

Hudson Memorial Students  
about to contact the ISS



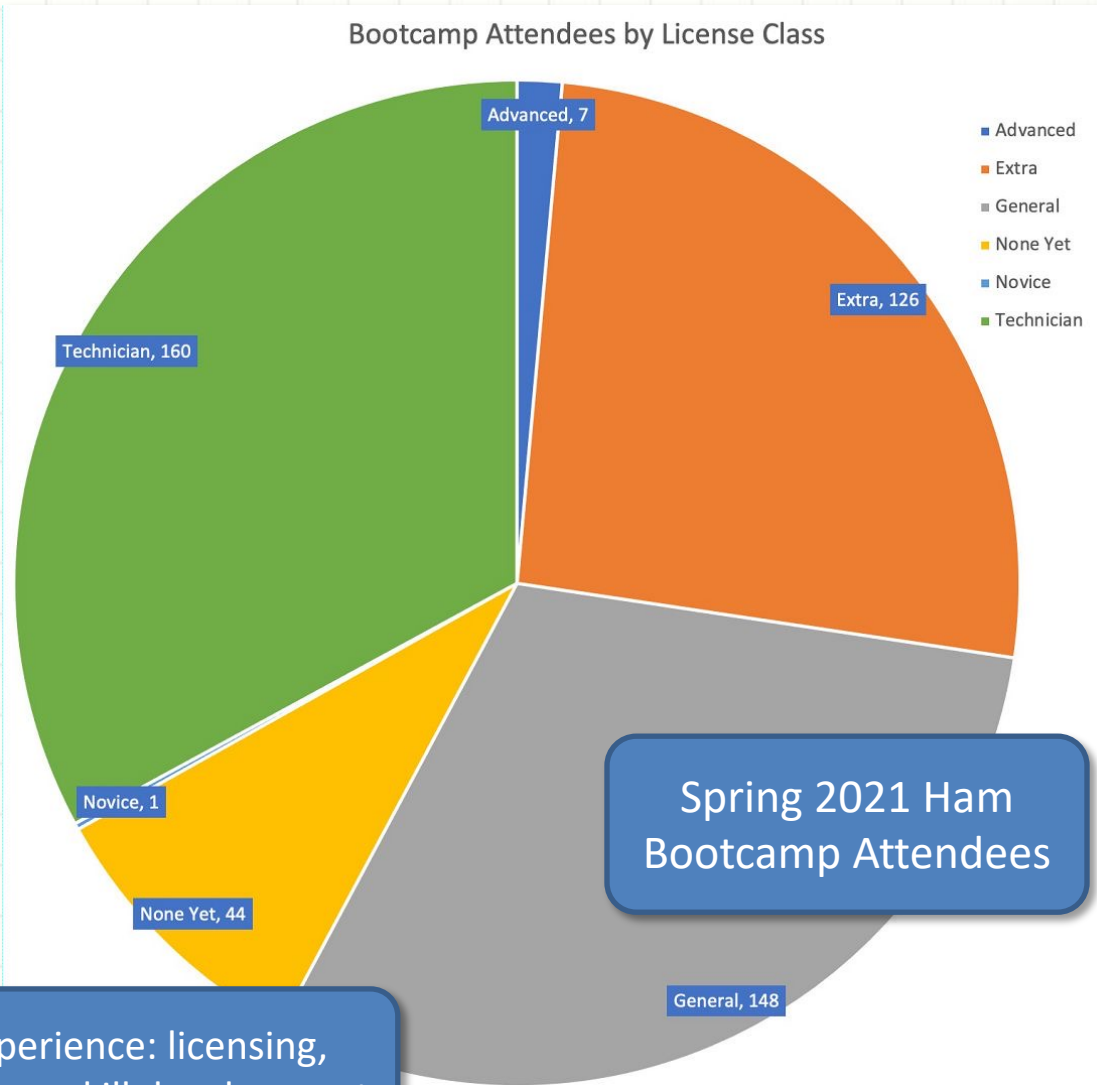
## **PROGRAMS HELPING HAMS AND YOUNG PEOPLE TO DEVELOP NEW SKILLS AND GET ON THE AIR**

**FRED KEMMERER, AB1OC  
PRESIDENT, NASHUA AREA RADIO SOCIETY  
ARISS MENTOR AND GROUND STATION**

# Hams are looking for Mentoring

## Stats from Licensing Classes & Ham Bootcamp

- Less than 25% of the folks who earn a Technician License are active on the air after 1 year
  - Based upon successful license NARS class grads
- Hams with General Class licenses and higher are looking for Mentoring and Skills Development help
  - ~60% at last Bootcamp had a General or higher license
- Its important to include folks who don't have a license yet
  - ~10% of Boot Campers did not have a license yet

