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# CROWDSOURCING, CITIZEN SCIENCE, AND THE LAW: LEGAL ISSUES AFFECTING FEDERAL AGENCIES

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# EXECUTIVE SUMMARY

The purpose of this report is to review legal and regulatory issues that federal agencies face when they engage in citizen science and crowdsourcing activities. The report identifies relevant issues that most federal agencies must consider, reviews the legal standards, suggests ways that agencies can comply with or lawfully evade requirements, and discusses practical approaches that can ease the path for federal citizen science and crowdsourcing projects, including procedural activities, cooperative actions, legislative changes, and regulatory adjustments.

## INTRODUCTION

**Citizen science** is a form of open collaboration in which members of the public participate in scientific research to meet real world goals. **Crowdsourcing** is a process by which individuals or organizations solicit contributions from a large group of individuals or a group of trusted individuals or experts. These definitions, like the field and the basic terminology itself, are evolving rapidly in multiple arenas. In this report, it will be simpler and more efficient to use one term—crowdsourcing—to refer to both crowdsourcing and citizen science

Federal crowdsourcing activities are remarkably diverse and creative. Some of the credit for this belongs to the Internet, which changed how agencies function in much the same way that it changed how individuals and organizations function. More of the credit belongs to dedicated federal employees who recognized that there were new ways to accomplish their missions. Some credit also belongs to agency management for supporting creativity and innovation.

The federal government operates under certain laws, rules, and policies that differ in significant ways from those that apply to any other institution. Federal agencies must comply with constitutional principles, statutory obligations, regulatory processes, and administrative policies. When new federal activities like crowdsourcing meet rapidly changing technologies, initially unrecognized legal issues may arise that lack precedent and therefore require agency lawyers to scramble to keep up with developments.

These factors may explain, in part, the apparent perception in the federal crowdsourcing community that some policies reflected in federal law unfairly target them, or that the rules were not intended to cover

their activities. However, the laws that affect crowdsourcing also affect numerous other federal activities.

This report explains the laws applicable to crowdsourcing and provides general guidance about how to comply with or lawfully avoid application of those laws. While some legal and administrative requirements applicable to crowdsourcing activities may be time consuming or cumbersome, none are an insurmountable barrier. The most practical advice derived from discussions with government employees who lived through compliance with various laws is to “embrace the bureaucracy.”

The Commons Lab within the Science and Technology Innovation Program at the Woodrow Wilson International Center for Scholars has been a leader in facilitating effective and efficient adoption of crowdsourcing. The Commons Lab has commissioned a series of reports, including this one that describe various crowdsourcing activities, and discuss the value and future of crowdsourcing.

## PAPERWORK REDUCTION ACT

The Paperwork Reduction Act of 1980 (PRA) regulates federal agency activities that involve the collection of information from more than 10 persons. The goals of the law are to provide for better management of information resources, minimize burden on the public, avoid duplication, and assure the practical utility of collected information. A broader goal of the PRA was to create a new government-wide organizational and policy framework to manage government information resources. The

PRA is a principled law seeking to improve management and efficiency in the federal government.

The PRA applies to many crowdsourcing activities. When the law applies, a federal agency must develop a formal information collection request, publish its plans in the Federal Register, consider public comments, publish a second Federal Register notice, and ask the Office of Management and Budget (OMB) for approval.

The PRA determines the process by which an agency obtains OMB approval for information collection, and OMB issues a rule with additional details and specifications. The clearance process has five basic steps:

1. An agency seeking to collect information from 10 or more individuals develops the information collection request in accordance with the requirements of the rule and obtains agency approval from the agency’s chief information officer (CIO).
2. The agency publishes a notice in the Federal Register giving the public 60 days to comment on the proposed information collection.
3. The agency evaluates the public comments.
4. The agency publishes in the Federal Register a second notice announcing the sending of the collection proposal to OMB for approval and inviting the public to submit comments to OMB within 30 days.

5. The agency submits its proposal for information collection to OMB concurrent with the publication of the second Federal Register notice. OMB then has 30 additional days from the end of the comment period (or 60 days in total) to take action on the proposal.

These linear steps belie the complexity of the process. The notion of an information collection request is broader than the words imply. OMB wrote the rule expansively to cover activities that go beyond simple reporting to an agency: Asking the public to provide any information—whether on paper, through a website, or via a mobile app—can constitute an information collection request.

In general, the rules governing the collection of information apply broadly to government collection activities, and the definitions in the rule are comprehensive. While there are some excluded activities, it is difficult to find “loopholes” that allow crowdsourced data collection to fall outside the PRA.

