# LOOKING THROUGH A POLICY WINDOW WITH TINTED GLASSES: AGENDA-SETTING DYNAMICS IN U.S. AI POLICY

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# FACT SHEET:
## President Biden Issues Executive Order on Safe, Secure, and Trustworthy Artificial Intelligence

"Artificial intelligence presents a new frontier for enhancing our economic and national security, as well as our way of life.

Moreover, responsible AI development is instrumental to our strategic competition with China.

At the same time, we must remain steadfast in mitigating the risks associated with this emerging technology, and others, while ensuring that all Americans can benefit."

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OCTOBER 30, 2023

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- America COMPETES Act, U.S. Innovation & Competition Act, CHIPS and Science Act

- Algorithmic Accountability Act, DEEPFAKES Act, AI Labeling Act, No Robot Bosses Act, Protect Elections from Deceptive AI Act

- Actions by FTC, DOC, NIST, and others
  - White House OSTP's "AI Bill of Rights"
  - NIST AI Risk Management Framework

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**A New Proposed Law Could Actually Hold Big Tech Accountable for Its Algorithms**

BY JACOB METCALF, BRITTANY SMITH, AND EMANUEL MOSS    FEB 09, 2022 · 12:22 PM

**FEDERAL TRADE COMMISSION**
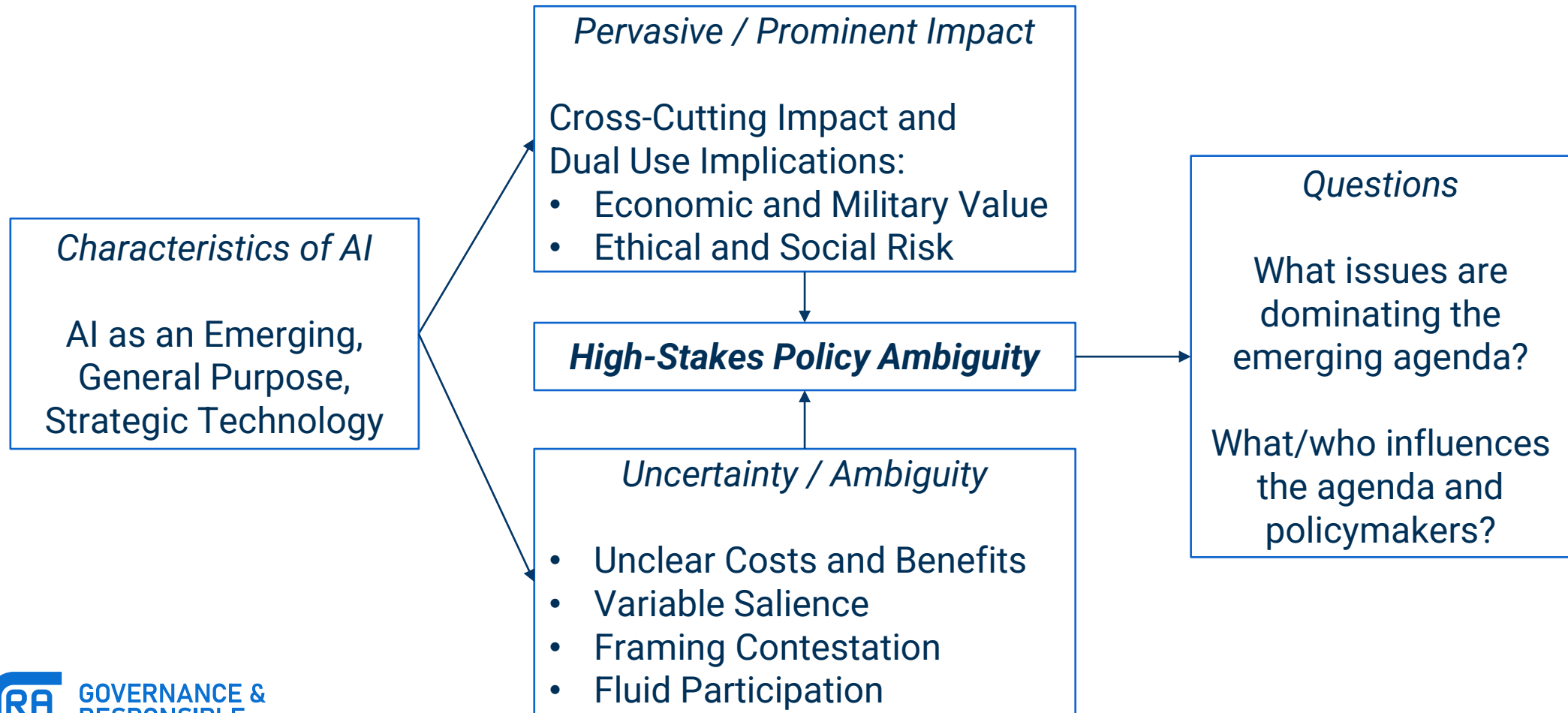PROTECTING AMERICA'S CONSUMERS

Aiming for truth, fairness, and equity in your company's use of AI

# A Policy Window Remains Open for AI

*The agenda for U.S. AI policy is under development*

- Major technical advances in 2010s → industry adoption, calls for governance

- How will strategic emerging GPTs like AI be governed in the 21st century?
  - Centralization, timing, self-regulation, coordination, precaution, open-sourcing
  - Old or new approaches to technology policy?

- What is the agenda and who has the influence to shape it?
  - Economic, ethical, or geopolitical issue frames?
  - Experts? Industry? The public?

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# Understanding AI as An Object of Policy Study

**Characteristics of AI**

*AI as an Emerging, General Purpose, Strategic Technology*

**Pervasive / Prominent Impact**

Cross-Cutting Impact and Dual Use Implications:
- Economic and Military Value
- Ethical and Social Risk

**High-Stakes Policy Ambiguity**

**Uncertainty / Ambiguity**

- Unclear Costs and Benefits
- Variable Salience
- Framing Contestation
- Fluid Participation

*Questions*

What issues are dominating the emerging agenda?

What/who influences the agenda and policymakers?