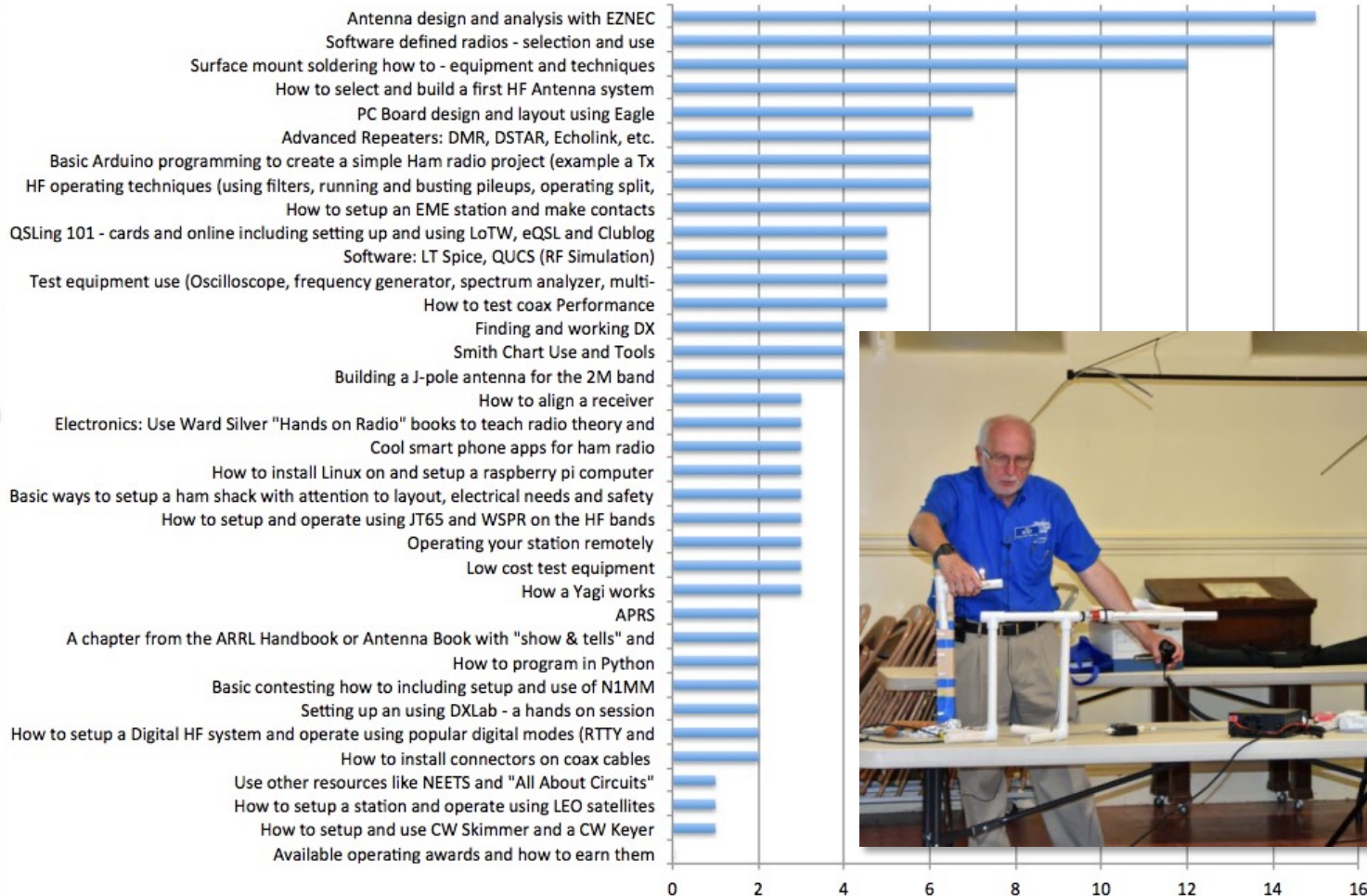


Need to focus on the full ham experience: licensing, getting on the air, and continuous new skill development

# Develop Skills and Help Hams Learn

## Hams Mentoring Hams - Tech Night Program Example

### One of my top 5 choices!



Member Prioritized and Delivered Training and Mentoring. Highly interactive sessions are recorded and archived online.



