Lessons in Leadership: Leading the Way on Rocky Terrain

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University of Waterloo

Maura Grossman Law

How Do You Get From Here to There?

Clinical Psychologist and Hospital Administrator in New York City

Litigator at a Wall Street Law Firm → **eDiscovery Lawyer**

Research Professor (in a top CS Department, without ever taking a college math or computer science course) at **U Waterloo** and **Adjunct Professor** at **Osgoode Hall Law School**

Director of Women in Computer Science

Wes Graham Faculty Fellow

Lessons Learned Along the Way

1. **Be honest with yourself about your strengths and weaknesses**
   - **"Get used to it" or "grow up already" don't work so well when you're a psychologist**

2. **Play to your strengths and interests rather than trying to fix your shortcomings**
   - **Don't be afraid of specializing**
   - **Become a "go-to" person (*i.e.*, indispensable)**
   - **The same rule applies to managing others**

3. **Leap, even if you are risk averse**
   - **Reinvent yourself (over and over again)!**

Lessons Learned Along the Way (Cont'd)

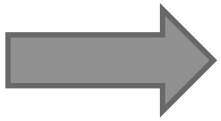
4. **True innovation comes from solving <u>real</u> problems that you are passionate about**
   - **Don't follow the bandwagon or the naysayers; chart your own course**

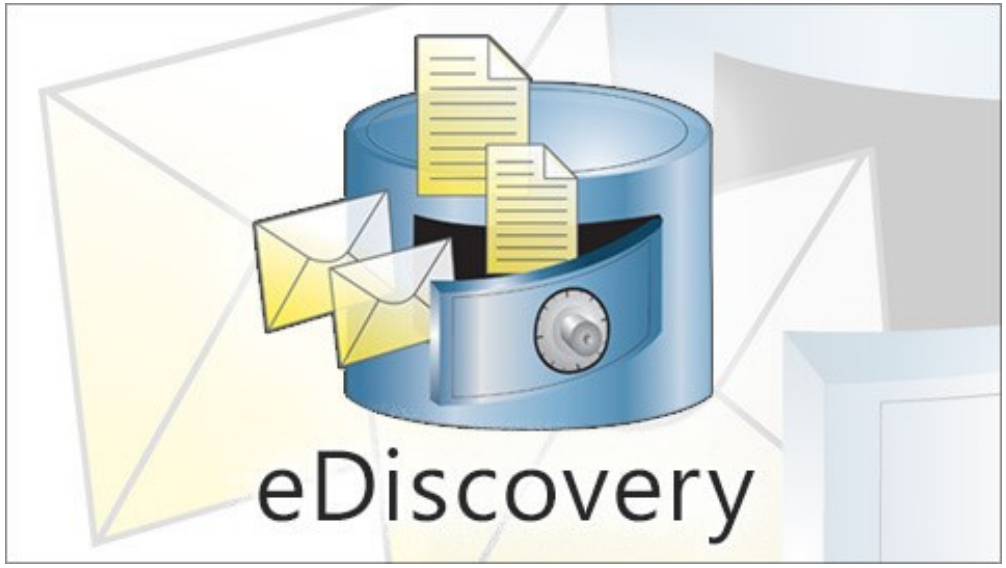
5. **<u>You can have impact or get recognition, but not both</u>**
   - **It is often hard to have a voice as a woman**
   - **Sometimes the recognition comes later, from sources where you least expect it**

6. **Persevere and develop a thick skin when the going gets rough**
   - **"On crack"; "Not a team player"; "Too [whatever]"**

7. ***Carpe Diem!***
   - **You never know where things will lead . . .**

In the Beginning . . .





The Text REtrieval Conference ("TREC")

National Institute for Standards and Technology ("NIST")

Legal Track 2006 – 2011
Total Recall Track 2015 – 2016

Lawyers vs. Algorithms

TECHNOLOGY-ASSISTED REVIEW IN E-DISCOVERY CAN BE MORE EFFECTIVE AND MORE EFFICIENT THAN EXHAUSTIVE MANUAL REVIEW

By Maura R. Grossman* & Gordon V. Cormack† **

Cite as: Maura R. Grossman & Gordon V. Cormack, *Technology-Assisted Review in E-Discovery Can Be More Effective and More Efficient Than Exhaustive Manual Review*, XVII RICH. J.L. & TECH. 11 (2011), http://jolt.richmond.edu/v17i3/article11.pdf.

