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# Designing Digital Simulations to Promote Inclusion in the Social Studies Classroom

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## ABSTRACT

Engaging social studies pedagogy has a history of using simulations in the classroom. In their present form, simulations can often come with logistical elements that distract from fundamental learning goals. In this paper, we summarize our experience building and facilitating a digital fur trade simulation for use in a 6<sup>th</sup> grade Minnesota Studies classroom with the goal of alleviating logistical and exclusion strain. Importantly, we make an existing simulation more accessible to students with limited mathematics, reading comprehension, or English-language skills specifically English Learners and Special Education students who have traditionally struggled with the existing simulation. Reflecting on this experience, we identify new possibilities for accessibility, inclusion, and engagement promised by digital simulations that demonstrate their compelling utility for classroom social studies teachers.

**Keywords** simulations; digital simulations; inclusion; accessibility; English Language Learners; Special Education

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## **INTRODUCTION**

Many social studies teachers—especially those teaching in diverse settings—are intimidated by classroom simulations because of the potential for them to go horribly wrong (Onion, 2019), the structural barriers presented by technology (Hébert et al., 2021), and budget limitations. However, it is also true that simulations are a mainstay of social studies teaching and research (Wright-Maley, 2015b).

In this paper, we present our experience collaboratively building and facilitating a digital fur trade simulation for use in the fur trade unit of a 6th grade Minnesota Studies classroom. In doing so, we attempt to alleviate some of the traditional pain points of simulation implementation while also providing a new lens for accessibility, inclusion, and engagement.

## THE RESEARCH

#### **Creating Simulations**

We created a digital version of an existing paper-pencil fur trade simulation developed by the Minnesota Historical Society aiming to make it more accessible to students with limited mathematics, reading comprehension, or English-language skills—specifically English Learners and Special Education students who struggled with the traditional simulation. Using Qualtrics, an online survey builder, we based the survey pathways on the content of the established fur trade simulation. We also examined how the switch to a digital simulation impacted student understanding of fur trade economics elaborated upon within the lesson. To assess these outcomes, we observed student small-group discussions and collected reflection sheets.

In the simulation, 6<sup>th</sup> grade students played the role of fur trader for a fictionalized fur company in Minnesota during the 1600s. The simulation aimed to teach students about the business of the Minnesota fur trade, specifically which types of goods were most desired by Indigenous trading partners, and why. First, students selected manufactured trade goods they would like to trade.

Students had a limited budget, and could not purchase every option. They were provided a reflection sheet to track their budget and record the options they selected. Students were asked to reflect on

their selected trade goods and why they chose them. Then, they traded these items with various fictional trading partners by reading text, making choices, and answering the survey questions in Qualtrics.

There were 3 primary types of content in the simulation. First, story-based instructions that helped the students understand the context of the simulation. These instructions were written to be as concise as possible, with key details repeated strategically during the simulation to help students understand the task. Second, interactive devices like a shopping list that allowed students to select goods to trade and buttons to click to complete various trades. Third, survey reflection questions designed to help prompt students to transition to the in-class reflection activity. The figures below demonstrate some of these essential elements:

### Figure 1a

#### Sample Instructions

The year is 1695.

You are a fur trader. Your job is take other types of goods and trade them for furs. You work for the Minnesota Fur Trading Company. They have given you money to purchase goods that you will then trade for furs.

In order to fulfill your contract, you must break even or make a profit on furs.

## Figure 1b

#### Sample Purchase and Tabulation

How many copper kettles would you like to buy?

С	opper kettles cost 25 shillings each	
C	0	
(		
(	) 2	

You have bought: 0 Muskets 1 Copper kettles

1 Steel knives

2 Cloths

1 Strands of beads

Your total number of unspent and wasted shillings is: 0 Shillings

## Figure 1c

#### Sample Trade Dialogue

You are approached by a person willing to trade 4 of their beaver pelts for one strand of beads.

They are the only person willing to trade for a strand of beads and only want one.

Make the trade	
O Refuse the trade	

## Figure 1d Sample Outcome

# In total you ended the day with 4 beaver pelts, 2 otter pelts, a bear pelt, and 10 muskrat pelts. That means you traded for furs with a 185 shilling value.

That's pretty good. Considering the fur company sent you with 50 shillings, making 185 back in furs means you made money.

