

Colleen M. Lewis
301 Platt Blvd. Claremont, CA 91711
lewis@cs.hmc.edu

Appointment

Assistant Professor, Harvey Mudd College. 2012 – present

Education

University of California, Berkeley, Ph.D. in Science and Mathematics Education – 2012

University of California, Berkeley, M.S. in Computer Science – 2009

University of California, Berkeley, B.S. in Electrical Engineering and Computer Science – 2005

NSF Funding

Lewis, C. M. (Oct. 2013 - Oct 2018) NSF CSTeachingTips.org (#1339404; \$771,095)

Corporate Funding

Dodds, Z. & Lewis, C. M. (2016). Google's CS4HS. (\$25,000).

Lewis, C. M. (2017). Microsoft Corporation, Microsoft Learning (Amount confidential).

Awards

2016 Denice Denton Emerging Leader ABIE Award from the Anita Borg Institute (ABIE)

2015 Mentoring Award from the National Center for Women in Information Technology (NCWIT)

2012 Chair's Award (for best paper) at the International CS Education Research Workshop

Educational Products

Programming in Scratch EdX course www.edx.org (Over 60,000 students enrolled)

YouTube tutorials www.youtube.com/user/ColleenMLewis (Over 730k views)

Book Chapter

Lewis, C. M. (2017). Good (and bad) reasons to teach all students computer science. In S. B. Fee, A. M. Holland-Minkley, & T. E. Lombardi, *New Directions for Computing Education: Embedding Computing Across Disciplines*. New York: Springer.

Publications

Shah, N. & Lewis, C. M. (submitted). Amplifying and Attenuating Inequity in Collaborative Learning: Toward an Analytical Framework.

Leake, M. & Lewis, C. M. (2017) Recommendations for Designing CS Resource Sharing Sites for All Teachers. *ACM SIGCSE Bulletin*. 48(1), 357-362.

Publications (continued)

- Lewis, C. M., Anderson, R. E., & Yasuhara, K. (2016). "I don't code all day": Fitting in computer science when the stereotypes don't fit. *Proceedings of the International Computer Science Education Research Workshop*. 23-32.
- Lewis, C. M. & Shah, N. (2015). How Equity and Inequity Can Emerge in Pair Programming. *Proceedings of the eleventh annual International Conference on International Computing Education Research* (pp. 41-50).
- Lewis, C. M. (2014). Exploring variation in students' correct traces of linear recursion. *Proceedings of the International Computer Science Education Research Workshop*. Glasgow, UK. 67-74.
- Shah, N., Lewis, C. M., & Caires, R. (2014) Analyzing Equity in Collaborative Learning Situations: A Comparative Case Study in Elementary Computer Science. International Conferences of the Learning Sciences (ICLS). *Nominated for best paper*.
- Lewis, C. M., Bhattacharyya, V., Dominguez, N., Esper, S., Fa-Kaji, N., & Schlesinger, A. (2014). Children's perception of what counts as a programming language. *The Journal of Computing Sciences in Colleges*. 29(4), 123-133.
- Parker, M., & Lewis, C. M. (2014). What makes Big-O analysis difficult: Understanding how students understand runtime analysis. *The Journal of Computing Sciences in Colleges*. 29(4), 164-174.
- Lewis, C. M., Khayrallah, H., & Tsai, A. (2013). Mining data from the AP CS A exam: patterns, non-patterns, and replication failure. *Proceedings of the International Computer Science Education Research Workshop*. San Diego, CA, USA. 115-122.
- Shah, N., Lewis, C. M., Caires, R., Khan, N., Qureshi, A., Ehsanipour, D., & Gupta, N. (2013). Building Equitable Computer Science Classrooms: Elements of a Teaching Approach. *ACM SIGCSE Bulletin*. 44(1). 263-268.
- Lewis, C. M. (2012). The Importance of Students' Attention to Program State: A Case Study of Debugging Behavior. *Proceedings of the International Computer Science Education Research Workshop*. Auckland, NZ. 127-134. **[Best paper award]**
- Lewis, C. M., Titterton, N., & Clancy, M. (2012) Using Collaboration to Overcome Disparities in Java Experience. *Proceedings of the International Computer Science Education Research Workshop*. Auckland, NZ. 79-86.
- Lewis, C. M. & Shah, N. (2012). Building Upon and Enriching Grade Four Mathematics Standards with Programming Curriculum. *ACM SIGCSE Bulletin*. 43(1). 57-62.
- Lam, A. J., Lewis, C. M., Lu, C., Ornstein, I. B., & Wang, D. (2012). Classifying problems to explain patterns of correlation on the 1988 Advanced Placement Computer Science exam. *The Journal of Computing Sciences in Colleges*.
- Lewis, C. M., Yasuhara, K., & Anderson, R. E. (2011). Deciding to Major in Computer Science: A Grounded Theory of Students' Self-Assessment of Ability. *Proceedings of the International Computer Science Education Research Workshop*. Providence, RI. 3-10.
- Lewis, C. M., Titterton, N., & Clancy, M. (2011). Developing students' self-assessment skills using lab-centric instruction. *The Journal of Computing Sciences in Colleges*. 26(4). 173-180.

