Curriculum Vitae

Robert H. Tai

Educational Background

Ed. D.	Science Education	Harvard University Graduate School of Education	1998

Dissertation: *Experience, Gender, and Performance: Connecting High School Physics Experience and Gender Differences to Introductory College Physics Performance*.

Ed. M.	Science Education	Harvard University Graduate School of Education	1994
M. S.	Physics	University of Illinois	1987
B. S.	Physics	University of Florida	1986
B. A.	Mathematics	University of Florida	1986

Professional Experience

University Positions:

Associate Professor	Curry School of Education University of Virginia	2007 – Present
Elementary Teacher Education Coordinator	Curry School of Education University of Virginia	2013 – 2015
Assistant Professor	Curry School of Education University of Virginia	2001 – 2007
Assistant Professor	College of Staten Island, City University of New York	1998 – 2001

Other:

Research Associate	Science Education Department Harvard – Smithsonian Center for Astrophysics	1996 – 1998
University Supervisor	Graduate School of Education Harvard University	1993 – 1997
Education Researcher	Science Media Group Harvard – Smithsonian Center for Astrophysics	1993 – 1995
Physics Teacher/ Curriculum Specialist	Wichita Falls Independent School District Wichita Falls, Texas	1992 – 1993
Physics Teacher	Lyons Township High School District 204 LaGrange, Illinois	1990 – 1992
Research Assistant	Nuclear Physics Laboratory University of Illinois, Urbana – Champaign	1987 – 1988

University Teaching (Courses Taught)

Curry School of Education, University of Virginia:

Science in the Elementary School (2001 – present)	EDIS 5330
Teaching Associateship: Elementary (2014 – present)	EDIS 5881
Science and Mathematics Education Policy Review and Analysis (2009)	EDIS 8500b
Exploring Topics on Conceptual Change Research (2004, 06, 08, 10, 13)	EDIS 7850a
Field Projects in Science and Mathematics (2002, 2003, 2005 – 2008)	EDIS 788
Reading and Research in Science Education (2001, 2003, 2005)	EDIS 955
Student Teaching Seminar for Secondary Science (2002)	EDIS 587
Introduction to Educational Technology (2001)	EDIS 345
Independent Study in Elementary Science Education (Periodically)	EDIS 793

College of Staten Island, City University of New York:

Art, Science, and Mathematics in Elementary Education (1998 – 2000)	EDE 303
Advanced Science Education for Elementary Teachers, Grades 3-6 (1999 – 2001)	EDE 630
The Teaching of Secondary School Curriculum in Science (1999 – 2001)	EDS 304
Advanced Studies in Teaching Secondary School Science	EDS 694
Fundamentals of Educational Research	EDD 630
Educational Research Project Seminar	EDD 631
Issues in Urban Education (GSUC/CUNY)	MALS U781

Teaching Fellowships/Assistantships

Harvard University Graduate School of Education:

How Children Learn Science	Philip M. Sadler	T 124
Teaching Science	Philip M. Sadler	T 215
Socio-historical Context & Diversity in American Schooling	Vito Perrone	T 901
Teaching & Curriculum in Secondary Schools I	Vito Perrone	T 120
Anti-Racist Multicultural Education	Donaldo Macedo	T 453

University of Illinois, Urbana – Champaign:

College Physics	Peter G. Debrunner	PHYS 101

Peer-Reviewed Publications

Data-based Research Journal Articles (Refereed):

1) **Tai, R. H.**, Ryoo, J. H., Mitchell, C. E., Kong, X., Skeeles-Worley, A. D., Almarode, J. T., Maltese, A. V., & Dabney, K. P. (In press). Gauging Informal STEM Youth Program Impact: A Conceptual Framework and a Measurement Instrument. *Journal of Youth Development*.

2) Dolenc, N. R., **Tai, R. H.**, & Williams, D. (2020) Excessive mentoring? An apprenticeship model on a robotics team. *Journal of Research in STEM Education.* 6 (2) 91 – 114. https://doi.org/10.51355/jstem.2020.81.

3) Chakraverty, D., Newcomer, S. N., Puzio, K., & **Tai, R. H.** (2020). It Runs in the Family: The Role of Family and Extended Social Networks in Developing Early Science Interest, *Bulletin of Science, Technology, and Society.* 38 (3-4), 27 – 38. https://doi.org/10.1177/0270467620911589.

4) Kitzmiller, R., Vaughan, A., Skeeles-Worley, A., Keim-Malpass, J., Yap, T. L., Lindberg, C., Kennerly, S., Mitchell, C., **Tai, R. H.**, Sullivan, B., Anderson, R., and Moorman, J. R. (2019). Diffusing an Innovation: Clinician Perceptions of Continuous Predictive Analytics Monitoring in Intensive Care. *Applied Clinical Informatics*, 10, 295-306. doi: 10.1055/s-0039-1688478

5) Keim-Malpass, J. Kitzmiller, R. R., Skeeles-Worley, A., Lindberg, C., Clark, M. T., **Tai, R. H.**, Calland, J. F., Sullivan, K., Moorman, J. R., & Anderson, R. A. (2018). Advancing continuous predictive analytics monitoring: Moving from implementation to clinical action in a learning health system, *Human Factors and Technology in the ICU*, *Critical Care Nursing Clinics of North America*. 30 (2), 273 - 287. https://doi.org/10.1016/j.cnc.2018.02.009.

6) Ryoo, J. H., **Tai, R. H.**, & Skeeles-Worley, A. D. (2018). Examination of Longitudinal Invariance on a Framework for Observing and Categorizing Instructional Strategies, *Research in Science Education*. https://doi.org/10.1007/s11165-018-9698-7.

7) **Tai, R. H.**, Kong, X., Mitchell, C. E., Dabney, K. P., Read, D. M., Jeffe, D. B., Andriole, D. A., & Wathington, H. D. (2017). Examining summer laboratory research apprenticeships for high school students as a factor in entry to MD/PhD programs at matriculation. *CBE - Life Sciences Education*. 16(2), article 37, doi: 10.1187/cbe.15-07-0161

8) Dabney, K. P., Chakraverty, D., Hutton, A. C., Warner, K. A., & **Tai, R. H.** (2017). The Bachelor's to PhD transition: Factors influencing PhD completion among women in chemistry and physics. *Bulletin of Science, Technology, and Society.* 36(4), 203 - 210.

9) Zhou, Y., Fan, X. Wei, X., & **Tai, R. H.** (2017). Gender gap among high achievers in math and implications for STEM pipeline. *The Asia-Pacific Education Researcher*. 26(5), 259 - 269.

10) Andriole, D. A., Jeffe, D. B. & **Tai, R. H.** (2016). Characteristics and Career Intentions of MD-MPH Program Graduates: A National Cohort Study. *Public Health Reports*. 131(4), 637 - 649.

11) Dolenc, N. R., Wood, A., Soldan, K., & **Tai, R. H.** (2016). Mars Colony: Using Role-play as a pedagogical Approach to Teaching Science. *Science and Children*. 53(6), 30 - 35.

12) Dabney, K. P., **Tai, R. H.**, & Scott, M. (2016). Family Education, Experiences, and Initial Interest in Science. *International Journal of Science Education, Part B: Communication and Public Engagement*, 6(3), 263-282. DOI: 10.1080/21548455.2015.1058990.

13) Dolenc, N. R., Mitchell, C. E., & **Tai, R. H.** (2015). Hands Off: Mentoring a Student-led Robotics Team. *International Journal of Science Education, Part B: Communication and Public Engagement*, DOI: 10.1080/21548455.2015.1039467.

14) Andriole, D. A., Jeffe, D. B., & **Tai, R. H.** (2015). Participation in college laboratory research apprenticeships among students considering careers in medicine. *Medical Education Online*. DOI: 10.3402/meo.v20.27231.

15) Sadler, P. M., Sonnert, G., Hazari, Z., & **Tai, R. H.** (2014). The role of advanced high school coursework in increasing STEM career interest. *Science Educator.* v23 (1), 1-13.

16) Dolenc, N. R., Mitchell, C. E., & **Tai, R. H.** (2014). Evidence of self-directed learning in a high school robotic team. *Journal of Youth Development.* v9 (4), 77 - 88.

