



# THE FUTURE *of* WORK

## — *in the* — STATE COURTS

*at the Human-Technology Frontier*

**SUMMARY OF WORKGROUP MEETINGS**

**SEPTEMBER 2022**

National Center for State Courts

**ncsc.org**

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# Acknowledgments

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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 Trocheset.

The project team is also indebted to our workgroup participants, who are listed throughout this report. 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.



## Overview

State courts hear about 95% of all legal matters in the U.S., and they 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 in legal decision-making, and the movement of court operations from physical space into virtual space. Although the court workforce includes a wide range of professional roles, all have felt the impact of these developments.

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 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.

This report summarizes a series of five workgroup meetings that took place between March and June 2022. 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.

Each gathering involved a combination of short presentations by experts, small-group brainstorming and problem-solving, and large-group discussion. This report summarizes the activities and insights of each meeting.

# Meeting 1: The Court Workforce

March 29, 2022 (Richmond, VA)

## Participants

Name	Organization	Expertise
Juliet Aiken	Conducere	Industrial-Organizational Psychology
Jennifer Bailey	Florida Courts	Court practitioner (judge)
Cristina Banks	University of California Berkeley	Industrial-Organizational Psychology
Kevin Bowling	National Association for Court Management	Court practitioner (administrator)
Dave Byers	Arizona Judicial Branch	Court practitioner (administrator)
Jason Cannon	IBM	Technology vendor
Pamela Casey	NCSC	Psychology
Paul DeLosh	Virginia Judicial System	Court practitioner (administrator)
Jennifer Elek	NCSC	Social Psychology
Iria Giuffrida	William & Mary Law School	Law, AI
Jim Harris	NCSC	Court consultant (court technology)
Carla Jones	InfoTrack	Court practitioner (IT), Technology vendor
Richard Landers	University of Minnesota	Industrial-Organizational Psychology
Stacey Marz	Alaska Court System	Court practitioner (administrator)
Andrea Miller	NCSC	Social Psychology
Kathleen Mosier	San Francisco State University	Industrial-Organizational Psychology
Diane Robinson	NCSC	Public Health, Data Governance
Nicolas Vermeys	Université de Montréal	Law, AI
T'Neil Walea	IBM	Technology vendor
Winnie Webber	Illinois Courts	Court practitioner (IT)

# Agenda

8:00 – 9:00	Welcome and Introductions
9:00 – 10:30	Presentations on the Court Workforce and the Work of the Courts Overview of the court workforce, Kevin Bowling Overview of court technologies, Jim Harris & Winnie Webber Industrial-Organizational Psychology 101, Cristina Banks & Kathleen Mosier
10:45 – 12:00	Small group breakouts and large group discussion: Imagining future courts
1:00 – 1:30	Large group discussion: What makes a task automatable?
1:30 – 4:45	Small group breakouts and large group discussion: Automating court tasks
4:45 – 5:00	Closing Remarks

## Presentations and Activities

### OVERVIEW OF THE COURT WORKFORCE

In this session, Kevin Bowling presented an overview of the courts to all participants, including the purposes the courts serve in society, how courts are generally structured, and typical court staffing patterns.

**The purposes of courts: Why.** As part of his work as a court educator and consultant, [Ernest Friesen](#) worked with court personnel over a period of about 10 years to develop a shared understanding of what purposes the courts serve. The following is the list of eight purposes that he developed:

- Do individual justice in individual cases
- Appear to do justice in individual cases
- Provide a final resolution of legal disputes
- Protect individuals from the arbitrary use of government power
- Make a formal record of legal status
- Deter criminal behavior
- Rehabilitate persons convicted of crimes
- Separate persons convicted of crimes from society

In addition to these core roles, Kevin Bowling identified some additional roles that the courts have taken on. For each of these activities, it could be argued that another branch of the government, social service entity, or technology would be a better fit to provide the service:

- Probation: should this be an executive branch function?
- Treatment services (e.g., problem-solving courts, juvenile programming): should this be a social work service?
- Collecting money: should this be a state treasury function?
- Information technology: should this work be outsourced?
- Traffic cases: should these be handled by departments of motor vehicles?
- Court reporting: should court reporters be replaced with audio and video recordings?
- Legal research: Should law clerks be replaced by AI research programs?

In many cases, the courts have taken on additional roles over time as other social and government institutions have been unable to meet society's needs in these areas (for example, problem-solving courts). Different roles have been added to the courts' purview in a somewhat piecemeal fashion, and the courts may benefit from having an opportunity to step back and consider holistically which of these responsibilities make sense for the courts to take on.

**Court structure: What.** Most state courts follow a typical overarching structure in which trial courts hear original cases and one or two levels of appellate courts review trial court decisions. Within that overarching structure, however, the courts vary widely in how they are organized. Some states have courts with specific jurisdiction to hear specialized subject matter (such as tax cases or juvenile matters). Some states have county or municipal courts that create an additional tier at the trial court level. States vary in the number of levels of appellate review that are available. Relationships between clerk's offices and the courts can vary quite a bit between jurisdictions. States also vary in the extent to which their courts are unified under a single budget and leadership structure or decentralized.



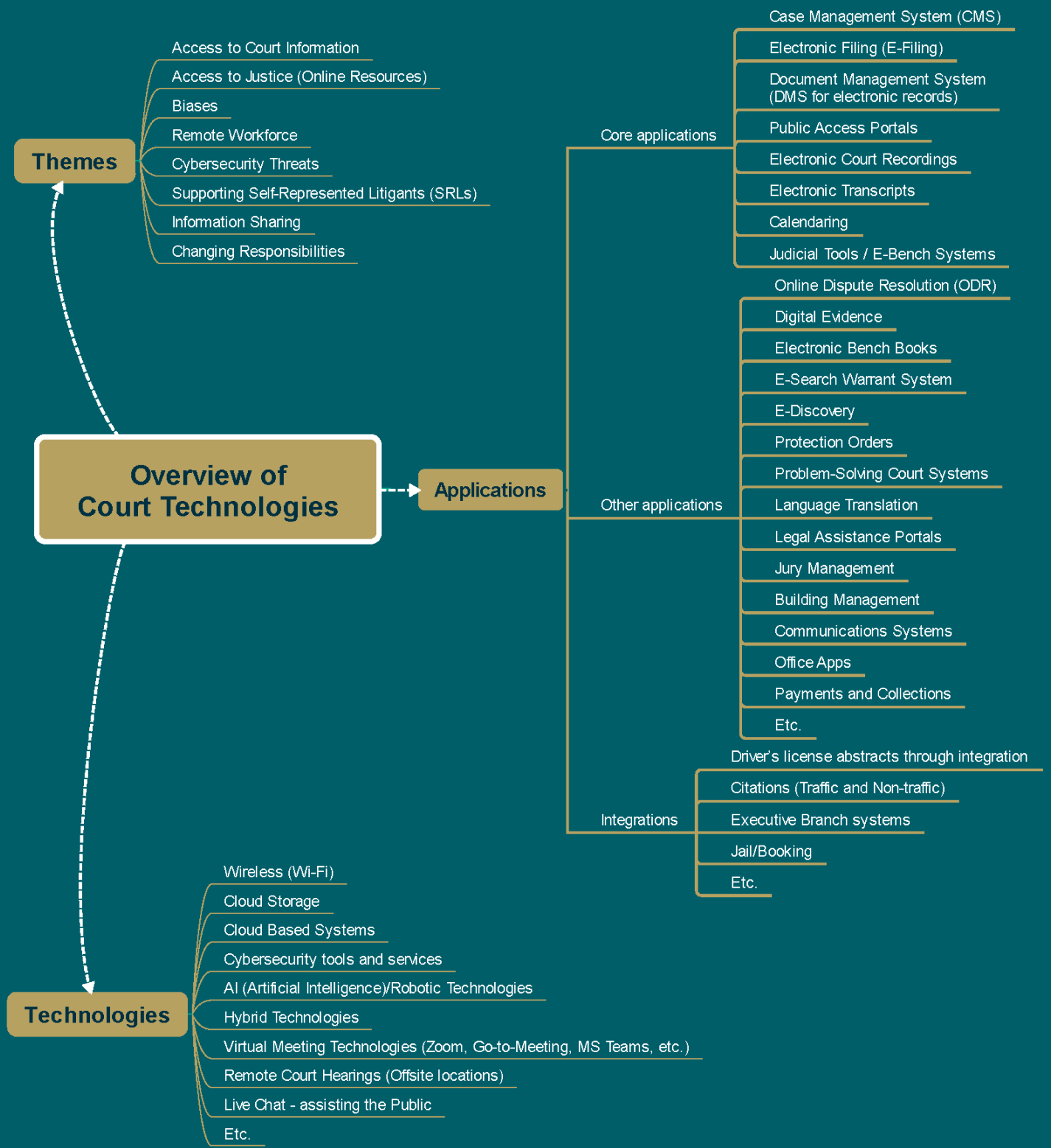
**Traditional court staffing patterns: Who.** The exact makeup of the court workforce varies between jurisdictions, but there are some overarching patterns of staffing that generally apply to most jurisdictions. The following is a list of typical categories of court personnel:

- Decision makers: judges, magistrates, commissioners, referees
- Administrators: state court administrators, trial court administrators, program directors
- Courtroom staff: court clerks, bailiffs, jury clerks, security personnel, court reporters, interpreters
- Professional staff: staff attorneys, law clerks, paralegals, program directors, probation officers, psychologists, social workers, treatment providers, librarians, public information officers
- Support staff: reception clerks, collection clerks, court navigators, grant writers, account clerks, detention staff
- Technical staff: IT personnel, facilities personnel, procurement officers, web masters, audio/visual support staff, drug testing staff, fixed asset managers

**Talent Development and Talent Management: When, Where, and How.** As we explore the future of work in the state courts, the courts will benefit from having a talent strategy in place, so they can ensure that they have the right people with the right skills in the right place and at the right time. Many resources exist to help the courts develop their strategies, but taking a proactive approach will require time, funding, and leadership.

## OVERVIEW OF COURT TECHNOLOGIES

In this session, Jim Harris and Winnie Webber presented a draft chart that provided an overview of court technologies. During the session, participants worked together to reorganize and add more content to the chart. The final version of the chart is reproduced here:



# INDUSTRIAL-ORGANIZATIONAL PSYCHOLOGY 101

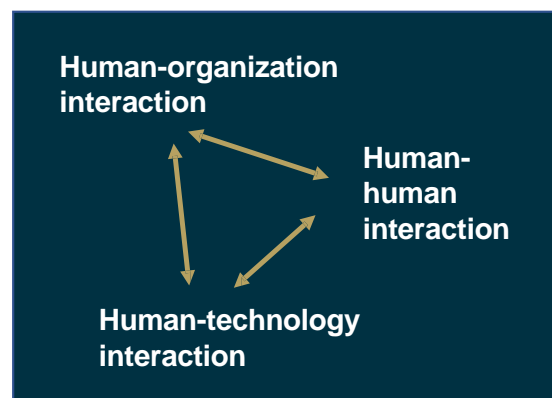
In this session, Cristina Banks and Kathleen Mosier presented an introduction to Industrial-Organizational Psychology, focusing on the major considerations when large-scale changes are coming to an industry or organization.

**What is I-O Psychology?** Industrial-Organizational Psychology is the scientific study of the workplace to understand human behavior in work settings and its impact on work and non-work outcomes. Researchers in this discipline examine a wide spectrum of factors that influence work behavior. Subfields within the discipline include selection and placement, training and development, organizational development, performance measurement, quality of work life, and human factors or ergonomics.

**Guiding principles & concepts.** Decades of research in I-O Psychology have culminated in some guiding principles and insights that will inform the work of this project:

- Employee performance is a function of ability, motivation, and organizational characteristics.
- Within a given environment, the best predictor of future behavior is past behavior.
- Behavior that is rewarded tends to be repeated; behavior that is not rewarded tends to stop.
- Extrinsic incentives that are attached to naturally occurring behavior tend to undermine intrinsic motivation.
- Employee involvement and participation in a change initiative increases understanding, commitment, and engagement in the change process.
- An organizational change strategy is most effective when it is consistent with employee values, desires, and personal benefits.
- An organizational change initiative that alters the person-machine interface requires reengineering in order to achieve an effective interface in the new environment.

