

Stenographic Transcript
Before the

COMMITTEE ON
RULES AND ADMINISTRATION

UNITED STATES SENATE

THE USE OF ARTIFICIAL INTELLIGENCE AT THE LIBRARY OF
CONGRESS, GOVERNMENT PUBLISHING OFFICE, AND
SMITHSONIAN INSTITUTION

Wednesday, January 24, 2024

Washington, D.C.

ALDERSON COURT REPORTING
1029 VERMONT AVE, NW
10TH FLOOR
WASHINGTON, DC 20005
(202) 289-2260
www.aldersonreporting.com

1 THE USE OF ARTIFICIAL INTELLIGENCE AT THE LIBRARY OF
2 CONGRESS, GOVERNMENT PUBLISHING OFFICE, AND SMITHSONIAN
3 INSTITUTION

4
5 Wednesday, January 24, 2024

6
7 U.S. Senate

8 Committee on Rules and Administration

9 Washington, D.C.
10

11 The committee met, pursuant to notice, at 2:15 p.m.,
12 in Room 301, Russell Senate Office building, Hon. Amy
13 Klobuchar, chairman of the committee, presiding.

14 Present: Senators Klobuchar [presiding], Padilla,
15 Ossoff, Fischer, Capito, Hagerty, and Britt.
16
17
18
19
20
21
22
23
24
25

1 OPENING STATEMENT OF SENATOR KLOBUCHAR

2 The Chairman. Calling this hearing to order. Good
3 afternoon. I would like to thank Ranking Member Fischer,
4 as always, and our colleagues for helping us put together
5 this hearing. With us today is Dr. Carla Hayden, who is
6 the Librarian of Congress. Thank you. We always enjoy
7 having you here.

8 Also here is Hugh Halpern, the Director of the
9 Government Publishing Office. Back again, thank you. As
10 well as Meroe Park, thank you for being here, the Deputy
11 Secretary and Chief Operating Officer of the Smithsonian.
12 We understand that the Secretary is ill. Just -- he will
13 recover but wasn't able to make it, so we really appreciate
14 it.

15 Today, we are going to talk about the very important
16 topic of artificial intelligence and the agencies that play
17 such a critical role in serving the American people. AI
18 has the potential, as we know, to lead to incredible
19 innovation by supercharging scientific research, improving
20 access to information, and increasing productivity.

21 But like any emerging technology, AI comes with
22 significant risks and our laws need to be as sophisticated,
23 as the potential threats are there to our own democracy.
24 Understanding these risks and benefits has been a major
25 bipartisan focus of the Senate, with Senators Schumer,

1 Rounds, Young, and Heinrich leading a series of nine forums
2 since the fall, and a number of us on various committees
3 working on proposals so that we are going to be ready when
4 this hits.

5 And I think, as you all saw from the reports of the
6 robocalls in New Hampshire with the fake voice of the
7 President or other things that have also occurred to
8 candidates on the Republican side of the aisle, this is not
9 going to be one side or another.

10 It is something that we as a Congress have to deal
11 with to put some guardrails. And that includes, of course,
12 the work that goes on in these agencies. At our hearing in
13 September, all the witnesses agree that AI poses risks to
14 our elections, and we heard testimony on why we must work
15 to put guardrails in place.

16 That is why I am leading a bipartisan bill with
17 Senators Hawley, Coons, Collins, and also joined with
18 Senators Bennet and Ricketts, to prohibit fraudulent AI
19 generated content in our elections within the framework of
20 the Constitution, for instance, allowing for satire and the
21 like, and why we need to take other steps like disclaimers
22 on ads that use AI so that the citizens of this country can
23 actually believe that it is their own candidate or their
24 opposing candidate who is speaking. Another example of a
25 legislation going on.

1 Senator Thune and I have joined together in
2 introducing a bill to put in place commonsense safeguards
3 for the highest risk, non-defense applications of AI, and
4 improve transparency. I see that Senator Capito is here.
5 She has also joined us on this important bill that is
6 mostly coming out of the Commerce committee.

7 So, let's get to your stuff, AI and how it affects the
8 work of the three agencies before us, the Library of
9 Congress, Government Publishing Office, and the
10 Smithsonian. While it is important that our three
11 witnesses today speak to measures they are taking to
12 safeguard against potential harms, they are also, I think
13 it is important to note, using AI technology in their work
14 to protect our country's greatest treasures, advance
15 scientific research, and improve public access to
16 information.

17 For example, the Library of Congress is testing
18 emerging AI technology to expand how researchers can better
19 use the resources they already house in their collections,
20 which make up the largest library in the world, we note
21 with much humbleness, such as a new AI tool that lets users
22 instantly search through 1.56 million images from digitized
23 historical newspapers to assist in archival research.

24 GPO is working to harness the efficiencies offered by
25 AI to modernize how it makes information from all three

1 branches of Government more usable for the public since
2 much of its work has expanded to digital publishing, hence
3 their new name, printing to publishing.

4 And as part of its work producing Government
5 documents, GPO is using AI to ensure quality control of
6 items such as the material you use to print passports. It
7 printed 22 million of them, as we learned at the last
8 hearing last year.

9 Finally, at the Smithsonian, which is the world's
10 largest museum education and research complex, researchers
11 are exploring how to use AI to do things like tackle some
12 of the most challenging problems in astrophysics, classify
13 species of fish in the Amazon, and make collections more
14 accessible, accurately identifying the contributions of
15 women, I like this one, in historical texts, in which they
16 were often identified in writing by only their husbands'
17 names. That will be interesting what you discover with AI.

18 We must continue working to stay ahead of the curve,
19 and I am committed to working in a bipartisan way with
20 Senator Fischer so that our country can benefit, and your
21 agencies can benefit from the best of AI, while protecting
22 against any threats. Thank you again, and I will turn it
23 over to Senator Fischer.

24

25

1 STATEMENT OF SENATOR FISCHER

2 Senator Fischer. Thank you, Chairman Klobuchar, for
3 calling this hearing on the use of artificial intelligence
4 at the Library of Congress, the Government Publishing
5 Office, and the Smithsonian. I also want to thank our
6 three witnesses who are here with us today.

7 I know we are all wishing Secretary Ben a speedy
8 recovery. I believe this is the first time the committee
9 has heard from the Library of Congress, the Government
10 Publishing Office, and the Smithsonian at the same time,
11 and Director Halpern, it is nice to see you back with us so
12 soon.

13 The Library of Congress and the Smithsonian both
14 safeguard a vast collection of our nation's treasures,
15 welcome our constituents to their beautiful buildings to
16 learn and explore, and service crucial resources to the
17 scientific and the academic communities.

18 The Government Publishing Office also performs vital
19 functions for the American people as it produces,
20 distributes, preserves, and publishes documents for all
21 three branches of our Government.

22 This is the Rules committee's second hearing on the
23 use of AI. As we discussed at the first hearing, there is
24 no question that AI is transformative, and it is poised to
25 evolve rapidly. While AI brings the possibility of

1 creating efficiencies and competitive advantages across
2 Government, it also creates risks.

3 Understanding and weighing the benefits and risks of
4 AI are necessary first steps before widely adopting the use
5 of AI. Today, I look forward to hearing from our witnesses
6 about how our Legislative Branch agencies are exploring
7 potential applications of AI.

8 There are many important questions to ask, such as are
9 these existing issues or specific challenges at our
10 Legislative Branch agencies that AI could solve? Are there
11 existing services that our agencies provide that AI could
12 improve? Can AI provide new avenues for these agencies so
13 that you can fulfill your missions?

14 I also look forward to hearing about the guardrails
15 our agencies are putting in place to mitigate those risks
16 of AI. We need to understand the cost of AI and AI's
17 impacts on agencies' budgets.

18 Just as importantly, agencies need to understand the
19 implications of AI use, especially the risks related to
20 privacy. Understanding Legislative Branch agencies' use of
21 AI is an important oversight question for this committee.
22 That said, we cannot lose sight of existing challenges
23 facing the agencies that we oversee.

24 As the Library looks to hire a new director for the
25 Congressional Research Service, and GPO seeks to maintain

1 high quality staffing standards in the face of your
2 retiring workforce, it is important that this committee
3 supports their efforts to improve hiring and retention
4 efforts.

5 Furthermore, as the Smithsonian endeavors to establish
6 two new museums authorized by statute, we must maintain
7 rigorous oversight of their efforts to tackle a deferred
8 maintenance backlog, a chronic issue for that agency.

9 With that said, I look forward to a productive
10 discussion about our Legislative Branch agencies' use of
11 AI, as well as other issues that you face. Thank you,
12 Madam Chair.

13 The Chairman. Well, thank you so much, Senator
14 Fischer. So, I will introduce our witnesses. Our first
15 witness, as I noted, is Librarian of Congress, Dr. Carla
16 Hayden.

17 Dr. Hayden was sworn in in September 2016. She has
18 done a tremendous job leading the Library. She previously
19 served as the CEO of Enoch Pratt Free Library in Baltimore,
20 and she received her undergraduate degree from Roosevelt
21 University, and master's and Ph.D. from the University of
22 Chicago, that I also attended.

23 Whenever I see Dr. Hayden, I always think about
24 Barbara Mikulski, who was so proud that a Baltimore
25 librarian got this job, and you have made her proud too.

1 So, thank you. Our second witness is Director of the
2 Government Publishing Office, Hugh Halpern, who has been in
3 his position since his unanimous confirmation, it doesn't
4 happen all the time, by the Senate in December 2019.

5 He previously worked on Capitol Hill for more than 30
6 years, including for former Speaker Paul Ryan. And he
7 received his bachelor's and master's degree from American
8 University, and his law degree from George Mason. Thank
9 you, and we really enjoyed your attendance at your last
10 hearing.

11 Our final witness is Meroe Park, who became Deputy
12 Secretary and Chief Operating Officer of the Smithsonian in
13 December 2019. Previously, she worked for 27 years at the
14 CIA. Okay, I didn't know that. When I read these bios, I
15 learn new things all the time. You probably don't
16 advertise that, but that is interesting. Including as
17 executive director and chief operating officer, and she
18 received her undergraduate degree from Georgetown.

19 Okay, now we are going to swear in the witnesses.
20 Okay, if you raise your right hand, do you swear that the
21 testimony you will give before the committee shall be the
22 truth, the whole truth, and nothing but the truth, so help
23 you God?

24 Dr. Hayden. I do.

25 Mr. Halpern. I do.

1 Ms. Park. I do.

2 The Chairman. Thank you, and you can be seated. We
3 will now proceed to five minute testimonies. We will start
4 with Dr. Hayden.

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 STATEMENT OF HON. CARLA HAYDEN, LIBRARIAN OF CONGRESS,
2 LIBRARY OF CONGRESS, WASHINGTON, D.C.

3 Dr. Hayden. Thank you, Madam Chairwoman, Ranking
4 Member Fischer, and members of the committee. Thank you
5 for this invitation to appear before you to discuss a topic
6 that is of great interest across the Government and within
7 the public archives sector, artificial intelligence.

8 And I am pleased to have the opportunity to further
9 engage with my Legislative Branch colleagues on this topic
10 and to update the committee on the Library's activities
11 exploring AI. At the Library, there are four areas of
12 focus with AI, to expand access to our collections, to
13 enhance services for users, to improve internal processes
14 for increased efficiency, and to implement a slate of
15 strong governance for the use of AI.

16 Becoming a more digitally enabled agency has been a
17 key focus of my tenure as Librarian, and in 2019, the
18 Library published a comprehensive digital strategy to guide
19 the agency's use of technology in an increasingly digital
20 world.

21 Building on this first major step, we have now fully
22 integrated our digital strategy into our 2024-2028
23 strategic plan, and the plan embraces a central idea, that
24 technology must be, as our CIO, Judith Conklin says, baked
25 into all we do. Since 2018, the Library's Digital

1 Innovation Division, also affectionately known as LC Labs,
2 has investigated AI and shared the results of its research
3 experiments with the public.