TREC 2009 Topics Used in the 2011 Grossman & Cormack Study

Topic	Request for Production
201	All documents or communications that describe, discuss, refer to, report on, or relate to the Company's engagement in structured commodity transactions known as "prepay transactions."
202	All documents or communications that describe, discuss, refer to, report on, or relate to the Company's engagement in transactions that the Company characterized as compliant with FAS 140 (or its predecessor FAS 125).
203	All documents or communications that describe, discuss, refer to, report on, or relate to whether the Company had met, or could, would, or might meet its financial forecasts, models, projections, or plans at any time after January 1, 1999.
204	All documents or communications that describe, discuss, refer to, report on, or relate to any intentions, plans, efforts, or activities involving the alteration, destruction, retention, lack of retention, deletion, or shredding of documents or other evidence, whether in hard-copy or electronic form.
207	All documents or communications that describe, discuss, refer to, report on, or relate to fantasy football, gambling on football, and related activities, including but not limited to, football teams, football players, football games, football statistics, and football performance.

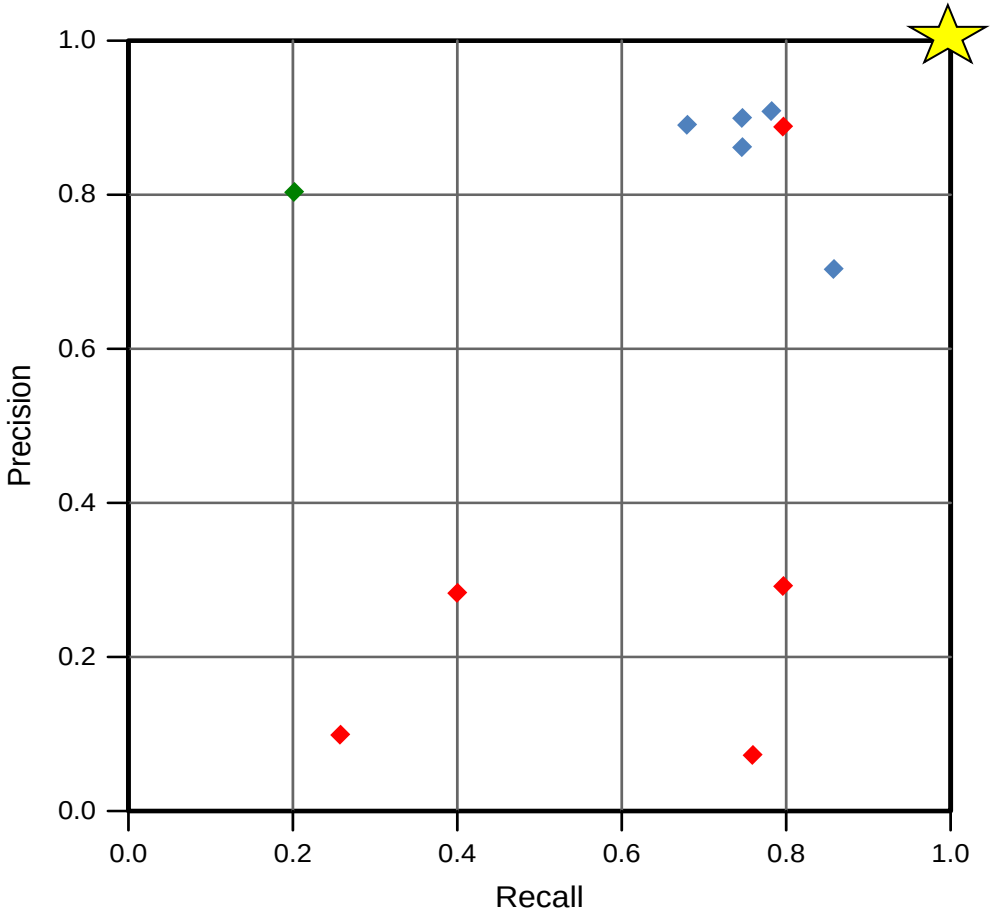
Effectiveness of Manual vs. TAR Reviews (2011 Richmond JOLT Study)

Topic	Team	Recall	Precision	F_1
201	Waterloo TREC (Law Students)	(†) 77.8% 75.6%	(*) 91.2% 5.0%	(*) 84.0% 9.5%
202	Waterloo TREC (Law Students)	67.3% (†) 79.9%	(*) 88.4% 26.7%	(*) 76.4% 40.0%
203	Waterloo TREC (Professionals)	(*) 86.5% 25.2%	(*) 69.2% 12.5%	(*) 76.9% 16.7%
204	H5 TREC (Professionals)	(*) 76.2% 36.9%	(*) 84.4% 25.5%	(*) 80.1% 30.2%
207	Waterloo TREC (Professionals)	76.1% (†) 79.0%	(†) 90.7% 89.0%	82.8% (†) 83.7%
Avg.	H5 / Waterloo TREC	**(†) 76.7%** **59.3%**	**(*) 84.7%** **31.7%**	**(*) 80.0%** **36.0%**

Results marked (*) are superior and overwhelmingly significant (P < 0.0001)

