William C. Payne

CREATIVE COMPUTING · ACCESSIBILITY
MUSIC & DANCE · PARTICIPATORY DESIGN

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EDUCATION

2017 – 2023	**Ph.D.** in Music Technology	NEW YORK UNIVERSITY

Dissertation Committee: Amy Hurst (Chair), R. Luke DuBois, Jason Freeman

2011 – 2016	**B.S./M.S.** in Computer Science (summa cum laude)	UNIVERSITY OF COLORADO BOULDER

Advisors: Shaun Kane, Clayton Lewis

2011 – 2016	**B.M.** in Music Composition (summa cum laude)	

Teachers: Michael Theodore, Carter Pann, Daniel Kellogg, John Drumheller

FACULTY APPOINTMENTS

2023 – present	**Assistant Professor**	UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

School of Information and Library Science (SILS)

PUBLICATIONS

Undergraduate and high school student mentees are marked with †.

CONFERENCE PROCEEDINGS

[1] **William Payne**, Eric Xu†, Izabella Rodrigues†, Matthew Kaney, Madeline Mau†, and Amy Hurst. 2024. "Different and Boundary-Pushing:" How Blind and Low Vision Youth Live Code Experimental Music Together. In *Proceedings of 16th ACM Conference on Creativity and Cognition* (C&C '24). **20.6% Acceptance**. Association for Computing Machinery, New York, NY, USA, (June 2024), 627–637. https://doi.org/10.1145/3635636.3656200.

[2] **William Payne**, Matthew Kaney, Yuhua Cao†, Eric Xu†, Xinran Shen†, Katrina Lee†, and Amy Hurst. 2023. Live Coding Ensemble as Accessible Classroom. In *Proceedings of the International Conference on New Interfaces for Musical Expression (NIME '23)*. UAM Lerma, Mexico City, Mexico, (July 2023), 9 pages. https://www.nime2023.org/program/papers#h.6z3xivjmv0cw.

[3] **William Payne**, Matthew Kaney, and Amy Hurst. 2023. Addressing Accessibility for Blind and Visually Impaired Live Coders. In *Proceedings of the 7th International Conference on Live Coding (ICLC '23)*. Zenodo, Utrecht, The Netherlands, (April 2023), 6 pages. https://doi.org/10.5281/zenodo.7843871.

[4] **William Payne** and Amy Hurst. 2023. "We Avoid PDFs": Improving Notation Access for Blind and Visually Impaired Musicians. In *Information for a Better World: Normality, Virtuality, Physicality, Inclusivity*. Isaac Sserwanga, Anne Goulding, Heather Moulaison-Sandy, Jia Tina Du, António Lucas Soares, Viviane Hessami, and Rebecca D. Frank, editors. **35% Acceptance**. Springer Nature Switzerland, Cham, 581–597. ISBN: 978-3-031-28032-0. https://doi.org/10.1007/978-3-031-28032-0_44.

[5] **William Payne**, Fabiha Ahmed†, Michael Zachor†, Michael Gardell†, Isabel Huey†, R. Luke DuBois, and Amy Hurst. 2022. Empowering Blind Musicians to Compose and Notate Music with SoundCells. In *The 24th International ACM SIGACCESS Conference on Computers and Accessibility* (ASSETS '22) Article 17. **26.5% Acceptance**. Association for Computing Machinery, Athens, Greece, (October 2022), 14 pages. DOI: 10.1145/3517428.3544825. https://doi.org/10.1145/3517428.3544825.

[6] **William Payne**, Fabiha Ahmed†, Michael Gardell†, R. Luke DuBois, and Amy Hurst. 2022. SoundCells: Designing a Browser-Based Music Technology for Braille and Print Notation. In *19th Web for All Conference* (W4A '22) Article 14. **Best Technical Paper**. Association for Computing Machinery, Lyon, France, (May 2022), 12 pages. ISBN: 978145039170. DOI: 10.1145/3493612.3520462. https://doi.org/10.1145/3493612.3520462.

[7] **William Payne**, Yoav Bergner, Mary Etta West, Carlie Charp, R. Benjamin Shapiro, Danielle Albers Szafir, Edd V. Taylor, and Kayla DesPortes. 2021. danceON: Culturally Responsive Creative Computing. In *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems* Article 96. **Best Paper Honorable Mention, 26.3% Acceptance**. Association for Computing Machinery, New York, NY, USA, (May 2021), 16 pages. ISBN: 9781450380966. https://doi.org/10.1145/3411764.3445149.

