

DISCOVERING THE WORLD OF “DIGITAL SAFETY”:

AMAZING TOOLS AVAILABLE AT YOUR FINGERTIPS
THAT YOU MIGHT NOT HAVE KNOWN ABOUT

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DIGITAL SAFETY

- What we ARE going to talk about:
 - Digital safety tools available for health and safety professionals
- What we are NOT going to talk about:
 - Digital safety as it relates to cybersafety for kids/teens (a common use of the term - try “Googling” it)



DISCLAIMER

- I am here to share helpful tools with other health and safety professionals
- Unless otherwise specified, the apps discussed are available for free
- I am not here to endorse any particular product
- I do not receive any perks from any company regarding the use of their products
- I'm not technically a technical guy
- This list is not all inclusive – your list may vary
– and we welcome your input and feedback

THE TERM “APP”

- “According to the *Oxford English Dictionary*’s historical entry for the word, ‘*app*’ as a shortening of application (as in *application program*) first found its way into print in the 1980s. Back then it was mainly a colloquial term used in computing circles...”
- With the introduction of the iPhone in 2007, and subsequently the Apple App Store in 2008, thousands of ‘apps’ were made available and were downloaded millions of times
- “App” was awarded the “word of the year” by the American Dialect Society in 2010
 - <http://www.americandialect.org/app-voted-2010-word-of-the-year-by-the-american-dialect-society-updated>

APPRECIATING THE DIGITAL DIVIDE

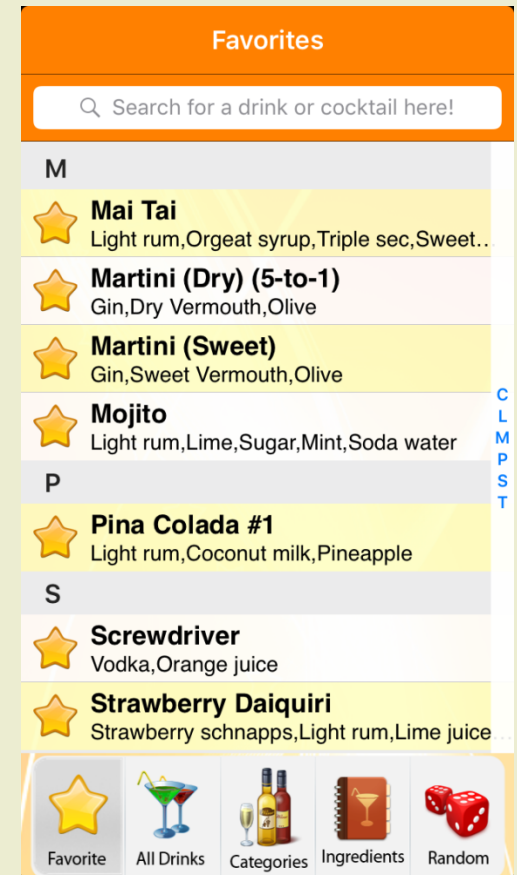
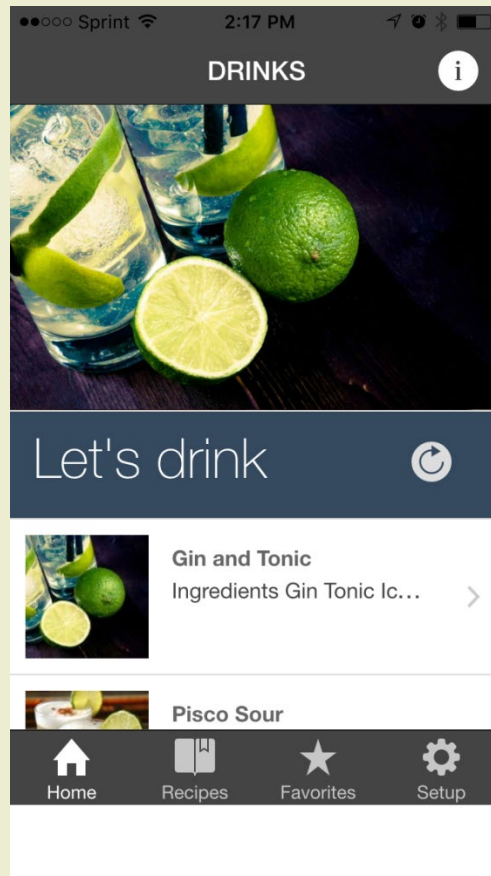
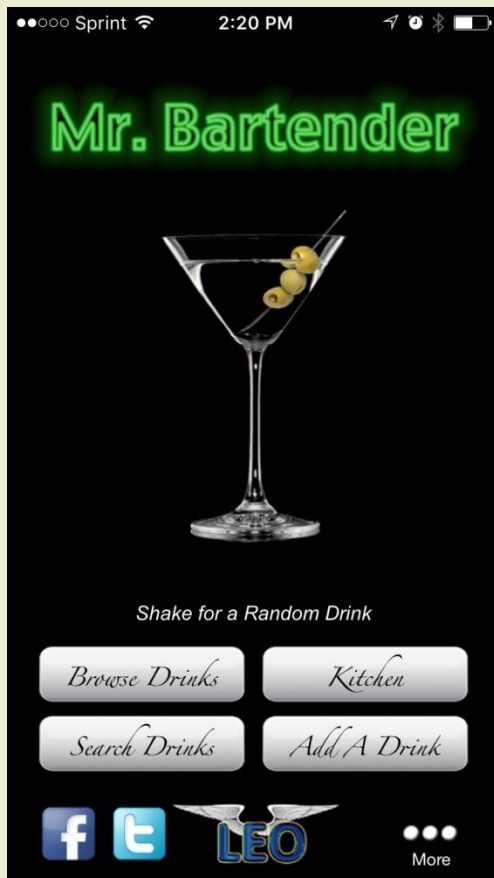
- Younger EHS professionals may be privy to these technologies, however the “more senior” generation may not have considered or embraced them
- Don’t assume all EHS professionals know about these apps or, importantly, know how to access or use them



SURVEY OF EHS PROFESSIONALS

- This is not just Scott's list!
- Practicing EHS professionals from around the USA were queried to obtain feedback on use of health and safety related apps
- The following represents a summary of the feedback obtained

TOP THREE RESPONSES



WEATHER APPS

- Why the need for real time weather information?

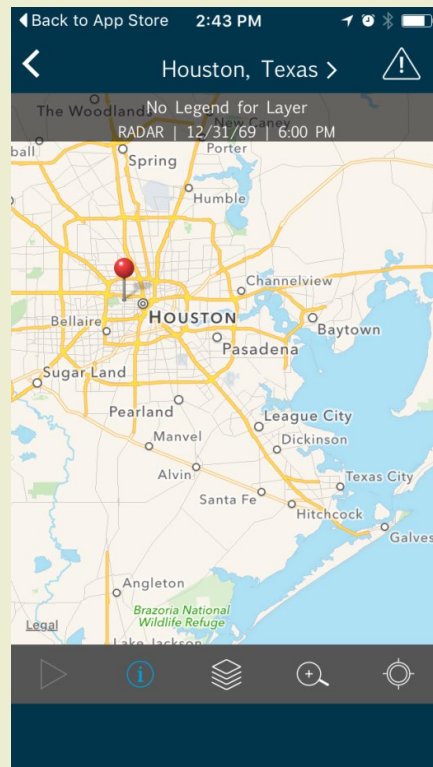
Based on National Weather Service and Associated Press reports, approximately 140 deaths have been attributed to flooding in 2016.