4 Working with digital researchers we call innovators
5 and residents, LC Labs has made its mark as a launchpad for
6 innovating engaging uses of AI to expand access to our
7 collections. A very popular example is citizen DJ, a music
8 sampling application that allows users to remix and create
9 music using free to use non rights restricted audio from
10 the Library's collections.

11 Other exciting AI use cases include experimenting with
12 machine learning and optical character recognition, or OCR,
13 to help manage metadata and machine readable text for
14 digitized documents.

15 For example, OCR has increased the discoverability of
16 more than 20 million historic American newspaper pages
17 through the Chronicling America Project. And building on
18 that technology, users can also search those historic
19 newspapers for photos using an application LC Labs rolled
20 out in 2020 called Newspaper Navigator.

21 However, enhancing services to Congress and the public
22 is also a major area of focus. In 2022, we released a
23 Government, a congress.gov API, application programming
24 interface, to make it easier for the public to access and
25 use accurate, structured Congressional, Legislative data.

1 And additionally, several Library service units are
2 successfully demonstrating AI's use in bolstering the
3 Library's information services. Our digital innovators
4 have been working with the Copyright Office to test
5 approaches for extracting data from historical copyright
6 records.

7 Now, this project combines human skills with AI
8 capacity to make a written or handwritten analog record
9 more accessible and easier to search online, and it is just
10 one example of how humans in the loop can be the model for
11 AI and successful integration of technology with human
12 skill, because a very important principle is that well
13 trained human beings will always be critical to the work of
14 the Library of Congress.

15 Now, the Library's AI use cases have also been a
16 testing opportunity to increase efficiency and staff
17 productivity. For example, our Cataloging Division is
18 currently experimenting with AI to help staff process more
19 efficiently bibliographic information and catalog records.

20 There are many opportunities with AI, but there also
21 must be, must be robust governance. The Library is in a
22 strong position as our existing technology governance
23 policies provide an adaptable foundation to use in guiding
24 us with emerging technologies like AI. And further, the
25 Library's approach to implementing AI closely aligns with

1 the practices of other Federal institutions and is informed
2 by NIST's AI Risk Management Framework, which also aims to
3 improve the trustworthiness of AI applications.

4 Responding to this fast developing area of technology
5 calls for collaboration across the private sector and
6 Government, which is why the Library participates in the
7 General Services Administration AI Community of Practice
8 and is a leading member of the International Artificial
9 Intelligence for Libraries, Archives and Museums
10 Secretariat.

11 To conclude, discovering the role AI has to play in
12 enhancing services to Congress and other users remains an
13 ongoing effort. And as the Library of Congress charts this
14 course forward, we plan to draw on our history of
15 technological innovations, and our rigorous development of
16 standards, and the input of our stakeholders and partners
17 to align possible uses for the public.

18 We appreciate this opportunity, and we hope that you
19 will join with us in making sure the values of
20 transparency, accountability, and efficacy remain as we
21 explore this opportunity.

22 [The prepared statement of Dr. Hayden follows.]

23

24

25

The Chairman. Thank you. Mr. Halpern.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

1 STATEMENT OF HON. HUGH NATHANIAL HALPERN, DIRECTOR, U.S.
2 GOVERNMENT PUBLISHING OFFICE, WASHINGTON, D.C.

3 Mr. Halpern. Thank you. Good afternoon, Chairwoman
4 Klobuchar, Ranking Member Fischer, Senator Capito. Always
5 good to see you. I am pleased to appear before you today
6 to share some of the potential uses of AI and related
7 technologies at the Government Publishing Office.

8 GPO differs from the Library and the Smithsonian in
9 that it is fundamentally a manufacturing operation. We
10 publish, produce, and maintain materials for all three
11 branches of Government.

12 Our 1,600 craftspeople and professionals produce
13 virtually all of Congress's documents, along with numerous
14 other publications, and manufacture secure credential
15 products like the U.S. passport. We also provide digital
16 information either through our own trusted digital
17 repository, govinfo.gov, or by serving data to our partners
18 like the Library where they use that data on sites like
19 congress.gov.

20 No matter what you call it, artificial intelligence,
21 machine learning, or a large language model, GPO's
22 operations are just as susceptible to disruption as any
23 commercial firms, and that is not necessarily a bad thing.

24 My written testimony describes GPO's policy approach
25 to this new generation of tools, so my statement today will

1 focus on three potential applications for AI and related
2 technologies in our day to day operations.

3 First, we believe these tools can improve our quality
4 assurance process by automatically recognizing defects that
5 a human inspector might miss. We already use a rudimentary
6 form of this technology in the production of the current
7 version of the U.S. passport. GPO uses equipment that
8 optically scans the pages that will become the identity
9 page in a personalized passport.

10 This equipment looks at each strip of three pages for
11 variances that exceed the specifications for the material
12 and rejects those pages that don't conform to the standard.
13 AI technology has the potential to further refine this
14 review, allowing the machines to learn what may constitute
15 a natural variation that is within the specification and
16 what is not.

17 This has the potential to reduce defect rates, lower
18 waste, and free up our quality assurance team to focus on
19 solving bigger quality problems as they arise. Second, we
20 see tremendous potential for supplementing our proofreading
21 team.

22 Proofreaders are very difficult to hire, and we need
23 to free them from making routine, repetitive corrections
24 and allow them to focus on more subtle issues that really
25 require a human being to interpret. One example is

1 capitalization.

2 GPO style says that we capitalize the letter S in the
3 word State when we are referring to a political subdivision
4 of the United States. Currently, we use computer scripts
5 to perform global search and replace functions on documents
6 to correct our most common errors, including that one. But
7 those scripts are really blunt instruments.

8 For instance, they can't tell the difference between
9 the State of Minnesota and a New York state of mind. AI
10 holds the promise of tools that understand context and know
11 when text refers to one kind of state or the other.

12 That will cut down on the need for our proofreaders to
13 review and rereview, and then correct material that has
14 already been run through our automated tools, and free them
15 up to focus on more difficult contextual issues.

16 My final example comes from GPO's public information
17 mission. We have had great success in making
18 Congressionally mandated reports publicly available since
19 the end of last year, with more than 180 of those reports
20 available on govinfo as of yesterday.

21 Most of those reports come to us as PDFs. While that
22 is a good format to show how the printed document looks, it
23 is not always the best format for viewing on a phone, a
24 tablet, or even for folks with disabilities.

25 While GPO would like to get these reports in more

1 flexible formats like XML, the agencies' authoring reports
2 aren't always equipped to supply them that way. AI
3 technologies hold the promise of allowing us to extract the
4 information from a PDF, understand the document structure,
5 and produce an alternative view that works on different
6 kinds of devices, all without manual, time consuming work
7 from our team.

8 These are just three examples where we see
9 applications in GPO's operations, and we are considering
10 many pilots in the future. All of these are intended to
11 act as a force multiplier for our team, allowing our folks
12 to be more productive, and deliver a higher value for our
13 customers and the taxpayer.

14 Madam Chairwoman, Ranking Member Fischer, thank you
15 for the opportunity to testify before the committee today.
16 I look forward to any questions the committee may have.

17 [The prepared statement of Mr. Halpern follows.]

18

19

20

21

22

23

24

25

1 The Chairman. Thank you very much. Last but not
2 least, Ms. Park, thank you.

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1 from our current use cases and are exploring new ones as
2 this technology continues to evolve.

3 For example, the National Museum of African American
4 History and Culture's Freedmen's Bureau Transcription
5 Project, which is the Smithsonian's largest crowdsourcing
6 initiative, is transcribing genealogical records of the
7 formerly enslaved. In a recent trial run, AI tools
8 reliably transcribed nearly two thirds of the test content,
9 showing how AI has the ability to dramatically scale up
10 work with large data sets.

11 Other examples, including, as the chairwoman mentioned
12 during her opening remarks, our data science labs'
13 development of a model that can discover incorrect women's
14 contributions mistakenly attributed to men in our
15 collections.

16 And the Smithsonian Astrophysical Observatories Astro
17 AI Center has more than 50 AI projects planned or underway,
18 creating excitement about our solar system and the universe
19 itself.

20 Inside the Smithsonian, we recently announced the
21 creation of an AI Community of Practice, which will help us
22 test new capabilities across the institution, as well as
23 build a framework of good governance to determine the best
24 way to use AI effectively and responsibly.

25 People rely on our reputation as a trustworthy

1 reservoir of knowledge, so we understand concerns about
2 bias, ethics, safety, and accuracy in available AI
3 outcomes, but there are also fantastic opportunities as
4 well. We and other cultural institutions can collaborate
5 with technology leaders to help improve AI tools for
6 everyone.

7 We can also examine the many dimensions of AI from a
8 scholarly perspective, convening experts to examine its
9 ethical, social, and economic implications. The nation's
10 250th birthday in 2026 will be a pivotal moment for us to
11 experiment with innovative AI tools, to enable
12 collaboration with tech leaders in other Government and
13 cultural organizations to make AI more reliable and
14 trustworthy, to educate people about the benefits and the
15 risks of AI.

16 Ultimately, AI is a tool. Used properly, it will
17 allow the Smithsonian to expand our reach and our impact.
18 Like any new technology, it comes with risks and the
19 potential for unintended consequences.

20 But by developing internal expertise and partnering
21 with external experts, we can thoughtfully leverage AI,
22 both for the Smithsonian and for the American public.
23 Thank you.

24 [The prepared statement of Ms. Park follows.]

25

1 The Chairman. Thank you very much. I am going to
2 turn it over to Senator Fischer and -- for her questions,
3 and then Senator Padilla.

4 Senator Fischer. Thank you, Madam Chairman. And
5 thank you all once again for being here today. Can each of
6 you share whether your respective agencies have an official
7 policy that governs its use of AI? Dr. Hayden, do you have
8 an official policy on that?

9 Dr. Hayden. Yes. The Library has a number of
10 policies for security, IT security in general, and we have
11 an AI working group that has developed guidelines.

12 And we also follow NIST framework. We also are very
13 cognizant and use the Executive Orders that have also laid
14 that. And so, we are very, I would say zealous on making
15 sure that we have those frameworks and guidelines.

16 Senator Fischer. You mentioned in your oral
17 testimony, it is in your written as well, about NIST and it
18 aims to improve the trustworthiness of AI applications.
19 Can you give me an example of how that would be used? I
20 think a lot of us, when we think of AI, we don't get down
21 to the nitty gritty.

22 We don't get down to the basics of what it really can
23 do. We just think, oh, this is going to be so wonderful.
24 It will be sorting data. And so, I think this -- I think
25 some of your answers from all of you would be very helpful

1 on that.

2 Dr. Hayden. One of the through lines for each of us
3 is trustworthiness and being -- and with the Library of
4 Congress, we take very seriously being stewards of historic
5 information, current information, that we are a trusted
6 source.

7 And so, working with the framework that includes
8 looking at a new technology, you map it, you explore, and
9 then you measure its usefulness and effectiveness. And
10 then if it passes quite a few of these things, you would
11 look at how you could implement it.

12 So, being able to make sure and having these
13 templates. We have questions that we pose when anything is
14 being proposed about AI in particular, what does it do?
15 How can we make sure that humans are in the loop for their
16 quality control?

17 So, it is a very important part of looking at AI in
18 particular and any newer technology.

19 Senator Fischer. Thank you. And, Mr. Halpern, can you let
20 me know if you -- do you have a policy?

21 Mr. Halpern. Absolutely. So, we have a directive in
22 place since last month, since the end of 2023. And one of
23 the things that that created was our AI guidance committee,
24 and I believe that committee is going to have their first
25 kickoff meeting on Monday, where they are going to start

1 evaluating different technologies for some pilot
2 deployments in the near term so we can start testing some
3 of these in our environment.

