

# Web Science: Disinformation

(Part 1 - Intro to Disinformation)

CS 432/532

Old Dominion University

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# What is Disinformation?

- *Disinformation*: Information that is false and deliberately created to harm a person, social group, organisation or country
- *Misinformation*: Information that is false but not created with the intention of causing harm



Cherilyn Ireton and Julie Posetti, [Journalism, 'Fake News' and Disinformation: A Handbook for Journalism Education and Training](#), UNESCO, 2018

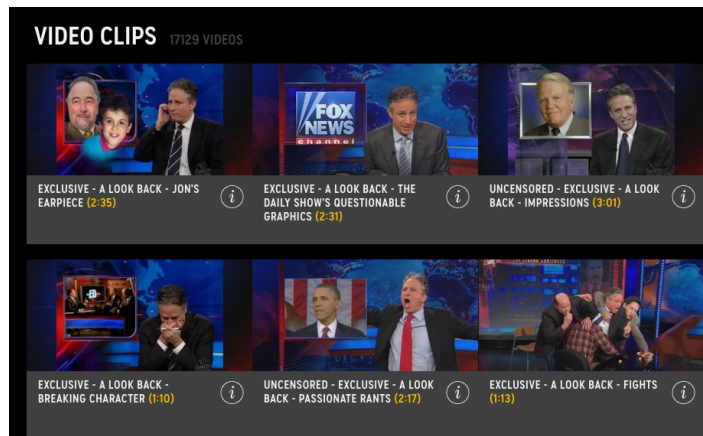
# What is “Fake News”?



[Not Necessarily The News - June 1983](#) (youtube)



[Sniglets](#) (Wikipedia)  
[Rich Hall - Supermarket Sniglets \(1983\)](#)



[The Daily Show with Jon Stewart - Series](#)  
[The Daily Show with Jon Stewart](#) (youtube)

# What is “Fake News”?

Now it's used as an attack, as a way to erode trust in traditional journalism

*“If it's news, it's not fake.  
If it's fake, it's not news.”*

-Julie Posetti

[Journalism, 'Fake News' and Disinformation: A handbook for journalism education and training](#) (video)



Cherilyn Ireton and Julie Posetti, [Journalism, 'Fake News' and Disinformation: A Handbook for Journalism Education and Training](#), UNESCO, 2018

# CONFRONTING **FAKE NEWS** & MISINFORMATION



## **MUDDIED WATERS: ONLINE DISINFORMATION DURING CRISIS EVENTS**

**KATE STARBIRD**

Assistant Professor, Human Centered Design &  
Engineering, University of Washington

April 18, 2018



[Muddied Waters: Online Disinformation During Crisis Events \(Kate Starbird\)](#)

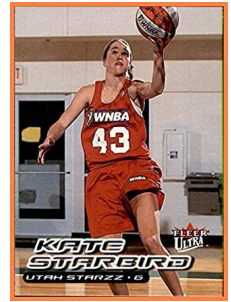
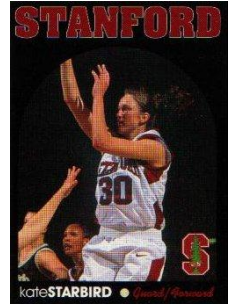
# Kate Starbird

From Wikipedia, the free encyclopedia

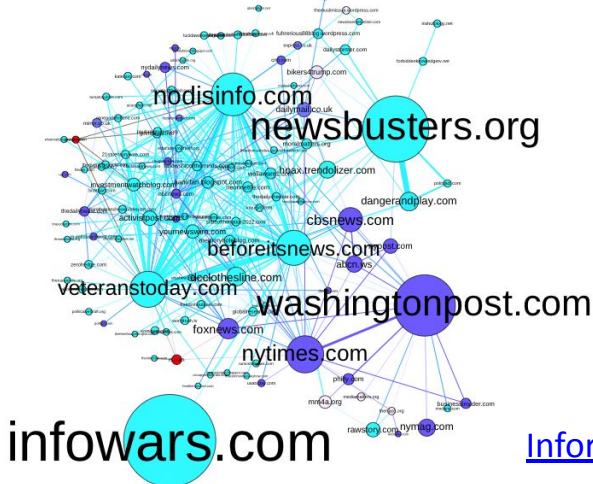
**Kate Starbird** (born July 30, 1975)<sup>[1]</sup> is a computer scientist and former professional basketball player. Starbird joined the faculty of the [University of Washington](#) Department of Human Centered Design & Engineering in 2012, and was promoted to associate professor in 2019.<sup>[2][3]</sup> She is a former professional [basketball](#) player in the [Women's National Basketball Association](#) (WNBA) and the [American Basketball League](#) (ABL).