Texas has had the highest number of flood deaths with at least 77 related fatalities during 2015-2016. (8 in Houston in April 2016)



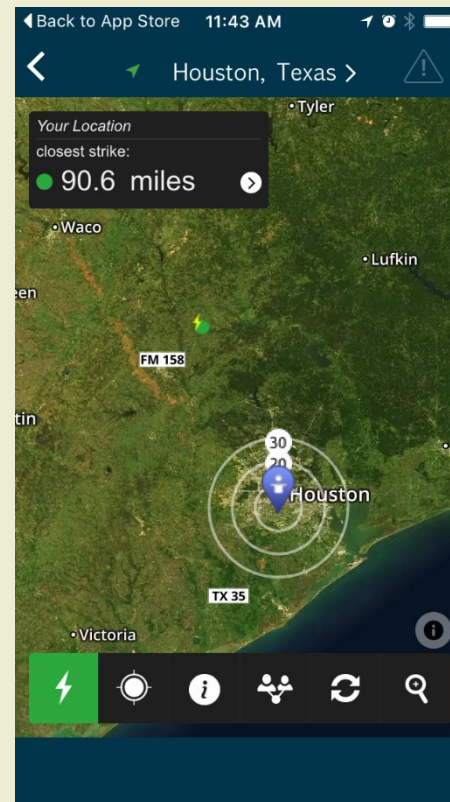
WEATHER APPS

- Helpful for planning common daily activities
- Can be used to guide emergency planning decisions
- In case of severe weather, these apps also inform the users about how to protect themselves and minimize damage



LIGHTNING STRIKE ALERTS

- Many lightning strike alert apps exist
- Spark-Alert from WeatherBug provides real time lightning strike info for your area




NIOSH LADDER SAFETY

- Why is ladder safety so important?
- More than 500,000 people are injured and more than 300 people die from ladder-related injuries each year in the United States.
- The estimated annual cost of ladder injuries in the US is \$24 billion, including lost work time, medical, legal, and pain/suffering expenses.



NIOSH LADDER SAFETY

- Determine what ladder rating is appropriate:

< Selection Duty Rating 

How much do you weigh, including tools and materials?


185 lbs

Will you or the ladder be near exposed electrical conductors?

YES NO

Done


170 lbs
175 lbs
180 lbs
185 lbs
190 lbs
195 lbs
200 lbs

< Selection Duty Rating 

How much do you weigh, including tools and materials?


Recommended Ladder

MINIMUM Grade Required

 **200** lbs. Load Capacity
TYPE III
DUTY RATING

LIGHT DUTY Household

OK


Show me the ladder 

Home Measuring Tool Ladder Safety

NIOSH LADDER SAFETY

- Provides basic but important ladder safety information:

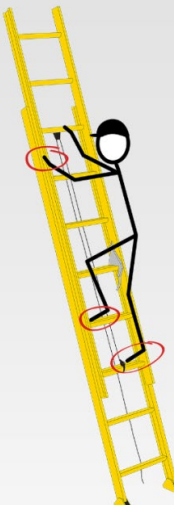
< Ladder Safety Proper Use



Face the ladder and maintain three points of contact when climbing.

Home Measuring Tool Ladder Safety

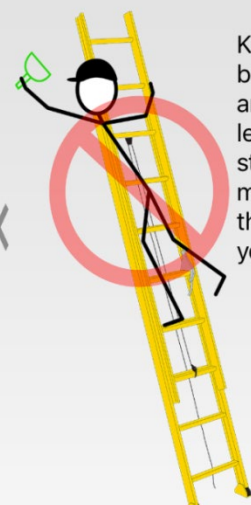
< Ladder Safety Proper Use



Grasp the ladder firmly. Maintain 3 points of contact when practical.

Home Measuring Tool Ladder Safety

< Ladder Safety Proper Use

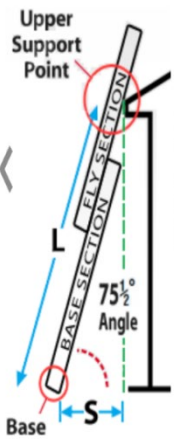


Keep centered between rails and avoid leaning, stretching, or making moves that could throw you off balance.

Home Measuring Tool Ladder Safety

< Back More Tips

4:1 Ratio



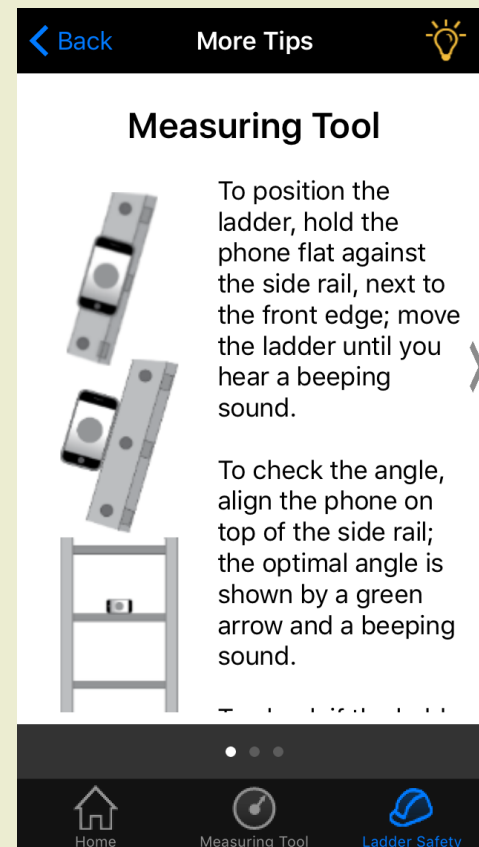
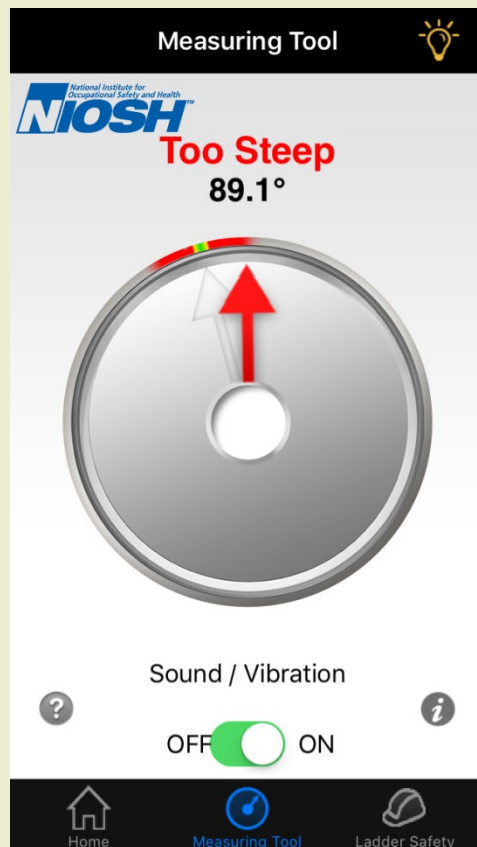
Place base of ladder 1 foot away from support for every 4 feet of working length of the ladder.

$S = \frac{1}{4} L$

Home Measuring Tool Ladder Safety

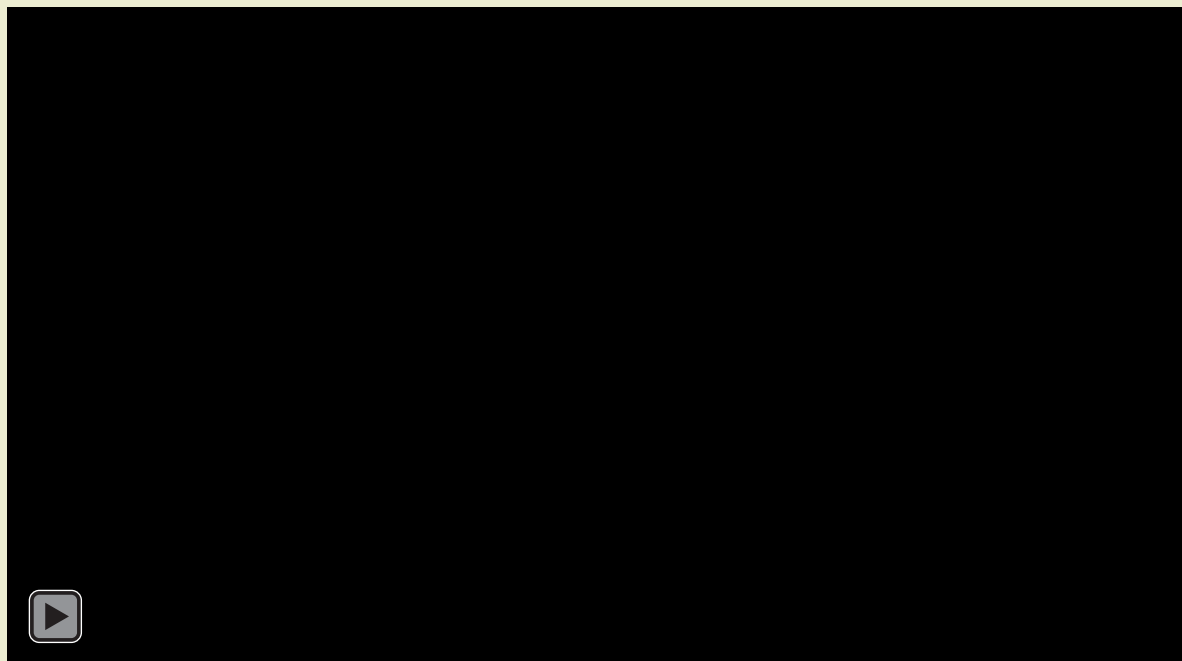
NIOSH LADDER SAFETY

- Ladder safety measuring tool included:



