



THE FUTURE *of* WORK

— *in the* —
STATE COURTS

at the Human-Technology Frontier

RESEARCH AGENDA

SEPTEMBER 2022

National Center for State Courts

ncsc.org

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Acknowledgments

This work is supported by a grant from the National Science Foundation (Award Number 2128981). This report was written by Andrea Miller, Principal Investigator on the project.

This project was developed by the core project team, including Andrea Miller, Juliet Aiken, Cristina Banks, Jennifer Elek, Iria Giuffrida, Diane Robinson, and Nicolas Vermeys.

NCSC staff who contributed to the project include Rebekke (Bailey) Chenevert, Lisa Custis, Lydia Hamblin, Breanne Harris, Tracey Johnson, Kelly Sutherland, and Allison Trochesset.

The project team is also indebted to our workgroup participants. Their ideas, insights, experience, and expertise shaped all of the content provided here.

The views and opinions expressed in this report are those of the author and do not necessarily represent the position of the National Center for State Courts or the National Science Foundation.



Introduction

State courts hear about 95% of all legal matters in the U.S. Public interactions with state courts through clerks, judges, probation officers, and other justice partners affect the legitimacy of the justice system, influence individual life outcomes, and shape communities. The courts also serve as conveners of a variety of social institutions and resources within each community. These include family and social services; educational institutions; physical, behavioral, and mental health care providers; law enforcement agencies; jails, prisons, and re-entry programs; and more.

The state courts are facing a pivotal moment. The rapid advancement of new technologies, along with the societal impacts of the COVID-19 pandemic and renewed calls for racial justice, have dramatically shifted the work of the state courts. New technologies affecting the state courts include the automation of case filing and case processing, the integration of Augmented and Artificial Intelligence (AI) in legal decision-making, and the movement of court operations from physical space into virtual space.

This is a crucial moment in which to evaluate the rapidly changing role of technology in the work of the state courts. As these technological developments accelerate, courts and researchers must collaborate to identify which legal decisions can be made by AI systems or by human-technology teams; reconfigure the composition of different occupations and skill sets within the court workforce; address job satisfaction, learning, and well-being among court practitioners; promote equity in court employment outcomes; promote equity in case outcomes for court users; and foster public trust in the legal system as a whole.

The National Center for State Courts received a planning grant from the National Science Foundation (Award Number 2128981) to begin exploring the future of work in the state courts at the human-technology frontier. The purpose of this grant was to gather researchers, practitioners, and court stakeholders for a year of guided ideation and discussion to craft a cross-disciplinary, convergent research agenda.

Scope

This research agenda focuses on the role of human-AI partnerships in the future court workforce. Although other types of technologies were considered as part of the project activities under this grant, it has become clear that the human-AI interface is the place where this research can make the biggest impact. Some technologies (e.g., pre-trial risk assessment tools) are already highly developed and integrated into the court workforce. The ongoing development and improvement of these technologies is already well-funded and resourced, and there are established research-practitioner partnerships supporting the work. Other technologies (e.g., remote court platforms) are being integrated into the court workforce so quickly that courts need guidance sooner than this project can deliver them. In contrast, the kinds of court innovations that AI will make possible will require a sustained effort over the course of years, and this project aims to establish the research-practitioner partnerships that will drive these innovations.

Research Team

The research team will include a broad coalition of scientists, practitioners, consultants, and policymakers across many disciplines. These disciplines include (but are not limited to) psychology, computer science, sociology, law, communication, education, public policy, political science, design, and engineering. The research team will also include court stakeholders—members of the court workforce, court users, and justice partners—who engage in participatory research and design processes.



Summary of Project Activities

Workgroup Meetings

The core activity of this project was a series of five workgroup meetings that took place between March and June 2022 (see *Summary of Workgroup Meetings* for more details). These meetings brought together scholars from a variety of scientific disciplines (industrial-organizational psychology, social psychology, political science, computer science, law, criminology, public health), professionals who work in and for the state courts (court administrators, judges, information technology officers, human resource professionals), experts who provide consultation and technical assistance to the courts, and technology developers and vendors.