Publications (continued)

- Lewis, C. M. (2011). Is pair programming more effective than other forms of collaboration for young students? *Computer Science Education*. 21(2). 105-134.
- Crutchfield, O. S., Harrison, C. D., Haas, G., Garcia, D. D., Humphreys, S. M., Lewis, C. M., & Khooshabeh, P. (2011). Berkeley Foundation for Opportunities in Information Technology (BFOIT): A Decade of Broadening Participation. *Transactions on Computing Education*. 11(3). Article 15. 1-24.
- Titterton, N., Lewis, C. M., & Clancy, M. (2010). Experiences with lab-centric instruction. *Computer Science Education (Ed. Y. Ben-David Kolikant)* 20(2), 79-102.
- Lewis, C. M. (2010). How programming environment shapes perception, learning and goals: Logo vs. Scratch, *ACM SIGCSE Bulletin*. 41(1), 346-350.

Workshops

- Lewis, C. M. (2017, July 24). Latest Research and Trends in Promoting Gender Equity in Computer Science Undergraduate Education. Women in Technology and Entrepreneurship in New York (WiTNY) 2017 Summer Faculty Workshop.
- Lewis, C. M. (2017, May 23). How Instructors Can Improve Inclusiveness in Classrooms and Programs. NCWIT Summit. Tucson, AZ.
- Lewis, C. M. (2017, May 3). Addressing Common Student Misconceptions in Scratch. WI CS Educators Summit. Green Lake, WI.
- Lewis, C. M. (2017, May 3). Tips for Increasing Student Engagement in Computer Science. WI CS Educators Summit. Green Lake, WI.
- Lewis, C. M. (2017, April 7). Supporting and Sustaining Equitable Teaching. Breaking the Boundaries in STEM Education Research. Loyola Marymount University. Los Angeles, CA.
- Lewis, C. M. (2016, September 24) Misconceptions in Scratch. Claremont Graduate University, Claremont, CA.
- Lewis, C. M. (2016, June 8) Workshop: Student presentations in Scratch: Making slideshows and animations. WeTeach_CS Summit, Austin, TX. <http://www.thetrc.org/cs-summit-2016/>
- Lewis, C. M. (2016, June 8) Workshop: Why does Scratch do that?: Common challenges for teachers and students. WeTeach_CS Summit, Austin, TX. <http://www.thetrc.org/cs-summit-2016/>
- Shah, N., & Lewis, C. M. (2013, March) Workshop: Structuring Programming Labs to Support an Equitable Classroom Environment. Workshop at CCSC-Southwest. San Marcos, CA.
- Clancy, M. J., Titterton, N., Carle, A., Lewis, C. M., & Garcia, D. D. (2010). Get your hands dirty with lab-centric instruction. Workshop presented at the SIGCSE Conference. Milwaukee, WI.
- Garcia, D. D., Harvey, B., Segars, A., Lewis, C. M., & Paley, J. (2010). The Beauty and Joy of Computing. Workshop presented at the SIGCSE Conference. Milwaukee, WI.