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# MOTIVATION AND THEORY
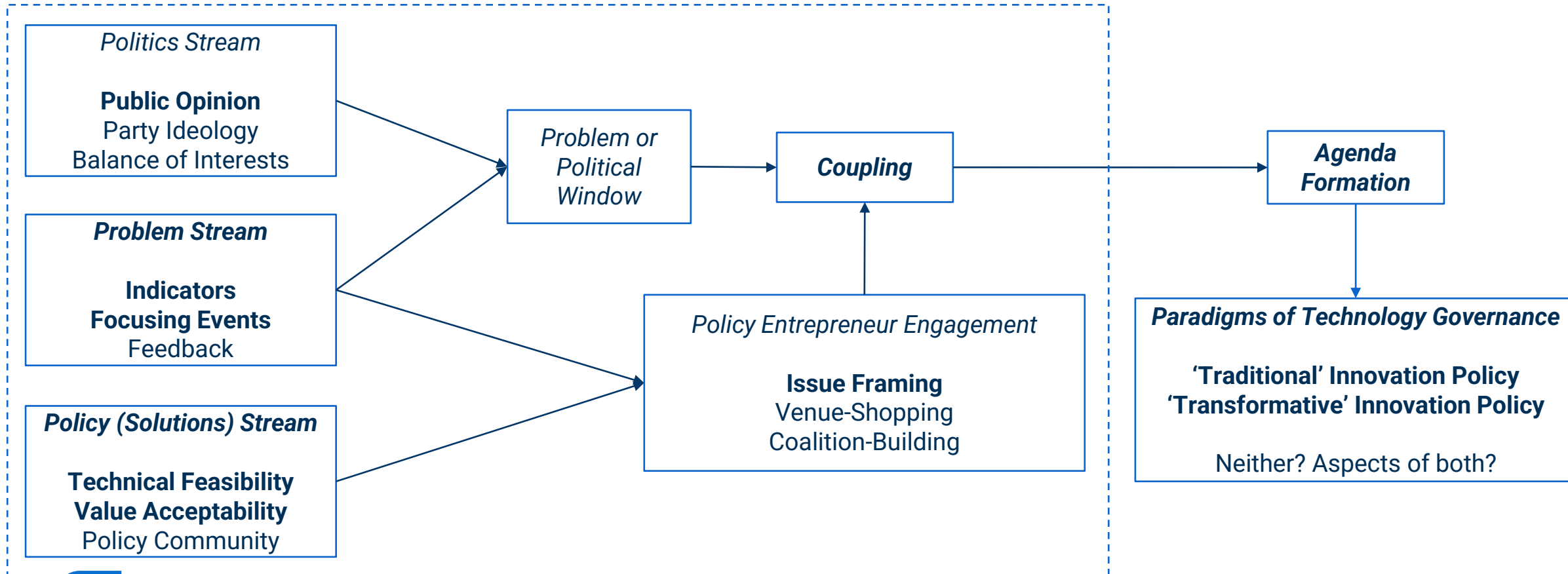
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# *Competing Visions of Technology Policy*

- 'Traditional' approach
  - Focus on strategic economic and geopolitical goals, pro-innovation, expert-driven
    (Edler & Fagerberg, 2017; Imbrie et al. 2021; Soete 2007)
  - "Agencies must avoid a precautionary approach…" including "regulatory or non-regulatory actions that needlessly hamper AI innovation and growth" (OMB 2020)

- 'Transformative' approach
  - Heightened focus on ethical & social impacts of technology, acknowledge risks, involve public (Diercks et al. 2019; Fjeld et al. 2020; Schiff et al. 2021; Schomberg 2013)
  - "The United States must foster public trust and confidence in AI technologies and protect civil liberties, privacy, and American values" (White House 2019)

*Does the U.S. federal AI policy agenda better reflect 'traditional' or 'transformative' innovation policy?* → *Why has U.S. AI policy taken this trajectory? What aspects of the policy process and context led to this result?*

# Agenda-Setting Dynamics for AI Policy: Multiple Streams Framework



Politics Stream

**Public Opinion**
Party Ideology
Balance of Interests

*Problem Stream*

**Indicators**
**Focusing Events**
Feedback

*Policy (Solutions) Stream*

**Technical Feasibility**
**Value Acceptability**
Policy Community

*Problem or Political Window*

*Coupling*

Policy Entrepreneur Engagement

**Issue Framing**
Venue-Shopping
Coalition-Building

*Agenda Formation*

*Paradigms of Technology Governance*

**'Traditional' Innovation Policy**
**'Transformative' Innovation Policy**

Neither? Aspects of both?

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# METHODOLOGY
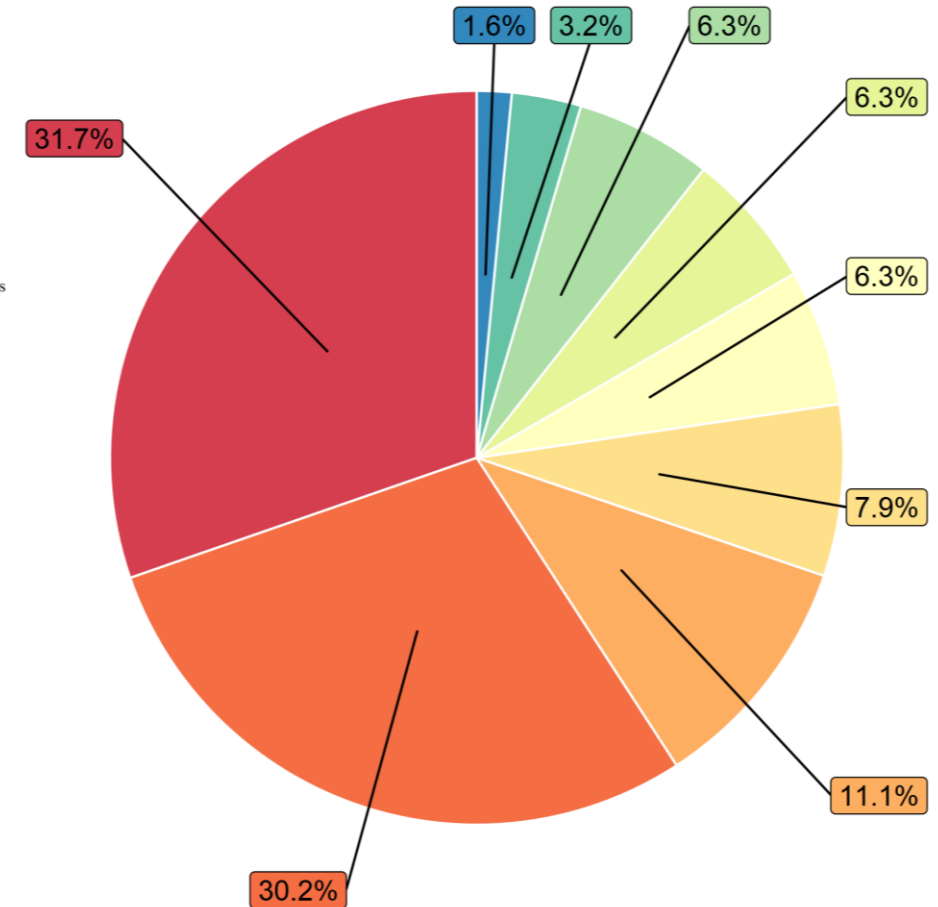
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# Data: U.S. Federal AI Strategy Documents