**Human factors/ergonomics.** Human factors/ergonomics (HFE) is an integrative discipline concerned with the understanding of interactions among humans and other elements of a system.





The profession applies theory, principles, data, and methods to design in order to optimize human well-being and overall system performance.

An HFE perspective will be critical for generating a sustainable design for human-automation work systems in the state courts. This perspective emphasizes the following approaches<sup>1</sup>:

- Holistic systems approach: HFE looks at the person embedded in a socio-technical context. It asks questions such as: Where are the gaps in the system? What are the needs? What is the risk of errors, and how easily can the system recover from an error? What impact will a given change have on downstream processes? How sustainable is the work system over time?
- Human-centric work systems: Human-automation work partnerships are designed so that the technology serves the human workers, and humans are

<sup>1</sup> For further information, see European Commission, Directorate-General for Research and Innovation, Breque, M., De Nul, L., & Petridis, A. (2021), [\*Industry 5.0 : towards a sustainable, human-centric and resilient European industry\*](#); Dul, J., Bruder, R., Buckle, P., et al. (2012), [\*A strategy for human factors/ergonomics: Developing the discipline and profession\*](#), *Ergonomics*, 55:4, 377-395; International Labour Organization & International Ergonomics Association (2021), [\*Principles and guidelines for human factors / ergonomics \(HFE\) design and management of work systems\*](#); Mosier, K. & Hiba, J.C. (2019), [\*The essential contribution of Human Factors/Ergonomics to the future of work we want\*](#), International Labour Organization.

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. This guiding principle manifests in several specific strategies:

- Give humans the “last word” on any decision or action made by an automated system.
- Keep humans in the loop by using automated systems that are observable and transparent, understandable and predictable, and reliable.
- Use automation for the tasks it does best. These include repetitive movements and physically difficult tasks; data collection, integration, and recording; and front-end situation assessment.
- Provide back-up cues and information.
- Avoid leftover design (designing technologies to automate certain parts of a job and leaving whatever work is leftover to the humans).
- Participatory design of work systems: HFE emphasizes the importance of engaging stakeholders who do and understand the work in the process of research, design, and automation. These stakeholders can 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 recognize the most critical cues and design features to keep. Participatory design also helps to promote buy-in from stakeholders when new systems are implemented.
- Evaluation, iteration, and continuous learning: HFE recognizes that the research, design, and implementation process is iterative. Once a new work system is designed, it needs to be evaluated and refined to identify and mitigate any unintended consequences. Organizations must recognize and be prepared for temporary reductions in performance as changes to the work system are assimilated. Organizations must then change how they select, train, and retrain personnel to reflect the new nature of the work.

## IMAGINING FUTURE COURTS

In this session, participants were instructed to re-imagine what future courts might look like. They were asked to choose their own future time point (e.g., 10 years, 50 years, 100 years) and to be as imaginative as possible. They were also asked to think about what new court jobs might emerge and what court jobs might become obsolete in their vision of the future.

The following are the new innovations that participants envisioned:

- Courtroom pods would exist around the state; these would be small physical spaces from which court users could access the court, rather than the court existing in one central location. These pods would be equipped with the infrastructure to support remote court participation. They would also be staffed with human personnel.
- New forms of digital evidence, including holograms for 3D evidence.
- A ground-up redesign of court processes and procedures that assumes litigants are unrepresented and highly unlikely to go to trial (which is true of most litigants).
  - Eliminate rules of evidence
  - Engaged judging
  - Regulatory reform
  - More alternative dispute resolution, including asynchronous models and uncontested case resolution by AI
- Technological tools/apps that integrate a range of services to address people's life problems (e.g., education about options (including non-legal forms of relief), legal advice, navigation through court processes, and connection to non-legal services (such as social services, medical, public benefits)).
- A ground-up redesign of the courts that defines them as a service, rather than a place.
- Increased use of and reliance on data, both to constantly/seamlessly assess effectiveness and efficiency and to constantly/seamlessly update and optimize practices.
- New models of job credentialing that focus on skills certification (similar to IT/tech certificates), rather than degrees; greater emphasis placed on adaptability and ability to engage in lifelong learning as a core job skill.
- More emphasis on case triage/pathways analysis; greater emphasis on diversion.
- More emphasis placed on the "production quality" of virtual hearings, in order to smooth out the user experience of the technology, to make cameras and other devices feel less intrusive, and to create the atmosphere that the court wants to convey.



The following are the court jobs that participants thought might become obsolete:

- Counter clerks; Initial data entry clerks
- Runners
- Paralegals/firm court clerks
- Court reporters
- In-person court interpreters



The following are the new court jobs that participants thought might emerge or become more common:

- Technology bailiffs for virtual hearings
- Digital evidence facilitators for virtual hearings
- Technical jury facilitator for virtual hearings
- Staff for remote court pods/ community court sites
- Court navigators (both AI and human) (directing people physically on where to go and digitally where to find information)
- Allied Legal Professionals
- Data analysts (more of them and new types of analysts)
- Technology clerks
- Cybersecurity specialists
- Court app developers
- Public/ court user educators
- Case triage specialists
- New types of diversion program or problem-solving court coordinators

## AUTOMATING COURT TASKS

In this session, participants were asked to consider the factors of a particular task that influence the extent to which it can and should be automated. Participants produced the following list of factors:

- Repetitiveness of the task
- Accuracy required for the task
- Speed required for the task
- Cost of human labor
- Availability of human labor
- Stakes of the task (the scope or severity of potential outcomes)
- Subjectivity involved in the task
- Cost and risk of human error in the task
- Where in the process or workflow the task occurs
- Extent of discretion versus defined parameters in the task
- Authority or legitimacy of the decision if it was made by a non-human
- Impact of automation on public trust and confidence in the court system broadly
- Who is responsible or liable for the task if it is completed by AI or a human
- Transparency
- Effect of automation on compliance
- Constitutionality
- Efficiency required for the task
- Universality of the data standards
- Universality of the business process
- Observability, transparency, and predictability of the task if it is conducted by AI
- Evaluability of the task
- The extent to which the task can be separated out from related tasks
- Availability of the needed data to train/update the AI (including data quality/integrity, timeliness, volume, representativeness)
- Cost and difficulty of automation
- The impact of automation on job stress or satisfaction
- Political support/opposition for automation
- Worker preferences and willingness to use/adopt the technology
- Court user preferences and willingness to use/adopt the technology



Next, participants divided into small groups, and each group was provided with a set of court roles and tasks. Groups categorized each task in one of the following categories: 1) Can be automated or enhanced with AI, 2) Cannot be automated or enhanced with AI, 3) Need more information. After finishing their categorization, they came together as a large group to discuss overarching themes and principles.

Participants determined that the following court tasks should generally be considered *not automatable*:

- Tasks involving oversight or quality assurance
- Design thinking
- Strategic decision-making
- Goal setting
- Tasks relying on human relationships

Finally, participants were asked to consider the items in their third category (“need more information”). They were asked what they would need to know in order to determine which of those tasks could be automated or enhanced with AI. Participants produced the following list of questions:

- What is the underlying goal/purpose of the court/role/task? Who gets to decide?
- What happens when the task gets escalated due to a problem or a customer complaint?
- Does someone need to witness the task? Who would that be?
- What data is available to train the AI? What data is available to train the human?
- Is the AI or the human more effective at this task?
- What kind of messaging would make people open to accepting the technology?
- Can AI capture human nuances, such as tone, cultural references, slang, and gestures?
- What’s the scope of information used to complete this task?
- Would court users need to use the technology? Would they be able to do so?
- What do the current humans who do this task want and need?
- What would the consequences be for the tasks that occur downstream in the process?
- What updates and patches would be needed on an ongoing basis?

## Overarching Themes and Insights

Finally, a number of overarching themes and insights arose during the day-long gathering that helped to shape the group's thinking going forward.

**Re-imagining the court system versus fine-tuning jobs.** Participants discussed throughout the day how the team should approach the overall question of automation in this project. One approach would be to redesign the court workforce from the ground up. Using the most extreme version of this approach, the project team would map out the functions of the court system and the workflow of cases moving through the system. It would design a new court workforce model from scratch, incorporating human-centered automation into the design of each personnel role. On the other end of the spectrum would be an approach that involves using automation to fine-tune specific workforce tasks that already exist. Using the most extreme version of this approach, the project team would simply identify current court tasks and consider which of them might benefit from automation. Note that the activities that participants engaged in during this meeting reflected these two approaches—at the beginning of the day, participants imagined a new vision of what the courts might look like in the future, and at the end of the day, participants thought about specific tasks that might be automated.

After some healthy debate and discussion, the group decided that the long-term project will probably need to adopt multiple approaches that fall somewhere between these two extremes. Rebuilding a new court system from the ground up is simply not realistic, and if the project team pushes for reforms that are too great, it will face resistance from court stakeholders. Conversely, thinking about court worker tasks in isolation from each other is not consistent with a human factors/ ergonomics perspective and is likely to lead to unintended consequences in downstream portions of the caseload process.

The following are some approaches that participants agreed were more likely to lead to success:

- Rather than thinking about how to make each work task more efficient in isolation, the project team should consider the entire caseload process and where there are opportunities for efficiency 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 unintended consequences for downstream tasks.

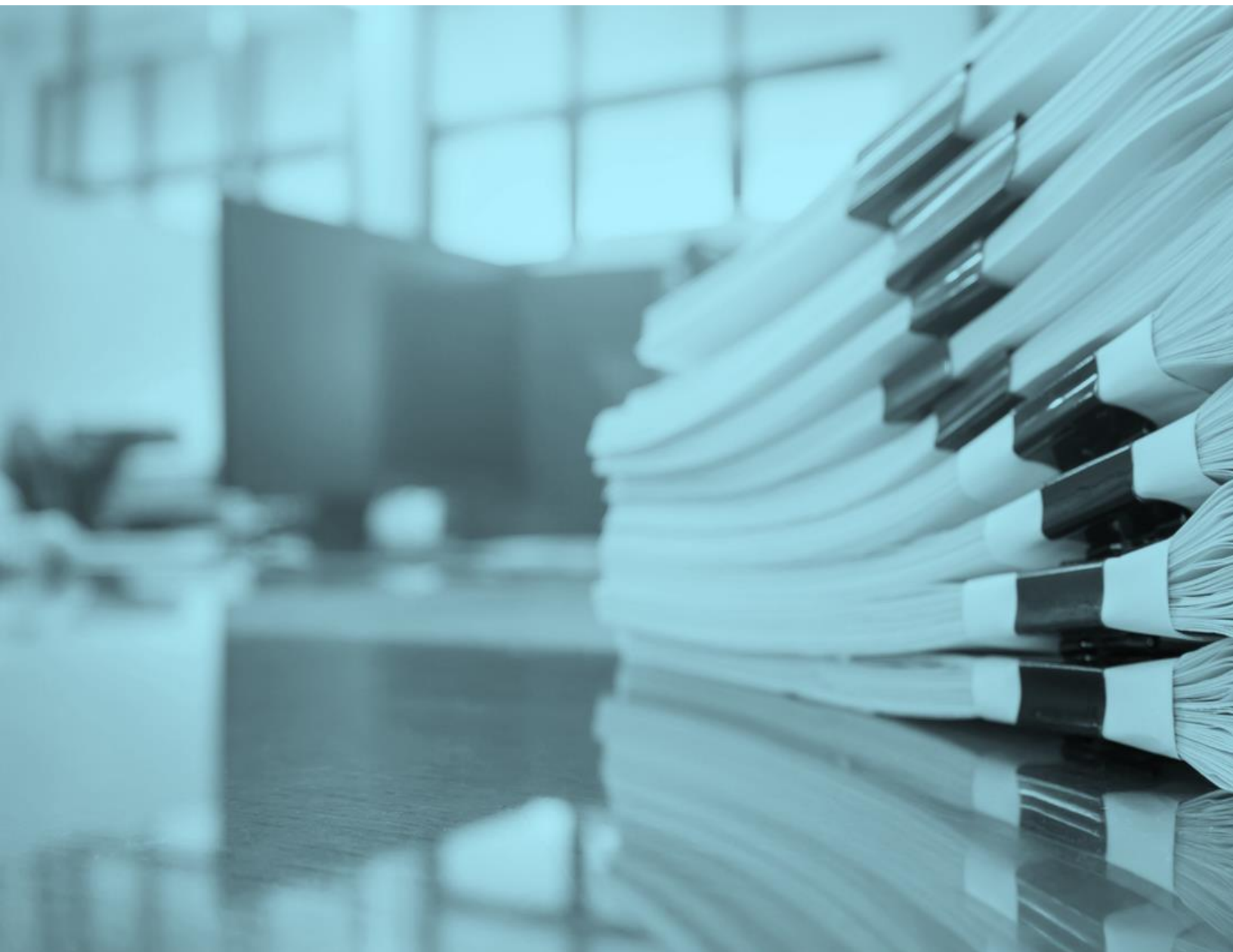
- Although it is unrealistic to redesign the entire workforce from scratch, there may be room to redesign some court roles. Automation may mean that some jobs are eliminated, created anew, or combined with jobs that used to be separate. The project team should remain open to rethinking which types of tasks combine together into a single worker's job.
- The project team should consider what is the appropriate amount of work for a human and avoid relying on outdated assumptions about how much work makes a full-time job. It will also be important to ensure that new technologies don't simply create more work for the workers it is designed to support.
- Many of the impacts of new technologies on the court system will take place incrementally. It will be important for the project team to be thoughtful about the pacing of change. For example, when a new technology is implemented, courts will initially need to invest in on-the-job training and re-training. As older generations of workers retire and are replaced, the courts will need to focus more on how they recruit workers with the right skills for using these technologies effectively.
- As some roles are removed from the court's purview, it will be important to consider the questions: If the court doesn't perform this task, who will? What tasks are court-essential versus ancillary? In what sector will the job be done best?