# A Typical Tech Night Session

Hams Mentoring to help Hams Get On The Air

Putting Up A  
Tower

July 2019

Tech Night

Fred, AB1OC

Nashua Area  
Radio Society



# Ham Bootcamp

## Hams Mentoring Hams to Get On The Air



Bootcamp at 2019 New England Ham Exposition in Boxboro, MA

- An activity to help you build a station and get on the air
- A chance to learn about what you can do with your license (and why you might want to have one)
- An opportunity to ask questions of experienced Hams and learn about Amateur Radio
- A great place to have some fun with Amateur Radio!
- In-person and online formats

# Ham Bootcamp

## Mentoring to help Hams Get On The Air



### Ham Bootcamp Sessions

TRACK	SESSION	HOST
Repeaters and VHF/UHF	Bootcamp Introduction	Fred, AB1OC
	Putting together a Station for Repeaters - How to pick a Radio and an Antenna	Fred, AB1OC
	Making Contacts and Joining a repeater Net	Fred, AB1OC Aron, W1AKI
	Radio Programming Tutorial	Fred, AB1OC
	Getting started with EchoLink	Anita, AB1QB
	Getting started with Amateur Radio Satellites	Burns, WB1FJ
	Getting started with Fox Hunting	Abby, AB1BY
HF Activities	Putting together an HF Station for SSB, CW, and Digital	Jamey, AC1DC
	Picking and Putting up an HF Antenna, Feedline, and Ground	Fred, AB1OC
	Operating on the HF bands using SSB Voice	Fred, AB1OC
	Software and setup for Logging Contacts via your computer	Anita, AB1QB
	Setting up WSJT-X and FT8 Digital	Fred, AB1OC
	CW - Learning the Language of Morse Code	Fred, AB1OC
	Finding DX and QSL'ing - Getting them in the log and confirmed	Anita, AB1QB
	Bootcamp Conclusion - Where to learn more and online Ham Radio Shopping Trip	Fred, AB1OC

Our next online Ham Bootcamp is scheduled for Saturday November 13<sup>th</sup>. You can register online and get more information at <http://n1fd.org/bootcamp>

# A Typical Ham Bootcamp Session

Hams Mentoring to help Hams Get On The Air

Picking And  
Putting Up An  
HF Antenna  
System

Spring 2021

Ham Bootcamp

Nashua Area Radio  
Society

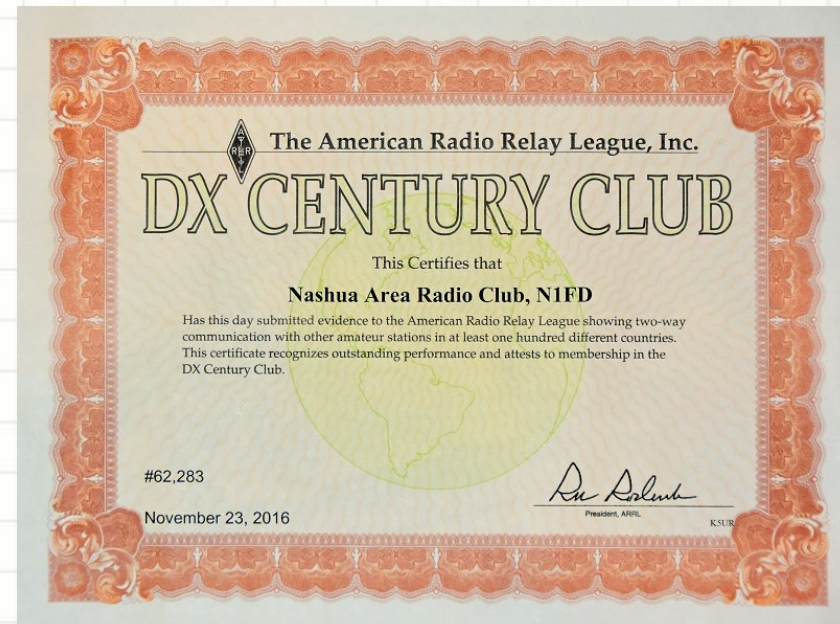
Fred, AB1OC



# Invite a Less Experienced Ham to Operate



- Invite a new or inexperienced ham to operate with you at your station
- Form a small group and enter a DX contest
- Help a new ham to operate in a special event
- 13 Colonies Station: Coach a new special event op towards the end of the event
- Provide a tour of your station and explain how-to put-up antennas, etc.