17) Dabney, K. P. & **Tai, R. H.** (2014). Factors associated with female chemist doctoral career choice within the physical sciences. *Journal of Chemical Education.* dx.doi.org/10.1021/ed4008815.

18) Jeffe, D. B., Andriole, D. A., Wathington, H. D., & **Tai, R. H.** (2014). The emerging physician-scientist workforce: Demographic, experiential, and attitudinal predictors of MD-PhD program enrollment. Academic Medicine. doi: 10.1097/ACM.0000000000000400.

19) Almarode, J. T., Subotnik, R. F., Crowe, E., **Tai, R. H.**, Lee, G. M., & Nowlin, F. (2014). Specialized high schools and talent search programs: Incubators for adolescents with high ability in STEM disciplines. *Journal of Advanced Academics*. 25(3), 307-331.

20) Kong, X., Dabney, K. P., & **Tai, R. H.** (2014). The association between science summer camps and career interest in science and engineering. *International Journal of Science Education, Part B*. 4 (1), 54 – 65.

21) Oh, K., Almarode, J. T. & **Tai, R. H.** (2013) An exploration of think-aloud protocols linked with eye-gaze tracking: Are they talking about what they are looking at. *Social and Behavioral Sciences*, v93, 184-189.

22) Oh, K., Trent, S. C., & **Tai, R. H.** (2013) Eye movements of students with learning disabilities in reading: A study of problem solving strategies. *Social and Behavioral Sciences*. v93, 252-256.

23) Kong, X., Chakraverty, D., Jeffe, D. B., Andriole, D. A., Wathington, H. D., & **Tai, R. H.** (2013). How do interaction experiences influence doctoral students' academic pursuits in biomedical research? *Bulletin of Science, Technology & Society*. 33(3-4), 76-84. doi: 10.1177/0270467613516754.

24) Jeffe, D. B., Andriole, D. A., Wathington, H. D., & **Tai, R. H.** (2013). Educational outcomes for MD-PhD Program at Medical School Matriculants, 1995-2000: A national cohort study. *Academic Medicine.* v89 (1), 84-93.

25) Chakraverty, D. & **Tai, R. H.** (2013). Parental Occupation Inspiring Science Interest: Perspectives from Physical Scientists. *Bulletin of Science, Technology & Society***.** 33: 44-52, doi:10.1177/0270467613509367.

26) Subotnik, R.F., **Tai, R.H.**, Almarode, J. & Crowe, E. (2013). What are the value-added contributions of selective secondary schools of mathematics, science and technology? – Preliminary analyses from a U.S. national research study. *Talent Development and Excellence*, 5 (1), 87-97

27) Dabney, K. P., Chakraverty, D., & **Tai, R. H.** (2013). The association of family influence on initial interest in science. *Science Education*. 97 (3), 395-409.

28) Dabney, K. P. & **Tai, R. H.** (2013). Female physicists doctoral experiences. *Physics Review Special Topics: Physics Education Research*. 9, 010115. http://prst-per.aps.org/abstract/PRSTPER/v9/i1/e010115

29) Wyss, V. L., Dolenc, N., Kong, X., & **Tai, R. H.** (2013). Time on text and science achievement for high school biology students. *American Secondary Education*. v41 (2), 49 - 59.

30) Maltese, A. V., **Tai, R. H.**, & Fan, X. (2012) When is homework worth the time? Evaluating the association between homework and achievement in high school science and math. *High School Journal*. *96 (1)*, 52 - 72.

31) Sadler, P. M. Sonnert. G., Hazari, H., & **Tai, R. H.** (2012) Stability and volatility of STEM career choice in high school: A gender study. *Science Education. 96 (3), 411 - 427*.

32) Loehr, J. F., Almarode, J. T., **Tai, R. H.**, & Sadler, P. M. (2012). High school and college biology: A multi-level model of the effects of high school courses on introductory course performance. *Journal of Biological Education. 46 (3), 165 - 172*.

33) Potvin, G. D. & **Tai, R. H.** (2011). Examining the relationship between doctoral completion time, gender, and future salary prospects for physical scientists. *Journal of Chemical Education*. (DOI: 10.1021/ed100555j).

34) Dabney, K., **Tai, R. H.**, Almarode, J. T., Miller-Friedman, J. L., Sonnert, G., Sadler, P. M., & Hazari, Z. (2011). Out of school time science activities and their association with career interest in STEM. *International Journal of Science Education, Part B*, v2, (1), 63-79. (DOI:10.1080/21548455.2011.629455).

35) Harsh, J. A., Maltese, A. V., & **Tai, R. H.** (2011). Undergraduate research experiences from a longitudinal perspective. *Journal of College Science Teaching. 41(1), 84-90.*

36) Maltese, A. V. & **Tai, R. H.** (2011). Pipeline persistence: Examining the association of educational experiences with earned degrees in STEM among US students. *Science Education. 95(5), 877 – 907* (DOI: 10.1002/sce.20441).

37) Subotnik, R. F., **Tai, R. H.**, Rickoff, R., & Almarode, J. T. (2010). Specialized Public High Schools of Science, Mathematics, and Technology and the STEM Pipeline: What Do We Know Now and What Will We Know in Five Years? *Roeper Review. 32(1), 7 – 16*.

38) Hazari, Z., Potvin, G., **Tai, R**. **H.** , & Almarode, J. (2010). For the Love of Science: Learning Orientation and Physical Science Success. *Physical Review Special Topics - Physics Education Research*, 6, 010107 (DOI: 10.1103/PhysRevSTPER.6.010107).

39) Wyss, V. L. & **Tai, R. H.** (2010). Conflicts between graduate study in science and family life, *College Student Journal*. 44(2, part B), 475 – 491.

40) Maltese, A. V., **Tai, R. H.**, & Sadler, P. M. (2010). The effect of high school physics laboratories on performance in introductory college physics. *The Physics Teacher.* 48(5), 333 – 337.

41) Maltese, A. V., & **Tai, R. H.** (2010). Eyeballs in the fridge: Sources of early interest in science. *International Journal of Science Education. 32(5), 669 – 685.*

42) Potvin, G. D., Hazari, Z., **Tai, R. H.** & Sadler, P. M. (2009). Unraveling Bias from Student Evaluations of their High School Science Teachers. *Science Education. 93(5), 827 – 845.*

43) **Tai, R. H.** & Sadler, P. M. (2009). Same science for all? Interactive association of structure in learning activities and academic attainment background on college science performance in the USA. *International Journal of Science Education.* 31(5), 675-696.

44) Schwartz, M., Sadler, P.M., Sonnert, G., & **Tai, R. H.** (2009). Depth versus Breadth: How Content Coverage in High School Science Courses Relates to Later Success in College Science Coursework. *Science Education. 93(5), 798 - 826.*

45) Hazari, Z., Sadler, P. M., & **Tai, R. H.** (2008). Gender differences in the high school affective experiences of introductory college physics students. *The Physics Teacher. 46*(7), 423-427.

46) **Tai, R. H.**, Sadler, P. M., & Maltese, A. V. (2007). A study of the association of autonomy and achievement on performance. *Science Educator, 16*(1), 22-28**.**

47) Maltese, A. V., **Tai, R. H.**, & Sadler, P. M. (2007). Breaking from tradition: Unfulfilled promises of block scheduling in science. *Science Educator, 16*(1), 1-7**.**

48) Sadler, P. M. & **Tai, R. H.** (2007). Accounting for advanced high school coursework in college admissions decisions. *College & University.* 82 (4), 7 – 14.

49) Sadler, P. M. & **Tai, R. H.** (2007). Advanced Placement™ exam scores as a predictor of performance in introductory college biology, chemistry, and physics courses. *Science Educator.*16 (2), 1 – 19.

50) **Tai, R. H.**, Liu, C. Q., & Fan, X. (2007). Factors influencing retention of math and science teachers in secondary schools: A study based on *SASS/TFS. Science Educator.* 16 (2), 27 – 32.

51) Sadler, P. M. & **Tai, R. H.** (2007). The Two High-School Pillars Supporting College Science. *Science.* 317(5837), 457 - 458.