- 63 key strategic AI documents

  **U.S. AI Policy Documents**

- Curated by White House AI Initiative Office between 2016 and 2020

- Meaningful reflection of official policy discourse, debates, competing ideas

  (Freeman 2011)

**Document Type:**

- Scientific and Technical Reports
- Strategy Documents
- Requests for Information
- AI Budget
- Ethical Principles
- Event Summary
- International Declaration
- Principles/Declarations
- Budget/Report

1.6%  3.2%  6.3%  6.3%  6.3%  7.9%  11.1%  30.2%  31.7%

Source: Author's calculations, from AI.gov

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Principles of Artificial Intelligence Ethics for the Intelligence Community



GAO
United States Government Accountability Office
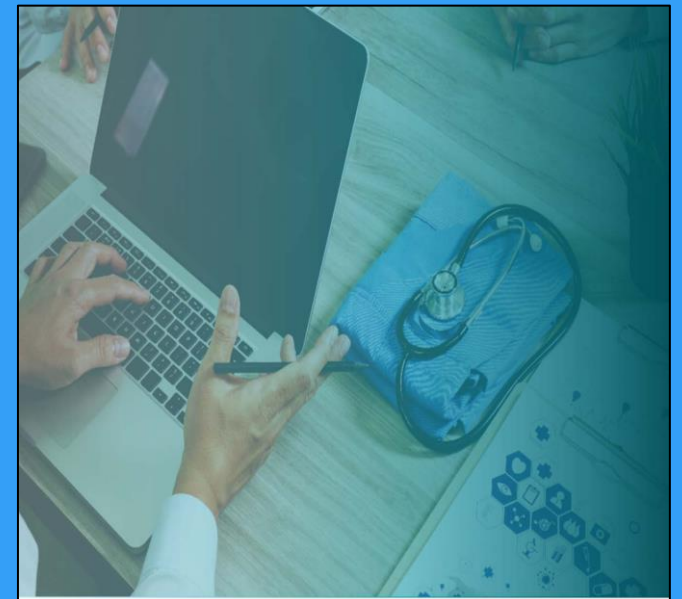Report to the Committee on Science, Space, and Technology, House of Representatives

TECHNOLOGY ASSESSMENT
Artificial Intelligence
Emerging Opportunities, Challenges, and Implications

HIGHLIGHTS OF A FORUM
Convened by the Comptroller General of the United States

March 2018
GAO-18-142SP



U.S. Department of Health and Human Services
Artificial Intelligence (AI) Strategy

January 2021



U.S. LEADERSHIP IN AI:
A Plan for Federal Engagement in Developing Technical Standards and Related Tools

Prepared in response to Executive Order 13859
Submitted on August 9, 2019

NIST National Institute of Standards and Technology
U.S. Department of Commerce



U.S. DEPARTMENT OF HOMELAND SECURITY

ARTIFICIAL INTELLIGENCE STRATEGY

December 3, 2020



USAID FROM THE AMERICAN PEOPLE

The ROCKEFELLER FOUNDATION

Artificial Intelligence in Global Health
Defining a Collective Path Forward

# Analysis Approach

- Single holistic case study: qualitative and quantitative document/content analysis
- Coding of 4,100 paragraphs with normalized comparison per domain
- Pattern matching based on conceptual framework (MSF and policy paradigms)

| Coding Domains | Traditional (examples) | Transformative (examples) |
|---|---|---|
| Focusing Events (7) | • Geopolitics & Military | • Scandals & Disasters |
| Indicators (7) | • Technical Performance & Advances | • Poverty, Harm, & Fairness |
| Issue Frames (3) | • Innovation | • Ethics |
| Problems (16) | • Data Quality & Access | • Human & Civil Rights |
| Solutions (16) | • Workforce & Education | • Public Engagement |
| Stakeholders (2) | • Experts | • Public |

