FOIA EXEMPTION FIVE: WILL IT PROTECT GOVERNMENT SCIENTISTS FROM UNFAIR INTRUSION?

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Abstract: The Freedom of Information Act (FOIA) gives the public a right to acquire a great deal of governmental information, possibly leading to the lawful disclosure of unpublished governmental research. Such early disclosure would amount to an unfair intrusion into the scientific process by effectively robbing scientists of the opportunity to publish their research in their own time. Moreover, forcing scientists to expose their findings in this manner could damage their careers and seriously discourage them from working for government agencies altogether. Such a loss of technical expertise would directly and adversely effect the quality of all government agency decisions regarding scientific issues. The topic of this Note, FOIA's Exemption Five, provides a possible avenue of protection for unpublished research by creating a deliberative process privilege that shields predecisional deliberative memoranda from public scrutiny. It will be up to the judiciary to interpret Exemption Five to include such unpublished research, and thereby protect government scientists and scientific agency decision-making as a whole.

INTRODUCTION

This Note addresses the issue of whether the Freedom of Information Act (FOIA) requires a federal agency to disclose unpublished scientific research data internally developed by government scientists. For example, when the United States Environmental Protection Agency (EPA) investigates a violation of the Clean Water Act, is the public entitled to disclosure of the raw data as they are collected during the investigation or must the public wait until EPA generates a

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final, official report? Is there any intermediate information subject to disclosure?

In general, scientists attain renown and credibility through publication of their research. Premature publicity effectively robs the scientist of the opportunity to reveal the results of that research as the scientist chooses. Without this choice, the scientist loses a major incentive for producing quality scientific work, and the scientist's career is placed at risk due to an inability to publish his or her own research. The risk of premature publicity to a government scientist is even more acute due to added disclosure pressure since, for example, a competing scientist could use FOIA to claim a public right to the government scientist's research data. Is this a fair consequence of taking a job with the government?

Since non-governmental scientists exist outside the reach of FOIA, a request for disclosure of their unpublished research data can only arise within the context of discovery during litigation. In such cases, the scientists may claim that the information is privileged, ir-

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5 See Deichman v. E.R. Squibb & Sons, 740 F.2d 556, 560 (7th Cir. 1984). In referring to the defendant scientist, the Deichman court acknowledged that "[h]is real and deepest objection is that he must be allowed to divulge to the public the results of his studies only in his own time and way." Id.

6 See Dow Chem. Co. v. Allen, 672 F.2d 1262, 1276 (7th Cir. 1982). The Allen court refrained from forcing academic researchers to disclose their preliminary results, finding that such disclosure would leave the researchers with the knowledge throughout continuation of their studies that the fruits of their labors had been appropriated by and were being scrutinized by a not-unbiased third party whose interests were arguably antithetical to theirs. It is not difficult to imagine that that realization might well be both unnerving and discouraging.... In addition, the researchers could reasonably fear that additional demands for disclosure would be made in the future.... To these factors must be added the knowledge of the researchers that even inadvertent disclosure of the ... data could jeopardize both the studies and their careers.

Id.

7 See Ethyl Corp. v. EPA, 478 F.2d 47, 49 (4th Cir. 1973).


relevant, or the subject matter of a trade secret. Government scientists, on the other hand, are left with far fewer avenues of protection. FOIA requests can be made, at least initially, independently of litigation.

Government protections do not change upon arriving in court, however. In response to a FOIA request or a FOIA lawsuit, the government’s defense is restricted to the narrow exemptions provided by the statute. The government scientist cannot claim that the information is irrelevant or the subject matter of a trade secret. These defenses are outside the scope of FOIA.

Government agencies are perpetually at risk of receiving FOIA requests for scientific research because their scientists perform studies in a wide variety of fields including identification of endangered species, investigations of air quality, reviews of new pharmaceuticals, and disposal of toxic wastes. Although FOIA strongly favors open government, premature disclosure of unpublished scientific research singles out scientists in government agencies and exposes them to unfair and significant intrusion into the scientific process.

To combat this intrusion, government agencies often claim a “deliberative process privilege” over their scientific research when refusing a FOIA request. Additionally, agencies might be able to claim a “researcher’s privilege” that has been addressed in cases regarding

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11 See discussion infra Part II.A.
12 See 5 U.S.C. § 552(a) (3) (A).
13 See Nat’l Wildlife Fed’n v. U.S. Forest Serv., 861 F.2d 1114, 1116 (9th Cir. 1988).
15 See Pub. Citizen Health Research Group v. FDA, 704 F.2d 1280, 1286–87 (D.C. Cir. 1983). Although Exemption Four of FOIA does protect “trade secrets” from disclosure, this protection is limited to commercial or financial information used for trade purposes, and thus does not extend to experimental research initiated and conducted by internal government scientists. See id.; see also Margaret Witherup Tindall, Breast Implant Information as Trade Secrets: Another Look at FOIA’s Fourth Exemption, 7 ADMIN L.J. AM. U. 213, 223–24 (1993). Exemption 4 is also restricted to information “obtained from a source outside the government.” Robert B. Kelso, A Practitioner’s Guide to “Confidential Commercial and Financial Information” and the Freedom of Information Act, 1990 ARMY LAW. 10, 11 n.16 (1990).
17 See Ethyl Corp. v. EPA, 478 F.2d 47, 49 (4th Cir. 1973).
non-governmental scientists, but is still far from an accepted privilege in all cases.  

If government scientists are forced to disclose their unpublished research, potentially inequitable treatment of scientists working in the public versus private sector could seriously reduce the incentive for scientists to continue in government positions. Such a loss of technical expertise in federal agencies would then greatly harm the quality of agency decisions regarding scientific issues. Since the courts have yet to decide a case where a government scientist refuses to disclose unpublished research data, the judiciary will likely be in the position to avoid such ultimate harm to scientific agency decision-making.

I. FOIA Overview

Congress enacted FOIA in order to create a public right in acquiring governmental information "from possibly unwilling official hands." The purpose of the Act was to "establish a general philosophy of full agency disclosure" by providing that "[e]ach agency shall make available to the public" a wide range of information.  

FOIA thereby empowers the courts to compel agencies to release their records in response to a valid request. The government's response does not depend on an applicant's showing of need for the information: "need or interest is irrelevant" under the statute.

Although FOIA does favor disclosure, subsection (b) establishes nine exemptions under which a federal agency may legally withhold particular records. Congress created these exemptions because it recognized that certain materials must always be kept confidential in

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19 See generally Dow Chem. Co. v. Allen, 672 F.2d 1262 (7th Cir. 1982); Smith, 173 F.R.D. at 54.
21 Mink, 410 U.S. at 80 (citation omitted).
22 5 U.S.C. § 552(a) (2000); see Mink, 410 U.S. at 80.
25 5 U.S.C. § 552(b). These exemptions cover a variety of agency records: Exemption 1 protects national defense and foreign policy secrets; Exemption 2 protects information "related solely to internal personnel rules;" Exemption 3 protects records otherwise exempt by statute; Exemption 4 protects trade secrets and commercial or financial information; Exemption 5 protects inter-agency and intra-agency memoranda; Exemption 6 protects personnel and medical files where disclosure would constitute an invasion of privacy; Exemption 7 protects records "compiled for law enforcement purposes;" Exemption 8 protects records related to "regulation or supervision of financial institutions;" and Exemption 9 protects geological data concerning wells. Id. at § 552(b)(1)–(9).
order to ensure the proper operation of government. For example, rights to personal privacy demand that medical and personnel records be withheld from public disclosure; and maintenance of the quality of government decision-making requires that memoranda of intra-agency deliberations be withheld as well. Courts must attempt to balance the interest in maintaining an open form of government against the opposing interest in protecting some necessary level of governmental confidentiality. Since this balance can be difficult to assess and achieve, Congress suggested that “[s]uccess lies in providing a workable formula which encompasses, balances, and protects all interests, yet places emphasis on the fullest responsible disclosure.” In other words, “disclosure [is] the rule and secrecy the exception,” such that confidentiality is only permitted when the requested records fall squarely within one of the statute’s nine exemptions.

