

***Annie Yi Han***

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**EDUCATION**

ED.D. Mathematics Education with Emphasis in Bilingual/Bicultural Education, Teachers College, Columbia University, New York.

M.S., Mathematics Education with Emphasis in College Mathematics Teaching, Teachers College, Columbia University, New York

M.A., Mathematics Education with Emphasis in Secondary School Mathematics Teaching, Teachers College, Columbia University, New York

B.S. Materials Science and Engineering, Beijing University of Science and Technology, China

**EXPERIENCE**

A. Teaching Experience:

**Professor of Mathematics** (2/98-present) at The City University of New York, Borough of Manhattan Community College, Mathematics Department.

Taught mathematics from developmental to calculus and statistics courses; Implemented Inquiry-Based (IBL) Teaching and Learning pedagogy in all levels of math classes; Developed and taught the Quantitative Reasoning courses; Initiated the Open-Educational-Resource (OER) curriculum and open-source digital WeBWork homework platform; Integrated computer technology and Mathlets into mathematics classes; Incorporated hands-on mathematical modeling into the mathematics for elementary teachers courses; Integrated the student research projects of history of mathematics into mathematics classes; Used Writing Across the Curriculum techniques in mathematics classes; Developed and taught asynchronous online statistics and calculus courses at two CUNY campuses (BMCC-CUNY, School of Professional Studies) since 2001.

**Adjunct Professor of Mathematics** (2/09-present) at The City University of New York, Scholl of Professional Studies, General Education Department. Taught online Introduction to Statistics courses; Using Open-Educational-Resource (OER) curriculum and implementing mathematical growth mindsets pedagogy to promote students' critical thinking skills.

**Adjunct Professor of Mathematics Education** (5/2003-present) at Teachers College - Columbia University, N. Y., Taught graduate courses: Curriculum and Method for Bilingual Teachers: Mathematics; Curriculum and Method for Bilingual Teachers: Science; Integrated language and culture with mathematics/science and the education curriculum; Field supervision of pre-service and in-service student teachers; Collaboration with colleagues in research on Dual-Language program at New York City and San Francisco School system.

**Adjunct Professor** at The City College of New York/CUNY, N. Y. (9/2002-08) Taught graduate courses: Teaching Content (Math, Science, Technology) using both English and Native Language; Inquiry Science

Pre K-6; Mathematics for Pre K-6 Teachers; and Content Research in Bilingual Education (for Master Thesis research students).

**Project Trainer** at Teachers College - Columbia University, N.Y. (9/91-9/93) Proposal writing within a continuously funded Title VII program; Conducted teacher training research and workshops; Conducted ethnographic research on bilingual mathematics classroom teaching.

**Bilingual Consultant** for Board of Education New York City Public Schools, N.Y. (11/91- 6/93, 1/97-12/97) Ongoing staff development training; Coordinated the 97' Chinese Painting Contest State-wide; Coordinated the development of Chinese-English Mathematics Glossary; Demonstration of lessons on the use of mathematics manipulatives in middle schools; Presentations for urban elementary teachers on understanding Asian culture; Workshops on integrating the Chinese abacus into the American elementary mathematics classroom; Parent involvement-workshops for new immigrant parents showing that mathematics and science learning can be done in the kitchen, supermarket, and playground; Development of a bilingual mathematics teacher's manual.

**Bilingual Mathematics Teacher** in New York City Public School District 20, Brooklyn, and District 27, Queens. (9/89-8/93, 4/95-8/96) Taught self-contained combined 7th and 8th-grade bilingual Chinese classes. Taught mathematics (7-grade math and Regents Math A) and science (Regents 8<sup>th</sup> grade Earth Science); Authored four "*Improved School Services*" grant proposals; Conducted a quantitative study on middle-school ethnic Chinese students' mathematics achievements.

#### B. Administrative Experience:

##### **Chair of Mathematics Department (2008 - 2014)**

Supervised 200+ mathematics faculty; Chaired the department P&B committee; In charge of mathematics department administration duties; Supervised 54 Full-time faculty, 27 of which were untenured, and 180+ Adjunct faculty members in the Mathematics Department; Set up and reinforced the math department goals for each academic year, such as "Improve the Pass Rates for Remedial Courses and Pathway Courses, Teaching for excellence," etc. Highlights:

- Hired 18 new faculty and each new faculty was assigned an experienced tenured faculty mentor.
- Developed the Math Department Master Plan to improve the remedial and pathway math courses pass rate initiative.
- Departmentally implemented an online homework system for all the remedial courses.
- Initiated and led the BMCC Developmental Mathematics Curriculum Reform Committee.
- Launched BMCC Quantway Initiative and was involved in every project stage: from Quantway curriculum developing, classroom piloting, implementing, and scaling. The BMCC Quantway OER Curriculum materials were shared with other CUNY colleges.
- Initiated and created the BMCC Mathematics Department organization on Blackboard, which provided a great tool and resource to all faculty. The Blackboard site had the necessary administrative documents (i.e., departmental meeting minutes, various committees meetings' minutes, templates for observation reports, etc.), forms, and handouts of presentations for faculty workshops, etc., available to all faculty members at any moment.
- Increased Math major enrollment from 68 students to 270 students. One strategy involved launching the "Mathematics Lounge" every semester for students and faculty to get together to share ideas and play mathematics games. BMCC math major alumnae and professional experts often were invited to the Math Lounge.
- BMCC Math Team competed at AMATYC Student Math League every year and won first place at the NE regional in 2009, 2010, and 2011.

- BMCC Math Department hosted the NYSMATYC Region 4 conference on November 1, 2009. More than 200 mathematics faculty members from two-year colleges across NY state attended the conference.
- BMCC Math Department hosted the MAA Metro New York Section Annual Conference in May 2010. Hundreds of mathematics faculty and students from Metro New York attended the conference.

**Acting Chair of Mathematics Department (9/2003-2/2004)**

Supervised 150 mathematics faculty; Chaired the department P&B committee; In charge of mathematics department administration duties (40 Full-time and 120 Adjunct mathematics faculty members in the Mathematics Department).

C. Community Services:

**Member of BMCC Study Abroad Committee, (2000-2006)**

Participated in all committee activities; Chaired the Faculty Handbook Subcommittee and developed a *BMCC Faculty Study Abroad Handbook*.

**Chair of Mathematics Department Adjunct Committee (1999-2004)**

Developed the first edition of the *Adjunct handbook for part-time faculty in the mathematics department* (published 2003); Planned and conducted the Annual Math Adjunct Faculty Orientation.

**Member of Mathematics Department several committees (1999-present):**

Calculus Committee, New-Course Committee, MAT200 Committee, Technology Committee, and Math Major committee.

**Member and Secretary of BMCC Study Abroad Committee, (2000-2006):**

Participated in all committee activities. **Chair of Faculty Handbook Subcommittee** developed a BMCC Faculty Study Abroad Handbook.

**Co-Chair of BMCC Asian-Heritage Month Committee (1999-2000, 2001-2004)**

Coordinated the Asian Heritage Month activities, which included fundraising, student and faculty activities, etc.

**BMCC Scholarship Committee, (2002 – 2008).**

**Initial Member of BMCC Writing Across the Curriculum Committee (1999-2006)**

Involved in the committee and sub-committee activities, including developing the College 5-yr WAC Plans and College WAC Assessment questions; Worked with a writing fellow in MAT150 statistics class.

**Chair and Founder of Blue Sky Asian-American Research Foundation (1995-present)**

Directed all ongoing activities promoting knowledge and understanding of Asian culture and heritage in the US and assisting in the multicultural enrichment of Asian-American children, their families, and other people in their communities.

**Director/Founder of BlueSky Chinese School for Children (1995-2013)**

Designed the Children's Chinese Curriculum for this weekend school; Supervised teachers and all administrative duties; Liaison between the community and school.

**Board Member and Treasurer of GNYNAAPAE** (Greater New York Association for Asian and Pacific American Education), A Chapter of the NAAPAE. Committee Co-Chair for 1993, 2002, 2004 NAAPAE Annual National Conference.

**Coordinator of the Eleventh Annual Statewide Roundtable for Educators of Asian LEP/ELL** (2004).  
**Coordinator of the Second Statewide Chinese Teachers Conference at Teachers College** (2003).  
**Coordinated the Second Bilingual/Multicultural Summer Institute of Teachers College** (1994).

## GRANTSMANSHIP

**PI, NSF: *Creating Data Science Pathways for STEM Student Success***. Amount \$774,000. Funding period: 2021-2024. Award # 2135596

To design a data science program for our urban, two-year college student population. This will significantly increase access to this growing and lucrative field for groups traditionally underrepresented in a wide range of STEM disciplines while maintaining high quality and rigor, allowing these students to transfer to four-year colleges. The sequence of the mathematics gateway courses will be pedagogically designed, and some current courses will be redesigned to enhance students' learning and retention through the program. Currently, the Data Science Associate degree program has received approval the New York State Education Department. This first CUNY Data Science AS degree program to now in the processing enroll the first cohort of students. The first cohort of Data Science Major students will start their study in Fall 2023. It will serve as a model for other postsecondary institutions seeking to initiate similar reforms among underrepresented groups in STEM.

