Question 1: In Massachusetts, do citizen scientists listed as authors or co-authors on published scientific papers face any liability for claims like libel, slander, or defamation?

Under Massachusetts law, a claim against the author of a scientific paper alleging that the paper contained false statements that harmed the plaintiff could involve two types of claims, defamation and commercial disparagement. Defamation encompasses other common law claims like libel and slander. Commercial disparagement is similar to defamation, as both claims concern harmful and false statements, and are both subject to an affirmative defense of substantial truthfulness. But whereas defamation is a claim about harm to reputation, commercial disparagement includes both harm to reputation as well as harm to the economic interests of a person or company.

A. Defamation

Statements of Opinion or Fact? The first issue in assessing a potential defamation claim is whether the challenged statements are actionable assertions of fact or statements of opinion that are constitutionally protected. Whether a statement constitutes fact or opinion depends on the totality of the circumstances, including “all the words used,” any “cautionary terms used by the person publishing the statement,” and “the medium by which the statement is disseminated and the audience to which it is published.” Opinions are often characterized as statements that are imprecise or open to speculation. Scientific conclusions, however—for example concerning the nature, toxicity, or safety of a product or output from a facility—especially those published in scientific journals—are more likely to be found statements of fact, or opinions that imply an assertion of fact. Accordingly, scientific findings and determinations are subject to defamation claims. Whether such an analysis applies in a commercial disparagement context is unclear.

To prevail on a defamation claim under Massachusetts law, a plaintiff must further establish that:

a. the defendant made a statement, concerning the plaintiff, to a third party;
b. the statement could damage the plaintiff’s reputation in the community;

c. the defendant was at fault, either by actual malice or negligence, in making the statement; and

d. the statement either caused the plaintiff economic loss (i.e., “special damages” or “special harm”), or is actionable without proof of economic loss.8

These factors will be analyzed in more detail in our discussion below regarding commercial disparagement as the underlying elements of a defamation claim and commercial disparagement claim are almost indistinguishable, and because the two causes of action often “merge when a disparaging statement about a product reflects on the reputation of the business that made, distributed, or sold it.”9 It should be noted, however, that defamation claims have slightly lower bars in terms of falsehood and knowledge of falsehood as compared to commercial disparagement claims, and defamation claims may be brought without proof of economic loss.

**Fault**—While a showing of actual malice (i.e., the defendant knew the statement was false, or acted with reckless disregard of its veracity) is necessary for a commercial disparagement claim, to prevail in a defamation lawsuit, it is sufficient for a private plaintiff to establish that the speaker was negligent in making the statement.10 The plaintiff need only prove that the speaker failed “to act reasonably in checking on the truth or falsity of the [challenged] communication before publishing it[,]” recognizing “[c]ustoms and practices within the profession.”11 As citizen scientists are generally laypersons (i.e., individuals without professional or specialized knowledge in a particular subject), but are otherwise acting in an academic or scientific capacity, it is unclear whether Massachusetts courts will hold them to a higher standard than other laypeople.

**Proof of Economic Loss**—Defamation suits, unlike commercial disparagement actions, do not require a showing of specific economic injury.12

### B. Commercial Disparagement

Commercial disparagement claims have five requirements, or elements, that a person bringing a lawsuit must prove:

a. the defendant published a statement that was false;

b. the statement was “of and concerning” the plaintiff (or its products or services);

c. the defendant knew the statement was false, or acted with “reckless disregard” of its veracity;

d. financial harm [or reputational harm, for defamation suits] to the plaintiff was intended or foreseeable; and

e. publication of the statement actually resulted in financial loss for the plaintiff.13
**Falsity**—The person or organization bringing the lawsuit has to prove that the statement published (in a scientific article, news article, blog post, or otherwise) was actually false. For commercial disparagement especially, this is a fairly high bar. Not only does the plaintiff have the burden of showing that the statements are demonstrably false, but the plaintiff may also have to establish that the statement was expressed as a fact rather than an opinion (although this requirement is unclear). For scientific articles, Massachusetts courts have not deferred to articles’ peer-reviewed status as intrinsically vouching for their truthfulness, but they have noted that academic journals satisfy the standard of being “published.” Consequently, in assessing veracity, courts may take note of: (1) the authors’ credentials, such as their experience, degrees, licenses and certifications, and affiliations with respected institutions; (2) the reputation and rigor of review of the publishing academic journal, news organization, etc.; and (3) the article’s acknowledgement of possible flaws and limitations in the study’s methodology.