[Kate Starbird](#) (Wikipedia)

[Kate's Homepage](#)



["An Aggressive Old Dominion Pounds Stanford Out of the Final", Mar 29, 1997](#) [\(youtube video\)](#)



[Information Wars: A Window into the Alternative Media Ecosystem](#)

# “Muddied Waters”

CONFRONTING  
**FAKE NEWS**  
& MISINFORMATION

MINI  
LECTURE  
SERIES

**MUDDIED WATERS:  
ONLINE DISINFORMATION DURING  
CRISIS EVENTS**

**KATE STARBIRD**  
Assistant Professor, Human Centered Design &  
Engineering, University of Washington  
April 18, 2018

**W**

[Muddied Waters: Online  
Disinformation During Crisis  
Events \(Kate Starbird\)](#)

- Disinformation terminology
- Information propagation on social media
  - We’re all susceptible - echo chambers, filter bubbles
- One goal is to sow division within a society
  - They’re trying to divide us and make us not trust information
- Be aware of your own cognitive biases
  - If you don’t think you have any, you might be the problem

*“If it makes you self-righteous, indignant, outraged against the other side, then probably someone is manipulating you.” - Kate Starbird*

# Web Science: Disinformation

(Part 2 - More Disinformation)

CS 432/532

Old Dominion University

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# CONFRONTING **FAKE NEWS** & MISINFORMATION



## **MUDDIED WATERS: ONLINE DISINFORMATION DURING CRISIS EVENTS**

**KATE STARBIRD**

Assistant Professor, Human Centered Design &  
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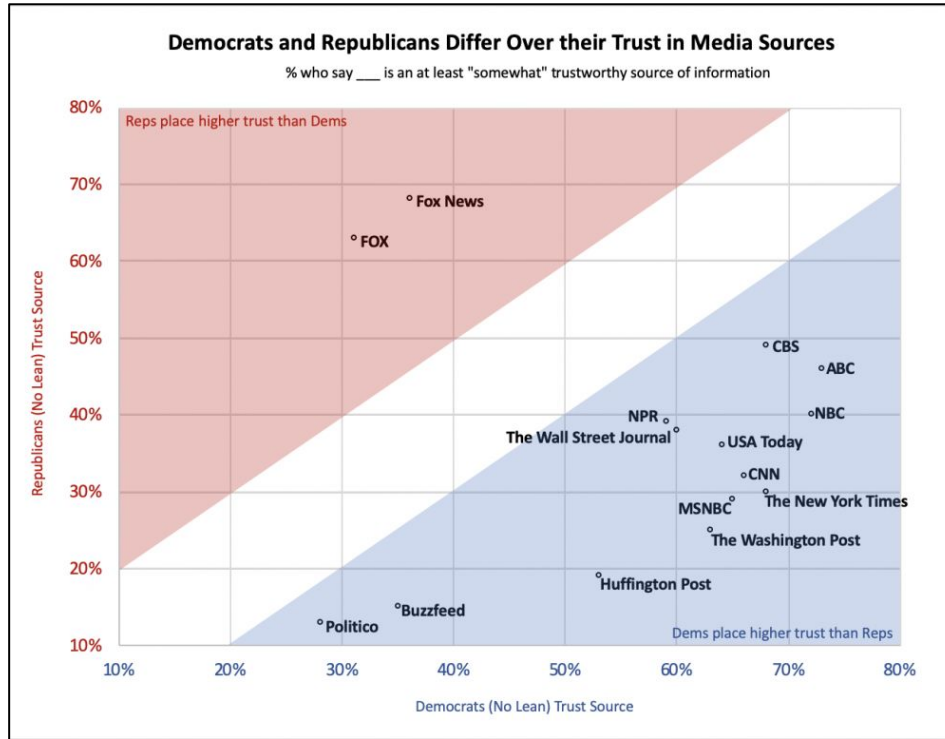


[Muddied Waters: Online Disinformation During Crisis Events \(Kate Starbird\)](#)