52) **Tai, R. H.** & Sadler, P. M. (2007). High school chemistry instructional practices and their association with college chemistry grades. *Journal of Chemical Education*. 84(6), 1040 – 1046.

53) Hazari, Z. S., **Tai, R. H.**, & Sadler, P. M. (2007). Gender differences in introductory university physics performance: The influence of high school physics preparation and affect. *Science Education*. 91 (6), 847 – 876.

54) Wyss, V. L., **Tai, R. H.**, & Sadler. P. M. (2007). High school class-size and college performance in science. *High School Journal.* 90(3), 45 – 53.

55) Sadler, P. M. & **Tai, R. H.** (2007). Weighting for recognition: Accounting for Advanced Placement and honors courses when calculating high school grade point average. *National Association of Secondary School Principals Bulletin, 91, 5 -32.*

56) **Tai, R. H.**, Liu, C. Q., & Fan, X. (2006). Alternative certification and retention of secondary math and science teachers: A study based on SASS/TFS. *Journal of the National Association of Alternative Certification*. 1(2), 19 – 26.

57) **Tai, R. H.**, Sadler, P. M., & Mintzes, J. J. (2006). Factors influencing college science success. *Journal of College Science Teaching.* 36(1), 56 – 60.

58) **Tai, R. H.**, Ward, R. B., & Sadler, P. M. (2006). High school chemistry content background of introductory college chemistry students and its association with college chemistry grades. *Journal of Chemical Education.* 83(11), 1703 – 1711.

59) **Tai, R. H.**, Liu, C. Q., Maltese, A. V., & Fan, X. (2006). Planning early for careers in science. *Science.* 312(5777), 1143 – 1144.

60) **Tai, R. H.**, Loehr, J. F., & Brigham, F. J. (2006). An exploration of the use of eye-gaze tracking to study problem solving on standardized science assessment. *International Journal of Research and Method in Education.* 29(2), 183 – 209.

61) Fan, X., Miller, B. C., Park, K., Winward, B. W., Christensen, M., Grotevant, H. D., & **Tai, R. H.** (2006). An exploratory study of inaccuracy and invalidity in adolescent self-report surveys. *Field Methods.* 18(3), 1 – 22.

62) Dexter, K. M., **Tai, R. H.**, & Sadler, P. M. (2006). Traditional and block scheduling for college science preparation: A comparison of college science success of students who report different high school scheduling plans. *High School Journal.* 89(4), 22 – 33.

63) **Tai, R. H.**, Sadler. P. M., & Loehr, J. F. (2005). Factors influencing success in introductory college chemistry. *Journal of Research in Science Teaching*. 42(9), 987-1012.

64) **Tai, R. H.** & Sadler, P. M. (2001) Gender differences in introductory undergraduate physics performance: University physics versus college physics in the United States. *International Journal of Science Education*. 23(10), 1017 – 1037.

65) Stanton-Salazar, R. D., Chavez, L. F., & **Tai, R. H.** (2001). The help-seeking orientations of Latino and Non-Latino urban high school students: A critical-sociological investigation. *Social Psychology of Education.* 5(1), 49 – 82.

66) Sadler, P. M. & **Tai, R. H.** (2001). Success in college physics: The role of high school preparation. *Science Education*. 85(2), 111 – 136.

67) Spina, S. U. & **Tai, R. H.** (1997). The politics of racial identity: A pedagogy of invisibility. *Educational Researcher*. 27(1), 36 – 48.

68) Sadler, P. M. & **Tai, R. H.** (1997). The role of high school physics in preparing students for college physics. *The Physics Teacher*. 35(5), 282 – 285.

Book Chapters (Refereed):

69) **Tai, R. H.** (2019). Reaching Youth with Science: A Look at Some Data on When Science Interest Develops and How it Might Be Sustained. In Alpaslan Sahin & J. Mohr-Schroeder, (Eds.), STEM Education 2.0: Myths and Truths – What Has K-12 Education Research Taught US? Dordrecht, NL: Brill|Sense Publishers. https://doi.org/10.1163/9789004405400.

70) **Tai, R. H.** & Wyss, V. L. (2017). School-based programs. In K. Peppler, (Ed.), *The SAGE Encyclopedia of Out-of-School Learning* (p. 671 - 673) Los Angeles, CA: SAGE Reference. http://dx.doi.org/10.4135/9781483385198.n259.

71) Mitchell, C. E. & **Tai, R. H.** (2017) Science clubs. In K. Peppler, (Ed.), *The SAGE Encyclopedia of Out-of-School Learning* (pp. 673 - 676) Los Angeles, CA: SAGE Reference. http://dx.doi.org/10.4135/9781483385198.n260.

72) **Tai, R. H.** & Mitchell, C. E. (2017). Science fairs. In K. Peppler, (Ed.), *The SAGE Encyclopedia of Out-of-School Learning* (pp. 676 - 678) Los Angeles, CA: SAGE Reference. http://dx.doi.org/10.4135/9781483385198.n261.

73) Mitchell, C. E. & **Tai, R. H.** (2017). Summer camps. In K. Peppler, (Ed.), *The SAGE Encyclopedia of Out-of-School Learning* (pp. 757 - 759) Los Angeles, CA: SAGE Reference. http://dx.doi.org/10.4135/9781483385198.n288.

74) **Tai, R. H.**, Liu, C. Q., Almarode, J. T., & Fan, X. (2010). Advanced Placement Course Enrollment and Long Range Educational Outcomes. In P. M. Sadler, G. Sonnert, **R. H. Tai**, & K. Klopfenstein, (Eds.), *AP: A Critical Examination of the Advanced Placement Program*. Cambridge, MA: Harvard Educational Press.

75) Liu, C. Q., **Tai, R. H.**, & Fan, X. (2009). Immigration, Race, and Higher Education Outcomes. In T. G. Wiley, J. S. Lee, & R. W. Rumberger, (Eds.), *The Education of Language Minority Immigrants in the United States*. (pp. 92 - 112). Bristol, PA: Multilingual Matters.

76) **Tai, R. H.,** Sadler, P. M., & Loehr, J. F. (2006). Factors influencing college science success. In J. J. Mintzes & W. H. Leonard, (Eds.), *Handbook of College Science Teaching*. (pp. 359 – 367). Arlington, VA: National Science Teachers Association Press.

77) Stanton-Salazar, R. D. & **Tai, R. H.** (2001). School personnel as sources of social and institutional support: Prevalence and predictors. In R. D. Stanton-Salazar, *Manufacturing Hope and Despair: The School and Kin Support Networks of US-Mexican Youth*. (pp. 218 – 247). New York: Teachers College Press.

Edited University Press Book (Refereed):

78) Sadler, P. M., Sonnert, G., **Tai**, **R. H.,** & Klopfenstein, K. (Eds.) (2010), *AP: A Critical Examination of the Advanced Placement Program*. Cambridge, MA: Harvard Educational Press.

Non Peer-Reviewed Publications

Edited Non-University Press Book:

1) **Tai, R. H.** & Kenyatta, M. L., Editors. (1999). *Critical ethnicity: Countering the waves of identity politics*. Boulder, CO: Rowman & Littlefield.

Textbook:

2) Victor, E., Kellough, R. D., & **Tai, R. H.** (2007). *Science K-8: An integrated approach.* Upper Saddle River, NJ: Pearson Merrill Prentice Hall.

Book Chapters:

3) **Tai, R. H.** & Wilson, E. V. (2003). Beyond comprehension: Elementary education and generative technology. In A. D. Sheekey. *How to ensure that Ed/Tech is not oversold and underused*. (1 –10). Lanham, MD: Scarecrow Press.

4) Bell, R. L. & **Tai, R. H.** (2003). Transforming science instruction with technology. In A. D. Sheekey. *How to ensure that Ed/Tech is not oversold and underused*. (11 – 24). Lanham, MD: Scarecrow Press.

5) **Tai, R. H.** (1999). Investigating academic initiative: Contesting Asian and Latino educational stereotypes. In **R. H. Tai** & M. L. Kenyatta (Eds.), *Critical ethnicity: Countering the waves of identity politics*. (125-134). Boulder, CO: Rowman & Littlefield.

