

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

Teaching Experience **Assistant Professor**
San José State University

- Physics 50: Introductory Calculus-Based Mechanics
- Physics 51: Introductory Calculus-Based Electricity & Magnetism
- Physics 20: Invitation to Physics & Astronomy
- Physics 110A: Electricity & Magnetism
- Physics 122: Modern Physics
- Physics 155: Topics in Physics & Astronomy (Physics Education Research)
- 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) <i>Facilitating Change in Higher Education: the Departmental Action Teams Model</i> . Glitter Cannon Press: Boulder, CO.
Refereed and Invited Chapters	<p>Suárez, E., Quan, G. M., Hammer, D., Atkins, L., <i>Learning in interaction; interacting scales of research</i>. In <i>the International Handbook of Physics Education Research</i>. https://doi.org/10.1063/9780735425477_013</p> <p>Ngai, C., Corbo, J. C., Quan, G. M., Falkenberg, K., Geanious, C., Pawlak, A., Pilgrim, M. E., Reinholz, D. L., Smith, C., Wise, S. <i>Developing the Departmental Action Team Theory of Change</i>. In <i>Transforming Institutions: Accelerating Systemic Change in Higher Education</i> (2020).</p>
Refereed Publications	<p>Dachille, F. & Quan, G. M. Trajectories of Transfer Students Toward a Bachelor's Granting University. Under Review in <i>The Physics Teacher</i>.</p> <p>Quan, G. M., Turpen, C., and Elby, A. Analyzing Identity Trajectories Within the Physics Community. (2022) <i>Physical Review—Physics Education Research</i>. https://doi.org/10.1103/PhysRevPhysEducRes.18.020125</p> <p>Sohr, E. R., Gupta, A., Johnson, B. J., Quan, G. M. <i>Examining the dynamics of decision making when designing curriculum in partnership with students: How should we proceed?</i> (2020) <i>Physical Review—Physics Education Research</i> https://doi.org/10.1103/PhysRevPhysEducRes.16.020157.</p> <p>Ngai, C., Pilgrim, M. E., Reinholz., D. L., Corbo, J. C., Quan, G. M.. <i>Developing the DELTA: Capturing cultural changes in undergraduate departments</i>. (2020) <i>CBE—Life Sciences Education</i>. https://doi.org/10.1187/cbe.19-09-0180</p> <p>Quan, G., Gupta, A., <i>Tensions in the Productivity of Design Task Tinkering</i>. (2019) <i>Journal of Engineering Education</i>. https://doi.org/10.1002/jee.20303</p> <p>Quan, G., Corbo, J., Falkenberg, K., Finkelstein, N., Geanious, C., Ngai, C., Pawlak, A., Pilgrim, M., Reinholz, D., Smith, C., Wise, S. (2019) <i>Designing for institutional transformation: Six principles for department-level interventions</i>. <i>Physical Review—Physics Education Research</i>. https://doi.org/10.1103/PhysRevPhysEducRes.15.010141</p> <p>Reinholz, D. L., Ngai, C., Quan, G., Pilgrim, M., Corbo, J., & Finkelstein, N. (2019) <i>Fostering sustainable improvements in science education: An analysis through four frames</i>. <i>Science Education</i>. https://doi.org/10.1002/sce.21526</p> <p>Quan, G., Turpen, C., and Elby, A, (2018) <i>Interactions between disciplinary practices and joint work in undergraduate physics research experiences</i>. <i>Physical Review—Physics Education Research</i>. 14, 020124 https://doi.org/10.1103/PhysRevPhysEducRes.14.020124</p> <p>Quan, G., Elby, A., (2016) <i>Connecting self-efficacy and views about nature of science in undergraduate research experiences</i>. <i>Physical Review Physics Education Research</i>, 12 (2), 020140. https://doi.org/10.1103/PhysRevPhysEducRes.12.020140</p>
Refereed Conference Publications	Juanson, A., Quan, G. M. , Avena, J. S., & Gendreau Chakarov, A. (2023) <i>Research on a faculty support program for working with learning assistants</i> . Under Review in

2023 PERC Proceedings.

Rojas, C. & **Quan, G. M.** (2023) *Mastery Grading in a Software Engineering Course*. Paper presented at the 2023 ASEE Annual Conference and Exposition, Baltimore, MD.

