



Wireless Risks & Safer Technology Solutions

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Cece Doucette, MTPW

- ▶ Helped Ashland, MA become first-in-nation with [Best Practices for Mobile Devices](#), 2014
- ▶ Introduced [legislation](#) in MA & testified in NH
- ▶ Co-founder, [Wireless Education](#), educational non-profit
- ▶ Co-founder, [Massachusetts for Safe Technology](#)
- ▶ [Co-Chair, Technology Panel, Health in Buildings Roundtable Conference @ NIH](#)
- ▶ Speaker: EMF Medical Conference [2021](#)



Best Practices for Mobile Devices

- ❖ Turn off the device when not in use.
- ❖ Turn wifi on only when needed.
- ❖ Always place the mobile device on a solid surface.
- ❖ Viewing distance should be a minimum of 12 inches from the screen.
- ❖ Specific product information guides are available by request through the IT Department.



The Legal Fine Print

▶ See the Fine Print

▶ Settings

▶ **G**eneral

▶ **L**egal & Regulatory

▶ **RF** Exposure

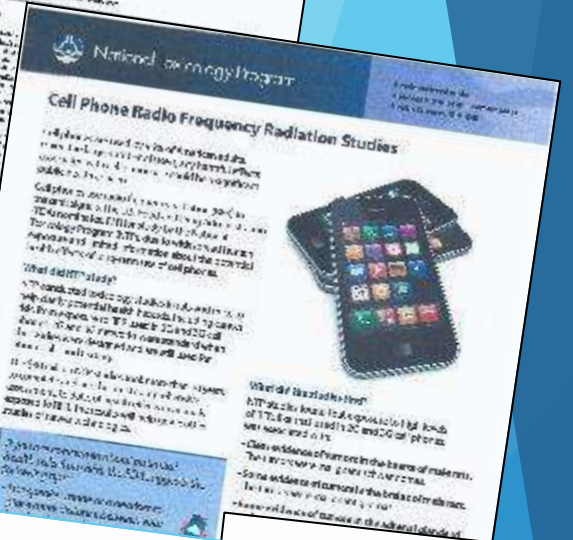
▶ Ashland & Newton library Acoustimeter Pittsfield Safe & Sound Pro II

▶ WACA 23-min. PSA, WCCA Tech Safe series



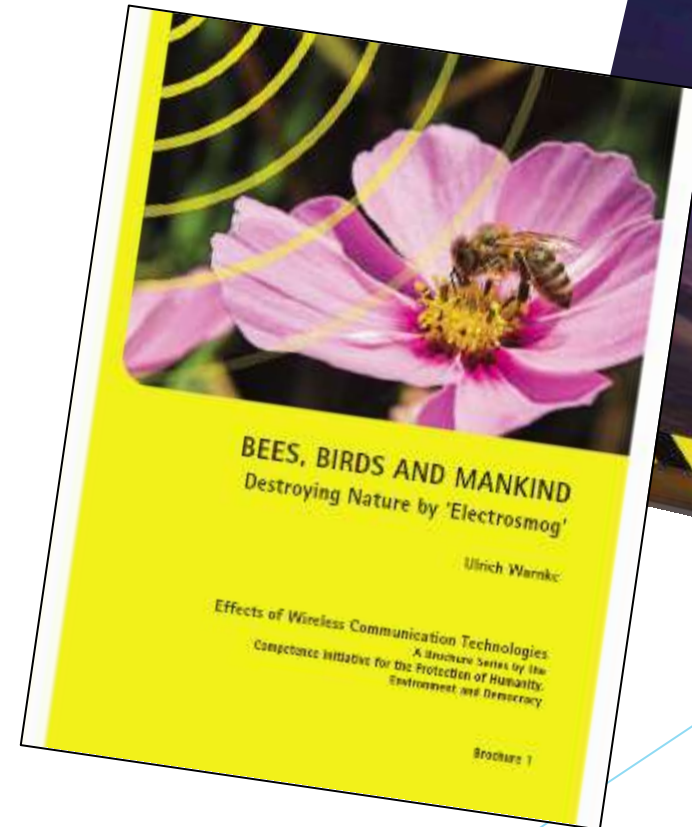
Science: Long-term Effects

- ▶ Child & Adult Cancers
- ▶ DNA Damage
- ▶ Infertility
- ▶ Neurotoxicity
 - ADD/ADHD
 - Autism
 - Alzheimer's
 - EWG Fact Sheets
- ▶ Children are especially vulnerable



Science: Planetary Impact

- ▶ Wildlife, Wireless & the Environment
- ▶ Pollinators
- ▶ Birds
- ▶ Energy consumption
 - Mineral extraction
 - Data warehouses
 - Networks
 - Personal devices
 - Streaming
 - Send/receive
 - Charging
 - Continuous app updates



Why Don't We Know?

- ▶ FCC: Captured Agency
- ▶ ProPublica Article
- ▶ FDA: Conflict of Interest
- ▶ World Health Organization
 - ▶ Reopening investigation
 - ▶ Conflicts of interest



What Safe Technology Looks Like

STEP 1:

Simple and Inexpensive Hardwiring Set-up



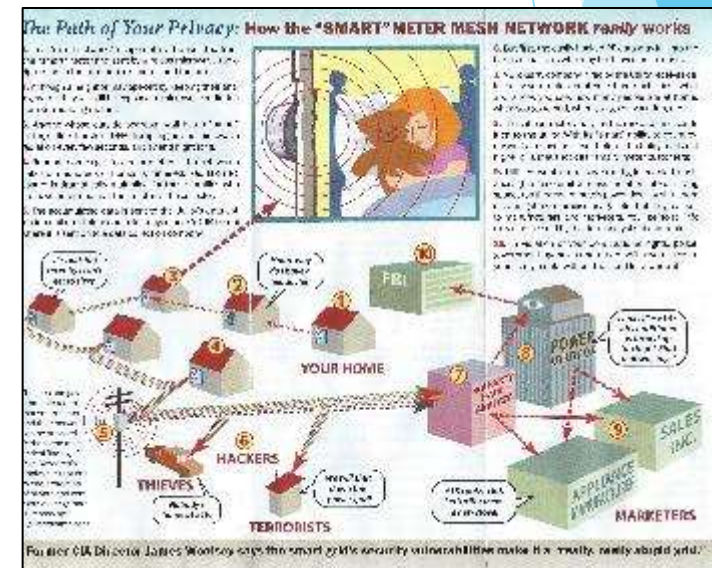
STEP 2:

Turn Off Wi-Fi Antennas

STEP 3: Measure

Source: Utility “Smart” Meters

- ▶ Pulse radiation continuously
- ▶ Can hop on house wires/pipes
- ▶ Fires, explosions, improper grounding
- ▶ Data harvesting, privacy issues
- ▶ Leading cause of sudden onset microwave sickness
- ▶ Environmental justice/[Worcester](#)
- ▶ [TedX Talk](#): Jeromy Johnson, engineer
- ▶ [TedX Talk](#): Dr. Alexia McKnight



Source: Cell Towers

- ▶ Examine the non-industry funded science
- ▶ AntennaSearch.com



Understanding EMFs

Search this site

Navigation

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- Cell Towers**
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- Solutions
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Cell Towers

Cell Tower Scientific Studies

The following studies indicate cell towers are **biologically hazardous**:

- [Report of final results regarding brain and heart tumors in Sprague-Dawley rats exposed from prenatal life until natural death to mobile phone radiofrequency field representative of a 1.8 GHz GSM base station environmental emission](#) from the Ramazzini Institute in Italy concludes, "The RI findings on far field exposure to RFR are consistent with and reinforce the results of the [NTP study](#) on near field exposure, as both reported an increase in the incidence of **tumors of the brain and heart** in RFR-exposed Sprague-Dawley rats." This study, partially funded by the U. S. government, is the first large-scale study to show clear evidence of cancer risk from cell towers.
- [Epidemiological evidence for a health risk from mobile phone base stations](#) finds "**adverse neurobehavioral symptoms or cancer** in populations living **at distances < 500 meters from base stations.**" (1,640 feet)
- [Association of Exposure to Radio-Frequency Electromagnetic Field Radiation \(RF-EMFR\) Generated by Mobile Phone Base Stations with Glycated Hemoglobin \(HbA1c\) and Risk of Type 2 Diabetes Mellitus](#) indicates, "It is concluded that exposure to high RF-EMFR generated by MPBS is associated with **elevated levels of HbA1c**."

24 Beacon St, Boston, MA 02133, United States

Results Summary

1520 towers and 4512 antennas within a 3.0 mile radius of 24 Beacon St, Boston, MA 02133, United States.

Registered Towers

ID	Carrier/Owner	Distance
0	Obs Reil, Lic	0.1 mi
1	Winstar Wireless	
2	T-mobile	
3	One Boston Place	
4	Brookfield Finance	
5	T-mobile	
6	Massachusetts Be	

Antenna Sites • (Ruskin Rd, Hyde Park, MA 02136)

Now Add 5G Small Cells

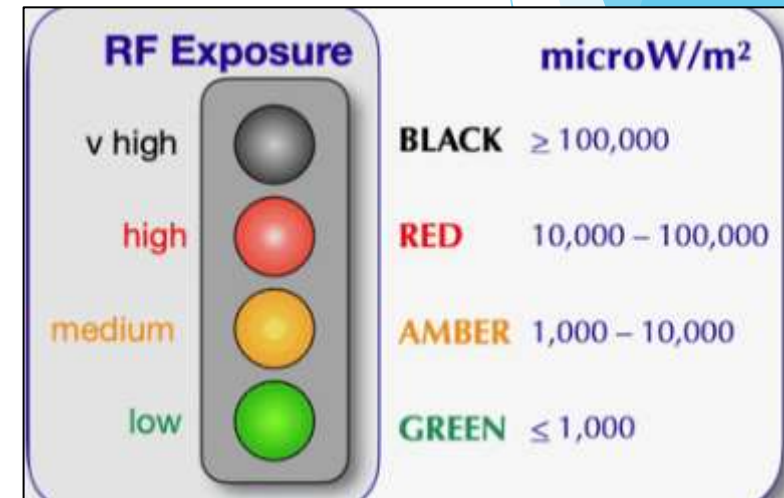
- ▶ [5th Generation technology](#), see [What is 5G & What Isn't](#)
- ▶ Promises faster entertainment downloads, smart cities, etc.; [buying the entertainment industry](#)
- ▶ Uses existing 3G, 4G wavelengths to penetrate buildings, can't go through objects
- ▶ 5G is the *addition* of short millimeter waves
- ▶ Industry goal: millions of small cells at curb outside bedrooms in public access way, every 2-12 houses
- ▶ Clear-cutting trees
- ▶ Never tested for safety ([Congressional hearing](#))
- ▶ ComputerWorld: [5G a Bad Joke](#)
- ▶ Verizon exposed [100 million January 2022](#)
- ▶ Rubik/Brown paper: [Evidence for a connection between coronavirus disease-19 and exposure to radiofrequency radiation from wireless communications including 5G](#)



Global EMF Monitoring Project



Outdoor Exposures



[Salzberg Guidelines](https://globalemf.net/)
<https://globalemf.net/>

Outdoor Measurements

- ▶ **Goal:** Less than **1,000** microwatts/square meter
- ▶ Westmoreland, NH Fire Department = **417**
- ▶ Keene, NH = **7,460**
- ▶ Nashua, NH = **14,500**
- ▶ Concord, NH = **66,600**
- ▶ Stratham, NH = **108,000**
- ▶ North End Boston = **613,000**
- ▶ [See Hawaiian Islands](#)