Results marked (†) are superior but not statistically significant (P > 0.1)

TAR vs. Manual Review



Blair & Maron Keyword Search

TREC 2009 Technology-Assisted Reviews

TREC 2009 Manual Reviews

Efficiency of Manual vs. TAR Reviews (2011 Richmond JOLT Study)

	Review Effort (No. of Docs)	
Topic	TAR	Manual
201	6,145	836,165
202	12,646	836,165
203	**4,369**	**836,165**
204	20,000	836,165
207	**34,446**	**836,165**
Average	**15,521**	**836,165**

- TAR required coding between **0.5%** (Topic 203) and **4.1%** (Topic 207) of the documents (**1.9%, on average, per topic**)
- Therefore, on average, TAR was **50 times** more efficient than manual review

If You [Build] [Prove] It, They Will Come (Not!)

"**It is difficult to get a man to understand something, when his salary depends upon not understanding it!**"

– **Upton Sinclair (1935)**

Don’t Wait for Your Balloon Bouquet Because It Ain’t Coming!

First Came the Criticisms . . .

EDD Update: Throwing a Wren

https://www.eddupdate.com/2012/11/throwing-a-wrench-in-the-pre

Search

EDD update electronic data discovery news and analysis

« Del. Chancery Court Judge Orders Predictive Coding | Main | kCura Relativity Makes (Small) Moves Into Processing »

November 01, 2012

Throwing a Wrench in the Document Review Machine

Computers against humans – is this the debate being waged around predictive coding to determine the future of document review? if this is the debate, is it what legal practitioners should really be focusing on in e-discovery?

In a recent *New York Law Journal* article, Steve Green and Mark Yacano of Hudson Legal question two sources widely cited to support the use of technology-assisted review. One source is Laura Grossman and Gordon Cormack's "Technology-Assisted Review Can (and Does) Yield More Accurate Results Than Exhaustive Manual Review, With Much Lower Effort" from the *Richmond Journal of Law & Technology*; the other is the 2009 Text Retrieval Conference (TREC) Legal Track Interactive Task study.

After providing a useful primer on the differences and potential uses of terminology used to gauge the efficiency of review methods, such as recall, precision and the F_1 score, the authors dig into the heart of their argument: the *Richmond Journal* article relies too heavily on the TREC 2009 study to support its assertions about manual review since TREC "doesn't appear designed to compare manual review with technology-assisted review at all."

. . . and the Pseudo-Scientific Attacks

Despite Early Success, Technology Assisted Review's Acceptance Is Limited by Lack of Definition

Wednesday, August 31, 2016

www.aceds.org/news/305930/Despite-Early-Success-Technology-Assisted-Reviews-Acceptance-Is-Limited-by-Lack-of-Definition.htm