Your company will be thrilled with your results. This is the BEST result possible out of all possible outcomes.

**Result: +135 shillings** 

## Figure 1e

#### Sample Reflection Question

As you reflect on the day, you have to decide if you're happy with what you got or if you wish you'd done something differently.

Are you?	
• Happy with the outcome	
O Wish I'd done something different	
O I'm not really sure	

Depending on the outcome of each trade, students were routed through different pathways similar to those in the existing paper-pencil simulation. For example, students who selected a musket, spending their entire budget, could only successfully make one trade. When they completed all possible trades for their chosen items, the Qualtrics survey calculated their profits and students reflected on their profit outcomes and learning on the reverse side of their reflection sheet. Specifically, students were asked what strategies earned the most profit in the simulation, what goods their trading partners most wanted, and to make inferences about why trading partners wanted these goods. Depending on the choices the students made, there were 14 possible outcomes—some

more profitable than others. The simulation was playable via a reusable URL given to students. Approximately 150 6th grade students completed the simulation during their 50-minute class periods.

## **FINDINGS**

Converting the simulation to a digital format benefitted teachers and students with fewer logistics, the ability for repeated and self-directed engagement, and increased time discussing the economics of the fur trade.

The most noticeable benefit was time savings. The traditional simulation required two 50-minute class periods, whereas the digital format reduced simulation duration to one class period. Instead of a 5-minute debrief at the conclusion of the traditional simulation, the digital format allowed for the facilitation of a 15-minute student-debrief discussion. This time was invaluable to students' processing and understanding of the reflection questions they were asked about, which strategies worked best in the fur trade, and which goods were most desired by trading partners. Students were able to learn independently at the start of the lesson and then reflect further during in-person randomized peer groups, without relying on direct teacher instruction. This discussion time allowed the teacher to conduct formative assessment and redirect student misconceptions. When direct instruction was needed, the time savings allowed for vocabulary review, extension of reflection questions, and guiding students to make connections to prior course content on gender-roles and "jobs" in early Ojibwe & Dakota cultures.

Further, the simulation was simple to facilitate and build. Unlike the traditional simulation, it required little preparation of classroom space, and because every student had a device, it required minimal supplies—only a half-sheet reflection and shopping list. Since the simulation took place in one class period, no students lost their work. Using Qualtrics meant that the simulation was simple to build, cost-effective, and easily accessible online via URL. The most challenging aspect of creating the simulation was developing pathways and possible outcomes, but the existing simulation provided a model we could follow. Using the pencil-paper framework, we created the digital version of the simulation in a matter of hours.

Most importantly, the digital format benefitted students. Like the original simulation, students made active decisions about trades, expressing their agency as learners (Rector-Aranda & Raider-Roth, 2015). But, the digitally-formatted simulation also allowed students to self-pace. Self-pacing allowed

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students to self-differentiate, make multiple attempts, and allowed the teacher and paraeducators to provide accommodations for students, including translation and "chunking" the task than spending their time managing student behaviors and logistics. Given multiple attempts, students were able to try different approaches, or "pathways," adding nuanced understandings to the lesson's subject matter and allowing students to learn from mistakes they made in prior attempts. These opportunities were not available in the traditional simulation due to time constraints.

Challenges presented by the switch to a digital simulation were typical to technology use in the classroom. Management of technology-related behaviors and 1:1 access to devices that were functional, charged, and used in on-task ways were obstacles. Largely, students participated enthusiastically throughout the simulation. Some students resisted randomly-assigned discussion groups during the debrief, which is not unusual in middle school classrooms.

Overall, the digital simulation format was successful in promoting student engagement and understanding of fur trade economics concepts. For inclusion classes with large numbers of English Learners and Special Education students, the digital format further facilitated adult support and inclusion of these students in collaborative group discussions.

## PRACTICAL IMPLICATIONS FOR TEACHERS

Our experience designing and implementing the fur trade simulation has direct implications for practice, especially as teachers mediate the challenges and benefits of technology in the classroom. Digital simulations are particularly compelling for social studies teachers due to their promises of accessibility, inclusion, and engagement. Many classroom teachers are intimidated by, or misunderstand simulations (Onion, 2019; Wright-Maley, 2015a; Wright-Maley, 2015b), without taking into account digital simulations specifically. Practitioners struggle to define simulations and frequently lump them in with role-plays, games, and other related pedagogical tools (Wright-Maley, 2015b).