[8] **William Payne**, Ann Paradiso, and Shaun Kane. 2020. Cyclops: Designing an Eye-Controlled Instrument for Accessibility and Flexible Use. In *Proceedings of the International Conference on New Interfaces for Musical Expression.* Birmingham City University, Birmingham, UK, (July 2020), 576–580. DOI: 10.5281/zenodo.4813204. https://www.nime.org/proceedings/2020/nime2020_paper112.pdf.

[9] **William Payne**, Alex Yixuan Xu†, Fabiha Ahmed†, Lisa Ye†, and Amy Hurst. 2020. How Blind and Visually Impaired Composers, Producers, and Songwriters Leverage and Adapt Music Technology. In *The 22nd International ACM SIGACCESS Conference on Computers and Accessibility* (ASSETS '20) Article 35. **28% Acceptance**. Association for Computing Machinery, Virtual Event, Greece, 12 pages. ISBN: 9781450371032. DOI: 10.1145/3373625.3417002. https://doi.org/10.1145/3373625.3417002.

[10] Yoav Bergner, Shiri Mund, Ofer Chen, and **William Payne**. 2019. First Steps in Dance Data Science: Educational Design. In *Proceedings of the 6th International Conference on Movement and Computing* (MOCO '19) Article 14. Association for Computing Machinery, Tempe, AZ, USA, (October 2019), 8 pages. ISBN: 9781450376549. DOI: 10.1145/3347122.3347137. https://doi.org/10.1145/3347122.3347137.

Journal Articles

[11] Kayla DesPortes, Kathleen McDermott, Yoav Bergner, and **William Payne**. 2022. "Go[Ing] Hard…as a Woman of Color": A Case Study Examining Identity Work within a Performative Dance and Computing Learning Environment. *ACM Trans. Comput. Educ.*, (April 2022). DOI: 10.1145/3531000. https://doi.org/10.1145/3531000.

[12] Yoav Bergner, Shiri Mund, Ofer Chen, and **William Payne**. 2021. Leveraging Interest-Driven Embodied Practices to Build Quantitative Literacies: A Case Study Using Motion and Audio Capture from Dance. *Educational Technology Research and Development*, (August 2021), 1–24. DOI: 10.1007/s11423-020-09804-2. https://doi.org/10.1007/s11423-020-09804-2.

[13] **William Payne** and S. Alex Ruthmann. 2019. Music Making in Scratch: High Floors, Low Ceilings, and Narrow Walls? *Journal of Interactive Technology and Pedagogy*, 15, (May 2019). https://jitp.commons.gc.cuny.edu/music-making-in-scratch-high-floors-low-ceilings-and-narrow-walls/.

Posters and Demos

[14] **William Payne**, Matthew Kaney, Izabella Rodrigues†, and Amy Hurst. 2025. Exploring Technical and Creative Posts in Online Live Coding Communities: An Analysis of Tidal Club and in_thread. In *Proceedings of The 2025 ACM International Conference on Supporting Group Work* (GROUP '25). Association for Computing Machinery, New York, NY, USA, (January 2025), To Appear.

[15] **William Payne**, Xinran Shen†, Eric Xu†, Matthew Kaney, Matthew Graves† Maya Herrera†, Madeline Mau†, Diana Murray†, Vinnie Wang†, and Amy Hurst. 2023. Approaches to Making Live Code Accessible in a Mixed-Vision Music Ensemble. In *The 25th International ACM SIGACCESS Conference on Computers and Accessibility* (ASSETS '23) Article 78. Association for Computing Machinery, New York, NY, USA, (October 2023), 5 pages. https://doi.org/10.1145/3597638.3614489.

[16] Francisco Enrique Vicente Castro, Kayla DesPortes, **William Payne**, Yoav Bergner, and Kathleen McDermott. 2022. AI + Dance: Co-Designing Culturally Sustaining Curricular Resources for AI and Ethics Education Through Artistic Computing. In *Proceedings of the 2022 ACM Conference on International Computing Education Research* (ICER '22). Association for Computing Machinery, Lugano and Virtual Event, Switzerland, (August 2022), 2 pages. DOI: 10.1145/3501709.3544275. https://doi.org/10.1145/3501709.3544275.

