

# EVIDENTIARY ISSUES WITH THE USE OF CITIZEN SCIENCE IN LITIGATION

Shaun Goho  
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Harvard Law School  
**Emmett Environmental  
Law & Policy Clinic**



Art courtesy of Karen Lee Sobol

# Outline



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- Introduction
- Some evidentiary issues
- Suggested practices and recommendations

# CSA Law & Policy Working Group



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ABOUT CONFERENCE **WORKING GROUPS** JOURNAL BLOG JOIN

## Law and Policy Working Group

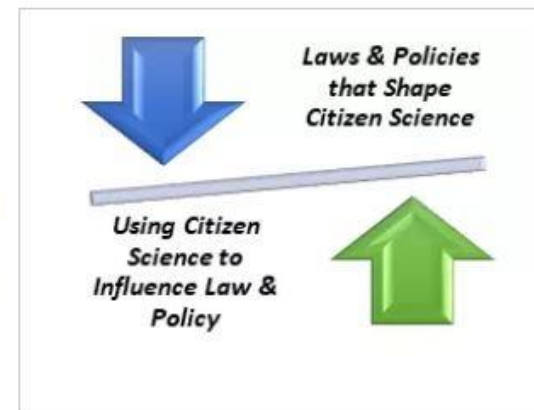
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## WELCOME TO THE LAW AND POLICY WORKING GROUP

Citizen science is used for a wide array of outcomes (see Data Use Spectrum below). These outcomes have historically focused on awareness raising and educating communities as well as scientific research as a means to determine the baseline health of people and their environment. Today, citizen science outcomes are increasingly expanding beyond education and research into influencing management and regulatory decisions and initiating new regulatory standards and legal enforcement through citizen suits. This working group was formed to focus efforts on understanding and disseminating information relating to the law and policy outcomes of citizen science. As such, the working group has identified two primary themes to guide the activities of the group:

1. **Laws and Policies that Shape Citizen Science and**
2. **Using Citizen Science to Influence Law and Policy.**



# CSA Law & Policy Working Group



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<https://www.citizenscience.org/working-groups/law-policy-working-group/>

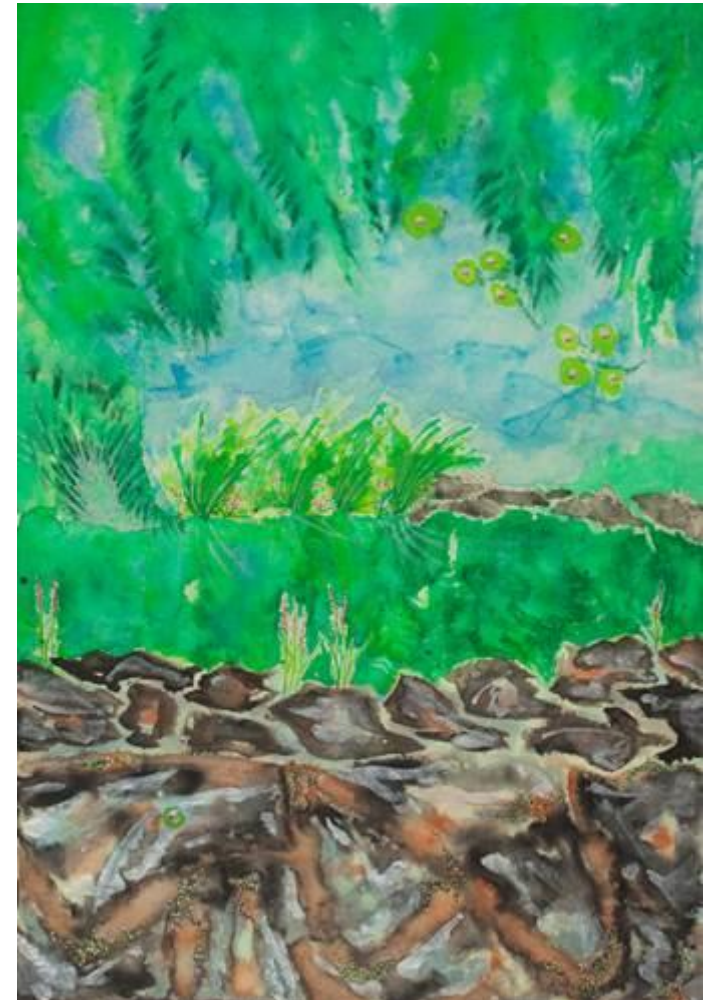


# Introduction



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- About the Emmett Clinic
- Our citizen science work