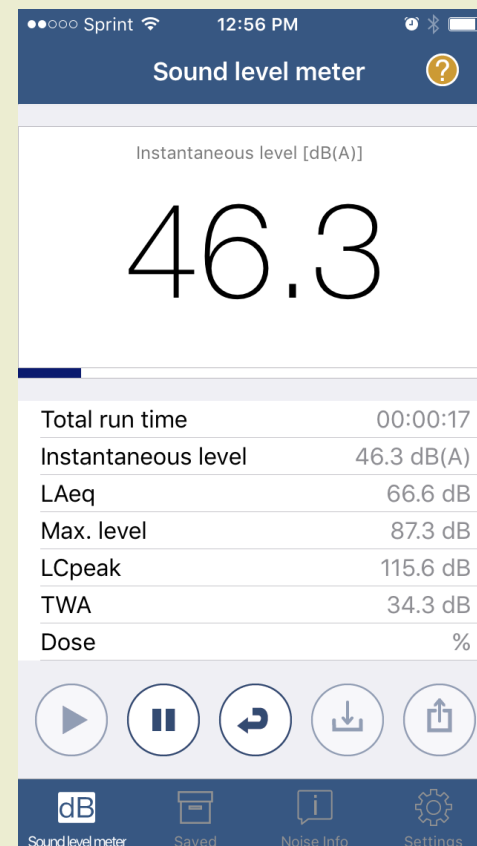
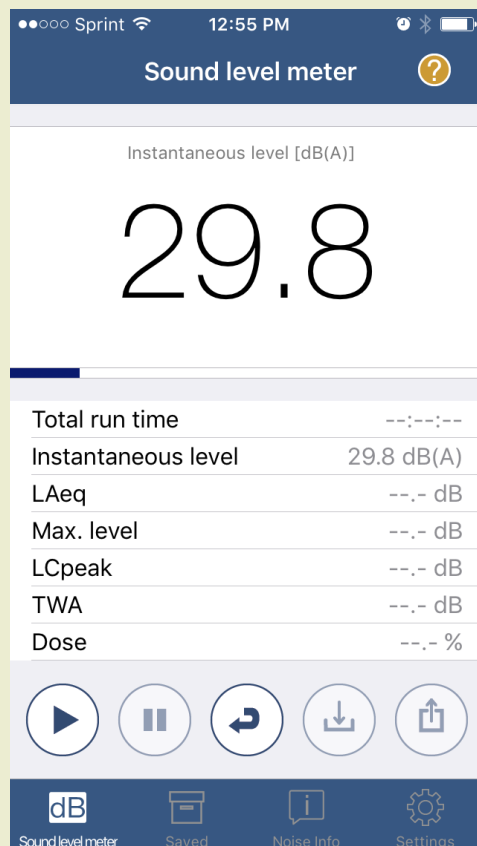
NIOSH LADDER SAFETY

- Short video demonstrating the NIOSH Ladder Safety Tool:



NIOSH SOUND LEVEL METER

- Real-time sound level measurements, with logging feature:



NIOSH SOUND LEVEL METER

- Peer reviewed literature evaluating this app:
 - Chucri A. Kardous and Peter B. Shaw, *Evaluation of smartphone sound measurement applications*, The Journal of the Acoustical Society of America Vol. 135, Iss. 4, 2014
 - Chucri A. Kardous and Peter B. Shaw, *Evaluation of smartphone sound measurement applications (apps) using external microphones—A follow-up study*, The Journal of the Acoustical Society of America Vol. 140, Iss. 4, 2016
 - Benjamin Roberts, Chucri Kardous, and Richard Neitzel, *Improving the accuracy of smart devices to measure noise exposure*, Journal Of Occupational And Environmental Hygiene Vol. 13 , Iss. 11, 2016

NIOSH SOUND LEVEL METER

- From a recent NIOSH Science Blog on this topic:
 - *This follow-up study suggests that using external, calibrated, microphones greatly improves the overall accuracy and precision of smartphone sound measurements, and removes much of the variability and limitations associated with the built-in smartphone microphones.*



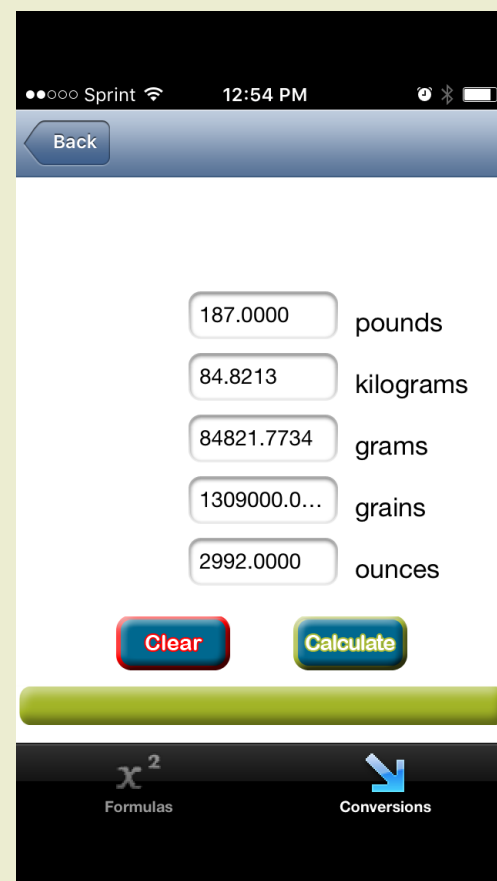
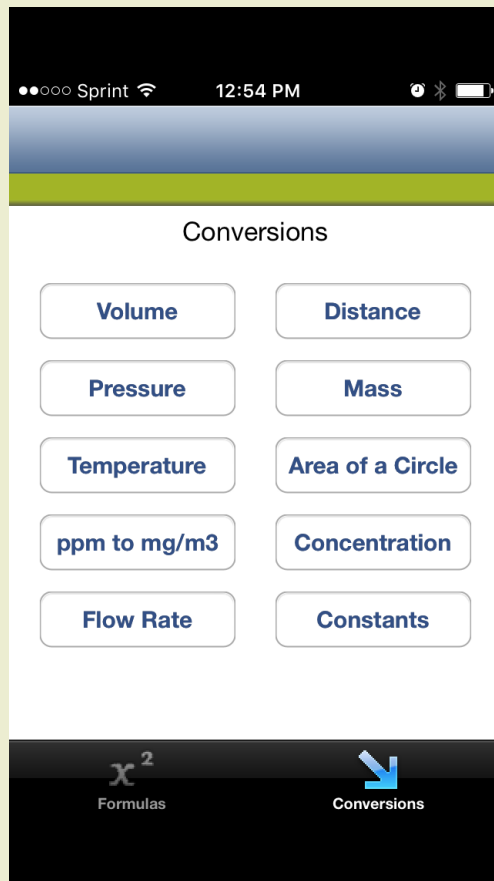
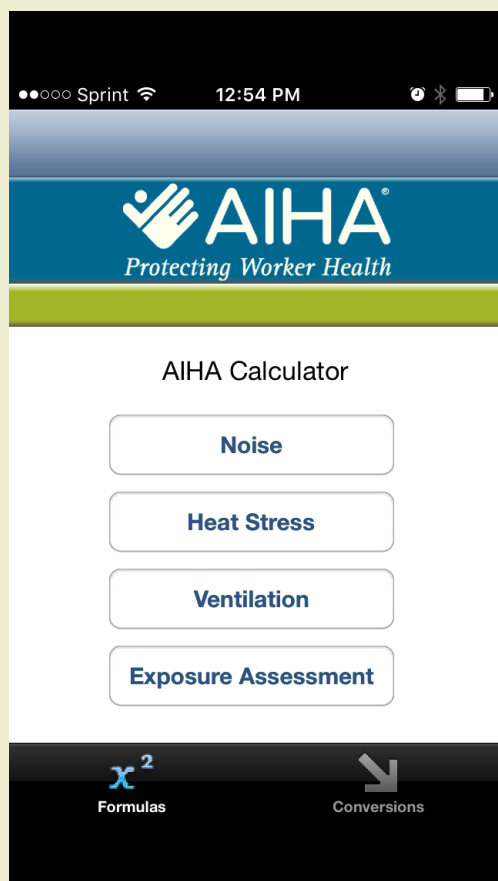
Video: CAPT Kardous testing mobile sound-meter apps in the lab



Figure 1. The SoundMeter app on the iPhone 5 (L) and iPhone 4S (R) compared to ½" Larson-Davis 2559 random incidence type 1 microphone (C).