by Bill Speros

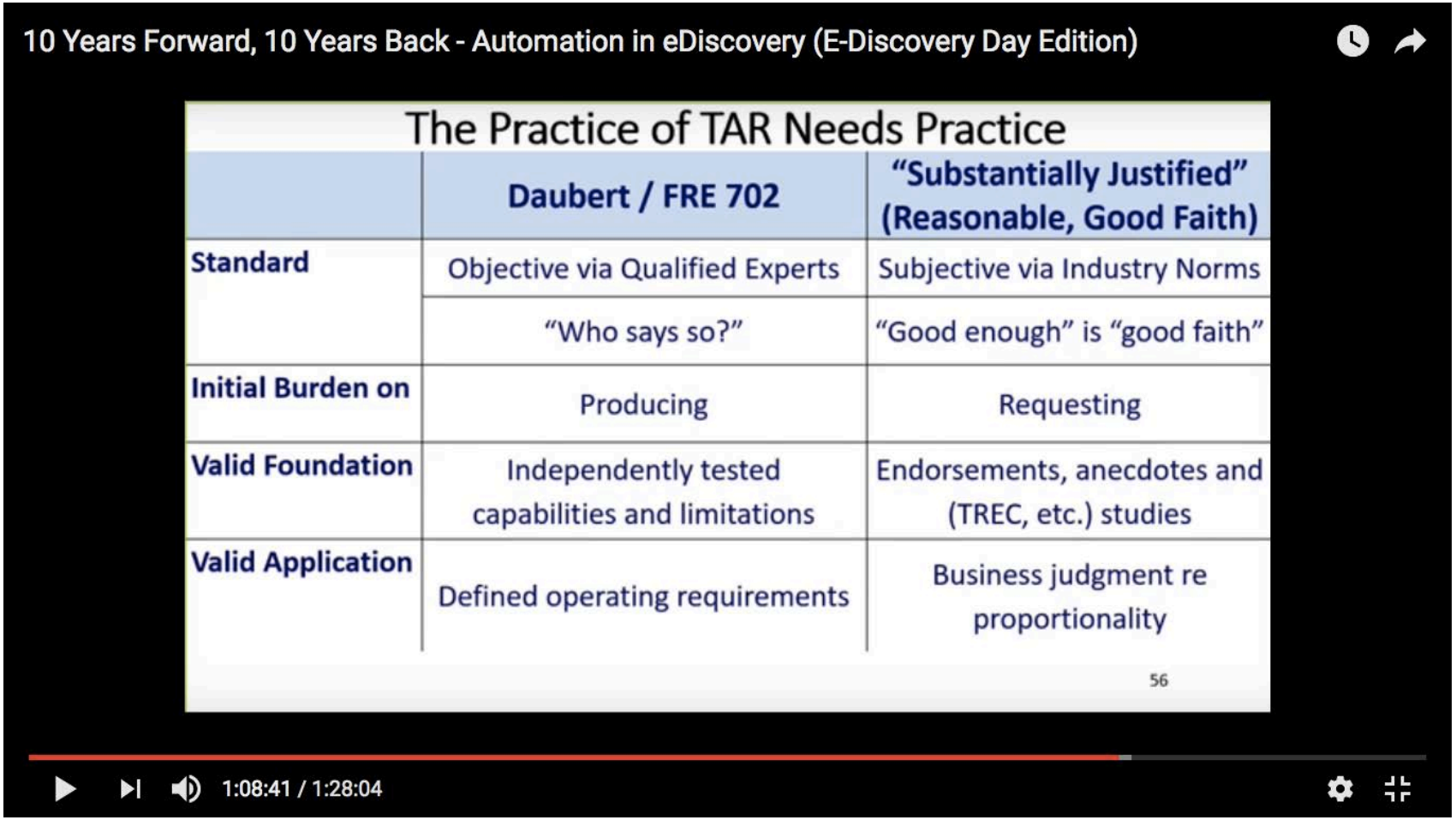
[. . .] After all, a common definition of TAR—see Footnote 1—consists of humans interplaying with computers using one or more undefined approaches to pursue one or more vaguely defined objectives.

Obviously, that definition and other commonly employed ones do not designate TAR's capabilities, operating requirements and constraints. Nor do those definitions delineate scientific mechanisms and methods. Nor do those definitions prescribe a set of particular technical components whose behavior to associate and valuate text in relevant circumstances can be modeled.

Instead, those definitions are essentially aspirations and un-testable puffery.

[1] "A technology-assisted review process involves the interplay of humans and computers to identify the documents in a collection that are responsive to a production request, or to identify those documents that should be withheld on the basis of privilege… A technology-assisted review process may involve, in whole or in part, the use of one or more approaches including, but not limited to, keyword search, Boolean search, conceptual search, clustering, machine learning, relevance ranking, and sampling." Maura R. Grossman & Gordon V. Cormack, *Technology-Assisted Review in E-Discovery Can Be More Effective and More Efficient Than Exhaustive Manual Review,* XVII RICH. J.L.& TECH. 11 (2011), p. 3-4.

. . . and More Pseudo-Scientific Attacks



Then Came the FOIA Request . . .

October 20, 2011

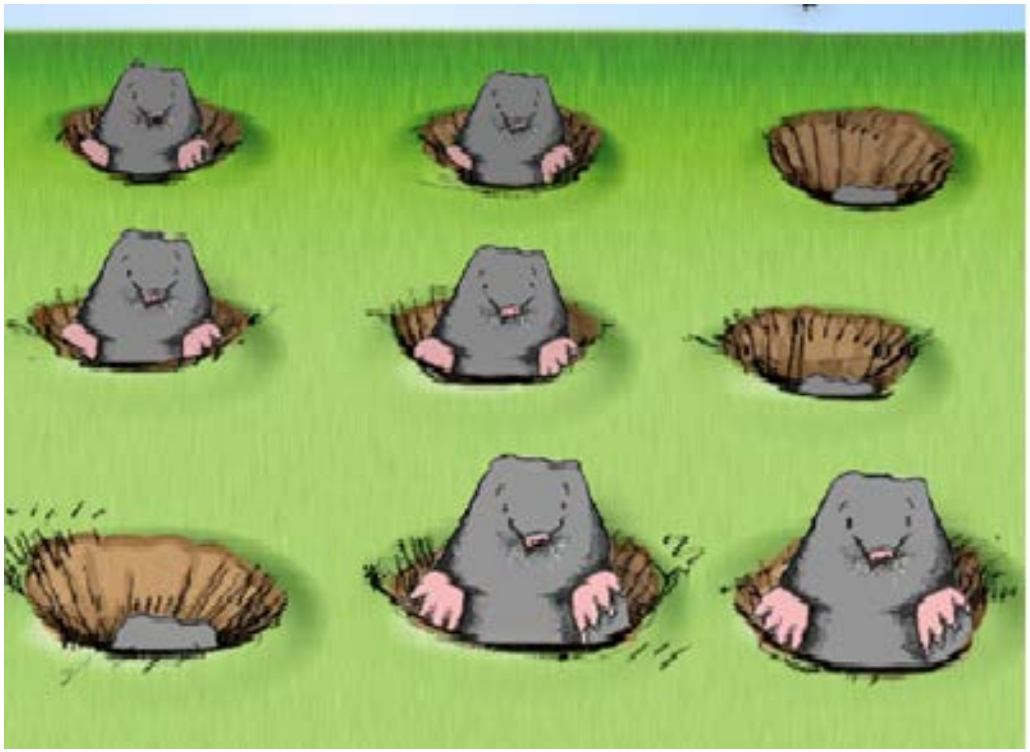
National Institute of Standards and Technology
Catherine S. Fletcher, FOIA & Privacy Act Officer
100 Bureau Drive, STOP 1710
Gaithersburg, MD 20899-1710

