawlak, A., Pilgrim, M., Reinholz, D., Smith, C., Wise, S. (2019) *Designing for institutional transformation: Six principles for department-level interventions*. *Physical Review—Physics Education Research*.<https://doi.org/10.1103/PhysRevPhysEducRes.15.010141>

Reinholz, D. L., Ngai, C., **Quan, G.**, Pilgrim, M., Corbo, J., & Finkelstein, N. (2019) *Fostering sustainable improvements in science education: An analysis through four frames*. *Science Education*. <https://doi.org/10.1002/sc.21526>

**Quan, G.**, Turpen, C., and Elby, A, (2018) *Interactions between disciplinary practices and joint work in undergraduate physics research experiences*. *Physical Review—Physics Education Research*. 14, 020124  
<https://doi.org/10.1103/PhysRevPhysEducRes.14.020124>

**Quan, G.**, Elby, A., (2016) *Connecting self-efficacy and views about nature of science in undergraduate research experiences*. *Physical Review Physics Education Research*, 12 (2), 020140. <https://doi.org/10.1103/PhysRevPhysEducRes.12.020140>

**Refereed Conference Publications** Amezcua, F., **Quan, G. M.** & Turpen, C. A. (2020) *Students' exploring and refining their equity ethic within the Access Network (2020 PERC Proceedings)*. Online, July 22nd-July 23rd, 2020.

**Quan, G. M.**, Gutmann, B., Corbo, J. C., Pollard, B., Turpen, C. A., & The Access Network (2019) *The Access Network: Cultivating Equity and Student Leadership in STEM* (2019 PERC Proceedings). Provo, U.T., July 24th-July 25th, 2019.

**Quan, G. M.**, Turpen, C. A., & Elby, A. (2019) *Longitudinal Analysis of Identity Trajectories of Undergraduate Physics Students* (2019 NARST). Baltimore, M.D., March 30-April 3rd.

Reinholz, D. L., Pilgrim, M. E., Falkenberg, K., Ngai, C., **Quan, G.**, Wise, S., Geanious, C., & Corbo, J. (2018) *Departmental Action Teams: A five-year update on a model for sustainable change* (in 2018 Reinvention Collaborative). Arlington, Virginia, November 8-10, 2018.

**Quan, G. M.**, Corbo, J., Ngai, C., Reinholz, D. L., & Pilgrim, M. E. (2018) *Research on university faculty members reasoning about how departments change* (2018 PERC Proceedings). Washington, D.C., August 1-2, 2018, edited by A. Traxler, Y. Cao, Steven Wolf. <http://dx.doi.org/10.1119/perc.2018.pr.Quan>

Corbo, J., **Quan, G. M.**, Falkenberg, K., Geanious, C., Ngai, C., Pilgrim, M. E., Reinholz, D. L., & Wise, S. (2018) *Externalizing the Core Principles of the Departmental Action Team (DAT) model* (2018 PERC Proceedings). Washington, D.C., August 1-2, 2018, edited by A. Traxler, Y. Cao, Steven Wolf. <http://dx.doi.org/10.1119/perc.2018.pr.Corbo>

Turpen, C. A., Gupta, A., Radoff, J., Elby, E., Sabo, H., & **Quan, G. M.**, (2018), *Successes and Challenges in Supporting Undergraduate Peer Educators to Notice and Respond to Equity Considerations within Design Teams*. Paper presented at 2018 ASEE Annual Conference Exposition, Salt Lake City, Utah. Retrieved from <https://www.asee.org/public/conferences/106/papers/23278/view>

**Quan, G. M.**, Turpen, C. A., Gupta, A., & Tanu, E. D. (2017), *Designing a Course for Peer Educators in Undergraduate Engineering Design Courses*. Paper presented at 2017 ASEE Annual Conference Exposition, Columbus, Ohio. Retrieved from <https://peer.asee.org/28124>

- Finalist for Best Paper in *Design in Engineering Education Division*

Tanu, E. D., **Quan, G. M.**, Gupta, A., & Turpen, C. A. (2017), *The Role of Empathy in Supporting Teaching Moves of Engineering Design Peer Educators*. Paper presented at 2017 ASEE Annual Conference Exposition, Columbus, Ohio. Retrieved from <https://peer.asee.org/29004>

Visintainer, T., Elby, A., Little, A., **Quan, G.**, & Aceves, A. (2017). *Exploring the Physics Summer Program Experiences of Undergraduate Students Underrepresented in the Physical Sciences*. Paper presented at the American Educational Research Association Conference, San Antonio, TX.

