Candace Thille

Employment

- Stanford Graduate School of Education: Associate Professor (Teaching). 2023-present
- Amazon: Director, Learning Science and Engineering 2018-2023
- Stanford Graduate School of Education: Associate Professor (Teaching) on leave of absence. 2018-2019
- Stanford Graduate School of Education: Assistant Professor 2013-2017
- Stanford University: Director, Open Learning Initiative 2013-2017
- Carnegie Mellon University: Director, Open Learning Initiative 2002-2013
- Interaction Associates, LLC: Managing Partner, Executive Vice President, West Coast Regional Managing Director, CFO, CIO, Consultant 1984-2002

Education

- **University of Pennsylvania**, Ed.D., Higher Education 2013
- **Carnegie Mellon University**, M.S., Information Technology 2005
- **University of California, Berkeley**, B.A., Sociology 1980

Other Affiliations

- Trustee, Educational Testing Service (ETS) Board of Trustees 2019-Present
- Founding Member, Advisory Council of California Education Learning Lab 2018-Present
- Member, Association for Computing Machinery Learning at Scale Conference (ACM L@S) Steering Committee 2017-Present
- Co-Editor, MIT Press Learning at Scale Book Series 2017-2018
- Affiliated Faculty, Stanford Neurosciences Interdepartmental Program 2015-2019
- Member, American Association of Colleges and Universities (AAC&U) Board of Directors 2014-2018
- Member, Advisory Council of NSF Education and Human Resources 2014-2018
- Member, Advisory Board of the William E. Kirwan Center for Academic Innovation University System of Maryland 2014-2018
- Member, Technical Advisory Council of the American Association of Universities STEM initiative 2012-2018
- Fellow, International Society for Design and Development in Education 2010-2018
- Member, Stanford Academic Senate 2015-2017
- Chair, Association for Computing Machinery Learning at Scale Conference (ACM L@S2017) Program Committee 2016-2017
- Member, Assessment 2020 Task Force of the American Board of Internal Medicine 2013-2016
- Member, Association for Computing Machinery Learning at Scale Conference (ACM L@S) Program Committee 2015-2021

- Member, Leaning with MOOCs (LWMOOC2015) Program Committee 2014-2015
- Member, U.S. Department of Education working group, *2015 National Education Technology Plan* 2014-2015
- Chair, Leaning with MOOCs (LWMOOC2014) Program Committee 2013-2014
- Co-Editor, Association of Computing Machinery *Ubiquity* symposium 2013-2014
- Redesign Scholar, The National Center for Academic Transformation 2007-2012
- Member, Advisory Committee of the Business Higher Education Forum & Office of Naval Research STEM project 2012-2012
- Member, Advisory Council Hewlett Packard Catalyst Initiative 2010-2012
- Member, working group of the President's Council of Advisors on Science and Technology (PCAST). *Engage to Excel* 2011-2011
- Member, U.S. Department of Education working group, *2010 National Education Technology Plan* 2009-2010

Grants

Principal Investigator on federal and private foundation sources totaling over $18,000,000:

- *CIF21 DIBBs: Building a Scalable Infrastructure for Data-Driven Discovery and Innovation in Education*: National Science Foundation. 2015-2019
- *The Learning Engineering Initiative: EdHub*: CZI/Silicon Valley Community Foundation 2017-2018
- *Adaptable Learning Feedback for Instructors: The Open Analytics Research System (OARS)*: Stanford VPTL Innovation Grant 2017-2018
- *Next Generation Courseware Challenge: A Partnership for Iterative Excellence in Online Courseware for College Learners*: The Bill and Melinda Gates Foundation: 2014-2017
- *OLI Fundamentals of Philanthropic and Nonprofit Strategy*: The Stanford PACs Center 2016-2017
- *The Digital Learning Research Network (dLRN)*: The Bill and Melinda Gates Foundation 2015-2017
- *Lacuna Stories*: Stanford Digital Learning Forum 2015-2016
- *Beyond the Lecture:* The Kresge Foundation 2014-2016
- *Introduction to Data Analysis and Interpretation*: Stanford VPOL Seed Grant 2015-2016
- *Raising the Floor with C3T- Consortium for Infrastructure Services*: The Bill & Melinda Gates Foundation 2013-2015
- *Improving Productivity and Attainment in Higher Education:* The Kresge Foundation 2012-2013
- *The Open Learning Initiative: StatWay :* The Carnegie Foundation 2012-2013
- *Open Professionals Education Network:* The Bill and Melinda Gates Foundation 2010-2013