Codebook

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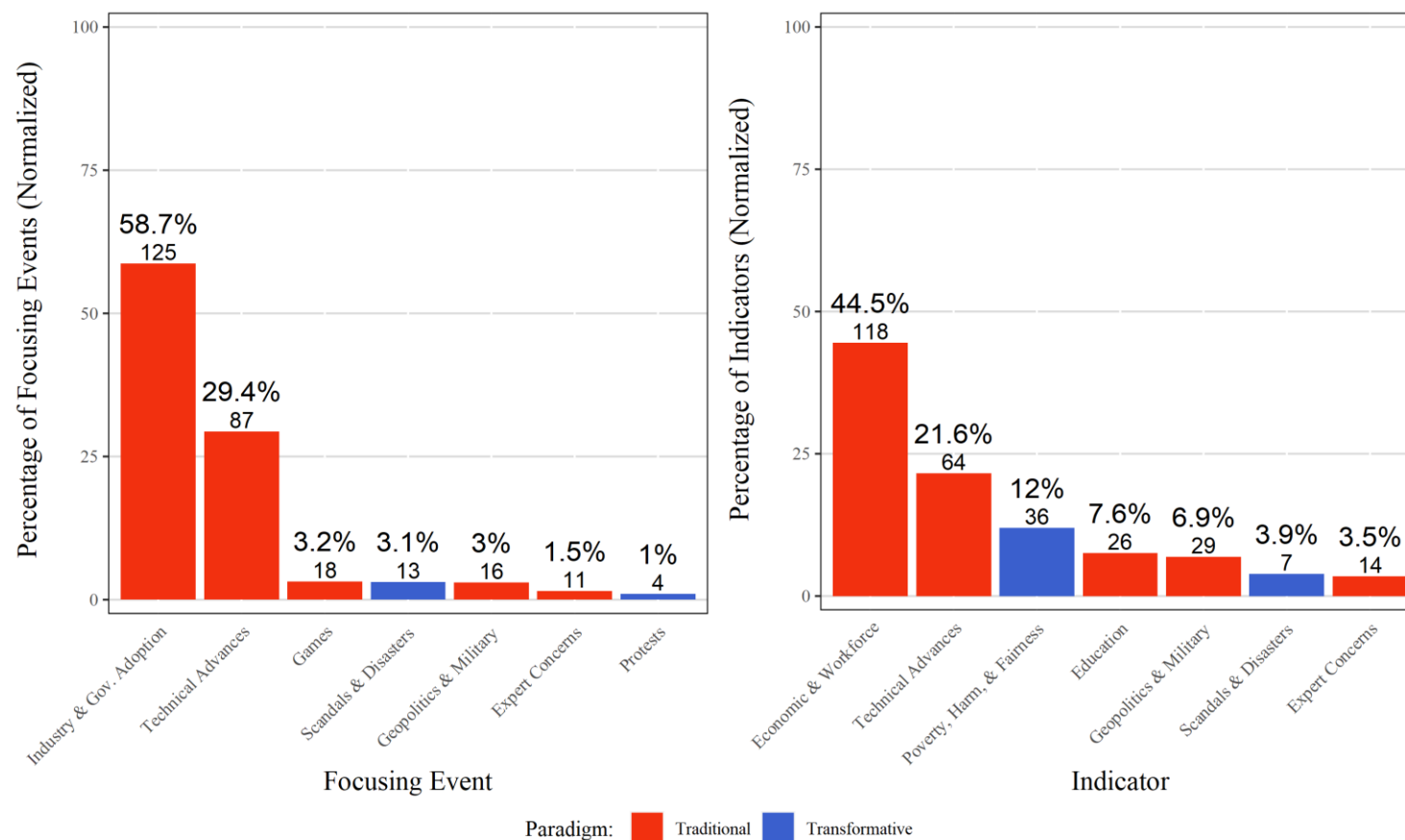
# RESULTS

# Focusing Events and Indicators: Largely Traditional

- Despite various scandals, harms, & expert statements warning about AI risks:

- *Overwhelming focus on traditional indicators and focusing events*

- 96% of focusing events and 84% of indicators are traditional in nature

**Coverage of Focusing Events and Indicators in U.S. AI Policy Documents**

# Examples of Prominent AI Issue Frames

## Innovation Frame



Congressman Bill Foster
@RepBillFoster

Artificial Intelligence is at the forefront of innovation that is changing the way Americans operate in the marketplace. I'm excited to chair the @FSCDems AI Task Force and better understand how developments in AI will affect the businesses and consumers.

1:12 259 views MRS. BEATTY MR. FOSTER

12:56 PM · May 10, 2019 · Twitter Web Client

18 Likes

## Ethics Frame



Yvette D. Clarke
@RepYvetteClarke

Algorithms determine whether we're hired, sent to jail, or approved for a mortgage; but can result in discrimination.

Proud to introduce the bicameral Algorithmic Accountability Act with @RonWyden & @CoryBooker to regulate algorithms & biased tech tools.
washingtonpost.com/business/techn...

3:46 PM · Apr 10, 2019 · Twitter for iPhone

16 Retweets    2 Quote Tweets    22 Likes

## Competition Frame



Marco Rubio
@marcorubio

While we spend our time fighting each other a China-centric technology future is taking shape. If we don't wake up & get moving #China will be setting global standards for AI, gene editing ethics, 5G, & controlling global data flows & digital commerce.

Dysfunctional U.S. needs "Sputnik moment" on future tech
The U.S. isn't seeing the urgency of this Sputnik moment
🔗 axios.com

7:11 AM · Jun 27, 2018 · Twitter for iPad

172 Retweets    41 Quote Tweets    447 Likes

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# *Issue Frames: Subsumption of Ethics into Innovation*

- ## Synthesis or subsumption?
  - Innovation (in traditional sense) is *dominant* frame in 40 of 63 documents

- ## Ethics at 'mission statement' level
- ## Ethics as instrumental to other goals