For citizen scientists participating in an academic study hosted by a university, much of this analysis will likely focus on the lead researchers and their design of the study, the institution, and the method of peer-review and publication. For citizen scientists acting alone, on the other hand, courts will likely review the citizen scientists’ training and past experience, the reputation of the host organization (if applicable), and most importantly, the methodology used in the study (e.g., whether the data was processed by a certified laboratory) and the study’s design limitations.

**“Of and Concerning”**—The plaintiff must prove that the statement or article was specifically “of and concerning” the plaintiff’s product or service. This is sometimes called the specific reference requirement, and limits the group of people who can claim disparagement or defamation to those who are specifically named or targeted. In Massachusetts, this element can be satisfied by showing that either (1) reference to the plaintiff was both intended and understood, or (2) the statement could be understood as implicitly referencing the plaintiff, and the defendant was negligent in publishing it as such. This means that if a scientific paper does not reference a facility, manufacturer, or brand name, and could not be reasonably understood as doing so, then there is likely no liability for defamation or commercial disparagement.

**Knowledge of Falsity**—This element is sometimes referred to in defamation contexts as “actual malice,” not with regard to ill-will toward the company or person referred to, but with regard to whether the defendant published the statement “with knowledge that it was false or with reckless disregard of whether it was false or not.” Massachusetts has adopted a version of this standard in both defamation and commercial disparagement contexts. Massachusetts courts have generally viewed peer-reviewed articles favorably in this regard, requiring plaintiffs to clearly prove that authors “entertained serious doubts about the truth of the challenged statements” before publishing.

In determining knowledge of falsity for scientifically-based statements, Massachusetts courts will look to the “scientific oversight that was an integral part of the clinical trial[,]” including: (1) whether the protocol for the study had approval from an official oversight body (e.g., an Institutional Review Board); (2) whether the study design and methodology followed federal or state agency guidance; (3) whether the study underwent a peer-review process; and (4) whether the authors “made changes to their draft of the article in response to the reviewers’ comments and suggestions.” For citizen scientists acting alone, this means that special attention must be paid to the methodology and practices used to gather, record, and analyze data; following federal
or state agency guidance on study design and protocol is likely to weigh against knowledge of falsity.

Massachusetts courts will not hold it against scientists if they identify limitations and shortcomings of their study design. “Scientific research is not characterized by perfect theories, flawless studies, and desired results; rather, the hallmarks of scientific research are continuous inquiry, testing, debate, disagreement, and revision.”25 Citizen scientists, therefore, who have no reason to doubt the accuracy of their data or claims beyond the reasonable design limitations of their study, are likely able to avoid liability for defamation or disparagement, especially if the limits of the study are acknowledged in the published article.

Knowledge of Pecuniary or Reputational Harm—For a disparagement or defamation suit to succeed, the plaintiff must prove that the defendant intended to cause, or knew that the publication was likely to cause, the plaintiff pecuniary (for disparagement) or reputational (for defamation) harm. For example, if a study were to show that a particular product had a negative environmental or health effect, the scientists involved would likely be aware that the publication of the study will impact the market for that product.26

Actual Pecuniary Damages or “Special Damages”—This element is only included in commercial disparagement suits. To demonstrate that there were “special damages,” the plaintiff must show “a specific loss of sales to identifiable customers” unless the statement was widely disseminated so that specific customers cannot be identified.27 Plaintiffs face a high burden of proof in establishing that the statement was “widely disseminated;” they can satisfy it “by circumstantial evidence showing that the loss [of the market] has in fact occurred, and eliminating other causes.”28 In sum, the plaintiff corporation has the burden of proving that, “as a direct and immediate consequence of the widespread dissemination of the challenged statements, it suffered pecuniary loss that was not attributable to other causes.”29

