

# EMF Safety in a Wireless World

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Cece Doucette, Massachusetts for Safe Technology

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## Cece Doucette, MTPW

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



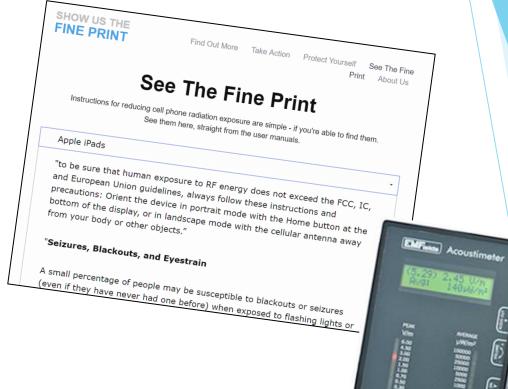
#### **Best Practices for Mobile Devices**

- \*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
    - **▶**General
      - ► Legal & Regulatory
        - RF Exposure



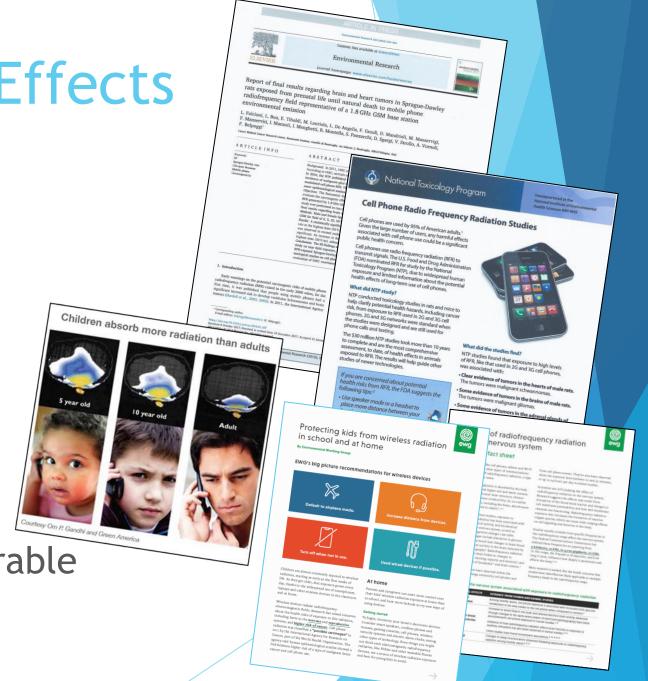
ATTRACT

JAMES AND STORE STORE

- ► Ashland & Newton library Acoustimeter Pittsfield Safe & Sound Pro II
- ► WACA 23-min. PSA, WCCA Tech Safe series

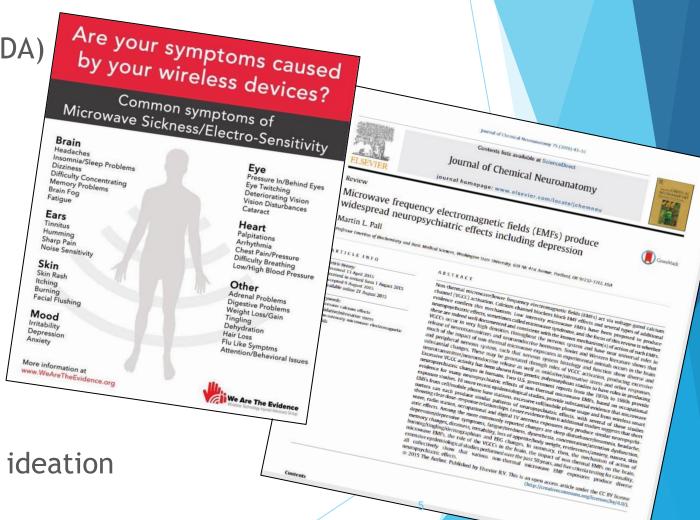
# Science: Long-term Effects

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



## Science: Short-term Effects

- ► <u>Electromagnetic Sensitivities</u> (ADA)
  - > Insomnia
  - > Headaches
  - Nosebleeds/earbleeds
  - Fatigue
  - > Pain
  - Skin abnormalities
  - > Irregular heartbeats
  - Cognitive impairment
  - > Anger, behavior issues
  - > Anxiety, depression, suicidal ideation