6) **Tai, R. H.** & Kenyatta, M. L. (1999). Introduction. In R. H. Tai & M. L. Kenyatta (Eds.), *Critical ethnicity: Countering the waves of identity politics*. (125-134). Boulder, CO: Rowman & Littlefield.

7) Kenyatta, M. L. & **Tai, R. H.** Editors. (1997). Ethnicity and education: A symposium. *Harvard Educational Review*. 67(2), vii-ix.

Book Reviews:

8) **Tai, R. H**. (1998). Review of Channel surfing: Race, talk, and the destruction of today's youth by H. Giroux. *Harvard Educational Review*. 68(1), 106 – 108.

9) **Tai, R. H.** (1997). Review of The death and rebirth of American radicalism by S. Aronowitz. *Harvard Educational Review*. 67(3), 608 – 611.

10) **Tai, R. H.** (1997). Review of Teaching mathematics: Toward a sound alternative by B. Davis. *Harvard Educational Review*. 67(2), 358 – 360.

11) **Tai, R. H.** (1997). Review of Writing permitted in designated areas only by L. Brodkey. *Harvard Educational Review*. 67(2), 353 – 358.

12) **Tai, R. H.** (1997). Review of The jobless future: Sci-tech and the dogma of work by S. Aronowitz & W. DiFazio." *Harvard Educational Review*. 67(1), 148 – 150.

13) **Tai, R. H.** (1996). Review of Composition as cultural practice by A. W. France. *Harvard Educational Review*. 66(1), 155 – 156.

Invited Reviews and Commentaries:

14) **Tai, R. H.** (2008). Posing tougher questions about the advanced placement program. *Liberal Education.* 94(3), 38 – 43.

15) **Tai, R. H.**, Liu, C. Q., Maltese, A. V., & Fan, X. (2006). Encouragement over exams: Evidence in support of the impact of promoting children's interest in science. National Science Education Leadership Association. Available online at: http://www.nsela.org/publications/publications6.html

16) **Tai, R. H.**, Sadler, P. M., & Loehr, J. F. (2006). Influencing college chemistry success through high school chemistry teaching. *The Science Education Review*. *5*, 123-127.

Video Productions

1) *Energy in Cycles*. Workshop 4. (2002). M. N. Schneps, (Executive Producer). *Science in Focus: Energy* Video Series. Cambridge, MA: Harvard-Smithsonian Center for Astrophysics.

2) *Minds of Our Own* Video Series. (1997). M. N. Schneps, (Executive Producer) & I. Sahiner, (Producer). Washington, D. C.: The Annenberg/CPB Math and Science Project.

3) *Energy: Where Should We Start?* (1996). Program 6. M. N. Schneps (Executive Producer) & I. Sahiner, (Producer). *Private Universe Teacher Workshop Videos Series*. Washington, D. C.: The Annenberg/CPB Math and Science Project.

Invited Presentations and Keynote Speeches

1) **Tai, R. H.,** Looking Toward the Future**:** Importance of Early Engagement of Youth in STEM. National 4-H STEM Symposium. Virtual. May 4, 2021.

2) **Tai, R. H.** The Importance of Engagement and Interest in STEM Persistence: Framework for Engaging Students in Learning Science. Developing Scientists through Outreach: Defining Quality for the Scientist. New York Academy of Sciences, New York, NY, February 18, 2016.

3) **Tai, R. H.** Reframing Education by Starting with the Learning. Architecture and Design Education Network Preconference. Chicago Architecture Foundation, Chicago, IL, November 4, 2015.

4) **Tai, R. H.** Finding FOCIS: A Framework for Examining Lessons and Learning Activities. Liebniz Institute for Science and Mathematics Education (IPN), Kiel University, Kiel, GER, May 27, 2015.

5) **Tai, R. H.** Report on Project FOCIS: Results of Analysis of Reliability and Validity Testing. Materials Research Science and Engineering Centers Annual Education and Outreach Directors Meeting, Massachusetts Institute of Technology, Cambridge, MA. December 4, 2014.

6) **Tai, R. H.** Finding FOCIS: A Framework for Examining Lessons and Learning Activities. Learning and Curriculum Department, College of Education and Human Development, Texas A & M University. College Station. November 11, 2014.

7) **Tai, R. H.** Finding FOCIS: A Framework for Examining Lessons and Learning Activities. Education and Outreach Teacher Workshop. Center for Research on Interface Structures and Phenomena. Yale University. New Haven, CT. November 8, 2014.

8) **Tai, R. H.** Finding FOCIS: A Framework for Examining Lessons and Learning Activities. Materials Research Laboratory Science Teacher Workshop. University of California, Santa Barbara. March 14, 2014.

9) **Tai, R. H.** Considering Youth's Interest & Engagement through a Framework for Examining Youths' Learning Activity Preferences. National Science Foundation, Advancing Informal STEM Learning Brownbag Series. Arlington, VA, May 28, 2013.

10) **Tai, R. H.** Considering Youth's Interest & Engagement through a Framework for Examining Youths' Learning Activity Preferences. National Institutes of Health Science Education Partnership Awards (SEPA) Conference. Omaha, NE, May 13, 2013.

11) **Tai, R. H.** Finding FOCIS: A Framework for Examining Lessons and Learning Activities. 2013 15th Annual Chicago Symposium Series on Excellence in Teaching Mathematics and Science: Research and Practice (Symposium 2). Chicago, IL, March 23, 2013.

12) **Tai, R. H.** & Dolenc, N. R. Planning for a Long-Range Longitudinal Research Study of Out-of-School Time Science Programs. National Youth Organizations Executive Roundtable, National 4H Convention Center, Chevy Chase, MD, February 7, 2013.

13) **Tai, R. H.** An Examination and Formulation of a New Conceptual Framework for Measuring Students' Interest and Engagement in Science. MRSEC Education Directors Network Meeting, Chicago, IL, September 30, 2012

14) **Tai, R. H.** & Dolenc, N. R. Longitudinal Research on Out-of-School Time Science Programs. National 4H Science Management Team, National 4H Convention Center, Chevy Chase, MD, September 18, 2012.

15) **Tai, R. H.** & Dabney, K. P. Scientific Workforce Analysis and Modeling Meeting, Ohio State University, Columbus, OH, May 14, 2012.

16) **Tai, R. H.** Board of Directors Meeting, S. D. Bechtel Jr. Foundation, San Francisco, CA, November 30, 2011.

17) Subotnik, R. F. & **Tai, R. H.** National Science Resource Center International Coalition Meeting, Smithsonian National Museum of Natural History, Washington DC, November 17, 2011

18) **Tai, R. H.** & Subotnik, R. F. Workshop on Successful STEM Education in K-12 Schools. National Research Council. Board on Science Education & Board on Testing and Assessment, Washington, D.C. May 10-12, 2011.

19) **Tai, R. H.** Strengthening High School Science for College Performance: Interpreting Research for Science Classrooms. Chicago Transformation Teachers Institutes, NSF Math Science Partnerships, Keynote Address and Workshop Presentation, Consortium of Chicago Area universities and the Chicago Public Schools, Chicago, IL February 25, 2011.

20) **Tai, R. H.** Importance of Developing an Early Interest in Science. The Activated Science Learner Symposium, Gordon and Betty Moore Foundation, Washington, D.C. September 14, 2010.

21) **Tai, R. H.** Pathways into Science: A Longitudinal Perspective. National Conference on Science and Technology in Out-of-School Time. Los Angeles, CA. September 23, 2010.

22) Duschl, R. A., Osborne, J. F., Rennie, L., **Tai, R. H.**, Rogat, T., & Earle, J. Assessing Youth's Interest in Science: Understanding Motivation and Identity. National Association for Research in Science Teaching. Philadelphia, PA. March 24, 2010.

23) Larry Gallagher & **Tai, R. H.** Overview of the *Academies for Young Scientists* Program and Comparison Sample Data. Out-of-school-Time STEM: Building Experience, Building Bridges. Learning and Youth Research and Evaluation Center, Exploratorium of San Francisco. Conference sponsored by the National Science Foundation. Washington, DC. October 19-200, 2009.

24) Tai, R. H. *Strengthening High School Science Programs in Support of our Students' Future*. Puget Sound Region Science Education Event. Hosted by South Sound and North Sound LASER Alliances, the Puget Sound Educational Service District and the Center for Inquiry Science. Institute for Systems Biology. Seattle, WA. May 26, 2009.

