

Friday, May 19th		
Time	Room	Forum
9:15-10:30	Room 1	TAPR
		Moderator: Scott Cowling WA2DFI
		<p>Scotty was first licensed in 1967 and has been continuously active since that time. He is active while mobile on HF CW and on APRS. Scotty is an advisor for Explorer Post 599, a BSA affiliated ham club for teens in the Phoenix area. He has been involved in the openHPSDR project for the last 10 years, is a TAPR Director and past TAPR Vice President. Scotty is also active in the production of openHPSDR components and other SDR projects. He is a co-founder of iQuadLabs, LLC, a supplier of openHPSDR systems and other Software Defined Radio components. He currently works at Zephyr Engineering, Inc, a computer consulting company that specializes in FPGA design and SDR hardware.</p> <p>Introduction by Steve Bible, N7HPR, TAPR President</p> <p>Write for QST/QEX by Kai Siwiak KE4PT, QEX Editor</p>
		<p>"Low Cost, Open Source Spectrum Monitoring" by Michael Ossmann, AD0NR and Dominic Spill</p> <p>Over the past few months, we and other open source software developers have devised new tools allowing low cost Software Defined Radio platforms to rapidly sweep across radio frequencies in order to monitor the spectrum around us. Our base platform is HackRF One, and we are able to monitor 1 MHz to 6 GHz every 0.75 seconds, allowing us to build up a near real-time picture of radio usage around us. Now we are looking at new ways to visualize, analyze, and interpret this information. This will be a look at open source hardware and software tools that enable us to monitor, analyze, and track down radio signals.</p> <p>Michael Ossmann is a wireless security researcher who makes hardware for hackers. He founded Great Scott Gadgets in an effort to put exciting, new tools into the hands of innovative people.</p> <p>Dominic Spill is senior security researcher for Great Scott Gadgets. The US government recently labeled him as "extraordinary". This has gone to his head.</p>
		<p>"Advanced SDR Algorithms for Noise Blanking and Noise Reduction" by Warren Pratt, NROV</p> <p>Wideband noise-blankers and LMS noise-reduction algorithms are commonplace in modern SDRs. With today's CPU power, more advanced algorithms offering superior performance can be made available. In this presentation, Dr. Pratt focuses on two such algorithms implemented in 2015 in the WDSP signal processing library for the openHPSDR program. The Spectral Noise Blanker uses linear predictive coding and often removes impulse noise under conditions where wideband blankers are ineffective. Impulses are detected by comparing the observed waveform with a predicted waveform. Impulses are corrected by recreating an estimate of corrupt portions of the original waveform using spectral information. The Spectral Noise Reduction algorithm operates in the frequency domain and, based upon statistical models of speech and noise, reduces random noise much more effectively than LMS algorithms. The seminal work for this approach was published by Yariv Ephraim and David Malah in 1984. However, the state of the art has advanced substantially over the past thirty years.</p>

		<p>To provide needed context, there is also a very limited introduction to wideband noise-blankers and LMS noise-reduction algorithms, both of which are also available in WDSP.</p> <p>Dr Warren C. Pratt, NROV Dr. Warren Pratt was first licensed in 1965 and was an avid operator and builder of ham radio equipment in his youth. He received a PhD in Electrical Engineering from the University of Illinois in 1977 and then entered the computer hardware and software industry, beginning as an engineer but then spending most of his career in executive management. He held engineering management positions at Hewlett-Packard, served as COO of Silicon Graphics, and as CEO of Alias, a 3D modeling and animation software company. Dr. Pratt is now retired and, in 2011, he joined the efforts of the openHPSDR program. He has written the WDSP digital signal processing library as well as other parts of the software that openHPSDR uses. He continues to enjoy exploring signal processing algorithms and supporting the openHPSDR program directions.</p>
