		Friday, May 20th	
Time	**Room**	**Forum**	
9:15-11:15	Room 1	TAPR	
		Moderator: Scott Cowling	
			Bio: 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 9 years, and is a past 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.
			9:15 – 9:25AM Introduction by Steve Bible, N7HPR, TAPR President
			9:25 – 9:35AM Write for QST/QEX by Kai Siwiak KE4PT, QEX Editor
			9:35 – 10:00AM "SatNOGS - A network of open source satellite ground stations" by Corey Shields KB9JHU
			Abstract: Cubesat operators tend to have few ground stations of their own and rely on amateur operators to help collect telemetry. With cubesat deployments on the rise, more and more data is lost as there are not enough ground stations listening. The SatNOGS Project is a Network of Open Source Satellite Ground Stations, focusing on Low Earth Orbit (LEO) satellites. In this presentation, we introduce SatNOGS as a way to increase the amount of data collected from these satellites and returned to their operators. Learn what the SatNOGS project is, how it works, and what we have planned for the future of amateur radio satellite reception.
			Bio: Corey, KB9JHU was first licensed in 1995, and his interests in radio cover the entire spectrum. The digital space has always been a strong interest, from using APRS in support of public service activities to standing up the first D-Star repeater in Bloomington, Indiana. He currently works at Mozilla (the creators of Firefox) in IT systems.
			10:00 – 10:25AM "HamWAN High Speed IP Radio Network" by Bryan Fields, W9CR
			Abstract: Presented will be an amateur radio high-speed IP backbone concept (HamWAN) with an emphases on building regional highly available networks. Utilizing the same techniques which enable the Internet, Amateur Radio networks may be built connecting projects to the Internet or other sites. Included will be an update on the regional HamWAN network deployments.
			Bio: Bryan Fields, W9CR has been a licensed Amateur Radio operator for 20+ years. He serves on the Technical Committee of AMPRnet, and as president of Florida Simulcast Group, Inc., a 501(c)3 amateur repeater club. He is a Principal Consulting Engineer with Nokia, and has over a decade in the telecommunications industry. At Nokia he is focused on wireless data performance in carrier networks and IP/MPLS networking.

			10:25 – 10:50AM "SDR Disrupt" by Chris Testa, KD2BMH
			Abstract: Tools and techniques for software defined radio continue to evolve at a rapid pace, and we'll go over the landscape and advancements in SDR technologies this past year. Numerous technologies are driving the power-price-performance curve to a new level of efficiency. We'll take a look at John Stephensen, KD6OZH's mesh project (part of TAPR), which helps pave the way for next-generation wireless links. Latest developments in digital voice will also be discussed.
			Bio: Chris Testa, KD2BMH got his degree in Computer Engineering from the University of Maryland. His day job is building Cloud based services, and by night his passion is to design and build computer hardware. Chris lives in Los Angeles and likes to go backcountry camping.
			10:50 – 11:15AM "HackRF Update" by Mike Ossmann, AD0NR
			Abstract: Having developed HackRF One, the world's lowest cost wideband Software Defined Radio transceiver, the HackRF project continues to produce open source hardware designs for SDR. Find out about our designs in development now and our ideas for future boards that will enable the next generation of SDR enthusiasts.
			Bio: Michael Ossmann is a wireless security researcher who makes hardware for hackers. Best known for the open source HackRF, Ubertooth, and Daisho projects, he founded Great Scott Gadgets in an effort to put exciting, new tools into the hands of innovative people.
9:15-10:45	Room 2	Remote Operating	
		Moderator: Mark Aaker	
			How to implement remote access to your radio station to allow operating while away from home. We'll review a variety of current solutions in hardware and software. If your travel schedule or antenna restrictions are keeping you off the air - remote access allows you to chase DX, contest or check into your favorite net from anywhere with your laptop or smartphone. We''ll look at solutions for radio control, antenna switching, AC power, digital modes and more. Remote access is a great club project to get more club members on the air. Remote access allows special event stations in locations where antennas and feedlines are not possible. We will help you avoid the common problems and pitfalls, and advance your remote operation.
			Moderator: Mark Aaker K6UFO, Owner and operator of a remote station
			Speakers: Brian Moran N9ADG, Editor of ARRL Contest Update Dennis Egan W1UE, Enthusiast for Remote, DXing, Digital Modes
9:15-10:15	Room 3	SHARES HF EMCOMM	SHARES – SHAred RESources Government HF Emergency Radio System