4 Senator Fischer. You know, you mentioned in your
5 testimony, a lot of -- the three interesting examples you
6 gave of how you are using AI right now.

7 So, how do you decide on a case by case basis when you
8 are ready to test that on that project, whether you think
9 it is safe at that point in time, or if you are just trying
10 to gather information.

11 Mr. Halpern. So, there are -- we already have a very
12 robust system for evaluating software and hardware for
13 deployment at GPO.

14 Much of what we do is mission critical to the
15 Congress, so we need to make sure that anything we deploy
16 doesn't interfere with our ability to deliver for our
17 customers, whether that is the House or the Senate, or our
18 State Department customer, or any other customer.

19 So, this is another layer on top of that. And looking
20 at some of these new technologies, both to see if there are
21 improvements to the way we do things that can leverage
22 benefit -- or deliver benefits to our customers and
23 minimize the risk from those same technologies of
24 introducing variables into our product. So, for instance
25 --

1 Senator Fischer. What does that mean, the risks of
2 introducing variables --?

3 Mr. Halpern. So, we have all read about the issues
4 with ChatGPT hallucinating facts that aren't there. The
5 good news is GPO doesn't generate a lot of public
6 information. We make other people's public information
7 available.

8 So, much of where we have got some -- we can leverage
9 these technologies is really in the quality assurance
10 world. But, by the same -- for the same reason you can't
11 -- you need to double check a ChatGPT's output, we need to
12 make sure that the optical system that is checking the
13 quality of our passport identity pages isn't introducing or
14 missing quality problems.

15 So, from that perspective, we really need to put these
16 systems -- deploy them in a limited way so that we can make
17 sure they are doing what they are advertised to do so that
18 we aren't delivering a product to our customer that is of
19 lesser quality than it should be.

20 Senator Fischer. Can I have the Smithsonian response
21 as well.

22 Ms. Park. Of course.

23 Senator Fischer. Thank you. Ms. Park.

24 Ms. Park. Great. Thank you. So, I will address
25 maybe two aspects of your question. Internally at the

1 Smithsonian, we absolutely are focused on governance and
2 also the sharing of best practices.

3 So, this community of practice that we have formed is
4 really designed to do a number of things. One is to
5 identify policies that we already have that need to be
6 updated with what is a very quickly evolving technology.
7 And also, things like protecting privacy.

8 You asked about specific examples of how does this
9 actually play out in an organization. You have to make
10 sure that if employees are using ChatGPT or some other
11 generative AI tool, that we are thinking about how that
12 data is being prepared and made available to AI to analyze.

13 So, there is a lot of thought going into how we go
14 about doing that internally. And then externally, we also
15 have a public mandate, as several of my colleagues have
16 talked about here, as trusted sources for the American
17 public.

18 We want to make sure that we are available to them,
19 that we have our 177 years of experience with history,
20 culture, science, education as a way to inform these tools,
21 and also as a way to help evaluate the accuracy of
22 information.

23 So that is still aspirational for us at this point,
24 but we are thinking about both aspects of our internal
25 governance, our internal opportunities for efficiency, as

1 well as our ability to be a convener and to help in the
2 more public realm.

3 Senator Fischer. Thank you.

4 The Chairman. Okay, Senator Padilla. Thank you.

5 Senator Padilla. Thank you, Madam Chair. As I have
6 had a chance to share in this committee before -- before
7 entering the Senate, I served as California's Secretary of
8 State, where a part of the portfolio was serving as a
9 custodian of the State's archives.

10 At the time, I made it a priority to dramatically
11 increase public access to our State's archives and this
12 involved a significant undertaking to digitize our archive
13 materials to make them easily viewable, not just to the
14 people of California, but to the world.

15 Question, first question is for Ms. Park. You noted
16 that prioritizing digitization is one of the Smithsonian's
17 key considerations with respect to AI. How do you envision
18 leveraging AI to increase public access to the Smithsonian?

19 Ms. Park. Indeed. And I will maybe make a couple of
20 comments in response to your question. The first is that
21 digitization is absolutely one of our priorities as an
22 institution. We have been at it actually for a while. It
23 is a behemoth task with over 150 million objects, and we
24 are working hard to identify ways to prioritize that. We
25 have a long ways to go in terms of having those materials

1 digitized.

2 So, when you refer to your own experience in
3 California, the first step, obviously, with AI is even
4 getting the records available and readable and analyzable
5 in a digital format. So that is job number one for us.

6 And the second part, is we believe that, unlike a
7 search engine that would be able to help the public
8 discover certain items that we might have in our collection
9 and learn about them, AI has the ability for the public to
10 make connections among the documents and objects and items
11 that we have in ways that we can't do as humans.

12 That we can use generative AI, and we hope to make it
13 available to the public as well, to be able to discover
14 things that we didn't even realize we had in our
15 collections. So, I think there is some really exciting
16 opportunities here, but as you noted, job one is getting
17 more of our items digitized and readable in a way that AI
18 can make use.

19 Senator Padilla. And, let you in on a secret, maybe a
20 good strategy. Whatever is most popular already, that is
21 where to start.

22 Ms. Park. The ruby slippers.

23 Senator Padilla. Because that tends to be the most
24 popular to everybody else. And just imagine the curating
25 opportunities that are possible when you get the metadata

1 and the keywords right. So, there is some good experts.
2 That will be helpful. Dr. Hayden, same question to you.

3 Dr. Hayden. The Library has been very, really at the
4 forefront in the library field with looking at how
5 digitized material could be made more discoverable, because
6 if it is not discoverable, it is really not accessible.

7 And so, one of the projects that I mentioned in my
8 testimony was taking a 20 year project of digitizing and
9 making available newspapers from all 50 States, but adding
10 an AI instrument, a navigator. You can now do even more
11 research into those newspapers. The photos that are in
12 there, names, all types of things.

13 And so, we have seen that that has made what was just
14 basically making things, putting them into digital form
15 from the vast amount of analog material we have in print
16 material going back hundreds of years, just basically
17 digitizing them.

18 Yes, that is an accessible aspect. But having tools
19 that have people be able to get into them has proven very
20 popular, especially when we allow the public to use
21 material in a creative way, like our Citizen DJ program,
22 where they can -- we put the material up there, music, all
23 types of things, and people can use them.

24 So, these tools can be very helpful for having people
25 make those connections between our various collections

1 -- we have collections in 470 languages. And so, being
2 able to use AI tools to help --

3 Senator Padilla. A follow up question to both of you.
4 Do you envision institution wide or even specific
5 initiatives to always be contained within your respective
6 institutions, or are there opportunities for public,
7 private partnerships that you are envisioning at this
8 point? Dr. Hayden and then Ms. Park.

9 Dr. Hayden. Well, the Library of Congress and the
10 Smithsonian are co-chairing a Secretariat in this coming
11 year that will look at more ways that we can all
12 collaborate and, of course, opportunities with the private
13 sector when we are making sure there are guardrails to
14 them.

15 Senator Padilla. Correct.

16 Ms. Park. I would just add that absolutely, there are
17 opportunities to work with all sorts of external groups.
18 Higher education, companies, all are interested in this
19 space.

20 And we have formed several consortiums with different
21 organizations to try to figure out if we can convene
22 together to talk about these kinds of issues, to provide
23 space for people to discuss the complexities of AI. So,
24 absolutely, there are ways for us to partner with others.

25 Senator Padilla. Okay. Thank you very much.

1 The Chairman. Very good. Thank you. Senator
2 Hagerty.

3 Senator Hagerty. Thank you, Chair Klobuchar and
4 Ranking Member Fischer. Appreciate you holding this
5 hearing. Dr. Hayden, it is good to see you back here again
6 -- to all three of our witnesses. Dr. Hayden, I would like
7 to start with you, though, if I might. We all know the
8 Library of Congress houses the U.S. Copyright Office.

9 Dr. Hayden. Yes.

10 Senator Hagerty. And I think, as a result, you are in
11 a unique position to ensure the proper implementation of
12 AI. And I think, we all know that AI offers many promising
13 benefits, but with its increasing prevalence, it is not
14 without drawbacks.

15 So, I would like to take this home, and you and I have
16 talked about my affinity for the songwriting and music
17 business in my home State of Tennessee. We are actually
18 home to thousands of performing artists there in Tennessee,
19 songwriters, artists, all of whom have the potential to be
20 greatly impacted by artificial intelligence.

21 I am concerned that AI generated deepfake recordings,
22 voice clones, or other infringements on the works of
23 copyright holders could cause serious damage to an artist's
24 reputation and to their livelihood.

25 Earlier this month, Governor Bill Lee announced plans

1 for legislation to protect the voices of performing artists
2 by adding their voices and sound to Tennessee's protection
3 of personal rights law.

4 I am pleased that my home State of Tennessee is
5 leading the nation in providing legal protection for our
6 artists and for our songwriters. And my first question,
7 Dr. Hayden, is given the growing pervasiveness of AI, how
8 does the Copyright Office plan to protect the copyrighted
9 works and uses of voices of performing artist at the
10 Federal level?

11 Dr. Hayden. The Copyright Office has been in the
12 forefront of looking at the issues involved with machine
13 generated works. And in fact, they have developed a
14 separate webpage for people who are creators, but just
15 giving so much guidance on that.

16 They have hosted a number of presentations and
17 webinars, and our Register of Copyright Shira Perlmutter
18 has been in the last year in many, many international
19 copyright sessions and things. And so, they are still
20 -- they just issued a rule to get information, and they had
21 over 10,000 responses.

22 And they are going to be issuing more information
23 about what they are hearing from stakeholders about how
24 that can really be used, but also be protecting.

25 Senator Hagerty. Can I get into -- let's drill into

1 this a little bit more in terms of information you are
2 getting back from stakeholders. In August, the Copyright
3 Office issued a notice of inquiry on copyright and
4 artificial intelligence. The notice sought information and
5 comments on a number of issues, including the use of
6 copyrighted works to train AI models.

7 The appropriate levels of transparency and disclosure
8 that are required with respect to the use of copyrighted
9 works, the legal status of AI generated outputs, and the
10 appropriate treatment of AI generated outputs that mimic
11 the personal attributes of human artist.

12 I am sure that many Tennessee songwriters and artists
13 submitted information to the Copyright Office urging the
14 implementation of several things. One, the requirements
15 for obtaining appropriate licenses or authorization to
16 ingest or otherwise use materials that are copyrighted, or
17 that implicate a person's rights of publicity or privacy.

18 Second, requiring adequate recordkeeping and auditing.
19 And third, ensuring that appropriate transparency is
20 maintained by AI companies. So, Dr. Hayden, are these
21 remedies that I just listed, are those the types that the
22 Copyright Office is considering?

23 Dr. Hayden. Well, the office is currently reviewing
24 those comments, over 10,000, and they cover the full range.
25 And so, what they are saying, and I have the information

1 here, that they are really looking at what could be
2 infringement, the treatment of these types of AI generated
3 outputs, and currently they are preparing that report. So,
4 I can't -- further than that but they will --

5 Senator Hagerty. I hope they will take into account
6 the three points that I have raised that are certainly of
7 interest to our industry in Tennessee. Rights to the
8 voices and likenesses of performers are generally protected
9 by State law rather than copyright law.

10 That includes laws providing a right of publicity,
11 privacy protections, and remedies for misappropriation.
12 Given this, in your opinion, Dr. Hayden, are statutory
13 changes needed to adequately protect the name, the image,
14 the likeness of performing artists?

15 Dr. Hayden. Our Register of Copyrights, Shira
16 Perlmutter, is very involved with that. And so, she will
17 be working with Congress on developing any potential
18 legislation or any other things that would impact the
19 copyright law as it stands. Right now, it is producing
20 works by a human being. That is the standard.

21 Senator Hagerty. I certainly hope you will view my
22 office as a resource and the people of Tennessee as a
23 resource here. I think we can add significantly to the
24 conversation. Thank you, Dr. Hayden, and I yield back my
25 time. Thank you.