Social Norm Change

- ▶ Martin Luther King, Jr.
 - ▶ Public engages
 - ▶ Courts rule
 - ▶ Public policy enacted



Legal Solutions

- ▶ FCC Sued:
 - ▶ [Environmental Health Trust](#)
 - ▶ [IRREGULATORS v. FCC](#)
 - ▶ [Murray v. Motorola](#)
- ▶ FDA Petition: [Americans for Responsible Technology](#)
- ▶ [MA Board of Health Legal Guidelines](#):
 - ▶ BoH legally empowered to protect health
 - ▶ Pittsfield, MA BoH to Verizon: [cease and desist order](#) & [citizen lawsuit](#) with CHD
- ▶ Fay School ADA: [Court recognizes non-thermal biological effects](#) for the first time
- ▶ EHS: [California Appellate Court](#) holds that Wi-Fi sickness is a disability
- ▶ Many other [lawsuits](#)



Verizon New York 2017 Financial Annual Report Excerpt: Revenues, Expenses and Profits

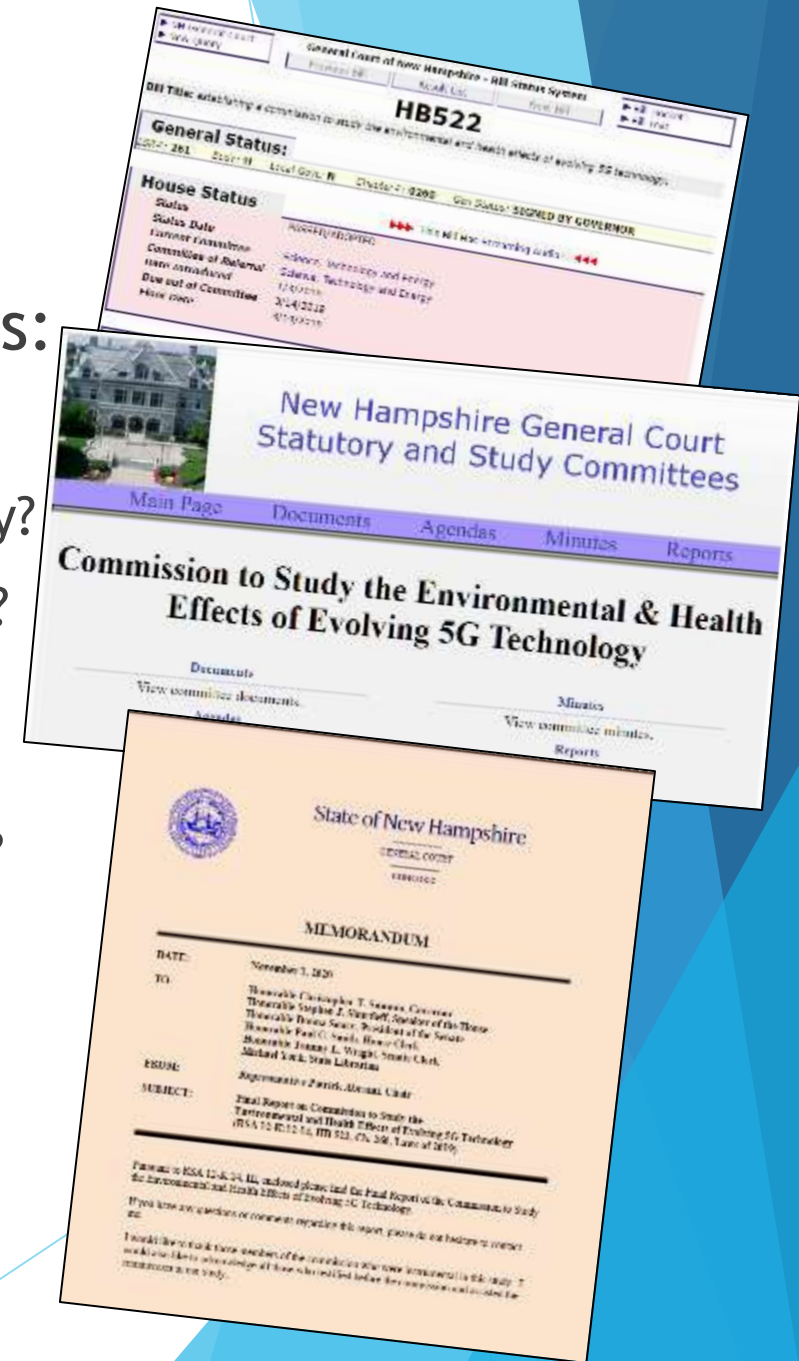
Item (a)	Total (b)	Nonregulated (c)	New York Local Service (d)	Access (e)
7 Total Operating Revenues	4,988,070,423	1,516,034,818	1,077,981,833	2,394,053,772
Operating Expenses				
Plant Specific	2,444,833,098	1,087,085,833	917,810,703	\$459,187,359
Plant Non-specific	440,183,019	55,415,741	247,756,805	\$137,010,493
Corporate Operations	2,917,804,192	297,290,536	1,768,187,818	\$52,425,990
Total Operating Expenses	7,578,159,182	1,645,881,073	4,022,050,889	2,010,245,463
Net Operating Revenues	(2,592,088,769)	(172,948)	(2,944,069,032)	351,627,317

Annotations:

- Corporate Operations Scandal:** Points to the Corporate Operations row.
- Wireless Scandal:** Points to the New York Local Service column.
- Billions for Broadband:** Points to the Plant Non-specific row.
- FCC Accounting Scandal:** Points to the Total Operating Revenues row.
- Tax Dodge:** Points to the Access column.

