

# Ryan Straight, Ph.D

Assistant Professor  
Cyber, Intelligence, and Information Operations  
College of Applied Science & Technology  
University of Arizona

May 4, 2023

## Chronology of Education

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Degree	Graduation
M.S., Cybersecurity - University of Arizona	May 2023
Ph.D, Instructional Technology - Ohio University Dissertation: An Exploratory Study of Augmented Reality and Mobile Games Examining Ingress Player Motivation and Potential Educational Value Dissertation advisor: Dr. Teresa Franklin	May 2015
M.Ed., Cultural Studies in Education - Ohio University Seminar Paper: Religion and Public Education, A Review of the Literature Seminar paper advisor: Dr. Najee E. Muhammad	May 2009
BS.Ed., Integrated Language Arts - Ohio University Major: Secondary English Education (7th - 12th grades American and British Literature) Minors: English Literature and Philosophy	December 2005

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## Chronology of Employment

### Academic Positions

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<b>Assistant Professor (Tenure track)</b> - Applied Computing & Cyber Operations, College of Applied Science & Technology, University of Arizona.	2023 - current
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<b>Director</b> - MA{VR}X (Extended Reality) Laboratory, College of Applied Science & Technology, University of Arizona.	2021 - current
<b>Associate Professor of Practice</b> - Applied Computing & Cyber Operations, College of Applied Science & Technology, University of Arizona.	2022 - 2023
<b>Assistant Professor of Practice</b> - Applied Computing & Cyber Operations, College of Applied Science & Technology, University of Arizona.	2021 - 2022
<b>Assistant Professor (Career track)</b> - Applied Computing, College of Applied Science & Technology, University of Arizona.	2019 - 2021
<b>Assistant Professor (Career track) &amp; Co-Program Director</b> - Educational Technology, College of Applied Science & Technology, University of Arizona.	2017 - 2021
<b>Senior Lecturer</b> - Educational Technology, University of Arizona, College of Applied Science & Technology	2015 - 2017

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## Professional Positions

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<b>Instructional Technology Training Specialist</b> - University Information Technology Services, University of Arizona - Tucson, AZ	2015 - 2017
<b>Student System Testing Analyst</b> - Office of the University Registrar, Ohio University - Athens, OH	2012 - 2015
<b>Undergraduate Catalog Manager</b> - Office of the University Registrar, Ohio University - Athens, OH	2009 - 2010

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## Major Fields

Cyber operations, extended reality, digital identity, Web3, postphenomenology, posthuman inquiry, e-Learning.

## Honors and Awards

- Outstanding Innovator award, College of Applied Science and Technology, 2022.
- Included in The 2019 Dean's List: EdTech's 30 Must-Read Higher Education IT Influencers

- Best In Track: “The New Professor: How I Podcasted My Way Into Students’ Lives (And How You Can, Too)”, OLC Innovate 2019.
- Effective Practice Award, “#SquadGoalsNetwork – Remixing the Personal Learning Network,” Angela Gunder, Jessica L. Knott, Ryan Straight, Clark Shah-Nelson, Keegan Long-Wheeler, Benjamin Scragg, John Stewart; The University of Arizona, Michigan State University, The University of Maryland, The University of Oklahoma, Arizona State University. OLC Accelerate 2018.
- Honors Professor, Honors College, spring semesters.
- UA Distance Faculty Fellow, inaugural, 2017 - 2020. (Program suspended in 2020 due to COVID-19.)

## Scholarship

### Peer Reviewed/Refereed

#### Articles

- Straight, R. (2023). Disparate Parasocial Phenomena Evaluation in Traditional Media and Immersive Virtual Reality. (In review.)
- Straight, R. (2023). Knowledge, Attitudes, and Opinions of Web3 Educators, Enthusiasts, and Critics. (In review.)
- Straight, R. (2023). Postphenomenological Cybersecurity: Sabotage, Mediation, and Intention in Man-in-the-Middle Attacks. (In preparation.)
- Straight, R., & Yecies, B. (2023). Decentralized Autonomous Organizations as Virtual Communities of Inquiry. (In preparation.)