Despite these misunderstandings, simulations are one of the best tools social studies teachers have for teaching complex systems in our classrooms (Aldrich, 2005). At the crux of the issue is pedagogical mediation (Wright-Maley, 2015b). Many classroom teachers either misperceive digital simulations as "just games," or perceive a "simulation day" as an opportunity to disengage, assuming students will learn via the simulation regardless of teacher intervention. Our experience underscores the flaw in this logic. Our digital simulation does not replace traditional classroom learning and student-teacher engagement; rather, it allows for increased engagement by lessening other structural barriers to participation. Knowledge of—and active engagement with—our content, learners, and context are essential for effective classroom use of simulations (DiCamillo & Gradwell, 2012). What made the digital simulation format effective and inclusive was the space it afforded for pedagogical mediation.

Despite structural barriers, like access to Wi-Fi and easy-to-use technology, most teachers remain motivated to use digital tools to improve student experiences (Hébert et al., 2021). Using technology in the classroom can present a variety of management challenges (Kuntz, 2012), but it is also perceived by teachers, parents, and communities as beneficial for learning (Dubé & Wen, 2021). Since the early-2000s, learning technologies have become essential for teaching and learning in the social studies (Lee & Friedman, 2009) and many social studies teachers are well-versed in using tools such as digital databases to engage their students in authentic intellectual work (Hofer & Swan, 2014). While teachers are faced with a constantly changing technological landscape of tools, the effective use of technology affords teachers the ability to differentiate and individualize curriculum (Johnson et al., 2022). Digitizing simulations provides the opportunity for teachers to combine graphics, video, and audio which can support English Learners (Brozek & Duckworth, 2011) and students with limited reading comprehension who may struggle when presented with text-only activities. Our experience building and facilitating a digital fur trade simulation affirms this—applying new technologies to time-honored simulation pedagogies created a more accessible lesson.

Inclusive teaching practices are necessary in social studies classrooms. More English Learners are placed in mainstream classes than ever before (Stairs-Davenport, 2023), and social studies is frequently one of the few classes where students are grouped heterogeneously rather than by standardized test scores. As such, social studies teachers are compelled to find ways to blend established social studies pedagogies, like simulations, with inclusive teaching practices requiring shifts away from "one size fits all" models toward individualized, differentiated learner experiences (Lindner & Schwab, 2020). Drawing on the assets of technology, allowing teachers the space to teach, and providing avenues for greater differentiation and individualization, digital simulations are a tool that can help teachers meet students' needs.

Ultimately, teachers should use digital simulations in the same way that they would use any other learning tool. It is essential to accommodate, modify, supplement, discuss, and provide context, and

the digital format eases the way. Technology allows for greater differentiation, individualization, and accommodation. Time savings allow for deeper discussion, collaborative learning, and student self-pacing. On the surface, sending students a single link to a digital simulation might seem less "customized," but it is important to remember that the simulation is a tool. Treating digital simulations as a tool allows practitioners to harness their potential for breaking down barriers to learning, increasing engagement, and centering students in lessons about highly complex social studies topics.

## Q & A with Annelise Paulson & Kat Albrecht

#### Question #1

#### Teacher's Question:

How do digital simulations promote inclusion and differentiation in social studies instruction?

#### Annelise Paulson & Kat Albrecht's Response:

We found that the digital version of this fur trading simulation promoted a wide range of differentiation and inclusion strategies. Lindner and Schwab (2020) describe inclusive education as consisting of collaboration, co-teaching, grouping, modification, individual motivation and feedback, and personnel support of students. The digital format of our simulation allowed for a more rigorous implementation of these inclusive strategies. Specifically, it allowed us to modify learning environment, material, process, product and time frame (2020). In the original paperpencil simulation, students could choose their own trade goods, but could not determine the pace of the simulation. This meant that all students needed to move around the room from station-tostation during a prescribed time in the lesson. Many students with disabilities struggled to complete the paper-pencil stations within the allotted time frame. By switching to the digital format, students were able to self-manage many of their individualized learning needs. For example, students with sensory needs were able to stay in one comfortable space and maintain emotional regulation, students with mobility needs were able to participate fully without a need for different materials from their peers, students with visual impairments were able to adjust font size and screen brightness, and bilingual students with language needs were able to use translation tools to better understand the course content presented in the simulation. The digital simulation structure also provided greater ability for personnel support of students throughout the lesson (2020). Students with self-management needs were able to complete the simulation in a para- or

teacher-led small group. Previously, the logistics presented by these needs were difficult to manage. Students with mathematics needs especially struggled with the calculations required in this lesson. The use of the digital format mitigated these challenges because the survey calculated profits for students automatically. As such, those students were better able to focus on the social studies topics of the lesson rather than getting bogged down and frustrated in the logistics of calculations.