[17] Yoav Bergner, **William Payne**, Kayla DesPortes, and Kathleen McDermott. 2022. danceON and softWEAR: education-level creative coding and programmable wearables. In *Proceedings of the 8th International Conference on Movement and Computing* (MOCO '22) Article 14. Association for Computing Machinery, Chicago, IL, USA, (June 2022), 2 pages. DOI: 10.1145/3537972.3538015.

[18] Fabiha Ahmed†, Dennis Kuzminer†, Michael Zachor†, Lisa Ye†, Rachel Josepho†, **William Payne**, and Amy Hurst. 2021. Sound Cells: Rendering Visual and Braille Music in the Browser. In *The 23rd International ACM SIGACCESS Conference on Computers and Accessibility* (ASSETS '21) Article 89. Association for Computing Machinery, Virtual Event, USA, (October 2021), 4 pages. ISBN: 9781450383066. DOI: 10.1145/3441852.3476555. https://doi.org/10.1145/3441852.3476555.

[19] Michael Quigley and **William Payne**. 2021. Toneblocks: Block-based Musical Programming. In *Proceedings of the International Conference on New Interfaces for Musical Expression* Article 45. Shanghai, China, (June 2021). DOI: 10.21428/92fbeb44.46c0f6ef. https://nime.pubpub.org/pub/qn6lqnzx.

[20] **William Payne**, Alex Xu†, Amy Hurst, and S. Alex Ruthmann. 2019. Non-Visual Beats: Redesigning the Groove Pizza. In *ASSETS 2019 - 21st International ACM SIGACCESS Conference on Computers and Accessibility*. Association for Computing Machinery, Inc, (October 2019), 651–654. ISBN: 9781450366762. DOI: 10.1145/3308561.3354590. https://doi.org/10.1145/3308561.3354590.

Doctoral Consortia

[21] **William Payne**. 2022. Sounds and (Braille) Cells: Co-Designing Music Technology with Blind and Visually Impaired Musicians. *19th Web for All Conference*. W4A '22 Article 2, 3 pages. DOI: 10.1145/3493612.3520464. https://doi.org/10.1145/3493612.3520464.

[22] **William Payne**. 2021. Non-Visual Composing and Coding. *SIGACCESS Accessibility and Computing*, 129, Article 4, (October 2021), 6 pages. ISSN: 1558-2337. DOI: 10.1145/3458055.3458059. https://doi.org/10.1145/3458055.3458059.

Workshops and Symposia

[23] Luis Morales-Navarro, Yasmin B. Kafai, Francisco Castro, **William Payne**, Kayla DesPortes, Daniella DiPaola, Randi Williams, Safinah Ali, Cynthia Breazeal, Clifford Lee, Elisabeth Soep, Duri Long, Brian Magerko, Jaemarie Solyst, Amy Ogan, Cansu Tatar, Shiyan Jiang, Jie Chao, Carolyn P. Rosé, and Sepehr Vakil. 2023. Making Sense of Machine Learning: Integrating Youth's Conceptual, Creative, and Critical Understandings of AI. Montreal, Canada: International Society of the Learning Sciences, (June 2023). https://doi.org/10.48550/arXiv.2305.02840.

[24] Shiyan Jiang, Kayla DesPortes, Yoav Bergner, Helen Zhang, Benjamin Walsh, Bita Akram, Jie Chao, **William Payne**, and Francisco Castro. 2022. Agents, Models, and Ethics: Importance of Interdisciplinary Explorations in AI Education. In *Proceedings of the 16th International Conference of the Learning Sciences* (ICLS 2022). International Society of the Learning Sciences. Hiroshima, Japan, (June 2022), 8 pages. https://repository.isls.org//handle/1/8977.

[25] Benjamin Walsh, Safinah Ali, Francisco Castro, Kayla DesPortes, Daniella DiPaola, Irene Lee, **William Payne**, Scott Sieke, and Helen Zhang. 2022. Making Art With and About Artificial Intelligence: Three Approaches to Teaching AI and AI Ethics to Middle and High School Students. In *Proceedings of the 53rd ACM Technical Symposium on Computer Science Education* (SIGCSE 2022). Association for Computing Machinery, Providence, RI, USA, 1 pages. DOI: 10.1145/3478432.3499157. https://doi.org/10.1145/3478432.3499157.