> "**Trustworthiness** of AI systems is a key factor for the **diffusion and adoption** of AI…essential to…turning AI trustworthiness into a **competitive parameter** in the **global marketplace**"
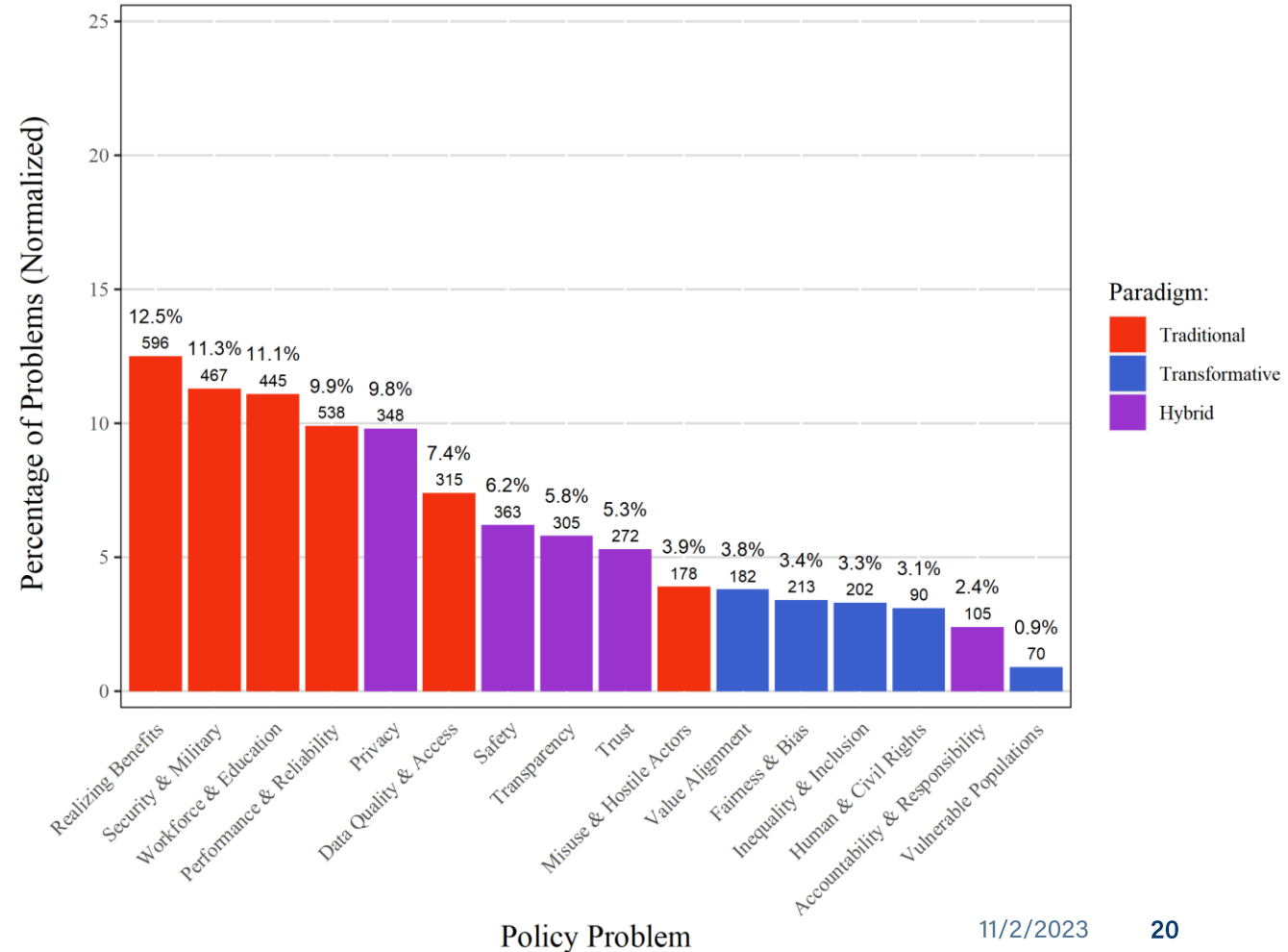
**Coverage of Issue Frames in U.S. AI Policy Documents**

Innovation

4
(6%)

19
(30%)

36
(57%)

1
(2%)

3
(5%)

0
(0%)

0
(0%)

Ethics

Geopolitics

Density:
30
20
10
0
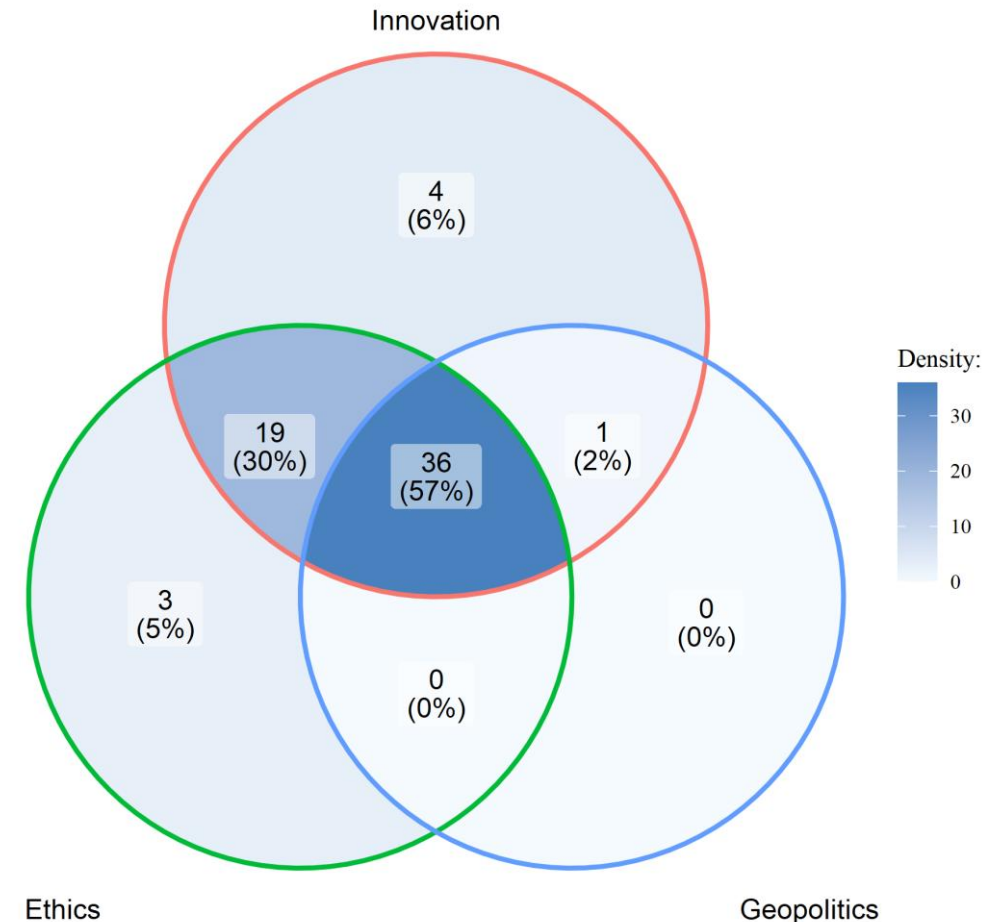
# Policy Problems: Traditional with 'Hybrid' Challenges

- Top problems are traditional in nature
  - 49 documents mention workforce & education; 54 mention security or military

- Many documents cover transformative-type policy problems as well
  - 25 mention human rights; 28 inequality or inclusion; 41 fairness or bias
  - But less often (only 16% of total problems) and in less depth

- 'Hybrid' problems & solutions
  - Absence of human-centered language RE issues like privacy, trust, & transparency
  - Instrumentalized to trad. innovation goals

- Productive synthesis or problematic?