As a separate note, it is possible that a case for defamation or commercial disparagement could be brought only against the lead author(s) of a given paper, as in the most relevant Massachusetts case, HipSaver, Inc. v. Kiel, where the lead author of a published study demonstrating the inefficacy of hip protectors was unsuccessfully sued for commercial disparagement.30 In that case, the Supreme Judicial Court stated that “HipSaver sued only Kiel because, as lead author, he assumed full responsibility for the integrity of the clinical trial and the accuracy of the data.”31 It is not clear whether the Court meant that the lead author affirmatively claimed such responsibility, or that the Court imposed it on him because of his status as the lead author. In any case, if a citizen scientist were named as a co-defendant with the lead author(s), there would likely be a higher bar for the plaintiff to prove the third element, knowledge of falsity. A layperson or someone with less academic training in the relevant field would be less easily able to discern the veracity of scientific claims in an article, and a court may be less inclined to assign liability to a more minor contributor to the article.

In sum, citizen scientists are unlikely to face liability in Massachusetts for defamation or commercial disparagement as long as a published article is scientifically substantiated and the author has no reason to believe the statements included in the article are false.
C. Immunity & Defenses

Immunity—Under the Massachusetts Tort Claims Act (MTCA), a public employee generally will not be held liable for their negligent or wrongful acts or omissions while acting within the scope of their office or employment. There is an exception, however, for “any claim arising out of an intentional tort, including libel or slander; for such claims, public employees enjoy only a conditional privilege.” Public employees can lose this protection against liability if the “communication is made in such a way as to unnecessarily, unreasonably, or excessively publish it to others, as to whom the occasion is not privileged” or with actual malice. Accordingly, if a citizen scientist is employed by a public academic institution in order to complete a study, the citizen scientist may enjoy a limited degree of immunity from defamation and commercial disparagement claims arising from their published scientific conclusions.

Substantial Truth—As stated above, in a defamation case, the defendant may establish the substantial truth of their statements as an affirmative defense. Minor inaccuracies in the statements will generally not amount to falsity unless removal of such inaccuracies would have a different effect on the mind of the reader. In the case of libelous statements, substantial truth will serve as a justification for the statements unless the plaintiff proves actual malice.

Anti-SLAPP Motion—Even if researchers eventually prevail in defamation and commercial disparagement lawsuits, prolonged litigation may impose significant costs. When a plaintiff brings the suit with the goal of discouraging the defendant’s statements on matters of public concern, this type of frivolous claim is called a strategic lawsuit against public participation or SLAPP.

Massachusetts’ anti-SLAPP statute allows a defendant who believes they have been targeted in a SLAPP to file a special motion to dismiss the suit prior to completing discovery, thereby providing a remedy to the cost and time needed to defend against otherwise protracted litigation. To prevail on the special motion, the defendant must first establish that the plaintiff’s claim is based solely on the defendant’s protected petitioning activity, which may include:

a. any written or oral statement made before or submitted to a legislative, executive, or judicial body, or any other governmental proceeding;

b. any written or oral statement made in connection with an issue under consideration or review by a legislative, executive, or judicial body, or any other governmental proceeding;

c. any statement reasonably likely to encourage consideration or review of an issue by a legislative, executive, or judicial body or any other governmental proceeding;

d. any statement reasonably likely to enlist public participation in an effort to effect such consideration; or

e. any other statement falling within constitutional protection of the right to petition government.
If the defendant succeeds in establishing this “petitioning” element, then the plaintiff must show, “by a preponderance of evidence, that the special movant’s petitioning activity was devoid of any reasonable factual or legal support and that it caused the nonmoving party actual injury.”

In Cardno ChemRisk, LLC v. Foytlin, for example, a scientific consulting firm that BP had retained to assess the toxic effects of the Deepwater Horizon oil spill on cleanup workers brought defamation claims against environmental activists based on a blog posting they had written questioning the firm’s assessment of the toxic effects. In dismissing the defamation suit, the Massachusetts Supreme Judicial Court found that the anti-SLAPP statute “protects non-self-interested petitioning on behalf of the environment,” and that ChemRisk failed to provide minimal evidence showing a lack of reasonable basis in fact. The court also noted that the environmentalists offered affidavits and corroborating evidence to support their claims, such as other scholarly articles that had made similar assertions regarding the firm’s findings.