Science: Planetary Impact

- 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



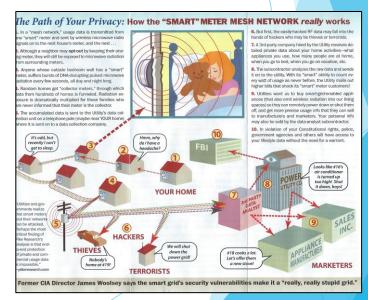
# What Safe Technology Looks Like



# Source: Utility "Smart" Meters

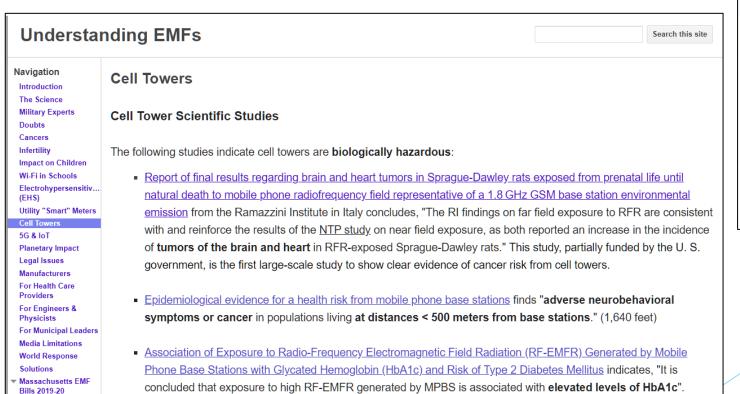
- Pulse radiation continuously
- Can hop on house wires/pipes
- > Fires, explosions, improper grounding
- Data harvesting, privacy issues
- Leading cause of sudden onset microwave sickness
- ► Environmental justice/<u>Worcester</u>
- ► <u>TedX Talk</u>: Jeromy Johnson, engineer
- ► <u>TedX Talk</u>: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



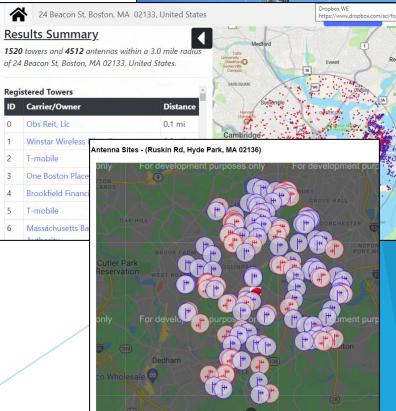


### Source: Cell Towers

- Examine the <u>non-industry funded science</u>
- ► AntennaSearch.com







### Now Add 5G Small Cells

- ► 5<sup>th</sup> Generation technology
- Promises faster entertainment downloads, smart cities, etc.; <u>buying the entertainment industry</u>
- Uses existing 3G, 4G wavelengths to penetrate buildings, can't go through objects
- **Solution** 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 (<u>Congressional hearing</u>)
- ComputerWorld: <u>5G a Bad Joke</u>
- Verizon exposed <u>100 million January 2022</u>
- ► Rubik/Brown paper: <u>Evidence for a connection between coronavirus disease-19 and exposure to radiofrequency radiation from wireless communications including 5G</u>