**Co-PI, NSF: *E-NEST: Enhanced Noyce Explorer, Scholars, Teachers (E-NEST): Fostering the Creation of Exceptional Mathematics and Technology Teachers in New York City*** Amount \$1,400,000. Funding period: 2020-2025. Award # 1950142.

**Activities include:** Recruiting and supervising NOYCE student interns; Matching faculty mentors for each student intern; Conducting mathematics parts of Summer Noyce explorer student workshops; Initiating the Noyce Student Club.

**PI (BMCC), US Depart of Edu: *Title V Cooperative Arrangement Grant: City Tech & BMCC, CUNY Opening Gateways to Completion: Open Digital Pedagogies for Student Success in STEM*** (City Tech-BMCC), Amount \$3,100,000.00. Funding period: Oct 2015- 2021.

The project aimed to increase student success in STEM by introducing open-source digital technologies, open educational resources (OER), and active learning pedagogies into the high-enrollment mathematics courses required for STEM disciplines at our institutions, “gateway” courses that can form insurmountable barriers for low-income and minority students.

**Activities Highlight:** 38 BMCC math faculty (26 full-time and 12 adjuncts) participated in the Opening Gateway (OG) Pedagogy Faculty Seminars; As of Fall 2022, 6 of the 12 OG-trained adjunct faculty were offered full-time lecture positions within CUNY; Created OER WeBWoRK online homework system for calculus sequence courses (MAT 056, MAT206, MAT206.5, MAT 301, MAT302, and MAT 303); A total of 24,063 students using WeBWoRK over the duration of the grant; The project has had a powerful effect on the culture of our departments, moving faculty towards the use of OER and open digital pedagogies; Students have benefited financially from the implementation of freely-available online resources; Use of WeBWoRK provided estimated savings to students of more than \$500,000 each year.

**PI, MSEIP Institutional Grant: *BMCC – Creating Career Pathways in Mathematics through the Recruitment and Retention of Talented Community College Students***, Amount \$750,000. Funding period: Oct 2014- 2018.

The goal of the project was to improve the access of undergraduate minority students to careers in mathematics by improving the pipeline for students entering 4-year colleges as math majors and to institutionalize practices that have evidence of successfully improving STEM education retention rate in the first two years of college.

Highlighted activities: Built the BMCC open-source online homework WeBWork server; Initiated OER digital platform to host Quantway courses, MAT 056 through MAT 302; Trained 48 math faculty to use the WeBWork system for their math courses; Developed a new mathematics proof course serving as a content bridge course to reduce the gaps between two-year and four-year mathematics curriculums; Conducted Faculty-Mentored-Student Summer Research projects with a total of 27 faculty and 50 students participating in the project. Seven students presented their research at MAA MathFest Summer Conference. Three students received MAA Student travel-fund grant awards.

**Co-PI. NSF, Noyce Grant: City Tech-BMCC NEST: Noyce Explorers, Scholars, Teachers**, Amount \$1,400,000. Funding period: Jan 2014- 2019. Award # 2135596

Recruited and supervised NOYCE student interns; Matched faculty mentors for each student intern; Conducted the mathematics portions of the summer Noyce explorer student workshops; Brought Noyce explorers to visit MoMath (the National Museum of Mathematics) and to NOYCE Summits.

**PI. Carnegie Quantway Project**, Amount \$75,000. Funding period: Jan 2010- 2013.

Served as a faculty team leader for the Quantway project reviewing Quantway lessons, piloting lessons, and leading a lesson study faculty development group, participating in the Quantway Winter/Summer Institutes; Created an alternative elementary algebra pathway for non-STEM students; Trained forty-two full-time and adjunct BMCC math faculty to teach the Quantway courses. The Quantway curriculum has helped thousands of non-STEM students pass developmental math requirements and graduate on time. The Quantway Curriculum became CUNY's flagship model.

**PI, Fulbright-Hays Group Study Abroad Grant, *Group Research Project Abroad - History of Chinese Mathematics Seminar in China***. Amount \$68,000. Funding period 2003-2004.