The first meeting was an in-person gathering, and it focused on the court workforce. Participants began the process of defining the court workforce and exploring what it would mean to automate or enhance some jobs or tasks with technology. The second and third meetings took place virtually, and they focused on future technologies. Participants thought about what kinds of technologies might come into play in the future and explored their potential effects on the courts. The fourth and fifth meetings took place virtually, and they focused on the court workforce and court users. Participants explored the potential impacts of future technologies on court workers' employment experiences and on court users' experiences and case outcomes.

Proof-of-concept Model of the Court Workforce

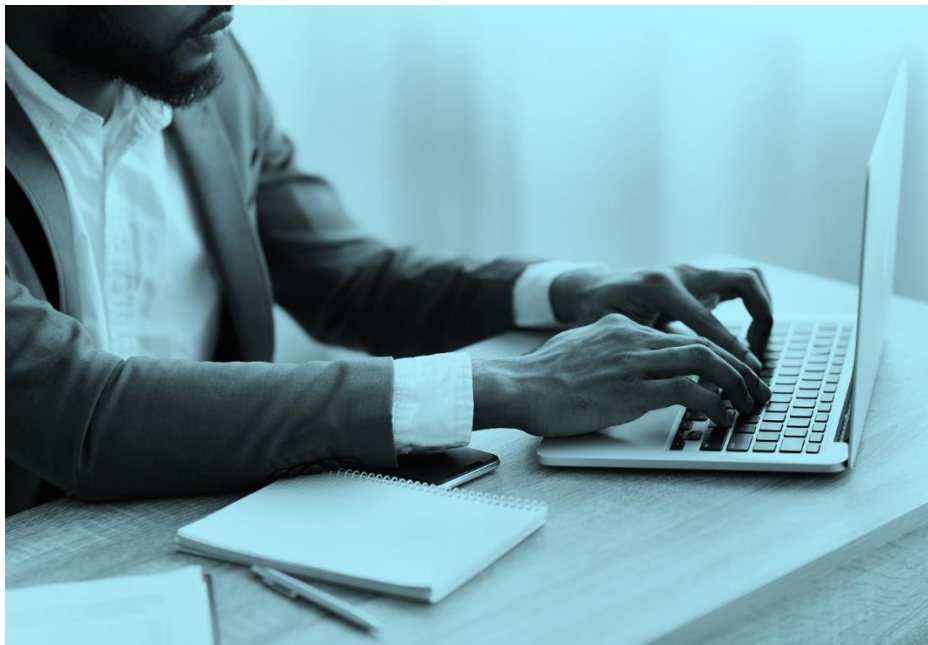
The research team created an initial prototype of a network model of the state court workforce. We used a sample of court job descriptions from 31 states, supplemented with data from the U.S. Department of Labor's [O*NET database](#), to construct a list of typical court jobs and tasks. We then explored how network modelling can be used to capture different clusters of state court roles that involve similar work (e.g., facilities and operations, court user interaction, courtroom management), clusters of roles that require similar skills, or clusters of roles that interact with each other in the caseflow management process. It became clear that a comprehensive, interactive network model of the court workforce will be a vital component of the research. It will enable us to conceptualize the court workflow, identify areas for improvement in court operations, and model the potential downstream impacts of new business practices or procedures.

Environmental Scan of Court Technologies

The research team conducted an environmental scan of how the state courts currently integrate technologies into their operations. We hoped to learn more about how courts have generally gone about adopting new technological innovations in the past. The technology uses we examined included remote hearings, online dispute resolution, and pretrial risk assessment tools. For each technology, we examined how it is being used in state courts across the U.S., what variations exist in its implementation, ethical and logistical concerns that the technology raises, the state of the research on the technology, and any changing trends in its usage. These technology examples help create a roadmap for the kinds of issues and roadbumps that the courts may experience as they adopt future technologies.