Question 2: In North Carolina, do citizen scientists listed as authors or co-authors on published scientific papers face any liability for claims like libel, slander, or defamation?

Under North Carolina law, a claim against the author of a scientific paper alleging that the paper contained false statements that harmed the plaintiff could involve two types of claims, defamation and unfair and deceptive trade practices. Our review of North Carolina case law did not reveal a case in which an academic professional or scientist was sued for defamation based on a published article. Nevertheless, we describe below the general legal standards for defamation and unfair and deceptive trade practices claims in North Carolina.

A. Categories of Defamation Claims

North Carolina recognizes libel and slander as the two main torts that comprise defamation. The distinction between the two categories is that generally “libel is written while slander is oral.” Similar to Massachusetts law, in order to recover for defamation, plaintiffs must show “that the defendant made false, defamatory statements of or concerning the plaintiff, which were published to a third person, causing injury to the plaintiff’s reputation.”

North Carolina recognizes three types of libel: (1) publications obviously defamatory which are called libel per se; (2) publications susceptible of two interpretations one of which is defamatory and the other not; and (3) publications not obviously defamatory but when considered with innuendo, colloquium, and explanatory circumstances become libelous, which are termed libels per quod. Each will be addressed in turn below.

Libel Per Se—For a claim of libel per se to succeed, the plaintiff must show that the “statements are subject to a single interpretation,” such that “the court can presume as a matter of law that they tend to disgrace and degrade the party or hold him up to public hatred, contempt or ridicule, or cause him to be shunned and avoided.” Libel per se statements include those remarks that (1) charge a person of having committed an infamous crime; (2) impeach a person in their trade or profession; (3) charge a person with having an infectious disease; or (4) claim the individual has committed other enumerated acts that tend to subject the individual to shame or contempt.
In order to determine whether such statements are defamatory, courts must view the remarks within their full context and interpret them in their ordinary meaning. “The law presumes that general damages actually, proximately and necessarily result from an unauthorized publication which is libelous per se,” and thus plaintiffs are not required to prove that actual pecuniary loss has in fact resulted under this type of defamation claim.

Whether scientific findings neatly fit into the libel per se category is unclear. While a citizen science publication may contain remarks regarding a polluting industry that are susceptible to a defamatory meaning, such findings could also likely be found to have multiple interpretations due to the inherent inconclusive nature of scientific inquiry.

**Dual Interpretation**—Under the second libel category, a publication may be found to be susceptible to two interpretations, one defamatory and the other not. Previous cases have held that ambiguous statements may be capable of more than one meaning, and thus fall into this category. When a claim falls into this category, a plaintiff needs “to prove that the defendant intended a defamatory meaning and that the recipients or readers understood the statement in a defamatory way.”

**Libel Per Quod**—For a defamation claim to fall into the third category, the plaintiff must be able to show that they suffered special damages. Defamation per quod arises when the utterance in question does not appear on its face to be defamatory, “but when considered in conjunction with innuendo, colloquium, and explanatory circumstances it becomes libelous.” In these cases, plaintiffs must allege and prove both the innuendo and the special damages caused. Special damages in defamation per quod cases refers to pecuniary loss, while emotional distress and mental suffering are not alone sufficient. Previous cases have required concrete findings that the plaintiffs have suffered economic loss; speculative allegations were not adequate to show pecuniary loss.