Led ten CUNY and BMCC mathematicians and two math educators from New York City Public Schools to visit twelve academic institutions and public schools in six cities in China. Activities included attending seminars, lectures, and classroom observations. Results: one BMCC faculty continued with his study in the History of Chinese Mathematics and received his Ph.D. from Teachers College, Columbia University with distinction; one faculty was invited as a visiting professor for 3 summers; mathematics faculty at BMCC integrated the History of Chinese Mathematics into their teaching and students research projects.

**Moody's Foundation** (2004-2005), Conducted in-service teacher development research on Japanese Lesson Study with PS/MS34 (Region 10); Worked with the teachers and mathematics coaches weekly; Worked with District 1 middle school in-service math teachers to conduct the Lesson Study research; Conducted a tri-statewide mathematics education conference: *History and New Perspectives Conference*, March 2005, BMCC, NY.

## **PRESENTATIONS and PUBLICATIONS** (selected articles)

Han, A. Miller, G., Jaffee, E., Florez, J., Muzicain, O., Featherstonhaugh, S., (2022). Creating Data Science

Pathways for STEM Student Success, 2022 NSF IUSE Summit, Washington D.C. June 1-3, 2022.

Han, A., Dean, A., & Shen, F., (2018) Mentoring Success Stories from the NOYCE NEST (NYCCT+BMCC) Project, Poster presentation, National IBL Conference, University of Texas at Austin, May 31 - June 2, 2018 Austin, Texas

Han, A., (2017). *Inquiry-Based Learning Pedagogy In Action*. Invited Lecture and Class Demo Lesson for the STEM faculty at School of Mathematics and Information Science, Xianyang Normal University, Shaanxi, P.R. China. Sept 2017

Han, A., Dean, M., & Zhong, D. (2017). Put Students in the Driver Seat on Their Mathematics Learning Journey, MAA MathFest, Chicago, July 26-29, 2017

Han, A., & Sheng, F. (2017), *Mentoring Pre-Service Teachers Through Inquiry-Based Learning Model*. AMS-MAA Joint Mathematics Meetings, Atlanta GA, Jan 4-7, 2017

Morgulis, A., Han, A, Dean, M., & Prioleau, F. (2017). *Creating Career Pathways in Mathematics through the Recruitment and Retention of Talented Community College Students*. AMS-MAA Joint Mathematics Meetings, Atlanta GA, Jan 4-7, 2017

Dean, M., Han, A., & F. Prioleau (2017), *Prepare Potential STEM Majors Who Are Not Yet Ready for Calculus Sequence*. AMS-MAA Joint Mathematics Meetings, Atlanta GA, Jan 4-7, 2017

Han, A. (2016) College Mathematics Reform in USA, Invited Lecture the STEM faculty at School of Mathematics and Science, Xi'an Siyuan University, Xian, P.R. China, April 2016.

Han, A., George, M., & Milman, Y. (2015). *An inquiry-based learning in Developmental Mathematics Course*. AMS-MAA Joint Mathematics Meetings, San Antonio, TX, Jan 10-13, 2015

Wu, L., Han, A. (2015) *The Origin, Development, and Dissemination of Differential Geometry in Mathematics History*. Preliminary report. AMS-MAA Joint Mathematics Meetings, San Antonio, TX, Jan 10-13, 2015

George, M., Han, A., Milman, Y. (2015). *The Way to Quantitative Literacy for College Developmental Mathematics Students*. AMS-MAA Joint Mathematics Meetings, San Antonio, TX, Jan 10-13, 2015

Han, A., George, M., Milman, Y., & Dawes, D. (2012). *Improving College Mathematics Through Lesson Study*. Proceedings of 12th International Congress on Mathematical Education Conference July 2012, COEX, Seoul, Korea. pp. 7369-7373, retrieved from [https://www.mathunion.org/fileadmin/ICMI/Conferences/ICME/ICME12/www.icme12.org/sub/sub01\\_01.html](https://www.mathunion.org/fileadmin/ICMI/Conferences/ICME/ICME12/www.icme12.org/sub/sub01_01.html)

Torres-Guzmán, M., Lao, C., and Han, Y. (2011). Chapter 9 Hidden Jewels: San Francisco Chinese Language Immersion Programs. In X. L. Rong & R. Endo (Eds.) *Asian American Education - Identities, Racial Issues, and Language*. Charlotte, NC: Information Age Publishing.

Su, B., Shu, S. and Han, Y. (2011). Hypersurfaces with constant mean curvature in a hyperbolic space. *Acta Mathematica Scientia*. 31(3): 1091–1102, [ScienceDirect](https://doi.org/10.1007/s11464-011-0109-1).