1 The Chairman. Very good. Thank you. Some of the
2 risks of AI are already clear. I talked about what just
3 happened with those robocalls and what we are seeing on
4 -- really in fake videos on both sides of the aisle. It
5 isn't just one side. I know the Republican Attorney
6 General is investigating what happened in New Hampshire.

7 But we know that there is going to be other security
8 issues, from our infrastructure, cyber-attacks. Could you
9 talk about what your agencies have done to guard against
10 cyber security threats to ensure that your systems remain
11 strong in the face of potential AI threats? Each one of
12 you could answer. Dr. Hayden.

13 Dr. Hayden. The Library of Congress, with the help of
14 Congress, has been able to build a very, very strong
15 cybersecurity foundation over a number of years.

16 And in fact, our CIO, Judith Conklin, is a
17 cybersecurity expert. And so that has been a major part of
18 what we have been able to bring to looking at the risks
19 with this particular technology, AI. And so, it fits into
20 our governance -- IT governance framework already, and we
21 are making sure that we are not on the cutting edge with
22 AI.

23 We are looking at our -- and using the experiences
24 that we have had. But there is a technology governance
25 board within the Library, and AI now has a working group

1 within that board to make sure that everything is aligned
2 with that. We are very concerned about the trustworthiness
3 of products that have are.

4 The Chairman. Okay. Very good. Mr. Halpern.

5 Mr. Halpern. Absolutely. So we, our team works very
6 hard to make sure that our systems are as impregnable as
7 possible. But we are also looking at some AI tools as
8 helpful in those efforts.

9 And one of the things that AI excels at is pattern
10 matching. So, they may be able to see patterns in our logs
11 that a human being might not readily identify. So that is
12 actually a benefit. One of the other areas that is sort of
13 tangentially related is in the privacy sphere. Searching
14 materials produced by others for personally identifiable
15 information.

16 Just like many, many other organizations, we have had
17 issues in the past where it has been hard for us to catch
18 every incidence of PII in our materials that we make
19 public. But again, these AI based tools that can recognize
20 whether it is a Social Security number or address or
21 another piece of PII in the Federal Register, the
22 Congressional Record, or anything else we publish, that is
23 an additional layer of security that these tools can help
24 us with, so that we don't inadvertently put something out
25 in the public domain that isn't supposed to be there.

1 The Chairman. Very good. Ms. Park.

2 Ms. Park. So, we take our cyber security
3 responsibilities very seriously, both in terms of our own
4 internal practices, but also in terms of our public domain.
5 We do comply with NIST standards when it comes to our cyber
6 profile.

7 So, our CIO is very much checking constantly to make
8 sure that we are following those standards. Our Inspector
9 General is also there to regularly check on our progress.
10 And the other thing we do is we regularly report and,
11 participate in Federal forums where you share information
12 about the latest threats that might be coming through
13 various channels, including, the emergence of AI and how it
14 is being used.

15 For one, for example, phishing has become much more
16 sophisticated now with the emergence of AI and the ability
17 to create much more easily emails and other things that
18 appear to be real. So, there are -- so we are stepping up
19 our testing of our own workforce in their terms of their
20 ability to recognize these things.

21 So, there is a lot of work going on there. And
22 finally, I would mention there is an internal group led by
23 our CIO right now that is really trying to develop or
24 evolve our policy structure to make sure that we are
25 prepared for whatever threats that might be coming from

1 emerging technologies, including AI.

2 The Chairman. And so, are you all taking part in
3 cybersecurity training? Do you think that will be
4 important as we see this changing world, both opportunities
5 and risks, with your staff?

6 Dr. Hayden. Definitely --

7 The Chairman. Is your staff doing -- okay. Yes.

8 Mr. Halpern. Absolutely. And we are evaluating
9 vendors now for some specific AI related training so that
10 folks understand these tools, and both the good and the bad
11 that they can bring.

12 Ms. Park. We have an annual training requirement for
13 all staff who have access to our network.

14 The Chairman. Okay. Dr. Hayden, Senator Hagerty
15 talked to you a bit about copyrights voices. When you
16 appeared before the committee last year, we discussed the
17 Copyright Office's new initiative to examine copyright law
18 and policy issues raised by AI. What are the lessons
19 learned by the Copyright Office over the past year? And
20 have they continued to see increases in the amount of
21 copyright applications for AI generated content?

22 Dr. Hayden. Yes, they have. And they have actually
23 had a number of cases. There have been, as I said, about
24 100 works that have had AI generated and human authorship,
25 and they have been registered by the office.

1 And they are also taking a leadership role
2 internationally when looking at what is the proportion of
3 the AI generated content and human, as well. So, they have
4 definitely been on the forefront of looking at that. But
5 right now, they have rejected several applications because
6 of the amount of AI authorship.

7 The Chairman. One last question of you, and then I
8 will have just one more. Your written testimony highlights
9 the work being done to test potential AI tools for the
10 National Library Service for the Blind and Print Disabled,
11 including improving the accessibility of book descriptions.

12 And we have talked about this way back, some of the
13 work we have done with the blind. What guardrails has the
14 Library put in place to ensure the content being produced
15 by these tools is accurate for its users?

16 Dr. Hayden. And that is part of the LC Labs, and
17 working directly with a service unit, NLS, Library for the
18 Blind and Print Disabled. And so, they have had quite a
19 bit of success with the e-reader rollout.

20 And so, they are looking at how can AI be used to help
21 this population. And there are some exciting
22 opportunities, but they are working hand in hand to make
23 sure that what is being presented to that community is
24 trustworthy.

25 And then you see that that is the main theme with, I

1 think all of us, is that we want to use this tool for a
2 number of reasons, for efficiency, effectiveness, but also
3 we have to make sure that there is that oversight --

4 The Chairman. Okay. Last, Ms. Park, you talked about
5 the assembling the group of experts from across the
6 Smithsonian to identify best practices, opportunities.
7 Could you talk about what next steps are after that, what
8 the timetable is?

9 Ms. Park. Yes. So, this group is charged with doing
10 a number of things. The governance piece is an important
11 one, reviewing policies, and also finding what is working
12 within the units. So, we have multiple museums and
13 research institutes.

14 And so, figuring out where we can do some things to
15 scale rather than have individual units try to do their own
16 thing where we can, for efficiency sake. I have asked for
17 them to do their initial work and come back with some
18 recommendations for what we might need to do in the short
19 term.

20 What are some of the immediate stopgaps that need to
21 be put in place, whether it is governance related or a best
22 practice related issue that we want to share. And then I
23 suspect there will be some longer term things that will be
24 -- take a little longer to address, whether it is systems
25 related, business process, or applications. So, I expect

1 it to be a bit of a phased approach.

2 The Chairman. My last question is, since Judy
3 Garland's shoes came up, do you know where she was born,
4 Judy Garland?

5 Ms. Park. Oh, no, this is a quiz.

6 The Chairman. Yes. Well, Grand Rapids, Minnesota.

7 Ms. Park. Yes, I was going to say -- I was going to
8 say Minnesota.

9 The Chairman. And they just sort of solved the crime
10 of the missing shoes that were there, which I would just
11 like to note for the record, finally. That they have been
12 returned. It is a sordid story. Yes, but they are back.
13 They are back.

14 So, in any case, thank you very much. Do you want to
15 ask any other questions, Senator Fischer? We have a vote
16 that has been called and thank you for the work that you
17 are doing, continuing to do, leading your agencies.

18 I speak for myself, I know other members of the
19 committee, we feel good about your stewardship of these
20 very important agencies, and we look forward to working
21 with you on the important work you are doing.

22 As we discuss opportunities, risks, I am sure we will
23 have more discussions about this. The hearing record will
24 remain open for one week, and we are adjourned. Thank you.

25 [Whereupon, at 3:12 p.m., the hearing was adjourned.]

WORD INDEX

< 1 >

1,600 16:12
1.56 4:22
10,000 34:21
 35:24
100 40:24
150 29:23
177 28:19
180 18:19

< 2 >

2:15 1:11
20 12:16 31:8
2016 8:17
2018 11:25
2019 9:4, 13
 11:17
2020 12:20
2022 12:22
2023 25:22
2024 1:5
2024-2028 11:22
2026 23:10
22 5:7
24 1:5
250th 23:10
27 9:13

< 3 >

3:12 43:25
30 9:5
301 1:12

< 4 >

470 32:1

< 5 >

50 22:17 31:9

< A >

ability 22:9
 26:16 29:1 30:9
 39:16, 20
able 2:13 25:12
 30:7, 13 31:19
 32:2 37:14, 18
 38:10
Absolutely 25:21
 28:1 29:21 32:16,
 24 38:5 40:8
academic 6:17
access 2:20 4:15
 11:12 12:6, 24
 29:11, 18 40:13
accessibility 41:11
accessible 5:14
 13:9 31:6, 18
account 36:5
accountability
 14:20
accuracy 23:2
 28:21
accurate 12:25
 41:15
accurately 5:14
act 19:11
activities 11:10
adaptable 13:23
add 32:16 36:23
adding 31:9 34:2
additional 38:23
additionally 13:1
address 27:24
 38:20 42:24
adequate 35:18
adequately 36:13
adjourned 43:24,
 25
Administration
 1:8 14:7
adopting 7:4
ads 3:22
advance 4:14

advantages 7:1
advertise 9:16
advertised 27:17
affectionately 12:1
affinity 33:16
African 22:3
afternoon 2:3
 16:3
agencies 2:16
 3:12 4:8 5:21
 7:6, 10, 11, 12, 15,
 17, 18, 20, 23 8:10
 19:1 24:6 37:9
 43:17, 20
agency 8:8 11:16
agency's 11:19
ago 21:9
agree 3:13
ahead 5:18
AI 2:17, 21 3:13,
 18, 22 4:3, 7, 13,
 18, 21, 25 5:5, 11,
 17, 21 6:23, 24, 25
 7:4, 5, 7, 10, 11, 12,
 16, 19, 21 8:11
 11:11, 12, 15 12:2,
 6, 11 13:7, 11, 15,
 18, 20, 24, 25 14:2,
 3, 7, 11 16:6 17:1,
 13 18:9 19:2
 21:21, 22 22:7, 9,
 17, 21, 24 23:2, 5,
 7, 11, 13, 15, 16, 21
 24:7, 11, 18, 20
 25:14, 17, 23 26:6
 28:11, 12 29:17,
 18 30:3, 9, 12, 17
 31:10 32:2, 23
 33:12, 21 34:7
 35:6, 9, 10, 20
 36:2 37:2, 11, 19,
 22, 25 38:7, 9, 19
 39:13, 16 40:1, 9,

18, 21, 24 41:3, 6,
 9, 20
aims 14:2 24:18
AI's 7:16 13:2
aisle 3:8 37:4
align 14:17
aligned 38:1
aligns 13:25
allow 17:24
 23:17 31:20
allowing 3:20
 17:14 19:3, 11
allows 12:8
alternative 19:5
Amazon 5:13
America 12:17
American 2:17
 6:19 9:7 12:16
 22:3 23:22 28:16
amount 31:15
 40:20 41:6
Amy 1:12
analog 13:8 31:15
analyzable 30:4
analyze 28:12
announced 22:20
 33:25
annual 40:12
answer 37:12
answers 24:25
API 12:23
appear 11:5 16:5
 39:18
appeared 40:16
application 12:8,
 19, 23
applications 4:3
 7:7 14:3 17:1
 19:9 21:22 24:18
 40:21 41:5 42:25
applying 21:16
appreciate 2:13
 14:18 33:4

approach 13:25
 16:24 43:1
approaches 13:5
appropriate 35:7,
 10, 15, 19
archival 4:23
archive 29:12
archives 11:7
 14:9 29:9, 11
area 12:22 14:4
areas 11:11 38:12
ARTIFICIAL 1:1
 2:16 6:3 11:7
 14:8 16:20 21:13,
 19 33:20 35:4
artist 34:9 35:11
artists 33:18, 19
 34:1, 6 35:12
 36:14
artist's 33:23
asked 28:8 42:16
aspect 31:18
aspects 27:25
 28:24
aspirational 28:23
assembling 42:5
assist 4:23
assurance 17:4, 18
 27:9
Astro 22:16
Astrophysical
 22:16
astrophysics 5:12
attendance 9:9
attended 8:22
Attorney 37:5
attributed 22:14
attributes 35:11
audio 12:9
auditing 35:18
August 35:2
authoring 19:1
authorization