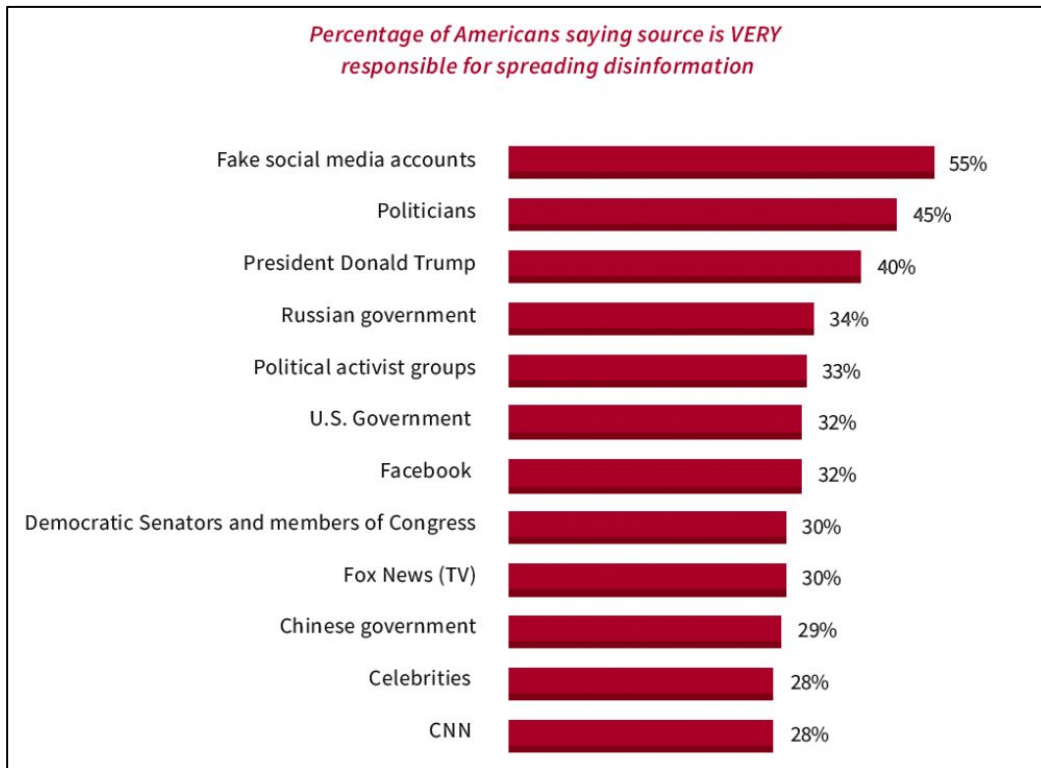
# Public Opinion about Disinformation

- Survey of 2200 adults in the US
- 80% - see disinformation once/week
- 80% - confident in recognizing false news
- People are the most trustworthy sources of info
  - 74% family
  - 72% people like me
  - 70% friends

# Trusted News Sources

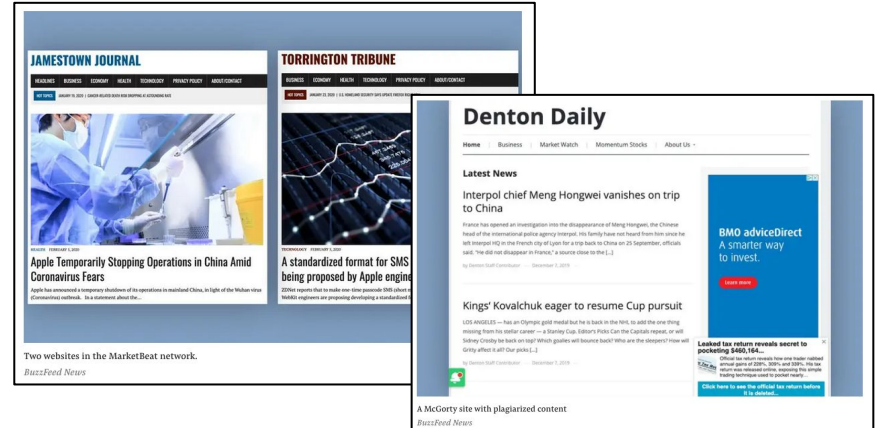
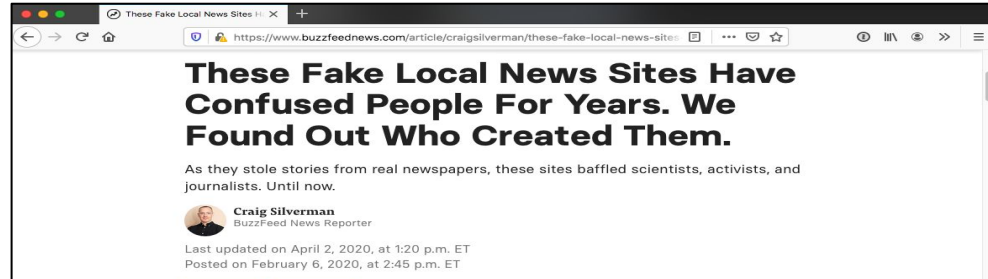


# Who is Spreading Disinformation?



# Fake Local News

- Websites with names like Livingston Ledger, Denton Daily, Hoback Herald
- Plagiarizing stories from major news organizations
- Network of sites
- Manipulating Google News and search results
- Goal to earn money through ads



"These Fake Local News Sites Have Confused People For Years. We Found Out Who Created Them", BuzzFeed News, Feb 2020,

# “Pink Slime” Journalism



- Producing “local” content for newspapers using out-of-town “reporters”

[“Exposing the “pink slime” journalism” of Journatic”](#)