		<p>"Introduction to RTL-SDR: Ultra cheap software defined radio" by Carl Laufer</p> <p>A brief overview of the RTL-SDR, an ultra low cost software defined radio that is opening the radio world up to new people. I will cover what the RTL-SDR is, what it can do, and how to set one up. The talk will also show some common applications and projects that it can be used for such as tracking aircraft and boats, receiving weather satellite images, decoding digital radio and more. The talk will also cover using SDRs together with portable computers such as the Raspberry Pi 3 for remote monitoring.</p> <p>Carl Laufer is an electronics, software and radio enthusiast from New Zealand. After completing his PhD in machine learning he decided to pursue a new interest in the software defined radio world. He now runs the RTL-SDR.com blog and web store, which specializes in news, projects and products related to ultra low cost software defined radio, and in particular the RTL-SDR dongle.</p>
9:15-10:15	Room 2	SHARES - Interoperable HF Emergency Communications
		Moderator: Ross Merlin WA2WDT
		<p>SHARES (SHARed RESources) is a Federal government HF radio program for backup communications and interoperability among Federal agencies and Federally-affiliated entities that have a need to send or receive national security or emergency preparedness communications such as state agencies, county emergency management agencies, and critical infrastructure / key resources providers (telecommunications, energy, healthcare, transportation etc.). This session will include both an introduction to SHARES for potential users and an open forum for audience members to discuss program issues with the SHARES Program Office staff.</p> <p>Bio:</p> <p>Ross Merlin, WA2WDT, is the SHARES Program Manager. He holds an Amateur Extra Class license and the General Radiotelephone Operator's License. His on-the-air interests include emergency communications, contesting, and digital modes. He is the author of the National Interoperability Field Operations Guide (NIFOG), which is widely used by public safety and emergency communications professionals across the country.</p>
9:15-10:15	Room 3	Remote Operating
		Moderator: Mark Aaker K6UFO

		<p>Remote Access to your Amateur Radio Station</p> <p>Moderator: Mark Aaker K6UFO, Owner and operator of a remote station.</p> <p>Speaker: Stu Phillips K6TU, Developer of K6TU.net Propagation service, high-tech entrepreneur and remote operator.</p> <p>How to implement remote access to your radio station to allow operating while away from home. We'll review a variety of current successful solutions in hardware and software. We'll look at solutions for radio control, antenna switching, AC power, amplifiers and more.</p> <p>Remote access is a great project for a club or special event station. We'll help you avoid common problems and advance your remote operation.</p>
9:15-10:15	Room 4	<p>Teaching One-Day Tech Classes</p> <p>Moderator: Dan Romanchik KB6NU</p> <p>In this talk, I will cover the following:</p> <ul style="list-style-type: none"> <li>• Why teach a one-day class instead of a more traditional, multi-session class?</li> <li>• Where can you hold the class?</li> <li>• How can you publicize the class, i.e. put butts in seats?</li> <li>• Should you charge for the class or offer it for free?</li> <li>• What is a good text to use for the class?</li> <li>• What are some good teaching techniques?</li> <li>• What are some ways to follow up with students?</li> </ul> <p>BIO:</p> <p>Dan Romanchik, KB6NU, is the author of the “No Nonsense” series of amateur radio license study guides and teaches one-day Tech classes in Ann Arbor, MI. He is also the author of a popular amateur radio blog (KB6NU.Com). His goal in life is to help people have fun with amateur radio.</p>