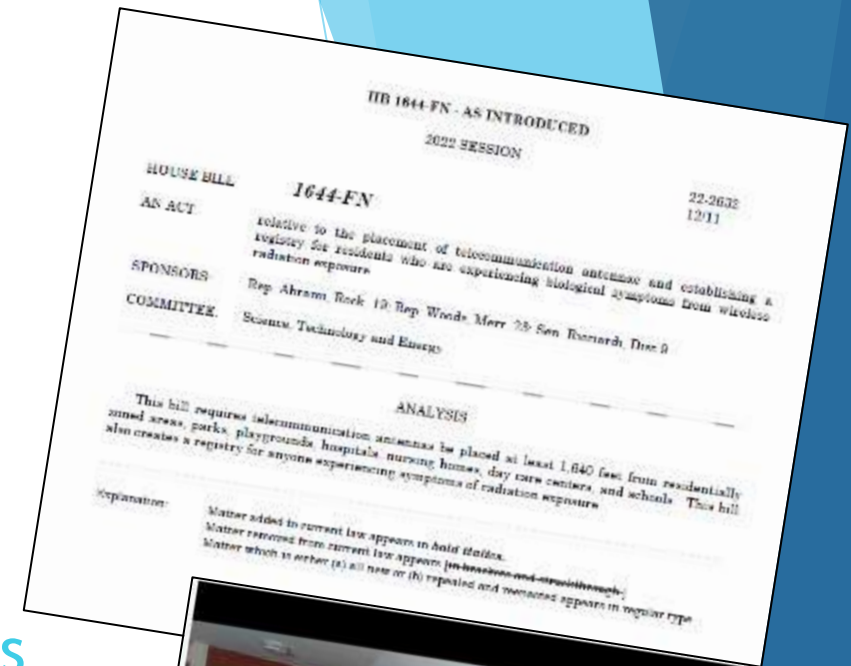
Leading Policy Solutions

- ▶ NH Rep. Patrick Abrami -- very pointed questions:
 - ▶ Why has the insurance industry put in RF exclusions?
 - ▶ Why does legal fine print say keep distance from the body?
 - ▶ Why are 1,000s of peer-reviewed studies ignored by FCC?
 - ▶ Why do FCC exposure limits not account for the non-thermal, non-ionizing, biological effects?
 - ▶ Why are US limits 100 times higher than other countries?
 - ▶ Why is the cumulative effect of increasing EMFs ignored?
- ▶ [New Hampshire 2019 law](#) in less than a year, groundbreaking [Commission Report](#) a year later
- ▶ Presentation by UNH [Dr. Kent Chamberlin](#) w/[slides](#)