In a FOIA lawsuit, the government agency bears the burden of showing that the requested documents may rightfully be withheld under one of these exemptions. Courts grant a limited amount of deference to an agency’s own determination that an exemption applies, but such determinations “must be clear, specific and adequately detailed; they must describe the withheld information and the reason for nondisclosure in a factual and nonconclusory manner; and they must be submitted in good faith.” In most cases, courts perform their own independent review of the requested records in order to decide whether a proposed exemption applies.

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26 Mink, 410 U.S. at 80.
27 See id.; 5 U.S.C. § 552(b) (6).
29 See Mink, 410 U.S. at 80. “[A]s its underlying purpose, the FOIA seeks to ensure a citizenry informed about the inner workings of its government—a goal vital to the proper functioning of a democratic society.” Pully v. IRS, 939 F. Supp. 429, 432 (E.D. Va. 1996).
30 Mink, 410 U.S. at 80.
31 Ethyl Corp. v. EPA, 478 F.2d 47, 49 (4th Cir. 1973).
32 See Nat’l Wildlife Fed’n v. U.S. Forest Serv., 861 F.2d 1114, 1116 (9th Cir. 1988).
33 Id.
35 Id.; see also Senate of P.R. v. U.S. Dep’t of Justice, 823 F.2d 574, 585 (D.C. Cir. 1987) (stating that “conclusory assertions of privilege will not suffice to carry’ the agency’s burden”) (citation omitted).
36 See generally Nat’l Wildlife Fed’n, 861 F.2d at 1114; Senate of P.R., 823 F.2d at 574; Pub. Citizen Health Research Group, 997 F. Supp. at 56.
II. THE PUBLIC SECTOR: EXEMPTION FIVE

Before government information becomes subject to disclosure, the requesting party must establish that it is seeking "agency records" within the meaning of FOIA.\(^{37}\) The statute defines "records" as "any information . . . maintained by an agency in any format, including an electronic format."\(^{38}\) This term is interpreted broadly to mandate disclosure of information in all of its forms—paper documentation, microfiche, electronic database, computer tapes, etc.—without regard for redundancy in revealing the same information in multiple formats.\(^{39}\) If an agency publicly discloses its records in one format, however, that agency loses all power to limit further disclosure of that same information in other formats.\(^{40}\)

The statute defines an "agency" as "any executive department, military department, Government corporation, Government controlled corporation, or other establishment in the executive branch of the Government (including the Executive Office of the President), or any independent regulatory agency."\(^{41}\) In interpreting this definition, courts examine whether the organization in question is subject to substantial federal control and whether it has decision-making authority.\(^{42}\) For instance, a contractor employed by a federal agency qualifies as an "agency" under FOIA if there is evidence of "extensive supervision and control exercised by the [federal] agency,"\(^{43}\) and the contractor has "substantial independent authority" such that it acts essentially as an extension of the existing federal agency.\(^{44}\) If the party initiating the FOIA request cannot meet this threshold of proving that the desired information is a record within the control of an agency, then the courts have no power to compel disclosure.\(^{45}\)

Exemption Five allows an agency to lawfully withhold "inter-agency or intra-agency memorandums [sic] or letters which would not be available by law to a party other than an agency in litigation with

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\(^{40}\) See id.


\(^{42}\) See Forsham, 587 F.2d at 1135.


\(^{45}\) Id. at 526.
the agency."46 By creating this exemption, Congress sought to avoid "the disruption of a free flow of ideas, opinions, advice and frank discussions within agencies concerning their policies and programs."47 In furtherance of this congressional objective, courts allow the government to withhold internal memoranda containing subjective analysis and recommendations related to agency policy.48 Exemption Five ensures that agency officials are not forced to "operate in a fishbowl" where they could be publicly scrutinized for considerations made during the decision-making process rather than for what they ultimately decide.49 Congress feared that such exposure would damage the quality of agency decisions by chilling the creativity and candor of those participating in internal discussions.50

When an agency refuses to disclose scientific information, the legal basis of its defense usually lies within Exemption Five.51 More specifically, agencies typically claim that the requested records constitute "predecisional deliberative memoranda" and thereby qualify for nondisclosure under the "deliberative process privilege."52 The legal controversy arises in sorting out exactly which records fit within this privilege.

The legislative history of FOIA explicitly identifies three categories of agency records which fall within the scope of Exemption Five: attorney-client communications, attorney work product, and predecisional deliberative memoranda.53 Each category contemplates an exchange of information which, if kept confidential, should encourage open communication within federal agencies.54 These categories do not comprise the limit of Exemption Five protection, which also encompasses records not routinely disclosed during civil discovery due to a finding of privilege.55

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47 Nat'l Wildlife Fed'n v. U.S. Forest Serv., 861 F.2d 1114, 1117 (9th Cir. 1988).
48 Id.
50 Petroleum Info. Corp., 976 F.2d at 1434.
53 Burka, 87 F.3d at 516.
55 See Burka, 87 F.3d at 516.
A. Scope of Protection Under Exemption Five

1. Attorney-Client Communications

The attorney-client privilege of Exemption Five protects communications made in confidence to an agency attorney as well as that attorney's responsive legal advice.\(^{56}\) In order to qualify for this privilege, an agency must prove that it communicated to an attorney in the same manner "as would any private party soliciting legal advice to protect his or her legal interests."\(^{57}\) In terms of scientific investigation records, an agency could claim this privilege if the requested records had indeed been confidentially given to an attorney for the purpose of gaining legal advice.\(^{58}\) Although there is little or no case law corresponding to this particular scenario, courts typically hold that communications between an agency and its attorneys may not be disclosed without the agency's consent.\(^{59}\)

2. Attorney Work Product

The attorney work product doctrine, as contemplated by Exemption Five, protects documentation of the opinions and "mental impressions of an attorney . . . prepared in anticipation of litigation."\(^{60}\) It is unlikely that this doctrine would apply to records of scientific research because such records are not usually prepared by attorneys and thus do not reflect the opinions of attorneys preparing for litigation. Furthermore, even if agency scientists conducted a study "with an eye towards litigation" and under attorney supervision, it is unlikely that the records of such a study would violate the attorney work product doctrine because, again, the mental impressions would be those of the scientists and not the attorneys.\(^{61}\) The doctrine could protect the attorney's opinions of the study as it relates to preparation for litigation, but the study itself would not be protectable under this legal theory.\(^{62}\)


\(^{57}\) Id. at *13.

\(^{58}\) See id.


\(^{60}\) McErlean v. U.S. Dep't of Justice, No. 97-Civ-7831, 1999 U.S. Dist. LEXIS 15544, at *19 (S.D.N.Y. Sept. 30, 1999) (citation omitted) (finding agency properly withheld documents which were created by INS trial attorneys in connection with deportation proceedings against plaintiff).


\(^{62}\) See id.
3. Materials Privileged Under the Ordinary Rules of Civil Discovery

Exemption Five also shields documents which are protected under the ordinary rules of civil discovery.63 Although the typical litigant may withhold material based on a showing of privilege or lack of relevance,64 relevancy is not an issue in a FOIA lawsuit.65 Therefore, the government may only withhold agency records if they are considered privileged within the realm of civil discovery, and may not withhold information solely for a lack of relevance.66 If an agency can prove that disclosure would violate a privilege allowable under Rule 501 of the Federal Rules of Evidence,67 it may lawfully withhold its records.68

a. Privileges in General

Privileges within civil discovery comprise an expansive category under Exemption Five because this exemption contemplates both newly recognized privileges and currently existing privileges that are routinely upheld in court.69 In general, every claim of privilege is determined using the "principles of the common law as they may be interpreted by the courts of the United States in the light of reason and experience."70 The Supreme Court has interpreted Rule 501 to allow courts flexibility in adopting rules of privilege on a "case-by-case basis . . . and to leave the door open to change."71

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64 See id.
66 See Burka, 87 F.3d at 516.
67 FED. R. EVID. 501. Rule 501 provides, in relevant part:

   Except as otherwise required by the Constitution of the United States or provided by Act of Congress or in rules prescribed by the Supreme Court pursuant to statutory authority, the privilege of a witness, person, government, State, or political subdivision thereof shall be governed by the principles of the common law as they may be interpreted by the courts of the United States in the light of reason and experience.