10:30-11:30	Room 2	<p>MARS</p> <p>Moderator: Paul English WD8DBY</p> <p>Military Auxiliary Radio System (MARS) is a Department of Defense (DOD) sponsored program implemented by the Army and the Air Force which trains FCC licensed amateur radio operators to provide contingency High Frequency (HF) communications support for DOD. MARS volunteers are trained on unique military messaging formats and use Military Standard digital protocols as well as digital encryption on DOD assigned HF frequencies. This forum will feature presentations from both the Army and Air Force MARS program leaders and may include other technical presentations relevant to this unique DOD support mission. This forum is open to all MARS members as well as amateur radio operators who are interested in supporting the MARS mission.</p> <p>Presentations will be given by Paul English WD8DBY, Army MARS Program Manager, and Dave Stapchuk KD9DXM, Chief Air Force MARS.</p>
10:30-11:30	Room 3	<p>Instructors Forum</p> <p>Moderator: Carole Perry WB2MGP</p>

		<p>Introduction to the Instructors' Forum : Moderator: Carole Perry WB2MGP</p> <p>This is a forum for teachers and instructors to share teaching techniques and new ideas for the classroom or for a radio youth group. There will be excellent networking opportunities along with great prizes and cameo appearances for our 30th Instructors' Forum anniversary.</p> <p>Speakers:</p> <p>Joe Spier K6WAO "AMSAT Education Outreach" Information about ARISS contacts and much more.</p> <p>Dr Tamitha Skov "Space Weather Woman: Solar Storms and Ham Radio"</p>
10:30 - 11:30	Room 4	<p>Ham Radio Makers and Hackers</p> <p>Moderator: Sean Kutzko, KX9X, ARRL Media and Public Relations Manager</p> <p>The ham radio community has always been a part of the DIY (do it yourself) movement. This group of panelists will share experiences about how ham radio is finding kinship with the new generation of creators, makers, hackers and innovators. Learn more about ham radio at Maker Faires®, Hackerspaces, and among Arduino users. The panelists will include ARRL author Glen Popiel, KW5GP (High Speed Multimedia for Amateur Radio and Arduino for Ham Radio), ARRL Education &amp; Technology Program Instructor Tommy Gober, N5DUX, and others. This forum is sponsored by ARRL, the national association for Amateur Radio®.</p>
10:45-11:45	Room 1	<p>APRS</p> <p>Moderator: Bob Bruninga WB4APR</p> <p>APRS continues to expand into more areas. Bob Bruninga, WB4APR will give an update on the state of APRS and the opportunities for APRS via the several Amateur Satellites now including worldwide coverage via three geostationary birds receivable with a SDR dongle and Raspberry pi kit. Don Arnold, W6GPS will talk about the new Kenwood TH-D74 combined APRS and Dstar radio and Bryan Hoyer will talk about the APRS digipeater to be installed for the Boy Scout Jamboree. Jason Rausch, KE4NYV will update on his APRS projects and as time permits, other APRS topics from the floor are welcome.</p>
11:45-1:15	Room 2	<p>Balloon Sat</p> <p>Moderator: Bill Brown WB8ELK</p> <p>Send a balloon around the World</p> <ul style="list-style-type: none"> <li>- Bill Brown WB8ELK</li> </ul> <p>National Solar Eclipse Project, Ham Radio in the shadow of the Moon</p> <ul style="list-style-type: none"> <li>- Jack Crabtree W7JLC</li> </ul> <p>Ballooning has it's ups and downs</p> <ul style="list-style-type: none"> <li>- Fritz Bock WD9FMB</li> </ul> <p>National Scout Jamboree balloons</p> <ul style="list-style-type: none"> <li>- Keith Kaiser WA0TJT</li> </ul>
11:45-12:45	Room 3	<p>Collins Radio</p> <p>Moderator: David Knepper W3ST</p>

		<p>COLLINS RADIO FORUM - Saturday, May 20, 2017, 11:30 - 12:30 pm</p> <p>"Continuing the legacy of preserving Collins amateur radio equipment for tomorrow's ham."</p> <p>Come join us in learning the critical elements of purchasing, repairing, and maintaining Collins radios for decades to come.</p> <p>Moderator and speaker: David Knepper, W3ST, founder of the Collins Radio Association</p>
11:45-12:45	Room 4	<p>Kit Building</p> <p>Moderator: Joe Eisenberg K0NEB Kit Building Editor, CQ Magazine</p> <p>Come learn hints and tips to help you become a successful kit builder and hear about how some popular kits were created.</p> <p>Topic: Kit Building tips for success</p> <p>Speakers:</p> <p>Wayne Burdick, N6KR Co-Founder, Elecraft</p> <p>David Cripe, NM0S - Designer, Four State QRP Group Kits</p> <p>Bill Sloan, NZ9S – DZKit Sienna and Sienna XL</p>
12:00-1:00	Room 1	<p>DSTAR</p> <p>Moderator: Robin Cutshaw AA4RC</p> <p>New location. New room. New radio. New devices. New software. Join Robin Cutshaw (AA4RC), John Hayes(K7VE), and more for updates on D-STAR.</p>