It is difficult to offer any clear timeline for the clearance of a PRA information collection request. **The steps in the process are clear, but the variable time for several steps is largely within the control of the agency.** An estimate of six to nine months overall may be a rough rule of thumb, but longer turnaround times are possible.

From time to time, OMB publishes additional advice and new procedures for agencies to use in developing and clearing information collection requests. Recent OMB PRA publications address the use of social media and web-based interactive

technologies; offer additional guidance on web-based interactive technologies that expands upon the list of examples provided in the first social media guidance memo, such as web-based data search tools and calculators; establish policies for generic clearances of information collection requests for methodological testing, customer satisfaction surveys, focus groups, contests, and website satisfaction surveys; and create a fast-track process allowing agencies to obtain timely feedback on service delivery.

While the new procedures may not have direct application to many crowdsourced information collections, **the willingness of OMB to find ways to adapt its procedures to new collection techniques or circumstances suggests that a well-founded request for a memo on approaches to clearing crowdsourced collections might receive a favorable reception.** It seems less likely that OMB would show enthusiasm for a broad crowdsourcing exemption from PRA information clearance requirements.

In December 2010, OMB offered guidance on facilitating scientific research by streamlining the PRA information clearance process. The memo first explains how existing rules may and may not apply to some scientific endeavors. A second part explains PRA procedures, including generic clearances. The third part of the memo emphasizes the value of early collaboration with OMB, including seeking guidance on survey and statistical information collections. Most important for crowdsourcing is OMB’s willingness to consider scientific research under the generic clearance process.

## Strategies for Progress

1. It is not inconceivable that the PRA law or rules could change to accommodate or exempt crowdsourcing in some major way. However, OMB has not shown much willingness over the years to significantly change information clearance procedures.
2. The PRA information clearance process is not insurmountable or pointless. Advice from more than one experienced navigator of OMB clearance boils down to this: “embrace the bureaucracy.” This advice comes in part from the recognition that the information clearance process is mostly unavoidable, so there is no point in seeking to evade or deny it.
3. Agencies that engage in crowdsourcing activities, even on an occasional basis, could benefit from collectively accepting OMB’s invitation to work together. Ideas for collaboration include defining useful classes or categories of crowdsourcing; standardizing collection plans and protocols to the extent possible; looking for flexibility for minor variations in scope or practice; or consulting with OMB’s Statistical and Science Policy Office for standard approaches.
4. Agencies that engage in crowdsourcing can do more on their own to navigate the PRA clearance process. Sharing documents and expertise should be a major priority, both within agencies and across agencies. For example, estimating the burden of a request is complex and often novel, so learning from others will make this task

simpler. Sharing information on navigating the agency clearance process, preparing Federal Register notices, and obtaining OMB approval would also be helpful. A crowdsourcing support organization is another possibility.

5. The Office of Science and Technology Policy might take on the task of convening crowdsourcing enthusiasts in agencies to make the case to OMB.

## INFORMATION QUALITY ACT

The Information Quality Act (IQA) seeks to ensure and maximize the quality, objectivity, utility, and integrity of information that federal agencies disseminate to the public. Each agency has its own information quality guidelines. Because OMB guidance limits application of the IQA to the dissemination of information that has a clear and substantial impact on important public policies or important private sector decisions, the IQA’s application to many crowdsourcing projects may be small.

As part of information resources management, OMB instructs agencies to develop a process for reviewing the quality (including the objectivity, utility, and integrity) of information before dissemination. OMB also directs agencies to establish administrative mechanisms allowing affected persons to seek and obtain, when appropriate, timely correction of information that does not meet applicable guidelines.

Some agency personnel may perceive the IQA as another overarching barrier not easily overcome. This perception may not always match the reality. Still, with information dissemination that contributes to

regulatory action, the IQA is more likely to be relevant, although to date many crowdsourcing activities have no regulatory implications. Further, the problem of data quality in crowdsourcing is already well known, and those who design and operate crowdsourcing activities seek ways of addressing quality issues as part of the programs' design. The standards in the law may still apply, but those standards may be lower or no different than those applied by crowdsourcing sponsors to themselves. Because OMB directs agencies to weigh the costs and the benefits of higher information quality in the development of information, the consequences of the IQA, even when it applies to crowdsourcing, may be limited.

### Strategies for Progress

1. Changes to the IQA or its rules seem unlikely. Obtaining additional guidance from OMB might be possible if a case could be made for it, but it is not clear that the IQA is a real barrier to crowdsourcing.
2. It would be helpful if agency personnel involved with crowdsourcing had a better understanding of the specific requirements and limited application of the IQA. It would help if more people understood that the IQA is not likely to present a significant barrier to crowdsourcing activities that are unlikely to lead to controversial regulatory activities.