   Id. This rule allows courts to grant rights of privilege on a case by case basis in order to prevent sensitive relationships from being harmed by mandatory disclosure of information which would otherwise remain confidential. See, e.g., Equal Employment Opportunity Comm’n v. University of Notre Dame Du Lac, 715 F.2d 331 (7th Cir. 1983).
68 See University of Notre Dame Du Lac, 715 F.2d at 335.
71 University of Notre Dame Du Lac, 715 F.2d at 335 (citation omitted).
b. Researcher’s Privilege

One type of privilege that an agency could claim under Rule 501 is a “researcher’s privilege.”72 Although the courts have not addressed this privilege in terms of government scientists, it has been considered in cases involving private scientists.73 In general, any analysis of privilege starts with the notion that “the public has a right to every person’s evidence” unless there is a valid claim of privilege with a constitutional, statutory, or common law basis.74 The researcher’s privilege, or scholar’s privilege, is currently based only in common law.75 This privilege is intended to protect a researcher’s career and publication prospects by preventing early disclosure of unpublished material.76 Although some courts seem to be sympathetic to this concept, there is no case law explicitly stating that such a privilege exists.77 In fact, few courts have even dealt with this particular claim of privilege.78 When courts do accept it, the scope of the privilege is often limited to specific circumstances where the burden on the researcher far outweighs the need for the evidence.79 Furthermore, these courts have only addressed this privilege as it applies in academic or commercial rather than governmental settings.80 On the whole, there is currently no established practice of protecting unpublished research data from disclosure under Rule 501.81 The following cases illustrate judicial treatment of the researcher’s privilege in the private sector and its likely applicability in the public sector.

In Dow Chemical Co. v. Allen, a researcher at the University of Wisconsin asserted a researcher’s privilege and refused to divulge all data related to his ongoing studies of a herbicide manufactured by the plaintiff company.82 The company, threatened with government cancellation of its herbicide, had requested the data in the hopes of

72 See Wilkinson, 111 F.R.D. at 440.
73 See Dow Chem. Co. v. Allen, 672 F.2d 1262, 1265 (7th Cir. 1982).
74 Wilkinson, 111 F.R.D. at 438.
75 See id. at 441.
77 See id. at 57.
78 See generally Equal Employment Opportunity Comm’n v. University of Notre Dame Du Lac, 715 F.2d 331 (7th Cir. 1983); Allen, 672 F.2d 1262; Wilkinson, 111 F.R.D. 432.
79 See Wilkinson, 111 F.R.D. at 440. See generally University of Notre Dame Du Lac, 715 F.2d 331; Allen, 672 F.2d 1262.
80 See, e.g., University of Notre Dame Du Lac, 715 F.2d at 331; Allen, 672 F.2d at 1262; Wilkinson, 111 F.R.D. at 432.
82 See 672 F.2d at 1265, 1274.
finding some information to use in its defense at the cancellation hearings. Since the research studies were incomplete, the court held that they were not discoverable because their relevancy and probative value were purely speculative. Although the court did not directly acknowledge the researcher's privilege, it did admit that premature public disclosure could significantly harm a researcher's career and credibility by precluding peer review and scientific publication. The court also feared that disclosure could set a precedent that would potentially chill scientific research on a larger scale by subjecting scientists to such intrusion.

The court in Smith v. Dow Chemical Co. discounted the researcher's privilege because the defendant company provided insufficient information when it asserted this privilege and refused to disclose its researcher's data relating to an ongoing study of vinyl chloride. The court did not accept the researcher's privilege because the company did not provide a detailed description of each document, including its purpose, coupled with an explanation of the need for confidentiality and how that need could only be met through the allowance of nondisclosure. Similarly, the court in In re Grand Jury Subpoena denied a scholar's privilege due to the defendant scholar's failure to provide the court with information comparable to what was required in Smith.

Although the courts have acknowledged the researcher's plight when asked to disclose unpublished data, it is unclear whether this privilege would be recognized in relation to a government scientist's response to a FOIA request. The courts seem to focus on two important factors: the stage of the research, and the researcher's ability to provide sufficient explanatory information.

Mandatory disclosure is less likely where the research is ongoing and results are still preliminary than in cases where the research is

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83 See id. at 1265.
84 See id. at 1278; see also Deitchman v. E.R. Squibb & Sons, 740 F.2d 556, 559 (7th Cir. 1984) (finding that irrelevant records are not discoverable under the rules of civil discovery).
85 Allen, 672 F.2d at 1276.
86 See id. at 1275.
87 See 173 F.R.D. 56, 58 (W.D.N.Y. 1997).
88 See id. at 57.
89 750 F.2d 223, 225 (2d Cir. 1984).
90 Compare id., with Smith, 173 F.R.D. at 57.
91 See Allen, 672 F.2d at 1273.
92 See In re Grand Jury Subpoena, 750 F.2d at 225; Allen, 672 F.2d at 1278; Smith, 173 F.R.D. at 58.
complete and in final report form.\textsuperscript{93} One reason for this distinction is that courts wish to avoid public confusion over preliminary data before the significance of those data have been fully assessed.\textsuperscript{94} Finalized yet unpublished results, however, fall into a middle category where it is difficult to predict how a court will decide.

Another significant element of the researcher's defense is the ability to present adequate information regarding the types of records requested and the likely burden on the researcher's credibility, career, and creativity that would result from premature public disclosure.\textsuperscript{95} Since the courts have yet to expressly acknowledge the existence of a researcher's privilege, and have never specifically applied this privilege in the context of a scientist in the public sector, the circumstances under which a court might recognize this privilege in the future are highly uncertain. This situation leaves government agencies with a final avenue of defense in a FOIA lawsuit: the deliberative process privilege.\textsuperscript{96}

4. Predecisional Deliberative Memoranda Protected Under the Deliberative Process Privilege

Agencies that refuse to disclose scientific research most often claim that the requested records fall into the category of predecisional deliberative memoranda under Exemption Five.\textsuperscript{97} This exemption is often referred to as the deliberative process privilege.\textsuperscript{98} Some courts collapse this privilege into the category of materials protected under the ordinary rules of civil discovery because it is a recognized, albeit limited, privilege used in litigation with government agencies.\textsuperscript{99} To assess this privilege, courts focus their inquiry on the following substantive aspects of the requested information: (1) whether it is purely factual or purely policy-related; (2) whether any factual mate-

\textsuperscript{93} See, e.g., Allen, 672 F.2d at 1265.
\textsuperscript{95} See In re Grand Jury Subpoena, 750 F.2d at 225.
\textsuperscript{96} See Nat'l Wildlife Fed'n v. U.S. Forest Serv., 861 F.2d 1114, 1117 (9th Cir. 1988).
\textsuperscript{98} See Petroleum Info. Corp., 976 F.2d at 1433.
rial is "reasonably segregable"; and (3) whether the material is both predecisional and deliberative.100

a. Factual Material Is Subject to Disclosure, but Matters of Agency Policy May Be Withheld