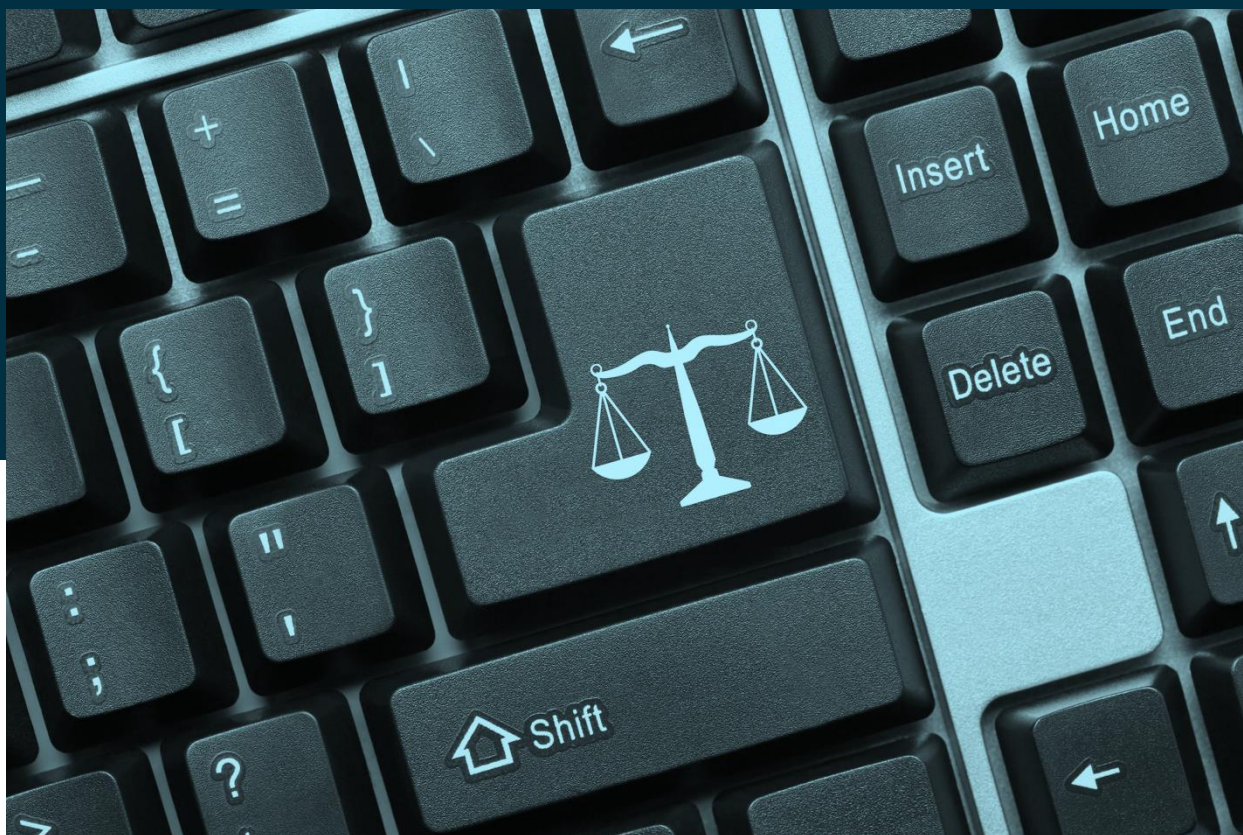
Literature review on Equity, Fairness, Accountability, and Transparency in AI

The research team conducted a literature review on ethical issues in Artificial and Augmented Intelligence (AI), including issues of equity, fairness, accountability, and transparency. We explored the current state of the research in this area. We gathered literature on how to evaluate fairness in AI decision-making, methods for building AI tools that make more equitable decisions, and ethical concerns about using AI in public institutions, such as the courts. There is a large amount of research activity happening in this domain right now, and the state of the knowledge will likely evolve quickly over the next decade. It will be critical to include experts in this area on the project team going forward.



Professional network

Finally, this project generated an interdisciplinary group of scholars and practitioners, who will continue to collaborate as the work moves forward. The cross-pollination of ideas and perspectives among participants has been vital for the research process so far. The network will likely continue to grow as the project moves forward and incorporates the expertise of people across more sectors and disciplines.