Dear Ms. Fletcher:

This is a request under the Freedom of Information Act, 5 U.S.C. § 552. I request that a copy of the following documents or electronically stored information (broadly defined to be at least as inclusive as the definition in Rule 34(a)(1)(A) of the Federal Rules of Civil Procedure) be provided to me: All documents to, from, about, constituting, referring to, concerning, or relating in any way to any of the following subjects, persons, entities (including all employees, agents, or persons otherwise associated with such entities), or things:

- Any employment, consulting, or other commercial relationship between any two persons, firms, or entities that employ or are otherwise associated with any coordinators of or participants in TREC Legal Track 2009, 2010, or 2011.
- Any actual, proposed, potential, possible, current, or former requirement or lack of requirement that TREC Legal Track coordinators make any disclosure of the relationship described in the preceding bullet point.
- The article authored by Gordon Cormack and Maura Grossman entitled "Technology-Assisted Review in E-Discovery Can Be More Effective and More Efficient Than Exhaustive Manual Review" published in Vol. XVII, Issue 3 of the Richmond Journal of Legal Technology
- The removal from publicly available internet access of the article described in the immediately preceding bullet point
- The Richmond Journal of Legal Technology
- Any correspondence between the joint team of Backstop LLP and Cleary Gottlieb Steen & Hamilton LLP and any or all of the following: Gordon Cormack, Maura Grossman, Ellen Voorhees, and any other NIST or TREC personnel.
- Any actual, proposed, or draft response, or non-response or failure or refusal to provide a response, or consideration or deliberation concerning whether to provide a response,

Followed by Whack-a-Mole . . .



And The Saga Continues to This Day . . .

11:00 am – 12:15 pm

The Great Debate: *In re Broiler Chicken*, Order of the Special Master Regarding ESI Search Methodologies