The time savings of digital simulations also provided greater opportunities for inclusion through strategic grouping (2020). Since the digital format allowed for more discussion time, we were able to implement group discussion strategies and bring more student voices into the simulation reflection/debrief than in the paper-pencil simulation. By using randomized groups for discussion, students who completed the simulation at different paces brought a variety of different insights to the reflection questions. Since students were able to set their own pace and make multiple attempts on the Qualtrics survey if they finished before their peers, those students who needed a faster pace were able to pursue an enriched simulation experience by exploring a variety of pathways leading to different profit outcomes. Then, because they were grouped randomly, their insights were shared with a wider peer group during discussion. This grouping strategy would not have been feasible due to the time constraints presented by the paper-pencil simulation, and its use engaged more students in discussion about the simulation topics.

#### Question #2

#### Teacher's Question:

When designing and enacting lessons using digital simulations, what procedures should be taken by teachers to ensure the digital simulation supports learning outcomes?

#### Anneliese Paulson & Kat Albrecht's Response:

When designing and enacting lessons using digital simulations, it is necessary that teachers remember that simulations, digital or not, are pedagogically mediated learning experiences (Wright-Maley, 2015b). Along these lines, we would suggest prioritizing student reflection and discussion as a key component of the pedagogical mediation of digital simulations. As with any effective simulation, students must be actively engaged in learning throughout (Wright-Maley, 2015b). Utilizing strategic discussion protocols is one way to successfully mediate the digital simulation experience in the classroom.

For example, in our digital simulation we facilitated reflection and discussion strategies to focus student learning on understanding the economics of the fur trade. Specifically, students were asked to reflect independently on why they chose certain trade goods prior to completing their trades. Once trading was completed, students reflected on their results, and whether they were happy with their results and, if they redid the simulation, what would they change. The paperpencil version of the simulation ended student reflection there. However, because the tool of digital simulations afforded time savings within the lesson, the teacher was able to facilitate small-group discussion on additional reflection questions meant to deepen students' understanding of fur trade economics: What strategies seemed to work best-earn the most profit—in the simulation? What inferences (educated guesses) can you make about the fur trade from the simulation? Hint: What goods were most wanted? Who would've wanted these the most? Why would they have wanted them? Students explored these questions three times: once independently, once in a randomized small group, and once in a whole-class, teacher-led discussion. As such, the discussion protocol allowed for the teacher and paraeducator to redirect, reframe, and extend student learning using questioning strategies. Further, these reflections were better targeted to the learning outcomes of the simulation, and when written responses were turned in, they also served as a direct formative assessment the teacher could use to determine whether or not students could articulate which goods were most desired by Indigenous trading partners in the fur trade, and why.

It is also necessary that the builder of the digital infrastructure of the simulation has a clear understanding of the learning goals embedded in the simulation. Speaking for ourselves, it can be very tempting for technologists and designers to revel in the opportunity to design a game or simulation such that the pedagogical goal can take a back seat to the game itself. However, we found that working together to design the logic of the simulation and talking through the learning goals guarded against this problem.

#### **Question #3**

#### Teacher's Question:

What adaptations can be made to a digital simulation activity if not every student has a digital device?

#### Anneliese Paulson & Kat Albrecht's Response:

Access to student devices, and classroom technology in general, is a major barrier for many teachers (Hébert et al., 2021) when it comes to the use of digital simulations. If it is not possible for every student to have a digital device, we recommend grouping students into pairs or small groups to complete the digital portion of the simulation. Group work is not only an inclusive teaching strategy (Lindner & Schwab, 2020), but it can also serve as an effective work-around for classrooms with limited devices. The group-work strategy could be especially effective if students are assigned group roles (recorder, reporter, scribe, etc.) to structure their work. After having students work in pairs or groups on the digital simulation, we recommend randomizing discussion groups so that students are not discussing the debrief or reflection questions with the same peers with whom they completed the digital stage of the simulation. This strategy would broaden the perspectives students have access to, allowing them to learn from peer insights.