**Coverage of Policy Problems in U.S. AI Policy Documents**



Paradigm:
- Traditional (red)
- Transformative (blue)
- Hybrid (purple)

Bar chart data (Percentage of Problems (Normalized) vs. Policy Problem):
- Realizing Benefits: 12.5% / 596
- Security & Military: 11.3% / 467
- Workforce & Education: 11.1% / 445
- Performance & Reliability: 9.9% / 538
- Privacy: 9.8% / 348
- Data Quality & Access: 7.4% / 315
- Safety: 6.2% / 363
- Transparency: 5.8% / 305
- Trust: 5.3% / 272
- Misuse & Hostile Actors: 3.9% / 178
- Value Alignment: 3.8% / 182
- Fairness & Bias: 3.4% / 213
- Inequality & Inclusion: 3.3% / 202
- Human & Civil Rights: 3.1% / 90
- Accountability & Responsibility: 2.4% / 105
- Vulnerable Populations: 0.9% / 70

# Policy Solutions: Traditional But Space for New Ideas?

- Traditional solutions dominate: R&D, Data, Workforce & Education

- Some hybrid solutions could be venues for more 'transformative' approaches: impact assessment, standards, monitoring
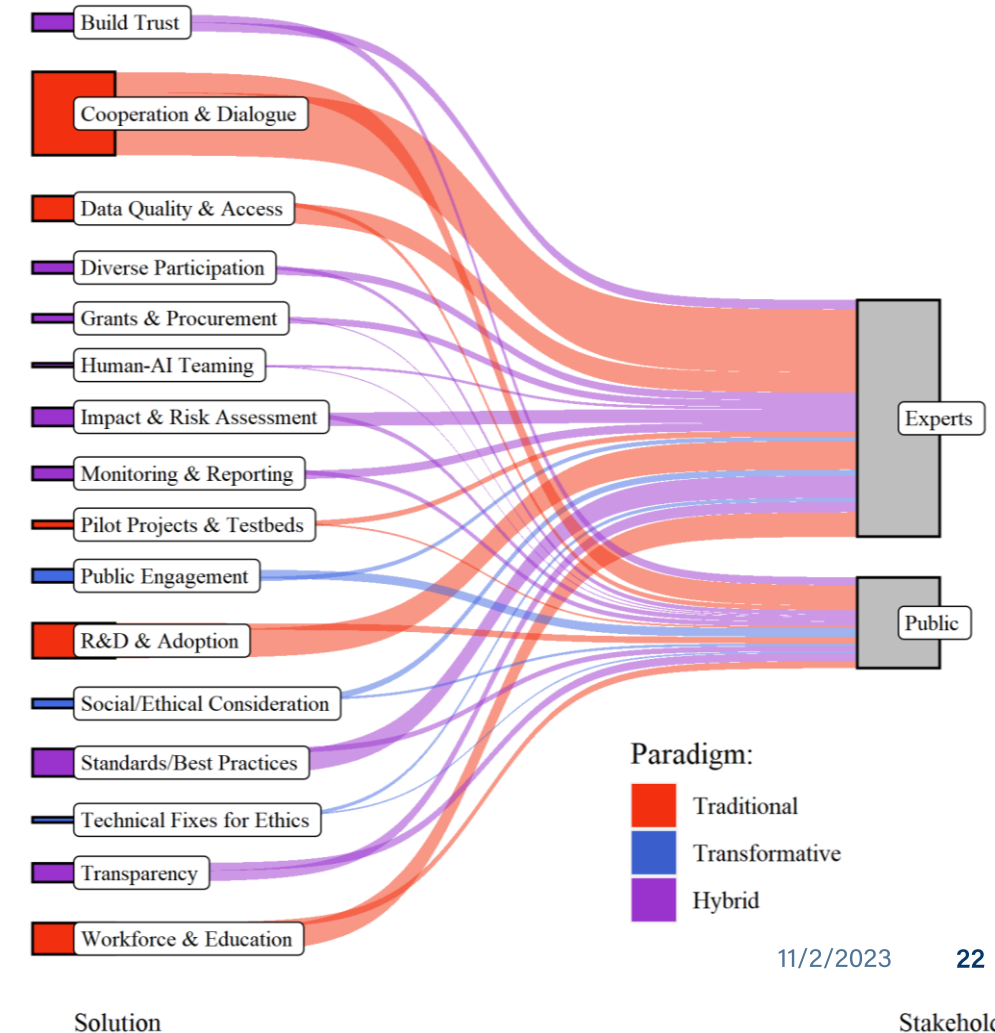
- Depends on their design