Many Exemption Five controversies rest on the general rule that factual material requires mandatory disclosure while policy-related matters do not.101 Congress designed Exemption Five to encourage the free exchange of opinions during agency deliberations and "has been held to protect . . . material reflecting deliberative or policy-making processes, but not purely factual or investigatory reports."102 This distinction is a basis for many court decisions, but it is not a bright line rule.103 Courts recognize the difficulty in distinguishing records as either purely factual or purely policy-oriented because most records include a combination of the two.104 Courts seem particularly split when dealing with information found in investigatory reports where policy issues are discussed in light of certain facts.105 Rather than debate about semantics, courts tend to use a "flexible, common sense approach," and examine records in their context and on a case-by-case basis.106 Under this approach, agencies may only withhold factual information where it is proven to be "inextricably intertwined with policy-making processes."107 Since policy issues are always shielded from disclosure under Exemption Five, closely tied factual issues are therefore shielded as well.108 Courts caution that this is a small exception to the general rule and does not invite expansive interpretation by government litigants.109

Scientific research may seem largely factual and technical in nature as opposed to records that are policy-oriented and consist solely

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100 See Nat'l Wildlife Fed'n, 861 F.2d at 1118–20; see generally Senate of P.R. v. U.S. Dep't of Justice, 823 F.2d 574 (D.C. Cir. 1987).
104 Nat'l Wildlife Fed'n, 861 F.2d at 1119.
106 See Mink, 410 U.S. at 91.
107 Train, 491 F.2d at 67.
108 See id.
109 See id.
of opinions and recommendations. Therefore, at first glance, it seems that scientific research could not be withheld under Exemption Five.110 Most courts, however, do not base fact-policy distinctions merely on subject matter.111 Rather, courts examine the substance of a record, including both its facts and opinions, and its relation to the agency's deliberative processes.112 In contrast, other courts specifically list scientific studies in the same general category as purely factual material, distinguishing them from matters of policy and decision-making.113

b. "Reasonably Segregable" Factual Material Is Subject to Disclosure, but Facts Which Are "Inextricably Intertwined" with Policy May Be Withheld

The "inextricably intertwined" common law standard has its roots in the express language of FOIA.114 When documents contain a mix of factual and policy-related materials, subsection (b) exemptions still require partial disclosure when possible, such that "[a]ny reasonably segregable portion of a record shall be provided to any person requesting such record after deletion of the portions which are exempt under this subsection."115 Therefore, facts that are "reasonably segregable" from a record comprised of both facts and policy are subject to mandatory disclosure.116 The difficulty arises in court interpretation of "reasonably segregable" and "inextricably intertwined."117 In general, courts consider whether the facts at issue are truly integrated into the deliberative process or are simply unexamined technical data.118

For example, the court in Ethyl Corp. v. EPA rejected EPA's deliberative process privilege claim because parts of the requested records "contained purely factual material not inextricably intertwined with policy-making processes."119 These parts included medical, scientific,

111 See, e.g., Mink, 410 U.S. at 91; Train, 491 F.2d at 67.
113 See Ethyl Corp. v. EPA, 478 F.2d 47, 50 (4th Cir. 1973).
114 See id.
116 See id.; Train, 491 F.2d at 68.
117 See 5 U.S.C. § 552(b); Ethyl Corp., 478 F.2d at 50.
119 478 F.2d at 48.
economic, and technological data related to proposed lead regulations under the Clean Air Act. The court noted that "purely factual reports and scientific studies cannot be cloaked in secrecy by an exemption designed to protect only 'those internal working papers in which opinions are expressed and policies formulated and recommended.'"121

Conversely, in Montrose Chemical Corp. v. Train, the court allowed EPA to withhold factual summaries concerning the risks and benefits associated with DDT because they embodied deliberative materials.122 Specifically, the court ruled that creation of the factual summaries involved the agency's "evaluation and analysis of the multitudinous facts."123 The use of personal, analytical judgment created a direct link between the facts and the policy-making process, qualifying those facts for exemption under the deliberative process privilege.124 Although facts in and of themselves are not as obviously deliberative as an open discussion, the court recognized that facts may be used as a resource in the deliberative process, bringing those facts within the protective scope of Exemption Five.125

The issue of whether governmental scientific data are exempt from disclosure seems to depend on how the government utilizes those data.126 If the data exist in raw form, the government probably cannot withhold them.127 If the data have been analyzed and collected into a report, however, a court is likely to consider them deliberative materials exempt from disclosure.128 Still, the question remains: what happens to the original raw data considered by the government in developing such a fact-based report? Under Ethyl Corp., this body of information would still be subject to full public disclosure,129 although it is less likely to be requested since compilations of raw data are often significantly longer than factual summaries. Furthermore, if the raw data can be publicly disclosed, the intrusion into the scientific process

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120 See id. at 48, 50.
121 Id. at 50 (citation omitted).
122 See 491 F.2d at 64-65.
123 Id. at 68.
124 See id.
125 See id.
127 See Ethyl Corp., 478 F.2d at 48.
128 See, e.g., Montrose Chem. Corp. v. Train, 491 F.2d 63, 64 (D.C. Cir. 1974).
129 See 478 F.2d at 48.
becomes unavoidable despite any protections accorded to ongoing draft reports. In cases where the fact-policy distinction is unclear or where the facts are inextricably intertwined with policy matters, courts will continue this inquiry.\footnote{See generally Nat’l Wildlife Fed’n v. U.S. Forest Serv., 861 F.2d 1114 (9th Cir. 1988); Senate of P.R. v. U.S. Dep’t of Justice, 823 F.2d 574 (D.C. Cir. 1987).}

c. Materials That Are Both Predecisional and Deliberative May Be Withheld from Disclosure

Unless an agency record contains facts which are reasonably segregable from policy issues, a court’s review process will continue because the agency still bears the burden of proving that the requested information embodies the two required elements of the deliberative process privilege: (1) that the record be predecisional, and (2) that the record be deliberative.\footnote{See Nat’l Wildlife Fed’n, 861 F.2d at 1117.} Although courts grant some degree of deference to agency determinations concerning what constitutes the agency’s deliberative process, the agency’s determination is a conclusory finding and must be supported by evidence.\footnote{See Mead Data Cent., Inc. v. U.S. Dep’t of the Air Force, 566 F.2d 242, 259 (D.C. Cir. 1977).}

i. An Agency Record Must Be “Predecisional” in Order to Qualify for Protection Under the Deliberative Process Privilege

A record is “predecisional” if it is created prior to the adoption of a corresponding policy rather than generated in support of a policy that is already in place.\footnote{See Nat’l Wildlife Fed’n, 861 F.2d at 1117.} In addition to temporal sequence, courts pay particular attention to whether the document author has the authority to speak on behalf of the agency in an official and final capacity.\footnote{See id. at 339–40.} A record is more likely to qualify as predecisional when the document author intends the document to represent his or her individual expression rather than the agency’s final position.\footnote{See 844 F. Supp. 770, 782 (D.D.C. 1993).}

For example, in Cleary, Gottlieb, Steen & Hamilton v. Dep’t of Health & Human Services, the court allowed government health authorities to withhold information because the record at issue was inherently predecisional.\footnote{See id. at 339–40.} The agencies lawfully refused to disclose their draft manuscript of a study on L-tryptophan because the study led to publi-
cation of the agency's subsequent report linking L-tryptophan to a rare disease. Exemption Five protected the draft manuscript from disclosure because: (1) the agency created it prior to making its report, and (2) the draft directly supported the agency's subsequent policy decision. In addition, the court found that the document author, a medical doctor, prepared the draft for the sole purpose of review and discussion among her colleagues and not to represent a final agency decision.