1:00-2:00	Room 3	<p>Antennas - The Last Frontier</p> <p>Moderator: Frank Beafore WS8B</p> <p>One area of amateur radio experimentation that remains a frontier yet today, is antenna design. This Forum will be the second version of a Forum presented at Hamvention in 2010.</p> <p>The subject matter will focus on antenna history, basic antenna fundamentals, testing methods and equipment available today and a short discussion on building your own antennas.</p>
1:00-2:15	Room 4	<p>Techniques of Best Operators</p> <p>Moderator: Mitch Stern W1SJ</p> <p>Mitch Stern W1SJ</p> <p>Tony Pazzola W2BEJ</p> <p>Why is working new stations such a struggle? Why does everyone else work the juicy DX but I can't? Why is it every time I get into a QSO, it ends up getting swallowed up in a blast of QRM?</p> <p>Now that you've bought up all that great stuff at Hamvention, how do you set it all up? And then, what do you do after you turn it on? How do you go about easily making contacts with others?</p> <p>Our forum today will certainly help.</p> <p>A good station certainly helps, but knowing WHAT to do and what NOT to do when you get on the air is even more important. We'll start off with some of the basics of good operating, learn how to build a great station for those portable operations, dabble with DX and finally learn how to use contests to become better operators. You won't be same operator by the end the day and will be a force to be reckoned with on the bands!You will be treated to on-the-air war stories, equipment ideas and super suggestions. Don't miss it!</p>

1:15-2:15	Room 1	Homeland Security
		Moderator: John Peterson
		<p>The Department of Homeland Security's (DHS) Office of Emergency Communications (OEC) forum is geared toward auxiliary emergency communicators who volunteer to provide backup emergency radio communications support to public safety and emergency response agencies. Typically they are amateur radio communicators from groups such as MARS, ARES, RACES, SATERN and other amateur radio groups. Volunteer emergency communications operators/groups have been providing back-up emergency communications to the public safety community for nearly a century. They are routinely used by event planners and emergency managers at all levels of government. Today nearly all the States/territories have incorporated some level of participation by amateur radio auxiliary communication operators into their communications interoperability plans.</p> <p>Come talk with the DHS Communications Unit (COMU) subject matter experts and learn about the nationally recognized, NIMS/ICS compliant, AUXCOMM workshop and senior level emergency communications experts who have incorporated this training in recent national level disasters. This forum will also include:</p> <ol style="list-style-type: none"> <li>1. John Peterson, OECs team lead for the development of the AUXCOMM course and the AUXCOMM Field Operations Guide</li> <li>2. Information on OEC's Interoperable Communications Technical Assistance Program</li> <li>3. How amateurs are incorporated into the National Emergency Communications Plan (NECP)</li> <li>4. Information on how you can become qualified to teach the OEC AUXCOMM course for your state.</li> <li>5. The latest changes expected for Communications Unit (COMU) training, which includes Communications Leader (COML), Communications Technician (COMT), Instructor courses for COML/COMT, AUXCOMM, Incident Communications Manager, Incident Tactical Dispatcher and the RADO courses.</li> </ol>
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1:30-2:30	Room 2	National Weather Service
		Moderator: Brandon Peloquin , Warning Coordination Meteorologist, National Weather Service Wilmington OH
		<p>Working With Amateur Radio ... To Save Lives During Severe Weather</p> <p>NOAA's Weather-Ready Nation initiative is about building community resilience in the face of increasing vulnerability to extreme weather and water events. To achieve this, the National Weather Service (NWS) strives to develop and strengthen partnerships with those who contribute to this initiative. This presentation will describe the partnership between Amateur Radio operators and the NWS and how they work together to help communities be better prepared for severe weather.</p>