**Quan, G.**, Turpen, C., Elby, A., (2016) *Attending to scientific practices within undergraduate research experiences* (2016 PERC Proceedings). Sacramento, CA, July 20-21, 2016, edited by D. L. Jones, L. Ding, and Adrienne Traxler.

**Quan, G.**, Elby, A., (2015) *Connecting Self-Efficacy and Nature of Science Shifts in Undergraduate Research Experiences* In 2015 PERC Proceedings. College Park, MD, July 29-30, 2015, edited by A. D. Churukian, D. L. Jones, and Lin Ding. Retrieved from <http://www.compadre.org/per/items/detail.cfm?ID=13888>

**Quan, G.**, Gupta, A., (2015) *Tensions in the Productivity in Design Task Tinkering - Fundamental* In 122th ASEE Annual Conference and Exposition. Seattle: American Society of Engineering Education. Retrieved from <http://www.asee.org/public/conferences/56/papers/12561/view>

**Quan, G.**, Gupta, A., & Elby, A. (2015) *Problematizing Best Practices for Pair-*

*ing in K-12 Student Design Teams* In 122th ASEE Annual Conference and Exposition. Seattle: American Society of Engineering Education.  
Retrieved from <http://www.asee.org/public/conferences/56/papers/12565/view>

**Quan, G.**, Gupta, A., (2014) *Finding Productivity in Design Task Tinkering*. In Polman, J. L., Kyza, E. A., O'Neill, D. K., Tabak, I., Penuel, W. R., Jurow, A. S., O'Connor, K., Lee, T., and D'Amico, L. (Eds.). (2014). Learning and becoming in practice: The International Conference of the Learning Sciences (ICLS) 2014, Volume 3 (1607-1608). Boulder, CO: International Society of the Learning Sciences.

## Grants and Funding

Collaborative Research: Expanding Access: Furthering a Network of Diversity-Focused Programs in the Physical Sciences September, 2018  
Joel Corbo (PI) **Gina Quan (Co-PI)** \$168,463  
*NSF Integrative Activities in Phys Award No. 1806566*

## Invited Presentations

**American Physical Society (APS) March Meeting** with Brianne Gutmann and Ben Pollard (March 2021)  
*Community-driven financial support for students during a pandemic: the Access Network Emergency Fund*

**American Physical Society Annual Leadership Meeting** (February 2021)  
*Effecting Change: Individual Actions and Leadership*

**Ohio State University Colloquium** (February 2021)  
*Cultivating Institutional Change in University Physics Departments*

**PERL @ Michigan State University Seminar** (November 2020)  
*Students' exploring and refining their equity ethic within the Access Network*

**Cal Poly-San Luis Obispo Colloquium** (October 2020)  
*Cultivating Institutional Change in University STEM Departments*

**American Association of Physics Teachers Conference 2020** (July 2020)  
*Voices of Women in Physics (Panelist)*

**Physics Education Research Conference 2020** with Fidel Amezcua and Chandra Turpen (July 2020)  
*Students exploring and refining their equity ethic within the Access Network*

**SJSU College of Science Virtual Seminar** (July 2020)  
*The Access Network: Supporting Equity and Student Leadership in STEM*

**Open Quantum Frontier Workshop: Quantum Education** (May 2020)  
*Designing for Sustainable Change in University STEM Departments*

**San Francisco State University Physics Colloquium** (October 2019)  
*Cultivating Institutional Change in University STEM Departments*

**APS Northwest Section Meeting** (May 2019)  
*Understanding how Undergraduate Research Experiences Support Physics Identities*

**Physics Education Research Conference 2018** (July 2018)  
*The Access Network: Bringing Together Student Leaders to Support Equity Programs*

**AAAPT 2017 Summer Meeting** (July 2017)  
*Creating A Classroom Ethos of "Learning Together": Strategies Equity Implications*