[“Switcheroo”](#), *This American Life*, 2012

[Pink slime](#) (Wikipedia)

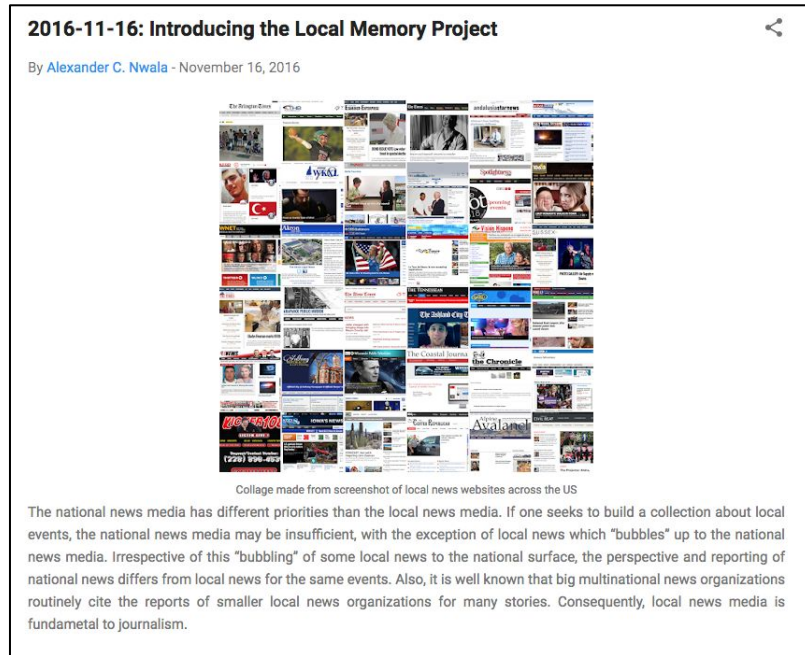
# Fake Local News Used for Politics

- [“Russian Influence Campaign Sought To Exploit Americans' Trust In Local News”](#), NPR, 2018
- [“Hundreds of ‘pink slime’ local news outlets are distributing algorithmic stories and conservative talking points”](#), Columbia Journalism Review, 2019
- [“Hiding in Plain Sight: PAC-Connected Activists Set Up ‘Local News’ Outlets”](#), Snopes, 2019

# Local Memory Project

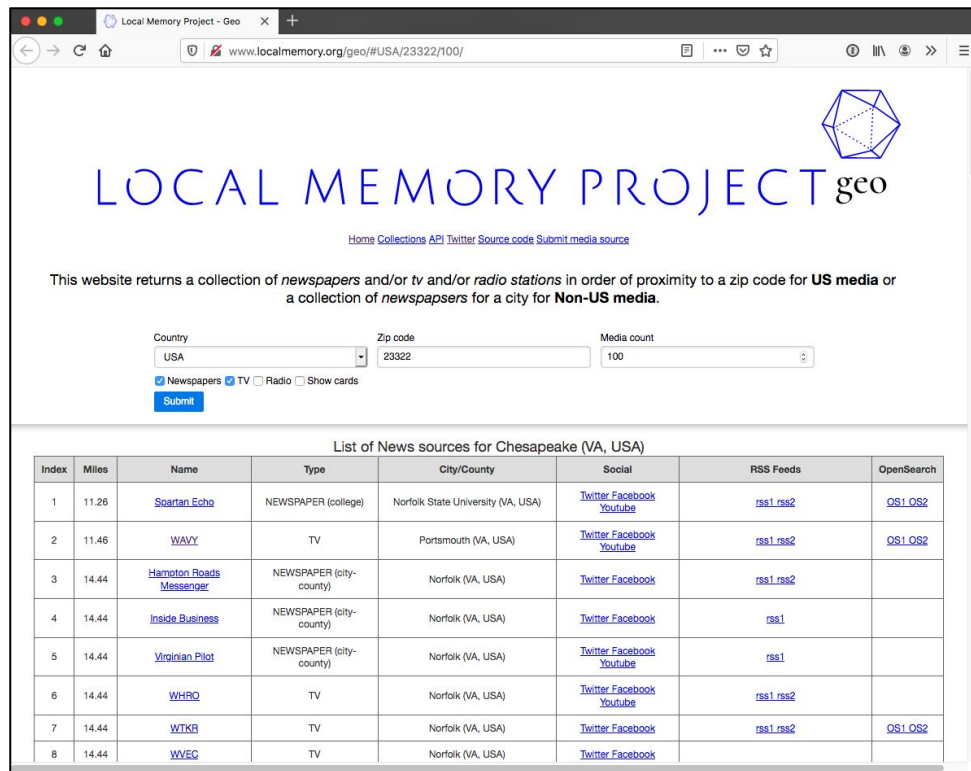
- Assist in building collections of news stories from local sources
- Can highlight stories that might not be covered by national media

[Introducing the Local Memory Project](#), WS-DL blog  
[Local Memory Project](#)





# Local Memory Project - geo



The screenshot shows a web browser window with the URL [www.localmemory.org/geo/#USA/23322/100/](http://www.localmemory.org/geo/#USA/23322/100/). The page features the Local Memory Project logo and a search form. The search form includes fields for Country (USA), Zip code (23322), and Media count (100). Below these fields are checkboxes for Newspapers, TV, and Radio, and a checkbox for Show cards. A Submit button is located below the checkboxes. The search results are displayed as a table titled "List of News sources for Chesapeake (VA, USA)".