Shu, S. & Han, A., (2010). Hypersurfaces with Two Principal Curvatures in a Real Space Form,

International Mathematical Forum, 5(4)(2010): 163 – 173.

Shu, S. and Han, A. (2009). Hypersurfaces with constant scalar or mean curvature in a unit sphere. Balkan journal of Geometry and Its Applications. 24(2): 90-100. Bucharest, Romania.

Shu, S. & Han, A. (2009). Nonnegative Sectional Curvature Hypersurfaces in a Real Space Form. Mathematical Notes. 86(5): 729-743 In Matematicheskie Zametki, 86(5): 776-793. The Russian Academy of Sciences (RAS), Russia.

Han, A. (2009). Westwenzianization of Mathematics Education in China Calvin Wilson Mateer's Work. Book of Abstracts and List of Participants of the XXIII International Congress of History of Science and Technology: Ideas and Instruments in Social Context, p.218, Budapest, Hungary, August 2009,

Yuan, H. & Han, A. (2009). Mathematics in Pre-service Elementary School Teacher Programs in China and the US--The Examples of Shanghai Normal University and The City University of New York. Curriculum, Teaching Material and Method (课程教材教法), People's Education Press, Beijing, 29 (3), pp. 91-96, 2009.

Han, A. (2007) Math Professional Resources Handbook – Grade K, Editor, Houghton Mifflin, Boston, 2007.

Han, A. (2007). Classification, positions and Patterns. In A. Han (Ed.), Math Professional Resources Handbook – Grade K, Houghton Mifflin, Boston, 2007.

Han, A. (2007). Operations with Decimal. In D. A. Pierre (ed.), Math Professional Resources Handbook – Grade 5, Houghton Mifflin, Boston, 2007.

Han, A. (2007). Money and Time. In West (Ed.), Math Professional Resources Handbook – Grade 1, Houghton Mifflin, Boston, 2007.

Torres-Guzman, M., Han, A., & Kleyn T., (2005) Self-Designated Dual-Language Programs: Is There a Gap Between Labeling and Implementation? Bilingual Research Journal, 29(2), 453-474, 2005.

Han, A. (2003). Probability. In Math Professional Resources Handbook, Houghton Mifflin, Boston, Vol. 4, 43-46.

Han, A. & Sunderland, M. (2003). Number Through 100. In Math Professional Resources Handbook, Houghton Mifflin, Boston, Vol. 2, 10-14.

Han, A. & Peskoff, F. (2003) Addition and Subtraction Facts Through Ten. In Math Professional Resources Handbook, Houghton Mifflin, Boston, Vol. 1, 9-14.

Han, Y. & Ginsburg, H. (2001). Chinese and English Mathematics Language: The Relation between Linguistic Clarity and Mathematics Performance. Mathematical Thinking and Learning, 2(2&3), 201-220, 2001 (join with H.).

Han, A. (2001). Chinese Mathematics Pedagogy and Practice: What Can We Learn? Mathematics Education Dialogues, NCTM, (11) 2001.

## **PROFESSIONAL AWARDS**

Scholarly Achievements Recognition, “Salute to Scholars” of the City University of New York, 2002, 2003, 2011, 2013, 2014, 2015, and 2016.

INPUT Award, American Mathematics Association of Two-Year College, 2001.

Salzburg Seminar Fellow – International Study Program – College and Universities as Sites of Global Citizenship, July 2007, Salzburg, Austria.

A Partnership In Education Award, Board of Education of the City of New York, Office of English Language Learners, Asian Languages Bilingual Education Technical Assistance Center, 2002.

American Mathematics Society travel support for attendance at the International Congress of Mathematicians in Beijing China Award, 2002.

US Department of Education Title VII Fellow, 1991-1994

New York State Empire State Challenger Fellow, 1989

## **PROFESSIONAL MEMBERSHIPS**

Member of

- National Council Teachers of Mathematics, 1990-present
- American Mathematics Association of Two-years Colleges, 1998-present (Life membership)
- Mathematical Association of American, 2000-present
- American Mathematical Society, 2002-present (Life membership)
- National Museum of Mathematics (MoMath), 2013-present
- National Association for Asian and Pacific American Education, 1989-2013
- Asian American Higher Education Council, 1990-2013
- National Association of Bilingual Education, 1989-1999
- New York State Association of Bilingual Education, 1990-1999
- American Educational Research Association, 1991-1999

Officer of Greater New York Association for Asian and Pacific American Education, 1994-2013

Chair of Blue Sky Asian-American Research Foundation, 1996-present

Officer of New York Bilingual Chinese Educators Committee, 1989-1998