**B. Standard of Review for Defamation Claims**

Courts will next look to the nature of the parties to determine the applicable legal standard of review. “Where the plaintiff is a public official and the allegedly defamatory statement concerns his official conduct, he must prove that the statement was made with actual malice—that is, with knowledge that it was false or with reckless disregard of whether it was false or not.” On the other hand, where the plaintiff is a private entity, but the speech is of “public concern,” the appropriate standard is negligence. To determine whether a matter is of “public concern,” North Carolina courts will look at a non-exhaustive list of factors, including:

a. Whether the topic was discussed throughout the community, nationally or internationally;

b. Whether the topic was a matter of public study (e.g., is this topic discussed at educational institutions, such as universities?); and

c. Whether relevant oversight entities received communications from third parties concerning the topic.
Published scientific statements concerning environmental pollution would likely be considered by courts as matters of “public concern.” Thus, for most cases in which plaintiffs are private polluters, citizen scientist defendants will likely be subject to a negligence standard for liability. As under Massachusetts law, the more citizen scientists follow established methods and practices in gathering data and/or subject their findings to peer review, the less likely North Carolina courts are to find citizen scientists negligent in publishing their findings.

C. Unfair & Deceptive Trade Practices

A claim of unfair and deceptive trade practices requires proof of three elements: “(1) an unfair or deceptive act or practice, (2) in or affecting commerce,64 which (3) proximately caused actual injury to the claimant.”65 Under this statute, a libel per se of a type impeaching a party in its business activities qualifies as an unfair or deceptive act in or affecting commerce.66 A claim for unfair and deceptive trade practices would therefore necessarily depend upon the validity of plaintiff’s alleged defamation per se claim.67 To recover, a plaintiff must further establish that it suffered actual injury as a proximate result of the deceptive statement or misrepresentation.68

D. Immunity & Defenses

Immunity—Sovereign immunity may protect scientists employed by a public university who are sued for libel or slander. In White v. Trew, a tenured professor at North Carolina State University sued the head of his department for libel for an unfavorable performance review.69 Trew, the department head, was required by N.C. State to annually review the performance of every faculty member and to “keep the appropriate dean apprised of the status of the reviews.”70 In the annual review, Trew wrote that White had not met the department’s expectations and that White had engaged in inappropriate and disruptive conduct. After attempting to appeal the review through N.C. State processes, White sued for defamation. The North Carolina Supreme Court found that Trew was protected by sovereign immunity.

Truth—Truth is a defense to a defamation action under North Carolina law.71

---

2 See, e.g., McAvoy v. Shufrin, 518 N.E.2d 513, 517 (Mass. 1988) (“While the plaintiff bears the burden of alleging the falsity of the libel, it is up to the defendant to prove truth as an affirmative defense.”).
5 Lyons, 453 N.E.2d at 458.
6 Hi-Tech Pharm., Inc. v. Cohen, 277 F. Supp. 3d 236, 244 (D. Mass. 2016) (finding that plaintiff scientist’s “statements concerning the nature of Hi-Tech’s supplements and the safety of BMPEA” could fairly be read as statements of fact, and the final determination on the matter was for the jury to decide); see also HipSaver, Inc. v. Kiel, 984 N.E.2d 755, 765 n.11 (Mass. 2013) (“[T]he expression of an opinion based on disclosed, nondefamatory facts is not sufficient to establish a defamation claim. However, a statement cast in the form of an opinion may
imply the existence of undisclosed defamatory facts on which the opinion purports to be based, and thus may be actionable.”) (internal quotation marks and citations omitted).

7 *HipSaver, Inc.*, 984 N.E.2d at 765 n.11; see also RESTATEMENT (SECOND) OF TORTS § 623A (“The defamation rule has now been changed, and an expression of mere opinion is no longer actionable unless it is found to imply the existence of undisclosed defamatory facts justifying the opinion. This new rule is held to derive from the Constitution. A similar rule may now apply to injurious falsehood, either because the Constitution requires it or through decisions of the state courts by way of analogy to the similar tort of defamation. The blackletter to this Section does not purport to lay down a specific rule on this issue. It uses the single word, “statement,” without indicating whether the term is confined to a statement of fact or includes both fact and opinion.”) (citations omitted).

8 *Ravnikar*, 782 N.E.2d at 510-11.

9 *HipSaver, Inc.*, 984 N.E.2d at 762 n.6. Courts are, however, reluctant to “impute a lack of integrity to a corporation merely from a criticism of its product.” *Id.* (quoting *Dairy Stores, Inc. v. Sentinel Publ. Co.*, 104 N.J. 125, 133–134 (1986)).