**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 personalized substantially for adoption in each jurisdiction, and software platforms and data outputs are incompatible across jurisdictions. The courts' increased reliance on future technologies will likely make it vital to reconcile technology and data formats, increase information sharing, and/or build systems that can share and merge mismatching data.

**Recruitment and advancement.** As the courts begin to rely on technologies that change at a faster pace, it will become crucial to hire personnel who can adapt to new technologies and systems over time. This may mean that the types of education that prepare people for court jobs involve more certifications instead of degrees. It may also mean that the courts will need to identify and recruit personnel with skills and personalities that enable lifelong learning and constant upskilling. The ways that wages and promotions are structured may also need to change. Participants agreed that current pay structures incentivize tenure and education, rather than skills or lifelong learning.

**Good examples of court innovation.** Finally, participants shared some examples of successful court innovations that may provide guidance for this project. They felt that these examples represented the level of innovation that this project might seek to achieve: a combination of holistic innovation and vision with pragmatic attention to realities on the ground and logistical, financial, and political constraints. The following are some examples to consider:

- [Kayak Court in Salt Lake City, Utah](#)
- [The reengineering of Utah's courts, 2007-2012](#)
- [The consolidation and reorganization of the Adult-Juvenile Probation system in Arizona, 2003](#)



# Meeting 2: Automating Court Tasks

May 10, 2022 (Virtual)

## Participants

Name	Organization	Expertise
Christopher Abraham	Michigan Courts	Court practitioner (IT)
Tammy Allen	University of South Florida	Industrial-Organizational Psychology
Kevin Bowling	National Assn. for Court Management	Court practitioner (administrator)
Dave Byers	Arizona Judicial Branch	Court practitioner (administrator)
Jason Cannon	IBM	Technology vendor
Darren Dang	California Courts	Court practitioner (IT)
Alicia Davis	NCSC	Court consultant (planning & performance)
Gary Egner	equivant	Technology vendor
Jennifer Elek	NCSC	Social Psychology
Kelly Roberts Freeman	NCSC	Criminology and Criminal Justice
Kat Genthon	NCSC	Public Policy and Administration
Sarah Gibson	NCSC	Sociology
Iria Giuffrida	William & Mary Law School	Law, AI
Paula Hannaford-Agor	NCSC	Law, Public Policy
Jim Harris	NCSC	Court consultant (court technology)
Brett Howard	California Courts	Court practitioner (IT)
Carla Jones	InfoTrack	Court practitioner (IT), Technology vendor
Cynthia Lee	NCSC	Law, Public Policy
Rodney Maile	Hawaii Judiciary	Court practitioner (administrator)
Stacey Marz	Alaska Court System	Court practitioner (administrator)
Jim McMillan	NCSC	Court consultant (court technology)
Jeremy Millar	Microsoft	Technology vendor
Andrea Miller	NCSC	Social Psychology
Jannet Okazaki	NCSC	Court consultant (court technology)
Roger Rand	Oregon Judicial Department	Court practitioner (IT)

Diane Robinson	NCSC	Public Health, Court Data Governance
Ann Marie Ryan	Michigan State University	Industrial-Organizational Psychology
Allison Trochesset	NCSC	Political Science
Nicolas Vermeys	Université de Montréal	Law, AI
Winnie Webber	Illinois Courts	Court practitioner (IT)
Zach Zarnow	NCSC	Court consultant (civil access to justice)

## Agenda

- 1:00 – 1:50 Welcome and Introductions
- 1:50 – 2:10 Small group breakouts: Imagining future courts
- 2:20 – 3:00 Overview of Artificial Intelligence, Nicolas Vermeys & Iria Giuffrida
- 3:00 – 4:45 Small group breakouts and large group discussion: AI and caseflow processing
- 4:45 – 5:00 Closing Remarks

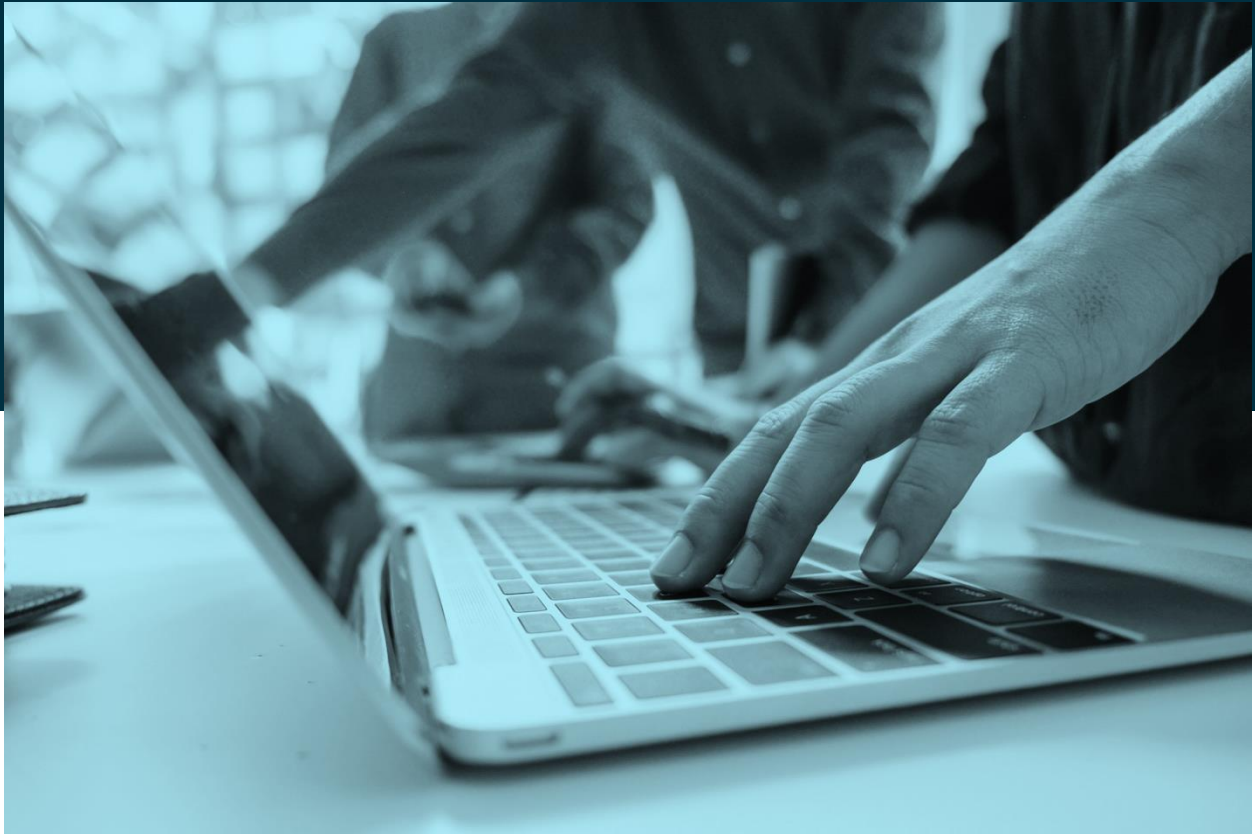
## Presentations and Activities

### NETWORK MODEL OF THE STATE COURT WORKFORCE

In this session, Allison Trochesset presented our initial prototype of a network model of the state court workforce. She showed participants 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.

Participants were enthusiastic about the potential for social network analysis as a tool in this project, both for the purposes of visualizing the workforce and for modeling the effects of different technologies and trends in the workforce. Participants agreed that studying the court workforce through social network analysis should be an early priority in the research agenda that flows from this project.





## IMAGINING FUTURE COURTS

In this session, participants were asked to re-imagine what future courts might look like. They were asked to choose their own future time point (e.g., 10 years, 50 years, 100 years) and to be as imaginative as possible. They were also asked to think about what new court jobs might emerge in their vision of the future.

The following are the new innovations that participants envisioned:

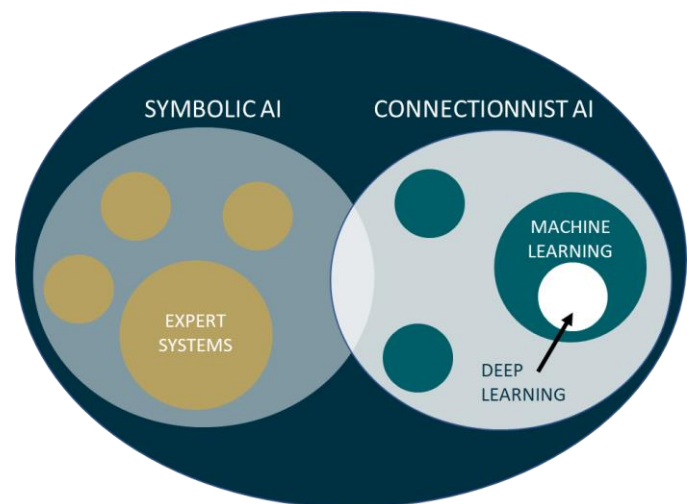
- The use of robots and AI to fulfill repetitive tasks, with humans playing the role of subject-matter experts that supplement and oversee the work
- A model of courts that is focused on customer service. This would include the expectation that courts are there to help people identify which of their needs are legal needs and which avenues for relief are available to them.

- Eliminating the model of case processing that focuses on documents as the unit of analysis. Under the current system, a piece of paper (or PDF) exists as the legal event (e.g., complaint, motion), the decision aid (e.g., the information contained in the complaint or brief), and the record of the legal event. Under the new model, the event and the decision aid will exist separately and not on paper. Technology will replace paper as a method of providing data and recording interim and final decisions.
- Greater emphasis on change management in all court processes and policymaking
- Changes in the role and vision of court leadership; changes in court culture
- Greater use of virtual space and decreased use of physical space/facilities
- The use of augmented reality to create an “experience” for court users (e.g., virtual reality jury trials)
- Redefining the courts as a service, rather than a place
- Redefining the courts as “tech” organizations
- Greater reliance on asynchronous case processing and alternative dispute resolution
- Greater reliance on plain language and the design of court processes for unrepresented litigants
- The use of AI, rather than humans, to process documents

## OVERVIEW OF ARTIFICIAL INTELLIGENCE

In this session, Nicolas Vermeys and Iria Giuffrida presented an introduction to Artificial Intelligence.