Guiding Principles for Future Research and Design

Participants in the workgroup meetings generated a set of guiding principles for future research and design. The *Summary of Workgroup Meetings* report contains a more detailed discussion of how these principles came about through conversations and activities in the meetings. This section synthesizes these insights into a list of guiding principles that the workgroup deemed important for future research and design in this area.

Holistic systems approach

As this project works toward re-imagining the operations of the courts to meet the needs of future court workers and court users, it will be essential for the research team to adopt a holistic systems approach. A holistic systems approach involves looking at the human worker in the context of the broader workforce and looking at work tasks in the context of the entire stream of caseload processing. Rather than thinking about how to fine-tune specific work tasks in isolation, the project team should consider the entire caseload process and where there are opportunities for improvements in how cases move through the system. Thinking about the work holistically will help inform decisions about which tasks might benefit from automation, while helping to prevent disruptions in court operations and unintended consequences for court workers.

Participatory research and design

The project team should adopt participatory methods in all stages of the research and design process. Participatory methods emphasize the importance of engaging stakeholders who conduct and understand the work in the process of research, design, and automation. These stakeholders—including both court workers and court users—can help shape agenda-setting and the weighing of the costs and benefits of different automation tools; help develop guiding principles and goals for the use of these technologies; identify tasks that would most benefit from automated assistance; pinpoint gaps and risks in the system with and without automation; predict “fatal flaws” in new systems; and help articulate standards for the performance of the tools and metrics for measuring performance. Participatory design also helps to promote buy-in from stakeholders when new systems are implemented.

Human-centered design

A guiding principle throughout this project is that future technologies should exist to support human stakeholders in the courts, rather than driving changes. Using this approach, human-automation work partnerships are designed so that the technology serves the human workers, and humans are always in control. This approach capitalizes on humans' ability to personalize and customize their decisions, draw on expertise, think critically and creatively, problem-solve, adapt to changes, and make decisions. Human-centered design involves specific strategies such as: considering what is the appropriate amount of work for a human and avoiding relying on outdated assumptions about how much work makes a full-time job; ensuring that new technologies don't simply create more work for the workers it is designed to support; giving humans the "last word" on decisions or actions made by an automated system; keeping humans in the loop by using automated systems that are observable and transparent, understandable and predictable, and reliable; and avoiding leftover design (designing technologies to automate certain parts of a job and leaving whatever work is leftover to the humans).

Standardization across jurisdictions

The court system is a patchwork of many smaller systems that operate idiosyncratically. This typically means that new technologies have to be customized substantially for adoption in each jurisdiction, and software platforms and data outputs are incompatible across jurisdictions. Differences across jurisdictions also inhibit innovation, as the inability to reach scale with new technologies prevents significant investment from venture capital. The courts' increased reliance on future technologies will make it vital to align data governance practices and increase information-sharing across jurisdictions. Standardization across data and software platforms will also need to go hand-in-hand with standardization in court policies and business practices.

Equity

Every stage of this project should be conceptualized through an equity lens. This approach includes placing the most marginalized groups at the center of inquiry, conducting equity impact analyses of proposed technological changes, and measuring the impacts of future technologies on disparities and disproportionality in court experiences and outcomes.

Research Questions

The project team developed a set of core research questions that drive this project. These research questions formed the basis of the workgroup meeting discussions, and they will continue to inform the research agenda going forward.

Re-conceptualizing the court workforce: What is the court workforce? How do different roles and tasks interact in the stream of caseload processing? Where should the operations of the courts be re-designed to meet the needs of future court workers and court users? Which court workforce roles and tasks can and should be automated or enhanced by technology? Which new occupations, jobs, and tasks will emerge? Which occupations, jobs, and tasks will become obsolete? How should job categories be re-conceptualized or re-organized to accommodate the new skill sets needed?

The impacts of future technologies on court workers: What are the impacts of future technologies on job satisfaction and well-being among court workers? What communication strategies and education will be needed to promote the acceptance of future technologies among court personnel? What skills will court workers need to effectively use future technologies? What are the implications of future court technologies on equity in court hiring, retention, and promotion?