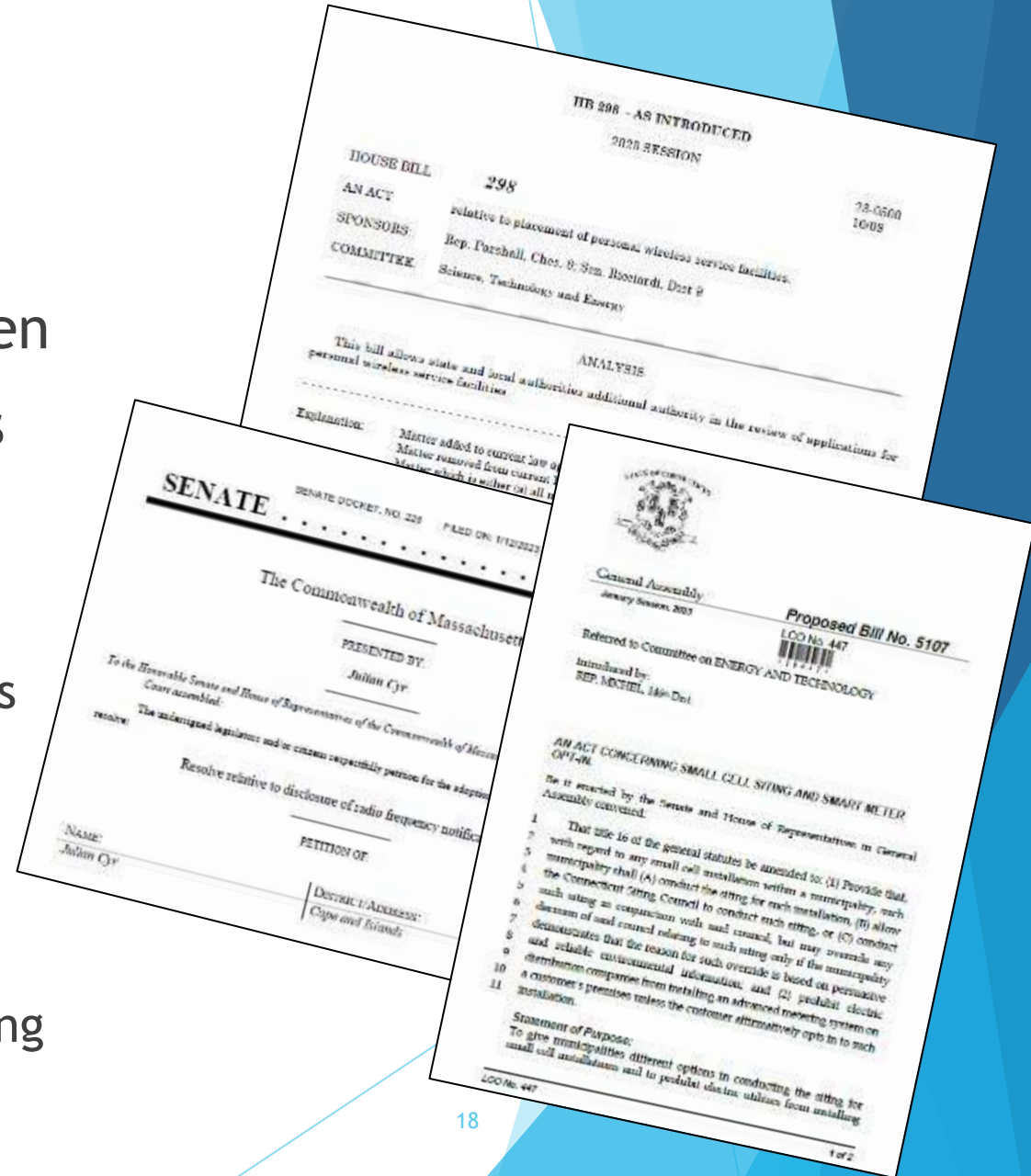
2022 NH Bill

- ▶ 2022: NH Rep. Patrick Abrami
 - ▶ [HB1644](#), Bi-partisan
 - ▶ 1,640' Setback (500 meters), registry of harm
- ▶ Presentation by UNH [Dr. Kent Chamberlin](#) w/ [slides](#)
- ▶ Frank Clegg, Retired President Microsoft Canada [testimony](#): “Wireless technology is no longer advanced technology, it has outlived its useful life as a main source of connectivity”
- ▶ House Committee on Science, Technology and Energy vote 15:3 to introduce new legislation in January



2023 Bills

- ▶ NH [HB.298](#) State & municipal control
- ▶ ME [LD 697](#) Birds, bees insects and children
- ▶ CT [HB-5107](#) Small cells and smart meters
- ▶ MA Bills: see hearing [testimonies](#)
 - ▶ [S.155](#): Commission
 - ▶ [S.156](#): Protect children from handheld devices
 - ▶ [S.316](#): Schools
 - ▶ [S.2152](#): Smart meter choice, emergency bill
 - ▶ [S.1044](#): Civil rights
 - ▶ [H.2158](#): EMS recognition, registry and reporting
- ▶ Bills in [Other States](#)



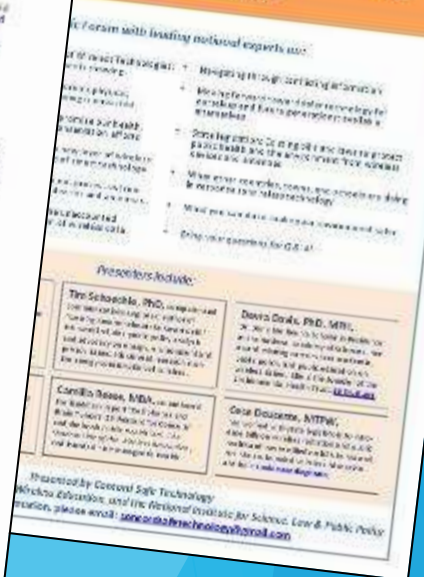
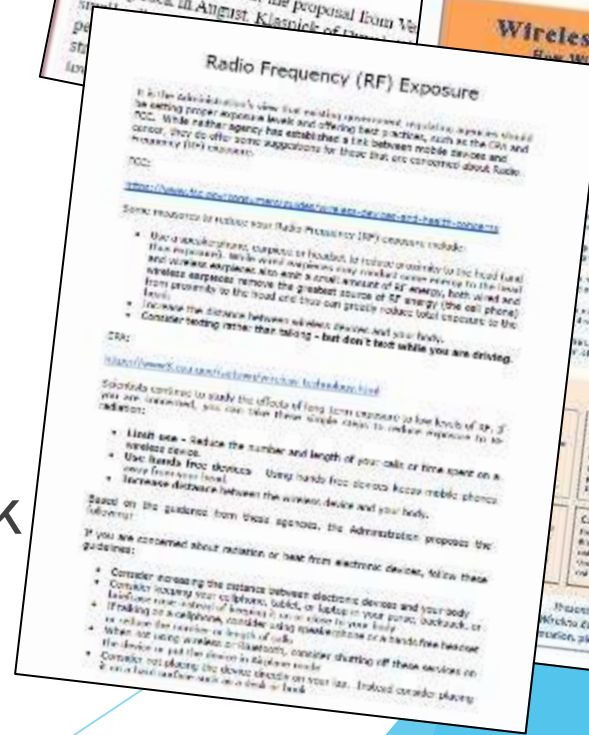
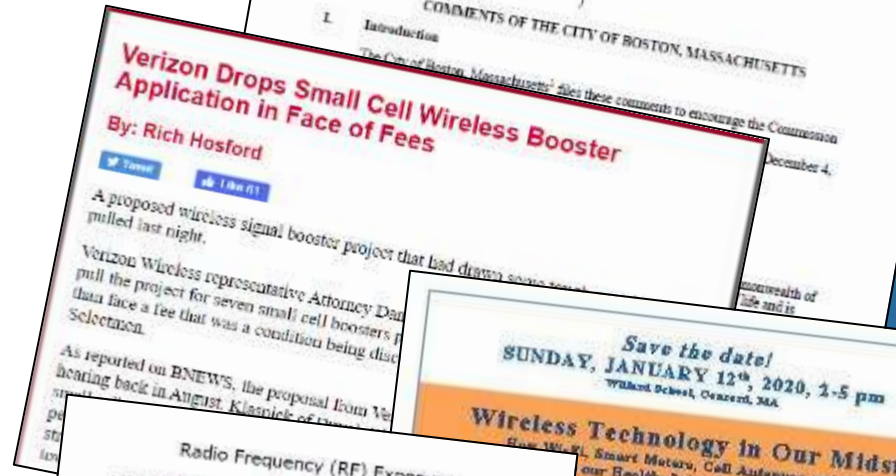
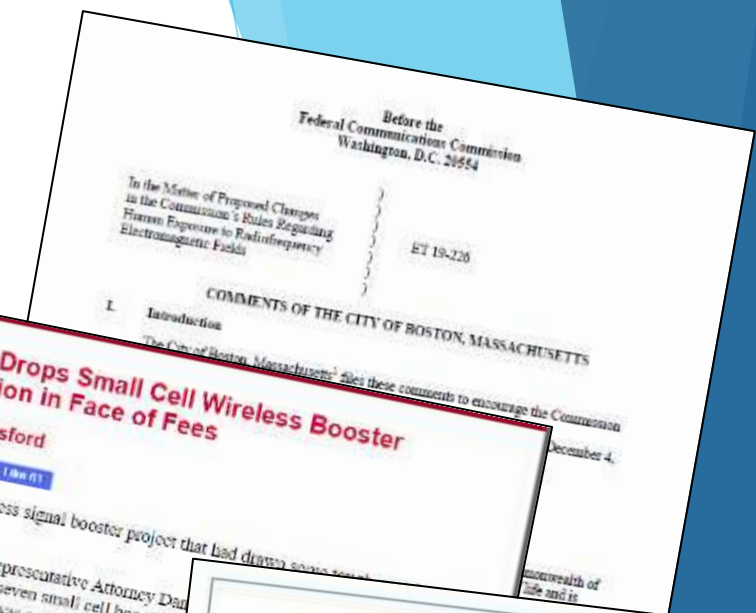
Public Taking Action