#### Conference Proceedings

- Straight, R. (2023). Parasocial Relationships in Virtual Reality: Pedagogical Considerations for Online Learning. In *Proceedings of EdMedia + Innovate Learning 2023*. Vienna, Austria: AACE. Acceptance rate: 25-39%.
- Straight, R. (2016). Emergent mentorship and learning communities of practice among players of augmented reality video games. In *Proceedings of E-Learn: World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*. Washington, DC: AACE. Acceptance rate: 25-39%.
- Smith, J., Straight, R. & Franklin, T. (2011). Student occupational expectations: A web 2.5 geolocateive study. *Proceedings of the Association for the Advancement of Computing in Education 2011* (pp. 2522-2526). Honolulu, HI: AACE. Acceptance rate: 25-39%.
- Straight, R. (2011). Commercial off-the-shelf video games as computer-assisted language learning environments. In *Proceedings of Society for Information Technology & Teacher Education International Conference 2011*(pp. 1982-1986). Chesapeake, VA: AACE. Acceptance rate: 25-39%.

- Smith, J. & Straight, R. (2011). The development and delivery of custom mobile apps for K-12 learning: Viable options for educators. In *Proceedings of the Society of Information Technology & Teacher Education International Conference 2011* (pp. 3102-3107). Chesapeake, VA: AACE. Acceptance Rate: 25-39%.

## Conferences/Scholarly Presentations

### Peer Reviewed

- Straight, R. (2023). "The State of Online Learning in Web3: How Educators Understand and Implement Ed3, Blockchain, and Metaversal Technologies." OLC Innovate. Virtual. (Acceptance rate: 50%.)
- Straight, R. (2022). "Who Says You R Not a Coder? Building Data-Driven, Open Source, Static Course Content for Accessibility and Interactivity with R." OLC Accelerate. Orlando, FL. (Acceptance rate: 50%.)
- Straight, R., Arfan, M., Bernstein, D., & Peck, M. (2022). "Web3 and Education: An Optimistic Primer on Online Learning's Blockchain-based Future." 2022 OLC Accelerate. Virtual. (Acceptance rate: 50%.)
- Straight, R. (2022). "Karu: Introducing the Metaversal Library for the Future of Immersive Larning." Presented at 2022 OLC Innovate, Dallas, TX. (Acceptance rate: 50%.)
- Straight, R. (2021). "Technological Mediation: A Postphenomenology Primer for Instructors, Designers, and More." 2021 OLC Accelerate. Virtual. (Acceptance rate: 50%.)
- Saldana, D., Straight, R., & Wittman, R. (2021). "Teams-Work Makes the Dream Work: Using Microsoft Teams to Build Community in Fully Online Programs." 2021 OLC Innovate. Virtual. (Acceptance rate: 50%.)
- Straight, R. (2020). "Community Continuity in the Time of Corona." Presented at the 2020 OLC Ideate event. Virtual.
- Rettler-Pagel, T. & Straight, R. "Owning Your Success: Battling the Impostor Phenomenon in Higher Education." Presented at the 2019 OLC Accelerate conference, Orlando, FL. (Acceptance rate: 50%.)
- Straight, R. "The New Professor: How I Podcasted My Way Into Students' Lives (And How You Can, Too)." Selected Best In Track. Presented at the 2019 OLC Innovate conference, Denver, CO. (Acceptance rate: 50%.)
- Straight, R., Gunder, A., Stewart, J., King de Ramirez, C., Thompson, K., & Pizzo, J. (2018). "And We're Live! A Rough Guide on Academic Podcasting." Presented at the 2018 OLC Accelerate conference, Orlando, FL. (Acceptance rate: 50%.)
- Gunder, A., Knott, J., & Straight, R. (2018). "#SquadGoalsNetwork - Remixing the Personal Learning Network." Presented at the 2018 OLC Accelerate conference, Orlando, FL. (Acceptance rate: 50%.)
- Shah-Nelson, C., Gunder, A., Stewart, J., Romanoski, M. Knott, J., Scragg, B., & Straight, R. (2018). "With a Little Help From My Friends: The Power of the PLN." Presented at the 2018 OLC Accelerate conference, Orlando, FL. (Acceptance rate: 50%.)