Indukuri, S. & **Quan, G. M.** (2022) *Characterizing the feedback that learning assistants give to faculty* (2022 PERC Proceedings). Grand Rapids, MI, July 13-14, 2022. <https://doi.org/10.1119/perc.2022.pr.Indukuri>

Quan, G. M., Corbo, J. C., Wise, S., & Ngai, C. (2021) *Unpacking Challenges in Student-Faculty Partnerships on Departmental Action Teams* (2021 PERC Proceedings). Online, August 4-5, 2021. <https://doi.org/10.1119/perc.2021.pr.Quan>

Amezcu, 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. <https://doi.org/10.1119/perc.2020.pr.Amezcu>

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. <https://doi.org/10.1119/perc.2019.pr.Quan>

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 Pairing 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

Agents of Change: Investigating How Partnerships between Faculty and Learning Assistants Enable Pathways for Sustainable Institutional and Classroom Transformation
June, 2023

Cassandra Paul (PI), **Gina Quan (Co-PI)**, Resa Kelly (Co-PI) \$1,178,442
NSF Improving Undergraduate STEM Education Award No. 2234071

Collaborative Research: Transfer Advocacy Groups: Transforming Culture to Support Transfer Students of Color in Undergraduate Physics May, 2023

Gina Quan (PI), Angie Little (Co-PI) \$ 1,403,600
NSF Racial Equity in STEM Education Award No. 2224296

Agents of Change: Faculty-Learning Assistant Partnerships Supporting Active, Engaging, Equitable Learning Environments May, 2022

Cassandra Paul (SJSU PI), Jennifer Avena (Co-PI) & **Gina Quan (Co-PI)**; Laura Rios (CPSLO PI); Kim Coble (SFSU PI) \$ 221,931
CSU CREATE Awards

Collaborative Research: Access Expansion: Growing a Network of Equity-Focused Programs in the Physical Sciences July, 2021

Gina Quan (PI) & Brianne Gutmann (Co-PI) \$45,047
NSF Integrative Activities in Phys Award No. 2011972

Understanding the Experiences of Community College Transfer Students in
 Physics July 2020-August 2021
Gina Quan (PI) \$7,445
CSU Central RSCA Program

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**

Reed College Colloquium (March 2023)
Cultivating Equity-Focused Change in University Physics Departments
Conferences for Undergraduate Women in Physics (CUWiP) Santa Cruz
 with Gabriela Huckabee and Jamie Principato (January 2023)
Identity and Intersectionality Workshop and Panel
American Association of Physics Teachers Committee on Graduate Education
 with Stephanie Williams and Seth Kimbrell (July 2022)
Graduate Students as Change Agents (Panel)
University of California, Berkeley Physics Colloquium (February 2022)
Cultivating Equity-Focused Change in University Physics Departments
University of Oregon Colloquium (May 2021)
Cultivating Equity-Focused Change in University STEM Departments
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 Net-
 work Emergency Fund*
Diversity and Inclusion in Physics at Penn Annual Seminar (March 2021)
Cultivating Equity-Focused Institutional Change in University STEM Departments
American Physical Society Annual Leadership Meeting (February 2021)
Effecting Change: Individual Actions and Leadership (Panelist)
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
AAPT 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**

PERC 2023 (Discussant) (July 2023)
Session: Teamwork in Physics Labs
AAPT 2023 Summer Meeting (July 2023)
Learning in interaction; interacting scales of research
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 students 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 2021 (August 2021)
Unpacking Challenges in Student-Faculty Partnerships on Departmental Action Teams
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**

Quan, G., *PERCoGS Newsletter: PERCoGS 10 Years Later* (Spring 2023)
 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 Pos-*

itive 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 **PERC 2023 Roundtable Session** with Frank Dachille (lead organizer) (July 2023)
Round Table Discussion on Exploring Culture in Physics
SJSU CoS Cultivating Equity and Inclusion Collaborative (CEIC) with Walter Adams, Jamie Alea, Kimberly Boudreaux, and Navrati Saxena (Fall 2022)
AAPT DEI Resource Room Session Organizer with Joel Corbo (August 2021)
Departmental Action Teams
ASCN Webinar with Joel Corbo, Courtney Ngai, and Sarah Wise (March 2021)
Facilitating Change Through the Departmental Action Team (DAT) Model
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

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

Conference Co-Organizer (Spring 2021 - Present)
Foundations and Frontiers of Physics Education Research - Puget Sound (FFPERPS)

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

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)

Memberships **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, The Physics Teacher, 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**