**What is (and isn't) AI?** There are various definitions of artificial intelligence, and definitions have also evolved over time. Many definitions center on the idea of computers simulating intelligent behavior in humans. However, under this definition, most computer behavior could be considered artificial intelligence. It is more useful to think of AI as an umbrella term that encompasses a wide variety of tools and technologies.





The Moravec paradox is the general principle that what is easy for humans is difficult for AI, and what is easy for AI is difficult for humans. This principle reminds us to consider carefully what might be the most valuable uses of machine learning and other AI technologies. Court workforce tasks that humans can perform easily and well are likely not good places to invest resources in developing AI-based automation tools.

Finally, it's important to be careful with the use of anthropomorphic language when discussing AI. Although words like *intelligence*, *learn*, and *neural* are commonly used in discussions of AI, it is important to remember that these words are only metaphors for human cognition.

**What legal and ethical principles arise when we use AI?** Some of the major legal and ethical issues surrounding the use of AI include:

- The black box (the inability in many cases to determine exactly how a computer arrived at its decision)
- Privacy and data security (security of the underlying data used by algorithms and security of the algorithms themselves)
- Intellectual property (Is AI a worker or an invention? Who owns intellectual property developed by AI? Can one train AI on existing intellectual property?)
- Liability (Who is criminally or civilly responsible when AI causes harm?)
- Regulatory (for example, issues surrounding land use, urban planning, environmental impacts)
- Biases (human cognitive biases are often taught to machine learning programs through the design of algorithms or through the selection of training data sets)

Potential solutions for these issues include ethical rules, regulations, and statutes. For example, the European Parliament has developed [draft legislation](#) that involves a risk-benefit analysis of different uses of AI technologies. Under this framework, uses of AI that create risks that outweigh the benefits to society might be prohibited or subject to more stringent regulation. Similar draft legislation has been introduced in the U.S. as the [Algorithmic Accountability Act of 2022](#).

## HOW MIGHT ARTIFICIAL INTELLIGENCE AFFECT COURT TASKS AND CASEFLOW PROCESSING?

In this session, participants were divided into small groups, and each group was assigned a particular court workforce task. They were asked to imagine using AI to replace or enhance the human role in that task and answer the following questions: 1) What would the AI do? What would the human do? 2) How would this change affect case processing (e.g., efficiency, accuracy, transparency)? 3) How would this change affect other tasks that happen upstream or downstream in case processing? 4) What further research would we need to do in order to determine whether this change is feasible and desirable?

The following is a summary of insights from each group:

### **Bailiff or Courtroom clerk**

- There are many potential uses of AI, including: extrapolating key events from court transcripts, connecting court transcripts with the digital evidence system, taking notes during trials and embedding the information in the case management system, recording data during live jury selection and connecting the data with the jury management system, making jury selection decisions, or serving as jurors.
- The most plausible uses of AI involve serving as a tool to automate simple tasks and allow the human bailiff to focus on non-automatable tasks; we should focus our research on how to develop AI tools that assist the human worker, rather than replacing the human worker.
- The current model of caseflow processing in the courts focuses on the paper document (or its PDF counterpart) as the unit of importance; there must be a document (e.g., filing, motion, order) for the case to move along at each step of processing. The introduction of AI allows the courts to shift to a model that focuses on the information traditionally contained in the documents, rather than the documents themselves. Using this approach, the information, not the document, would be the work product of the courts. AI could be a powerful tool for recording, embedding, integrating, and analyzing this information across the system.

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- Public defender**
- There are many potential uses of AI, including: triaging clients, supplementing the client interview with additional information (e.g., prior record, strengths of the case, potential collateral consequences of conviction, relevant caselaw), identifying weaknesses or complications in the defense case, analyzing outcomes for similar defendants in the jurisdiction, providing information to support client decision-making regarding pleas, or completing time-consuming discovery tasks.
  - Some important avenues for research include: identifying barriers to effective information-sharing across branches of government or across technological systems, developing outcome measures of effective criminal defense so that we can determine whether AI systems are providing constitutionally adequate defense, developing methods for assessing bias at each stage of public defender decision-making, and ensuring transparency for any decisions made by AI.

- Compliance or Probation officer**
- There are many potential uses of AI, including: producing risk assessment analysis and reports, monitoring social media accounts and phones of people who are on probation, monitoring financial transactions, providing methods for biometric authentication, automatically redacting documents, or integrating data across technologies (e.g., subcutaneous substance use patches, GPS monitoring devices).
  - AI has the potential to increase the efficiency of probation officers' monitoring tasks, but it also introduces (or exacerbates) ethical issues surrounding privacy, human rights, and data security.

- Court clerk**
- There are many potential uses of AI, including: flagging and correcting errors in court documents, checking in litigants as they arrive at court for services, further automating the e-filing process (which has undergone some automation already in many courts), or translating natural language filing.
  - Aspects of the clerk's role that involve customer service are less plausible areas for automation than aspects of the job that involve the management of documents and caseflow processing.

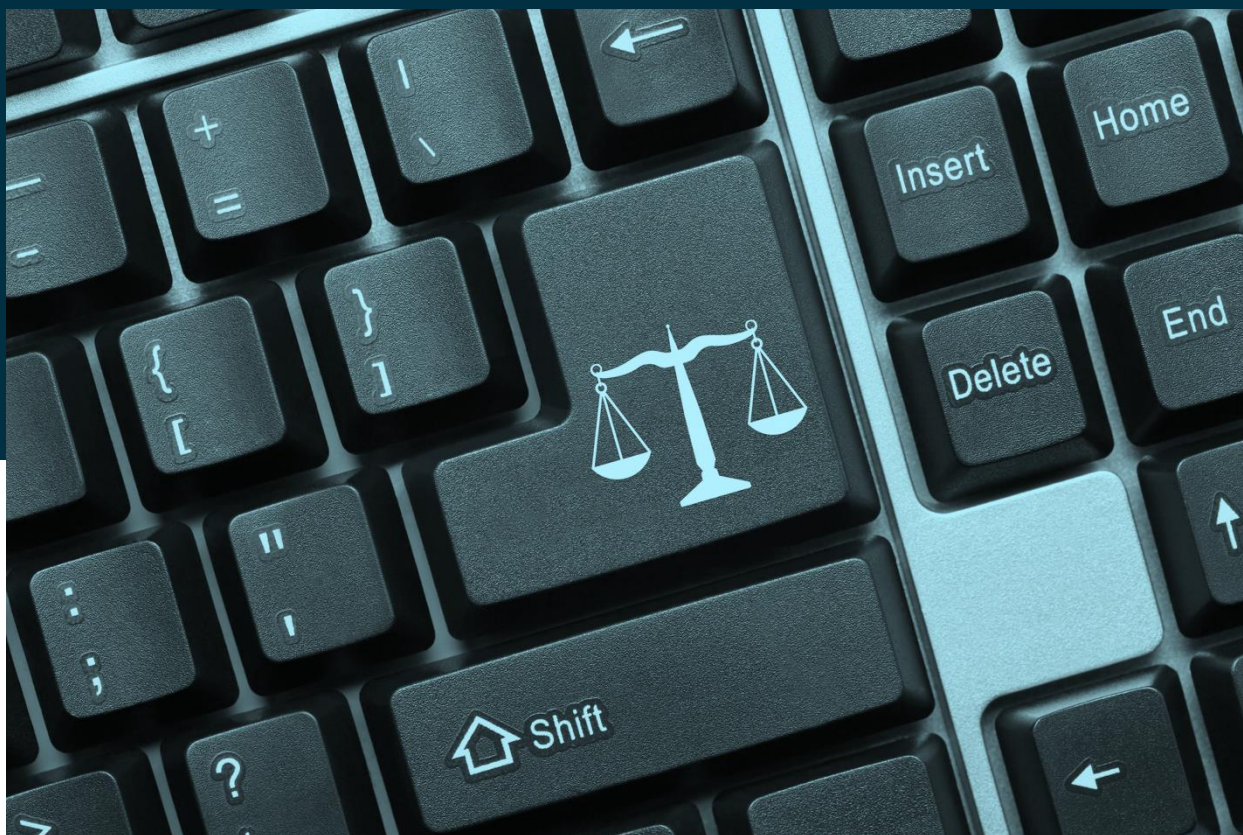
## Judge

- There are many potential uses of AI, including: tagging documents and taking notes during trial, transcription, analyzing decisions made by judges in other similar cases, monitoring timebound responses in the caseload process (e.g., a 30-day limit to answer a complaint) and moving cases forward as needed, analyzing outcomes of past cases (e.g., which sentences reduce recidivism?), ruling on motions and objections, or making final legal decisions.
- It is more plausible to consider potential uses of AI for case processing than for making substantive legal decisions; we should focus our research on how to develop AI tools that assist the human judge, rather than replacing the human judge.
- Ethical issues that arise if AI makes legal decisions include:
  - Appellate review of a judge's decision requires transparency about how the decision was made.
  - Public trust in the courts and the legitimacy of the judicial branch may be undermined if decisions are not made by humans.
  - Is there a Constitutional right to a human judge?

## Court navigator

- Some apps and technologies already exist to automate the process of navigating court users through the courts. These include chatbots on court websites; court kiosks that let people apply for civil legal aid services, access legal resources, and attend online meetings and remote court hearings in privacy; robots with voice recognition capabilities that help guide court users through courthouses, and other self-help apps for court users. Some developers are also building machine learning apps that can help people who don't have attorneys identify whether their problems have legal solutions.
- Other potential uses of AI include: translation for interactions with litigants who have limited English proficiency, checking for errors in documents using natural language processing, triaging litigants who don't understand what levels of legal solutions may be best for them (e.g., have you considered supported decision-making instead of guardianship?), or linking legislation and court rules with instructions and forms for litigants so that updates and rule changes are rolled out automatically and consistently.
- There will likely continue to be a human role in court navigation, and as some tasks become automated, there may be a greater need for court navigators with strong interpersonal and legal skills.





## Overarching Themes and Insights

Finally, several overarching themes and insights arose during the gathering that helped to shape the group's thinking going forward.

**Re-organizing court jobs.** During small-group work, all six groups envisioned a future in which the human worker would work in tandem with the AI to complete the job. None of the groups felt that AI would enable full automation of a court role (to the extent that a particular human job would be eliminated). However, the discussion did raise some awareness of how the current system divides up tasks between workers in ways that could be re-evaluated. For example, the court navigator and court clerk groups felt that these two jobs have a lot of overlap, and court users often don't understand the distinction between these roles. It may be that by automating parts of these two jobs, the remaining human-oriented functions (i.e., those focused on customer service) could be combined into a single job. Thus, the process of thinking through the potential for automation also helps us to re-evaluate the ways in which different workforce tasks are organized under the current system. Both court workers and court users should have input into how it makes sense to re-organize different court workforce roles.

**Simplifying human decisions makes it easier to automate them.** In some areas of the law, there have been moves toward reducing the amount of human input into decisions, in order to reduce biased outcomes. For example, we may be moving toward a future in which attorneys cannot make peremptory challenges during jury selection and potential jurors can only be removed for a limited number of reasons. Bail reform may be moving us toward a future in which most defendants are released before trial without cash bail, and they can only be detained for a limited number of reasons. As these decision rules become more structured and simplified, it may become easier to automate them and have AI programs make these decisions instead of humans.