2:15-3:30	Room 3	Fox Hunt / ARDF
		Moderator: Dick Arnett WB4SUV

		<p>Foxhunting (Transmitter Hunting) &amp; Amateur Radio Transmitter Hunting (ARDF)  Moderator: Dick Arnett, WB4SUV,  Speakers Bob Frey, WA6EZV and Brian DeYoung , K4BRI  Topics include demonstration and discussions on a variety of equipment used for VHF Mobile, on foot and ARDF style transmitter hunts. On Saturday we will be having an on foot foxhunt with multiple transmitters in a local park.</p>
2:30-5:00	Room 1	<p>Antenna Forum  Moderator: Tim Duffy K3LR  "Enhanced Stacked Yagi Arrays with Parasitic Elements and BOLPA Log Periodic Development"  Justin Johnson, G0KSC  "Space Weather and Amateur Radio: Science, Forecasting and Effects"  Dr. Tamitha Skov  "Using High Performance Multiplexer Technology to Improve Your HF Station Capability"  Andrei Fedorishev, RA6LBS  "Building and Installing the 3 Element 80 Meter Yagi at W0AIH"  Paul Bittner, W0AIH</p>
2:30-3:30	Room 4	<p>Young Ladies Radio League  Moderator: Anne Manna WB1ARU  Young Ladies' Radio League is sponsoring this Forum for all YLs, licensed or not. Every woman ham is a "Young Lady" no matter what her age. There will be a fascinating presentation on YL history by Kay Eyman, WA0WOF. Other topics will include: what YLs are doing and have done in our shared hobby, reports on new nets and awards, and ways to join in the fun. Bring your questions to the YL Forum and find out more about women in Amateur Radio and hear from Young Ladies of all ages! OMs are also welcome to earn awards and are appreciated for their support. Moderator: Bobbie Donahue.</p>
2:45-3:45	Room 2	<p>Ham Radio and the Law: Antenna Permits and Problems  Moderator: Fred Hopengarten, Esq., K1VR, Author "Antenna Zoning for the Radio Amateur"  A discussion by Amateur Radio attorneys on legal issues of interest to hams: avoiding restrictive covenants, presenting your case for a tower permit, and information on recent court rulings on PRB-1. Updates on proposed legislation to protect hams living under homeowner association restrictions. Sponsored by ARRL, the national association for Amateur Radio. Speakers include Bob Famiglio, Esq., K3RF, ARRL Volunteer Counsel and Vice Director, and others.</p>
3:45-5:00	Room 3	<p>Software Defined Radio  Moderator: Stephan Hicks  Multiple speakers will discuss new advances in the world of Software Defined Radio and will form a panel at the end to discuss questions from the audience. Moderated by Steve Hicks, N5AC, VP Engineering FlexRadio Systems.</p>
3:45-5:00	Room 4	<p>Digital Mobile Radio  Moderator: John Burningham W2XAB</p>

		<p>Digital Mobile Radio (DMR) 2017  By John Burningham, W2XAB  The popularity of amateur DMR networks and ham innovation has brought new hot spot technology and the growth of the networks including DMR-MARC, DMRX, Brandmeister, DMR Plus, and regional networks. Learn about the broad overview of what is going on with DMR for both the new and experienced user.</p>
4:00-5:00	Room 2	<p>County Hunting  Moderator: Tim Eklin W8JJ</p>
		<p>Dr. Timothy Eklin, W8JJ - Forum Moderator  Tim, W8JJ holds USA-CA #1203 and will serve as moderator for this forum and provide a basic overview of county hunting for attendees. Tim is currently the Great Lakes District Director for the Mobile Amateur Radio Awards Club (MARAC).  Timothy Eklin, W8JJ – Speaker # 1  Tim, W8JJ holds USA-CA #1203 and will discuss thirteen rule changes that took effect in February 2017 in order to provide further incentives for both mobile and portable stations to activate counties. Tim will present a summary of the impact these recent changes will have on various awards offered by MARAC.  Robert Gedemer, KA9JAC – Speaker #2  Bob, KA9JAC holds USA-CA #1079 and will discuss operating for the dual purpose of activating and working counties while participating in Parks on the Air (POTA) events. Bob is an avid county hunter and he has worked all 3,077 U.S. counties three times. He also activated many counties while operating as a mobile station.</p>