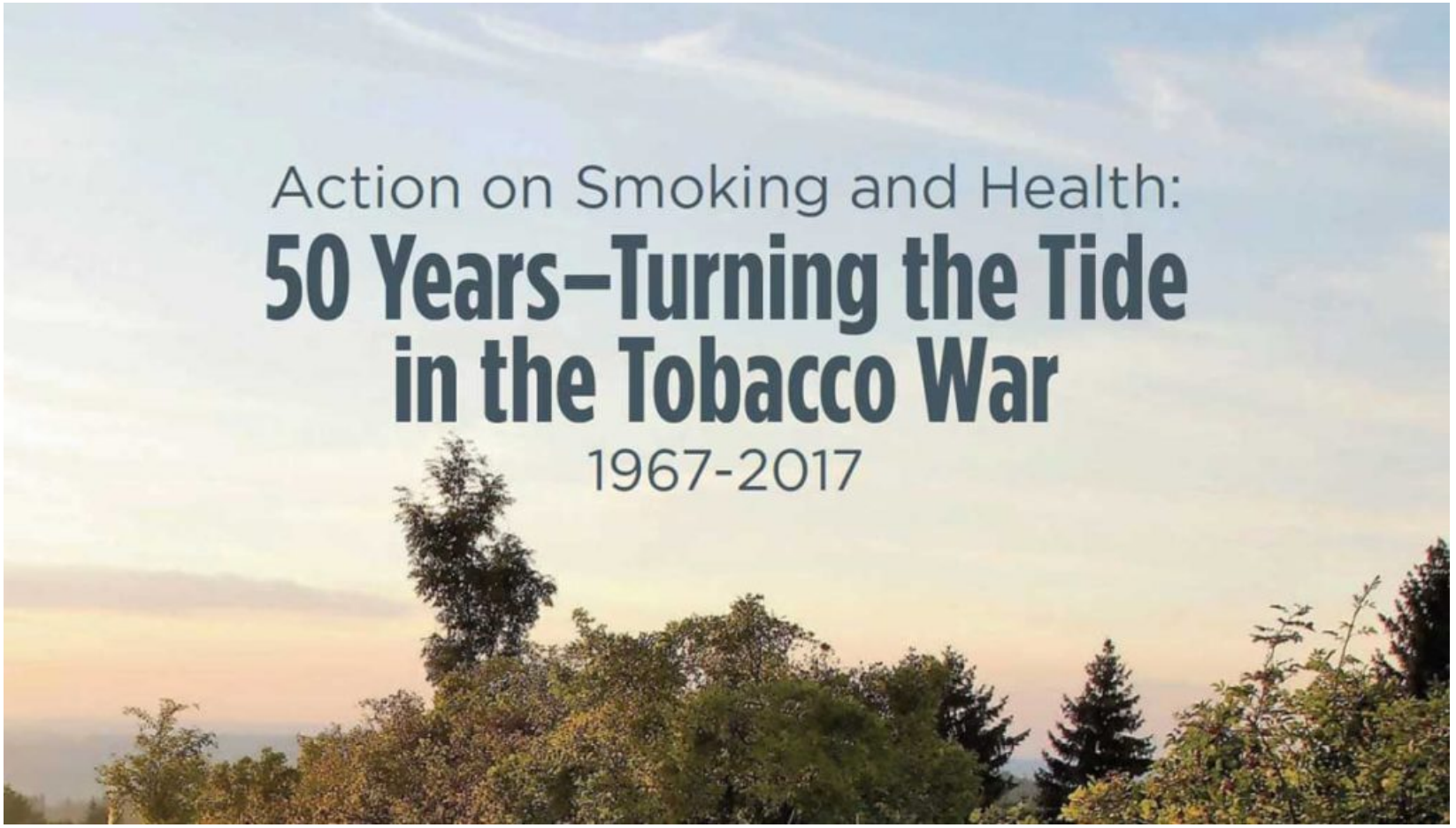
Paul D. Weiner (Moderator), Littler Mendelson PC

Ariana J. Tadler, Milberg Tadler Phillips Grossman LLP

Jeane A. Thomas, Crowell & Moring LLP

- Debate whether there is a requirement to be "transparent" in discovery
- Discuss the extent of an obligation to disclose information about discovery procedures before any discovery deficiencies are identified
- Consider arguments by requesting and responding parties on issues regarding "discovery about discovery"
- Evaluate when validation is required and how much is too much
- Address the pros and cons of using Special Masters for eDiscovery disputes
- Analyze what precedential value, if any, detailed Protocol Orders have, and whether they help or hinder embracing new eDiscovery technologies