The well-known jigsaw strategy often used in collaborative learning would be an effective way to address this particular challenge. As in a jigsaw activity, students can first be sorted into technology-sharing base groups to complete the digital simulation. These base groups could be heterogenous groupings or, to provide greater accommodations or differentiation, homogeneous groupings based on reading level, personnel support needs, language needs, or a variety of other factors at the teacher's discretion. After completing the digital simulation, students would then re-group into jigsaw groups. Jigsaw groups should be composed of students from various base groups so that no student is working with the same group twice. In jigsaw groups, students can either work on reflection/debrief questions, or share their base groups' reflections and engage in discussion countering misconceptions or sharing multiple perspectives. After participating in both base and jigsaw groups, teachers can then engage students in individual formative assessment strategies such as written reflection, verbal reflections/conferencing, or exit tickets.

#### **Question #4**

### Teacher's Question:

How can Qualtrics (and/or other tools) be used to digitize existing simulations? Could you provide examples?

#### Anneliese Paulson & Kat Albrecht's Response:

The simulation we created translated well to Qualtrics because of the various "pathways" students could be routed through based on different trade decisions. But the beauty of this simulation is that we relied on a very simple system that could be implemented by a teacher who did not have any experience with coding or programming. The simulation is, at its core, a cleverly designed survey making use of skip and branching logics, and the simulation could be implemented in any survey builder. For example, Google Forms is another free survey building tool that teachers have access to through a Google Suite account.

The key to implementing this type of simulation is in creating logic diagrams to represent the different possible pathways. In our simulation creation, we were advantaged by a pre-existing simulation, but we still followed the practice of creating individual logic trees that mapped out possible outcomes. To do this, we met to discuss the price of trade goods, the value of various furs, and create a list of all possible outcomes, as well as what decisions a learner would have to make to yield that outcome. We drew out the pathways on paper and consulted those diagrams when building the actual survey. This gave us a reference document to make sure we had recreated every possible outcome in the survey/simulation.

Below, we provide two sample logic diagrams to show how this can be straightforward, or require more consideration. The first flow chart marks the simple outcome of what happens if a student decides to purchase a musket. The musket purchase exhausts the total budget, so it is the only good a student can purchase. However, the second example depicts the possible outcomes if a student foregoes the musket and decides to purchase at least one copper kettle, leaving the student with additional possibilities for later trades.

## Figure 2a

Sample Logic Diagram for Musket



## Figure 2b

## Sample Logic Diagram for 1 or More Copper Kettle



We also made sure to play the simulation through every pathway, and we recruited friends and colleagues to play too. This gave us confidence that every pathway worked, and that any confusing instructions were addressed. We made several choices in the survey specifically with a 6<sup>th</sup> grade audience in mind, including some strategically-repeated instructions and reminder documents. We also tested the simulation with the goal of breaking it, ending our testing when all

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attempts to break it had failed. Our testing procedure was very successful, and there were no problems reported during the simulation with the survey itself.

There are also more complex (and more aesthetic) ways of developing pick-your-path games with different apps, and various companies offer a variety of free or low-cost builders. However, we didn't do this because we wanted to test something in the classroom that was quick to set up and easy to implement. Indeed, including meetings, logic diagramming, and set-up, it only took about 3 hours to develop and build this simulation, and it is also completely reusable in future classes.

Similar methods could also be used to create various other Economics simulations where economic decision making is bounded by scarcity or government regulation. In our example, the pathways students could select in Qualtrics were tied to budget constraints. So long as there are pathways for student decision-making to follow, Qualtrics or Google Forms could be used to digitize the simulation. Along these lines, an Economics simulation demonstrating the differences in production between command, market, and mixed economic systems could also be effectively digitized. In this simulation, students might follow different sets of pathways in which they encounter differing levels of government regulation or supply/demand factors to eventually bring a product to market. The survey could tabulate the number of products created in each economic system, and, during discussion, students could consider the ease of bringing products to market, the quality of the products, and the variety of products brought to market under each economic system. But this is just the beginning of the possibilities for such simulations, since any domain of learning where student decision-making and analysis is emphasized is amenable to the fundamental structure of this simulation.