AIHA IH CALCULATOR

- Helpful calculations and conversions for Industrial Hygienists and for everyday life:



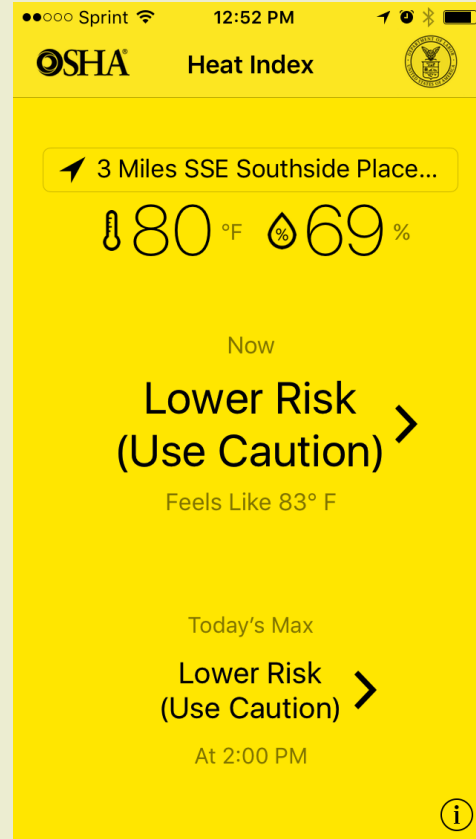
OSHA HEAT INDEX CALCULATOR

- Why is understanding heat stress so important?
- Heat is one of the leading weather-related causes of death in the United States, resulting in hundreds of fatalities each year and even more heat-related illnesses.
- In 2014, 2,630 workers suffered from heat illness and 18 died from heat stroke or related causes on the job.



OSHA HEAT INDEX CALCULATOR

■ Occupational Safety and Health Administration



This screenshot shows the 'Heat Index Precautions' screen in the OSHA app. The background is white. The status bar shows 'Sprint', signal strength, time '12:52 PM', and battery level. The app header includes the OSHA logo, the title 'Heat Index', and the OSHA seal. Below the header, a back arrow and the title 'Heat Index Precautions' are visible. The main content area is titled 'Lower-risk Conditions' and states 'Most people can work safely.' It then says 'Review the tips below and on OSHA's Heat Illness campaign site: [Actions for Lower Risk Conditions](#).' Below this is a section titled 'Water and Shade' with a bulleted list of precautions. An information icon (i) is at the bottom right.

OSHA Heat Index

< Heat Index Precautions

Lower-risk Conditions

Most people can work safely.

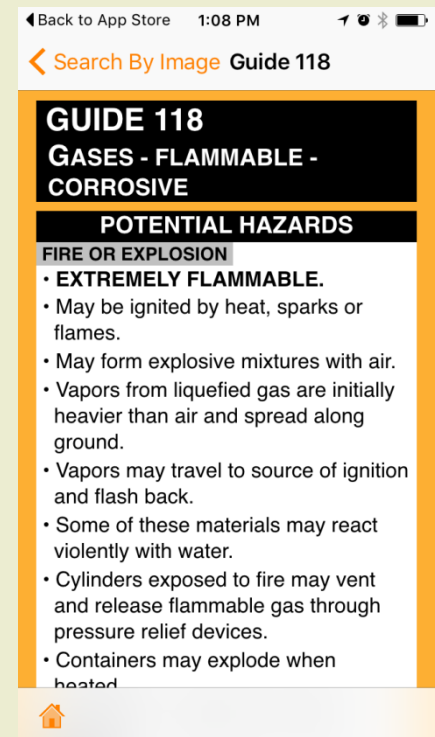
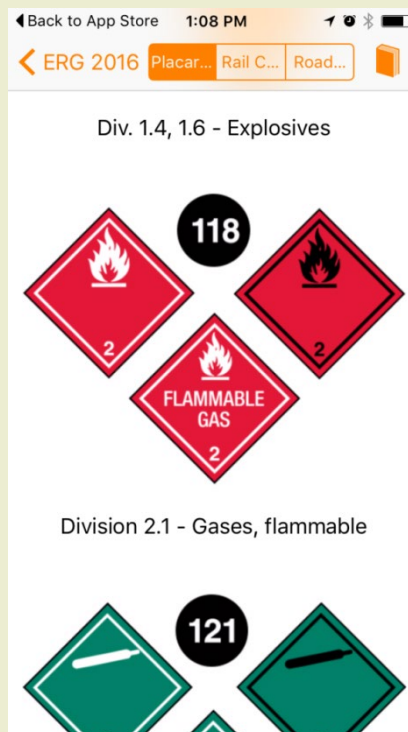
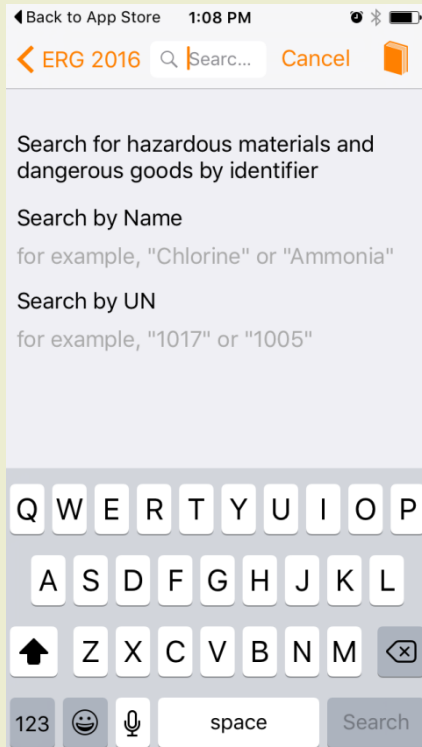
Review the tips below and on OSHA's Heat Illness campaign site: [Actions for Lower Risk Conditions](#).

Water and Shade

- Adequate amounts of [drinking water](#) must be in convenient, visible locations close to the work area.
- Drink plenty of water, even if you are not thirsty.
- If in the heat less than 2 hours and involved in moderate work activities, drink 1 cup (8 oz.) of water every 15 to 20 minutes.
- During prolonged sweating lasting