25) Tai, R. H. Bridging K-12 and Post-Secondary STEM Education. *Assessing Youths' Interest in STEM: What Do We Need to Know?* National Science Foundation Workshop. Arlington, VA. October 31, 2008.

26) Tai, R. H., Stimmer, M., Miller, D., & Ottinger, R. (moderator) Success for Students in STEM: Creating In-School Interest & Engagement Through After-School. *Pathways to Opportunity*. Grantmakers for Education. 12th Annual Conference. Baltimore, MD. October 21, 2008.

27) Tai, R. H. Science and Chemistry Education Research: Interest and Performance. *The National Academies' Chemical Sciences Roundtable*. Washington DC. August 4 – 5, 2008.

28) Tai, R. H. Planning Ahead and Looking Back: Connections Between Early Science Interest and Science-related Careers. *From Legislation to Implementation: Achieving Excellence in STEM Education*. Texas Regional Collaboratives for Excellence in Science and Mathematics Teaching. Fourteenth Annual Meeting. Austin, TX. July 9 – 11, 2008.

29) Tai, R. H. Connections in STEM: Research on Linkages with Early Interest in Science. *The 2008 Science Education Speakers Series.* Saint Louis Science Center, ST. Louis, MO, March 20, 2008.

30) Tai, R. H. Some Thoughts on Planning and Implementation of a Research Study**.** *Innovative Technology Experiences for Students and Teachers Principal Investigators Meeting*, National Science Foundation, Arlington, VA, February 5, 2008

31) Tai, R. H. Preparing for a Future in Science. *Sixth Annual NC OPT-ED Alliance Day*, Greensboro, NC, September 28, 2007.

32) **Tai, R. H.** Early Interest as a Key Predictor of Later Participation in STEM Careers. *2007 Bay Area Institute*. The Center for Informal Learning and Schools, Exploratorium. San Francisco, CA, August 14 – 15, 2007.

33) **Tai, R. H.**, Liu, C. Q., & Fan, X. Math/Science AP and Longitudinal Outcomes: An Analysis Using NELS:88. *Conference on Advanced High School Coursework in Science and Mathematics*. Harvard-Smithsonian Center for Astrophysics. Cambridge, MA, May 11 – 12, 2007.

34) Liu, C. Q., **Tai, R. H.**, & Fan, X. Immigration, Race, and Higher Education Outcome. UC Linguistic Miority Research Institute 20th Annual Conference. Arizona State University, Tempe, AZ. May 3-5, 2007.

35) **Tai, R. H.** Impact of Interest in Science. *National Science Foundation – Academies for Young Scientists Kick-off Meeting*, Exploratorium, San Francisco, CA, January 12, 2007.

36) **Tai, R. H.** & Sadler, P. M. Looking for Connections: High School Physics Instructional Practice and Introductory College Physics Performance. *American Astronomical Society – American Association of Physics Teachers Joint Meeting*. Seattle, WA. January 7, 2007.

37) **Tai, R. H.** Planning Early for Careers in Science. *Fifth Annual OPT-ED Alliance Day*, Greensboro, NC, September 22, 2006.

38) **Tai, R. H.** Some Thoughts on Science Education Research. *Expert Group Meeting on the Potential National Center for Educational Statistics Secondary School Longitudinal Survey*. Education Statistics Services Institute, Washington, DC. October 11-12, 2005.

39) Sadler, P. M. & **Tai, R. H.** *AP: Advanced Placement or Academic Padding?* Seminar. National Science Foundation, Arlington, VA. October 28, 2005.

40) **Tai, R. H.** Educational Research versus Action Research. *International Conference on Action Research and Professional Development in Science. Invited presentations*. National Changhua University of Education, Changhua, Taiwan, ROC, June 3-5, 2005.

41) **Tai, R. H.** A Conceptual Framework for Action Researchers. *International Conference on Action Research and Professional Development in Science. Invited presentations*. National Changhua University of Education, Changhua, Taiwan, ROC, June 3-5 2005.

42) Sadler, P. M. & **Tai, R. H.** *Students' Pathways: High School Labs and College Achievement*. Committee on the Future of High School Science Laboratories: Role and Vision, Board on Science Education, National Research Council, Washington, DC. July 12 – 13, 2004.

43) Tai, R. H. *Surprising Minds: Some Ideas about how Children Learn Science*. Rediscover Virginia Teachers Workshop, The Wintergreen Nature Foundation, Wintergreen, VA, August 4-6, 2002.

44) Carter, James & **Tai, R. H.** Setting a Context, Private Universe Teachers Workshops Series. National teleconference. *Science Media Group of the Harvard – Smithsonian Center for Astrophysics and the Massachusetts Corporation for Educational Television*. Cambridge, MA. March 11, 1997.

Peer-Reviewed Conference Presentations

1) Price, A., Mroczkowski, A., Skeeles-Worley, A. D., & **Tai, R. H.** (2019, September 19 – 24, 2019) Developing YOUth!: Year four results of a longitudinal study of STEM youth development program Alumni, Toronto, ON, CAN.

2) **Tai, R. H.** (2019, March 15 - 18) *Measuring Program Impact: Examples of Some Research Techniques newly applied to Afterschool Programs*, RISE UP, National Afterschool Association 2019 Convention, New York, NY.

3) Dolenc, N. R. & **Tai, R. H.** (2014, October). *Self-Directed versus Apprenticeship: Comparing Mentoring on High School Robotics Teams*. The Mentoring Institute at the University of New Mexico Annual Mentoring Conference. Albuquerque, NM.

4) **Tai, R. H.** (2014, February). Out-of-School Time STEM Learning: Considering the Diversity of Factors Influencing Youth's Interest and Engagement in Science. Chicago, IL.

5) Kong, X., & **Tai, R. H.** (2012, March). The influence of science summer camps on STEM career interest among sixth-eighth graders. Paper presented at the Annual Meeting of National Association for Research in Science Teaching, Indianapolis, IN.

6) Almarode, J. T., Dabney, K. P., & **Tai, R. H.** *Out-of-School Time Science Activities and Their Association with Career Interest in STEM.* Presented at the annual National Association for Research in Science Teaching. Orlando, FL. April, 2011.

7) Almarode, J. T., Dabney, K. P., & **Tai, R. H.** *The Impact of Taking Algebra I in the Eighth Grade on Success in College Calculus.* Presented at the annual American Educational Research Association. New Orleans, Louisiana. April, 2011.

8) Hazari, Z., Potvin, G., **Tai, R. H.**, & Almarode, J. For the Love of Science: Learning Orientation and Physical Science Success. Talk scheduled for the American Physical Society (APS) April Meeting, Washington, DC. February 13 – 17, 2010.

9) Almarode, J., Hazari, Z., & **Tai, R. H.,** *Gender Differences in the Time Line of Career Events for Physical Scientists*. NARST Annual International Conference, Philadelphia, PA, March 21 - 24, 2010.

10) Potvin, G., Bauknight, E.,Cellucci, K., & **Tai**, **R. H.** Exploring the experiences of female graduate students in the physical sciences: A comparative study. Paper accepted to NARST Annual International Conference, March 2010.

11) Potvin, G. & **Tai**, **R. H.** Understanding doctoral completion time and its impact on career physicists. Talk to be given at APS/AAPT 2010 Joint Winter Meeting, February 2010.

12) Potvin, G.,Hazari, Z., **Tai**, **R. H.,** & Sadler, P. M. Unraveling bias from student evaluations of high school science teachers. AAPT 2009 Summer Meeting, July 28, 2009.

13) Potvin, G., Sadler, P. M., & **Tai**, **R. H.** The difference between engineering and science students: Comparing backgrounds and high school experiences. Paper presented at 2009 ASEE Annual Conference & Exposition, June 17, 2009.

14) Potvin, G. & **Tai**, **R. H.** Slow and steady doesn't win the race: How time-to-doctoral degree impacts the career of physical scientists, Denver, CO. Talk given at APS April Meeting 2009, May 2, 2009.