It’s Hard to Change Tribe Mentality; It Doesn’t Happen Overnight



Beware of Algorithm Aversion

Journal of Experimental Psychology: General

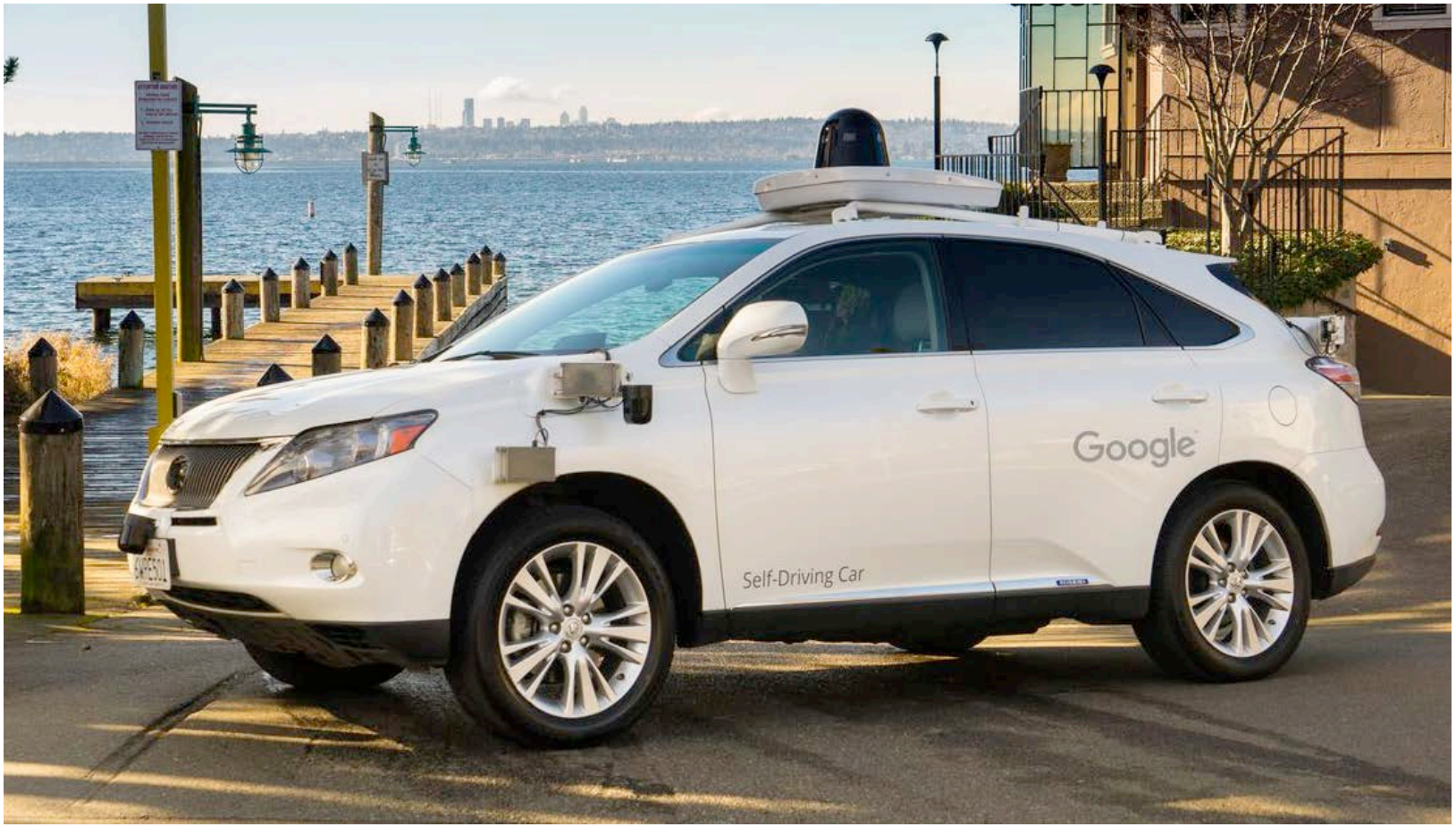
0096-3445/14/$12.00 http://dx.doi.org/10.1037/xge0000033

Algorithm Aversion: People Erroneously Avoid Algorithms After Seeing Them Err

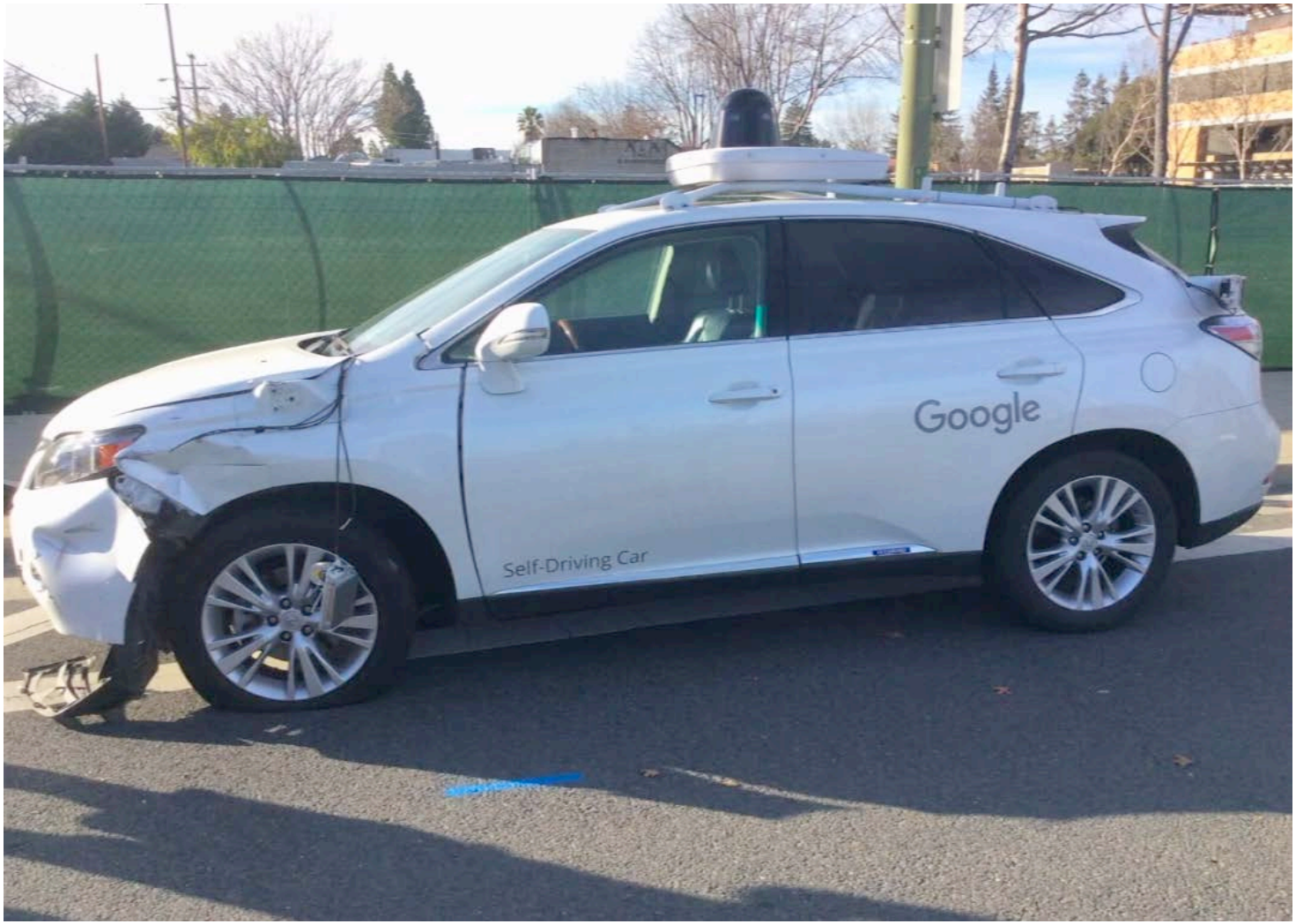
Berkeley J. Dietvorst, Joseph P. Simmons, and Cade Massey
University of Pennsylvania