The "predecisional" factor is fairly straightforward and will be met if the agency can prove that the requested record corresponds to a later decision finalized by agency officials with greater decision-making authority than the document author. It is likely that unpublished government research would qualify as predecisional in accordance with the deliberative process privilege because agency decision-makers typically commission government research in order to obtain data needed to make particular agency decisions. As long as a government scientist can link his or her research to some agency issue, the required temporal sequence of the privilege will be satisfied. Also, government scientists usually do not have the authority to make official decisions on behalf of an entire agency. On the contrary, by performing scientific investigations and analyzing results, scientists are not making the ultimate decisions, but are acting as a resource for the agency's official decision-makers.

ii. An Agency Record Must Be "Deliberative" in Order to Qualify for Protection Under the Deliberative Process Privilege

A record is "deliberative" if "it reflects the give-and-take" of the decision-making process. The main objective of this requirement is the furtherance of creative and candid debate within agencies by preventing decision-makers from being judged on their predecisional

137 See id. at 774, 782.
138 See id. at 782–83.
139 See id. at 782.
141 See, e.g., Cleary, Gottlieb, Steen & Hamilton, 844 F. Supp. at 782.
142 See id. at 782.
143 Nat'l Wildlife Fed'n v. U.S. Forest Serv., 861 F.2d 1114, 1117 (9th Cir. 1988).
considerations.\textsuperscript{144} Courts are also concerned with avoiding public confusion due to premature disclosure of unsettled policy discussions.\textsuperscript{145}

The deliberative process privilege only applies to an agency record that is part of the deliberative process and is not merely a piece of deliberative material.\textsuperscript{146} For instance, purely factual records are not inherently deliberative, but can become part of the deliberative process if their disclosure is "tantamount to the 'publication of the evaluation and analysis of the multitudinous facts.'"\textsuperscript{147} The suggested distinction falls between records of wholly factual data and records combining factual data with opinions and analysis such that disclosure of the facts inherently forces disclosure of the agency deliberations spawned by those facts.\textsuperscript{148}

For example, records in \textit{Chemical Manufacturers Ass'n v. Consumer Product Safety Commission} qualified as deliberative because they documented an exchange of ideas among scientists regarding the agency's study of a chemical used in the manufacture of toys.\textsuperscript{149} The court ruled that these scientific deliberations were part of the agency's "give-and-take" and that disclosure of such deliberations would discourage open discussion among the agency scientists.\textsuperscript{150} Specifically, the court held that "scientists should be able to withhold nascent thoughts where disclosure would discourage the intellectual risk-taking so essential to technical progress."\textsuperscript{151}

Conversely, the court forced the Bureau of Land Management in \textit{Petroleum Information Corp. v. U.S. Dep't of Interior} to disclose its data file of land descriptions because this type of record was not deliberative.\textsuperscript{152} The court based its decision on two facts: (1) the file was "essentially technical" in nature and existed as a type of "record keeping" unrelated to any particular policy decisions, and (2) all of the information in the file was already available to the public in various forms, thereby diminishing the potential for public confusion, and defeating the agency's right to protection from further disclosure.\textsuperscript{153} The agency

\textsuperscript{145} Id.
\textsuperscript{146} \textit{Nat'l Wildlife Fed'n}, 861 F.2d at 1118.
\textsuperscript{147} \textit{Id.} at 1118–19 (citation omitted).
\textsuperscript{148} See \textit{id.} at 1118.
\textsuperscript{150} See \textit{id.} at 117–18.
\textsuperscript{151} \textit{Id.} at 118.
\textsuperscript{152} See 976 F.2d 1429, 1438-39 (D.C. Cir. 1992).
\textsuperscript{153} See \textit{id.} at 1436–37.
did not select and edit data, but simply reformatted the data into a different digital medium.\textsuperscript{154} The lack of discretion used in creating such a data file defused any concerns regarding discouragement of candid agency discussions.\textsuperscript{155}

It is unclear if a court would recognize government research as deliberative. Raw data alone would probably not qualify as deliberative and could be considered indistinguishable from the "record keeping" in Petroleum Information Corp.\textsuperscript{156} The larger category of scientific investigations, on the other hand, typically involves a "give-and-take" of ideas as well as the use of discretion,\textsuperscript{157} yet courts are split as to how to classify scientific deliberations.\textsuperscript{158} Some courts consider them to be objective interpretations of technical data\textsuperscript{159} and place them in the same category as purely factual reports, suggesting that disclosure of scientific deliberations is not equivalent to revealing an agency's deliberative processes regarding policy matters.\textsuperscript{160} Others courts, however, seem to equate scientific deliberations to general policy deliberations which commonly involve an exchange of opinions and advice.\textsuperscript{161}

B. Current Judicial Trend

Scientific research encompasses a wide range of information from original raw data to finalized technical reports published after extensive analysis and peer review. Under Exemption Five, a government agency may legally withhold parts of this information, but not all, under the deliberative process privilege for predecisional deliberative memoranda when disclosure would reveal an element of the agency's decision-making process.\textsuperscript{162} A researcher's privilege, on the

\textsuperscript{154} Id. at 1438.
\textsuperscript{155} See id.
\textsuperscript{156} See id. at 1437–38.
\textsuperscript{157} See, e.g., Nat'l Wildlife Fed'n v. U.S. Forest Serv., 861 F.2d 1114, 1117 (9th Cir. 1988).
\textsuperscript{159} See, e.g., Parke, Davis & Co., 623 F.2d at 6.
\textsuperscript{160} See Ethyl Corp., 478 F.2d at 50.
\textsuperscript{162} See discussion supra Part II.A.4.
other hand, is largely unrecognized and therefore provides government scientists with little realistic protection.\textsuperscript{163}

Courts vary in interpreting the limits of Exemption Five, but most agree that, in response to a FOIA request, a government agency must disclose purely factual data.\textsuperscript{164} Given the statute's overarching goal of maximum disclosure, courts are very reluctant to promote government secrecy unless the requested material falls squarely within one of the statute's nine exemptions.\textsuperscript{165} Therefore, it is unlikely that a court would contradict the general rule that purely factual data must be disclosed.\textsuperscript{166}

The more these facts are analyzed, reviewed, and shared with non-scientists for the purpose of making future policy-oriented decisions, however, the more likely it is that such facts will be exempt from disclosure.\textsuperscript{167} Just as the courts support FOIA's basic objective, they also try to uphold the objective of Exemption Five and will not compel disclosure if such an order would reveal the agency's decision-making process, consequently chilling the candidness of agency deliberations and ultimately diminishing the quality of agency decisions.\textsuperscript{168} It is this balancing of opposing interests that places government scientists at risk of unfair intrusion into their scientific process—an intrusion not suffered by scientists in the private sector because those individuals are not vulnerable to disclosure requests under FOIA.\textsuperscript{169}

III. THE PRIVATE SECTOR: UNFAIR COMPETITION, TRADE SECRETS, RELEVANCE, AND PRIVILEGE

When outside the realm of litigation, scientists working in a commercial industry or academic institution enjoy significant protection of their unpublished research. Since FOIA does not reach these areas of research, the public at large has no right to this information.\textsuperscript{170} Any attempt to acquire their research data and results could

\textsuperscript{163} See discussion \textit{supra} Part II.A.3.b.

\textsuperscript{164} See discussion \textit{supra} Part II.A.4.a.

\textsuperscript{165} See, e.g., Nat'l Wildlife Fed'n v. U.S. Forest Serv., 861 F.2d 1114, 1116 (9th Cir. 1988).

\textsuperscript{166} See discussion \textit{supra} Part II.A.4.a.

\textsuperscript{167} See discussion \textit{supra} Part II.A.4.

\textsuperscript{168} See EPA v. Mink, 410 U.S. 73, 80 (1973).

\textsuperscript{169} See discussion \textit{supra} Introduction.