[26]   Folashade Solomon, Lauren Vogelstein, Corey Brady, Rebecca Steinberg, Curtis Thomas, Dionne Champion, Lindsay Lindberg, Noel Enyedy, Kayla DesPortes, **William Payne**, Yoav Bergner, Edd Taylor, and R. Benjamin Shapiro. 2021. Embodying STEM: Learning at the intersection of Dance and STEM. In *Proceedings of the 15th International Conference of the Learning Sciences* (ICLS 2021). International Society of the Learning Sciences. Bochum, Germany, (June 2021), 7 pages. DOI: `10.22318/icls2021.819`. `https://repository.isls.org//handle/1/7588`.

THESES

[27]   **William Payne**. 2023. *Sounds and (Braille) Cells: Co-Designing Music Technology with Blind and Visually Impaired People*. New York University, (May 2023). PhD Dissertation.

[28]   **William Payne**. 2016. *Ambient Audio and Calm Technology*. University of Colorado Boulder, (December 2016). `https://scholar.colorado.edu/concern/graduate_thesis_or_dissertations/mp48sd16v`. MS Thesis.

[29]   **William Payne**. 2015. *Tangible Solenoid Display and Sonification: Representing Interactive Simulations to Blind Users*. University of Colorado Boulder, (December 2015). Senior Thesis.

INVITED TALKS

UNIVERSITY PRESENTATIONS

2024	Inclusive Design of Creative Technology	CARLETON CREATIVE INTERACTIONS LAB
2023	Inclusive Design of Creative Technology	TULANE COMPUTER SCIENCE
	Inclusive Design of Creative Technology	CAROLINA SEMINAR ON INNOVATION FOR PUBLIC GOOD
	Inclusive Design for Arts & Computing Education	UIUC iSchool
	Inclusive Design for Arts & Computing Education	UNC-SILS
	Inclusive Design for Arts & Computing Education	RIT iSchool
	Inclusive Design for Arts & Computing Education	UT Austin iSchool
	Inclusive Design for Arts & Computing Education	CU COMPUTER SCIENCE
2022	Music Technology for Blind & Visually Impaired People	NYU MARL
2021	Inclusive Design for Music Making & Play	UNIARTS HELSINKI MUSIC EDUCATION
2020	danceON: Culturally Responsive Creative Computing for Data Literacy	NYU MARL

PANELS

2024	Diversity, Equity, and Inclusion	CREATIVITY & COGNITION
	Perspectives on Inclusive Design	ALLIANCE FOR IDENTITY-INCLUSIVE COMPUTING EDUCATION (AiiCE)
2022	Radical Music Teaching	CRITICAL SONIC PRACTICE SYMPOSIUM
2020	Digressions on Expression	PSYCHOLOGY OF PROGRAMMING INTEREST GROUP

COMPANIES AND NONPROFITS

2021	New Developments in HCI (Featured Project)	MICROSOFT RESEARCH
	Accessible Web & Visualization Development	TWO-N
2020	danceON: How Art Motivates Code	NYC MEDIA LAB

HONORS

FULL SCHOLARSHIPS & FELLOWSHIPS

2020 – 2023	Research Assistant, Dancing Across Boundaries (DAB!) NSF STEM+C 1933961	NYU
2017 – 2020	Steinhardt Fellowship	NYU

| 2011 – 2016 | Boettcher Scholarship | CU |

Full-ride to any Colorado college or university including tuition, stipend, and housing.