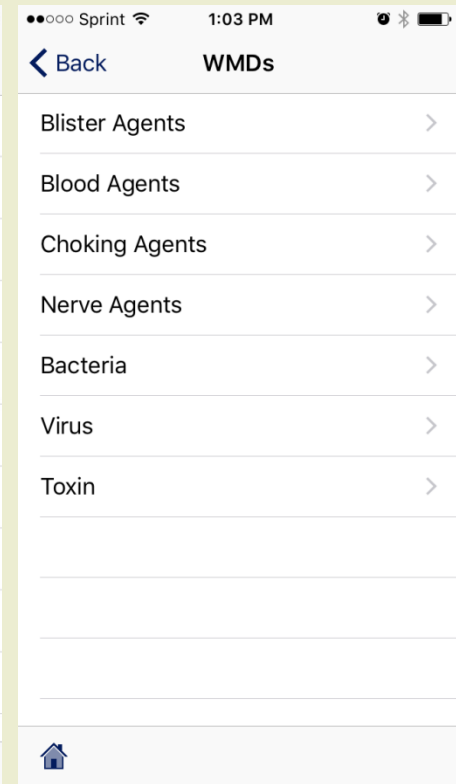
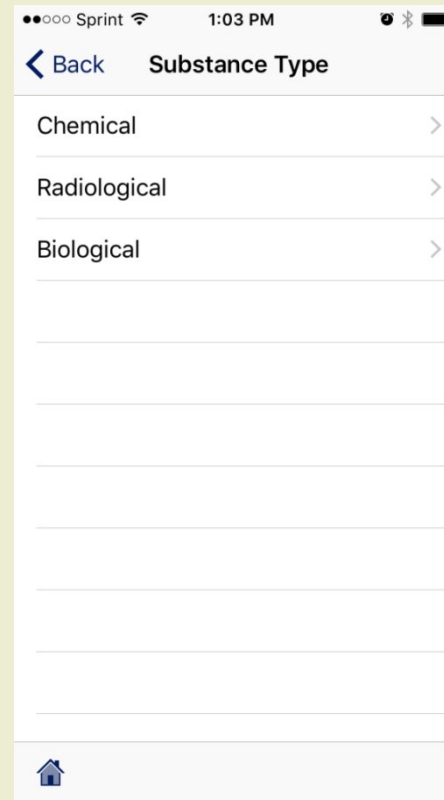
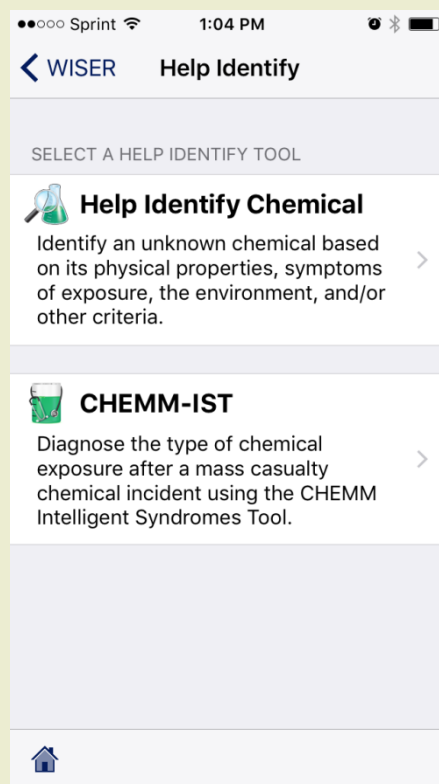
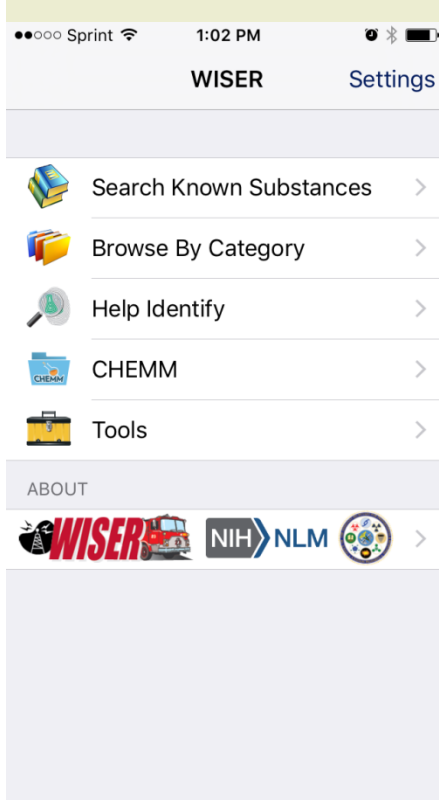
EMERGENCY RESPONSE GUIDE (2016)

- North American Emergency Response Guide (Pipeline and Hazardous Materials Safety Administration)
- Guidance for hazardous materials transportation emergency response



WISER

- WISER = Wireless Information System for Emergency Responders (U.S. National Library of Medicine)



PEDSAFE

- Why is pedestrian safety so important?

Approximately 5,000 pedestrians are killed and approximately 70,000 are injured in traffic related incidents each year in the United States.

PEDSAFE

- Flashing yellow light to provide safety for pedestrians at night



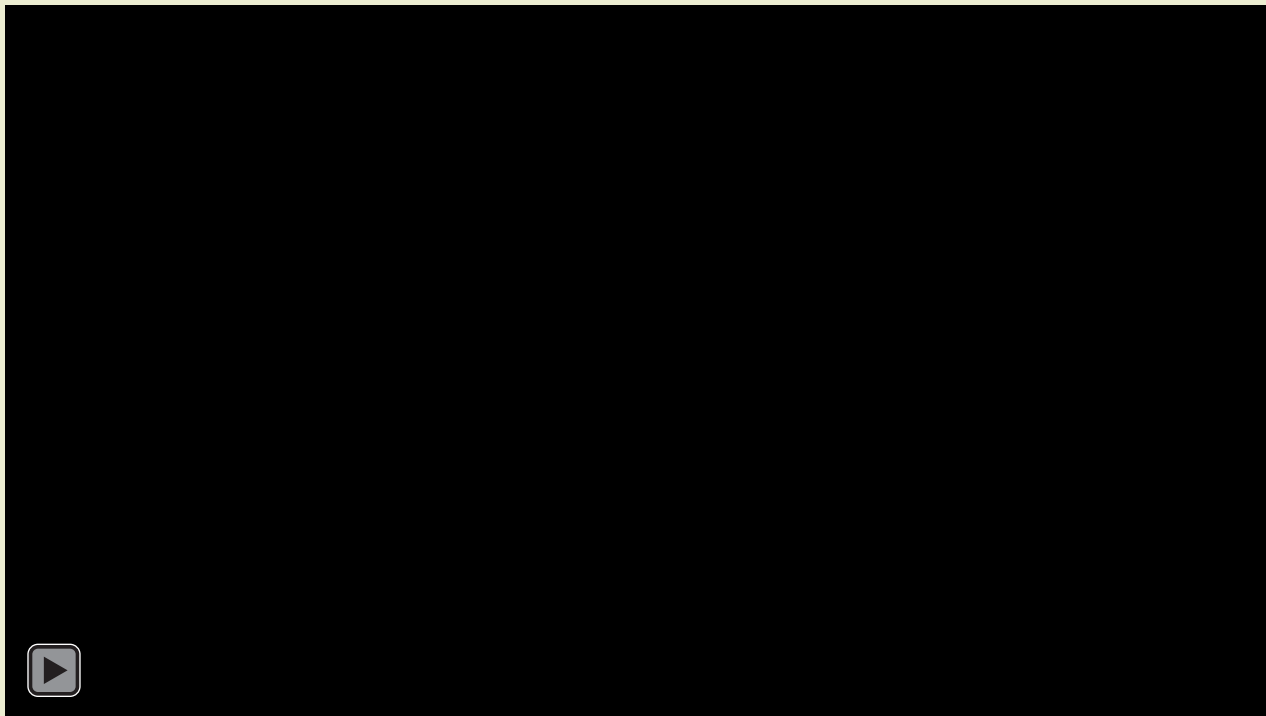
PedSafe



PedSafe

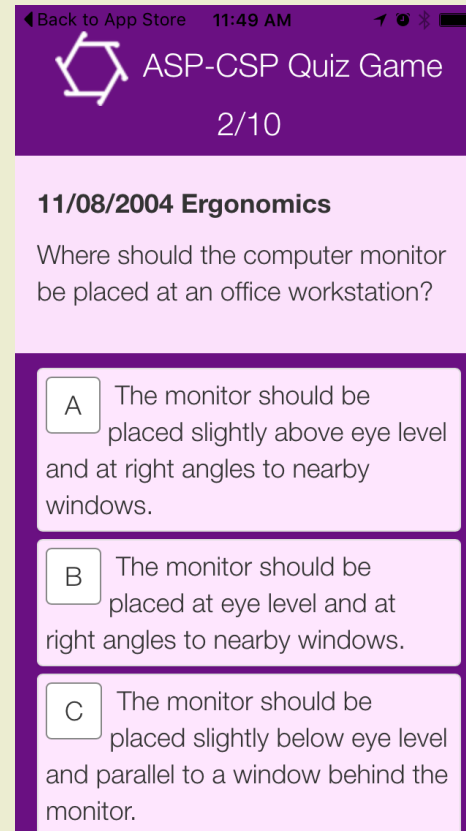
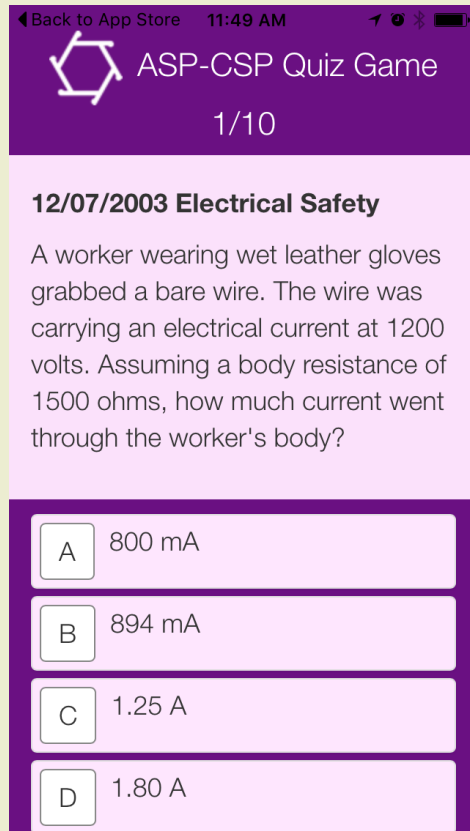
PEDSAFE