Index	Miles	Name	Type	City/County	Social	RSS Feeds	OpenSearch
1	11.26	<a href="#">Spartan Echo</a>	NEWSPAPER (college)	Norfolk State University (VA, USA)	<a href="#">Twitter</a> <a href="#">Facebook</a> <a href="#">Youtube</a>	<a href="#">rss1</a> <a href="#">rss2</a>	<a href="#">OS1</a> <a href="#">OS2</a>
2	11.46	<a href="#">WAVY</a>	TV	Portsmouth (VA, USA)	<a href="#">Twitter</a> <a href="#">Facebook</a> <a href="#">Youtube</a>	<a href="#">rss1</a> <a href="#">rss2</a>	<a href="#">OS1</a> <a href="#">OS2</a>
3	14.44	<a href="#">Hampton Roads Messenger</a>	NEWSPAPER (city-county)	Norfolk (VA, USA)	<a href="#">Twitter</a> <a href="#">Facebook</a>	<a href="#">rss1</a> <a href="#">rss2</a>	
4	14.44	<a href="#">Inside Business</a>	NEWSPAPER (city-county)	Norfolk (VA, USA)	<a href="#">Twitter</a> <a href="#">Facebook</a>	<a href="#">rss1</a>	
5	14.44	<a href="#">Virginian Pilot</a>	NEWSPAPER (city-county)	Norfolk (VA, USA)	<a href="#">Twitter</a> <a href="#">Facebook</a> <a href="#">Youtube</a>	<a href="#">rss1</a>	
6	14.44	<a href="#">WHRO</a>	TV	Norfolk (VA, USA)	<a href="#">Twitter</a> <a href="#">Facebook</a> <a href="#">Youtube</a>	<a href="#">rss1</a> <a href="#">rss2</a>	
7	14.44	<a href="#">WTKR</a>	TV	Norfolk (VA, USA)	<a href="#">Twitter</a> <a href="#">Facebook</a>	<a href="#">rss1</a> <a href="#">rss2</a>	<a href="#">OS1</a> <a href="#">OS2</a>
8	14.44	<a href="#">WVEC</a>	TV	Norfolk (VA, USA)	<a href="#">Twitter</a> <a href="#">Facebook</a>		

# Manipulating Social Media

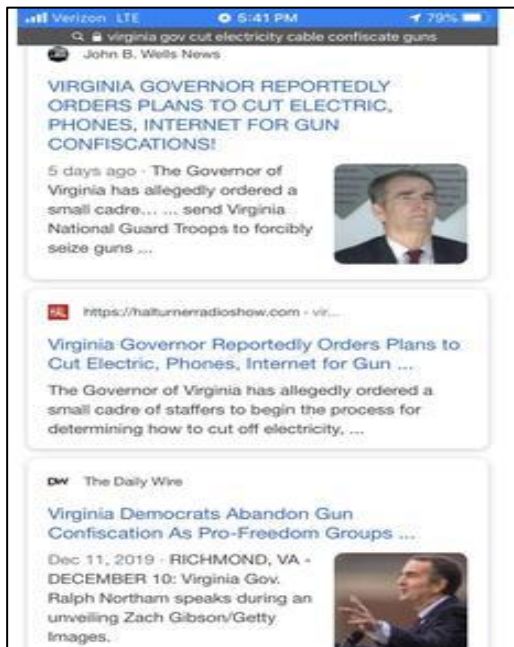
- [“Inside the hate factory: how Facebook fuels far-right profit”](#), *The Guardian*, Dec 5, 2019
- [“I Found Election Interference And No One Cared”: One US Veteran’s Fight To Protect His Compatriots Online](#), *BuzzFeed News*, Dec 30, 2019
- [“Sanders supporters have weaponized Facebook to spread angry memes about his Democratic rivals”](#), *The Washington Post*, Jan 24, 2020,
- [“How conservatives learned to wield power inside Facebook”](#), *The Washington Post*, Feb 20, 2020

# Manufactured Consensus

On Dec 20, 2019, I saw this meme from a friend in Arkansas on Facebook.