# Field Day as a Learning Tool

Focus Activity On New Hams & Young People



- Help young Hams to become your “star” operators
- Embrace new Technology & make it the central part of your operation
  - Satellites, SDRs, Networking, Video
- What does Amateur Radio look like to your young visitors? Be engaging.

# Help People To Try Out Ham Radio

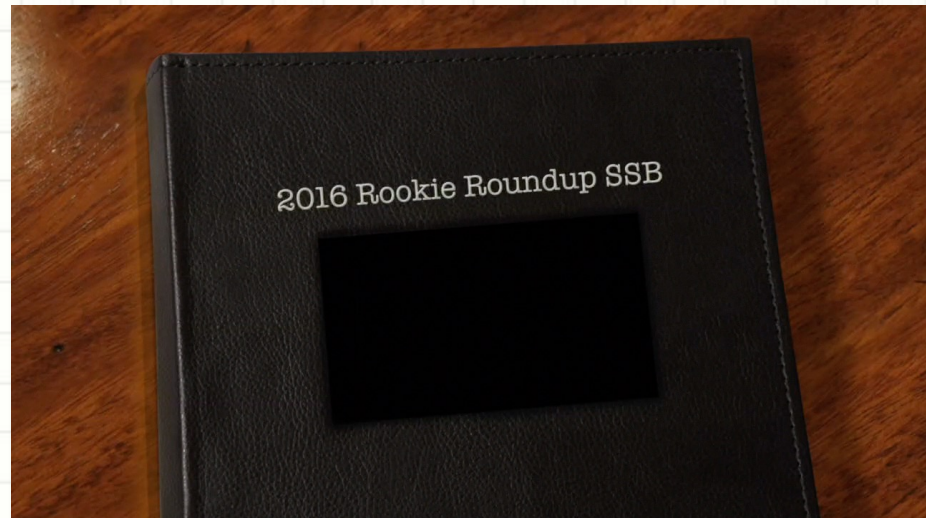


## ARRL Kids Day

- Kids Day provides a chance for you to get on the air and talk with other young people
- Activities include some additional fun such as -
  - A Fox Hunt (find a hidden transmitter)
  - Make contacts using satellites in space
  - Morse Code activities
  - ...
- We livestream video during your operation to Facebook

## ARRL Rookie Roundup – SSB, RTTY, CW

- These contests provide a chance to compete and have fun on the air
- They are held three times a year
- We open a member's station for you to use and provide training and coaching
- Earn a contest certificate for your wall!





# Programs in Local Schools

## STEM Education through Amateur Radio

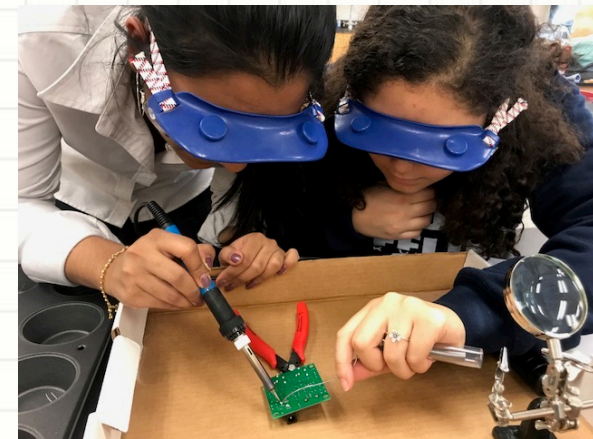


### High-Altitude Balloon Projects

- ***Its about education first*** – develop and deliver a quality STEM learning experience
- Good mix of classroom education and Amateur Radio activities for fun is essential
- Participation in school clubs, STEM nights, and other school projects
- Something special – [an ISS Contact](#)