\textsuperscript{170} See discussion \textit{supra} Part I.
be blocked under intellectual property theories of unfair competition\textsuperscript{171} and trade secret protection.\textsuperscript{172}

These intellectual property theories, however, comprise fairly narrow defense options for private scientists faced with the prospect of having to disclose their unpublished research data in the course of litigation. In addition, nondisclosure may also be allowed if the requested information is privileged\textsuperscript{173} or irrelevant.\textsuperscript{174}

A. Unfair Competition by Misappropriation

In business, unfair competition by misappropriation is a tort based in common law.\textsuperscript{175} This tort addresses the rights of competitors between each other as opposed to their rights against the public.\textsuperscript{176} When one competitor expends money, skill, and effort to reach an objective, that entity is entitled to profit from the results of that labor.\textsuperscript{177} If a second competitor steps in, takes the results, and then uses them as its own, such action constitutes misappropriation because the second competitor is striving to profit at minimal cost and reap the benefits of the first competitor's hard work.\textsuperscript{178}

For example, in International News Service v. Associated Press, the Supreme Court enjoined a competing commercial news service from publishing news stories obtained from the Associated Press (AP).\textsuperscript{179} The International News Service (INS) had been lifting news stories from the AP newspapers and transmitting them to customers of INS's own news service.\textsuperscript{180} The court affirmed the injunction against INS based on a finding of unfair competition because INS admittedly took material "acquired by [AP] as the result of organization and the ex-

\textsuperscript{171} See generally Int'l News Serv. v. Associated Press, 248 U.S. 215 (1918); Nat'l Basketball Ass'n v. Motorola, Inc., 105 F.3d 841 (2d Cir. 1997).
\textsuperscript{172} See generally Metallurgical Indus., Inc. v. Fourtek, Inc., 790 F.2d 1195 (5th Cir. 1986).
\textsuperscript{173} See generally Burton v. R.J. Reynolds Tobacco Co., 175 F.R.D. 321 (D. Kan. 1997) (addressing whether scientific tobacco research disclosed to defendant's attorney was protected by attorney-client privilege).
\textsuperscript{174} See generally Rywkin v. N.Y. Blood Ctr., No. 95 Civ. 10008, 1999 U.S. Dist. LEXIS 9570 (S.D.N.Y. June 22, 1999) (addressing whether scientific research was relevant to plaintiff's ability to show quality of work prior to termination).
\textsuperscript{175} See Robert P. Merges, et al., Intellectual Property in the New Technological Age 796 (Aspen Law & Business 2000). This tort was first established by the Supreme Court in Int'l News Serv. See 248 U.S. at 215.
\textsuperscript{176} See Int'l News Serv., 248 U.S. at 236.
\textsuperscript{177} See id. at 239–40.
\textsuperscript{178} See id.
\textsuperscript{179} See id. at 245–46.
\textsuperscript{180} See id. at 292.
penditure of labor, skill, and money . . . and that [INS] in appropri-
ing it and selling it as its own . . . endeavor[ed] to reap where it ha[d] not sown . . .."  
181 The court thereby characterized INS’s business practice as unfair competition by misappropriation.  
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More recently, in National Basketball Ass’n v. Motorola, Inc., a Sec-

ond Circuit court held that the misappropriation claim from International News Service continues to apply, albeit in a somewhat limited fashion, in cases which meet a five part test.  
183 This five part test limits the holding of International News Service to cases where:

(i) a plaintiff generates or gathers information at a cost; (ii) the information is time-sensitive; (iii) a defendant’s use of the information constitutes free riding on the plaintiff’s efforts; (iv) the defendant is in direct competition with a product or service offered by the plaintiffs; and (v) the ability of other parties to free-ride on the efforts of the plaintiff or others would so reduce the incentive to produce the product or service that its existence or quality would be substantially threatened.  
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Plaintiff costs can include time, labor, money, and skill.  
185 In National Basketball Ass’n, for instance, the plaintiff made these types of expenditures in order to obtain information that was deemed time-
sensitive.  
186 Free-riding is accomplished when a competitor makes a profit at minimal cost by taking advantage of the fruits of another’s labors.  
187 To be in direct competition, parties need to be active in the same industry, trying to capitalize on the same general area of the market.  
188 Lastly, the ability to free-ride must reduce a plaintiff’s incentive to produce quality work such that the existence of the work itself is threatened.  
189 In cases such as International News Service, the two parties were in the same line of work—publishing news stories—

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181 See id. at 239, 246.
183 105 F.3d 841, 845 (2d Cir. 1997). The Nat’l Basketball Ass’n court vacated a prelimi-

nary injunction because Motorola’s use of its own reporters to collect and transmit game information via pager to Motorola customers did not amount to misappropriation under Int‘l News Serv. See id. at 854–55.
184 See id. at 845.
185 See id. at 854.
186 See id. at 853. Plaintiff developed a system of electronically relaying basketball game statistics to customers as the games were being played. See id. at 843–44.
187 See id. at 854.
189 See id. at 241.
and the defendant’s ability to sell those stories while the plaintiff alone bore the costs of gathering the information substantially reduced the plaintiff’s profit making potential.\textsuperscript{190}

Although there is no federal case law applying this test in the context of scientific research, it is possible that competitors in this field could fall within the scope of this test in certain circumstances. This would allow a private scientist to protect his or her unpublished research data and enjoin a competitor from taking the data for commercial profit.

First, the cost to plaintiff element could be met because scientists spend significant amounts of time and money gathering and analyzing data.\textsuperscript{191} Second, scientific data is time-sensitive because not only does the reward fall upon the first scientist to reach publication, but also upon the first company to make commercial use of its research results.\textsuperscript{192} Third, if a competing scientist acquires research data without having to bear any major costs, that competitor would be free-riding off the other scientist.\textsuperscript{193} Fourth, the direct competition element would likely be met in cases of scientific research because scientists are often aware of ongoing work in their fields.\textsuperscript{194} If a competitor is interested in another scientist’s information, it is not unlikely that they are in competition with each other at some level. Fifth, the ability of competitors to obtain research data at little or no cost would certainly reduce the incentive to engage in scientific research to such a degree that scientific progress would be alarmingly threatened.\textsuperscript{195}

Therefore, competing scientists in a commercial industry could likely protect their unpublished research data under a theory of unfair competition by misappropriation. If one of the scientists was a government employee, however, this defense would not be available in light of FOIA—even if all other circumstances were the same.

B. Trade Secrets

The primary purpose of trade secret protection is based in utilitarian theory, promoting investment in proprietary and valuable in-
formation by prohibiting others from unlawfully acquiring that information for commercial profit.\textsuperscript{196} A trade secret is commonly defined as:

information . . . [that] derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use, and is the subject of efforts that are reasonable under the circumstances to maintain its secrecy.\textsuperscript{197}

Since this doctrine deals only with protection of information of economic value, it does not apply to cases where scientific research is unassociated with commercial profit.\textsuperscript{198} Therefore, government scientists are not protected from disclosure under a theory of trade secrets because their work is not intended to be commercially viable.\textsuperscript{199}

Trade secret claims are comprised of three elements: (1) proper subject matter; (2) acquisition of information by improper means; and, (3) implementation of reasonable precautions.\textsuperscript{200} Even if a private scientist becomes involved in a lawsuit where confidential research data is at the forefront, the scientist can obtain a protective order at the outset of litigation in order to prevent disclosure to the general public.\textsuperscript{201} In a FOIA lawsuit, a protective order would be antithetical to the very purpose of the requesting party's claim and would therefore not be allowed.\textsuperscript{202}

1. Proper Subject Matter

The Restatement of Torts suggests six factors to assist in determining whether information qualifies as a trade secret: (1) the extent

\textsuperscript{196} Merger, et al., supra note 175, at 36.

\textsuperscript{197} Id. at 35 (citing the Uniform Trade Secrets Act, with 1985 Amendments § 1(4)). Although no single definition applies in all jurisdictions, forty states and the District of Columbia have adopted the provisions of the Uniform Trade Secrets Act in some capacity. Id. at 34.

\textsuperscript{198} See Uniform Trade Secrets Act, § 1 (4) (amended 1985).

\textsuperscript{199} Seegenerally Ctr. for Auto Safety v. Nat'l Highway Traffic Safety Admin., 93 F. Supp. 2d 1 (D.D.C. 2000) (finding that manufacturer supplied information on automobile air bags was commercially valuable and thereby protected from disclosure under FOIA Exemption 4).

\textsuperscript{200} Merger, et al., supra note 175, at 35–36.

\textsuperscript{201} See Fed. R. Civ. P. 26(c) (7) (allowing courts to grant protective orders for trade secret or other confidential research information).