- Straight, R. (2017). "Slacking Off in Class: Cloud-Based Team Collaboration in Online Higher Education Programs." Presented as an Innovation Lab at the 2017 Online Learning Consortium Innovate conference, New Orleans, LA. (Acceptance rate: 50%.)
- Straight, R. (2016). "Slack and the Online Classroom." Presented at the 2016 University of Arizona IT Summit, Tucson, AZ.

### **Invited**

- Straight, R. (2023). "The Inescapable Technological Mediation of Online Learning." *Transforming the Teaching & Learning Environment*. University of Pittsburgh. Virtual.
- Straight, R. (2022). "Simulations, Immersion, and Gamification." *Digital Literacy & AI Webinar Series*. UNESCO. Virtual.
- Straight, R. (2021). "Introduction to the XRpedia." Presented at the 23rd Virtual Worlds Forum. Virtual.
- Straight, R. (2019). "The Games Peoples Play." OLC Collaborate, Maui 2019. University of Hawai'i Maui College, Kahului, Maui, HI.
- Invited panelist, \*TENWEST Festival - Social Impact Summit, "Innovation in Educational Technology," Tucson, AZ - 2017.

### **Submitted**

- Straight, R. (2022). "A Philosophy of Technology and Education in the Metaverse." Ed3 Unconference. Virtual.
- Straight, R. & Ozgen, D. (2022). "Building a Metaversal Curriculum." Ed3 Unconference. Virtual.
- Straight, R. & Gunder, A. (2016). "Innovative Learning Projects: Promoting Leading-Edge Opportunities in Higher Education." Poster presented at the 2016 University of Arizona IT Summit, Tucson, AZ.

### **Awarded Grants**

*Campuswide Novel Asynchronous Communication*. Role: PI. Co-PI: Romi Wittman. Funding source: Innovative Learning Project, UArizona. Total budget: \$3,000. Internal.

## Submitted Grants

### Principal Investigator

*GRASPE (Cybersecurity): Gamified Realities and Storytelling Platform for (Cybersecurity) Education.* 20% effort. Role: PI. Funding source: NSF 22-548 (ECR: Building Capacity for STEM Educational Research (BCSER)). Total budget: \$348,363 (Direct: \$221,409; Indirect: \$118,454). (2023-26). Submitted Research.gov 2023-02-23. Tracking number: 2321258.

In this STEM education research capacity project, the investigator proposes to develop narrative-based cybersecurity- and Web3-focused educational materials using emerging technologies like augmented reality and volumetric video to investigate evidence-based improvements in underserved-youth-directed learning. Using postphenomenology and posthuman inquiry frameworks, the project seeks to enhance learner safety and knowledge through technologically mediated, epistemological exercises and experiences. This study will investigate how and to what extent these next-generation, gamified learning experiences impact domain knowledge and scenario-based learner response. The hypotheses guiding this proposal are: 1) compared to “traditional” media, these emergent technologies will produce a measurable increase in learners’ STEM domain knowledge, analysis, and evaluation; 2) learners who partake in narrative, gamified learning materials will demonstrate higher engagement with this highly complex, critical STEM domain; 3) learners’ successful completion of the program will positively correlate with further interest in the domain and increased interest in exploring cybersecurity and related post-secondary education and careers.

*Supporting Undergraduate Research and Knowledge Transfer through the Use and Development of Free Open Source Software Platforms and Tools.* 2.5% effort. Role: PI. Funding source: Provost Investment Fund, UArizona. Total budget: \$70,000. (2023-24). Submission: fall 2023.

In line with the university’s interest in developing and supporting undergraduate research efforts, this project seeks to design a platform that supports knowledge retention, transfer, and generation, all while leveraging free and open source software and the principles of open and reproducible science. As this project is Wildcat-targeted and domain agnostic, the platform and content will be applicable and easily implemented and incorporated across programs and fields.

### Co-Principal Investigator

*Building the Next Generation Human Firewall (NGHF): A Customizable Informal Cybersecurity Learning Model.* 10% effort. Role: Co-PI. Co-PIs: Dalal Alharthi (PI), Paul Wagner (Co-PI), Michelle Higgins (Co-PI), Amber (Co-PI). Funding source: NSF 22-626 (EHR: Advancing Informal STEM Learning (AISL)). Total budget: \$146,583 (Direct: \$97,722; Indirect: \$48,861). (2023-24). Submitted Research.gov 2023-01-10. Tracking number: 2314286.