- *Gateways to Success:* The Carnegie Corporation 2010-2012
- *The Community College Open Learning Initiative*: The Walter S. Johnson Foundation 2010-2011
- *The Community College Open Learning Initiative*: The William and Flora Hewlett Foundation 2009-2011
- *The Community College Open Learning Initiative*: The Lumina Foundation 2009-2011
- *The Community College Open Learning Initiative*: The Bill & Melinda Gates Foundation 2009-2011
- *The Open Learning Network (OLNet):* The William and Flora Hewlett Foundation 2009-2011
- *APLU and OLI Planning Grant:* The Bill & Melinda Gates Foundation 2010-2011
- *The Catalyst Initiative:* Office of Global Social Innovation at HP 2009-2011
- *Transforming Web-based Courseware into a Full Statics course with Digital Feedback and Assessment*: National Science Foundation 2009-2010
- *Improving the Feedback Cycle in Introductory Courses*: The Spencer Foundation 2008-2010
- *Molecular Visualization in STEM Education:* National Science Foundation 2010-2010
- *The Open Learning Initiative II*: The William and Flora Hewlett Foundation 2004-2007
- *The Open Learning Initiative*: The William and Flora Hewlett Foundation 2002-2004

Publications

. Zhao, J., Thille, C. Zimmaro, D. (2021). Data mining for discovering cognitive models of learning. *Proceedings of the Conference on Education and Artificial Intelligence Technologies – EAIT-2021*, August 2021. London, UK.

Strauber, C.B., Ali, L.R., Fujioka, T. *et al.* (2021). Replicability of neural responses to speech accent is driven by study design and analytical parameters. *Sci Rep* **11,** 4777 (2021). https://doi.org/10.1038/s41598-021-82782-4

Zhao, J., Thille, C., Gattani, N., Zimmaro, D. (2021). A novel framework for discovering cognitive models of learning. *Proceedings of the Eighth ACM Conference on Learning @ Scale*. June 2021 (pp. 271–274). https://doi.org/10.1145/3430895.3460156

Bassen, J., Balaji, B., Schaarschmidt, M., *et al.* (2020). Reinforcement learning for the adaptive scheduling of educational activities. *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems*. April 2020. (pp 1–12). https://doi.org/10.1145/3313831.3376518

Zhao, J., Bhatt, S., Thille, C., Zimmaro, D. (2020) Interpretable personalized knowledge tracing and next learning activity recommendation. *Proceedings of the Seventh ACM Conference on Learning @ Scale*. August 2020 (pp. 325–328) https://doi.org/10.1145/3386527.3406739

Bhatt, S., Zhao, J., Thille, C., Zimmaro, D. (2020). Evaluating Bayesian knowledge tracing for estimating learner proficiency and guiding learner behavior. *Proceedings of the Seventh ACM*

Conference on Learning @ Scale. August 2020. (pp. 357–360). https://doi.org/10.1145/3386527.3406746

Zhao, J., Bhatt, S., Thille, C., Zimmaro, D. (2020). Cold start knowledge tracing with attentive neural Turing machine. *Proceedings of the Seventh ACM Conference on Learning @ Scale*. August 2020 (pp 333–336). https://doi.org/10.1145/3386527.3406741

Bhatt, S., Zhao, J., Thille, C., Zimmaro, D. (2020). A novel approach for knowledge state representation and prediction. *Proceedings of the Seventh ACM Conference on Learning @ Scale*. August 2020. (pp. 353–356) https://doi.org/10.1145/3386527.3406745

Johanes, P. & Thille, C. (2019). The heart of educational data infrastructures: Conscious humanity and scientific responsibility, not infinite data and limitless experimentation. *British Journal of Educational Technology*. Volume 50, Issue 6. (pp. 2959-2973). November 2019. London, UK.

Brunskill, E., Zimmaro, D., Thille, C. (2018). Exploring the impact of the default option on student engagement and performance in a statistics MOOC. *Proceedings of the Fifth Annual ACM Conference on Learning at Scale*. Article No.: 34 (pp 1–4) June 2018.