35:15
authorized 8:6
authorship 40:24
 41:6
automated 18:14
automatically 17:4
availability 21:21
available 18:18,
 20 21:22 23:2
 27:7 28:12, 18
 30:4, 13 31:9
avenues 7:12

< B >
bachelor 9:7
Back 2:9 6:11
 31:16 33:5 35:2
 36:24 41:12
 42:17 43:12, 13
backlog 8:8
bad 16:23 40:10
baked 11:24
Baltimore 8:19, 24
Barbara 8:24
based 38:19
basically 31:14, 16
basics 24:22
basis 26:7
beautiful 6:15
Becoming 11:16
behemoth 29:23
beings 13:13
believe 3:23 6:8
 17:3 25:24 30:6
Ben 6:7
benefit 5:20, 21
 26:22 38:12
benefits 2:24 7:3
 23:14 26:22
 33:13
Bennet 3:18
best 5:21 18:23
 22:23 28:2 42:6,

21
better 4:18
bias 23:2
bibliographic
 13:19
bigger 17:19
bill 3:16 4:2, 5
 33:25
bios 9:14
bipartisan 2:25
 3:16 5:19
birthday 23:10
bit 35:1 40:15
 41:19 43:1
black 21:10
Blind 41:10, 13, 18
blunt 18:7
board 37:25 38:1
bolstering 13:2
book 41:11
born 43:3
Branch 7:6, 10, 20
 8:10 11:9
branches 5:1
 6:21 16:11
bring 37:18 40:11
brings 6:25
Britt 1:15
budgets 7:17
build 22:23 37:14
building 1:12
 11:21 12:17
buildings 6:15
Bureau 22:4
business 33:17
 42:25

< C >
California 29:14
 30:3
California's 29:7
call 12:4 16:20
called 12:20

43:16
Calling 2:2 6:3
calls 14:5
candidate 3:23, 24
candidates 3:8
capabilities 22:22
capacity 13:8
capitalization 18:1
capitalize 18:2
Capito 1:15 4:4
 16:4
Capitol 9:5
Carla 2:5 8:15
 11:1
case 26:7 43:14
cases 12:11 13:15
 22:1 40:23
catalog 13:19
Cataloging 13:17
catch 38:17
cause 33:23
center 21:10
 22:17
central 11:23
CEO 8:19
certain 30:8
certainly 36:6, 21
Chair 8:12 29:5
 33:3
chairman 1:13
 2:2 6:2 8:13
 10:2 15:1 20:1
 24:1, 4 29:4 33:1
 37:1 38:4 39:1
 40:2, 7, 14 41:7
 42:4 43:2, 6, 9
Chairwoman 11:3
 16:3 19:14 22:11
challenges 7:9, 22
challenging 5:12
chance 29:6
changed 21:21
changes 36:13

changing 40:4	comes 2:21 18:16	25:4 26:15 32:9	Copyright 13:4, 5
channels 39:13	23:18 39:5	33:8 36:17 37:13,	33:8, 23 34:8, 11,
character 12:12	coming 4:6 32:10	14	17, 19 35:2, 3, 13,
charged 42:9	39:12, 25	congress.gov	22 36:9, 19 40:17,
charts 14:13	comments 29:20	12:23 16:19	19, 21
ChatGPT 27:4	35:5, 24	Congressional	copyrighted 34:8
28:10	Commerce 4:6	7:25 12:25 38:22	35:6, 8, 16
ChatGPT's 27:11	commercial 16:23	Congressionally	Copyrights 36:15
check 27:11 39:9	committed 5:19	18:18	40:15
checking 27:12	Committee 1:8, 11,	Congress's 16:13	correct 18:6, 13
39:7	13 4:6 6:8 7:21	Conklin 11:24	32:15
Chicago 8:22	8:2 9:21 11:4, 10	37:16	corrections 17:23
Chief 2:11 9:12,	19:15, 16 25:23,	connections 30:10	cost 7:16
17 21:1	24 29:6 40:16	31:25	country 3:22 5:20
chronic 8:8	43:19	consequences	country's 4:14
Chronicling 12:17	committees 3:2	23:19	couple 29:19
CIA 9:14	committee's 6:22	conservation 21:19	course 3:11
CIO 11:24 37:16	common 18:6	considerations	14:14 27:22
39:7, 23	21:16	29:17	32:12
citizen 12:7 31:21	commonsense 4:2	considering 19:9	cover 35:24
citizens 3:22	communities 6:17	35:22	craftspeople 16:12
classify 5:12	Community 14:7	consortiums 32:20	create 12:8 21:9
clear 37:2	22:21 28:3 41:23	constantly 39:7	39:17
clones 33:22	companies 32:18	constituents 6:15	created 25:23
closely 13:25	35:20	constitute 17:14	creates 7:2
co-chairing 32:10	competitive 7:1	Constitution 3:20	creating 7:1
cognizant 24:13	complex 5:10	consuming 19:6	22:18
collaborate 23:4	complexities 32:23	contained 32:5	creation 22:21
32:12	comply 39:5	content 3:19 22:8	creative 31:21
collaboration 14:5	comprehensive	40:21 41:3, 14	creators 34:14
23:12	11:18	context 18:10	credential 16:14
colleagues 2:4	computer 18:4	contextual 18:15	crime 43:9
11:9 28:15	concerned 33:21	continue 5:18	critical 2:17
collected 21:7	38:2	continued 40:20	13:13 26:14
collection 6:14	concerns 23:1	continues 22:2	crowdsourcing
30:8	conclude 14:11	continuing 43:17	22:5
collections 4:19	conducting 21:18	contributions	crucial 6:16
5:13 11:12 12:7,	confirmation 9:3	5:14 22:14	cultural 23:4, 13
10 22:15 30:15	conform 17:12	control 5:5 25:16	culture 28:20
31:25 32:1	CONGRESS 1:2	convene 32:21	Culture's 22:4
Collins 3:17	2:6 3:10 4:9, 17	convener 29:1	curating 30:24
combines 13:7	6:4, 9, 13 8:15	convening 23:8	current 17:6
come 18:21 42:17	11:1, 2 12:21	conversation 36:24	22:1 25:5
	13:14 14:12, 13	Coons 3:17	

currently 13:18
 18:4 35:23 36:3
curve 5:18
custodian 29:9
customer 26:18
 27:18
customers 19:13
 26:17, 22
cut 18:12
cutting 37:21
cyber 37:10 39:2,
 5
cyber-attacks 37:8
cybersecurity
 37:15, 17 40:3

< D >
D.C 1:9 11:2
 16:2 21:3
damage 33:23
data 12:25 13:5
 16:17, 18 21:7
 22:10, 12 24:24
 28:12
day 17:2
deal 3:10
decade 21:20
December 9:4, 13
decide 26:7
deepfake 33:21
defect 17:17
defects 17:4
deferred 8:7
Definitely 40:6
 41:4
degree 8:20 9:7,
 8, 18
deliver 19:12
 26:16, 22
delivering 27:18
democracy 2:23
demonstrating
 13:2
Department 26:18

deploy 26:15
 27:16
deployment 26:13
deployments 26:2
Deputy 2:10 9:11
 21:1
describes 16:24
descriptions 41:11
designed 28:4
determine 22:23
develop 39:23
developed 24:11
 34:13
developing 14:4
 23:20 36:17
development
 14:15 22:13
devices 19:6
difference 18:8
different 19:5
 21:14 26:1 32:20
differs 16:8
difficult 17:22
 18:15
digital 5:2 11:18,
 19, 22, 25 12:4
 13:3 16:15, 16
 30:5 31:14
digitally 11:16
digitization 29:16,
 21
digitize 29:12
digitized 4:22
 12:14 30:1, 17
 31:5
digitizing 31:8, 17
dimensions 23:7
directive 25:21
directly 41:17
Director 2:8 6:11
 7:24 9:1, 17 16:1
disabilities 18:24
Disabled 41:10, 18

disclaimers 3:21
disclosure 35:7
discover 5:17
 22:13 30:8, 13
discoverability
 12:15
discoverable 31:5,
 6
discovering 14:11
discuss 11:5
 32:23 43:22
discussed 6:23
 40:16
discussion 8:10
discussions 43:23
disruption 16:22
distributes 6:20
Division 12:1
 13:17
DJ 12:7 31:21
document 18:22
 19:4
documents 5:5
 6:20 12:14 16:13
 18:5 30:10
doing 27:17
 28:14 40:7 42:9
 43:17, 21
domain 38:25
 39:4
double 27:11
Dr 2:5 8:15, 17,
 23 9:24 10:4
 11:3 14:22 24:7,
 9 25:2 31:2, 3
 32:8, 9 33:5, 6, 9
 34:7, 11 35:20, 23
 36:12, 15, 24
 37:12, 13 40:6, 14,
 22 41:16
dramatically 22:9
 29:10
draw 14:14

drawbacks 33:14
drill 34:25

< E >
Earlier 33:25
Early 21:6
easier 12:24 13:9
easily 29:13 39:17
economic 23:9
edge 37:21
educate 23:14
education 5:10
 28:20 32:18
effective 21:23
effectively 22:24
effectiveness 25:9
 42:2
efficacy 14:20
efficiencies 4:24
 7:1
efficiency 11:14
 13:16 28:25 42:2,
 16
efficient 21:23
efficiently 13:19
effort 14:13
efforts 8:3, 4, 7
 38:8
either 16:16
elections 3:14, 19
emails 39:17
embraced 21:11
embraces 11:23
emergence 39:13,
 16
emerging 2:21
 4:18 13:24 40:1
employees 28:10
enable 23:11
enabled 11:16
endeavors 8:5
engage 11:9
engaging 12:6

engine 30:7
enhance 11:13
enhancing 12:21
 14:12
enjoy 2:6
enjoyed 9:9
Enoch 8:19
enslaved 22:7
ensure 5:5 33:11
 37:10 41:14
ensuring 35:19
entering 29:7
environment 26:3
envision 29:17
 32:4
envisioning 32:7
equipment 17:7,
 10
equipped 19:2
e-reader 41:19
errors 18:6
especially 7:19
 31:20
establish 8:5
ethical 23:9
ethics 23:2
evaluate 28:21
evaluating 26:1,
 12 40:8
everybody 30:24
evolutionary 21:17
evolve 6:25 22:2
 39:24
evolving 28:6
examine 23:7, 8
 40:17
example 3:24
 4:17 12:7, 15
 13:10, 17 17:25
 18:16 22:3 24:19
 39:15
examples 19:8
 22:11 26:5 28:8

exceed 17:11
excels 38:9
excitement 22:18
exciting 12:11
 30:15 41:21
executive 9:17
 24:13
existing 7:9, 11,
 22 13:22
exoplanets 21:17
expand 4:18
 11:12 12:6 23:17
expanded 5:2
expect 42:25
experience 21:24
 28:19 30:2
experiences 37:23
experiment 23:11
experimenting
 12:11 13:18
experiments 12:3
expert 37:17
expertise 23:20
experts 23:8, 21
 31:1 42:5
explore 6:16
 14:21 25:8
exploring 5:11
 7:6 11:11 22:1
extending 21:25
external 23:21
 32:17
externally 28:14
extract 19:3
extracting 13:5