**Standardization across jurisdictions.** The court system is a patchwork of many smaller systems that operate idiosyncratically. In Meeting #1, the group discussed the need for standardization and compatibility across data and software platforms. In this meeting, the group also discussed the need for standardization of caseflow processes and workforce structures. It will be easier to successfully automate portions of court work to the extent that the work itself looks the same across jurisdictions.

**Learning from innovations in other sectors.** Other sectors have successfully moved from systems that were organized around paper documents to systems that are organized around information. Some examples that participants thought about include retail (i.e., moving from catalogue orders to online shopping) or medicine (i.e., electronic medical records that are no longer housed in a particular provider's office). The courts may benefit from learning about some of these other models.

**Challenges and opportunities in rural courts.** Future technologies present both challenges and opportunities for courts in rural areas. Rural courts often face difficulties recruiting staff, and recruitment may become even more difficult if courts need to recruit personnel with specialized technological skills. Conversely, however, automation may help rural courts eliminate the need to recruit humans for certain jobs. The use of remote court operations might also allow courts to recruit personnel who live outside of the jurisdiction.

**The role of future technologies in society.** As future technologies become more prevalent in all sectors of society, there may be downstream impacts on the courts. New technologies may create new social problems that need to be resolved in courts. New technologies might also solve (or change) some social problems so that they no longer require legal solutions. Courts will benefit from thinking not only about how automation can change their workforce but also how automation in other sectors will change the causes of action that exist and the nature of cases that courts are asked to resolve.

# Meeting 3: AI and Court Data

May 16, 2022 (Virtual)

## Participants

Name	Organization	Expertise
Christopher Abraham	Michigan Courts	Court practitioner (IT)
Kevin Bowling	National Assn. for Court Management	Court practitioner (administrator)
Jason Cannon	IBM	Technology vendor
Pamela Casey	NCSC	Psychology
Ani Dave	Tech Unicorn	AI Ethics
Alicia Davis	NCSC	Court consultant (planning & performance)
Teri Deal	NCSC	Court consultant (juvenile & family courts)
Gary Egner	equivant	Technology vendor
Jenny Elek	NCSC	Social Psychology
Kat Genthon	NCSC	Public Policy and Administration
Iria Giuffrida	William & Mary Law School	Law, AI
Margaret Hagan	Stanford University	Court Technology, Access to Justice
Paula Hannaford-Agor	NCSC	Law, Public Policy
Brett Howard	California Courts	Court practitioner (IT)
Carla Jones	InfoTrack	Court practitioner (IT), Technology vendor
Cynthia Lee	NCSC	Law, Public Policy
Stacey Marz	Alaska Court System	Court practitioner (administrator)
Jim McMillan	NCSC	Court consultant (court technology)
Andrea Miller	NCSC	Social Psychology
Jannet Okazaki	NCSC	Court consultant (court technology)
Roger Rand	Oregon Judicial Department	Court practitioner (IT)
Diane Robinson	NCSC	Public Health, Court Data Governance
Alka Roy	The Responsible Innovation Project	AI Ethics
Scott Schlegel	Louisiana Courts	Court practitioner (judge)
Joe Smith	NCSC	Court consultant (government & leadership)
Samuel Thumma	Arizona Judicial Branch	Court practitioner (judge)
Allison Trochesst	NCSC	Political Science
Nicolas Vermeys	Université de Montréal	Law, AI
T'Neil Walea	IBM	Technology vendor
Winnie Webber	Illinois Courts	Court practitioner (IT)

# Agenda

- 1:00 – 1:15 Introduction
- 1:15 – 2:00 Imagining future courts (redux)
- 2:10 – 2:50 State Court Data, Diane Robinson
- 3:10 – 4:40 Small group breakouts and large group discussion: AI and court data
- 4:40 – 5:00 Closing Remarks

## Presentations and Activities

### IMAGINING FUTURE COURTS (REDUX)

In this session, we synthesized and reviewed the ideas that participants had generated in our previous Imagining Future Courts sessions. The following is a summary of these ideas:

#### Redesigns:

- Redefining the courts as a service, not a place; Courts go where the people are (e.g., courtroom pods, kayak courts)
- Redesigning processes and procedures to assume litigants are unrepresented and unlikely to go to trial (e.g., eliminate rules of evidence, engaged judging, unsupervised ADR)
- Tools/apps that integrate a range of services to address people's life problems (e.g., education about legal & non-legal options, legal advice, referral to non-legal services)
- Eliminating documents as the unit of analysis/processing
- New models of job credentialing that focus on skills certification, not degrees

#### Tweaks and incremental changes:

- Increased use of data to assess effectiveness and update/optimize practices
- Automation and augmentation of certain tasks
- Greater emphasis on adaptability and lifelong learning as a core job skill
- More emphasis on case triage/pathways analysis; more emphasis on diversion
- More emphasis placed on the "production quality" of virtual hearings
- New forms of digital evidence, including holograms
- More emphasis on change management in all court processes and policymaking
- Greater use of virtual space and decreased use of physical space/facilities



Participants had the opportunity to reflect on the collection of ideas as a whole and to raise new questions or issues that occurred to them:

**Re-imagining the court system versus fine-tuning jobs.** Participants revisited the debate about how the team should approach the overall question of automation in this project. One approach would be to redesign the court workforce from the ground up, and another approach would involve making incremental changes and fine-tuning specific aspects of court jobs. The group decided that the long-term project will probably need to involve both of these approaches. The research team should have an overarching vision of the system that we want to achieve, and that vision should guide project priorities. On a logistical level, incremental changes will be how we can gradually (and realistically) move toward that vision.

**Tension between growing and shrinking court roles.** Many of the decisions surrounding future technologies in the courts will depend on what role the courts want to play in society more broadly. In some sectors, the courts have moved toward being more involved in more stages of people's lives, often to address unmet needs in other sectors of society (e.g., behavioral health and drug courts to address gaps in healthcare). In other sectors, the courts have moved toward encouraging people to solve their problems outside the courts whenever possible (e.g., increases in arbitration and mediation in tort cases). The courts will benefit from coming to some consensus over how much and how early to be involved in people's lives (and marketing/branding themselves to the public accordingly), and court users should have input into that discussion.

**Using a comparative lens.** This project should incorporate a comparative lens, drawing lessons both from other (non-court) sectors and from courts outside of the U.S.

**Accelerating or mitigating disparities between courts.** There are significant disparities between state courts in terms of their uses of technology. As the research team develops a change management strategy for introducing future technologies into the courts, we will likely need to adopt different approaches for courts that already use AI than for courts that still use exclusively paper records. Future technologies have the potential to either exacerbate these disparities, allowing more advanced and better-funded courts to keep pushing forward their technological innovations, or to mitigate these disparities, allowing low-technology courts to leapfrog ahead with more comprehensive innovations. The research team should continue to be mindful about the differences between courts as future technologies are integrated into existing systems.

## STATE COURT DATA

In this session, Diane Robinson presented an introduction to court data and why working with court data is so difficult.

Several characteristics of court data make it challenging to work with:

- **Volume of state court cases.** The U.S. uses a federalist system in which the federal and state governments share power. The Federal courts in the U.S. have limited jurisdiction, which means that cases must meet certain criteria to be heard there. In practice, this means that more than 95% of all court cases in the U.S. are handled by the state courts (in the pre-pandemic years, this meant about 80-90 million cases filed per year).
- **Diversity of state court structure.** State courts vary widely in how they are structured and in how they assign different types of cases to different courts. [See examples here.](#)
- **Diversity of court authority.** State courts vary widely in how they distribute authority between courts or between individual offices. Dimensions on which the courts vary include whether the Supreme Court or Chief Justice has superintending authority over lower courts, whether judges are appointed or elected, whether clerks are appointed or elected, whether the whole state uses a central case management system or whether each local court selects its own system, and whether courts and clerks have separate case management systems within the same jurisdiction. These differences have implications not only for the consistent collection and usage of data across the state, but also for the consistent adoption and implementation of new policies and procedures involving data.
- **Diverse definitions of terminology.** Even commonly used terms are used differently in different courts' data systems. For example, whether a case has been "closed" can mean different things in different places. A divorce case might be considered closed in one jurisdiction after the divorce has been granted, whereas the same case would be considered open—possibly for years—in another jurisdiction until all related issues (e.g., child custody, distribution of retirement accounts) are resolved.

**NCSC initiatives for standardizing court data.** NCSC has several initiatives aimed at standardizing court data across the country, but this is a long-term effort and will require buy-in from the courts. The [Court Statistics Project](#) captures aggregate court data (e.g., how many cases were filed in a particular year and how many have closed) from different jurisdictions in a standardized format. The [National Open Court Data Standards](#) (NODS) aims to standardize the collection of case-level data within the courts by providing a recommended set of data elements with consistent definitions for all state courts. Both of these initiatives are voluntary on the part of state courts.

**Court data governance.** NCSC is working with the state courts to adopt robust [data governance](#) frameworks. Data governance principles include:

- Treat court data as a strategic asset
- Establish data quality as part of the strategic plan and day-to-day practice of the courts
- Identify key personnel; designate who has responsibility for data governance and data quality
- Establish practical data standards
- Have a plan and consistent strategy to identify and solve data problems
- Make innovation and learning part of the court culture
- Establish a mechanism to resolve conflicts among stakeholders

**Questions to ask about potentially sensitive data:**

- Are these data actionable? What will we do with this information? What will change if we have this information?
  - What will happen if we do not collect these data?
  - Are the courts the right place to collect these data?
  - What is the business need?
  - Who needs access? Can access be limited to those with a business use?
- If we collect potentially sensitive data, are there laws or court rules that require us to release it? Under what circumstances?

## AI AND COURT DATA

In this session, participants were divided into small groups, and each group was assigned a particular court workforce task. They were asked to imagine using AI to replace or enhance the human role in that task and consider what new data we would need in order to teach a machine how to do the task.

The groups generally agreed that much of the data needed to build AI tools using machine learning either do not exist at the quality needed or are collected by another entity outside of the courts. Efforts to build AI tools using machine learning will likely involve merging data together across institutions and entities (e.g., courts, law enforcement, jails and detention centers, health providers, social service agencies) and building new data collection initiatives within the courts. These efforts will also require court stakeholders to reach consensus on how to define goals and measure outcome quality.

## Overarching Themes and Insights

Finally, some overarching themes and insights arose during the gathering that helped to shape the group's thinking going forward.

**Standardization across jurisdictions.** The group again discussed the need for standardization and compatibility across jurisdictions. Standardization across data and software platforms will need to go hand-in-hand with standardization in court policies and business practices.

**Diverse stakeholders in court data.** Part of the reason there is interest in improving the quality and consistency of court data stems from the needs of researchers and policymakers to make informed decisions about the judicial system. Standardizing court data will help reduce the burden on court staff when responding to requests from outside stakeholders for information, and it will decrease data misuse and misinterpretation. However, the courts are also stakeholders in their own data, and they will be able to engage in more effective policymaking and strategic planning to the extent that they have easy access to quality data about their own operations.

**Defining acceptable AI performance.** One debate that arose in our discussions is how to define the standard for acceptable performance of AI tools. Participants disagreed about whether the standard for acceptable performance is that the AI performs at least as well as humans or that the AI performs without bias or errors.