**Coverage of Policy Solutions in U.S. AI Policy Documents**

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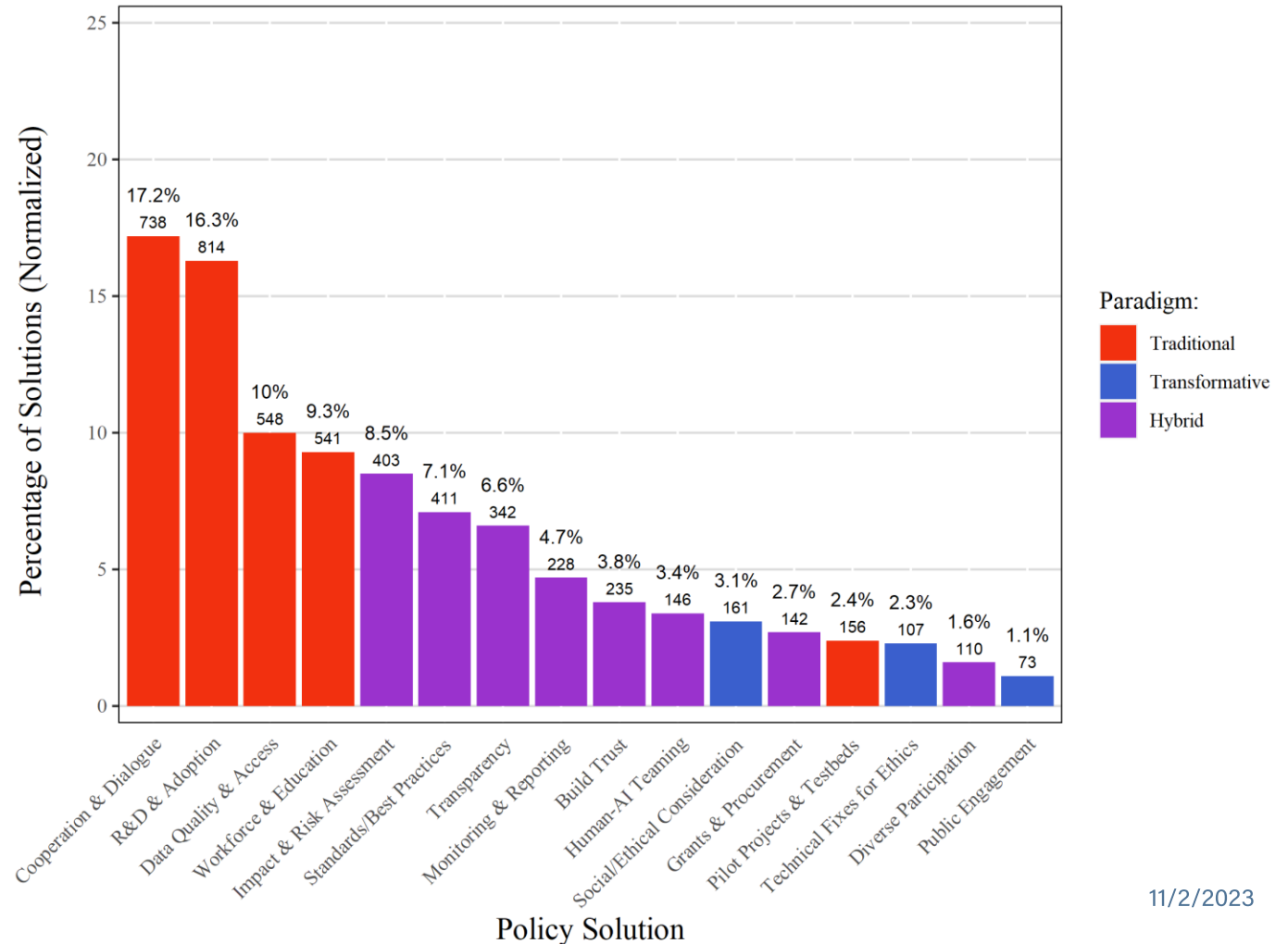
# Key Actors: Expert-Dominated

- Public most often cited with respect to 'cooperation & dialogue' versus more concrete solutions

- Meanwhile roles, timelines, and deliverables are detailed for (industry and government) experts

- Almost no mention of public opinion, venues for two-way public engagement

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## Role of the Public and Experts in U.S. AI Policy Documents



Solution

Build Trust
Cooperation & Dialogue
Data Quality & Access
Diverse Participation
Grants & Procurement
Human-AI Teaming
Impact & Risk Assessment
Monitoring & Reporting
Pilot Projects & Testbeds
Public Engagement
R&D & Adoption
Social/Ethical Consideration
Standards/Best Practices
Technical Fixes for Ethics
Transparency
Workforce & Education

Experts
Public

Paradigm:
- Traditional
- Transformative
- Hybrid

Stakeholder

11/2/2023   22

# Discussion and Takeaways

## Lack of 'technical feasibility'

"While stakeholders…expressed broad agreement that societal and ethical considerations must factor into AI standards, it is not clear how that should be done and whether there is yet sufficient scientific and technical basis to develop those standards provisions" (NIST 2019)

- **Some solutions not 'value acceptable'**
  - Privacy and algorithmic bias are admissible concerns; inequality and 'power' are not

- **Or outside bounds of existing policy venues**
  - Agencies translate social-ethical issues narrowly
  - Institutional inertia, scope, and ways-of-working

- **Significant concern about ethics, but federal actors default to traditional understandings of technology policy and solutions**
  - *Arguably unprecedented change in focus for AI policy but no paradigm shift yet*

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# Where does this leave us in 2023?

Policy images solidifying with merged frames centering innovation?

Or opening of new window with gen AI: misinformation, labor, auditing, safety?

And 'new' issues w/ heightened salience: open vs. closed source, safety vs. ethics, big tech power consolidation?

**GRAIL GOVERNANCE & RESPONSIBLE AI LAB**

# *THANK YOU!*

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# Key U.S. Strategic AI Policy Documents