- Short video demonstrating the PEDSAFE app:



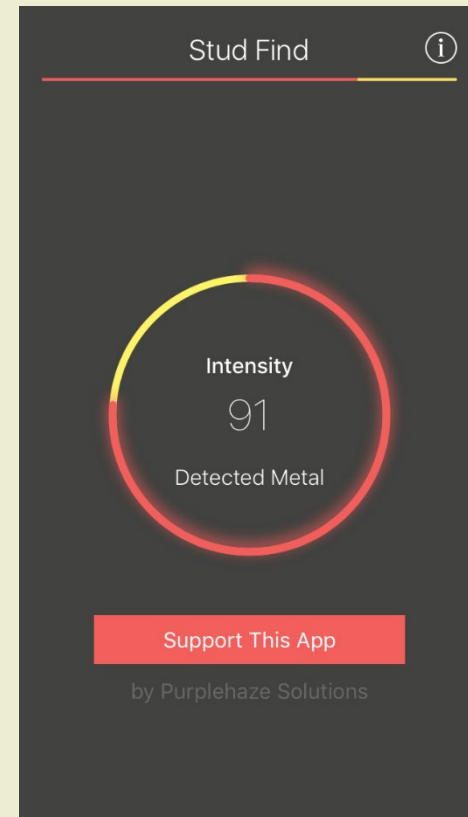
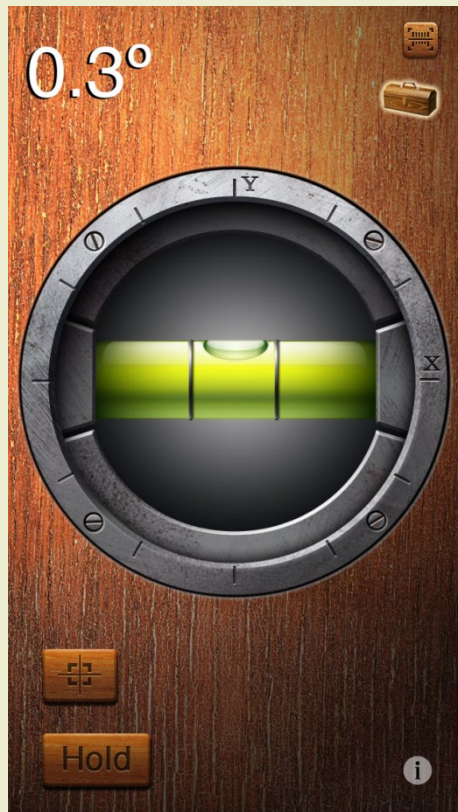
EXAM PREP APPS

- Studying for a credentialing exam? Try an app!
- Example: ASP-CSP Quiz Game (Bowen EHS)



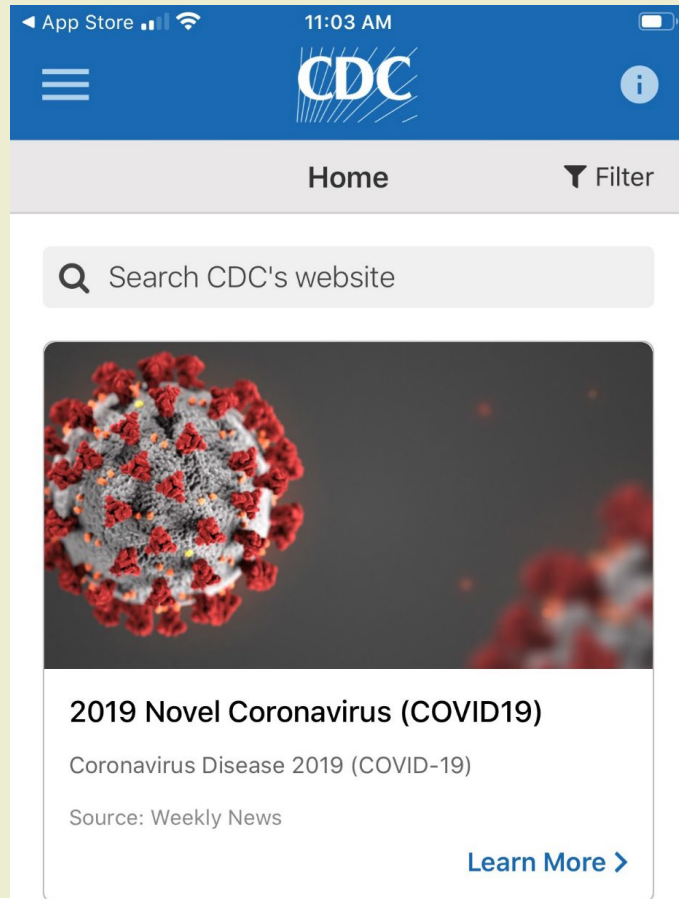
OTHER HELPFUL TOOLS

- iHandy level and other carpenter's tools
- Studfinder



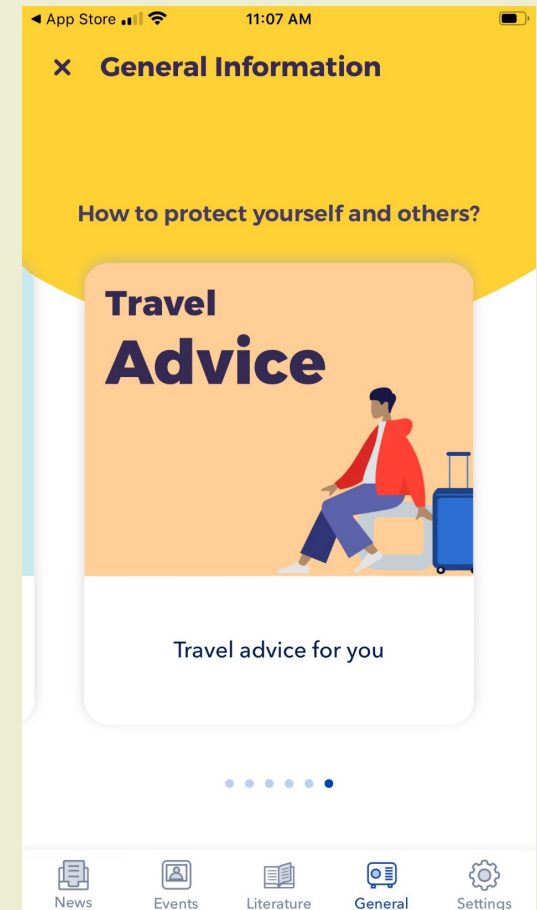
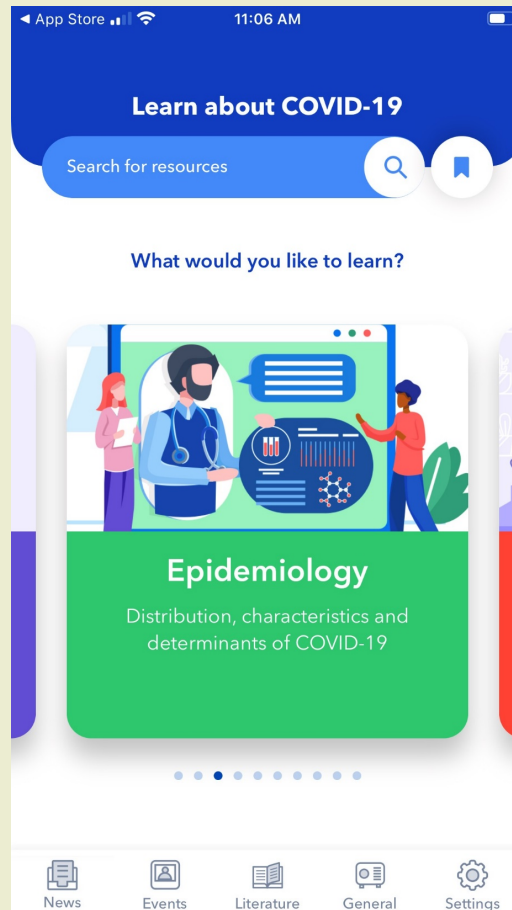
COVID-19 APPS