Invited Talks

- Lewis, C. M. (2017, May 3). Promoting Equity and Access in CS. WI CS Educators Summit. Green Lake, WI.
- Lewis, C. M. (2017, March 17). Creating Inclusive Classrooms and Academic Institutions: Lessons from Harvey Mudd College and UC Berkeley. Worcester Polytechnic Institute. Worcester, MA.
- Lewis, C. M. (2017, March 16) Good (and Bad) Reasons to Teach All Students CS. CS Education Course. Worcester Polytechnic Institute. Worcester, MA.
- Lewis, C. M. (2017, January 10) CSTeachingTips for Assessing Student Learning. Webinar for the CS For All Teachers Community. <https://csforallteachers.org/event/webinar-csteachingtips-for-assessing-student-learning>
- Lewis, C. M. (2017, January 9) The K-12 Computer Science Landscape. Connecticut CSTA. https://youtu.be/ie_cT_YiYz4
- Lewis, C. M. (2016, November 16) Preparing for CS Ed Week (Part Two). Webinar for the CS For All Teachers Community. <https://csforallteachers.org/event/webinar-preparing-for-cs-ed-week-part-two>
- Lewis, C. M. (2016, November 14). Eleven Tips for Creating Inclusive Classrooms: Lessons from Harvey Mudd, UC Berkeley, psychology research, and CSTeachingTips.org. Cal State University, Long Beach. Long Beach, CA.
- Lewis, C. M. (2016, October 28) Increasing Diversity in CS: Harvey Mudd College and UC Berkeley. Cygnets workshop. British Computing Society (BCS). London, UK.
- Lewis, C. M. (2016, October 18) The stereotypes don't fit. Now what? Rice University, Houston, TX.
- Lewis, C. M. (2016, October 17) You don't look like a computer scientist. Kalamzoo College. Kalamzoo, MI.
- Lewis, C. M. (2016, October 17) Creating inclusive college classrooms: Why and how. Jennifer Mills Lecture Series, Kalamzoo College. Kalamzoo, MI.
- Lewis, C. M. (2016, September 28) CSTeachingTips - Revisiting Classroom Norms. Webinar for the CS For All Teachers Community. <https://csforallteachers.org/event/webinar-csteachingtips-revisiting-classroom-norms>
- Lewis, C. M. (2016, August 25) The K-12 Computer Science Landscape. Computer Science Teachers Association, Inland Empire, Harvey Mudd College, Claremont, CA.
- Lewis, C. M. (2016, August 6) Computer Science Teaching Tips from CSTeachingTips.org. Virtual MESA Academy for Science and Mathematics Educators 2016. University of Southern California, Los Angeles, CA.
- Lewis, C. M. (2016, July 27) Working Together to Broadening Participation in Computer Science. SIGGRAPH Women's Lunch, Anaheim, CA.
- Lewis, C. M. (2016, June 7) Expanding access to CS: Why and how. WeTeach_CS Summit, Austin, TX. <http://www.thetrc.org/cs-summit-2016/>

Invited Talks (continued)

- Lewis, C. M. (2016, May 11) Bias and institutional barriers in CS: Tips for identification and mitigation. CS Education Day at Northwestern. Northwestern University, Evanston, IL. <https://plt.eecs.northwestern.edu/edu-day/#lewis>
- Lewis, C. M. (2016, April 28) Experience != Smart. Pasadena City College. Pasadena, CA.
- Lewis, C. M. (2016, April 13) Translating Research into Practice. Hosted by CSNYC, New York, NY. <https://youtu.be/TUj8pMAp6X4?t=46m10s>
- Lewis, C. M. (2016, March 2) Some ABCs of Teaching CS. New Educators Workshop – SIGCSE 2016. <http://dave-reed.com/NEW/schedule.html>
- Lewis, C. M. (2015, October 18) Increasing Diversity in CS: Harvey Mudd College and UC Berkeley. Smith College. Northampton, MA.
- Lewis, C. M. (2015, July 17) "You don't look like a computer scientist" Summit Keynote at the Qualcomm EmpowHERment Summit.
- Lewis, C. M. (2015, June 25) Starting from Scratch: Community Webinar. Webinar for the CS For All Teachers Community. <https://csforallteachers.org/event/webinar-csteachingtips-revisiting-classroom-norms>
- Lewis, C. M. (2015, June 6). Scratch Meetup w/Prof. Colleen Lewis. Hosted by CSNYC, New York, NY. <https://youtu.be/AZW6GdZUJyI>
- Lewis, C. M. (2015, June 3). CS Teaching Tips – Diversity Tip-A-Thon. Hosted by CSNYC, New York, NY. <https://youtu.be/Rk47haG-w8A>
- Lewis, C. M. (2015, April 6). Pair programming – Success or Epic Disaster. Webinar hosted by the NSF-sponsored site [cs10kcommunity.org](http://air.adobeconnect.com/p3vd0mgw719/) <http://air.adobeconnect.com/p3vd0mgw719/>
- Lewis, C. M. (2015, February 19) Increasing Diversity in CS: Harvey Mudd College and UC Berkeley. Loyola Marymount University, Los Angeles, CA.
- Lewis, C. M. (2015, January 16). Episode #9 Colleen Lewis. Webinar hosted by CS Education Zoo. <https://youtu.be/yBe0fqE0XCM>
- Lewis, C. M. (2014, March 20). Increasing Diversity in CS: Harvey Mudd College and UC Berkeley. University of North Carolina, Chapel Hill. Chapel Hill, NC.
- Lewis, C. M. (2011). Improving student-student, student-instructor, and student-grade interactions using lab-centric instruction. Department of Computer Science, University of California, Santa Barbara. May 2011. Santa Barbara, CA, USA.
- Lewis, C. M. (2010) Scratch in middle school: Teaching tips and resources. Computer Science Teachers Association, Golden Gate Chapter. October 2010. Berkeley, CA, USA.
- Lewis, C. M. (2010) Interactions between programming environment design and the user's non-programming knowledge. Berkeley Institute of Design, University of California, Berkeley. October 2010. Berkeley, CA, USA.