Bälter, O., Zimmaro, D., Thille, C. (2018) Estimating the minimum number of opportunities needed for all students to achieve predicted mastery. *Smart Learn. Environ.* **5,** 15 (2018). https://doi.org/10.1186/s40561-018-0064-z

Bassen,J., Howley, I., Fast, E., Mitchell, J., Thille, C. (2018). OARS: exploring instructor analytics for online learning. *Proceedings of the Fifth Annual ACM Conference on Learning at Scale*. June 2018 Article No.: 55. (pp 1–10h). ttps://doi.org/10.1145/3231644.3231669

Thille, C. & Zimmaro, D. (2017). Incorporating learning analytics in the classroom. In Zilvinskis, J. & Borden, V. (Eds.). *New Directions for Higher Education.* Hoboken, NJ: Wiley.

Koedinger, K. Liu, R., Stamper, J., Thille, C. Pavlik, P. (2017). Community based educational data repositories and analysis tools. *Proceedings of the Seventh International Learning Analytics & Knowledge Conference* Pp. 524-525. Vancouver, British Columbia, Canada, March 13, 2017. New York, NY: ACM

Thille, C. (2016). What the science of learning indicates we should do differently. In Otte, G. Goldstein, M. (Eds.), *Change We Must: Deciding the Future of Higher Education.* New York, NY.

Thille, C. (2016). *Bridging Learning Research and Teaching Practice for the Public Good: The Learning Engineer*. New York, NY: TIAA Institute.

Thille, C., Schneider, E., Kizilcec, R., Piech, C. Halawa, S., & Greene, D. (2014). The future of data–enriched assessment. *Research & Practice in Assessment*, 9, 5-16.

Bier, N., Lip, S., Strader, R., Thille, C. & Zimmaro, D. (2014). An approach to knowledge component/skill modeling in online courses. Open learning technical paper. Retrieved from https://static1.squarespace.com/static/5330c47be4b03ea35b2645a8/t/5361cb4be4b0c9d8aaa7d3be/1398917963378/AnApproachtoSkillMappinginOnlineCourses04302014.pdf

Thille, C (2014). MOOCs and technology to advance learning and learning research. *Ubiquity*. Volume 2014 Issue April, Article No. 1 (pp.1-7). New York, NY: ACM

Thille, C (2013) How technology is transforming higher education. Proceedings of the Aspen Institute Congressional Congress. Oct 4-7, 2013

Kaufman, J., Ryan, S., Thille, C. & Bier, N. (2013). *Open Learning Initiative Courses in Community Colleges: Evidence on Use and Effectiveness*. Technical Report of the William and Flora Hewlett Foundation. Retrieved from https://www.hewlett.org/wp-content/uploads/2013/12/CCOLI_Report_Final_1.pdf

Thille, C. (2012). Changing the production function in higher education. Part of the series: *Making Productivity Real: Essential Readings for Campus Leaders*. Washington, DC: American Council on Education.

Strader, R. & Thille, C. (2012). The Open Learning Initiative: Enacting instruction online. In Oblinger, D.G. (ed.) *Game Changers: Education and Information Technologies*. Washington, DC: Educause

Thille, C. (2012). Treating higher ed's 'cost disease' with supersize online courses. In McCormick, T. & Young, J. (eds.) *Rebooting the Academy: 12 Tech Innovators who are Transforming Campuses*. Washington, DC: Chronicle of Higher Education.

Thille, C (2012). Technology: Conducive and disruptive roles in improving student success and college completion. *Proceedings of 21st Century Commission on the Future of Community Colleges*. Washington, DC: AACC

Thille, C. & Smith, J. (2011). Cold rolled steel and knowledge: What can higher education learn about productivity? *Change: The Magazine of Higher Learning*. March/April 2011.

Lovett, M., Meyer, O., Thille, C. (2010). In search of the "perfect" blend between and instructor and an online course for teaching introductory statistics. *Proceedings of 8th International Conference on Teaching Statistics*. July 11-16, Ljubljana, Slovenia.

Thille, C. (2010). Educational technology as a transformational innovation. *The White House Summit on Community Colleges Conference Papers*. October 2010. Washington, DC.

Thille, C. (2010). Continuous improvement in teaching and learning: Open Learning Initiative (OLI) and Open Learning Net (OLnet). EDUCAUSE ELI January 11, 2010

Thille, C. & Smith, J. (2010). Learning unbound: Disrupting the Baumol/Bowen effect in higher education. *Futures Forum*. Washington, DC: American Council on Education.