I used Google to search for “virginia gov cut electricity cable confiscate guns”



The only result on the 1st page that doesn't echo the hoax is a [MediaMatters article](#) refuting the hoax.

Woolley and Guilbeault, [“Computational Propaganda in the United States of America: Manufacturing Consensus Online”](#)

# “Firehose of Falsehood”

## **Distinctive Features of the Contemporary Model for Russian Propaganda**

- 1 High-volume and multichannel
- 2 Rapid, continuous, and repetitive
- 3 Lacks commitment to objective reality
- 4 Lacks commitment to consistency.

Paul and Matthews, [“The Russian ‘Firehose of Falsehood’ Propaganda Model: Why It Might Work and Options to Counter It”](#), The Rand Corporation, 2016

# Multichannel



[Kate Starbird on Twitter: "New paper in the Harvard Misinformation Review w/ co-author Tom Wilson looking at how \(dis\)information campaigns work across platforms"](#)

	Cluster	Number tweets	Number Original Tweets	Number (%) Total Tweets w/ URL to YouTube	Number (%) Original Tweets w/ URL to YouTube	Number (%) Total Tweets w/ Video Embed in Twitter	Number (%) Original Tweets w/ Video Embed in Twitter
Pro	Blue	208265	27733	2225(1.07%)	631(2.28%)	37,614(18.1%)	3104(11.2%)
Anti	Red	633762	123167	43,340(6.84%)	11,184(9.08%)	89,717(14.2%)	7610(6.2%)

Wilson and Starbird, ["Cross-platform disinformation campaigns: lessons learned and next steps"](#), Harvard Misinformation Review, Jan 14, 2020

# “Firehose of Falsehood”

## Distinctive Features of the Contemporary Model for Russian Propaganda

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# Combating the “Firehose of Falsehood”

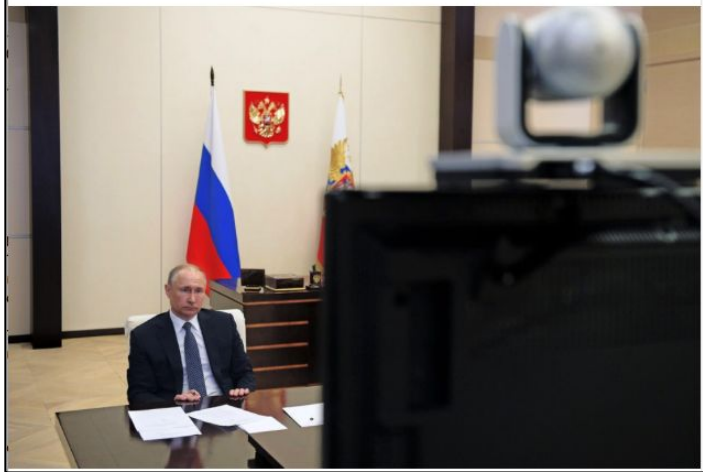
- Don't expect to counter the firehose of falsehood with the squirt gun of truth (!!)
- Find ways to help put raincoats on those at whom the firehose of falsehood is being directed
- Don't direct your flow of information directly back at the firehose of falsehood
- Increase the flow of persuasive information and start to compete
- Turn off (or turn down) the flow

Paul and Matthews, [“The Russian ‘Firehose of Falsehood’ Propaganda Model: Why It Might Work and Options to Counter It”](#), The Rand Corporation, 2016

# Russian Propaganda and Health Disinformation

## ***Putin's Long War Against American Science***

A decade of health disinformation promoted by President Vladimir Putin of Russia has sown wide confusion, hurt major institutions and encouraged the spread of deadly illnesses.



His agents have repeatedly planted and spread the idea that viral epidemics — including flu outbreaks, Ebola and now the [coronavirus](#) — were sown by American scientists. The disinformers have also sought to undermine faith in the safety of vaccines, a triumph of public health that Mr. Putin himself promotes at home.

“It’s all about seeding lack of trust in government institutions,” [Peter Pomerantsev](#), author of “Nothing Is True and Everything Is Possible,” [a 2014 book](#) on Kremlin disinformation, said in an interview.

["How Russia's Troll Farm Is Changing Tactics Before the Fall Election"](#), *NY Times*, Mar 29, 2020