		Moderator: Ross Merlin WA2WDT	
			This session, conducted by Ross Merlin WA2WDT, the SHARES Program Manager, will discuss the recent expansion of the federal SHARES HF Radio Program to support state agencies, county Emergency Management agencies, and critical infrastructure / key resources providers in addition to the legacy stakeholder group of Federal agencies. SHARES provides emergency backup and interoperability communications for many of the civil agencies previously supported by the MARS programs. Recently all MARS members were granted access to the SHARES program, and the MARS and SHARES are working more closely together to improve and maintain the readiness of HF emergency communications. The presentation will conclude with a question and answer session.
9:15-10:15	Room 5	Having Fun with CW	Speaker: Dan Romanchik, KB6NU, author of The CW Geek's Guide to Having Fun with Morse Code
		Moderator: Dan Romanchik KB6NU	
			Description: Despite the fact that there is no longer a Morse Code test, many new operators are interested in learning and using this mode. Dan will explore some of the reasons why CW is still such a popular mode, how to learn Morse Code, how to select a key, how to make contacts, and even more importantly, how to have fun with CW.
			Bio: Dan Romanchik, KB6NU, is a self-proclaimed CW geek. He is the author of The CW Geek's Guide to Having Fun with Morse Code, the "No Nonsense" amateur radio license study guides, and the popular amateur radio blog, KB6NU.Com. When he's not writing about amateur radio, he works CW on the HF bands and teaches electronics and ham radio classes in Ann Arbor, MI.
10:30-12:00	Room 3	Instructors Forum	This Forum will answer the FAQs about introducing amateur radio in to schools, recruiting females into the hobby, and the advantages of a college amateur radio club.
		Moderator: Carole Perry	
			Maria Lysandrou "KD9BUS "Attracting Females into Ham Radio."
			Bob Roschewsk KA2PBT "How to Advance Amateur Radio in the School System." Also presenting, high schoolers Lukas Purasson KD2ISB and Nick Roschewsk KD2HBR who will speak about "Antenna and the Engineering Design Competition."
			Sam Rose KC2LRC "Advantages of College Ham Radio Clubs."

10:30-11:30	Room 5	The ARRL Laboratory – Behind the Scenes!	Presenter: Bob Allison, WB1GCM, ARRL Assistant Lab Manager
		Moderator: Bob Allison	
			ARRL members who are familiar with the monthly column *QST* Product Review have some idea of the work supported by the ARRL Laboratory. But did you know the Lab has an answer man, Zack Lau, W1VT, who runs the ARRL Technical Information Service? He provides the answers to members who call or write to the Lab for help. Did you know the Lab has an RFI expert? Mike Gruber, W1MG helps members experiencing RFI problems. Who is the watchdog against spectrum encroachment from consumer devices? Lab Manager Ed Hare, W1RFI is a prominent board member serving on several industry standards committees. He also won the BPL battle for all of us. Come hear about how the ARRL Lab supports members and the entire Amateur Radio Service!
11:00-12:00	Room 2	Propogation of Radio Waves	Title: The Propagation of Radio Waves Through the Standard Atmosphere
		Moderator: Frank Beafore WS8B	
			Abstract: By executive order of President Franklin D. Roosevelt in the summer of 1940, the National Defense Research Committee (NDRC) was ask to research and compile a Summary Technical Report on the "state-of-the-art" relating to radio propagation. In 1945, these related studies were declassified and published in 1946. Since then, many of the printed manuscripts were lost or destroyed. This forum will be given based on one of the manuscripts of the same title above. Relating to radio propagation, this presentation will focus on: antennas, factors influencing transmission, radio gain, propagation aspects of equipment, and terrain diffraction. The entire presentation will refer to the manuscript and tie technology discovered in the mid 1940's to today's learnings. In typical forum fashion, the moderator will ask for audience participation.
11:30-12:30	Room 1	APRS	Another exciting year in APRS will be discussed plus announcements of new ideas, projects, new radios and products plus comments from the floor. Speakers will be:
		Moderator: Bob Bruninga	WB4APR, Bob Bruninga - APRS Operating notes
			N6BG, Byon Garrabrant and Allen Lord - Byonics Update
			KE4NYV, Jason Rausch - RPC Electronics Update
			W6GPS, Don Arnold - AVMAP G6 update
			KA2DDO, Andrew Pavlin - author of YAAC
11:45-12:45	Room 5	Kit Building	
		Moderator: Joe Eisenberg	Joe Eisenberg, K0NEB, Kit Building Editor, CQ Magazine – Keynote:

			Kit news – "Who's in and who's out of the kit business?" Also, we will take a look at hints and tips for kit builders. Topics to be covered include easy new kits to build and techniques to increase your chances of success.
			Speakers:
			Wayne Burdick, N6KR, Elecraft
			James Bennett, KA5DVS, Pacific Antennas/QRPKITS.COM
12:15-2:15	Room 2	Balloon SAT	Trans-Atlantic Pico balloon flight with APRS and WSPR
		Moderator: Bill Brown WB8ELK	- Bill Brown WB8ELK
		and Doug Loughmiller W5BL	
			Building and designing a Pico Tracker
			- Mike Hojnowski KD2EAT
			Amateur Radio Balloons over North East Texas
			- Doug Loughmiller W5BL
			Spaceport Indiana STEM activities with high altitude balloons
			- Brian Tanner
			A high altitude balloon will be launched after the forum at 3:15 pm in the flea market
12:15-1:45	Room 3	Collins Radio	Tips on Collins Restoration and Repair
		Moderator: David Knepper	Presenters: Robert Spooner, AD3K and David Knepper, W3ST
			Sponsored by the Collins Radio Association
12:45-2:15	Room 1	DSTAR	
		Moderator: Robin Cutshaw	D-STAR continues to grow with a number of new devices and new software which makes D-STAR unique among the digital protocols. The speakers this year are experts in the many facets of D-STAR and will be updating attendees with the latest news, radios, and gadgets.
1:00-2:15	Room 5	Techniques of Best Operators	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?
		Moderator: Mitch Stern W1SJ	

		Tony Pazzola W2BEJ	Now that you've bought up all that great stuff from the Flea Market and got home and set it all up, what do you do after you turn it on? How do you go about easily making contacts with others?
			Our forum today will certainly help.
			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, move on to the more serious matter of public service and emergency operation, 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 recommendations, super suggestions and then you'll get to participate in the dreaded Hamvention QSO Party. Don't miss it!
2:00-3:30	Room 3	Foxhunt ARDF	
		Moderator: Dick Arnett	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. Equipment used to locate intentional interference will also be demonstrated.
2:30-3:45	Room 2	Ham Radio and Law	Ham Radio and the Law: Antenna Permits and Problems
		Moderator: Fred Hopengarten	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. Speakers:
			• Bob Famiglio, Esq., K3RF, ARRL Volunteer Counsel and Vice Director: The concept of Viewshed, and how to present it favorably
			• Jim O'Connell, Esq., W9WU, ARRL Volunteer Counsel: Buying a house
			• Kevin Kaufhold, Esq., W9GKA, ARRL Volunteer Counsel: Case study for PRB-1
			• Dan Henderson, N1ND, ARRL Regulatory Information Manager: Update on the Amateur Radio Parity Act