DISTINCTIONS

2024	Deborah Barreau Teaching Award Nomination	UNC-SILS
2023	Outstanding Dissertation Honorable Mention	NYU STEINHARDT
2022	Best Technical Paper	WEB 4 ALL
2021	Best Paper Honorable Mention	CHI
2016	Outstanding Graduate of the College of Engineering (First in Class)	CU

GRANTS & AWARDS

2024	Institute for Arts and Humanities Research Grant ($6,580)	UNC-CH
2023	Kilgour Award ($10,000)	UNC-SILS
	Project Grant with FMDG Music School ($15,000)	CTA FOUNDATION
	Graduate Student Organization Compeetitive Professional Reimbursement Grant ($100)	NYU
2022	Steinhardt Doctoral Research & Travel Grant ($1,500)	NYU
	Music Technology Doctoral Travel Grant ($1,000)	NYU
	Tandon Engineering Expo Research Competition, 3rd Prize ($1,000)	NYU
2020	Music & Performing Arts Doctoral Studies Award ($500)	NYU
2019	Steinhardt Doctoral Research & Travel Grant ($1,500)	NYU
2018	Combine Early Startup Grant, with Andre Gill, Tyler Bisson ($25,000)	NYC MEDIA LAB
	Steinhardt Doctoral Research & Travel Grant ($1,500)	NYU
2015	Undergraduate Composition Award for *Rain In Raissa* ($1,000)	CU
	Choral Composition Award for *Gone, Gone, Again* ($1,000)	CU
2014	Educational Enrichment Grant ($3,000)	BOETTCHER FOUNDATION
	Undergraduate Research Opportunities Program (UROP) Grant ($2,000)	CU
	Center for Asian Studies Scholarship (full cost of study abroad in Xi'an, China)	CU
2013	Richard Toensing College of Music Scholarship ($2,000)	CU
2012	James M. Grossi College of Music Scholarship ($2,000)	CU

UNIVERSITY TEACHING EXPERIENCE

| fall 2024 | Usability Testing and Evaluation (INLS 719) - 16 students | UNC-CH |

Instructor. Graduate level course covering usability engineering, testing and evaluation including: UX lifecycle, contextual inquiry,formal and informal evaluation techniques, measures, metrics, qualitative and qualitative, and evaluation reporting. Students form project teams to design and implement a user study.

| spring 2024 | Design for Accessibility (INLS 690) - 15 students | UNC-CH |

Instructor. Graduate level course where students learn how to design interventions that can be used by people with diverse sensory, motor, and cognitive abilities. Students encounter models of disability, accessible design frameworks, and common assistive technologies through readings and hands-on activities. Students form teams, identify a need relevant to a certain population, and work together to develop a prototype product.

| | Seminar in Human Computer Interaction (INLS 818) - 11 students | UNC-CH |

Instructor. Research and development in design and evaluation of user interfaces that support information seeking. Major topics: interactivity, needs assessment, query and browser interactions, interactive design and maintenance, usability testing.

| fall 2023 | Usability Testing and Evaluation (INLS 719) - 14 students | UNC-CH |

Instructor.

fall 2019 – spring 2022	**Vertically Integrated Projects (VIP-UY 300X-B)**	NYU

Instructor. Led team of undergraduates through semester-long hands-on research projects. Published results at three ASSETS conferences and Web4All. Won third prize at Tandon Engineering Expo. Featured in NYU Ad Campaign.

summer 2018	**Creative Learning Design (INTM-SHU 236A)**	NYU SHANGHAI

Co-instructor with S. Alex Ruthmann. Developed curriculum and course materials, lectured students, and partnered with local organizations for student design projects. creativelearningchina.org

2013 – 2016	**Critical Encounters (EHON 1151)**	CU

TA, Head TA for Scot Douglass. Undergraduate literature and philosophy course for all students enrolled in the Engineering Honors Program (EHP). Prepared and led recitations, organized other TA's.

STUDENTS ADVISED

DOCTORAL COMMITTEES

2024–present	Robert Manzo	UNC-CH

Perceptions of Credibility and Authority in Autistic-Authored Publications

Matthew Belskie	UNC-CH

Physiological and Psychological Effects of Esports

Wenyuan Wang	UNC-CH

When Enough is Not Enough: An Investigation on Information Satiety

2023–present	Rachel Rodney	UNC-CH

Information Needs of Foster Parents

MASTERS THESES

In-Progress	Victor Hazboun, Sriya Kasumarthi, Norry Lu, Bernice Meja, Jaycee Sansom	UNC-CH

2024	Jeremiah Hartstock	UNC-CH

"Discover Weakly?" Perceptions of Spotify's Algorithmically Generated Music Recommendation Systems

Elizabeth Byrd	UNC-CH

Tools and Techniques for Recovery: Exploring Resources Used in Early Alcohol Use Disorder Recovery