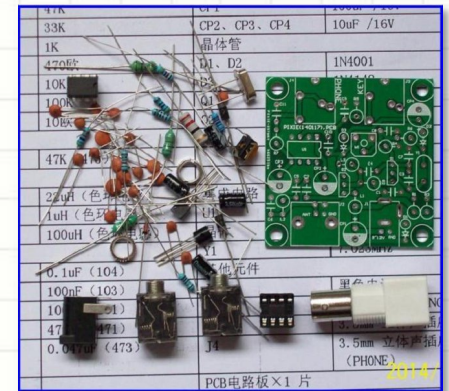
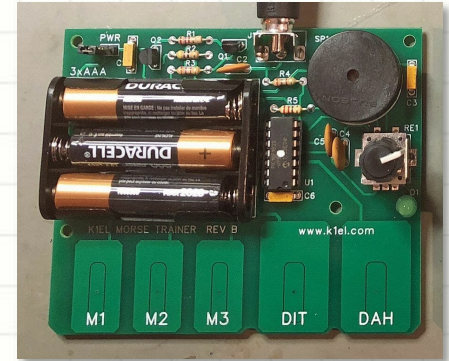
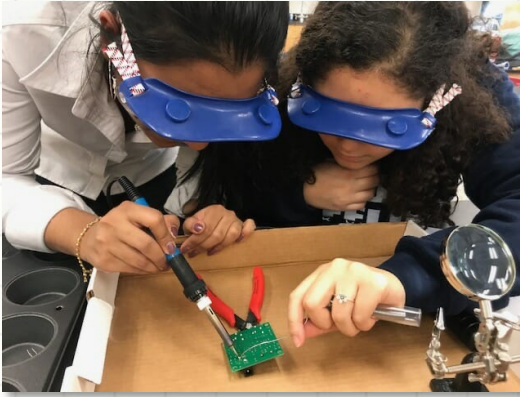
Morse Code Competitions



School Kit Builds



# Sponsor a Kit Build Activity in a School



**Ham Radio Kit Builds at School or at a Hamfest**

**Code Practice Key (above)  
40m CW Transceiver Kit (below)**

- Build an electronic kit that students can use to have fun with Ham Radio
  - Morse Code Practice Keys and devices
  - Simple CW (Morse Code) Transceivers
- Students learn about how electronic circuits work and how they are constructed
- Students work as part of a team to build and use their kits



# An ISS Crew Contact

## An Experience of a Lifetime!



[Highlights from a Contact Video](#)



# ISS Contact Education Plan Elements

## Hudson Memorial School Example...

- Teachers & students involved in radio and space-science curriculum
  - Astronomy & STEM Night
  - Skype contact with Astronaut
  - High-Altitude Balloon project and launch
  - Planting seeds from the ISS
  - Visit to the Boston Museum of Science to learn about space exploration
  - Pre-engineering program working on ISS solutions
  - Amateur Radio activities included in STEM nights
- Multi-discipline curriculum - ELA, Social Studies, Math, Science, PLTW
- [Learn more here](#)



# Teaching an Amateur Radio Class In A Local School



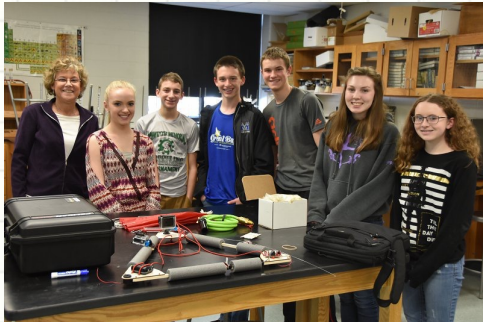
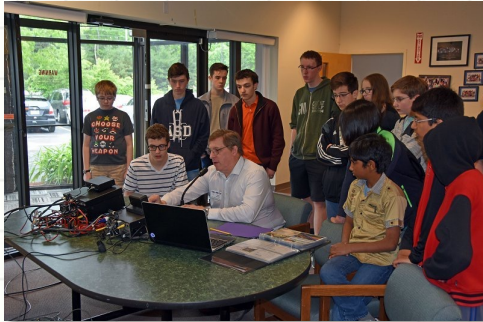
## Some Topics Taught in Class

- What is Amateur Radio and why do people use it?
- How do radio transmitters and receivers send information over the air?
- How do we share the “air” among multiple radio users?
- What is it like to make an Amateur Radio contact?
- How do digital wireless communications and TV work?
- How do satellite and space communications work?
- How do I get a license to transmit using Amateur Radio?



# Learning and Development Through Amateur Radio

Investing in young people, your community, and in our future...



- Contribute to the future via education for young people in your community
  - Provide for STEM learning through Amateur Radio
  - Create fun learning activities at local schools, libraries, Boy's/Girl's clubs, ...
  - Engage with Scouting organizations
- Make our hobby stronger by becoming a driver for modernization & growth
  - Help adapt and evolve our hobby to maintain and grow its relevance
  - Embrace new technology and today's Internet and Digital platforms
  - ***Improve public awareness and perception of the value of Amateur Radio***



# Thank You!



## Contact Information:

Fred Kemmerer, AB1OC  
President, Nashua Area Radio Society  
[ab1oc@arrl.net](mailto:ab1oc@arrl.net)

Much more information, pictures,  
and video are available on the Internet at:

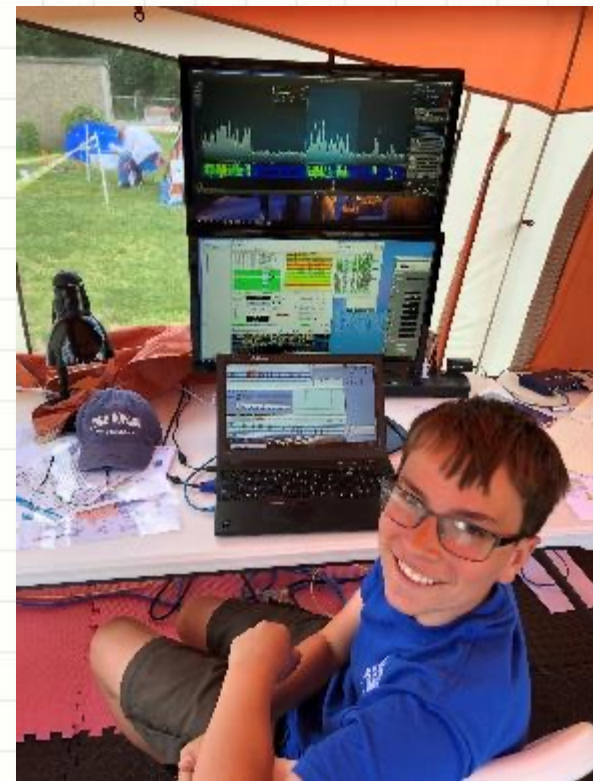
[www.n1fd.org](http://www.n1fd.org), [www.stationproject.blog](http://www.stationproject.blog),  
[ab1oc-4-director.org](http://ab1oc-4-director.org)



# Focusing On The Young Ham

Its different today...

- Consider this...
  - Young people have more activities to choose from than ever before
  - Their calendars are busier than ours
  - Young families have to work harder and have very limited time beyond work and family
  - Social activities, learning valuable life skills, and self improvement are still top priorities
- Provide for entry into Amateur Radio in reasonable steps
  - Provide activities to allow new and young prospective Hams to try out and experience Amateur Radio in small, time limited steps
  - Encourage a simple path to get licensed or upgraded
    - ***It's a huge mistake to treat licensing as a hurdle to be jumped over***
  - Mentoring, training, and help getting on the air are your club's most critical assets – ***you must get your members actively involved***
- Make Amateur Radio Fun! Embrace Digital and Computer Tech.



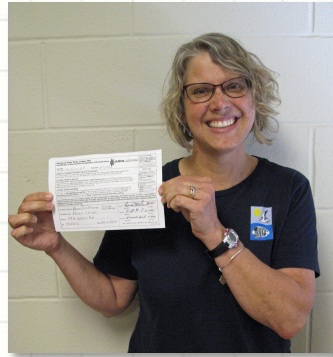


# You'll Need Great Advisors

Here are some of ours...



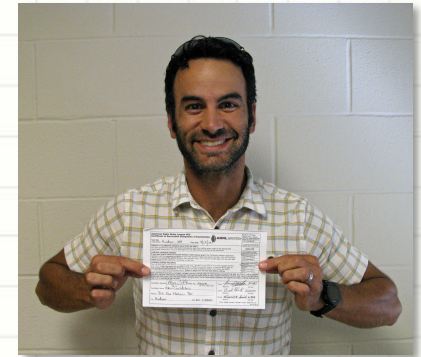
Eleni Floras  
MHS Physics Teacher



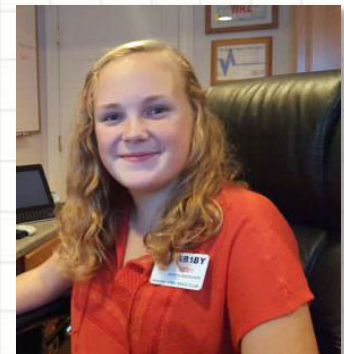
Karen Crivac, KC1KBW  
BGHS Biology Teacher



Dan Pooler, AC1EN  
HMS Mathematics Head



Adam Goldstein, KC1KBZ  
HMS Science Head



Abby Finchum, AB1BY  
Youth Advisor & EC Member

- Focus on Natural Leaders and Influencers for young people
- Understand how to relate to and teach young people
- Guide development of quality STEM learning material
- Folks who truly believe in and want to invest in the future of young people
- Encourage and help your advisors to get licensed and active in Amateur Radio
- Enable young people to lead the way