- ▶ [150+ national groups](#)
- ▶ [Cell towers](#) in MA
 - ▶ [Shelburne](#), MA 1,500' setback in bylaw, 3,000' from schools
 - ▶ Wayland 900' setback in bylaw
 - ▶ [Pittsfield](#) Board of Health unanimous vote to issue Verizon cease and desist
 - ▶ Dover-Sherborn Regional won
 - ▶ Concord relocating tower
 - ▶ Petersham AT&T height waiver denied
 - ▶ Centerville Concerned Citizens @ Cape Cod
 - ▶ Holliston wireless antennas on power lines



MA Towns Taking Action

- ▶ [City of Boston files with FCC](#)
- ▶ [City of Boston sues FCC](#)
- ▶ [Burlington Small Cell Policy](#)
 - ▶ National example with [Americans for Responsible Technology](#)
 - ▶ Bedford, Lincoln, Andover adopting Burlington
- ▶ [Shrewsbury Board of Health](#)
- ▶ [Concord Expert Forum](#) 300+
- ▶ [Worcester schools RF statement](#)
- ▶ Ruskin Road Neighborhood Forum, Hyde Park with Mike Lynch, Broadband & Cable Office



Public Servants Taking Action

- ▶ Stamford, CT rejects 5G
- ▶ Easton, CT 5G moratorium
- ▶ Hawaii County bans 5G
- ▶ Worldwide actions



School Actions

- ▶ Louisiana law passed [HB548](#) for [school best practices for digital devices!](#)
- ▶ [Netherlands](#), Finland and others removing technology!
- ▶ [New York Times](#): Silicon Valley execs banning screens from their children
- ▶ [TechSafe Schools](#) national program
- ▶ [Curriculum](#) & [Professional Development](#)
- ▶ Wireless Education's [Schools & Families](#) on-line course
- ▶ Extensive printable resources at [Environmental Health Trust](#)
- ▶ [Maryland](#) first public health agency to recommend hard-wiring in schools, see [fact sheet](#)
- ▶ U.S. Collaborative for High Performance Schools [low-EMF best practices](#)
- ▶ [Cyprus safety recommendations](#) for study at home



Professional Solutions



▶ Health Care Training

- ▶ [EMF Textbook](#)
- ▶ [Physicians for Safe Technology](#)

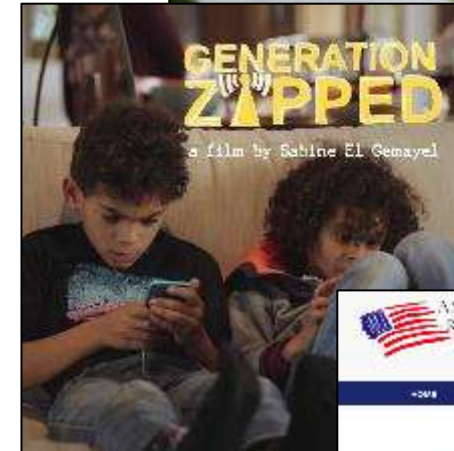
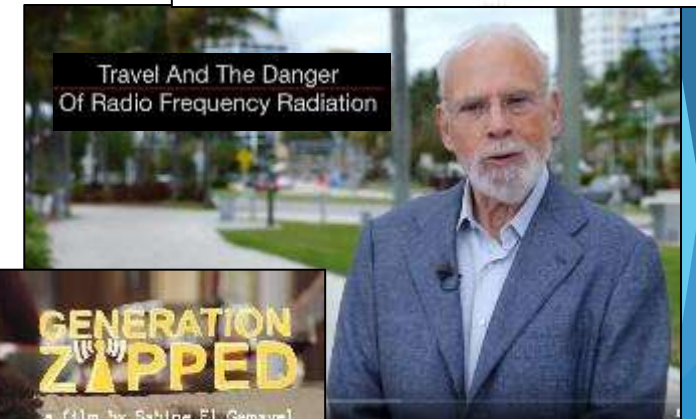
▶ Engineers, physicists, technologists, architects, etc.