The impacts of future technologies on court work: What are the impacts of future technologies on caseloads and case processing efficiency? What are the impacts of future technologies on the quality and equity of case outcomes? What are the impacts of future technologies on public trust in the courts? What new skills will court users need to navigate the courts? What are the implications of future court technologies on equity in court user experiences?



A Research Agenda on the Future of Work in the State Courts at the Human-Technology Frontier

Research on the future of work in the state courts will involve a multi-pronged approach that unfolds over several stages. This research agenda aims to anticipate and respond to the needs of court workers and court users as we move into a future in which AI technologies become intertwined in society and in the operations of the courts. This research agenda will also contribute to the basic science of industrial-organizational psychology, social cognition, science communication, computer science, design, engineering, adult learning, and legal decision-making.

The research agenda is divided roughly into stages, although the activities under different stages will likely overlap to some degree. The aim is to complete Stage I in 3–5 years. Stages II through IV are not defined by specific time periods, as different technologies might proceed through these stages at different speeds.

STAGE I: RE-CONCEPTUALIZING THE COURT WORKFORCE

Develop guidelines for the use of future technologies in the courts: Develop a set of overarching principles, values, and ethical guidelines for the use of AI in the courts. Submit these guidelines for adoption by the Conference of Chief Justices (CCJ) and the Conference of State Court Administrators (COSCA).

Conduct a survey of state court personnel: Design a survey of state court workers across the country using Social Network Analysis methods. Measure typical tasks for each court role, interactions among court roles, and workers' attitudes about potential uses of AI in their work.

Build an interactive network model of the court workforce: Use the findings of the court personnel survey to construct a network model of the state court workforce, including layers that show: 1) clusters of state court roles that involve similar work functions, 2) clusters of roles that require similar skills, and 3) clusters of roles that interact with each other in the caseload management process.

Re-imagine the court workflow: Engage court workers and court users in a participatory visioning process to re-imagine aspects of the court workflow that are in need of change. Drawing on the results of the workforce survey and the visioning process, identify priority areas for automation and human-AI partnerships.

STAGE II: DEVELOPING NEW HUMAN-AI PARTNERSHIPS

Articulate goals and standards for specific AI technologies: For the priority automation areas identified in Stage I, engage court workers and court users in a participatory design process to: 1) articulate goals for the use of these technologies, and 2) establish standards for the performance of the tools and metrics for measuring performance. Performance standards and metrics should capture impacts on employee wellbeing, workforce equity, case processing efficiency, quality and equity of case outcomes, and court user experiences.

Conduct feasibility studies of specific AI technologies: For proposed new AI technologies, examine potential development partners, funding models, and sustainability.

Develop AI-driven court technologies: Develop AI technologies and tools based on the goals and standards identified in the participatory design process.

STAGE III: IMPLEMENTING NEW AI COURT TECHNOLOGIES

Pilot-test new technologies in limited jurisdictions: Test new technologies using the performance standards and metrics identified in the participatory design process. Refine technologies as needed until they meet the standards for employee wellbeing, workforce equity, case processing efficiency, quality and equity of case outcomes, and court user experiences.

Develop on-the-job training protocols: Develop training protocols to teach workers how to use new technologies on-the-job. Examine varying educational needs for current job-holders who need upskilling or reskilling versus incoming new workers.

Develop public education about new technologies: Develop public communication and education strategies for new technologies that affect court users. Emphasize accessibility and cultural responsiveness of public communications.

Implement new technologies nationwide: Provide technical assistance to courts that are interested in implementing new technologies. Test the technologies to ensure that they continue to meet the standards for employee wellbeing, workforce equity, case processing efficiency, quality and equity of case outcomes, and court user experiences. Establish systems and processes for ongoing performance measurement.

STAGE IV: MAINTAINING AND IMPROVING AI COURT TECHNOLOGIES

Monitor performance and continue to improve technologies: Conduct regular analyses of performance measures and make ongoing improvements as needed.