# Global EMF Monitoring Project



#### **Outdoor Exposures**



Salzberg Guidelines <a href="https://globalemf.net">https://globalemf.net</a>

#### 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



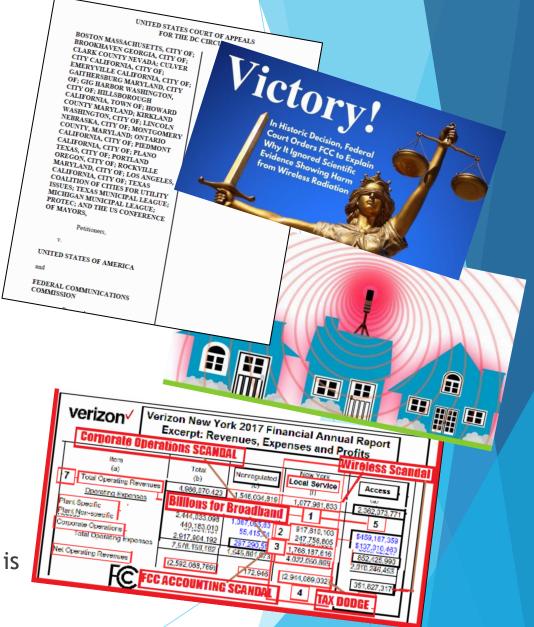
# Social Norm Change

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



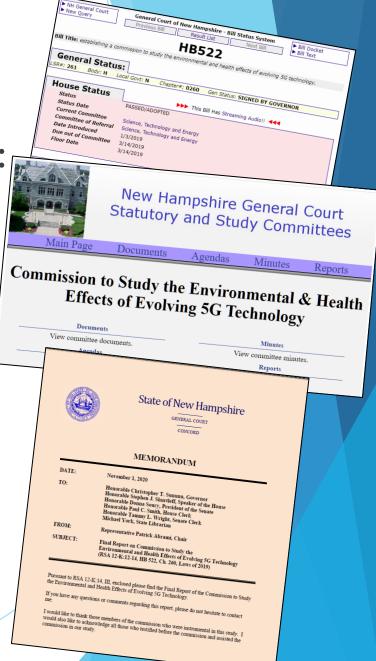
# Legal Solutions

- ► 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: <u>cease and desist order</u> & <u>citizen lawsuit</u> with CHD
- ► Fay School ADA: <u>Court recognizes</u> non-thermal biological effects for the first time
- ► EHS: <u>California Appellate Court</u> holds that Wi-Fi sickness is a disability
- Many other <u>lawsuits</u>



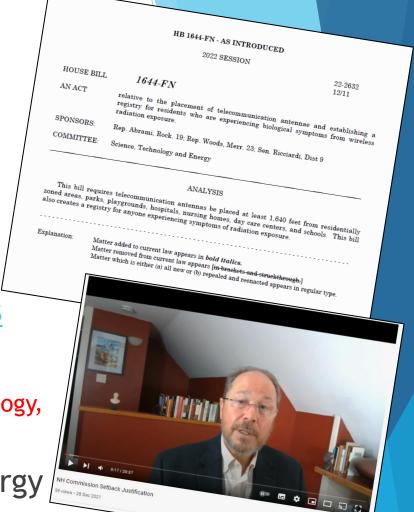
# Leading Policy Solutions

- 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 nonthermal, 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 <u>Dr. Kent Chamberlin</u> w/<u>slides</u>



### 2022 NH Bill

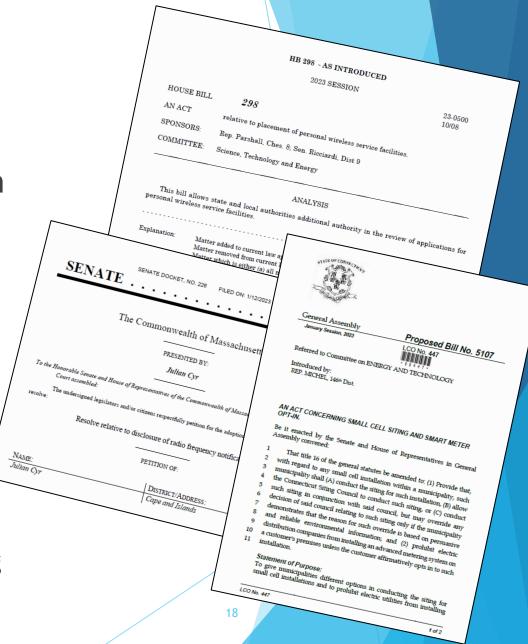
- ▶ 2022: NH Rep. Patrick Abrami
  - ► <u>HB1644</u>, Bi-partisan
  - ▶ 1,640' Setback (500 meters), registry of harm
- ▶ Presentation by UNH <u>Dr. Kent Chamberlin</u> w/<u>slides</u>
- ► Frank Clegg, Retired President Microsoft Canada testimony: "Wireless technology is no longer advanced technology, 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



B 4 \$ DISLIKE \$ SHARE \$ SAVE

### 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 <u>testimonies</u>
  - ► S.155: Commission
  - ► <u>S.156</u>: Protect children from handheld devices
  - ► <u>S.316</u>: Schools
  - ► <u>S.2152</u>: Smart meter choice, emergency bill
  - ► <u>S.1044</u>: Civil rights
  - ▶ <u>H.2158</u>: EMS recognition, registry and reporting
- ► Bills in <u>Other States</u>