# Our Work So Far



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- Citizen Science Manual

A MANUAL FOR CITIZEN SCIENTISTS  
STARTING OR PARTICIPATING IN  
DATA COLLECTION AND  
ENVIRONMENTAL MONITORING  
PROJECTS



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March 2019 (2nd ed.)

# Citizen Science Manual



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## A MANUAL FOR CITIZEN SCIENTISTS STARTING OR PARTICIPATING IN DATA COLLECTION AND ENVIRONMENTAL MONITORING PROJECTS

[HTTPS://CITIZENSCIENCEGUIDE.COM/](https://citizenscienceguide.com/)

# Citizen Science Manual



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- Supplements to the Manual

*Using Citizen Science Evidence in Litigation – DRAFT*

## USING CITIZEN SCIENCE DATA IN LITIGATION



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March 2019 (DRAFT)



# Evidentiary Issues



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- Rule 11 certifications
- Rule against hearsay; authentication requirement
- Fact / opinion testimony distinction
- Expert / lay testimony distinction

# Rule 11 Certifications



## Federal Rule of Civil Procedure 11:

- An attorney who files a complaint, pleading, or motion certifies that “the factual contentions have evidentiary support or, if specifically so identified, will likely have evidentiary support after a reasonable opportunity for further investigation or discovery.”

# Rule 11 Certifications



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The lesson:

- Attorney must reasonably believe that the citizen science data provides a sound factual basis for claims

# Rule Against Hearsay



- Hearsay is not admissible unless an exception applies. Fed. R. Evid. 802.
- “Hearsay” is a statement made outside of testimony at the current trial or hearing that a party offers in evidence to prove the truth of the matter asserted in the statement.
- Potentially relevant exceptions: business records, present sense impression

# Rule Against Hearsay



An example: *Consol. Env'tl. Mgmt. v. Zen-Noh Grain*, 981 F. Supp. 2d 523 (E.D. La. 2013)

- Forms completed while making opacity observations
- Held: hearsay unless people who made observations could testify about them
- Held: business records and present sense impression exceptions inapplicable because made for litigation

# Authentication



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“To satisfy the requirement of authenticating or identifying an item of evidence, the proponent must produce evidence sufficient to support a finding that the item is what the proponent claims it is.”

- Fed. R. Evid. 901

# Hearsay / Authentication



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The lesson:

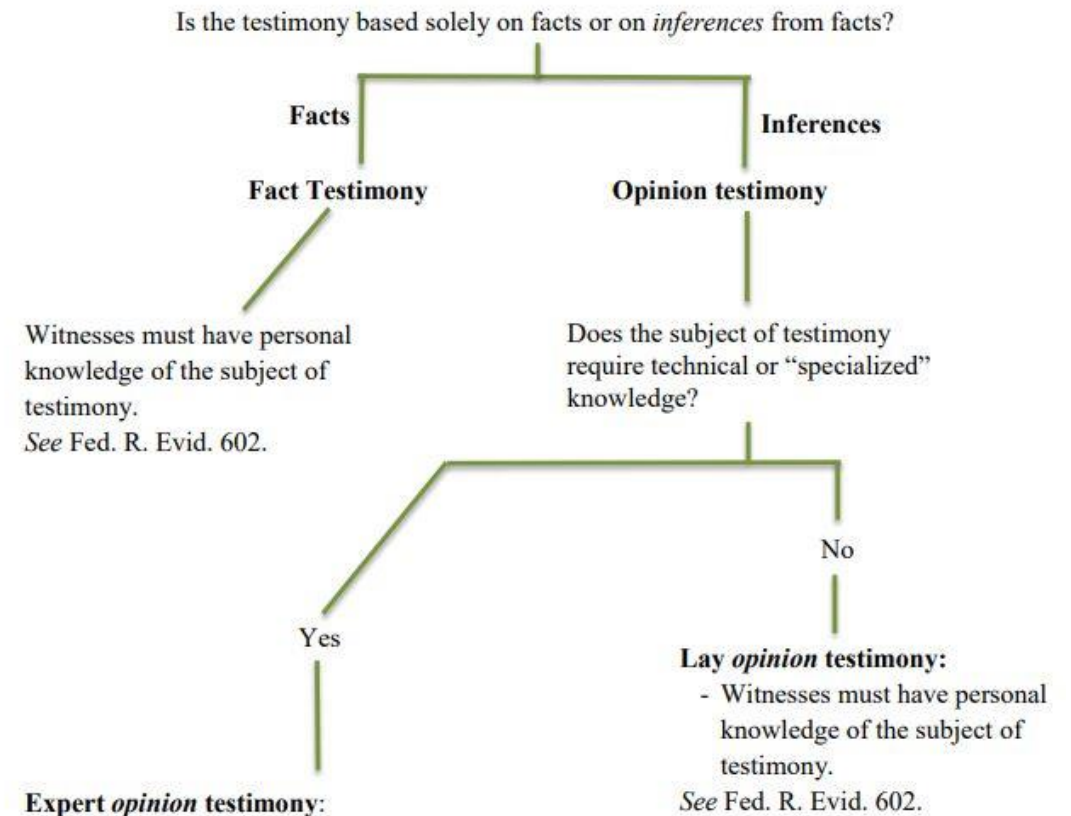
- Litigants need a witness to testify about methods and records of data collection

# Evidentiary Issues



- Fact vs. opinion testimony
- Lay vs. expert opinion testimony

Figure 1: Requirements of Expert and Lay Testimony





# Fact vs. Opinion Testimony



- Opinion testimony reflects “a belief based upon inferences drawn from ascertained or assumed facts.”
- Fact testimony does not include inferences or assumptions about facts.
- “In practice . . . the distinction between fact and opinion can be blurred, and even the most specific and detailed statements are in some measure the product of inference and reflection, as well as observation and memory.” *State v. Kinsel*, 545 N.W.2d 885, 990 (Iowa App. 1996).

# Lay vs. Expert Testimony



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- Federal Rules of Evidence 701 & 702
- *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579 (1993)

# Federal Rule of Evidence 701



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If a witness is not testifying as an expert, testimony in the form of an opinion is limited to one that is:

- (a) rationally based on the witness's perception;
- (b) helpful to clearly understanding the witness's testimony or to determining a fact in issue; and
- (c) not based on scientific, technical, or other specialized knowledge within the scope of Rule 702.

# Federal Rule of Evidence 702



A witness who is qualified as an expert **by knowledge, skill, experience, training, or education** may testify in the form of an opinion or otherwise if:

- (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;
- (b) the testimony is based on sufficient facts or data;
- (c) the testimony is the product of reliable principles and methods; and
- (d) the expert has reliably applied the principles and methods to the facts of the case.

# Examples of Lay Testimony:



- *Ellis v. Gallatin Steel Co.*, 390 F.3d 461 (6th Cir. 2004): direct observation and photos of dust from factories landing on farms
- *State of Ga. v. City of E. Ridge, Tenn.*, 949 F. Supp. 1571, 1577 (N.D. Ga. 1996): eyewitness testimony and videos of raw sewage overflowing out of a manhole

# Examples of Lay Testimony:



- *Concerned Area Residents for Env't v. Southview Farm*, 34 F.3d 114 (2d Cir. 1994): direct observation of manure application on fields and manure flowing into ditch
- *Cmty. Ass'n for Restoration of the Env't v. Henry Bosma Dairy*, 305 F.3d 943, 954 (9th Cir. 2002): “testimony presented at the trial of residents who live in the area who stated that they had seen manure wastewater applied to the field and spilling into the Canal”

# Daubert test



Trial court judge must decide whether to admit expert testimony, based on:

- Whether the methodology or theory can be or has been **tested, peer reviewed, or published.**
- The known or potential **rate of error** for the methodology or technique.
- The existence and maintenance of **standards** controlling the operation of the methodology.
- The degree to which the methodology or theory is **generally accepted in the relevant scientific community.**

# *Daubert* and Citizen Science



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“The notion that *Daubert* . . . requires particular credentials for an expert witness is radically unsound. The Federal Rules of Evidence, which *Daubert* interprets rather than overrides, do not require that expert witnesses be academics or PhDs. . . . Anyone with relevant expertise enabling him to offer responsible opinion testimony helpful to judge or jury may qualify as an expert witness.”

*Tuf Racing Prod., Inc. v. Am. Suzuki Motor Corp.*, 223 F.3d 585, 591 (7th Cir. 2000).



# *Daubert* and Citizen Science



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Applying the *Daubert* factors:

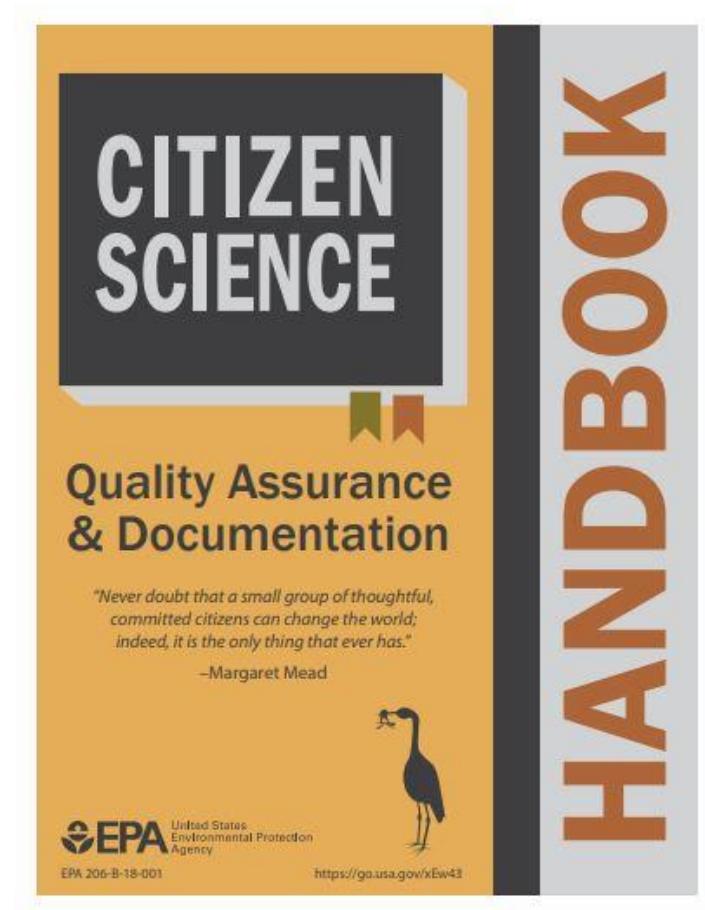
- Tested?
- Rate of error?
- Standards?
- Generally accepted?

# Suggested Practices



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- Train volunteers
- Document all activities
- Follow QAPP or other standardized QA/QC protocol
- Look at EPA Citizen Science QA & Documentation Handbook (Mar. 2019)



# Suggested Practices



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- Use air sensors that score well in SCAQMD Tests

# Recommendations



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- Agencies develop regulatory benchmarks for sensors
- Scientific community indicate what is necessary for CitSci to be generally accepted

## **AIR SENSORS 2019:**

EPA's Second Workshop on Deliberating Performance Targets for Air Quality Sensors

July 16, 2019

Sheraton Imperial Hotel  
Durham, North Carolina

# Follow-Up



Harvard Law School  
Emmett Environmental  
Law & Policy Clinic

## Shaun Goho

Deputy Director &  
Senior Staff Attorney

Harvard Law School

Emmett Environmental  
Law & Policy Clinic

[sgoho@law.harvard.edu](mailto:sgoho@law.harvard.edu)