Bajzek, D., Brooks, J., Jerome, W., Lovett, M., Rinderle, J., Rule, G. & Thille, C. (2008). Assessment and instruction: Two sides of the same coin. In G. Richards (Ed.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education* (pp. 560-565). Chesapeake, VA: AACE

Thille, C. (2008). Building open learning as a community based research activity. In Iiyoshi, T. & Kumar, V. (Eds.), *Opening Up Education: The Collective Advancement of Education through Open Technology, Open Content, and Open Knowledge*. Cambridge, MA: MIT Press.

Lovett, M., Meyer, O. & Thille, C. (2008). The Open Learning Initiative: Measuring the effectiveness of the OLI statistics course in accelerating student learning. *Journal of Interactive Media in Education.* http://jime.open.ac.uk/2008/14/

Thille, C., Conole, G. Law, S. & Ives C. (2008). Developing open courseware for excellence in learning. *Proceedings of the First International Conference of the new Canadian Network for Innovation in Education (CNIE)*. Banff, Alberta, Canada. April 27, 2008

Thille, C. & Heffernan, N. (2007) Supporting student learning: The Open Learning Initiative and ASSISTments. *EDUCAUSE ELI* November 6, 2007

Thille, C. (2007). The Open Learning Initiative. *Proceedings of the International Conference of Open Courseware and e-Learning*. Taipei, Taiwan. June 11-15

Thille, C. (2007). Evidence based design: The Open Learning Initiative. *Academic Intersections*. No 1. Fall 2007.

Meyer, O., & Thille, C. (2006). Developing statistical literacy across social, economic, and geographical barriers using a "stand-alone" online course. *Proceedings of 7th International Conference on Teaching Statistics*. July 2-7, Salvador, Bahia, Brazil.

Margulies, A., Sinou, V., Thille, C. (2005) Models of open educational resources: OpenCourseWare, Sofia, and the Open Learning Initiative. *EDUCAUSE Center for Analysis and Research (ECAR) Research Bulletin*. October 25, 2005

Selected Blogs, Editorials, & Podcasts

- Why 'Black Box' Software Isn't Ready to Teach College; with Jeffrey R. Young. *EdSurge Guide Thought Leaders Discuss the College (And Classroom) Of the Future*. https://www.edsurge.com/news/2017-05-18-why-black-box-software-isn-t-ready-to-teach-college — May 18, 2017
- As Big-Data Companies Come to Teaching, a Pioneer Issues a Warning; with Goldie Blumenstyk. *Chronicle of Higher Education.* http://www.chronicle.com/article/As-Big-Data-Companies-Come-to/235400 — February 23, 2016
- What We've Learned from MOOCs; with Mitchell Stevens and John Mitchell. *Inside Higher Education,* https://www.insidehighered.com/views/2015/09/22/moocs-are-no-panacea-they-can-help-improve-learning-essay — September 22, 2015

- MOOCs and Machines; with Steve Kolowich. *Inside Higher Education.* https://www.insidehighered.com/news/2012/05/10/candace-thille-talks-moocs-and-machine-learning — May 12, 2012

Courses Taught

- Data Analysis and Interpretation (EDUC 200A) — F2014, F2015, F2016, F2017
- Engineering Education & Online Learning (EDUC 391/ENGR 391) — S2014, S2015, S2016, S2017
- Lytics Seminar (EDUC 407) — W&S 2014 W&S 2016, S2023
- Learning Sciences and Technology Design Seminar (EDUC 291), — W2015, F2106
- Proseminar on Teaching and Learning (EDUC 325B) — W2017

Awards

- **Arizona State University Frank Rhodes Scholar Lecture Award** — 2023
- **University of Pennsylvania GSE Distinguished Alumni Award** — 2022
- **National Leadership in Student Success, Innovation, and Collaboration Award**, UIA — 2017
- **The Sixteen Most Innovative People in Higher Education**, Washington Monthly — 2016
- **Cyber Learning Distinguished Lecture Award**, National Science Foundation — 2015
- **Orkand Chair Distinguished Lecture Award**, University of Maryland System — 2014
- **Distinguished Service Award,** The National University Technology Network — 2014