#### **Question #5**

### Teacher's Question:

What advice do you have for teachers new to using digital simulations in the classroom?

#### Anneliese Paulson & Kat Albrecht's Response:

We encourage teachers to remember the old adage "Don't reinvent the wheel!" We relied heavily on an existing paper-pencil simulation to design our digital version. Using extant curriculum resources helped us focus our efforts on the opportunities of digitization as a tool for improving student outcomes and inclusion. We advise teachers new to using digital simulations to do the same. Start with a simulation you know addresses your desired course outcomes and build a digital simulation from there. Preferably, you will have facilitated this simulation several times and can address common obstacles that your students face when you digitize it. Using extant curriculum resources can also help you to maintain rigor when creating your digital simulation version. Remember, the digital simulation is a tool for facilitating student learning, so make sure you choose the correct tool for the job at hand—the lesson outcomes or learning targets. Also, center your lesson planning around facilitating discussion or a "debrief" of the simulation.

We found that the crucial benefit of using a digital simulation rather than a paper-pencil simulation was the amount of discussion time that this switch affords. Pairing your digital simulation with a discussion protocol will help students process the complicated topics covered in your simulation. Additionally, we encourage teachers to use structured discussion protocols and assigned partners or groups. Structuring the discussion/debrief in this way can help students shift their mindset about the simulation away from the misconception that simulations are "just games" (Wright-Maley, 2015a) and help them stay focused on the learning outcomes for the lesson.

Lastly, we recommend setting clear technology expectations with your students prior to, or at the start of, the digital simulation. While technology can be a tool for increasing classroom engagement (Kuntz, 2012), access to, and effective use of, technology in the classroom can be a major challenge (Hébert et al., 2021). We encourage teachers to set classroom technology use expectations at the beginning of the term as part of establishing classroom norms, and also to ensure that they revisit these expectations in the context of the digital simulation. For example, facilitate discussion with students about what effective use of technology in the classroom looks like and sounds like. This strategy could also be effective if used to revisit both technology and discussion/group work norms in your classroom community. Finally, be sure that you have a backup plan in place for students who may not come to class prepared, or who run into technical difficulties. Consider our recommendations above for how you could facilitate a digital simulation

when not all students have access to a digital device. Partner or group work is a reliable, inclusive teaching strategy (Lindner & Schwab, 2020) that can be utilized in the event one or more students do not arrive prepared for the lesson.

#### Note

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## **ABOUT THE AUTHORS**

#### Anneliese Paulson

I am currently a doctoral student in Curriculum and Instruction at Indiana University Bloomington, located on the ancestral homelands of the myaamiaki (Miami), Lënape (Delaware), Bodwéwadmik (Potawatomi), and saawanwa (Shawnee) people. At IU I hope to further examine the nexus between social and civic education, linguistic, and neurodiversity inclusive practices for language learners and students with disabilities in social studies classes. Ultimately, I aim to prepare future social studies teachers to facilitate inclusive classroom communities which empower multilingual and neurodiverse social studies students. Previously, I taught secondary social studies, including 6th grade Minnesota Studies, in Mni Sota Makoce (Minnesota) in Prior Lake, Minnesota, on the traditional and contemporary lands of the Mdewakanton Dakota people. Outside of professional pursuits, I enjoy making music, reading murder mystery novels, and crafting art projects from recycled materials.

#### Kat Albrecht

I am an Assistant Professor at Truman State University in the Social Sciences and Human Inquiry Department, though I was an Assistant Professor at Georgia State University in the Andrew Young School of Policy Studies during the initiation of this research. I hold a PhD in sociology and a JD from Northwestern University. I am also currently an MFA student at the University of Georgia in the screenwriting program. My research sits at the intersection of computational social science, the study of fear, and criminal law. I direct my lab, the Fear and Computational Law Lab where we use innovative methods to measure how fear becomes entangled with U.S. law. I am also the Executive Director of the SCALES OKN, a court data non-profit where we work to make public data meaningfully public such that everyone can measure what's happening in the legal system at scale. I am also the North American Director of the Summer Institutes in Computational Social Science, where we provide support for and host free 2-week summer programs to teach computational social science techniques all around the world. Outside of my academic and non-profit pursuits I am a staff writer for Horror DNA where I specialize in reviewing creature features, low-budget horror, and practical special effect films.