The overarching aim of this Type 3 AISL Planning proposal is to develop a customizable and replicable informal cybersecurity learning model for youth ages 11-13. Currently, demand for highly qualified cybersecurity professionals far exceeds supply. In addition to that, the cybersecurity industry is not ethnically diverse, according to the (ISC)<sup>2</sup> Cybersecurity Workforce Study that was released in 2022. Minoritized individuals comprise 17.1% of the cybersecurity

workforce and only 21.5% are women. These demographic concerns warrant the development of methods to successfully recruit and retain more women and minoritized individuals into the field. The development of this planning proposal was motivated by (1) the need for a diverse well-trained cybersecurity workforce, and (2) the desire to contribute to informal cybersecurity learning literature. To accomplish goal #1, our proposed partnership will develop and pilot test an informal cybersecurity learning program that aims to engage and build the confidence of youth ages 11-13 (particularly girls, Latinos, African Americans, and Native Americans) as the potential next generation of cybersecurity leaders. To achieve goal #2, we will develop a Type 4 Integrating Research and Practice proposal focused on implementing an updated informal cybersecurity learning model in multiple schools, with particular attention on how the model can be customized in diverse settings, enabling other educators and researchers to replicate and/or extend the proposed work. We will develop an informal cybersecurity learning program for youth ages 11-13 through a cyclic approach that includes five phases: community building, designing learning experiences, delivery methods, pilot testing, and assessment methodology.

### **Current Ongoing Research Projects**

- Study: *Virtual Reality Fitness Coaches and Parasocial Relationships (Parasocial VR)*. IRB: STUDY00001202. Pre-registration: <https://doi.org/10.17605/OSF.IO/7WUV5>

People develop one-way relationships with media figures, celebrities, even fictional characters. These can range from feelings of kinship to notions of romantic partnership. These experiences are termed “parasocial.” Parasocial phenomena—parasocial interactions, relationships, even break-ups—are well documented in traditional media dating back to newscasters in the 1950s. Recently, parasocial phenomena have been explored with “new” media like game streaming websites and YouTubers who, unlike newsreaders or television and film actors, can break the one-directional media limitations and easily interact directly with the viewer. This study seeks to explore an even newer medium—virtual reality—and determine to what extent parasocial phenomena are similar or different within an immersive and not wholly passive experience.

- Study: *Web3 Education (Ed3)*. IRB: STUDY00001782. Pre-registration: <https://doi.org/10.17605/OSF.IO/VM5AX>

The movement toward a sufficiently decentralized internet (known as Web3) has been gaining popularity in areas such as finance (cryptocurrency) and the industrial supply chain (blockchain). Another area that is beginning to build steam is in education. Proponents of decentralization, learner sovereignty, and verifiable credentials see the Web3 movement as a boon for education. This is generally known as Ed3. This study seeks to gather opinions, attitudes, criticisms, and concerns about the Ed3 movement from organizers, attendees, and online community members at a conference specifically built around this topic. A survey will be provided online. Participants who complete the survey will receive a digital badge as compensation.

### **Completed Research Projects**

- Study: *Improving Community via Novel Communication Software*. IRB: 2008966473.

Online classes can often feel isolating and distant. This study examined the potential of, and developed best practices and guidelines for, using new communication software in this environment.

## **Guided Student-Led Research Projects**

- Student: Keroack, Jacob. (Spring 2023). College of Science: Neuroscience and Cognitive Science. Research performed in MA{VR}X Lab.
- Student: Somohano, Anthony. (Spring 2023). Eller College of Management: MIS & Accounting. Research performed in MA{VR}X Lab.
- Student: Yowika, Waamene. (Spring 2023). College of Applied Science and Technology: Cyber Operations (Engineering track). Research performed in MA{VR}X Lab.
- Student: Diguardi, Nikki. (Spring 2023). College of Applied Science and Technology: Applied Computing. Research performed in MA{VR}X Lab.