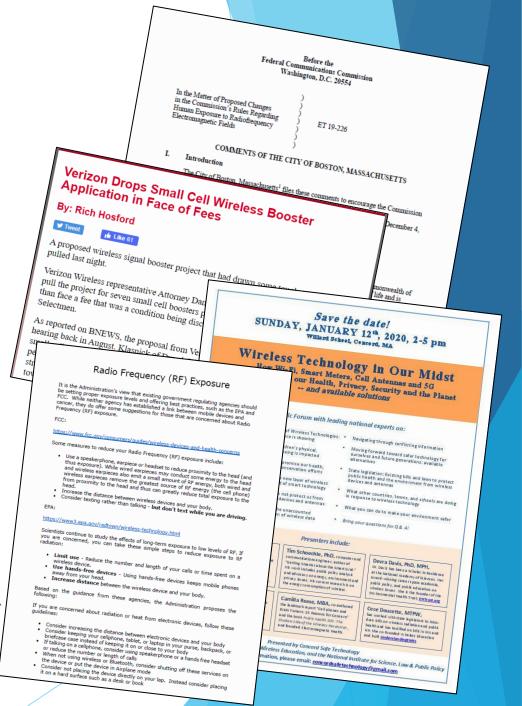
# **Public Taking Action**

- ► <u>150+ national groups</u>
- ► <u>Cell towers</u> in MA
  - Shelburne, MA 1,500' setback in bylaw, 3,000' from schools
  - Wayland 900' setback in bylaw
  - <u>Pittsfield</u> 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 <u>Americans for</u> <u>Responsible Technology</u>
  - 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



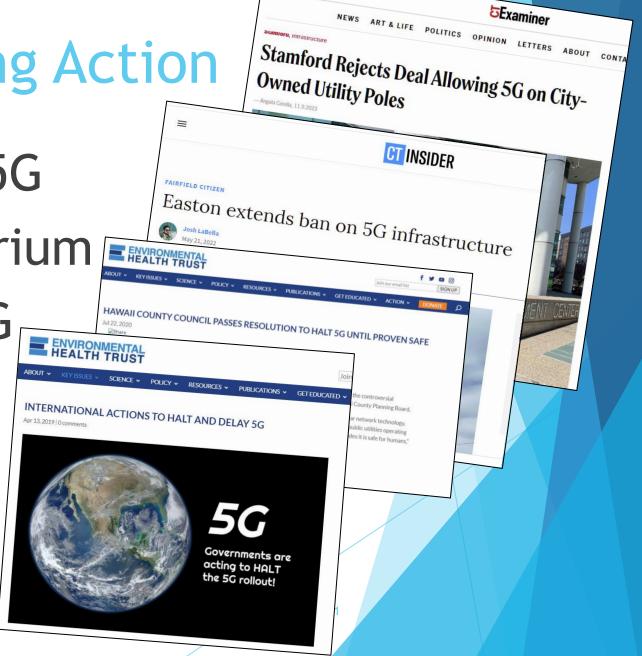
Public Servants Taking Action

► Stamford, CT rejects 5G

Easton, CT 5G moratorium

► Hawaii County bans 5G

► Worldwide actions



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#### **School Actions**

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





### **Professional Solutions**

- Health Care Training
  - ► <u>EMF Textbook</u>
  - ► Physicians for Safe Technology
- Engineers, physicists, technologists, architects, etc.
  - ► Clegg et al., <u>Building science and radiofrequency radiation: What makes</u> <u>smart and healthy buildings</u>, Building and Environment, 2019
  - Heroux et al., <u>Cell Phone Radiation Exposure Limits and Engineering Solutions</u>, Int. J. Environ. Res. Public Health, 2023
  - Silicon Valley engineer <u>Jeromy Johnson TEDx Talk</u>, additional info <u>for engineers and physicists</u>



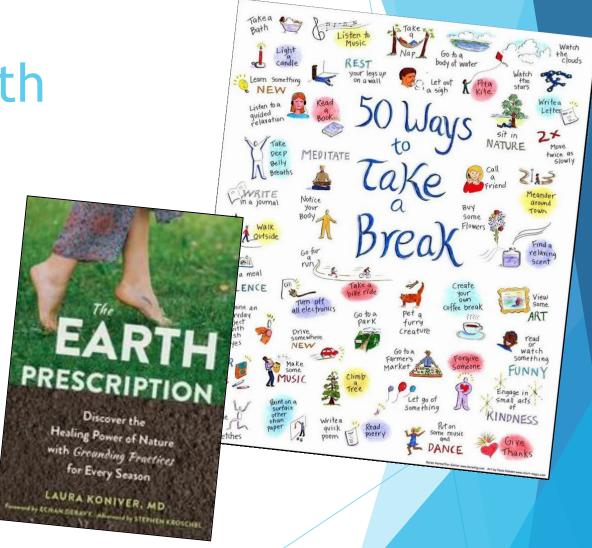
#### Home & Work Solutions

- <u>Building Biology Institute</u> consultants
- ► Award-winning film <u>Generation Zapped</u>
- ► PBS Burt Wolf <u>1808</u> & <u>1809</u>
- 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 <u>Municipal Leaders</u>
- Differentiate industry priorities vs. public's
  - ► <u>Reinventing Wires: The Future of</u> Landlines and Networks
- ► Measure vs. biological effects