Research shows that evidence-based algorithms more accurately predict the future than do human forecasters. Yet when forecasters are deciding whether to use a human forecaster or a statistical algorithm, they often choose the human forecaster. This phenomenon, which we call *algorithm aversion*, is costly, and it is important to understand its causes. We show that people are especially averse to algorithmic forecasters after seeing them perform, even when they see them outperform a human forecaster. This is because people more quickly lose confidence in algorithmic than human forecasters after seeing them make the same mistake. In 5 studies, participants either saw an algorithm make forecasts, a human make forecasts, both, or neither. They then decided whether to tie their incentives to the future predictions of the algorithm or the human. Participants who saw the algorithm perform were less confident in it, and less likely to choose it over an inferior human forecaster. This was true even among those who saw the algorithm outperform the human.

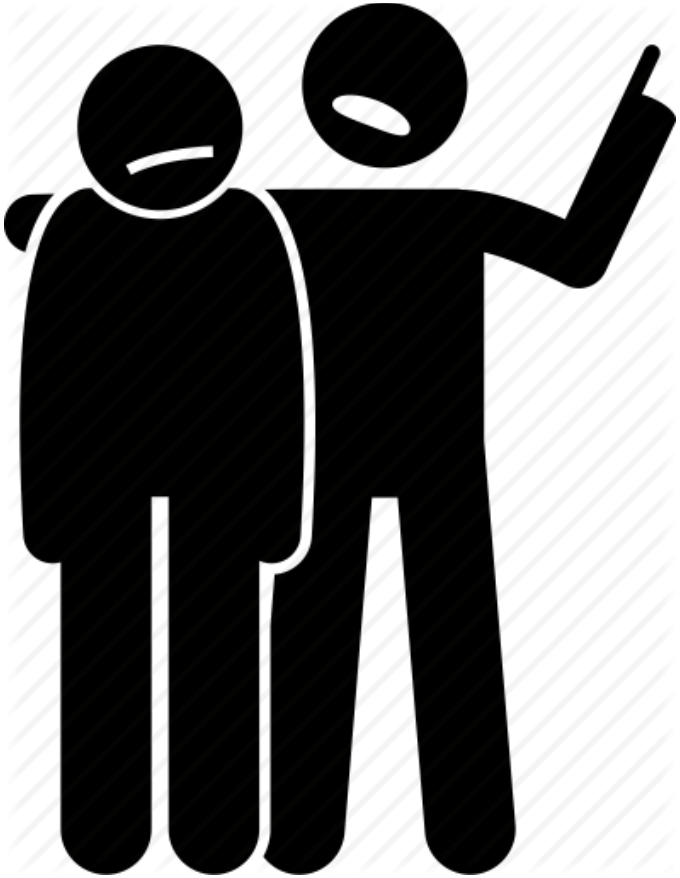
Drivers vs. Algorithms



But Algorithms Make Mistakes . . .



Learning How to Persuade ≠ “Because I Said So”



People Hate Ceding Control, So Add a Knob

People Will Fight Threats to Their Identity

The Short Game: Think About Incentive Structures

The Long Game: Empirical Research and Measurement

Thank ime!

Maura R. Grossman, J.D., Ph.D.

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