\textsuperscript{202} See id.
of distribution of the information outside the plaintiff's business; (2) the extent of distribution of the information inside the plaintiff’s business; (3) the measures taken to keep the information secret; (4) the value of the information; (5) the effort or money expended in developing the information for profit; and, (6) the ease of acquiring the secret through reverse engineering. These factors provide guidance and do not constitute an exhaustive list of considerations; furthermore, every factor does not need to be present in order to prove proper subject matter.

For example, modifications made to a furnace by the plaintiff company in *Metallurgical Industries, Inc. v. Fourtek* constituted a trade secret because the plaintiff demonstrated the third, fourth, and fifth factors listed above. The plaintiff took numerous security measures, restricting access to its modified furnaces to authorized personnel who signed nondisclosure agreements. The furnace modifications allowed the company to perform a highly profitable “zinc recovery process,” thereby demonstrating the commercial value of the trade secret and the advantage acquired over the competition. Lastly, the court recognized that the plaintiff spent a great deal of time, money, and effort in developing the modifications. Overall, the court applied a somewhat subjective test: if the plaintiff treats the information like a trade secret, it probably is a trade secret. A commercial scientist, therefore, will likely be able to prove that his or her research data constitute proper trade secret subject matter if the trade secret holder allows only limited disclosure in an effort to maintain secrecy.

2. Acquisition of Information by Improper Means

If the subject matter is appropriate for trade secret protection, the court must then determine whether the information was discov-

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203 See *Restatement of Torts* § 757, comment b (1939).
205 See *Metallurgical Indus., Inc.*, 790 F.2d at 1201–02.
206 See id. at 1199.
207 Id. at 1201.
208 See id.
209 See id. at 1199–1200.
210 See id.
ered by improper means or breach of confidence.\textsuperscript{211} Courts generally agree that a trade secret may be acquired legally through reverse engineering—purchasing a product, dismantling it to determine its design and function, and then using those determinations to create a new product for commercial use.\textsuperscript{212} It may not, however, be taken by "means which fall below the generally accepted standards of commercial morality and reasonable conduct."\textsuperscript{213} For example, a company may not bribe or otherwise illegally induce a competitor's employees to reveal confidential information.\textsuperscript{214}

In the context of scientific research, unpublished studies are not publicly available for purchase. Therefore, this situation precludes the lawful option of reverse engineering. Any other attempt to acquire such information outside the realm of litigation and a discovery request would therefore be considered improper.\textsuperscript{215}

3. Implementation of Reasonable Precautions

The majority of states require plaintiffs to demonstrate the third element of taking reasonable precautions to maintain secrecy.\textsuperscript{216} This element is similar to the third element suggested for determining proper subject matter: measures taken to keep the information secret.\textsuperscript{217} In both cases, the plaintiff must intend for the information to remain secret and must further manifest that intention by making a reasonable effort to uphold secrecy.\textsuperscript{218}

\textsuperscript{211} See Merges et al., supra note 175, at 65. This discussion is limited to situations involving improper means. For a court opinion dealing with breach of a confidential relationship, see Smith v. Dravo Corp., 203 F.2d 369, 373 (7th Cir. 1953).

\textsuperscript{212} See Merges et al., supra note 175, at 70.

\textsuperscript{213} E.I. duPont deNemours & Co., Inc. v. Christopher, 431 F.2d 1012, 1016 (5th Cir. 1970) (citing Restatement of Torts § 757, comment f (1939)) (holding that aerial photography of construction of an industrial plant constituted improper means of obtaining a trade secret).


\textsuperscript{215} See Restatement (Third) of Unfair Competition § 43 (1995) (defining improper means to include "theft, fraud, unauthorized interception of communications, inducement of or knowing participation in a breach of confidence, and other means either wrongful in themselves or wrongful under the circumstances of the case.").

\textsuperscript{216} See Merges et al., supra note 175, at 34. Most states follow the Uniform Trade Secrets Act which includes this requirement. See id.

\textsuperscript{217} See discussion supra Part III.B.1.

\textsuperscript{218} See Electro-Craft Corp. v. Controlled Motion, Inc., 332 N.W.2d 890, 901 (Minn. 1983) (finding that security measures are not per se required, but that the level of effort expended to maintain secrecy must be proportional to the level of industrial espionage expected in the plaintiff's industry).
The court in Electro-Craft Corp. v. Controlled Motion, Inc., for example, found that the plaintiff did not make reasonable efforts to maintain secrecy of the designs of its electric motors.\textsuperscript{219} Although the company did remove confidential information from its publications and require some employees to sign confidentiality agreements, these steps were not enough.\textsuperscript{220} More often, the court decided, the plaintiff "treated its information as if it were not secret" by sending technical documents to customers and vendors and failing to label them as confidential, allowing unrestricted document access to employees, and also giving informal tours without providing any warnings about confidentiality.\textsuperscript{221} Since the plaintiff could not prove that it implemented reasonable precautions to maintain secrecy, it could not establish the existence of a trade secret.\textsuperscript{222}

In the commercial industry, it is likely that a science-based company will take reasonable measures to maintain the secrecy of its research studies, thereby protecting its scientists’ work as trade secret information. If a company can show that it took reasonable measures, such as requiring confidentiality agreements from researchers, limiting employee disclosure, restricting employee access, and providing warnings as to confidentiality,\textsuperscript{223} then the company will probably meet its threshold burden of proving that the scientific data at issue constitute a trade secret.\textsuperscript{224}

C. Relevance

In ordinary civil litigation, Federal Rule of Civil Procedure 26(b)(1) limits discovery to information that is “relevant to the subject matter involved in the action.”\textsuperscript{225} Although this is a low threshold

\textsuperscript{219} See id. at 893, 903.
\textsuperscript{220} Id. at 901–02.
\textsuperscript{221} Id. at 903. In addition, two of the plaintiff’s industrial plants held open houses where the public was allowed to view manufacturing processes. Id.; see also K-2 Ski Co. v. Head Ski Co., 506 F.2d 471, 474 (9th Cir. 1974) (finding that limited tours of a ski manufacturing plant did not destroy secrecy because it was impossible to discover the secret during the tour).
\textsuperscript{222} Electro-Craft Corp., 332 N.W.2d at 903.
\textsuperscript{223} See id. at 902–03.
\textsuperscript{224} See discussion supra Part III.B.1. While a court would accord trade secret status to economically valuable scientific research performed by scientists in commercial industries, similar research performed by government scientists (and academicians) would not be protected under this doctrine because non-commercial information is outside the scope of trade secrets. See discussion supra Part III.B.
\textsuperscript{225} Fed. R. Civ. P. 26(b)(1).
that has been interpreted broadly by the courts, it still provides a restriction on disclosure that government scientists do not enjoy in light of FOIA.

D. Privilege

Like government scientists, private scientists may withhold requested information under a claim of privilege. The application of the attorney-client and attorney work product privileges, however, are limited when considered in relation to protecting scientific research. For instance, the court in Burton v. R.J. Reynolds Tobacco Co. held that communications made to an attorney regarding defendant’s tobacco research could only be protected by the attorney-client privilege if there was a “connection between the scientific information . . . and the rendering of legal advice.” No such nexus was found. Similarly, the plaintiff did not successfully claim work product immunity over that same research because “there was a lack of any relationship between the scientific analysis and any identifiable litigation. . . . The documents themselves reveal[ed] no reference to litigation.” Thus, in response to requests for scientific research materials, these two privileges provide a relatively weak defense.

Despite the limited nature of the attorney-client and attorney work product privileges in both the private and public sectors, private scientists have another privilege at their disposal—namely, the researcher’s privilege—which has only been recognized in cases involving non-governmental scientists. Currently, this privilege provides the private sector with an additional legal basis for nondisclosure that is only theoretically available to government scientists.

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226 See, e.g., Rywkin v. N.Y. Blood Ctr., No. 95 Civ. 10008, 1999 U.S. Dist. LEXIS 9570, at *6–8 (S.D.N.Y. June 22, 1999) (granting discovery order for scientific research materials because requested information was relevant to plaintiff’s ability to prove discriminatory termination).