15) Hazari, Z., Potvin, G., Almarode, J., & **Tai, R. H.** (2009). Relating motivational orientation to indicators of success for physical scientists. Talk given at NARST Annual International Conference, Garden Grove, CA. April 17 – 21, 2009.

16) **Tai, R. H.**, Potvin, G., Loehr, J. F., & Lloyd, S. S. The Doctoral Experiences of Students and Their Advisors in Chemistry and Physics: A Qualitative Examination. National Association for Research in Science. Baltimore, MD, March 30 – April 3, 2008.

17) Potvin, G. D., Hazari, Z., **Tai, R. H.**, & Sadler, P. M. Adopting gender stereotypes: Unraveling bias from student evaluations of their teachers. National Association for Research in Science. Baltimore, MD, March 30 – April 3, 2008.

18) **Tai, R. H.**, Liu, C. Q., & Fan, X. Still I Rise: Overcoming Labels and Barriers. American Educational Research Association. New York, NY, March 24- 28, 2008.

19) Maltese, A. V. & **Tai, R. H.** Eyeballs in the Fridge: Sources of Early Interest in Science. American Educational Research Association. New York, NY, March 24- 28, 2008.

20) Wyss, V. L. & **Tai, R. H.** Gender Differences in Response to Family and Work Conflicts in Physics and Chemistry for Doctoral Students and Beyond. American Educational Research Association. New York, NY, March 24-28, 2008.

21) Wyss, V. L., Liu, C. Q., & **Tai, R. H.** The Influence of Service Learning in High School Science on Undergraduate Majors. National Association for Research in Science. Baltimore, MD, March 30 – April 3, 2008.

22) **Tai, R. H**. & Sadler, P. M. Assessment of the Effectiveness of Instructional Technology Use in High School: A Cross-Discipline Comparison. American Association of Physics Teachers. Baltimore, MD, January 21 - 23, 2008.

23) Hazari, Z., Sadler, P. M., & **Tai, R. H.** Gender differences in college physics and pre-college physics experiences. American Association of Physics Teachers. Baltimore, MD, January 21 - 23, 2008.

24) Potvin, G. D., Hazari, Z., **Tai, R. H.**, & Sadler, P. M. Adopting gender stereotypes: Unraveling bias from student evaluations of their teachers. National Association for Research in Science Teaching Annual Conference. Baltimore, MD, March 30 – April 3, 2008.

25) Maltese, A. V. & **Tai, R. H.** The Role of High School Laboratories in Student Performance in Introductory College Science. National Association for Research in Science Teaching Annual Conference. New Orleans, LA, April 15 – 18, 2007.

26) Loehr, J. F., **Tai, R. H.**, & Sadler, P. M. High School and College Biology: A Multilevel Model of the Effects of High School Courses on Introductory Course Performance. American Educational Research Association Annual Conference. Chicago, IL, April 9 – 13, 2007.

27) Wyss, V. L. & **Tai, R. H.** High School Science Class Size, Methodology, and College Student Achievement. Association of Science Teacher Educators. Clearwater, FL, January 4 – 6, 2007.

28) Cozart, S., Booker, K., **Tai, R. H.** & Gregory, A. Leaving No Child Behind in the Wake of Katrina: Conceptualizing Quality Education for All, Symposium on Race and Society, University of Virginia, Charlottesville, VA, November 3, 2006

29) **Tai, R. H.**, Sadler, P. M., Fan, X., Maltese, A. V., & Ward, R. B. Instructional Technology Use in Science Education: Evidence of a Findings Gap between Large-scale and Small-scale Studies. National Association of Research in Science Teaching, San Francisco, CA, April 3 – 6, 2006.

30) **Tai, R. H.**, Liu, C. Q., & Fan, X. Factors Influencing Retention of Math/Science Teachers in Secondary Schools: A Study Based on a National Longitudinal Sample. American Educational Research Association. American Educational Research Association, San Francisco, CA, April 7 – 11, 2006.

31) **Tai, R. H.**, Liu, C. Q., & Fan, X. A Longitudinal Study of Factors Influencing High-School Students' Pursuit of College Math/Science Majors. American Educational Research Association, San Francisco, CA, April 7 – 11, 2006.

32) Loehr, J. F. & **Tai, R. H.** The impact of high school biology on introductory college biology performance: A report from Project FICSS. Association for Science Teacher Education, Colorado Springs, CO, January 19 – 23, 2005.

33) **Tai, R. H.**, Loehr, J. F., & Brigham, F. J. What are you looking at? Using eye-tracking to understand student problem-solving behavior in science. Association for Science Teacher Education, Colorado Springs, CO, January 19 – 23, 2005.

34) Sadler, P. M. & **Tai, R. H.** Factors that Influence College Science Success. National Science Teachers Association. Dallas, TX, April 2 – 3, 2005.

35) **Tai, R. H.** & Sadler, P. M. Long Range Impact of Autonomous Student Learning in Labs and Projects on College Science Performance, National Association of Research in Science Teaching. Dallas, TX, April 4 – 7, 2005.

36) Loehr, J. F. & **Tai, R. H.** The Effects of Select High School Biology Content on Students' Introductory College Biology Performance: A Project FICSS Report, National Association of Research in Science Teaching. Dallas, TX, April 4 -7, 2005.

37) **Tai, R. H.**, Loehr, J. F., & Brigham, F. J. Exploring Eye-gaze Tracking as a Means of Assessing Scientific Content Knowledge Expertise. American Educational Research Association, Montreal, CAN. April 11 – 15, 2005.

38) **Tai, R. H.** & Sadler, P. M. Student Autonomy in HS Science Inquiry-based Experiences and Performance in Introductory College Science. American Educational Research Association, Montreal, CAN. April 11 – 15, 2005.

39) **Tai, R. H.** & Loehr, J. F. Bridging Disciplines: A Look at a Graduate Education and Research Traineeship Program in the Physical Sciences. American Evaluation Association. Atlanta, GA, November 3 – 6, 2004.

40) **Tai, R. H.**, Sadler, P. M., & Loehr, J. F. Connecting High School Instruction and College Performance in Chemistry: A Project FICSS Report. National Association of Research in Science Teaching. Vancouver, CAN, April 1 – 3, 2004.

41) **Tai, R. H.**, Loehr, J. F., & Brigham, F. J. Windows to the Mind: Using Eye-gaze Tracking to Gauge Expertise. National Association of Research in Science Teaching. Vancouver, CAN, April 1–3, 2004.

42) **Tai, R. H.** A Different View: A Novel Application of Logistic Regression to Analyzing Gender Differences. American Educational Research Association International Conference, Chicago, IL, April 21 – 25, 2003.

43) Loehr, J. F. & **Tai, R. H.** Changing Pace: Factors Influencing Teaching Practice Diversity. National Association of Research in Science Teaching. Philadelphia. March 23 – 26, 2003.

44) **Tai, R. H.** & Loehr, J. F. Directing Energies: A Look at the Transition from Student to Scientist. Association of Educators of Teachers of Science. St Louis. January 30 – February 1, 2003.

45) **Tai, R. H.** & Loehr, J. F.; *Promoting Variety: Factors that Influence Pedagogical Diversity in 10th Grade Science Classrooms*; a roundtable session given at the American Educational Research Association, Chicago, IL. April 21 – 25, 2003.

46) **Tai, R. H.** Different Educations: Toward unveiling the pervasiveness of race and gender bias in the classroom. National Association for Research in Science Teaching Conference. New Orleans. April 7-10, 2002.

47) **Tai, R. H.** & Loehr, J. F.; *Factors Influencing Success in College Chemistry*, a paper presentation given at the Virginia Association of Science Teachers Annual Conference, Norfolk, VA. 2002.

48) **Tai, R. H.** Different Educations: Unveiling the Pervasiveness of Gender Bias in Grade 10 Science Classrooms. American Educational Research Association. April. Seattle. April 10 – 14, 2001.

49) **Tai, R. H.** Gender and Pedagogy: Differences in Science Teaching Methods Experienced by Grade 10 Girls and Boys. National Association for Research in Science Teaching. New Orleans. April 28-May 1, 2000.

50) **Tai, R. H.** Death of Imagination: Teaching Science as Knowledge. Perspectives on Nature: The Conceptual and the Cultural. Center for Cultural Studies. Graduate Center of the City University of New York. New York. December 3, 1999.