■ COVID-19 Information – Centers for Disease Control and Prevention



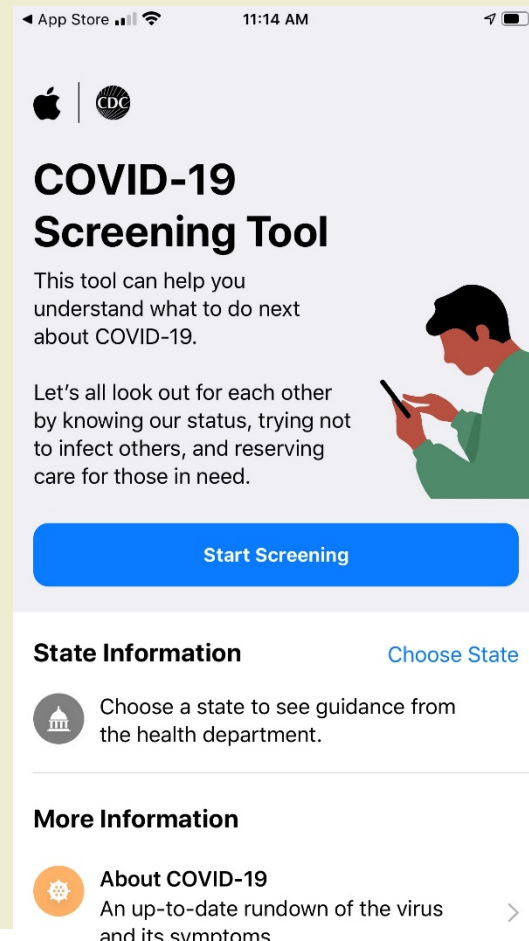
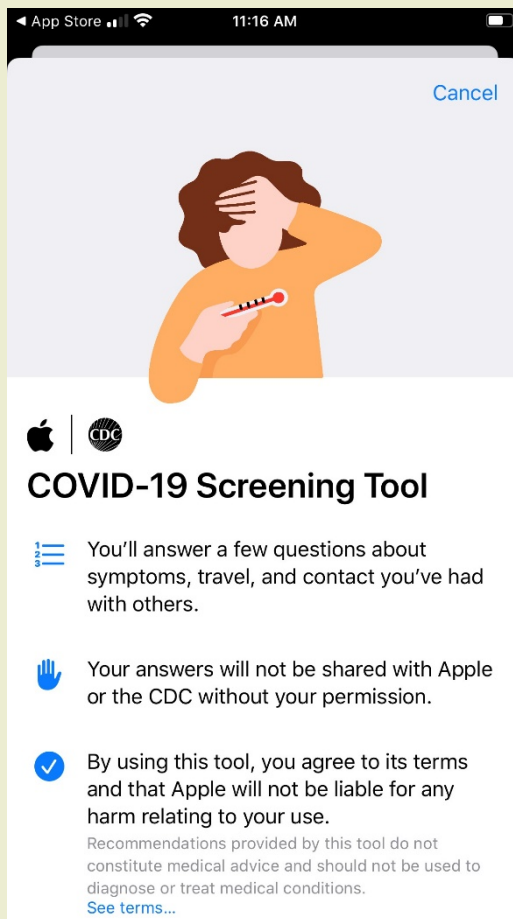
COVID-19 APPS

■ COVID-19 Information – World Health Organization



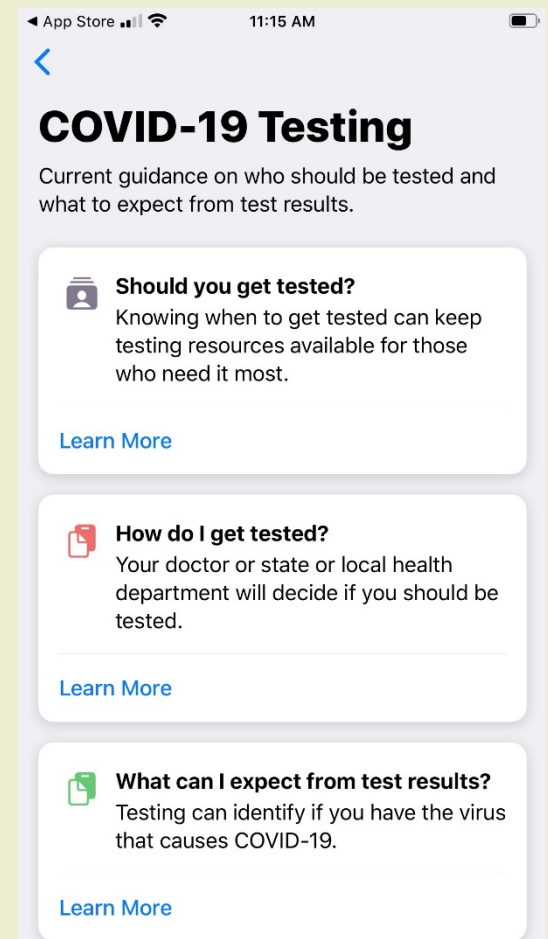
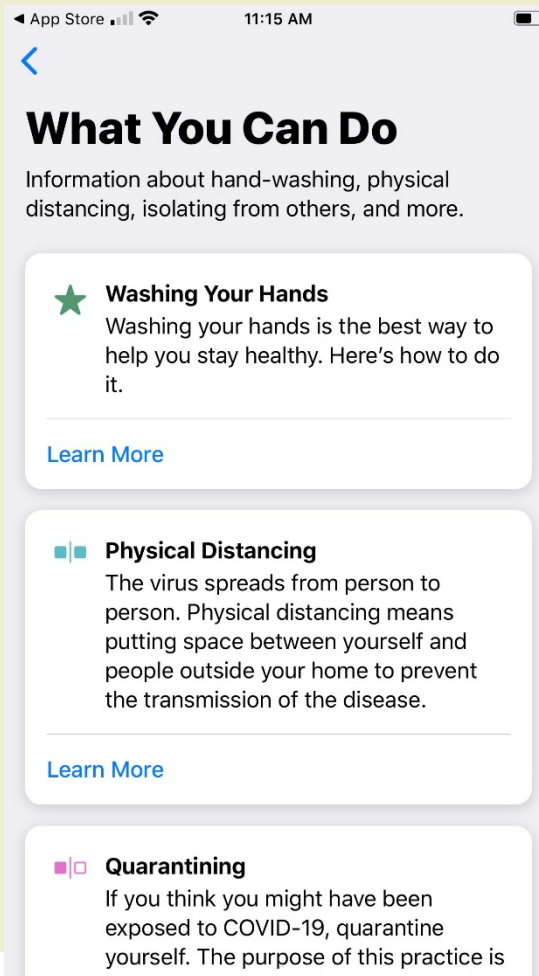
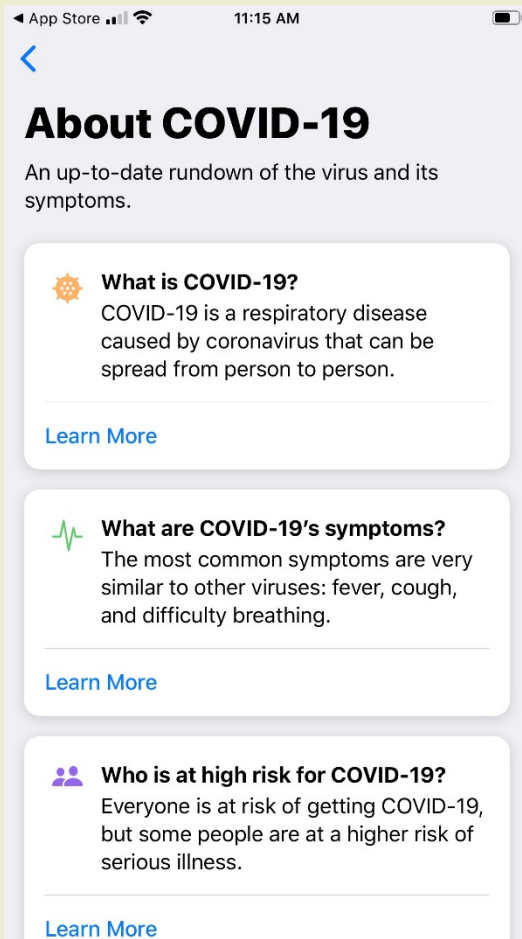
COVID-19 APPS

■ COVID-19 Screening Tool



COVID-19 APPS

■ COVID-19 Screening Tool



COVID-19 APPS

■ COVID-19 Screening Tool

App Store 11:17 AM

< Back Cancel

Have you recently started experiencing any of these symptoms?
Select all that apply.