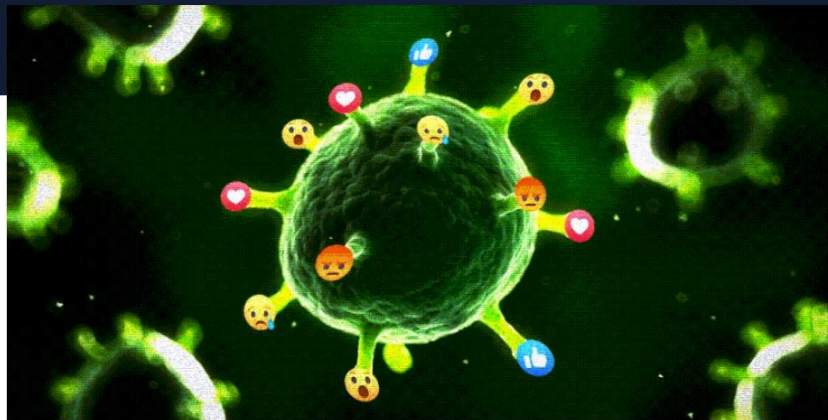
[“Putin’s Long War Against American Science”](#), *NY Times*, Apr 13, 2020



# Health Disinformation

## Social media hosted a lot of fake health news this year. Here's what went most viral.

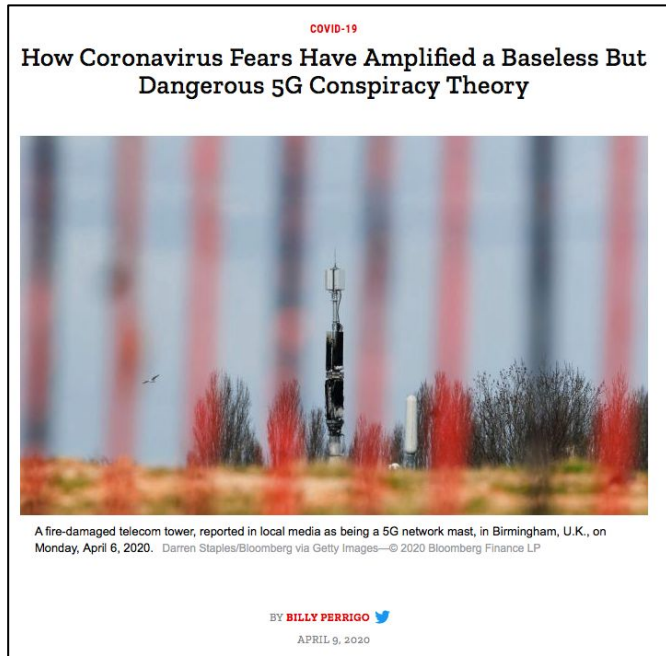
The most viral health misinformation in 2019 was on the topics of cancer, unproven cures and vaccines, according to an NBC News review.



["Social media hosted a lot of fake health news this year. Here's what went most viral."](#), NBC News, Dec 29, 2019

["Firehosing: the systemic strategy that anti-vaxxers are using to spread misinformation"](#), *The Guardian*, Nov 2019,

# Conspiracy Theories Can Have Real-World Consequences



## Facebook to warn users who 'liked' coronavirus hoaxes

*Have you liked or commented on a Facebook post about the COVID-19 pandemic that turned out to be a hoax*

By **BARBARA ORTUTAY** and **AMANDA SEITZ** Associated Press

April 16, 2020, 8:29 PM • 5 min read



[Facebook to warn users who 'liked' coronavirus hoaxes](#),  
*Associated Press report, Apr 16, 2020*

[“How Coronavirus Fears Have Amplified a Baseless But Dangerous 5G Conspiracy Theory”](#), *Time*, Apr 9, 2020

# Armchair Epidemiology

## What We Pretend to Know About the Coronavirus Could Kill Us

Today's propaganda is tomorrow's truth, and vice versa.



By Charlie Warzel

Mr. Warzel is an Opinion writer at large.

April 3, 2020

Misinformation is a spectrum. The most outlandish claims — that the Obama administration engineered and sold the coronavirus to China — don't require a medical degree to debunk. But much of the pernicious false news about the coronavirus operates on the margins of believability — real facts and charts cobbled together to formulate a dangerous, wrongheaded conclusion or news reports that combine a majority of factually accurate reporting with a touch of unproven conjecture.

The phenomenon is common enough that it already has its own name: armchair epidemiology, which [Slate described](#) as “convincing but flawed epidemiological analyses.” The prime example is a Medium blog post titled “Covid-19 — Evidence Over Hysteria” by Aaron Ginn, a Silicon Valley product manager and “growth hacker” who argued against the severity of the virus and condemned the mainstream media for hyping it.

Dr. Bergstrom's [Twitter thread refuting Ginn's article](#)

[“The Professors Who Call ‘Bullshit’ on Covid-19 Misinformation”](#), *Wired*, Mar 24, 2020

Dr. Starbird's [Twitter thread on the Twitter analysis in the \*Wired\* article](#)

["Flatten the Curve of Armchair Epidemiology"](#), Mar 19, 2020

[“What We Pretend to Know About the Coronavirus Could Kill Us”](#), *NY Times*, Apr 3, 2020

# Ideal Conditions for Distrust

## What We Pretend to Know About the Coronavirus Could Kill Us

Today's propaganda is tomorrow's truth, and vice versa.