Panels

- Nourbakhsh, I., Lewis, C. M., Blikstein, P., & Ordonez, P. (2017, May 24). Experiential Learning and the Experience of Learning. CrossRoads Summit hosted by Infosys. San Francisco, CA.
- Preston, M., Wang, K., Bortleson, C., Lewis, C. M., Eisner, K. (2017, March 8). Panel at CSforAll Consortium Network Reception hosted by Amazon. Seattle, WA.
- Aviv, A. Gondree, M., Lewis, C. M., & Mirkovic, J. (2016, December 8) Panel: Security Education. Annual Computer Security Applications Conference (ACSAC) 2016. Burbank, CA. www.acsac.org/2016/openconf/modules/request.php?module=oc_program&action=page.php&id=74
- Lewis, C. M. & Tejada, S. (2016, November 15). Code Documentary Screening and Panel. City National Bank, Los Angeles, CA.
- Gircharu-Kemoli, A., Lewis, C. M., Fofang, S., Segalov, M. (2016, October 21). Disseminating effective teaching practices to broaden participation in STEM. Grace Hopper Celebration. Houston, TX.
- Bryant, K., Feinberg, D., Chang, A. & Lewis, C. M. (2016, August 18). Screening of Code Documentary and Women in Tech Panel. TurnItIn, Oakland, CA.
- Evans, D., Peterson, Z., Lewis, C. M., & Kohno, T. (2016, August 8). Teaching Computer Security: Thoughts from the Field. 25th USENIX Security Symposium, Austin, TX. <https://www.usenix.org/conference/usenixsecurity16/technical-sessions/presentation/evans>
- Taylor, T., Tom, T., Lopez, A., & Lewis, C. M., (2016, April 30) Creating a Middle School Computer Science Course Curric. Based on CSTA National Standards. Panel at Teaching for Impact: Innovative Practices for Today's Standards. Hosted by UC San Diego.
- Hosford, G., Lewis, C. M., Leyzberg, D., & Schor, J. (2016, March 8) Teaching coding is not about creating programmers. SXSWedu 2016. Austin, TX.
- Garcia, D. D., Reges, S., Lewis, C. M., & Ensmenger, N. (2016, March 4). Why Don't Some CS0 Students Succeed? How Important Are Background, Experience, Culture, Aptitude, Habits and Attitude? Panel at the SIGCSE Conference. Memphis, TN.
- Garcia, D. D., Aaronson, L., Kenner, S., Lewis, C. M., & Rodger, S. (2016, March 3). Technology We Can't Live Without!, revisited. Panel at the SIGCSE Conference. Memphis, TN.
- Lewis, C. M., Kannabiran, G., Spertus, E., & Goldsmith, J. (2016, October) Strategies for Creating Equitable Classrooms: Advice from Feminist Professors. Panel at the Grace Hopper Celebration of Diversity in Computing. Houston, TX.
- Lynch, K., Margolis, J., Lewis, C. M., & Kearns, A. (2015, November 11) Panel discussion of CODE: Debugging the Gender Gap. Panel presented at LA TechWeek, Los Angeles, CA.
- Lewis, C. M., Womack, C., Priforce, K., Monterroso, K., Torres, R., & Mernit, S. (2015, September 11) Repairing the STEM Pipeline. Panel at the TechInclusion conference, San Francisco, CA.
- Dorn, B., Guzdial, M., Lewis, C. M., & Shapiro, B. (2014, August). Expanding the PhD Cohort in CS Education. Panel at the International Computing Education Research Workshop. Glasgow, UK.