- ▶ Clegg et al., [Building science and radiofrequency radiation: What makes smart and healthy buildings](#), Building and Environment, 2019
- ▶ Heroux et al., [Cell Phone Radiation Exposure Limits and Engineering Solutions](#), Int. J. Environ. Res. Public Health, 2023
- ▶ Silicon Valley engineer [Jeremy Johnson TEDx Talk](#), additional info [for engineers and physicists](#)



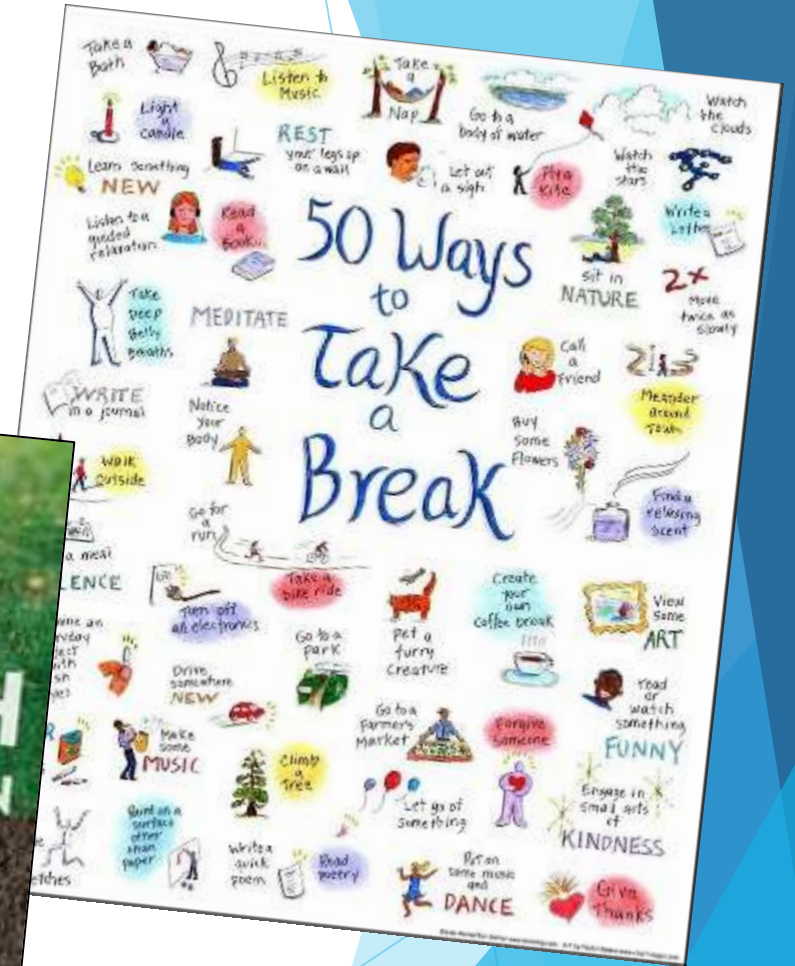
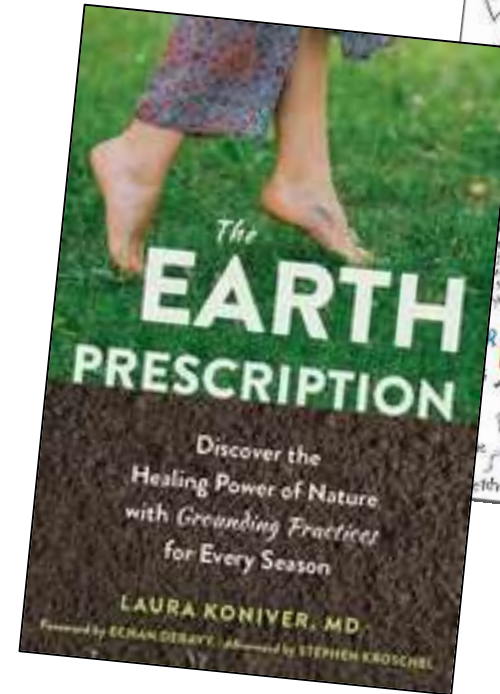
Home & Work Solutions

- ▶ [Building Biology Institute](#) consultants
- ▶ Award-winning film [Generation Zapped](#)
- ▶ PBS Burt Wolf [1808](#) & [1809](#)
- ▶ Americans for Responsible Technology [Tool Kit](#)



Safe Tech Solutions: Physical & Mental Health

- ▶ Avoid excessive screen time
 - ▶ Set limits for yourself and children
 - ▶ Model good behavior
- ▶ 50 Ways to Take a Break
- ▶ The Earth Prescription



Safe Tech Solutions: Municipal Level

- ▶ [ALARA](#), As Low As Reasonably Achievable (CDC)
- ▶ Investigate:
 - ▶ Resources for [Municipal Leaders](#)
- ▶ Differentiate industry priorities vs. public's
 - ▶ [Reinventing Wires: The Future of Landlines and Networks](#)
- ▶ [Measure](#) vs. [biological effects](#)

ALARA - As Low As Reasonably Achievable

Understanding EMFs For Municipal Leaders

Re-Inventing Wires: The Future of Landlines and Networks

Americans for Responsible Technology
Checklist for Municipal Codes Addressing Small Cell Installations

RADIOFREQUENCY / MICROWAVE EXPOSURE GUIDELINES

Power Density	No. Countries	Radio Frequency	Exposure Duration	Reference
0.01	1	0.01	10	ICNIRP (1998)
0.001	1	0.001	10	ICNIRP (1998)
0.0001	1	0.0001	10	ICNIRP (1998)
0.00001	1	0.00001	10	ICNIRP (1998)