< F >
face 8:1, 11 37:11
facing 7:23
fact 34:13 37:16
facts 27:4
fake 3:6 37:4
fall 3:2

fantastic 23:3
fast 14:4 21:9
Federal 14:1
 34:10 38:21
 39:11
feel 43:19
field 21:18 31:4
figure 32:21
figuring 42:14
final 9:11 18:16
Finally 5:9 39:22
 43:11
finding 42:11
firms 16:23
first 6:8, 23 7:4
 8:14 11:21 17:3
 21:10 25:24
 29:15, 20 30:3
 34:6
Fischer 1:15 2:3
 5:20, 23 6:1, 2
 8:14 11:4 16:4
 19:14 24:2, 4, 16
 25:19 26:4 27:1,
 20, 23 29:3 33:4
 43:15
fish 5:13
fits 37:19
five 10:3
flexible 19:1
focus 2:25 11:12,
 17 12:22 17:1, 18,
 24 18:15
focused 28:1
folks 18:24 19:11
 40:10
follow 24:12 32:3
following 39:8
follows 14:22
 19:17 23:24
force 19:11
forefront 31:4
 34:12 41:4
form 17:6 31:14

format 18:22, 23
 30:5
formats 19:1
formed 28:3
 32:20
former 9:6
formerly 22:7
forums 3:1 39:11
forward 7:5, 14
 8:9 14:14 19:16
 21:9 43:20
foundation 13:23
 37:15
four 11:11
framework 3:19
 14:2 22:23 24:12
 25:7 37:20
frameworks 24:15
fraudulent 3:18
Free 8:19 12:9
 17:18, 23 18:14
Freedmen's 22:4
fulfill 7:13
full 35:24
fully 11:21
functions 6:19
 18:5
fundamentally
 16:9
further 11:8
 13:24 17:13 36:4
Furthermore 8:5
future 19:10

< G >
Garland 43:4
Garland's 43:3
gather 26:10
genealogical 22:6
General 14:7
 24:10 37:6 39:9
generally 36:8
generate 27:5

generated 3:19
33:21 34:13 35:9,
10 36:2 40:21, 24
41:3
generation 16:25
generative 21:21
28:11 30:12
George 9:8
Georgetown 9:18
getting 30:4, 16
35:2
give 9:21 24:19
given 34:7 36:12
giving 34:15
global 18:5
go 28:13 29:25
God 9:23
goes 3:12
going 2:15 3:3, 9,
25 9:19 24:1, 23
25:24, 25 28:13
31:16 34:22 37:7
39:21 43:7
Good 2:2 16:3, 5
18:22 22:23 27:5
30:20 31:1 33:1,
5 37:1 38:4 39:1
40:10 43:19
governance 11:15
13:21, 22 22:23
28:1, 25 37:20, 24
42:10, 21
GOVERNMENT
1:2 2:9 4:9 5:1,
4 6:4, 9, 18, 21
7:2 9:2 11:6
12:23 14:6 16:2,
7, 11 23:12
Governor 33:25
governs 24:7
govinfo 18:20
govinfo.gov 16:17
GPO 4:24 5:5
7:25 16:8 17:7

18:2, 25 26:13
27:5
GPO's 16:21, 24
18:16 19:9
Grand 43:6
great 11:6 18:17
21:22 27:24
greatest 4:14
greatly 33:20
gritty 24:21
group 24:11
37:25 39:22 42:5,
9
groups 32:17
growing 34:7
guard 37:9
guardrails 3:11,
15 7:14 32:13
41:13
guidance 25:23
34:15
guide 11:18
guidelines 24:11,
15
guiding 13:23

< H >

Hagerty 1:15
33:2, 3, 10 34:25
36:5, 21 40:14
hallucinating 27:4
Halpern 2:8 6:11
9:2, 25 15:1 16:1,
3 19:17 25:19, 21
26:11 27:3 38:4,
5 40:8
Hampshire 3:6
37:6
hand 9:20 41:22
handwritten 13:8
happen 9:4
happened 37:3, 6
hard 29:24 38:6,

17
hardware 26:12
harms 4:12
harness 4:24
Hawley 3:17
Hayden 2:5 8:16,
17, 23 9:24 10:4
11:1, 3 14:22
24:7, 9 25:2 31:2,
3 32:8, 9 33:5, 6,
9 34:7, 11 35:20,
23 36:12, 15, 24
37:12, 13 40:6, 14,
22 41:16
heard 3:14 6:9
hearing 2:2, 5
3:12 5:8 6:3, 22,
23 7:5, 14 9:10
33:5 34:23 43:23,
25
Heinrich 3:1
help 9:22 12:13
13:18 22:21 23:5
28:21 29:1 30:7
32:2 37:13 38:23
41:20
helped 21:9
helpful 24:25
31:2, 24 38:8
helping 2:4
high 8:1
higher 19:12
32:18
highest 4:3
highlights 41:8
Hill 9:5
hire 7:24 17:22
hiring 8:3
historic 12:16, 18
25:4
historical 4:23
5:15 13:5
history 14:14

21:18 22:4 28:19
hits 3:4
hold 19:3 21:22
holders 33:23
holding 33:4
holds 18:10
hole 21:10
home 33:15, 17,
18 34:4
Hon 1:12 11:1
16:1
hope 14:18 30:12
36:5, 21
hosted 34:16
house 4:19 26:17
houses 33:8
Hugh 2:8 9:2
16:1
human 13:7, 11,
13 17:5, 25 35:11
36:20 38:11
40:24 41:3
humans 13:10
25:15 30:11
humbleness 4:21
hundreds 31:16
husbands 5:16

< I >

idea 11:23
identifiable 38:14
identification
21:17
identified 5:16
identify 28:5
29:24 38:11 42:6
identifying 5:14
identity 17:8
27:13
ill 2:12
image 21:10
36:13
images 4:22

imagine 30:24	12:15	INSTITUTION	32:22 34:12 35:5
immediate 42:20	increases 40:20	1:3 21:2, 7, 15	37:8 38:17 40:18
impact 23:17	increasing 2:20	22:22 29:22 32:4	issuing 34:22
36:18	33:13	institutions 14:1	items 5:6 30:8,
impacted 33:20	increasingly 11:19	23:4 32:6	10, 17
impacts 7:17	incredible 2:18	instrument 31:10	its 5:2, 4 12:2, 5
implement 11:14	individual 42:15	instruments 18:7	23:8 24:7 25:9
25:11	industry 36:7	integrated 11:22	33:13 41:15
implementation	inform 28:20	integration 13:11	
33:11 35:14	information 2:20	INTELLIGENCE	< J >
implementing	4:16, 25 13:3, 19	1:1 2:16 6:3	January 1:5
13:25	16:16 18:16 19:4	11:7 14:9 16:20	job 8:18, 25 30:5,
implicate 35:17	25:5 26:10 27:6	21:13, 19 33:20	16
implications 7:19	28:22 34:20, 22	35:4	join 14:19
23:9	35:1, 4, 13, 25	intended 19:10	joined 3:17 4:1, 5
important 2:15	38:15 39:11	interest 11:6 36:7	Judith 11:24
4:5, 10, 13 7:8, 21	informed 14:1	interested 32:18	37:16
8:2 13:12 25:17	infrastructure	interesting 5:17	Judy 43:2, 4
40:4 42:10 43:20,	37:8	9:16 26:5	
21	infringement 36:2	interface 12:24	< K >
importantly 7:18	infringements	interfere 26:16	key 11:17 29:17
impregnable 38:6	33:22	internal 11:13	keywords 31:1
improve 4:4, 15	ingest 35:16	23:20 28:24, 25	kickoff 25:25
7:12 8:3 11:13	initial 42:17	39:4, 22	kind 18:11
14:3 17:3 23:5	initiative 22:6	Internally 27:25	kinds 19:6 32:22
24:18	40:17	28:14	Klobuchar 1:13,
improvements	initiatives 32:5	International 14:8	14 2:1 6:2 16:4
26:21	innovating 12:6	34:18	33:3
improving 2:19	innovation 2:19	internationally	know 2:18 6:7
21:24 41:11	12:1	41:2	9:14 18:10 25:20
inadvertently	innovations 14:15	internet 21:13	26:4 33:7, 12
38:24	innovative 23:11	interpret 17:25	37:5, 7 43:3, 18
incidence 38:18	innovators 12:4	introduce 8:14	knowledge 23:1
include 12:11	13:3	introducing 4:2	known 12:1
includes 3:11	input 14:16	26:24 27:2, 13	
25:7 36:10	inquiry 35:3	investigated 12:2	< L >
including 9:6, 16	Inside 22:20	investigating 37:6	Labs 12:1, 5, 19
18:6 22:11 35:5	inspector 17:5	invitation 11:5	22:12 41:16
39:13 40:1 41:11	39:8	involved 29:12	laid 24:13
incorrect 22:13	instance 3:20	34:12 36:16	language 16:21
increase 13:16	18:8 26:24	issue 8:8 42:22	languages 32:1
29:11, 18	instantly 4:22	issued 34:20 35:3	large 16:21 22:10
increased 11:14	institutes 42:13	issues 7:9 8:11	largest 4:20 5:10
		17:24 18:15 27:3	

22:5	14, 21 14:6, 13	maintain 7:25	Meroe 2:10 9:11
latest 39:12	16:8, 18 24:9	8:6 16:10	21:1
launchpad 12:5	25:3 31:3, 4 32:9	maintained 35:20	met 1:11
law 9:8 34:3	33:8 37:13, 25	maintenance 8:8	metadata 12:13
36:9, 19 40:17	41:10, 14, 17	major 2:24 11:21	30:25
laws 2:22 36:10	Library's 11:10,	12:22 37:17	meteorological
layer 26:19 38:23	25 12:10 13:3, 15,	making 14:19	21:7
LC 12:1, 5, 19	25	17:23 18:17	Mikulski 8:24
41:16	licenses 35:15	21:23 24:14 31:9,	Milky 21:10
lead 2:18	likeness 36:14	14 32:13 37:21	million 4:22 5:7
leaders 23:5, 12	likenesses 36:8	manage 12:13	12:16 29:23
leadership 41:1	limited 27:16	Management 14:2	mimic 35:10
leading 3:1, 16	lines 25:2	mandate 28:15	mind 18:9
8:18 14:8 34:5	listed 35:21	mandated 18:18	minimize 26:23
43:17	little 35:1 42:24	manual 19:6	Minnesota 18:9
learn 6:16 9:15	livelihood 33:24	manufacture	43:6, 8
17:14 30:9	locomotive 21:12	16:14	minute 10:3
learned 5:7 40:19	logs 38:10	manufacturing	misappropriation
learning 12:12	long 29:25	16:9	36:11
16:21 21:16, 25	longer 42:23, 24	map 25:8	missing 27:14
led 39:22	look 7:5, 14 8:9	mark 12:5	43:10
Lee 33:25	19:16 25:11	Mason 9:8	mission 18:17
legal 34:5 35:9	32:11 43:20	master 8:21 9:7	26:14
legislation 3:25	looking 25:8, 17	matching 38:10	missions 7:13
34:1 36:18	26:19 31:4 34:12	material 5:6	mistakenly 22:14
Legislative 7:6, 10,	36:1 37:18, 23	17:11 18:13 31:5,	mitigate 7:15
20 8:10 11:9	38:7 41:2, 4, 20	15, 16, 21, 22	model 13:10
12:25	looks 7:24 17:10	materials 16:10	16:21 22:13
lesser 27:19	18:22	29:13, 25 35:16	models 35:6
lessons 40:18	loop 13:10 25:15	38:14, 18	modernize 4:25
lets 4:21	lose 7:22	matter 16:20	moment 23:10
letter 18:2	lot 24:20 26:5	mean 27:1	Monday 25:25
level 34:10	27:5 28:13 39:21	measure 25:9	month 25:22
levels 35:7	lower 17:17	measures 4:11	33:25
leverage 23:21	< M >	meeting 25:25	multiple 42:12
26:21 27:8	machine 12:12, 13	Member 2:3 11:4	multiplier 19:11
leveraging 29:18	16:21 21:15	14:8 16:4 19:14	museum 5:10
Librarian 2:6	34:12	33:4	22:3
8:15, 25 11:1, 17	machines 17:14	members 11:4	museums 8:6
Libraries 14:9	Madam 8:12	43:18	14:9 42:12
LIBRARY 1:1	11:3 19:14 24:4	men 22:14	music 12:7, 9
4:8, 17, 20 6:4, 9,	29:5	mention 39:22	31:22 33:16
13 7:24 8:18, 19	main 41:25	mentioned 22:11	
11:2, 11, 18 13:1,		24:16 26:4 31:7	