51) Macedo, D. P., Leistyna, P., **Tai, R. H.**, & Spina, S. (chair), Exposing Institutionalized Censorship: Counter-Discourse and Critical Pedagogy from Pre-K Through the Academy. Popular Education and Social Change: The North American Agenda, Fifth Annual International Conference. New York. June 3 – 5, 1999.

52) Aronowitz, S., **Tai, R. H.**, & Vozick, M. Dialogical Method in Teaching Science: A Preliminary Discussion. Popular Education and Social Change: The North American Agenda, Fifth Annual International Conference. New York. June 3 – 5, 1999.

53) Darder, A., Zuss, M., & **Tai, R. H.** (chair), Schools of Education and the Formation of Critical Educators. Popular Education and Social Change: The North American Agenda, Fifth Annual International Conference. New York. June 3 – 5, 1999.

54) **Tai, R. H.** & Sadler, P. M. Gender Differences in Introductory Undergraduate Physics Performance: University Physics versus College Physics. National Association for Research in Science Teaching. Boston. March 28 – 31, 1999.

55) **Tai, R. H.** Countering Racial Stereotyping: Immigrant Status as a Factor in Predicting Academic Persistence. American Educational Researchers Association. Montréal. April 19 – 23, 1999.

56) Sadler, P. M. & **Tai, R. H.** Predictors of Success in College Physics. American Association of Physics Teachers, College Park, MD. August 5 – 10, 1996.

57) **Tai, R. H.** Physics as a Tool for Teaching Cognitive Skills. National Science Teachers Association. Kansas City, MO. April 1 – 4, 1993.

58) **Tai, R. H.** & Carpenter, J. Chaos in the Classroom: A New Kind of Science. Texoma Council of Teachers of Mathematics. Wichita Falls, TX. February 27, 1993.

Grants Funded (Principal Investigator)

1) Project EXPLORE2: A Project Exploring Impacts of Informal STEM Experiences through Accelerated Longitudinal Research (NSF DRL 1811265). July 2018 – June 2023. National Science Foundation, Washington, DC. PI: **Robert H. Tai**. (Total funding: $1,724,629; UVA Portion $1,200,000)

2) Science Everywhere! Project. December 2017 - December 2018. Overdeck Family Foundation, New York, NY. PI: **Robert H. Tai**. (Total Funding: $85,000)

3) Project BUILD: Building Using an Interactive Learning Design. April 1, 2017 - March 31, 2020. National Science Foundation. Subcontract in partnership with National Center for Inquiry Learning, Boulder, CO. Subcontract PI: **Robert H. Tai**; PI: Paul Dusenbery, Ph.D. (Total funding, $1,199, 418; UVA portion, $179,000)

4) Science Everywhere! Innovation Challenge. December 2016 - December 2017. Overdeck Family Foundation, New York, NY. PI: **Robert H. Tai**. (Total Funding: $65,500)

5) Developing Youth Project (originally named: From Community to Career: A Longitudinal Study of an Out-of-school Science Program and Youth from Populations Underrepresented in STEM"). September 1, 2015 - August 31, 2019. National Science Foundation. Subcontract in partnership with Museum of Science and Industry, Chicago, IL.

Subcontract PI: **Robert H. Tai**; PI: Aaron Price, Ph.D. (Total funding, $960,277; UVA Portion, $169,000).

6) Project EXPLORE: Exploring Longitudinal Research on Out-of-school Time Experiences in STEM (NSF DRL 1551275) November 2014 - November 2015. National Science Foundation. PI: **Robert H. Tai**. (Total Funding: $114,000)

7) *Framework for the Observation and Categorization of Instructional Strategies*. (NSF DRL 1335784) September 2013 - September 2017. National Science Foundation. PI: **Robert H. Tai**. (Total funding: $799,920)

8) *Spark to Flame: An Accelerated Longitudinal Study of Science Interest and Engagement*. July 2011 - June 2015. S. D. Bechtel, Jr. Foundation. Project in Collaboration with Indiana University, Bloomington, IN. PI: **Robert H. Tai**; IU Subcontract PI: Adam Maltese. (Total Funding: $600,000; UVA portion: $400,000)

9) *Transitions in the Education of Minorities Underrepresented in Research: TrEMUR*. (NIH – NIGMS 1 R01 GM094535-01) September 2010 – August 2016. National Institutes of Health – National Institute of General Medical Sciences. Project in Collaboration with Washington University of Saint Louis School of Medicine, Saint Louis, MO. PI: **Robert H. Tai**; Joint PI: Heather Wathington (UVA). WUSTL subcontract co-PIs: Dorothy Andriole, MD and Donna Jeffe, PhD. (Total Funding: $1,275,000; UVA portion: $900,000).

10) *Collaborative Research on Out-of-school Time Science Programs: CROSTime*. (NSF DRL 1010935, ISE). October 2010 – September 2012. National Science Foundation, Division of Research on Learning in Formal and Informal Settings. Project in collaboration with the Ethnography and Evaluation Research Center of the University of Colorado, Boulder, CO. PI: **Robert H. Tai**. CU Joint PI: Sandra Laursen, PhD. (Total Funding: $440,000; UVA portion: $149,000).

11) *Exploring the Outcomes and Methods of Youth Out-of-School-Time Science Programs*. (Robert N. Noyce Foundation) Project in collaboration with the Ethnography and Evaluation Research Center of the University of Colorado, Boulder. February 2010 – January 2011. PI: **Robert H. Tai**. CU Joint PI: Heather Thiry, PhD. (Total Funding: $224,815; UVA portion: $107,151).

12) *Study of the Impact of Specialized Public High Schools of Science, Mathematics, and Technology*. (NSF DRL 0815421, REESE) Subcontract in partnership with the American Psychological Association. September 15, 2008 – August 31, 2011. National Science Foundation, Division of Research on Learning in Formal and Informal Settings. Subcontract PI: **Robert H. Tai**; Co-PI: Xitao Fan, PhD; PI: Rena Subotnik, PhD (Total Funding: $1,050,000; UVA portion: $430,000).

13) *Youth-based Program Impact on Education and Career Choices: An Exploration of Issues in Planning and Implementing Longitudinal Research.* (NSF DRL 0748041, DRK12). November 1, 2007 – October 31, 2010. National Science Foundation, Division of Research on Learning in Formal and Informal Settings. PI: **Robert H. Tai**; Co-PI: Xitao Fan, PhD; (Total Funding: $200,000).

14) *Project Crossover: A Study of the Transition from Student to Scientist*. (NSF REC 0440002, ROLE). January 15, 2005 – December 31, 2008. PI: **Robert H. Tai**; Co-PI: Xitao Fan, PhD; National Science Foundation, Divisions of Education & Human Resources and Graduate Education – Research on Learning and Education Program. (Total Funding: $1,003,717).

15) *Project FICSS: Factors Influencing College Science Success.* (NSF REC 0115649, IERI). October 1, 2001 to September 30, 2005. Interagency Educational Research Initiative (IERI) administered through the National Science Foundation. Subcontract in partnership with Harvard University. Subcontract PI: **Robert H. Tai**; PI: Philip M. Sadler, EdD (Total Funding: $2.9 million; UVA portion: $393,479).

16) *Growth Initiatives for Teachers* (GIFT) Grant. Fellow. GTE Foundation. 1993. PI: **Robert H. Tai** with James Carpenter. ($12,000)

Consultancies

1) South Carolina Education Oversight Committee, Cyclical Review Process of South Carolina Science Academic Standards (April 2019 – September 2019).

2) Westat, National Institutes of Health Science Education Partnership Award Program Process Evaluation Project (2015 - 2017)

3) The Research Foundation, The State University of New York, Afterschool STEM Mentoring Program (May 2016 – August 2016).