## ANTIDEFICIENCY ACT

The Antideficiency Act seeks to control federal spending by limiting the ability of agencies to create financial obligations in

excess or in advance of appropriations. For example, the Antideficiency Act restricts the ability of agencies to use volunteers, although some agencies have general authority to accept gifts of services. In general, agencies that respect congressional appropriation controls and meet procedural requirements can likely carry out most, if not all, crowdsourcing activities.

The restriction against accepting volunteered services is not quite as broad as it might appear on first reading. Acceptance of services without compensation is not impossible, although questions still remain about the limits. A well-planned, narrowly-defined crowdsourcing activity that includes a written waiver of compensation signed by the volunteers seems unlikely to violate the Antideficiency Act.

### Strategies for Progress

1. Many agencies already have authority to accept gifts, including gifts of services. Anyone in an agency considering a crowdsourcing activity should be able to obtain a definitive answer about the agency's existing authority from the agency's general counsel.
2. Some of the uncertainties about the application of the Antideficiency Act might disappear if an agency or congressional committee formally asked the Government Accountability Office (GAO) specific questions about a planned crowdsourcing project.
3. It seems unlikely that Congress would directly amend the Antideficiency Act on behalf of crowdsourcing. However, from time to time over the years, Congress has passed legisla-

tion relaxing some of the standards in the Antideficiency Act for particular agencies or activities. Granting agencies broad authority to accept gifts of services has not proved controversial in the past.

## PRIVACY AND INFORMATION POLICY

Federal information management laws affect crowdsourcing activities in much the same way as they affect other federal agency operations. Not all crowdsourcing activities collect personal information or raise privacy issues, but privacy can present unexpected challenges in some cases. Even collecting minimal information about volunteers participating in crowdsourcing may create privacy obligations for federal agencies under various statutes. Many agencies have privacy offices, privacy officers, or other privacy resources that may be available to help identify legal obligations, carry out privacy requirements, and generally do the right thing to protect the privacy of personal information.

Privacy obligations for federal agencies are likely to present few substantive limitations in a crowdsourcing context, but there are several relevant laws and different publication and evaluation requirements to meet. Complying with privacy law generally means satisfying procedural requirements that are mostly within the control of the agency.

The **E-Government Act of 2002** requires agencies to conduct privacy impact assessments (PIAs) before creating new privacy risks. The requirement attaches when an agency develops or procures information technology systems that col-

lect, maintain, or disseminate information in identifiable form from or about members of the public, or when it initiates, consistent with the PRA, a new electronic collection of information in identifiable form for 10 or more persons.

The requirement for a PIA is likely to apply to any crowdsourcing activity that requires an information clearance request under the PRA *and* that collects any personally identifiable information. Each agency conducts its own PIAs, and they are not submitted to or approved by OMB. If, as seems likely with crowdsourcing, information collection does not create a “major” information system, an extensive PIA is not required.

The **Privacy Act of 1974** is a privacy law applicable to all federal agencies. The Act broadly implements fair information practices, which are general principles for the protection of the privacy of personal information. The primary challenge for crowdsourcing is determining whether an activity creates a “system of records,” which triggers a series of specific obligations. A system of records is a group of records controlled by an agency “from which information *is retrieved* by the name of the individual or by some identifying number, symbol, or other identifying particular assigned to the individual.” Because technology has made the retrievability standard largely meaningless, agencies should assess retrievability in good faith based on expected and actual use of records.

There are three general classes of individuals whose personal information might be part of federal agency crowdsourcing and might result in the creation of a system of records. First, volunteers who participate



in the crowdsourcing activity. Second, individuals who are not participants in the activity. Third, agency employees participating in the activity.

If the Privacy Act of 1974 applies, a set of procedural and publishing requirements attaches to an activity. An agency must describe in the Federal Register each system of records in a *system of records notice*, commonly called a SORN. An agency must also send a notice of a new or substantially changed system of records to OMB and to Congress. Writing a SORN might appear a daunting activity, but many of the elements tend to be the same in most SORNs within an agency. A SORN will use much of the same information for preparing for compliance as would be used during the clearance process of the Paperwork Reduction Act. Other elements can usually be readily copied or adapted from other agency SORNs.

For those not versed in the Privacy Act of 1974, writing the routine uses is the hardest part. A *routine use* is a term of art describing the disclosure of a record outside the agency that maintains the system of records. Routine uses tend to be standard within an agency and even, to a certain extent, across agencies.