<p>< N > name 5:3 36:13 names 5:17 31:12 NATHANIAL 16:1 nation 21:25 34:5 National 22:3 41:10 nation's 6:14 23:9 nationwide 21:8 natural 17:15 Navigator 12:20 31:10 near 26:2 nearly 22:8 necessarily 16:23 necessary 7:4 need 2:22 3:21 7:16, 18 17:22 18:12 26:15 27:11, 15 28:5 42:18, 20 needed 36:13 network 40:13 New 3:6 4:21 5:3 7:12, 24 8:6 9:15 16:25 18:9 22:1, 22 23:18 25:8 26:20 37:6 40:17 newer 25:18 news 27:5 newspaper 12:16, 20 newspapers 4:23 12:19 31:9, 11 nice 6:11 nine 3:1 NIST 24:12, 17 39:5 NIST's 14:2 nitty 24:21 NLS 41:17</p>	<p>non 12:9 non-defense 4:3 note 4:13, 20 43:11 noted 8:15 29:15 30:16 notice 1:11 35:3, 4 number 3:2 24:9 28:4 30:5 34:16 35:5 37:15 38:20 40:23 42:2, 10 numerous 16:13</p> <p>< O > objects 29:23 30:10 Observatories 22:16 obtaining 35:15 obviously 30:3 occurred 3:7 OCR 12:12, 15 offered 4:24 offers 33:12 OFFICE 1:2, 12 2:9 4:9 6:5, 10, 18 9:2 13:4 16:2, 7 33:8 34:8, 11 35:3, 13, 22, 23 36:22 40:19, 25 Officer 2:11 9:12, 17 21:2 Office's 40:17 official 24:6, 8 oh 24:23 43:5 Okay 9:14, 19, 20 29:4 32:25 38:4 40:7, 14 42:4 once 24:5 ones 22:1 ongoing 14:13 online 13:9 open 43:24</p>	<p>OPENING 2:1 22:12 Operating 2:11 9:12, 17 21:2 operation 16:9 operations 16:22 17:2 19:9 opinion 36:12 opportunities 13:20 23:3 28:25 30:16, 25 32:6, 12, 17 40:4 41:22 42:6 43:22 opportunity 11:8 13:16 14:18, 21 19:15 21:5 opposing 3:24 optical 12:12 27:12 optically 17:8 oral 24:16 order 2:2 Orders 24:13 organization 21:24 28:9 organizations 23:13 32:21 38:16 Ossoff 1:15 outcomes 23:3 output 27:11 outputs 35:9, 10 36:3 oversee 7:23 oversight 7:21 8:7 42:3</p> <p>< P > p.m 1:11 43:25 Padilla 1:14 24:3 29:4, 5 30:19, 23 32:3, 15, 25 page 17:9</p>	<p>pages 12:16 17:8, 10, 12 27:13 Park 2:10 9:11 10:1 20:2 21:1, 4 23:24 27:22, 23, 24 29:15, 19 30:22 32:8, 16 39:1, 2 40:12 42:4, 9 43:5, 7 part 5:4 25:17 29:8 30:6 37:17 40:2 41:16 participate 39:11 participates 14:6 particular 25:14, 18 37:19 partner 32:24 partnering 23:20 partners 14:16 16:17 partnerships 32:7 pass 21:5 passes 25:10 passport 16:15 17:7, 9 27:13 passports 5:6 pattern 38:9 patterns 38:10 Paul 9:6 PDF 19:4 PDFs 18:21 people 2:17 6:19 22:25 23:14 29:14 31:19, 23, 24 32:23 34:14 36:22 people's 27:6 perform 18:5 performers 36:8 performing 33:18 34:1, 9 36:14 performs 6:18 Perlmutter 34:17 36:16</p>
--	--	---	--

<p>personal 34:3 35:11</p> <p>personalized 17:9</p> <p>personally 38:14</p> <p>person's 35:17</p> <p>perspective 23:8 27:15</p> <p>pervasiveness 34:7</p> <p>Ph.D 8:21</p> <p>phased 43:1</p> <p>phishing 39:15</p> <p>phone 18:23</p> <p>photos 12:19 31:11</p> <p>piece 38:21 42:10</p> <p>PII 38:18, 21</p> <p>pilot 26:1</p> <p>pilots 19:10</p> <p>pivotal 23:10</p> <p>place 3:15 4:2 7:15 25:22 41:14 42:21</p> <p>plan 11:23 14:14 34:8</p> <p>planned 22:17</p> <p>plans 33:25</p> <p>play 2:16 14:11 28:9</p> <p>pleased 11:8 16:5 34:4</p> <p>pocket 21:12</p> <p>point 26:9 28:23 32:8</p> <p>points 36:6</p> <p>poised 6:24</p> <p>policies 13:23 24:10 28:5 42:11</p> <p>policy 16:24 24:7, 8 25:20 39:24 40:18</p> <p>political 18:3</p> <p>pollen 21:18</p> <p>popular 12:7</p>	<p>30:20, 24 31:20</p> <p>population 41:21</p> <p>portfolio 29:8</p> <p>pose 25:13</p> <p>poses 3:13</p> <p>position 9:3 13:22 33:11</p> <p>possibility 6:25</p> <p>possible 14:17 30:25 38:7</p> <p>potential 2:18, 23 4:12 7:7 16:6 17:1, 13, 17, 20 23:19 33:19 36:17 37:11 41:9</p> <p>Practice 14:7 22:21 28:3 42:22</p> <p>practices 14:1 28:2 39:4 42:6</p> <p>Pratt 8:19</p> <p>prepared 14:22 19:17 23:24 28:12 39:25</p> <p>preparing 36:3</p> <p>Present 1:14 21:5</p> <p>presentations 34:16</p> <p>presented 41:23</p> <p>preserves 6:20</p> <p>President 3:7</p> <p>presiding 1:13, 14</p> <p>prevalence 33:13</p> <p>previously 8:18 9:5, 13</p> <p>principle 13:12</p> <p>print 5:6 31:15 41:10, 18</p> <p>printed 5:7 18:22</p> <p>printing 5:3</p> <p>priorities 29:21</p> <p>prioritize 29:24</p> <p>prioritizing 29:16</p> <p>priority 29:10</p>	<p>privacy 7:20 28:7 35:17 36:11 38:13</p> <p>private 14:5 32:7, 12</p> <p>probably 9:15</p> <p>problems 5:12 17:19 27:14</p> <p>proceed 10:3</p> <p>process 13:18 17:4 42:25</p> <p>processes 11:13</p> <p>produce 16:10, 12 19:5</p> <p>produced 38:14 41:14</p> <p>produces 6:19</p> <p>producing 5:4 36:19</p> <p>product 26:24 27:18</p> <p>production 17:6</p> <p>productive 8:9 19:12</p> <p>productivity 2:20 13:17</p> <p>products 16:15 38:3</p> <p>professionals 16:12</p> <p>profile 39:6</p> <p>program 31:21</p> <p>programing 12:23</p> <p>progress 39:9</p> <p>prohibit 3:18</p> <p>Project 12:17 13:7 22:5 26:8 31:8</p> <p>projects 22:17 31:7</p> <p>promise 18:10 19:3 21:23</p> <p>promising 33:12</p>	<p>Proofreaders 17:22 18:12</p> <p>proofreading 17:20</p> <p>proper 33:11</p> <p>properly 23:16</p> <p>proportion 41:2</p> <p>proposals 3:3</p> <p>proposed 25:14</p> <p>protect 4:14 34:1, 8 36:13</p> <p>protected 36:8</p> <p>protecting 5:21 28:7 34:24</p> <p>protection 34:2, 5</p> <p>protections 36:11</p> <p>proud 8:24, 25</p> <p>proven 31:19</p> <p>provide 7:11, 12 13:23 16:15 32:22</p> <p>providing 34:5 36:10</p> <p>public 4:15 5:1 11:7 12:3, 21, 24 14:17 18:16 23:22 27:5, 6 28:15, 17 29:2, 11, 18 30:7, 9, 13 31:20 32:6 38:19, 25 39:4</p> <p>publications 16:14</p> <p>publicity 35:17 36:10</p> <p>publicly 18:18</p> <p>publish 16:10 38:22</p> <p>published 11:18</p> <p>publishes 6:20</p> <p>PUBLISHING 1:2 2:9 4:9 5:2, 3 6:4, 10, 18 9:2 16:2, 7</p> <p>pursuant 1:11</p>
--	---	---	--

put 2:4 3:11, 15
4:2 27:15 31:22
38:24 41:14
42:21
putting 7:15
31:14

< Q >

quality 5:5 8:1
17:3, 18, 19 25:16
27:9, 13, 14, 19
question 6:24
7:21 27:25 29:15,
20 31:2 32:3
34:6 41:7 43:2
questions 7:8
19:16 24:2 25:13
43:15
quickly 28:6
quite 21:16 25:10
41:18
quiz 43:5

< R >

raise 9:20
raised 36:6 40:18
range 35:24
Ranking 2:3 11:3
16:4 19:14 33:4
rapidly 6:25
Rapids 43:6
rates 17:17
reach 21:25 23:17
read 9:14 27:3
readable 12:13
30:4, 17
readily 38:11
ready 3:3 26:8
real 39:18
realize 30:14
really 2:13 9:9
17:24 18:7 24:22
27:9, 15 28:4
30:15 31:3, 6

34:24 36:1 37:4
39:23
realm 29:2
reason 27:10
reasons 42:2
received 8:20 9:7,
18
recognition 12:12
recognize 38:19
39:20
recognizing 17:4
recommendations
42:18
record 13:8
38:22 43:11, 23
recordings 33:21
recordkeeping
35:18
records 13:6, 19
22:6 30:4
recover 2:13
recovery 6:8
reduce 17:17
refer 30:2
referring 18:3
refers 18:11
refine 17:13
Register 34:17
36:15 38:21
registered 40:25
regularly 39:9, 10
rejected 41:5
rejects 17:12
related 7:19 16:6
17:1 38:13 40:9
42:21, 22, 25
released 12:22
reliable 23:13
reliably 22:8
rely 22:25
remain 14:20
37:10 43:24
remains 14:12
remarks 22:12

remedies 35:21
36:11
remix 12:8
repetitive 17:23
replace 18:5
report 36:3 39:10
reports 3:5 18:18,
19, 21, 25 19:1
repository 16:17
Republican 3:8
37:5
reputation 22:25
33:24
require 17:25
required 35:8
requirement 40:12
requirements
35:14
requiring 35:18
rereview 18:13
research 2:19
4:15, 23 5:10
7:25 12:2 21:18
31:11 42:13
researchers 4:18
5:10 12:4
reservoir 23:1
residents 12:5
resource 36:22, 23
resources 4:19
6:16
respect 29:17
35:8
respective 24:6
32:5
Responding 14:4
response 27:20
29:20
responses 34:21
responsibilities
39:3
responsibly 22:24
restricted 12:9

result 33:10
results 12:2
retention 8:3
retiring 8:2
returned 43:12
review 17:14
18:13
reviewing 35:23
42:11
revolutionary
21:11
Ricketts 3:18
right 9:20 26:6
31:1 36:10, 19
39:23 41:5
rights 12:9 34:3
35:17 36:7
rigorous 8:7
14:15
risk 4:3 14:2
26:23
risks 2:22, 24
3:13 7:2, 3, 15, 19
23:15, 18 27:1
37:2, 18 40:5
43:22
robocalls 3:6 37:3
robust 13:21
26:12
role 2:17 14:11
41:1
rolled 12:19
rollout 41:19
Room 1:12
Roosevelt 8:20
Rounds 3:1
routine 17:23
ruby 30:22
rudimentary 17:5
rule 34:20
Rules 1:8 6:22
run 18:14 22:7
Russell 1:12