# Meeting 4: AI and Court Workers

June 9, 2022 (Virtual)

## Participants

Name	Organization	Expertise
Christopher Abraham	Michigan Courts	Court practitioner (IT)
Juliet Aiken	Conducere	Industrial-Organizational Psychology
Jennifer Bailey	Florida Courts	Court practitioner (judge)
Cristina Banks	University of California Berkeley	Industrial-Organizational Psychology
Kevin Bowling	National Assn. for Court Management	Court practitioner (administrator)
Dave Byers	Arizona Judicial Branch	Court practitioner (administrator)
Teri Deal	NCSC	Court consultant (juvenile & family courts)
Iria Giuffrida	William & Mary Law School	Law, AI
Margaret Hagan	Stanford University	Court Technology, Access to Justice
Paula Hannaford-Agor	NCSC	Law, Public Policy
Casey Kennedy	Texas Courts	Court practitioner (IT)
Cynthia Lee	NCSC	Law, Public Policy
Stacey Marz	Alaska Court System	Court practitioner (administrator)
Jim McMillan	NCSC	Court consultant (court technology)
Andrea Miller	NCSC	Social Psychology
Kathleen Mosier	San Francisco State University	Industrial-Organizational Psychology
Jannet Okazaki	NCSC	Court consultant (court technology)
Bart Olsen	Utah State Courts	Court practitioner (human resources)
Roger Rand	Oregon Judicial Department	Court practitioner (IT)
Diane Robinson	NCSC	Public Health, Court Data Governance
Allison Trocheset	NCSC	Political Science
Nicolas Vermeys	Université de Montréal	Law, AI
Winnie Webber	Illinois Courts	Court practitioner (IT)

## Agenda

- 1:00 – 1:15 Introduction
- 1:15 – 2:10 I-O Psychology Principles of Job Satisfaction, Employee Wellbeing, and Organizational Change Management, Juliet Aiken
- 2:20 – 3:15 Small group breakouts and large group discussion: AI and employee wellbeing
- 3:30 – 4:10 Social Psychology Principles of Stereotyping, Discrimination, and Equity in the Workplace, Andrea Miller
- 4:10 – 5:00 Small group breakouts and large group discussion: AI and workplace equity

## Presentations and Activities

### I-O PSYCHOLOGY PRINCIPLES OF JOB SATISFACTION, EMPLOYEE WELLBEING, AND ORGANIZATIONAL CHANGE MANAGEMENT

In this session, Juliet Aiken presented some fundamental principles of job satisfaction, employee wellbeing, and change management from industrial-organizational psychology.

**Job satisfaction.** Job satisfaction is the overall evaluation of a job as favorable or unfavorable. It consists of cognitive, affective, and behavioral components. A major theory in job satisfaction research is the motivation-hygiene model, which conceptualizes satisfaction and dissatisfaction with the job as separate components that are driven by different facets of the job. Dissatisfaction tends to be driven by hygiene factors (e.g., pay, job security, physical working conditions, quality of supervision), and satisfaction tends to be driven by motivation factors (e.g., promotion opportunities, personal growth, recognition, responsibility, achievement). Job satisfaction has implications for organizational commitment, job performance (if job rewards are tied to performance), and retention (depending on economic conditions).

**Employee well-being.** Employee well-being includes the mental, emotional, and physical well-being of employees in relation to their work. Well-being is often conceptualized in terms of stress. Common stressors at work include environmental issues like heat, cold, and noise; workload; work pace; work schedules; interpersonal conflict; a lack of autonomy, control, or predictability; role ambiguity; emotional labor;

and traumatic experiences, such as workplace violence. Workplace stress can lead to burnout and low performance.

**Change management.** Organizations often think about change management as a discrete activity that they engage in when a major and identifiable shift is happening (such as the adoption of a new system or policy). However, change is a constant in organizations, and they benefit from viewing change management as a practice about which they should be consistently mindful. Organizations also benefit from viewing change through the lens of a systems approach (e.g., examining the potential effects of a change holistically throughout all sub-systems in an organization), rather than viewing changes as silos in isolation from other systems within the organization.

Methods of driving change among employees include rewards, accountability, and training. Strategies for change management include facilitative (providing resources and support for employees as they adopt changes), informational (giving employees information about the changes), attitudinal (persuading resistant employees to support new changes), and political (enforcing new required changes from the top down).

Different roles for personnel in the change process include:

- Change managers are formally in charge of driving the change. They define vision, communicate priorities, participate in planning, supply resources, protect change agents, provide options and consequences, and provide training.
- Change agents help encourage change by providing solutions to problems, facilitating processes and communication, linking resources, bridging groups, persuading, and providing a sense of stability.
- Change allies support the change by helping their colleagues navigate it. This can include serving as a sounding board for colleagues who have negative feelings about the change or providing historical context for why the change is needed.
- Change recipients are all personnel in the organization. Resistance to change among recipients can arise from a need for security, a threat to self-confidence, anxiety about a loss of organizational power, or a lack of skills. Strategies for overcoming resistance to change include using repeated and consistent language around the change, including recipients in planning, sharing details, listening, allowing room for mourning, keeping planning horizons long enough, providing ongoing training, and providing resources.



## AI AND EMPLOYEE WELLBEING

In this session, participants were divided into small groups, and each group was assigned a hypothetical AI tool that would replace a court workforce task. Participants were asked to consider how the new technology might affect job satisfaction and employee wellbeing.

The following is a summary of insights from participants:

### Benefits of AI

- Employees may enjoy focusing their time and energy on higher-level tasks and relationship-oriented tasks, rather than the more rote tasks they do now
- Employees may feel more job satisfaction and pride in their work if the overall quality of the work is higher (if, for example, AI tools produce more consistency and fewer mistakes)
- AI tools may reduce workloads and enable better work-life balance
- Employees may feel less stress if mistakes can be attributed to the AI tool, rather than to them
- AI tools could serve an educational function and give employees more insight into how they do their own jobs

### Drawbacks of AI

- Some people genuinely enjoy more rote tasks and would not prefer to spend more of their time in relationship-oriented work
- Some of the more rote tasks that we train AI to do may have hidden benefits for the human workers (for example, clerks may benefit from reading incoming case filings if doing so gives them a chance to get to know litigants and their problems; automating case filing processes may make clerks feel more detached from court users)
- If more rote tasks are removed from an employee's duties, they may be left with only the most challenging or stressful tasks
- AI tools may increase workloads if not designed well (i.e., some employees may feel they have to manage the technology on top of their normal workload)
- Employees may feel more surveilled at work if AI tools are tracking certain performance metrics



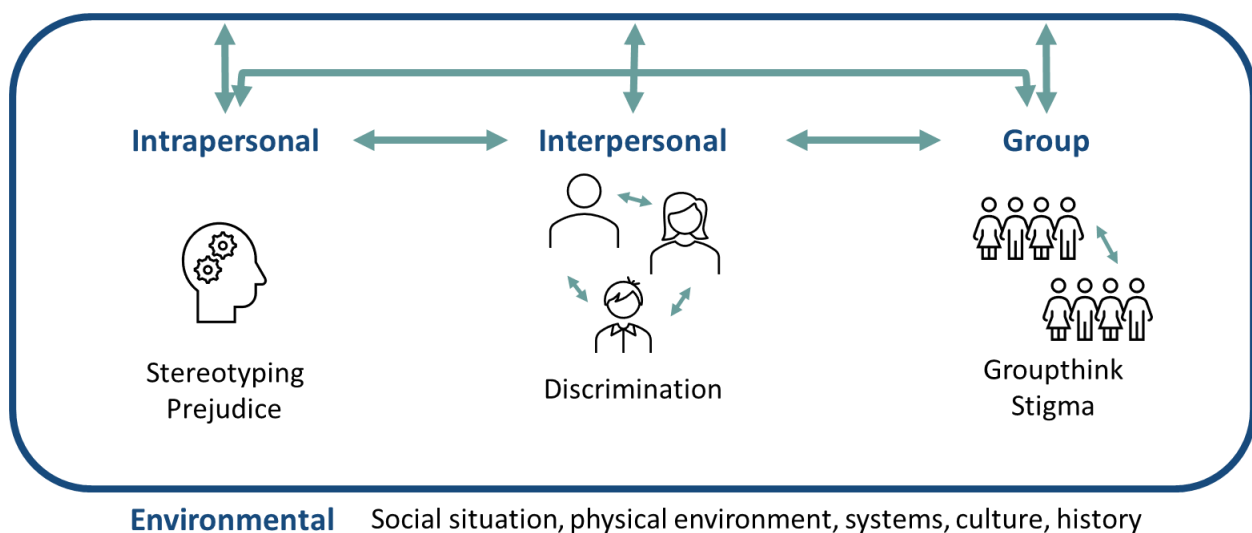
### Strategies for promoting job satisfaction and well-being

- Ensure that the parts of jobs that human workers are doing give them enough sense of accomplishment and mission
- Work with employees to design (and maintain and improve) the AI tools, so that they have a voice in how the tools can help them; help employees feel like they're being promoted, as opposed to being replaced by technology
- Celebrate the ways in which the AI tools make everyone's work better (e.g., "we've had X days with high data quality")
- Ensure that human workers understand how AI tools are making decisions, are in the loop on those decisions, and can override those decisions when necessary

## SOCIAL PSYCHOLOGY PRINCIPLES OF STEREOTYPING, DISCRIMINATION, AND EQUITY IN THE WORKPLACE

In this session, Andrea Miller presented some fundamental social psychology principles of equity in the workplace.

**Level of analysis in social psychology.** Social psychology examines interactions between the individual and the environment. This approach involves several reciprocally interacting levels of analysis, including the intrapersonal (e.g., stereotypes, prejudice), interpersonal (e.g., discrimination), group (e.g., groupthink, stigma), and environmental (e.g., social situation, physical environment, culture) levels.





Although there are many areas of social psychology research that play a role in workplace equity, this presentation highlighted a few of the most relevant areas of research for this project:

**Stereotype threat/ Identity threat.** Stereotype threat occurs when members of stigmatized groups are in situations where negative stereotypes about their group may be used to interpret their behavior (for example, a woman performing an engineering task at work may worry that if she performs poorly, she will confirm negative stereotypes about women's STEM abilities). Stereotype threat leads people to experience:

- Pressure to disconfirm the stereotype
- Impaired executive functioning, Underperformance
- Less interest in the domain, Disengagement
- Less belonging/fit
- Decreased trust
- Increased anxiety
- Lower job/career satisfaction, Increased turnover & absenteeism

Factors that contribute to stereotype threat include the domain of the work (social stereotypes portray some groups as being better fit for certain roles, such as men in STEM careers), being a token representative of one's group in the environment, a lack of representation in leadership, workplace segmentation or segregation, and cues in the physical environment that signal that one's group doesn't fully belong.

The most promising interventions for stereotype threat involve creating identity-safe workplace environments. This can include ensuring diversity so that there's a critical mass of underrepresented groups in the organization, ensuring diversity in leadership, building identity-safe cues in the physical work environment, and shaping organizational messaging and organizational culture.

**Implicit bias.** Implicit or unintended biases are attitude, stereotype, or prejudice that operate at least somewhat automatically or unintentionally to influence thinking or behavior. Although research suggests that people are generally aware of their personal beliefs and cultural stereotypes (i.e., they generally have content awareness), they may not be aware of or fully understand how they developed this knowledge (i.e., source awareness), or how and to what extent that knowledge influences their everyday thinking and behavior (i.e., impact awareness).

The most promising interventions for implicit and unintended biases are those that promote better decision-making environments. This generally involves increasing structure and clarity in the decision-making process. Strategies can include reducing individual decision-making discretion, creating clear and well-defined decision-making processes and procedures, and using objective decision-making criteria where possible.

**Group-level disparities/ Disparate impacts.** Group-level disparities are patterns of inequality that emerge at the group level (e.g., an average salary discrepancy between men and women in an organization). These disparities can arise from policies that directly create a disparate impact (e.g., a policy that requires workers to transfer to a new location in order to be promoted to Supervisor will make it disproportionately harder for women to accept promotions). These disparities can also arise from the aggregation of many biased individual decisions (e.g., a policy that allows supervisors broad discretion to set hourly wages).

The most promising interventions for group-level disparities include auditing data for disparities and proactively investigating the unintended consequences of existing policies, examining proposed policies before implementation to assess their potential impact on equity, and promoting better decision-making environments (i.e., creating structure around decision-making processes in the same ways discussed above).

## AI AND WORKPLACE EQUITY

In this session, participants discussed the potential impacts of future technologies on court workplace equity. Participants agreed that an important component of the research agenda for this project will be examining whether incorporating AI and other technology into court workforces may exacerbate current patterns of workplace inequities. For example, if court jobs require more education or expensive certifications, will these jobs be less accessible to historically marginalized groups? If some court jobs are viewed as being more STEM-oriented in the future, will women and Black and Indigenous employees experience more stereotype threat?