# 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

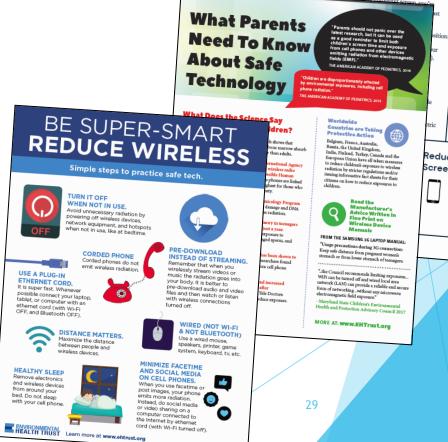


- Checklist for Municipal Codes Addressing
- The code requires applicants to document the specific personal wireless communication nroblem being addressed by the antenna installation and why the selected location is the leg 1. The code requires applicants to document the specific personal wireless communication problem being addressed by the antenna installation and why the selected location is the least manner of entiring the translation. The code plants and why the selected location is the least code and the code plants are considered to the code plants. protein being addressed by the antenna installation and why the selected location is the lear infrustry means of solving the problem. The code clearly defines "adequate coverage" as occurring when a wireless carrier is coverage as exposed to such that most customass can expose fails. infinisive means of solving the problem. The code clearly defines "adequate coverage" as occurring when a wireless carrier's coverage is such that most customers can successfully use the most locations within the minimality. occurring when a wireless carrier's coverage is such that most customers of carrier's service most the time in most locations within the municipality.
- 2. The code requires the submission, under penalty of perjury, of certified "drive test" results (for lack of canacity) that document wans in 2. The code requires the submission, under penalty of perjuty, of certified "drive test" results (coverage had dropped call reports (for lack of capacity) that document gaps in location is the least intrusive means to ensure adequate coverage.
- 3. The code specifies tiered preference areas for installation of antennas (industrial, then communical and then recidential). The amplicant material montals written documentation of the amplicant materials. 3. The code specifies hered preference areas for installation or aniemas (monstria, inen commercial, and then residential). The applicant must provide written documentation of sizuificant effort to place aniemas in non-residential areas, away from schools and dayce commercial and then residential). The applicant must provide written documentation of significant effort to place antennas in non-residential areas, away from schools and daycare contact (this to five or node failure) and proof that such alternate cine will not result in adequate
- significant errors to piace antennas in non-residential areas, away from schools and daycare centers (due to fire or pole failure), and proof that such alternate sites will not result in adequate coverage before a permit is issued. 4. The code requires applicants to document possession of liability insurance which does not exclude coverage for health claims due to radiofrequency (RF) radiation exposure (in insurance with acceptable if the insurance is issued to exclude coverage for health claims due to radiofrequency (RF) radiation exposure (in insurance parlance, a "pollution exclusion"). Self insurance may be acceptable if the insurance is issued to
- parlance, a "pollution exclusion"). Self insurance may be acceptable if the insurance is is the parent company (e.g., Verizon), not the contractor, agent or a company subdivision 5. The code requires applicant to post conspicuous signs of pending applications at proposed citae (subara varmithad) and provide proof that all proposed compare within 500 fact of the 5. The code requires applicant to post conspicuous signs of pending applications at propor sites (where permitted) and provide proof that all property owners within 500 feet of the proposed antenna installation have been notified of the application by certified mail
- The code requires applications and permits for all types of RF antennas, including free-standing, pole mounted, structure-mounted and strand-mounted antennas.
- 7. The code requires a certified engineer to attest, under penalty of perjury, that the operational matter transfer and property of perjury, that the operational matter than an appear is not to the operational matter than the content of the conte
- 7. The code requires a certified engineer to aftest, under penalty of perjuty, mat the operation afternational limits which are substantially higher. 8. The code requires that FCC safety limits apply to the aggregate emissions of all co-located equipment, not just emissions of single antennas. In the event such aggregate emissions exceed the number of fundi the emissions are lowered to accomplish equipment, not just emissions of single antennas. In the event such aggregate emissions exceed FCC guidelines, all antennas must be turned off until the emissions are lowered to acceptable

## 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. Feet flat on floor, Screen is at-or slightly below-eye level.

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

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

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-blocking eyeglasses. Download software that reduces blue light and flicker.



## Thank You!

- Massachusetts for Safe Technology
- ► MA4SafeTech@gmail.com