**San José State University Science Education Seminar** (October 2016)  
*Attending to Scientific Practices within Undergraduate Research Experiences*

**Better Astronomy for the Next Generation (UMD Astronomy Seminar Series)** - with Stephen Secules (March 2016)  
*Using Student Perspectives to Understand Equity in STEM Education*

**Bard College Colloquium** (November 2015)  
*How Undergraduate Student Research Experiences Impact Students' Participation in Physics*

**PER Group Meeting, University of Colorado, Boulder** (April 2015)  
*Unpacking the Productivity of Design Task Tinkering*

**National Society of Black Physicists 2015 Winter Meeting** (February 2015)  
*How Undergraduate Student Research Experiences Impact Students' Participation in Physics*

**PERL @ Michigan State University Seminar** (September 2014)  
*Unpacking Partnership in an Arduino Environment*

**American Physical Society (APS) April 2012 Meeting** with Ana Aceves, Badr Albanna, and Joel Corbo (April 2012)  
*Students as Colleagues: An Examination of Teacher-Student Collaboration in Improving Educational Environments*

**Contributed Presentations**

**AERA 2020 Symposium** (Discussant) (April 2020)  
*"Designing for" to "Designing with" Partners: Emergent Challenges in the Co-design Process* (Conference cancelled due to COVID-19)

**PERC 2019** (Juried Talk) (July 2018)  
*Longitudinal analysis of a student's identity trajectory within the physics community*

**AAPT 2019 Summer Meeting** (July 2018)  
*The Impacts of Students as Partners on Departmental Action Teams*

**AAPT 2018 Summer Meeting** (July 2018)  
*Research on university faculty members reasoning about how departments change*

**AAPT 2017 Summer Meeting** (July 2017)  
*Longitudinal Analysis of Identity Trajectories of Undergraduate Physics Students*

**American Society of Engineering Education Annual Conference** (June 2017)  
*Designing a Course for Peer Educators in Undergraduate Engineering Design Courses*

**AAPT 2017 Winter Meeting** (February 2017)  
*Understanding How Undergraduate Physics Research Experiences Shape Identity Trajectories*

**AAPT 2016 Summer Meeting** (July 2016)  
*Research on Identity Trajectories in Undergraduate Research Experiences*

**AAPT 2016 Winter Meeting** (January 2016)  
*Becoming a Physicist: Identity Trajectories in Undergraduate Research Experiences*

**AAPT 2015 Summer Meeting** (July 2015)  
*How Undergraduate Research Experiences Support More Central Participation in Physics*

**American Society of Engineering Education Annual Conference** (June 2015)  
*Tensions in the Productivity in Design Task Tinkering*

**American Society of Engineering Education Annual Conference** (June 2015)  
*Problematizing Best Practices for Pairing in K-12 Student Design Teams*

**AAPT 2015 Winter Meeting** (January 2015)  
*How Student Research Experiences Shape Perceptions of Scientists*

**AAPT 2014 Summer Meeting** (July 2014)  
*Research on Productive Tinkering in an Arduino Environment*

**AAPT 2013 Summer Meeting** (July 2013)  
*Research on Building Supportive Undergraduate Communities through Physics Seminars*

**AAPT 2012 Summer Meeting** (August 2012)  
*Modeling Consensus: Understanding how Undergraduate Freshmen Define Physics Model*

**Contributed Posters**

**Physics Education Research Conference 2019** (July 2019)  
*The Access Network: Cultivating Equity and Student Leadership in STEM*