4) 4-H National Council, Tier 3 Study on the Feasibility of a Longitudinal Research Project on 4-H Youth Participants (2011 - 2014)

5) *Science in the Classroom* Project, Science Magazine, American Association for the Advancement of Science, Washington DC (2011 - Present)

6) Department of Engineering and Science Education, Clemson University, Clemson, SC (2010 – 2012)

7) Battelle Center for Mathematics and Science Education Policy, John Glenn School of Public Affairs, The Ohio State University, Columbus, OH (2010 – 2012)

8) Exploratorium, Project LYREC, CILS Program, San Francisco, CA (2006 – 2010)

9) Science Education Department, Harvard-Smithsonian Center for Astrophysics, Cambridge, MA (2006 – 2012)

10) Expert Group Meeting on Potential NCES Secondary School Longitudinal Study, Education Statistics Services Institute, Washington, DC (2005)

11) Project LogGEd On, Curry School of Education, University of Virginia, Charlottesville, VA (2003 – 2006)

12) Second Language Acquisition Differences grant proposal, Educational Development Corporation (EDC), Cambridge, MA (2003)

13) Chicago Academic Standards Examination (CASE), Office of Accountability, Department of Student Assessment, Chicago Public Schools, IL (2001 – 2002)

Service

National:

Co-Editor, *Science Educator* journal,
National Science Education Leadership Association 2017 - Present
National Science Foundation Proposal Review Panels 2003, 2005, 2006 - 2019
National Science Foundation, Grants, Ad Hoc Reviewer 2005, 2018
OEID OSSI Longitudinal Study Technical Review Advisory Panel, NASA 2013-2014
Evaluation Advisory Panel, NASA Summer of Innovation program 2012
Advisor to Associate Director of Science, Office of Science and Technology Policy, Executive Office of the President of the United States 2011
Editorial Board, *Journal of Research in Science Teaching* 2011-2014
Member, Committee of Visitors, National Science Foundation Innovative Technology Experiences for Students and Teachers (ITEST) Program 2011
National Institutes of Health, Study Groups for National Institute of General Medical Sciences (Interventions RFA and SBIR RFA) 2010, 2011, 2013
Advisory Board Member, Assessment Tools in Informal Science (ATIS), Program in Education, Afterschool, and Resiliency (PEAR), Harvard University and McLean Hospital 2010-Present
Distinguished Editorial Review Board, National Institutes of Health 2009
Scientific American Decade 2 Education Forum sponsored by AMGEN 2009
High School Longitudinal Study Science Advisory Panel, National Center for Educational Statistics 2007
Ad Hoc Peer-review for the following journals:
Science (AAAS), Science Education, Journal of Research in Science Teaching, International Journal of Science Education, Review of Educational Research, Educational Evaluation and Policy Analysis, Journal of Psychology of Science

and Technology, Journal of Chemical Education
Roeper Review (Gifted Education Journal) 1999 – Present
American Educational Research Association, Annual Conference Presentation Reviewer 2001 – 2003, 2005, 2009
National Association of Research in Science Teaching, Annual Conference Presentation Reviewer 2001 – 2006
Coordinating Committee for the Popular Education and Social Change International Conference, New York, NY 1998 – 1999

Commonwealth of Virginia:
Maggie L. Walker Governor's School for Government and International Studies Science and Mathematics Faculty Workshop 2009
Advisory Panel, Virginia Advanced Study Strategies 2008 – 2010
Member, Board of Directors, *Science Overdrive* (Non-profit Organization for Science Teacher Professional Development) 2009 – 2011

University of Virginia:
Institutional Review Board for the Social and Behavioral Science 2008 – Present
Virginia – Research Innovations in Science Education (VRISE) 2009
Bias Review Subcommittee, Office of Vice President for Diversity and Equity, University of Virginia 2006 – 2009
Search Committee for Assistant Dean of Asian Pacific American Students 2003
Faculty Facilitator for the *Different Voices, Common Threads* Program 2003
Internal Program Reviewer for the SELIM Project, Science and Engineering of Laser Interactions with Matter, Departments of Chemistry and Physics and School of Engineering 2002

Curry School of Education:
Coordinator, Elementary Teacher Education Program 2013-2015
Chair, Faculty Search Committee for Open Rank STEM Education /Teacher Education 2012
Convener, Mathematics and Science Education Program Unit 2008 – 2009
Faculty Search Committee for Open Rank STEM Education 2008 – 2009
Initial Review Committee for Tenure Review (T. Stanton-Chapman) 2009
Third-Year Review Committee (Anne Gregory, Derick Williams) 2008, 2010
Science Education Program Committee 2001 – Present
Elementary Teacher Education Program Committee 2001 – 2016
Faculty Diversity Committee 2002 – 2009
Instructor the Curry Foundation "Kids College" Summer Enrichment Program 2004
Curry School Elementary Education Student Teaching Placement Study Committee 2003
Secondary Teacher Education Program Committee 2001 – 2003
Search Committee for Curry Foundation Director of Annual Fund 2003

Curry-Venable Technology Collaboration, Consultant 2002 – 2003

Local Community:

Technology Advisory Committee, Albemarle County Public Schools, VA 2002 – 2003
Guest Instructor at the Virginia Mathematics and Science Academy, Richmond, VA 2003
Keynote Speaker at the *Re-Discover Virginia* Teacher Workshops of the Wintergreen Natural Foundation, Wintergreen, VA 2002
Science Fair Judge at Charlottesville High School, Charlottesville, VA 2002
Conference for Asian Pacific American Youth, Asian Pacific American Civil Rights Task Force, Boston, MA 1994
Eureka! Science Theater Director and Scientist-in-Residence, Wichita Falls Museum and Arts Center, Wichita Falls, TX 1993

Other:

Environmental Action Group of the Paulo Freire Institute, Center for Cultural Studies, Graduate School & University Center, CUNY 1999 – 2000
Educational Technology Faculty Search Committee, CSI/CUNY 1998 – 1999
Curriculum Studies Faculty Search Committee, CSI/CUNY 1999 – 2000
Doctoral Admissions Committee, Learning and Teaching Department, Harvard Graduate School of Education 1998
Advanced Doctoral Student Panel for Admissions and Recruitment Open House 1997
Editorial Board Member, *Harvard Educational Review* 1995 – 1997
Book Notes Co-Editor, *Harvard Educational Review* 1996 – 1997
Ethnicity & Education Symposium Co-Chair, *Harvard Educational Review* 1997
Learning & Teaching Transition Committee, Harvard Graduate School of Education 1994 – 1995

Honors and Awards

1) 2020 Alumni Association Distinguished Professor, University of Virginia

2) 2018 Most Influential in Research and Evaluation, *National Afterschool Association*.

3) 2008 Education Research Leadership Award – *Council of Scientific Society Presidents*, Washington DC.

4) *Excellence in Diversity* Fellow 2003 – 2004, University of Virginia.

5) *Project ABCD* Fellow, (Alternative Blueprint for Curriculum Development) Texas ASCD, Baylor University, Waco, TX. 1993.

6) Award for Outstanding Achievement and Promise, Department of Curriculum and Instruction, College of Education, University of Illinois. 1990.

7) Instructor and Course Evaluation Survey: Excellent Teaching Assistant, Physics 101, University of Illinois, Urbana-Champaign. 1986.

Teaching Certifications

Illinois State Teacher Certificate, Teacher (physical science), Grades 6-12, #1362335, February 7, 1990 - July 1, 2001.

Texas Teacher Certificate, Provisional Secondary Physics, Grades 6-12, #264831251, issued October 17, 1992.

Professional Development Activities

Leadership in Academic Matters, Spring Cohort of 2009, University of Virginia, January – May, 2009

Schools and Staffing Survey Summer Seminar, National Center for Educational Statistics, Washington, DC, June 18-21, 2001.

Woodrow Wilson National Fellowship Foundation Summer Physics Workshop, Texas A & M University, College Station, TX, 1992.

PRISMS Workshop on High School Physics instructional techniques, Seneca, IL, 1991.

Elected to the Following Honor Societies

Phi Delta Kappa	University of Illinois	1990	Education Honor Society
Kappa Delta Pi	University of Illinois	1989	Education Honor Society
Phi Beta Kappa	University of Florida	1986	Academic Honor Society
Phi Kappa Phi	University of Florida	1984	Academic Honor Society

Memberships in Professional Organizations

American Association of Physics Teachers (AAPT)
American Chemical Society (ACS)
American Educational Research Association (AERA)
National Association of Research in Science Teaching (NARST)
National Science Education Leadership Association (NSELA)
National Science Teachers Association (NSTA)