Fever or chills ☐

Mild or moderate difficulty breathing ☐

New or worsening cough ☐

Sustained loss of smell, taste, or appetite ☐

Sore throat ☐

App Store 11:17 AM

< Back Cancel

In the last 14 days, what is your exposure to others who are known to have COVID-19?
Select all that apply.

I live with someone who has COVID-19 ☐

I've had close contact with someone who has COVID-19 ☐
I was within 6 feet of someone who's sick, or I was exposed to a cough or sneeze.

I've been near someone who has COVID-19 ☐
I was at least 6 feet away and was not exposed to a sneeze or cough.

App Store 11:17 AM

< Back Cancel

In the last 14 days, have you traveled internationally?

I have traveled internationally ☐

I have not traveled internationally ☐

Next

COVID-19 APPS

■ COVID-19 Symptom Study

App Store 11:13 AM

< Me

Your COVID-19 tests

If you've ever had a COVID-19 test, please add below. This includes PCR, antigen and antibody tests. You can edit these at any time in the future.

Add new test

I have never had a COVID test

App Store 11:13 AM

< Me

How do you feel physically right now?

You are currently reporting from: **77459**
[Update Location](#)

I feel physically normal

I'm not feeling quite right

App Store 11:12 AM

✓

Thank you, please report again tomorrow, even if you're well.

People with COVID symptoms in
Fort Bend County + today


12,915

1.6% of 787,858 residents

Estimate for September 11, 2020 [Learn more](#)

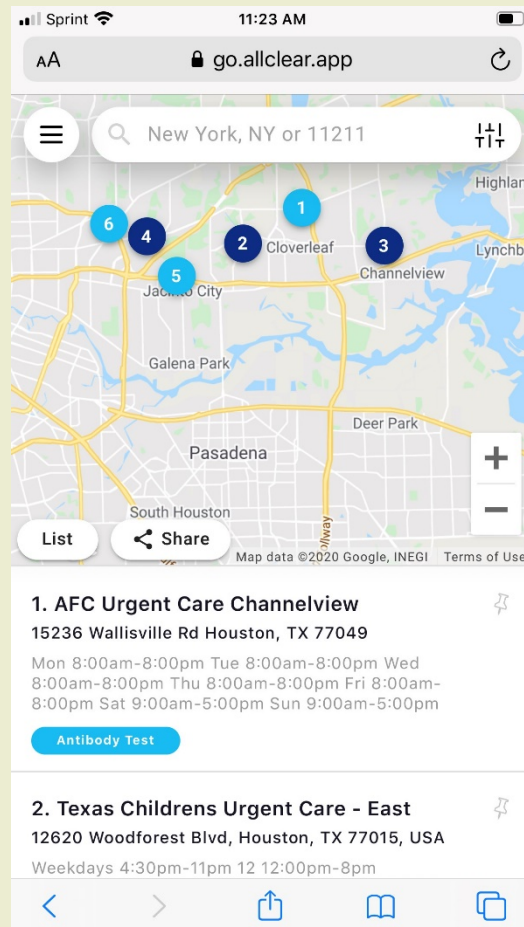
Fort Bend County's rank in contribution
-0 places since yesterday

659 out of 2,746 counties



COVID-19 APPS

■ COVID-19 Testing Locations



NEEDS ASSESSMENT

- Would a hands-on workshop with “younger” technologically savvy individuals be helpful?
- Are there apps that we haven’t considered?
- What other apps could be useful to the EHS profession for future development?

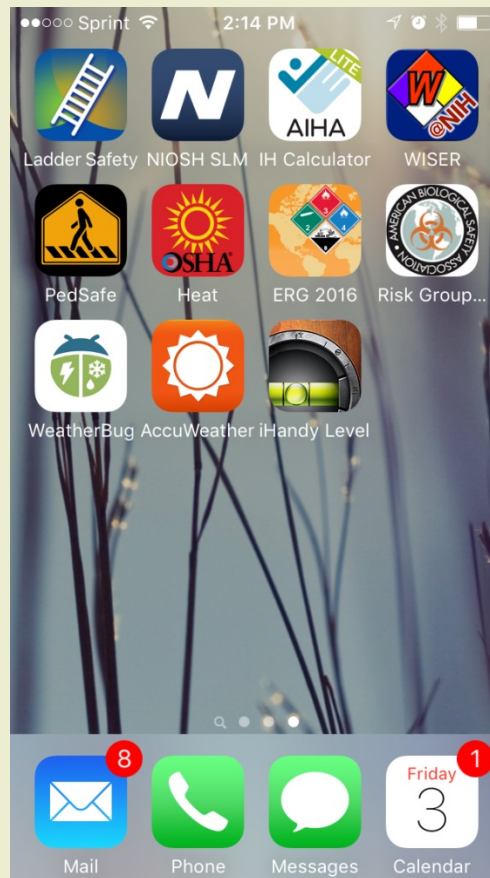


SUMMARY

- Health and safety related apps are readily available at your fingertips
- Many of them are free of charge
- Spend some time populating your device to make it a useful tool in the workplace
- Be aware of the potential limitations to these apps
- Share good apps with your peers!

THANK YOU!

- You know this smart phone belongs to a safety geek.....

















REFERENCES

- See handout created by Scott Patlovich

Digital Safety

A Summary of Safety-Related Apps Available to Assist EHS Personnel

Application Name	Sponsor / Vendor	Description	Link
Accuweather	Accuweather	Local weather including automatic severe weather notifications	http://downloads.accuweather.com/  https://itunes.apple.com/us/app/accuweather-for-iphone/id300048137?mt=8  https://play.google.com/store/apps/details?id=com.accuweather.android&hl=en
NOAA Radar US 	National Oceanic and Atmospheric Administration	Local weather including automatic severe weather notifications	 https://itunes.apple.com/us/app/noaa-radar-us-hd-weather-radar-and-forecasts/id415411639?mt=8  https://play.google.com/store/apps/details?id=com.weatherphens.noaa_hidet_radar&hl=en
Tornado app	American Red Cross	Information on tornado safety	 https://itunes.apple.com/us/app/tornado-by-american-red-cross/id602724318?mt=8  https://play.google.com/store/apps/details?id=com.cube.arc.tfa&hl=en
Weatherbug	xAd	Local weather including automatic severe weather notifications	https://weather.weatherbug.com/appdownload/  https://itunes.apple.com/us/app/weatherbug-weather-forecasts/id281940292  https://play.google.com/store/apps/details?id=com.aws.android
iAuditor 	Safety Culture	Mobile inspection forms and report builder	https://safetyculture.com/iauditor/
iForms 	HelpSystems	Create forms and checklists; send directly to PI or facility	https://www.helpsystems.com/products/electronic-forms-software-windows-and-ibm-i
Safety Meeting	Meridian Computing Inc.	Coordinate and manage safety meetings	 https://itunes.apple.com/us/app/safety-meeting-app/id559528507?mt=8  https://play.google.com/store/apps/details?id=com.nwlc.safetymeeting

PLEASE NOTE : These are examples of helpful safety apps, this list is not all inclusive, many other apps exist, all are free unless otherwise indicated by 

REFERENCES

- Additional supplementary PDF handout will be included with this virtual presentation on COVID-19 related apps