For a new (or significantly changed) system of records, the agency must publish a SORN in the Federal Register. New routine uses also require a Federal Register publication. An agency must ask for and consider public comments, but the Privacy Act of 1974 does not require the more elaborate notice-and-comment process called for under the Administrative Procedure Act.

The **Children's Online Privacy Protection Act of 1998** (COPPA) regulates the collection, maintenance, use, and disclosure of individually identifiable personal information obtained online from children under the age of 13. Nominally, COPPA does not apply to federal websites. However, it is a matter of OMB policy that all federal websites must comply with COPPA standards when collecting personal information online at websites directed to children. While it is unlikely that most crowdsourcing activities would collect information from children, an activity conducted in association with a scout troop or school could result in the online collection of personal information from children.

The **Family Educational Rights and Privacy Act** (FERPA) establishes privacy rules for schools and universities that receive federal funds through the Department of Education. The law covers *education records* that contain information directly related to a student. FERPA establishes rules governing the collection, use, disclosure, access, and correction of such information. Unless a federal agency operates a school, FERPA does not apply to the agency. However, if an agency works cooperatively with a school or university on a crowdsourcing activity, the agency may run into FERPA issues. An agency working with a school may be able to avoid most privacy obligations by allowing the school to maintain all personally identifiable student records and by maintaining only non-identifiable program records.

The federal health care privacy rules issued under the authority of the **Health Insurance Portability and Accountability Act** (HIPAA) have little

relevance to most federal crowdsourcing activities. For the most part, HIPAA privacy rules apply directly to covered entities, generally health care providers, health plans, and their business associates. Even if a crowdsourcing activity collects health information about individuals, HIPAA will not apply unless the agency otherwise qualifies as a provider or plan. It is possible, however, that a federal agency covered by HIPAA will engage in crowdsourcing.

In 2007, OMB ordered agencies to develop a policy for safeguarding personally identifiable information (PII) and for responding to a **security breach** of that information. By now, each agency should have a security breach response policy in place. For any crowdsourcing activity that collects and maintains PII, the possibility exists that a security breach may expose personal information to unauthorized individuals. Responding to a security breach can be a difficult and expensive undertaking that requires much effort to be completed quickly.

Most other countries around the world have **national privacy laws** broadly applicable to government and private sector record keepers. Privacy laws in other countries generally have little direct relevance to federal agency activities. In a crowdsourcing context, a privacy law in another country may need to be considered if a federal agency undertaking an activity involving the collection of personal information solicits participation by individuals living abroad.

Both the **Federal Records Act** and the **Freedom of Information Act** (FOIA) have rules that may affect the collection,

dissemination, and destruction of federal crowdsourcing records. There are no special provisions in either law about crowdsourcing, but the laws affect crowdsourcing records in the same way as they apply to other federal agency records.

The Federal Records Act requires that each federal agency make and preserve records that (1) document the organization, functions, policies, decisions, procedures, and essential transactions of the agency and (2) furnish the information necessary to protect the legal and financial rights of the government and of persons directly affected by the agency's activities. Most noteworthy here is the provision requiring each agency to obtain the approval of the Archivist of the United States before disposing of agency records.

Among other things, the Freedom of Information Act requires each federal agency to respond to requests for copies of federal records. An agency can withhold a record on various grounds, including privacy. A crowdsourcing record might fall under the FOIA's privacy exemption to the extent that it reflects personal information about a volunteer or agency employee. Other FOIA exemptions are less likely to apply.

Like the Federal Records Act, the FOIA is a "housekeeping" law applicable broadly to all federal programs. Any federal program may become the subject of a FOIA request, and a program might give some mild consideration to organizing its records in a way that would simplify a response to a request. Each agency has a FOIA officer to help with compliance.

## Strategies for Progress

1. Those who have written Privacy Impact Assessments and Privacy Act of 1974 Systems of Records Notices can educate others about the requirements. Sharing completed documents within and among agencies is also valuable. One way that some agencies might simplify compliance with the Privacy Act of 1974 is by defining one system of records that covers all crowdsourcing activities generically.
2. Every agency has a Privacy Act officer who has experience with the law and the policy surrounding the use of personal information. The Privacy Act officer should be called immediately whenever there is even a hint of a privacy issue.

## TERMS OF SERVICE FOR MOBILE APPS

When federal agencies develop mobile applications for use by those engaged in crowdsourcing, they typically use online facilities and services that operate under terms of service (TOS) established by private companies, such as Google for Android devices and Apple for iPhones. Federal law may not allow agencies to accept these standard TOS. Agencies and service providers have been working together to develop terms of service that federal agencies can accept.