## Overarching Themes and Insights

Finally, some overarching themes and insights arose during the gathering that helped to shape the group's thinking going forward.

**Participatory research methods.** It will be critical for this research to use as many participatory methods as possible, both to promote the quality of the findings and the resulting technology tools and to encourage buy-in among court practitioners.

**Limited court budgets.** Financial constraints will likely play a role in courts' ability to effectively integrate future technologies. Not only will the technologies themselves cost money, but it may also cost more money to attract and retain court employees who have the skills necessary to navigate future technologies. Part of this project may involve examining strategies for persuading state legislatures to increase court budgets to fund necessary technological developments.

**The stakes are higher in the courts than in many other sectors.** Although many of the group's conversations so far have focused on the benefits of new technological changes in the courts, it's important to remember that people who fear these changes have good reason to be hesitant. When a technology fails in a for-profit business, the organization may receive a negative online review, lose a sale, or make less profit. But technology failures in the courts could have life-altering consequences for court users. The minimum viable product model that is often used in product development will not work as a method for rolling out new technologies to the courts, because the potential consequences of technology failure are too high.

**Intergenerational differences in employees' responses to future technologies.** Participants felt that many of our questions and discussions had different solutions depending on whether the focus is current job-holders who will be adapting to new technologies or future job-holders who will be AI natives. It will be important for both the research team and research samples to include people from multiple generations so that these different relationships with work and with technology are fully considered.

**No-code AI.** No-code or low-code AI may present opportunities for people with lived-experience expertise (such as current job-holders) to help build high-quality AI tools without requiring them to have computer science skills. These approaches may increase the extent to which employers feel that they understand the tools and have a voice in their development.

# Meeting 5: AI and Court Users

June 16, 2022 (Virtual)

## Participants

Name	Organization	Expertise
Christopher Abraham	Michigan Courts	Court practitioner (IT)
Kevin Bowling	National Assn. for Court Management	Court practitioner (administrator)
Dave Byers	Arizona Judicial Branch	Court practitioner (administrator)
Jason Cannon	IBM	Technology vendor
Pamela Casey	NCSC	Psychology
Darren Dang	California Courts	Court practitioner (IT)
Kelly Roberts Freeman	NCSC	Criminology and Criminal Justice
Iria Giuffrida	William & Mary Law School	Law, AI
Przemyslaw Grabowicz	University of Massachusetts Amherst	Computer Science
Margaret Hagan	Stanford University	Court Technology, Access to Justice
Paula Hannaford-Agor	NCSC	Law, Public Policy
Danielle Hirsch	NCSC	Court consultant (civil access to justice)
Carla Jones	InfoTrack	Court practitioner (IT), Technology vendor
Casey Kennedy	Texas Courts	Court practitioner (IT)
Stacey Marz	Alaska Court System	Court practitioner (administrator)
Andrea Miller	NCSC	Social Psychology
Roger Rand	Oregon Judicial Department	Court practitioner (IT)
Alka Roy	The Responsible Innovation Project	AI Ethics
Joe Smith	NCSC	Court consultant (government & leadership)
Allison Trochesset	NCSC	Political Science
Nicolas Vermeys	Université de Montréal	Law, AI
Winnie Webber	Illinois Courts	Court practitioner (IT)

# Agenda

- 1:00 – 1:15 Introduction
- 1:15 – 2:00 Introduction to pre-trial risk and needs assessment tools, Kelly Roberts Freeman
- 2:10 – 2:50 Large group discussion: AI and legal decision-making
- 3:10 – 4:00 Usability and Accessibility of Court Technologies for Court Users, Danielle Hirsch
- 4:10 – 5:00 Small group breakouts and large group discussion: AI and court user experiences

## Presentations and Activities

### INTRODUCTION TO PRE-TRIAL RISK AND NEEDS ASSESSMENT TOOLS

In this session, Kelly Roberts-Freeman presented an introduction to pre-trial risk and need assessment tools.<sup>2</sup> These tools represent one type of algorithmic decision-making that has already played a prominent role in the courts for some years. This technology gives us a window into what the adoption of future technologies in the courts may look like.

**History of risk assessment.** Until the early 1900s, risk assessment in criminal justice relied on individual professional judgment. Correctional staff would evaluate probation and parole cases individually to estimate the likelihood that an individual being released may re-offend while on parole.

In 1928, Burgess developed the first actuarial risk instrument, which was a structured scoring system that added different weights to the risk factors that correctional staff had typically been considering. Since that time, risk assessments have become more sophisticated and have expanded in scope to include usages in pre-trial decision-making and sentencing. In the 2000s, as the use of pre-trial risk assessment tools expanded, research on these tools grew, and challenges to their validity became more common. In particular, many voiced concern that the algorithms driving these tools' recommendations were racially biased.

<sup>2</sup> For more information, see American Bar Association, [Pretrial Release Principles](#); National Center for State Courts Webinar Series, [Pretrial Historical and Legal Foundations](#), [Research on Pretrial Assessment, Release, and Detention](#), [Implementation Challenges and Opportunities Roundtable](#).



**Pre-trial risk assessment.** Pre-trial risk assessment tools aim to predict the defendant's likelihood of future justice-system involvement or noncompliance with justice system requirements (such as appearing in court for trial). The recommendations generated by these tools are just one piece of information that judges use when deciding whether to release or detain a defendant before trial and, if released, what bail or other conditions to impose.

The algorithms that underlie these tools typically consider the severity of the current charge, the defendant's history of justice-system involvement, self-reported information about the defendant's substance use, employment, or housing status, and demographic information such as age and gender. Different algorithms use different factors (and weight the factors differently), depending on whether they are designed to predict failure to appear, new criminal activity, or new violent criminal activity.

Jurisdictions vary in how they use the recommendations that come from pre-trial risk assessment tools. Jurisdictions may interpret terms like “low” and “high” risk differently. They may also tie different consequences to each assessment score. In one jurisdiction, for example, “Level 2 risk” might suggest that a judge require weekly telephone check-ins, whereas in another jurisdiction, the same level of risk may suggest that a judge detain the defendant or impose bail.

**Challenges with pre-trial risk assessment tools.** Pre-trial risk assessment tools face several challenges that are likely to arise as future technologies are adopted by the courts to assist with decision-making. The ways in which researchers and practitioners have gone about addressing these challenges can provide lessons for how we confront the challenges of future technologies such as AI tools:

- **Black box algorithms:** Many courts use pre-trial risk assessment tools that are built by for-profit companies using proprietary algorithms. This means that there is a lack of public accountability and transparency related to the quality of the decisions made by these tools, and appellate courts cannot review how pre-trial decisions were made in individual cases.
- **Individualized decisions versus group-based statistics:** Algorithms are built using historical data from groups of people, and cut points (i.e., the dividing lines between scores) are determined from continuous distributions of risk probabilities. In other words, when a tool says that a particular defendant has a 10% chance of failure to appear, what that really means is that past defendants with similar characteristics have failed to appear about 10% of the time.

- **Communication of “risk”:** The use of terms such as “high risk” may inflate people’s perceptions of risk. Pre-trial success rates are generally very high. Research shows that re-arrest is most common for non-violent offenses, such as drug, property, and public order crimes. Although some pre-trial risk assessment tools use language like “high risk,” high-risk defendants are typically more likely than not to appear for trial without re-arrest. For example, the highest risk scores on the Federal Pretrial Risk Assessment tool correspond to failure rates between about 5% (arrest for violent offenses) and 7% (failure to appear).
- **Money bail replacement:** Although pre-trial risk assessment tools are often discussed as a method for reducing pre-trial detention by replacing the courts’ reliance on money bail, the use of these tools has failed to reduce incarceration rates in many jurisdictions.
- **Racial disparities:** Many of the algorithms used by pre-trial risk assessment tools are built using historical data that is characterized by severe racial disparities. There is widespread concern that although these tools are meant to reduce human bias by standardizing the pre-trial decision-making process, they may actually reproduce the racial biases of the past. Efforts to address disparities in these tools include:
  - Improved education (for users of the tools and for the public) about prediction and pretrial risk
  - Increasing transparency about tool development and use
  - Stakeholder buy-in and input (e.g., community engagement, racial impact statements)
  - Using these tools only for release decisions, rather than decisions to detain
  - Addressing racial disparities throughout the justice system (e.g., disparities in policing and arrests)
  - Re-validating these tools regularly (including examining false positives and false negatives and auditing outcomes for racial disparities)

## AI AND LEGAL DECISION-MAKING

Many of the issues and challenges that scholars and practitioners are grappling with right now in the pre-trial risk assessment space are similar to the issues that we anticipate grappling with as future technologies like AI are adopted in the courts. In this session, participants discussed the issues that they saw and the lessons they think we can learn from the pre-trial risk assessment experience.



**Educating the court workforce and the public about future technologies.** A major challenge with pre-trial risk assessment tools is helping judges and other decision-makers, as well as members of the public and the media, understand how risk predictions are generated from algorithms, how to interpret risk predictions, and what case decisions (e.g., conditions of a defendant's release) might stem from those predictions. Educating the workforce about how future technologies work will need to be a key component of the research agenda, along with securing their buy-in for the use of these technologies. It will also be important to help members of the public understand how legal decisions are made, what role future technologies play in these decisions, and why these technologies are being adopted (i.e., what the costs and benefits are). Research on science communication will be vital for this effort, as well as examples in other sectors (such as DNA analysis companies' efforts to present ancestry data in a way that customers will interpret accurately).

**Decision-making discretion.** Social psychology research shows that the most effective way to reduce social biases in individual-level decision-making is to reduce decision-makers' discretion (i.e., to embed structure, consistency, and clarity into the decision-making task). From that standpoint, pre-trial risk assessment tools are promising as methods for reducing individual judicial discretion.

However, the logistical details of how these tools are developed and implemented has undermined their ability to fulfill that potential. For example, humans systematically misinterpret risk and probability estimates, and framing a decision in terms of gains or losses can bias those interpretations of risk even further. Additionally, the stakes of the decision can affect how risk-averse decision-makers are. In the case of pre-trial risk assessment tools, many judges fear being held personally accountable by the public if a defendant is released and then goes on to hurt someone; this fear may be heightened in jurisdictions where judges are elected. Finally, the fact that the algorithms driving these tools are built using racially biased data further undermines their ability to be useful as a mechanism for eliminating human biases in decision-making.

Our research agenda on future technologies, especially those involving AI to make legal decisions, will need to address these challenges head-on. Research on court workers' numeracy and interpretations of probabilities will be an important component. Another key component of the research will be an examination of human overrides: When human workers override machine-generated recommendations, in which direction do they tend to deviate? For which types of litigants? In what types of cases? Under what decision-making and environmental conditions?

### **Determining a standard of acceptable performance for machine decision-making.**

Although the conversation of pre-trial risk assessment tools has focused on challenges and shortcomings, these tools have improved pre-trial decision-making compared to the alternative, which is individual judicial discretion. Whereas judges typically don't perform better than chance at predicting whether a defendant will return for trial or commit an act of violence, the assessment tools' predictions are correct significantly more often.

Throughout our own discussions, there has been a tendency to hold machine decision-making to a higher standard of quality than the standard we use for humans. One question the research community will need to address is: What is the standard for acceptable machine decision-making performance? As we consider allowing machines to make case decisions in the courts, do we require that they perform no worse than human decision-makers, do we require that they perform better than human decision-makers, or do we require that they perform without bias or error? If the standard for machine decision-making is higher than it is for humans, why is that?

The research team should look to examples from other institutions that have already put a lot of thought into these important questions (such as the Canadian government's [Directive on Automated Decision-Making](#)).



**Participatory research methods.** Many of these issues surrounding the understanding of, and buy-in for, future technologies may be addressed by the thoughtful use of participatory research methods. Users of the tools (i.e., court personnel) and members of the public alike have valuable insights that could help shape agenda-setting and the weighing of the costs and benefits of different decision-making tools; help develop guiding principles and goals for the use of these technologies; and help articulate standards for the performance of the tools and metrics for measuring performance. There are already good examples of agile governance or participatory policymaking that the research team could draw from (see examples [here](#) and [here](#)).