2:30-3:30	Room 5	Old Transmissions and Voices of the Past	
		Moderator: John Dilks	
		John Dilks, K2TQN, QST Editor of the “Vintage Radio” column for 15-years, writing over 160 columns.	PowerPoint includes Photos, Graphics, and the actual Voices of the following Wireless Pioneers telling their personal accounts and stories: Marconi, Jack Binns, Irving Vermila (Ham #1), Dr. Lee DeForest, Hugo Gernsback, Edwin Armstrong, John Reinartz (life story), Leon Deloy – (French 8AB - first transatlantic QSO), Elmo Pickerill (first airplane-to-ground QSO, 1910), Art Collins, General Griswold (USAF- SAC), Clarence Tuska describing the start of QST magazine in 1915, an SOS from the passenger ship "PRINSENDAM" in 1980 and early Wireless Ship transmissions on 500kc CW.
2:30-5:00	Room 1	Antennas	“Bent Elements for Impedance Matching and Performance Enhancement within Yagi Antennas for HF”
		Moderator: Tim Duffy K3LR	Justin Johnson, G0KSC
			Justin will share some of his research that indicates increased Yagi antenna performance with bent elements.
			“The Antenna Book – its Purpose and Structure in the Internet Age”
			Ward Silver, N0AX
			As editor, Ward will explain what is new in the latest ARRL Antenna Book and how best to use the new material to enhance your antenna system.
			“Innovative Wideband Techniques in Antennas – A New OWA Concept”
			Dr. Jim Breakall, WA3FET
			Jim will describe a totally new approach to increasing VSWR bandwidth of many antennas.
			“Low Band Antennas at W3LPL: Fifty Years on Continuous Improvement”
			Frank Donovan, W3LPL
			As the low bands continue to get better, Frank will describe what he has learned from his extensive experience of designing, construction and using low band antennas at W3LPL.
3:45-5:00	Room 3	Software Defined Radio	Why SDR?
		Moderator: Stephan Hicks N5AC	
			Abstract: This is a common question that all hams ask (or should ask). I will try to answer the question "What does the SDR do for me that a conventional radio doesn't?" Examples of virtual receivers, remote operation and open-source design will be discussed.

			Scotty Cowling, WA2DFI was first licensed in 1969 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 9 years, and is a past 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.
			Jared Boone, AF7SO
			SDR In Your Hand
			Abstract: Ham software-defined radio is often done with a PC or expensive and power-hungry FPGA hardware. I will discuss my PortaPack project, where I do lots of battery-powered SDR with the $5 microcontroller in the HackRF One.
			Jared Boone, AF7SO, channels his radio and electronics obsessions into his open-source hardware business, ShareBrained Technology.
			Stephen Hicks, N5AC, VP Engineering, FlexRadio Systems
			Station simplification, DX and remote operation with the FLEX-6000 and Maestro
			Part of the promise of a true software defined radio (SDR) is the ever expanding wealth of software capabilities. In this talk we discuss how new software capabilities added to the FLEX-6000 platform along with the Maestro control system have led to simplification of station design, better DX capabilities and remote operating possibilities.
			Steve Hicks joined FlexRadio Systems in 2006. As Vice President of Engineering, Steve is responsible for the company's product development and product strategy. Steve brings over 25 years of technology experience having held posts at a number of companies including Rockwell/Collins, Digital Equipment Corporation, and Texas Instruments as well as his own software and consulting businesses. Steve has been a licensed operator since 1977 and currently holds an Extra Class license. He is a life member of the ARRL, Central States Microwave Society and the Texas VHF-FM Society. He has also previously held the post of President of the North Texas Microwave Society. In addition, Steve was awarded the Mini Circuits Annual Award for Design Achievement in 2008. Steve received his BSEE from Texas A&M University and an Executive MBA from Southern Methodist University.
			The three speakers will form a panel at the end of the presentations and will address questions from the audience as a group.

3:45-5:00	Room 5	Digital Mobile Radio	
		Moderator: John Burningham W2XAB	Digital Mobile Radio (DMR) is the international standard for professional radios, there are over a dozen manufactures in the world. Hams have built a couple of world wide networks over the last few years. Learn about what is going on in the amateur DMR community, the new innovations and what the future holds.
4:00-5:00	Room 2	County Hunting	Dr. Timothy Eklin, W8JJ - Forum Moderator
		Moderator: Tim Eklin	Tim, W8JJ holds USA-CA #1203 and has worked and confirmed all U.S. counties and will serve as moderator for this forum. Tim is also the Great Lakes District Director for the Mobile Amateur Radio Awards Club (MARAC).
			Randy Hatt, AA8R – Speaker #1
			Randy, AA8R holds USA-CA #885 and will answer the following questions: What is County Hunting? How do you get started? What equipment do I need? What frequencies, modes, and protocols do county hunters use? Randy will also share some benefits of joining the Mobile Amateur Radio Awards Club (MARAC).
			Bob Voss, N4CD – Speaker #2
			Bob, N4CD holds USA-CA #883 and will discuss going mobile for the dual purpose of activating counties while participating in the National Parks on the Air (NPOTA) event. This is a fun and interesting way to increase your contacts while mobile. Bob is an avid travel enthusiast and he is the first amateur to operate from all 3,077 U.S. counties twice.