Ryan 9:6

< S >

safe 26:9

safeguard 4:12
6:14

safeguards 4:2

safety 23:2

sake 42:16

sampling 12:8

satire 3:20

saw 3:5

saying 35:25

says 11:24 18:2

scale 22:9 42:15

scans 17:8

scholarly 23:8

Schumer 2:25

science 22:12
28:20

scientific 2:19
4:15 6:17 21:15

scripts 18:4, 7

search 4:22
12:18 13:9 18:5
30:7

Searching 38:13

seated 10:2

second 6:22 9:1
17:19 30:6 35:18

secret 30:19

Secretariat 14:10
32:10

Secretary 2:11, 12
6:7 9:12 21:1, 6
29:7

sector 11:7 14:5
32:13

secure 16:14

security 24:10
37:7, 10 38:20, 23
39:2

see 4:4 6:11
8:23 16:5 17:20

19:8 26:20 33:5
38:10 40:4, 20
41:25

seeing 37:3

seeks 7:25

seen 31:13

Senate 1:7, 12
2:25 9:4 26:17
29:7

SENATOR 2:1
4:1, 4 5:20, 23
6:1, 2 8:13 16:4
24:2, 3, 4, 16

25:19 26:4 27:1,
20, 23 29:3, 4, 5
30:19, 23 32:3, 15,
25 33:1, 3, 10

34:25 36:5, 21
40:14 43:15

Senators 1:14
2:25 3:17, 18

separate 34:14

September 3:13
8:17

series 3:1

serious 33:23
seriously 25:4
39:3

served 8:19 29:7
service 6:16 7:25
13:1 41:10, 17

services 7:11
11:13 12:21 13:3
14:7, 12

serving 2:17
16:17 29:8

sessions 34:19

sets 22:10

share 16:6 24:6
29:6 39:11 42:22

shared 12:2

sharing 28:2

Shira 34:17 36:15

shoes 43:3, 10

short 21:11 42:18

show 18:22

showing 22:9

side 3:8, 9 37:5

sides 37:4

sight 7:22

significant 2:22
29:12

significantly 36:23

sites 16:18

skill 13:12

skills 13:7

slate 11:14

slippers 30:22

SMITHSONIAN

1:2 2:11 4:10

5:9 6:5, 10, 13

8:5 9:12 16:8

21:2, 20 22:16, 20

23:17, 22 27:20

28:1 29:18 32:10
42:6

Smithsonian's

22:5 29:16

social 23:9 38:20

software 26:12

solar 22:18

solve 7:10

solved 43:9

solving 17:19

songwriters 33:19
34:6 35:12

songwriting 33:16

soon 6:12

sophisticated 2:22
39:16

sordid 43:12

sort 38:12 43:9

sorting 24:24

sorts 32:17

sought 35:4

sound 34:2

source 25:6

sources 28:16

space 32:19, 23

speak 4:11 43:18

Speaker 9:6

speaking 3:24

species 5:13

specific 7:9 28:8
32:4 40:9

specification 17:15

specifications
17:11

speedy 6:7

sphere 38:13

staff 13:16, 18
40:5, 7, 13

staffing 8:1

stakeholders

14:16 34:23 35:2

standard 17:12
36:20

standards 8:1
14:16 39:5, 8

stands 36:19

start 10:3 25:25
26:2 30:21 33:7

State 18:3, 9, 11
26:18 29:8 33:17
34:4 36:9

STATEMENT

2:1 6:1 11:1
14:22 16:1, 25
19:17 21:1 23:24

States 18:4 31:9

State's 29:9, 11

status 35:9

statute 8:6

statutory 36:12

stay 5:18

step 11:21 30:3

stepping 39:18

steps 3:21 7:4
42:7

<p> stewards 25:4 stewardship 43:19 stopgaps 42:20 story 43:12 strategic 11:23 strategy 11:18, 22 30:20 strip 17:10 strong 11:15 13:22 37:11, 14 structure 19:4 39:24 structured 12:25 stuff 4:7 style 18:2 subdivision 18:3 submitted 35:13 subtle 17:24 success 18:17 41:19 successful 13:11 successfully 13:2 supercharging 2:19 supplementing 17:20 supply 19:2 supports 8:3 supposed 38:25 sure 14:19 24:15 25:12, 15 26:15 27:12, 17 28:10, 18 32:13 35:12 37:21 38:1, 6 39:8, 24 41:23 42:3 43:22 susceptible 16:22 suspect 42:23 swear 9:19, 20 sworn 8:17 system 22:18 26:12 27:12 systems 27:16 </p>	<p> 37:10 38:6 42:24 < T > tablet 18:24 tackle 5:11 8:7 take 3:21 25:4 33:15 36:5 39:2 42:24 talk 2:15 32:22 37:9 42:7 talked 28:16 33:16 37:2 40:15 41:12 42:4 tangentially 38:13 task 29:23 taxpayer 19:13 team 17:18, 21 19:7, 11 38:5 tech 23:12 technological 14:15 technologies 13:24 16:7 17:2 19:3 26:1, 20, 23 27:9 40:1 technology 2:21 4:13, 18 11:19, 24 12:18 13:11, 22 14:4 17:6, 13 21:12 22:2 23:5, 18 25:8, 18 28:6 37:19, 24 telegraph 21:8, 13 tell 18:8 templates 25:13 tends 30:23 Tennessee 33:17, 18 34:4 35:12 36:7, 22 Tennessee's 34:2 tenure 11:17 term 26:2 42:19, 23 </p>	<p> terms 29:25 35:1 39:3, 4, 19 test 13:4 22:8, 22 26:8 41:9 testify 19:15 testimonies 10:3 testimony 3:14 9:21 16:24 24:17 26:5 31:8 41:8 testing 4:17 13:16 26:2 39:19 text 12:13 18:11 texts 5:15 thank 2:3, 6, 9, 10 5:22 6:2, 5 8:11, 13 9:1, 8 10:2 11:3, 4 15:1 16:3 19:14 20:1, 2 21:4 23:23 24:1, 4, 5 25:19 27:23, 24 29:3, 4, 5 32:25 33:1, 3 36:24, 25 37:1 43:14, 16, 24 theme 41:25 thing 16:23 39:10 42:16 things 3:7 5:11 9:15 25:10, 23 26:21 28:4, 7 30:14 31:12, 14, 23 34:19 35:14 36:18 38:9 39:17, 20 42:10, 14, 23 think 3:5 4:12 8:23 24:20, 23, 24 26:8 30:15 33:10, 12 36:23 40:3 42:1 thinking 28:11, 24 third 35:19 thirds 22:8 thought 28:13 </p>	<p> thoughtfully 23:21 thousands 33:18 threats 2:23 5:22 37:10, 11 39:12, 25 three 4:8, 10, 25 6:6, 21 16:10 17:1, 10 19:8 26:5 33:6 36:6 Thune 4:1 time 6:8, 10 9:4, 15 19:6 21:6 26:9 29:10 36:25 timetable 42:8 today 2:5, 15 4:11 6:6 7:5 16:5, 25 19:15 21:5 24:5 tool 4:21 23:16 28:11 42:1 tools 16:25 17:3 18:10, 14 22:7 23:5, 11 28:20 31:18, 24 32:2 38:7, 19, 23 40:10 41:9, 15 top 26:19 topic 2:16 11:5, 9 tracing 21:17 train 35:6 trained 13:13 training 40:3, 9, 12 transcribed 22:8 transcribing 22:6 Transcription 22:4 transformative 6:24 transparency 4:4 14:20 35:7, 19 treasures 4:14 6:14 treatment 35:10 36:2 </p>
--	---	--	---

tremendous 8:18
 17:20
trial 22:7
trusted 16:16
 25:5 28:16
trustworthiness
 14:3 24:18 25:3
 38:2
trustworthy 22:25
 23:14 41:24
truth 9:22
try 32:21 42:15
trying 26:9 39:23
turn 5:22 24:2
two 8:6 22:8
 27:25
types 31:12, 23
 35:21 36:2

 < U >
U.S 1:7 16:1, 15
 17:7 33:8
Ultimately 23:16
unanimous 9:3
undergraduate
 8:20 9:18
understand 2:12
 7:16, 18 18:10
 19:4 23:1 40:10
Understanding
 2:24 7:3, 20
undertaking 29:12
underway 22:17
unintended 23:19
unique 33:11
unit 41:17
United 18:4
units 13:1 42:12,
 15
universe 22:18
University 8:21
 9:8
update 11:10

updated 28:6
urging 35:13
usable 5:1
USE 1:1 3:22
 4:19 5:6, 11 6:3,
 23 7:4, 19, 20
 8:10 11:15, 19
 12:9, 11, 25 13:2,
 15, 23 16:18 17:5
 18:4 22:1, 24
 24:7, 13 30:12, 18
 31:20, 23 32:2
 35:5, 8, 16 42:1
usefulness 25:9
users 4:21 11:13
 12:8, 18 14:12
 41:15
uses 12:6 14:17
 16:6 17:7 21:15
 34:9

 < V >
value 19:12
values 14:19
variables 26:24
 27:2
variances 17:11
variation 17:15
various 3:2 31:25
 39:13
vast 6:14 31:15
vendors 40:9
version 17:7
videos 37:4
view 19:5 36:21
viewable 29:13
viewing 18:23
virtually 16:13
visitor 21:24
vital 6:18
voice 3:6 33:22
voices 34:1, 2, 9
 36:8 40:15

volunteers 21:8
vote 43:15

 < W >
want 6:5 28:18
 42:1, 22 43:14
Washington 1:9
 11:2 16:2 21:2
waste 17:18
watch 21:12
way 5:19 19:2
 21:11 22:24
 26:21 27:16
 28:20, 21 30:17
 31:21 41:12
ways 29:24, 25
 30:11 32:11, 24
webinars 34:17
webpage 34:14
Wednesday 1:5
week 43:24
weighing 7:3
welcome 6:15
well 2:10 8:11,
 13 13:12 21:5
 22:22 23:4 24:17
 27:21 29:1 30:13
 32:9 35:23 41:3
 43:6
wide 32:4
widely 7:4 21:22
widespread 21:21
wishes 21:6
wishing 6:7
witness 8:15 9:1,
 11
witnesses 3:13
 4:11 6:6 7:5
 8:14 9:19 33:6
women 5:15
women's 22:13
wonderful 24:23
word 18:3
words 21:19

work 3:12, 14
 4:8, 13 5:2, 4
 13:13 19:6 22:10
 32:17 39:21 41:9,
 13 42:17 43:16,
 21
worked 9:5, 13
workforce 8:2
 39:19
working 3:3 4:24
 5:18, 19 12:4
 13:4 24:11 25:7
 29:24 36:17
 37:25 41:17, 22
 42:11 43:20
works 19:5 33:22
 34:9, 13 35:6, 9
 36:20 38:5 40:24
world 4:20 11:20
 27:10 29:14 40:4
world's 5:9
writing 5:16
written 13:8
 16:24 24:17 41:8

 < X >
XML 19:1

 < Y >
year 5:8 18:19
 31:8 32:11 34:18
 40:16, 19
years 9:6, 13
 21:9 28:19 31:16
 37:15
yesterday 18:20
yield 36:24
York 18:9
Young 3:1

 < Z >
zealous 24:14