| Document Author and Title | Document Author and Title |
|---|---|
| (NSTC) Preparing for the Future of Artificial Intelligence | (NSTC) NITRD Supplement to the President's FY 2020 Budget |
| (NSTC) The National Artificial Intelligence Research and Development Strategic Plan | (DOC/NIST) A Taxonomy and Terminology of Adversarial Machine Learning |
| (EOP) Artificial Intelligence, Automation, and the Economy | (DOC/USPTO) Request for Comments on Intellectual Property Protection for Artificial Intelligence Innovation |
| (GAO) Face Recognition Technology: DOJ and FBI Need to Take Additional Actions to Ensure Privacy and Accuracy | (DOC/NOAA) Public Comment for the Four Draft NOAA Science and Technology Strategies: NOAA Unmanned Systems, Artificial Intelligence, Omics, and Cloud Strategies |
| (DOT) Automated Driving Systems 2.0: A Vision for Safety | (NSTC) 2016–2019 Progress Report: Advancing Artificial Intelligence R&D |
| (DOT/FAA) Strategic Plan, FY2019-2022 | (DOT) Raising Awareness of Artificial Intelligence for Transportation Systems Management and Operations |
| (GAO) Technology Assessment: Artificial Intelligence – Emerging Opportunities, Challenges, and Implications | (DOT) Ensuring American Leadership in Automated Vehicle Technologies 4.0 |
| (OSTP) Summary of the 2018 White House Summit on Artificial Intelligence for American Industry | (OMB) Request for Comments on a Draft Memorandum to the Heads of Executive Departments and Agencies, "Guidance for Regulation of Artificial Intelligence Applications" |
| (Treasury) A Financial System That Creates Economic Opportunities – Nonbank Financials, Fintech, and Innovation | (DOC/NOAA) Artificial Intelligence Strategy |
| (HHS/NIH) National Institutes of Health Workshop: Harnessing Artificial Intelligence and Machine Learning to Advance Biomedical Research | (OSTP) American Artificial Intelligence Initiative: Year One Annual Report |
| (CRS) Artificial Intelligence (AI) and Education | (DoD) Ethical Principles for Artificial Intelligence |
| (USAID) Reflecting the Past, Shaping the Future: Making AI Work for International Development | (ODNI) Principles of Artificial Intelligence Ethics for the Intelligence Community |
| (NSF) Request for Information on Update to the 2016 National Artificial Intelligence Research and Development Strategic Plan | (NSTC) Artificial Intelligence and Cybersecurity: Opportunities and Challenges: Technical Workshop Summary Report |
| (DOT) Preparing for the Future of Transportation: Automated Vehicles 3.0 | (OMB) Federal Data Strategy: 2020 Action Plan |
| (CRS) U.S. Ground Forces Robotics and Autonomous Systems (RAS) and Artificial Intelligence (AI): Considerations for Congress | (G7) Science and Technology Ministers' Declaration on COVID-19 |
| (NSTC) Charting a Course for Success: America's Strategy for STEM Education | (NITRD) Artificial Intelligence and Cybersecurity: A Detailed Technical Workshop Report |
| (ODNI) The AIM Initiative: A Strategy for Augmenting Intelligence Using Machines | (DOC/NOAA) Data Strategy: Maximizing the Value of NOAA Data |
| (DoD) Department of Defense Artificial Intelligence Strategy | (ODNI) Artificial Intelligence Ethics Framework for the Intelligence Community |
| (DOE) Workshop Report on Basic Research Needs for Scientific Machine Learning: Core Technologies for Artificial Intelligence | (GAO) Facial Recognition Technology: Privacy and Accuracy Issues Related to Commercial Uses |
| (OSTP) Artificial Intelligence and Quantum Information Science Research and Development Summary: Fiscal Years 2020-2021 | (DOC/NIST) Four Principles of Explainable Artificial Intelligence |
| (DOJ) Data Strategy for the U.S. Department of Justice | (NITRD) AI R&D Dashboard, Networking and Information Technology R&D Program |
| (USAID) AI in Global Health: Defining a Collective Path Forward | (NSTC) NITRD Supplement to the President's FY2021 Budget |
| (DOC/NIST) Artificial Intelligence Standards | (DoD) DoD Data Strategy |
| (OECD) Recommendation on AI | (GAO) Facial Recognition: CBP and TSA are Taking Steps to Implement Programs, but CBP Should Address Privacy and System Performance Issues |
| (G20) AI Principles | (DOE/ASCAC) Final Report of the Subcommittee on AI/ML, Data-intensive Science and High-Performance Computing |
| (NSTC) National AI R&D Strategic Plan: 2019 Update | (State) Declaration of U.S. and UK Cooperation in AI R&D |
| (DOE) AI for Science | (DOC/USPTO) Inventing AI: Tracing the diffusion of artificial intelligence with U.S. patents |
| (OMB) Identifying Priority Access or Quality Improvements for Federal Data and Models for Artificial Intelligence Research and Development and Testing | (FOC) FOC Joint Statement on Artificial Intelligence and Human Rights |
| (G7) Biarritz Strategy for an Open, Free and Secure Digital Transformation | (CRS) Artificial Intelligence and National Security |
| (DOC/NIST) U.S. Leadership in AI: A Plan for Federal Engagement in Developing Technical Standards and Related Tools | (NSTC) Recommendations for Leveraging Cloud Computing Resources for Federally Funded Artificial Intelligence Research and Development |
| (DOC/USPTO) Request for Comments on Patenting Artificial Intelligence Inventions | (DHS) U.S. Department of Homeland Security Artificial Intelligence Strategy |
| (DoD/Air Force) Air Force Artificial Intelligence Annex to DoD AI Strategy | (White House) Executive Order Promoting the Use of Trustworthy AI in the Federal Government |
| (OSTP) Summary of the 2019 White House Summit on Artificial Intelligence in Government | (DOJ) Artificial Intelligence Strategy for the U.S. Department of Justice |

# Codebook

| Coding Domains | Traditional | Transformative | Hybrid |
|---|---|---|---|
| Focusing Events (7) | • Expert Concerns<br>• Games (e.g., Deep Blue, AlphaGo)<br>• Geopolitics & Military<br>• Industry & Government Adoption<br>• Technical Performance & Advances | • Protests<br>• Scandals & Disasters | |
| Indicators (7) | • Economic & Workforce<br>• Education<br>• Expert Concerns<br>• Geopolitics & Military<br>• Technical Performance & Advances | • Poverty, Harm, & Fairness<br>• Scandals & Disasters | |
| Issue Frames (3) | • Geopolitics<br>• Innovation | • Ethics | |
| Problems (16) | • Data Quality & Access<br>• Misuse & Hostile Actors<br>• Performance & Reliability<br>• Realizing Benefits<br>• Security & Military<br>• Workforce & Education | • Fairness & Bias<br>• Human & Civil Rights<br>• Inequality & Inclusion<br>• Value Alignment<br>• Vulnerable Populations | • Accountability & Responsibility<br>• Privacy<br>• Safety<br>• Transparency<br>• Trust |
| Solutions (16) | • Pilot Projects & Testbeds<br>• R&D and Adoption<br>• Workforce & Education | • Public Engagement<br>• Social/Ethical Consideration<br>• Technical Fixes for Ethics | • Build Trust<br>• Diverse Participation<br>• Grants & Procurement<br>• Human-AI Teaming<br>• Impact & Risk Assessment<br>• Monitoring & Reporting<br>• Standards/Best Practices<br>• Transparency |
| Stakeholders (2) | • Experts | • Public | |