227 See discussion supra Part II.A.3.

228 See Fed. R. Civ. P. 26(b)(1); see also discussion supra Part II.A.3.

229 See discussion supra Part II.A.1.

230 See discussion supra Part II.A.2.


233 See id. at 328.

234 Id.

235 See discussion supra Part II.A.3.b.

236 See discussion supra Part II.A.3.b.
Arguably, government scientists may claim a wider variety of privileges than private scientists. While both groups can claim attorney-client, work product, and researcher's privileges,237 only government scientists can additionally claim a deliberative process privilege.238 This apparent advantage, however, falls short when viewed from a larger perspective of the strengths of all possible defenses. In this sense, private scientists have more legal theories at their disposal (e.g., unfair competition, trade secret protection, and relevance)239 than government scientists have.

IV. ANALYSIS: ADVANTAGES OF PRIVATE SCIENTISTS OVER PUBLIC SCIENTISTS

Is the deliberative process privilege under Exemption Five enough to protect government scientists from disparate treatment when faced with a request for disclosure of their unpublished research? Given the current judicial trend in FOIA lawsuits, the chips seem to be stacked against the government scientists.

Even at the outset of a disclosure request, government scientists are at a disadvantage. A FOIA request is relatively simple, and an individual or group does not need attorney representation in order to submit a request to a federal agency.240 In contrast, to request comparable information from a private scientist, the requesting party must identify a cause of action and initiate litigation because there is no public right to acquire information from private entities.241 Commencement of litigation prior to a disclosure request is just one of many hurdles that protects scientists in the private sector, but does not shield government scientists under similar circumstances.

Once a case enters litigation, parties adverse to private scientists must demonstrate relevance in order to compel disclosure.242 If the requested records are not relevant to the litigation, disclosure cannot be ordered.243 In FOIA lawsuits, however, relevance is immaterial and

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237 Recall that the researcher's privilege provides a weak claim for private scientists and a claim of unknown success for government scientists. See discussion supra Part II.A.3.b.
238 See discussion supra Part II.A.4.
239 See discussion supra Parts III.A–C.
241 See discussion supra Part I.
242 See Fed. R. Civ. P. 26(b) (1).
243 See id.
places no hindrance on a disclosure request aimed at a government scientist.244

Protective orders can also limit disclosure in cases involving private scientists,245 avoiding the potential harms of full public disclosure.246 In fact, commercial scientists, comprising a subset of private scientists which does not include academicians, can avoid disclosure altogether under theories of unfair competition247 and trade secret protection.248 Such defenses are simply not available to federal agencies trying to protect their scientists from undue exposure. Rather, the agencies are strictly limited to the nine narrow exemptions provided under FOIA249—most notably, the deliberative process privilege under Exemption Five.250

Not only is this disparate treatment unfair to government scientists, but it also brings a number of policy issues to the forefront which parallel FOIA's Exemption Five objective of protecting the quality of agency decisions. If government scientists are forced to disclose their unpublished research, their careers and publication prospects will be significantly harmed. The credibility of the scientists will be seriously threatened by the release of unendorsed conclusions based on research data they collected.251 Coupled with the fact that monetary compensation in government employment is typically lower than that which is offered to scientists in commercial industries,252 losing the renown that accompanies fruitful research studies would eliminate a major incentive for scientists to take positions in government agencies.

Once an agency loses the ability to provide meaningful incentive to its scientists, it is likely that those scientists would pursue careers in the private sector where the salaries are higher and their work would be protected.253 Without scientific expertise, the agency itself would lose credibility which, in turn, would have a direct effect on the

244 See Forsham v. Califano, 587 F.2d 1128, 1134 (D.C. Cir. 1978).
245 See Fed. R. Civ. P. 26(c) (7).
246 See, e.g., Dow Chem. Co. v. Allen, 672 F.2d 1262, 1273 (7th Cir. 1982).
247 See discussion supra Part III.A.
248 See discussion supra Part III.B.
250 See discussion supra Part II.A.4.
251 See Allen, 672 F.2d at 1273.
253 See id. at 900.
agency's capacity to make quality decisions based on technical information.

Congress established, and courts have interpreted, Exemption Five to maintain the quality of agency decisions by protecting agency decision-makers from having to "operate in a fishbowl." If an agency cannot retain its scientists because FOIA exposes them to an unfair intrusion into the scientific process, then operating in a "fishbowl" seems like a minor problem for an agency in comparison to the challenge of making quality technical decisions in the absence of quality technical staff.

In light of this larger objective (protecting the quality of agency decisions), courts should be prepared to take a more flexible approach to interpretation of FOIA's deliberative process privilege as applied to scientific research. This particular scenario of a government scientist refusing to disclose unpublished research data has yet to come before a court. Furthermore, very few FOIA cases have reached the Supreme Court in recent years, greatly limiting the amount of precedent a lower court could turn to for assistance in making a ruling on this issue. Therefore, courts may get the opportunity to establish a new interpretation of Exemption Five and the deliberative process privilege.

Given the current judicial trend, a flexible interpretation of Exemption Five probably poses the largest problem in relation to scientific raw data which are largely factual in nature. Although the fact/policy distinction, applied universally by the courts, could easily subject raw data to mandatory disclosure, it is also possible that such information could be deemed "inextricably intertwined" with policy matters because scientific research is not performed in a

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254 See Petroleum Info. Corp. v. U.S. Dep't of the Interior, 976 F.2d 1429, 1434 (D.C. Cir. 1992) (citation omitted); see also discussion supra Part II.

255 In the last ten years, the Court has decided only one FOIA case which specifically addressed Exemption 5. See Dep't of the Interior v. Klamath Water Users Protective Ass'n, 532 U.S. 1, 8 (2001) (finding that FOIA Exemption 5 did not protect water allocation documents generated by Indian tribes because the documents did not constitute internal agency memoranda).

256 See discussion supra Part II.B.

257 See, e.g., Mead Data Cent., Inc. v. U.S. Dep't of the Air Force, 566 F.2d 242, 256 (D.C. Cir. 1977); Montrose Chem. Corp. v. Train, 491 F.2d 63, 67-68 (D.C. Cir. 1974); Nat'l Wildlife Fed'n v. U.S. Forest Serv., 861 F.2d 1114, 1116 (9th Cir. 1988); see also discussion supra Part II.A.4.a.

258 See discussion supra Part II.A.4.b.
vacuum and is more often the result of intermediary analysis and deliberation among peers within a scientific research department.\textsuperscript{259} Since most agency research is commissioned for use in making some future agency decision, the research will likely qualify as predecisional.\textsuperscript{260} The next significant hurdle would be the determination of whether scientific research is deliberative—that is, whether scientific deliberations are equivalent to policy deliberations.\textsuperscript{261} Although science is indeed largely objective, many unknowns remain as knowledge and technology develop. Therefore, deliberations regarding various scientific judgments, opinions, and theories will always play a major role in scientific research.\textsuperscript{262}

**CONCLUSION**

If Exemption Five of FOIA is not recognized by courts as a mode of protecting government scientists from unfair intrusion, then scientific researchers who choose to work for a federal agency will be at a severe disadvantage in relation to their private sector counterparts. Alternatively, by accepting the foregoing argument, scientific research can be legally protected from disclosure under FOIA's deliberative process privilege, and the objective of Exemption Five can be preserved. Furthermore, the potential for a major loss in incentives for government scientists can be averted, thereby upholding the quality of technical agency decisions by maintaining a high level of expertise within the government. This question of how to interpret Exemption Five will likely require an answer in the near future as scientific governmental research is increasingly brought to the forefront of public concern in such areas as stem cell research,\textsuperscript{263} anthrax testing,\textsuperscript{264} and human cloning.\textsuperscript{265}

\textsuperscript{260} See discussion supra Part II.A.4.c.
\textsuperscript{261} See discussion supra Part II.A.4.c.
\textsuperscript{262} See McGarity, supra note 259, at 740–47.