By Charlie Warzel  
Mr. Warzel is an Opinion writer at large.

April 3, 2020

A pandemic seems like a unique opportunity to set aside our differences and focus on the facts. After all, we're in this crisis together. And we need to trust experts — epidemiologists, doctors and scientists — because they're all we've got. But in crisis situations — especially early on — our desire for information exceeds our ability to accurately deliver it. Add to this the complexities of epidemiology: exponential growth; statistical modeling; and the slow, methodical nature of responsible science. Together, they create the ideal conditions for distrust, bad-faith interpretations and political manipulation, the contours of which we're only beginning to see.

[“What We Pretend to Know About the Coronavirus Could Kill Us”](#), *NY Times*, Apr 3, 2020

# Engaging in Sense-Making

## What We Pretend to Know About the Coronavirus Could Kill Us

Today's propaganda is tomorrow's truth, and vice versa.



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Mr. Warzel is an Opinion writer at large.

April 3, 2020



“In a crisis event, one thing people do is engage in sense-making — seeking out facts and coming up with explanations,” Kate Starbird, an associate professor at the University of Washington, told me this week. “It’s a way of psychologically coping with the uncertainty and anxiety of the event, and of having agency in the response.”

[“What We Pretend to Know About the Coronavirus Could Kill Us”](#), *NY Times*, Apr 3, 2020

“I ask us as information participants to tune in to how our anxiety fuels information-seeking and information-sharing activities that may make us susceptible to spreading false rumors and/or disinformation. This can mean slowing down. It can mean doing a better job of vetting our sources... It can also mean choosing not to share content that we’re just not sure about. And it can even mean stepping away from our feeds when we realize they aren’t helping us resolve the anxiety and uncertainty and are just amplifying them. *We can think about this as the “hand-washing” for the infodemic accompanying the pandemic.*”

Starbird, [“How a Crisis Researcher Makes Sense of Covid-19 Misinformation”](#), Mar 9, 2020



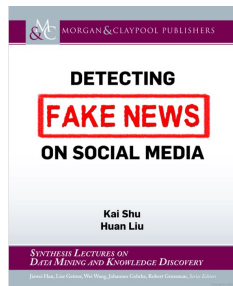
# Detecting Fake News on Social Media

## Detecting Fake News on Social Media

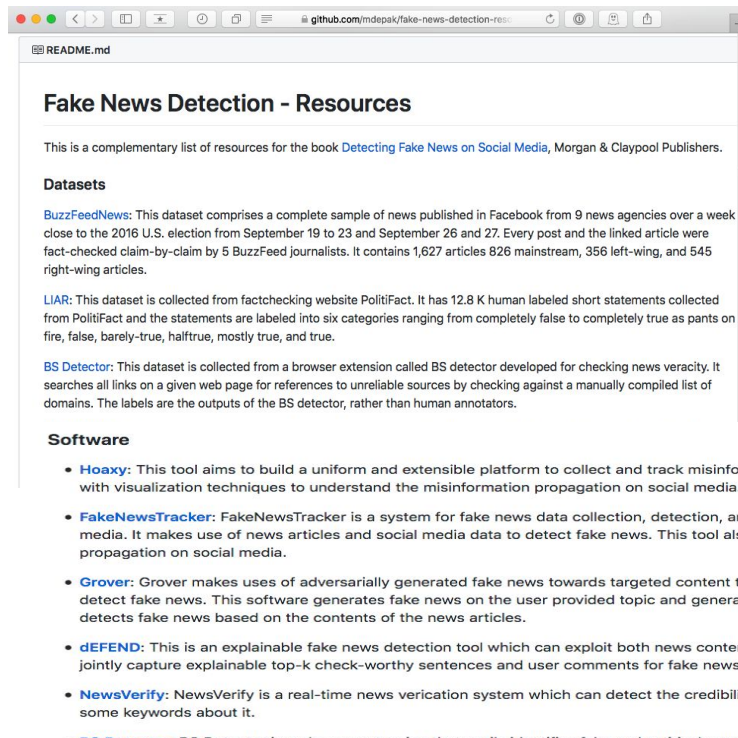
Kai Shu and Huan Liu, Arizona State University  
Morgan & Claypool Publishers, 2019. ISBN 9781681735825.

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## [Detecting Fake News on Social Media](#)



[mdepak/fake-news-detection-resources](#): 📖 A curated list of resources dedicated to Fake News Detection

# Objectives

- Explain the difference between disinformation and misinformation.
- Explain how echo chambers and filter bubbles support motivated reasoning and confirmation bias.
- Explain how an understanding of social networks is important in understanding how misinformation and disinformation spreads.
- List the 4 distinctive features of contemporary Russian propaganda.
- List and explain ways to combat the “firehose of falsehood”.