**Feedback information for users of decision-making tools.** It may be useful for court decision-makers, such as judges, to have access to basic descriptive data on how their decision-making compares to those of other judges. Data dashboards that can break down their decisions by factors such as case type or litigant race might also be useful. This type of feedback has started to become available to judges in limited forms in recent years, and as case-level data become more consistently collected and utilized by the courts, this feedback is likely to become more widely available. The research team should examine how accessing this kind of feedback influences case decision-making or the willingness to adopt future technologies as part of the decision-making process.



**Public transparency of decision-making processes.** One question that arose in the discussion is the effect of public transparency of human- versus machine-made case decisions. Designing future technologies using features like explainable AI, so that it is possible to understand how an AI tool came to a decision, may foster both buy-in from court personnel and public trust in the courts by promoting transparency.

However, increased transparency may also undermine public trust in the courts or the authority of legal decisions. For example, a foundational principle in the American legal system is the notion of jury secrecy. In most jurisdictions, jury deliberations are private, not part of the court record of a case, and not reviewable by an appellate court (except in extreme cases such as juror bribery). The idea behind this policy is that cases would never end (appeals would go on forever) if every part of the jury decision-making process was open for review.

It remains an open empirical question whether keeping jury deliberations secret actually does promote the legitimacy of the legal system, but this idea is foundational for how the jury system is designed in the U.S. The research team should examine whether transparency in the decision-making processes of humans or future technologies influences people's trust in the system and willingness to abide by decisions.

**The role of private, for-profit entities in court operations.** Private, for-profit vendors have played an important role in court operations for many years, often supporting case management functions such as systems for managing case data. As future technologies become further integrated into court operations—and especially if these technologies extend beyond case processing and into case decision-making—for-profit entities are going to become further intertwined into court systems. This entanglement will likely raise new ethical and Constitutional issues, as well as practical questions relating to funding, liability, data security, and more. The research agenda should include a component that addresses these issues.



## USABILITY AND ACCESSIBILITY OF COURT TECHNOLOGIES FOR COURT USERS

In this session, Danielle Hirsch presented an overview of usability and accessibility issues for court users.

**The iceberg analogy for people with legal problems.** Research by Rebecca Sandefur and others<sup>3</sup> shows that the sample of people that courts interact with represents a small percentage of the population of Americans who have legal problems; only about 14% of civil legal issues go to court. Until recently, research and

<sup>3</sup> See for example, Sandefur, R.L. (2012). [Money Isn't Everything: Understanding Moderate Income Households' Use of Lawyers' Services](#). In *Middle Income Access to Justice*, A. Duggan, L. Sossin, & M. Trebilcock (Eds.). Toronto, ON: University of Toronto Press. Sandefur, R.L. (2014), [Accessing Justice in the Contemporary USA: Findings from the Community Needs and Services Study](#), Sandefur, R.L. (2019). [Access to What?](#) *Dædalus*, 148(1), 49-55.



policymaking surrounding access to justice has focused on those people who are at the tip of the iceberg (i.e., those visible to the courts). These are self-represented litigants who have to navigate the courts without the help of lawyers, people who visit self-help centers in the courts or websites for legal information, and people who receive limited assistance from attorneys through pro bono services or civil legal aid.

Courts never come into contact with the much larger group of Americans who either know that their problem has a legal component but do not seek help from the legal system (this can be for many reasons, including a lack of understanding of the system, a lack of financial resources, a lack of trust in the system, and more) or who do not know that their problem has a potential legal solution at all. It will be important to consider, as part of this research agenda, who are the potential users, targets, and recipients of court technologies. Future technologies have the potential to not only help court workers serve members of the public who are already using the courts, but also help others with legal problems access the courts for the first time.

Strategies for understanding how future technologies can be harnessed to improve access to the courts include:

- **Process mapping:** It is crucial that researchers understand the stages that people go through, starting with the initial identification of their problem, accessing legal assistance, interfacing with the courts, and resolving their court business. This process will help the research team build systems, workflows, and technology tools that meet people where they are, rather than using technology as a workaround or afterthought within a system that is fundamentally failing.
- **Courts as a service, not a place:** Thinking about the courts as a service, rather than a physical location, will allow the research team to build systems and processes that reach people where they need services in their everyday lives.

**Current technologies that reach court users.** The courts have already begun to adopt technologies and tools with which court users themselves interface. These include electronic filing, court self-help centers and websites, remote court proceedings, online and community-based payment, online dispute resolution, remote language interpretation, text reminders for court appearances, chatbots, online legal portals and automated forms, and online streaming court proceedings. The research team should look to these examples for insights into how to ensure that future court technologies are user-friendly, accessible, and equitable.

For example, e-filing presents an opportunity to re-think what information the courts need from people in order to initiate a case and what is the most accessible and user-friendly way to get that information to the court. Bad examples of e-filing systems, however, have simply taken the existing court filing process and replaced paper forms with electronic forms. This approach means that the clerk's role—knowing which real-world problems correspond to which legal causes of action, selecting the correct forms, and ensuring the forms are completed correctly—is now being done by the court user, who typically lacks the knowledge, experience, and technology resources to do the task.

## AI AND COURT USER EXPERIENCES

In this session, participants considered a set of specific examples of future technologies as a way to generate ideas about how future technologies might affect court user experiences. Participants worked with the following hypothetical scenarios:

- **Case filing:** All court users must e-file, and an AI program receives and reviews all new case filings. Using natural language processing, the AI triages the case and determines what case processing pathway it should follow. It also schedules initial and follow-up hearings for the case.
- **Probation compliance:** An AI program monitors the probationer's car/phone location, internet usage, and alcohol and cannabis consumption, in order to determine compliance with probation conditions. People on probation check in at regular intervals with an AI chatbot, which asks questions tailored to the individual's case, determines compliance, and identifies any emerging risks or needs.
- **Navigating physical and virtual courthouses:** When court users arrive in court (either physical or virtual), they are greeted by a friendly AI-driven bot that asks them what they need. Using voice or text recognition, the AI determines where to direct the court user (e.g., a courtroom, a help desk, a virtual court Zoom link) and what help they may need. If the court user is filing a case or filling out a court form, it helps the user complete this task on a screen.

The questions that participants considered for each scenario were as follows: How will the technology affect court users' experience of the court? How will the technology affect equitable access to the courts for court users? How will the technology affect public trust and confidence in the courts?

The following is a list of insights that participants offered during the discussion:

**Court users are not a monolith.** In our discussions of how to make future technologies usable and accessible for court users, we were frequently reminded that the needs of courts users vary widely. Geographic differences, differences in technology fluency, and demographic differences will all be important considerations in this research agenda. It will be vital for the research team to ensure that future technologies are culturally responsive, bridge the digital divide, address gaps in infrastructure, and meet court users where they are. Solutions will likely involve providing multiple channels through which court users can get their court business done (e.g., an AI-driven tool and a human alternative), and the challenge with that approach will be to ensure that all available channels provide high-quality experiences and outcomes.

**Court users may interact with technology in unforeseen ways.** Participants shared examples of court users interacting with court technologies differently than how they'd interact with human court workers, often in ways that the technology developers did not foresee. For example, in a pilot test of a program that allowed litigants to communicate with the court through text messages, one research team discovered that because the texting tool made the court seem more convenient, accessible, and comfortable to court users, they sometimes acted against their own interests (e.g., sharing information that was harmful to their case, texting while intoxicated). Another participant shared that in his jurisdiction's experience with probation, some surveillance measures (e.g., monitoring social media activity) felt more burdensome or draconian when done using technology than when done by a human probation officer. It will be important for the research team to be prepared for unforeseen effects of technology on court users' behavior.

**Court users' experiences will be shaped by what they expect.** Court users' reactions to interfacing with court technology tools will likely depend on whether they view these tools as alternatives to receiving no assistance or alternatives to having human interactions. Strong communication with the public around court technologies and their purposes will likely be important.

**Court users' perceptions of resource allocation in the courts.** Participants shared experiences in which court users were upset with what they viewed as inappropriate uses of public resources for technological innovations. In one example, court users disliked the idea of funding a court navigation robot because it seemed like a frivolous use of money, as opposed to an innovation that could improve a core court function. In another example, court users were upset about a beautiful new courthouse building that had recently been built when they felt there were other, more essential, uses for government funding. These examples highlight the importance of public engagement and communication around which uses of future technologies are priorities. Whereas researchers and court professionals may view a particular technological tool as providing a core public service, members of the public may view it as an unnecessary expense, and that perception may undermine public trust in the courts.

## Overarching Themes and Insights

Finally, some overarching themes and insights arose during the gathering that helped to shape the group's thinking going forward.

**Guidance from existing literature in different sectors.** This research agenda will draw on the vast amount of knowledge that already exists across disciplines, as there are researchers already examining many of the questions we're asking here. However, one question that the group raised is under what circumstances the court workforce is a unique case that may function differently from other, more highly studied, sectors.

For example, a large body of research in user experience and human-computer interaction exists and can provide insights into designing court technology tools that are accessible for court users. However, the stakes involved in court user interactions are often higher than the stakes involved in other sectors. If a retail company's website, for example, is not user-friendly or accessible, the consequences may be fewer sales. In contrast, courts have constitutional duties to provide a certain level of service to every member of the public, and court decisions can have life-changing consequences. The mechanisms driving progress and change are also different in some sectors than in the courts. Whereas competition for revenue may push retail corporations to continuously test, study, and improve their uses of technology, the courts are not subject to the same market pressures and have historically resisted change.

A vital component of the research agenda will involve monitoring how existing insights from other sectors hold when applied in the courts. Some recent work examining this question as it relates to usability and accessibility can be found [here](#).

**Going back to first principles.** Throughout these conversations, whenever the group has focused its thinking on concrete, logistical, and practical issues surrounding the adoption of technologies, the conversation has invariably turned back to larger principles and values. For example, a conversation about the efficacy and accessibility of remote hearings might turn to asking questions such as: “Is the goal of a remote hearing to replicate the in-person hearing experience, or is the goal something else?” A conversation on e-filing might turn to questions like, “Should we be trying to replace the clerk with technology, or should we be finding an entirely new way to get a litigant’s initial case information to the court?”

Participants agreed that it will be vital to this project to develop a set of overarching principles, values, and ethical guidelines for the use of future technologies in the courts. These principles will help to ensure that the research team doesn’t lose sight of the underlying purposes of the court system (and of the future technologies themselves) when tackling more specific technological issues. These principles should also acknowledge that new technologies will inevitably raise new ethical issues (see an example [here](#)), and the guiding document should be continuously updated as needed.

**The role of private, for-profit entities in technology development.** State courts are dependent on their state legislatures for funding, and their budgets are often very tight. Court budgets generally do not include funds for research and development, making innovation difficult. This may be part of the reason why private, for-profit entities have served as the vendors for many technology products that courts use (such as case management systems and pre-trial risk assessment tools).

In some cases, there isn’t a clear or sustainable profit model for new technologies. For example, some researchers in the access to justice space have had trouble finding software developers willing to invest venture capital in developing court e-filing apps. The amount of local customization required, the fact that practices and procedures can change from court worker to court worker within a single court, the existence of rules that limit profit-sharing between attorneys and non-attorneys, and other factors make this kind of technology difficult to develop under a for-profit business model.

In cases like these, when for-profit entities are unable or unwilling to do so, who will serve the research and development function that the courts typically cannot fulfill themselves? Is there a sustainable non-profit model for software development? Should the federal government fill this role? Who will serve the long-term maintenance function once these products are developed?

# Conclusions

The questions, ideas, and insights generated by the participants of these working group meetings form the basis for our ongoing research.

The NCSC team is building on this foundation with literature reviews, environmental scans, and a comprehensive research agenda for the Future of Work in the State Courts at the Human-Technology Frontier.