In a crowdsourcing context, mobile applications developed by or for federal agencies offer an excellent example of the potential legal issues. A mobile app is a computer program designed to run on a smartphone or other device. When

an agency develops a mobile app, it is likely to act as other developers do. When the app is ready for public release, the agency commonly distributes it through the app distribution platform operated by the owner of the mobile operating system. Each distribution platform operates under its own TOS, licensing rules, and other policies. App developers accept the terms of the platforms that they use, and there is typically little opportunity for negotiation or alteration of the standard TOS.

For an agency operating under the restrictions of federal law, the standard terms for app distribution create conflicts with the law and with federal policy. One example is the requirement that an app developer pay any legal costs that the platform incurs due to distribution of the app. The problem for a federal agency is that an indemnification agreement violates the Antideficiency Act if the agreement, without statutory authorization, imposes on the United States an open-ended, potentially unrestricted liability. A choice of law provision and a requirement for arbitration are other examples of TOS that may conflict with federal law.

There are solutions to TOS conflicts and helpful resources already available. For agencies wishing to implement crowdsourcing through a mobile application, the problems are real, but they are surmountable with effort and cooperation from inside and outside the government.

## Strategies for Progress

1. Once a platform agrees to new TOS with one agency, the next agency may be able to use that same solution or find another one faster. Some ven-

dors now publish standard TOS just for federal agencies, and this allows other agencies to accept those federal TOS without additional negotiations or effort. The General Services Administration (GSA) maintains a list of federal-compatible terms of service agreements online.

2. While TOS for federal agencies is a rapidly developing area of law, GSA and agency lawyers are working together to sort it out. Already available resources solve some problems, and more solutions are likely. The Federal Acquisition Regulation has already been adjusted once, and further changes are to be expected.
3. The rapidity of change with the Internet and technology presents multidimensional challenges that are likely to require additional attention in the future. One resource for helping agencies to find and address these challenges is the Social Media Community of Practice, which brings together more than 500 federal social media managers. There may be a need for further cooperation specifically among agency lawyers, perhaps under the auspices of the GSA.

## PROTECTION OF HUMAN SUBJECTS

The Common Rule issued by numerous federal agencies regulates the conduct of research activities with the goal of protecting human research subjects. In some cases, crowdsourcing activities will

qualify as human subjects research. In other cases, it may not be clear whether an activity qualifies.

The Common Rule has two basic requirements for most federally funded crowdsourced research on human subjects: Subjects must give legally effective informed consent, and an institutional review board (IRB) must review the research. All federal agencies are likely to operate their own IRBs. Satisfying an IRB that a research project meets these standards takes time, effort, and paperwork. However, not every project needs to go through the full formal approval process. An expedited process allows for approval for projects that involve minimal risk.

## Strategies for Progress

1. A federal employee contemplating a crowdsourcing activity will want to determine as early as possible if the activity presents a human subject protection issue. To determine if the Common Rule applies to a federal crowdsourcing activity, an informal discussion with the chair of the relevant IRB may be the best starting point. The chair should be able to advise whether the Rule applies and whether the activity is likely to meet the minimal risk standard so that it qualifies for expedited review.
2. For federal agencies, the relationship between crowdsourcing and the Common Rule may need a clearer delineation. A clearer policy would also benefit IRBs that may not know

how to characterize crowdsourcing activities. The federal crowdsourcing community might ask the Office for Human Research Protections (OHRP), the office primarily responsible for the Common Rule, for assistance. Before approaching OHRP, however, the community would do well to examine the subject so that it can suggest distinctions between activities or classes of crowdsourcing that would be useful in developing specific guidance.

## LAST WORD

Any organization, whether a business, university, scientific organization, state government, or federal agency, operates under both internal and external constraints and rules. Crowdsourcing and citizen science—both rapidly developing methods for accomplishing functions that would be impossible or difficult otherwise—push against existing constraints by using non-traditional sources and methods. Many of

the laws that affect crowdsourcing and citizen science by federal agencies also affect numerous other agency functions. It is entirely possible today for federal agencies to engage in crowdsourcing and citizen science despite existing constraints.

Crowdsourcing and citizen science are relatively new activities, and it will take time for the laws and rules that broadly regulate federal agency activities to adapt. As with so many other endeavors, creativity, cooperation, persistence, and patience are needed to achieve better and more efficient outcomes and processes that meet ongoing need. This report includes ideas and suggestions intended to help federal agencies engaged in crowdsourcing and citizen science to find ways through bureaucratic and legal barriers and to explore how rules and laws might change to meet their evolving needs.







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**The Commons Lab** of STIP seeks to mobilize public participation and innovation in science, technology and policy.

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