Panels (continued)

- Dahlberg, T. A., Black, J., Joffman, J., Lewis, C. M., & Seals, C. (2013) Leveraging Service Learning to Develop K-12 CS Outreach. Panel presented at the Grace Hopper Celebration of Women in Computing. Minneapolis, MN, USA.
- Lewis, C., M., Clancy, M., Lee, C., B., O'Neill, M., Shah, N., & Wiedermann, B. (2013) Panel: Flavors of active learning in computer science classrooms. Panel at the Consortium for Computing Sciences in Colleges: Southwest Region. San Marcos, CA.
- Garcia, D. D. Ericson, B., Goode, J., & Lewis, C. M. (2012) Rediscovering the passion, beauty, joy, and awe: making computing fun again, part 5. Special Session at the ACM Special Interest Group in Computer Science Education. Raleigh, NC. 577-578.
- Garcia, D. D., Lewis, C. M., Dougherty, J. P., & Jadud, M. C. (2010). If _____, you might be a computational thinker! Special Session at the ACM Special Interest Group in Computer Science Education. Milwaukee, WI. 263-264.

Lightning Talks

- Lewis, C. M. (2016, March) You wouldn't know it from SIGCSE proceedings; but we don't only teach CS1. Lightning talk at the SIGCSE Conference. Memphis, TN.
- Lewis, C. M. (2015, March 25) CTeachingTips.org. Lightning talk presented at the CCSC-SW Conference. Claremont, CA.
- Lewis, C. M. (2014, August) Tips for Teaching Computer Science. Lightning Talk presented at International Computing Education Research Workshop. Glasgow, UK.
- Lewis, C. M. (2013). "You're too much of a people person to be a computer scientist" How students feel they fit (or don't fit) in CS. Lightning talk presented at the International Computer Science Education Research Workshop. San Diego, CA, USA. 115-122.

Birds of a Feather

- Falkner, N., Patitsas, E., & Lewis, C. M. (2017, March 9). Alternative Publishing and Dissemination of CS Education Research. Birds of a Feather at the SIGCSE Conference. Seattle, WA.
- Lewis, C. M. & Gregg, C. (2016, March 2) How Do You Teach Debugging? Resources and Strategies for Better Student Debugging. Birds of a Feather at the SIGCSE Conference. Memphis, TN.
- Garrod, C., Forbes, J., Lewis, C. M., & Osera, P. (2016, March 2) Mentoring Student Teaching Assistants for Computer Science. SIGCSE Conference. Memphis, TN.
- Alvarado, C., Bryce, R., Burnett, M., Lewis, C. M., McCirkard, S., & Swanier, C.. (2015, May) How to be an award winning mentor. Birds of a Feather presented at the National Center for Women in Information Technology Summit. Hilton Head Island, SC.
- Gregg, C. & Lewis, C. M. (2015, March) Working with Undergraduate TAs. Birds of a Feather presented at the SIGCSE conference. Kansas City, MO.

Technical Reports

Lewis, C. M. (2010). Attrition in introductory computer science at the University of California, Berkeley. Tech. rep., EECS Department, University of California, Berkeley.

Advisory Boards

NCWIT Academic Alliance - Summit Planning Committee (2015 – present)

Worked with NCWIT leadership to plan and execute the summit meeting for Academic Alliance members.

Engage CS Edu - NCWIT (2015 – present)

Advised project on engaging educators within an online curriculum-sharing platform.

Transformative Robotics Experience for Elementary Students (TREES) (2014 – present)

Advised NSF project 1523010 on developing and evaluating robotics curriculum for elementary school students.

STEAM:Coders (2014 – present)

Advised the non-profit focused on providing CS instruction to disadvantaged middle-school students in the LA area.

Berkeley Foundations for Opportunities in IT (2009 – 2012)

Advised regarding the strategic direction of the program to increase the participation of underrepresented minorities in CS.

External Service

Founder – Works in Progress Workshop – ICER Conference (2014-2017)

Founded a yearly workshop held at the International Computing Education Research Workshop (ICER) to create critical feedback groups to improve the quality of CS education research.

Conference Chair – Consortium of Computing Sciences in Colleges – Southwest Region (2015)

Hosted the annual conference with 40 attendees.

Region Chair – Consortium of Computing Sciences in Colleges – Southwest Region (2014-2017)

Elected chair for the Southwest Region.

National Board – Consortium of Computing Sciences in Colleges (2011-2014)

Elected representative from the Southwest Region to the National Board.

Co-Founder – University of California, Berkeley’s CS-KickStart (2011) cs-kickstart.berkeley.edu

Co-founded a one week workshop for incoming female freshman, launched in August 2011, to create a community and build students’ interest and confidence to pursue a CS major.