2021	Michael Quigley (co-advised with Mary Farbood)	NYU

Block-Based Musical Programming

2020	Jake Sandakly (co-advised with Leila Adu-Gilmore)	NYU

Music Education Technology: Investigations into Creative Tech for the K-12 Classroom

SERVICE

REVIEWER - CONFERENCES, JOURNALS, AND GRANTS

2024	Federal Grants Panel
	Transactions on Accessible Computing (TACCESS)
	ACM SIGACCESS Conference on Computers and Accessibility (ASSETS)
	Transactions on Computing Education (TOCE)
	CHI-Play
	International Conference on Live Coding (ICLC)
	International Society of the Learning Sciences (ISLS) Annual Meeting

2023	Georgia Sea Grant	
	ACM Conference on Human Factors in Computing Systems (CHI)	
	iConference	
	ACM SIGACCESS Conference on Computers and Accessibility (ASSETS)	
	International Society of the Learning Sciences (ISLS) Annual Meeting	
2022	International Society of the Learning Sciences (ISLS) Annual Meeting	
	New Interfaces for Musical Expression (NIME)	
2021	New Interfaces for Musical Expression (NIME)	

Conference Organizing Committees

2023	ACM SIGACCESS Conference on Computers and Accessibility (ASSETS)	
	Proceedings Co-Chair	

University Committees

fall 2024 – present	Masters Committee	UNC-SILS
spring 2024	Undergraduate Committee	UNC-SILS
2016	College of Engineering Dean Search	CU
2015	College of Music Interdisciplinary Opportunities	CU
2012 – 2015	Engineering Excellence Fund (chair, 2015)	CU
	Pendulum New Music Concert Series	CU

Other University Service

2023 – present	Digital Accessibility Liason	UNC-CH
2020 – 2021	M.S. Thesis Reader	NYU
2017 – 2020	MARL Talk Series Organizer	NYU
2015	Engineering Honors Program Mentor in Residence	CU

Extended Community Service

fall 2024	Alumni mentor	Boettcher Foundation
spring 2017	Math/science mentor for XSCI	Timberline PK-8
2008 – 2016	Rose Youth participant, grant maker *Innovate for Good*	Rose Foundation
2011 – 2013	7th grade English class volunteer	Casey Middle School

Professional Experience

2020 – 2023	Accessible Music Technologist	FMDG Music School

Working on the transcription team to create braille and large print music for blind and visually impaired music students and to digitize a library of past transcriptions. Co-taught electronic music history course.

summer 2019	Research Intern	Microsoft Research

Developed eye-controlled musical instruments for a person with ALS as part of the Hands-Free Music Project in Microsoft Enable Group. Published results in NIME (New Interfaces for Musical Expression).

summer 2016	Instructor	CU Science Discovery

Taught 15 high school students code, electronics, and physical computing in project-based summer course called *Makerspace Academy*. Developed original curriculum and course materials.

summer 2013	Software Development Intern	8z Real Estate

Developed a mobile app for iOS/Android supporting 8z Realtors. Contributed to a four-person team by writing QUnit tests, running QA, and participating in daily standup and weekly code review.

OTHER ACTIVITIES

2018   Combine Startup Accelerator   NYC MEDIA LAB
Followed Lean Startup Method with Andre Gill and Tyler Bisson conducting 100 customer interviews.

2015 – 2017   Radio Host/DJ   RADIO 1190
Co-hosted *The Intentional Listener* with friends. intentional-listener.com

2011 – 2016   Music Composition   BOULDER, CO
Works include *Gone, Gone, Again* for SATB choir (2013), *Rain in Raissa* for chamber orchestra (2014 - read by Alarm Will Sound), and *One Half of a Secret Handshake* for solo guitar and electronics (2015).

2011 – 2016   Music Performance   BOULDER, CO
Performed on electric guitar, percussion and electronics solo and in ensembles including the Boulder Laptop Orchestra (BLOrk), the Colorado New Music Ensemble (CNME), and the Boulder Balinese Gamelan. Co-founded the Boulder Image and Sound Network (BiSON), an iPad-based performance ensemble.

2012 – present   Running   *
Can be found most days passing bicyclists on Harlem Hill in Central Park or Hillsborough St. in Chapel Hill.