## **Service/Outreach**

### **Graduate Student Committees**

- Reviewer, dissertation (Minor Chair) & comprehensive exam committees: Adina Gardner. Nursing: Neurobiology.

### **Institutional Service**

- Director, College of Applied Science & Technology Virtual Reality Lab. (2021 - Ongoing)
- Women in Cybersecurity (WiCyS) student group support (2021 - ongoing)
- College of Applied Science & Technology Faculty Forum
  - President: 2019 - 2021 (two terms; typically a one-year engagement)
  - Past-President: 2021 - 2022
- UAccess Learning revamp project - Interface subject matter expert (2020)
- University of Arizona Faculty Learning Community - Teaching Continuity co-creator (2020 - 2021)
- CAST Executive Leadership team (2019 - 2021)
- College of Applied Science & Technology Honors faculty advisor (2019 - 2020)
- Faculty advisor, Associated Students of Arizona South Student Government (2017 - 2020)

### **Local/State Outreach**

- Regional news coverage: “CAST is diving into virtual reality with new lab.” Herald/Review, Sierra Vista, AZ. [https://www.myheraldreview.com/news/lifestyle/cast-is-diving-into-virtual-reality-with-new-lab/article\\_3702222e-9f07-11ec-965a-07c77fbd622.html](https://www.myheraldreview.com/news/lifestyle/cast-is-diving-into-virtual-reality-with-new-lab/article_3702222e-9f07-11ec-965a-07c77fbd622.html)
- Development of educational virtual tour of Patterson Observatory, Sierra Vista, OH. Link: <https://mavrxlab.org/news/2021-09-02-patterson-observatory-3d-tour/index.html>
- Lab-based “Dine Under the Stars” charity event support, 2021 - 2022.



- Write-up in University of Arizona's *UA@Work* feature *Lo Que Pasa* about Faculty Learning Community, April 29, 2020.
- Invited speaker, "STEM Resources for Parents and 6-8th grade children," Gridley Middle School, Tucson, AZ - 2016.

## National/International Outreach

- Associate editor: *Humanities & Social Sciences Communications* (formerly *Palgrave Communications*), published by *Springer Nature*. 2019-Ongoing.
- Reviewer: *Humanities & Social Sciences Communications* (formerly *Palgrave Communications*), published by *Springer Nature*. 2019-Ongoing.
- Usability advisor, *Teamflow*, 2021.
- Invited Judge: OLC Innovate 2021 *Effective Practice Awards*.
- Host, "*The New Professor*" podcast, 2017 - 2020.
- Usability advisor, *Enightful*, 2020 - 2021.
- Guest, *Teaching in Higher Education (TiHE) Podcast*, May 2020.
- Guest, *Learning Nuggets* podcast, April 28, 2020.
- Profile featured in Scholastic magazine's **Tech4Innovation**, 2019.
- Keynote: *Twenty Under 40 & Citizen of the Year Awards* presented by the Sierra Vista Herald and SSVEC (2019).
- Steering Committee, OLC Innovate: Workshops track co-chair, 2019.
- Social Media Advisor, *Learning Science Research Nurturing Students & Classroom Innovation (LRNSCI)*, International Society for Technology in Education (ISTE), 2018 - 2019.
- Consultant, *Course of Mind* podcast, International Society for Technology in Education (ISTE), 2018-2019.
- Online Learning Consortium workshop facilitator, *Designing Gamified Learning Environments*, 2019 - 2020.
- Online Learning Consortium workshop facilitator, *Designing Game-Based Learning*, 2019 - 2020.
- Staff writer, *Chronicle of Higher Education - ProfHacker* (2017 - 2019)

## Departmental Committees

- Graduate Program Development (Doctoral) (2022 - ongoing)

## College Committees

- Undergraduate Research Development committee (2022 - ongoing)
- Student Showcase organization committee, member (2018)
- College of Applied Science & Technology Policy Committee (2017 - 2018)
- College of Applied Science & Technology Technology Committee (2016 - 2018)

## University Committees

- Graduate Council (2022-2025)
- University Search Committee for Online Teaching and Learning Meeting Software (2017 - 2018)

- University Funding Committee (2017 - 2018)
- Graduate College Grievance Committee (2015 - 2018)