Next Steps

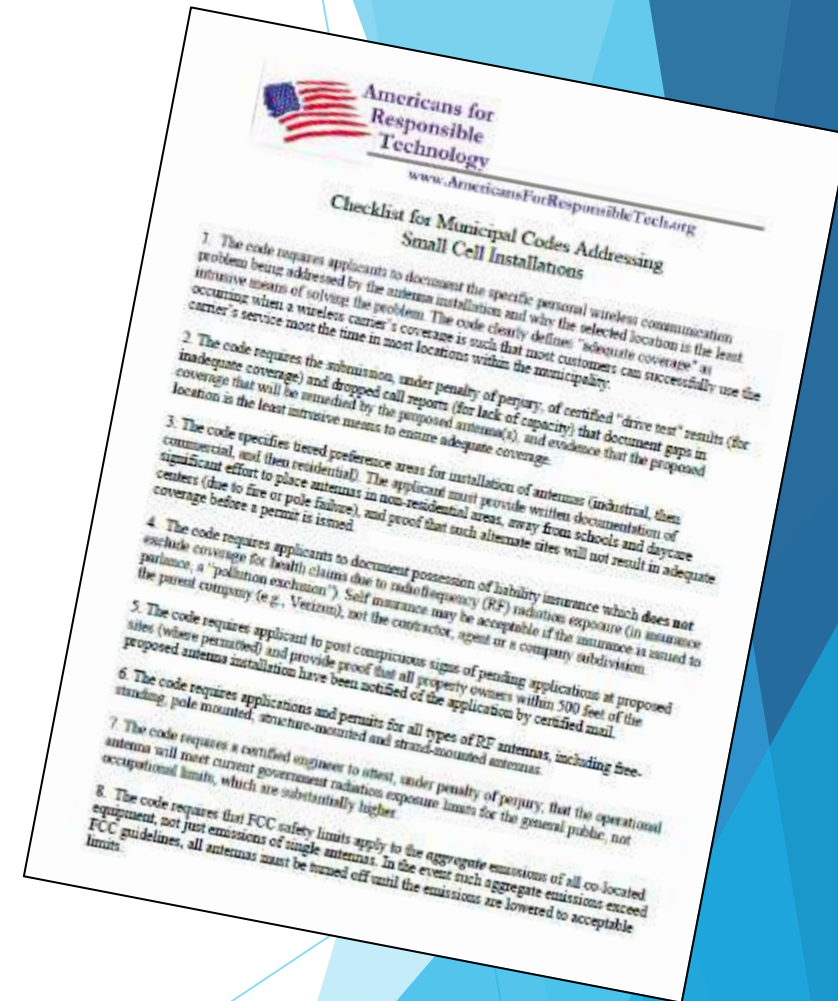
- ▶ No safe level of EMF/RF
- ▶ [Dr. Linda Birnbaum](#): Need state efforts
- ▶ Educate the public
 - ▶ [Upcoming info sessions](#)
 - ▶ Sponsor public/regional forums ([Tri Town Health Department](#), [Hanscom Area Towns Selectboard](#))
 - ▶ Train [schools & staff](#) on safe tech ASAP
 - ▶ Engage professional associations (Municipal, Schools, AFL/CIO, Nurses Assoc., Children's Alliance, etc.)



Next Steps

▶ Local:

- ▶ Form town-wide tech safety committees
- ▶ Offer no-fee “smart” meter opt-out
- ▶ Transition to hard-wired in public spaces
- ▶ Strengthen wireless communication facility by-laws: [Americans for Responsible Technology tool kit](#)
- ▶ National Attorney [Andrew Campanelli](#)



For Today

- ▶ Reduce your exposures
 - ▶ Notice what is radiating
 - ▶ Start with baby steps
 - ▶ Create a sleep sanctuary
 - ▶ Ethernet cables and adapters
 - ▶ Choose airplane mode
- ▶ Environmental Health Trust

Resources



Checklist for Low-EMF Computer

Set-up For Any Computer

- ✓ Device always on a table. Don't sit on floor. Screen is at or slightly below—eye level.
- ✓ The "high-five test" if you can't properly lift. Passes means you're good.

Use Wired, Not Wi-Fi and Not Bluetooth

Use corded (not Wi-Fi, not Bluetooth) mouse, keyboard, printer, speakers, and other accessories.

Connect devices to your modem using ethernet cord. Check if you need an adapter to connect to the ethernet.

After connecting by ethernet cord, make sure Wi-Fi is OFF on device and modem, and make sure Bluetooth is off on device).

Multiple users? Connect a corded ethernet switch to the modem or to the ethernet, then you can add more ethernet cords to numerous devices.

Reduce Blue Light on ALL Screens

- Blue light blocker covers are usually available for all screens.
- Blue-lighting eyeglasses.
- Download software that reduces blue light and filters.

ENVIRONMENTAL HEALTH TRUST

What Parents Need To Know About Safe Technology

Parents should not panic over the latest research, but it can be used as a guide to make sure that children's wireless use and exposure to cell phones and other devices is kept to a minimum.

IN AN ENVIRONMENTAL HEALTH TRUST REPORT

"Children in a computer safety school or environmental program, including cell phone safety."

IN AN ENVIRONMENTAL HEALTH TRUST REPORT

BE SUPER-SMART REDUCE WIRELESS

Simple steps to practice safe tech.

- TURN IT OFF WHEN NOT IN USE.** Avoid unnecessary radiation by powering off wireless devices, routers, organizers, and laptops when not in use. Not at bedtime.
- PRE-DOWNLOAD** Remember that when you stream video or music the traffic goes into your body. It's better to pre-download apps and videos. Use and then switch to later Wi-Fi wireless connections turned off.
- WIRELESS (NOT WI-FI & NOT BLUETOOTH)** Use a wired mouse, keyboard, printer, game system keyboard, etc.
- HEALTHY SLEEP** Turn off wireless and wireless devices from around your bed. Do not sleep with your cell phone.
- MINIMIZE FACETIME AND SOCIAL MEDIA ON CELL PHONES.** When you use facetime or social media, your phone works more like a cell phone. Instead, download media to your phone and connect to the internet by ethernet cord (with Wi-Fi turned off).
- USE A PLUG-IN ETHERNET CORD.** It's super fast, you may be able to connect your laptop, tablet or computer with an ethernet cord with Wi-Fi, BT, and Bluetooth OFF.
- DISTANCE MATTERS.** Maximize the distance between you and wireless devices.
- CORDED PHONE** Corded phone has no Wi-Fi and wireless radiation.
- WIRELESS (NOT WI-FI & NOT BLUETOOTH)** Use a wired mouse, keyboard, printer, game system keyboard, etc.

ENVIRONMENTAL HEALTH TRUST

Thank You!

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