10 *Hi-Tech Pharm., Inc.*, 277 F. Supp. 3d at 249-250.


12 *Ravnikar*, 782 N.E.2d at 510-11.


15 See *HipSaver, Inc.*, 984 N.E.2d at 765 n.11.

16 *Id.* at 763.

17 *Id.* at 760-61, 763-65.


22 See *HipSaver, Inc.*, 984 N.E.2d at 768; *Dulgarian*, 652 N.E.2d at 609.

23 See *HipSaver, Inc.*, 984 N.E.2d at 770.

24 *Id.* at 769.

25 *Id.* at 769.

26 See *id.* at 770-71.

27 *Id.* at 772–73.

28 *Id.* at 773 (quoting RESTATEMENT (SECOND) OF TORTS, § 633 comment h, at 357) (internal quotation marks omitted and emphasis added).

29 *Id.* at 775.

30 *Id.* at 759 n.2.

31 *Id.*

32 M.G.L. ch. 258 § 2.

33 *Id.* § 10(c); see also *Barrows v. Wareham Fire Dist.*, 976 N.E.2d 830, 838 (Mass. App. Ct. 2012) (“Statements made by public officials while performing their official duties are conditionally privileged.... The threat of defamation suits may deter public officials from complying with their official duties when those duties include the
need to make statements on important public issues.”) (quoting Mulgrew v. Taunton, 574 N.E.2d 389, 392 (Mass. 1991)).


35 M.G.L. ch. 231, § 92.


37 M.G.L. ch. 231, § 92.

38 For example, in a federal court case in Massachusetts, where Hi-Tech Pharmaceuticals lost its defamation lawsuit against a Harvard researcher for his research on the toxicity of the company’s supplements, the owner and CEO of Hi-Tech Pharmaceuticals, didn’t see the jury verdict as a loss: the “long and costly legal battle will scare away other academics from investigating the supplement industry.” Rebecca Robins, A Supplement Maker Tried to Silence a Harvard Doctor — and Put Academic Freedom on Trial, BUSINESS INSIDER (Jan. 10, 2017), https://www.businessinsider.com/supplement-maker-tried-to-sue-pieter-cohen-of-harvard-for-his-research-2017-1.

39 M.G.L. ch. 231, § 59H.


41 See id.

42 Id.

43 Id. at 1189 (“[T]he Legislature enacted the anti-SLAPP statute with anti-development activists in mind, many of whom were focused on protecting natural resources.”).

44 Id. at 1190-91.

45 Id.


48 See id. (citing Holleman v. Aiken, 668 S.E.2d 579 (N.C. App. Ct. 2008)).


53 Lewis, 725 S.E.2d at 601.

54 Renwick, 312 S.E.2d at 408 (quoting Flake v. Greensboro News Co., 195 S.E. 55, 59 (N.C. 1938)).

55 See, e.g., Griffin v. Holden, 636 S.E.2d 298, 303 (N.C. App. Ct. 2006); cf. Arnold v. Sharpe, 251 S.E.2d 452, 455 (N.C. 1979) (“Here we are not concerned with the second class since the language allegedly published was clear and unambiguous.”).


58 Hien Nguyen, 684 S.E.2d at 474.


See id. at 740-41.

“Commerce” includes all business activities except professional services rendered by a member of a learned profession. N.C. Gen. Stat. § 75-1.1(b). For example, “professional services rendered by an attorney in the course of his business are exempt under the statute and may not form the basis of an unfair or deceptive trade practices claim.” Boyce & Isley, PLLC, 568 S.E.2d 893 at 902.


Boyce & Isley, PLLC, 568 S.E.2d 893 at 902.

See, e.g., Craven, 656 S.E.2d at 733 (dismissing plaintiff’s claim for unfair and deceptive trade practices following dismissal of defamation per se claim).

See id.

White v. Trew, 736 S.E.2d 166 (N.C. 2013).

Id. at 167.

Boyce & Isley, PLLC, 710 S.E.2d at 317.