**Foundations and Frontiers of Physics Education Research - Puget Sound** (July 2018)

*Externalizing the Core Principles of the Departmental Action Team (DAT) Model*  
**Physics Education Research Conference 2018** (August 2018)  
*Research on university faculty members reasoning about how departments change*  
**CU Center for STEM Learning Symposium** (October 2017)  
*Departmental Action Teams as a Mechanism for Promoting Departmental Change*  
**Physics Education Research Conference 2017** (July 2017)  
*Supporting Community Building and Physics Practices in Undergraduate Research Experiences*  
**Physics Education Research Conference 2016** (July 2016)  
*Attending to scientific practices within undergraduate research experiences*  
**American Educational Research Association** (April 2016)  
*Tracing the Participation of Undergraduate Physics Majors in Research Experiences*  
**American Educational Research Association** (April 2016)  
*Unpacking Productivity in the Practice of Design Task Tinkering*  
**Physics Education Research Conference 2015** (July 2015)  
*Connecting Self-Efficacy and Nature of Science Shifts in Undergraduate Research Experiences*  
**Physics Education Research Conference 2014** (July 2014)  
*Investigating Access to and Attitudes toward Programming in a Physics Camp*  
**International Conference of the Learning Sciences 2014** (July 2014)  
*Finding Productivity in Design Task Tinkering*  
**Physics Education Research Conference 2013** (July 2013)  
*Variation in Student Self-Reports of Study Group Experiences*  
**Physics Education Research Conference 2012** (August 2012)  
*Characterizing Consensus about the Definition of a Physics Model*  
**AAPT 2012 Winter Meeting** (February 2012)  
*Building Together: An Undergraduate Freshman Class Defines Physics Model*

**Non-Refereed Writing**

Corbo, C., Ngai, C., **Quan, G.**, and Wise, S., *Using project principles to anchor changing departments* (Part 1) *Departmental Change: Starting an Initiative* (Part 2) *Departmental Change: Engaging in a Change Initiative* (Part 3) (Winter 2021)  
 UMD Physics Graduate Committee and **the Access Network**, *Results of the Mental Health Survey*. (September 2016)  
**Quan, G.**, and Gupta, A., *Bringing our Whole Selves to the Table: Nurturing a Positive Culture*. *PER Consortium of Graduate Students Newsletter*. (July 2016)  
**Quan, G.**, and Little, A. *Creating Together in Compass: Strategies To Support Participation*. *Compass Website*. (April 2013)

**Workshop & Session Organizer**

**AAPT/SEA Change Webinar** with Joel Corbo, Courtney Ngai, and Sarah Wise (October 2020)  
*Facilitating Change Through the Departmental Action Team (DAT) Model*  
**AERA 2020 Symposium** (April 2020)  
*“Designing for” to “Designing with” Partners: Emergent Challenges in the Co-design Process* (Conference cancelled due to COVID-19)  
**AAPT 2019 Workshop** with Joel Corbo (July 2010)  
*Creating Sustainable Change in University Departments: Theory and Practice*  
**PERC 2017 Parallel Session** with Joel Corbo (July 2017)  
*Bridging Research and Practice in the Access Network*  
**APS Bridge/Graduate Education Conference Workshop** with Abhinav Deshpande, Zachary Eldredge, Stephen Ragole, and Erin Sohr (July 2017)  
*Student-led Initiatives Toward Improving Graduate Student Mental Health*  
**AAPT 2017 Winter Meeting Session** with Eleanor Sayre (February 2017)

*Creating Inclusive Environments at Conferences*

**UMD Physics Department TA Training** with Chandra Turpen (August 2016)  
*Assessment and Giving Feedback*

**AAPT 2015 Summer Meeting Workshop** with Danielle Champney &  
Dimitri Dounas-Frazer (July 2015)

*Facilitating student self-reflection & personalized instructor feedback*

**PERC 2015 Parallel Session** with Chandra Turpen (July 2015)

*Bridging educational research and practice: Supporting Undergraduate Research Experiences in physics*

**Leadership** **Core Organizer & Founding Member** (Spring 2015 - Present)  
*The Access Network*

**PERLOC Representative** (Elected) (Spring 2015 - Winter 2017)  
*Physics Education Research Leadership and Organizing Council (PERLOC)*  
*PER Consortium of Graduate Students (PERCoGS)*

**Publicist** (Elected) (Summer 2013 - Spring 2015)  
*PER Consortium of Graduate Students (PERCoGS)*

**Memberships** **American Educational Research Association**—Member (Fall 2015-Present)  
**American Association of Physics Teachers**—Member (Fall 2011-Present)  
**American Physical Society**—Member (Fall 2011-Present)

**Referee** **Physical Review**—**Physics Education Research, Journal of Engineering Education, Science Education, American Society of Engineering Education Proceedings, Physics Education Research Conference Proceedings, National Association of Research in Science Teaching Conference Proceedings, European Science Education Research Association Conference Proceedings**