Info session topics

• Intro to Amateur Radio and the Club
  – Chris (KA8WFC) and Lora (KC8UDG)

• Amateur Radio, NASA, and more
  – Dean Tony England (WØORE)

• W8UM Station Tour and Demo
  – “The shack”
Amateur Radio = “Ham Radio”

• Amateur Radio Operators are “Hams”
  – Term goes back to days of the telegraph (Morse Code) when a poor sender was “ham-fisted” (early wireless was all telegraphy)

• Hams have come from all walks of life
  – Engineers, business, trades, doctors, teachers, farmers, scientists, lawyers, journalist, senators and kings, men, women, kids, and college students!

• Just like broadcast radio stations, Hams are licensed by the FCC and have their own call signs
Radio is Magic!

• Hams share a common fascination with radio communication
  – We think it is amazing that you can create invisible radio waves that travel everywhere and through almost everything, and use them to talk to each other!
  – At least some part of us gets excited by knobs, flashing lights, and big antennas
Some Ham Activities

• Putting together and operating your own radio station and using it to talk to other Hams (two-way and not broadcasting, but not “CB” either)
• Space communication using satellites, talking to astronauts, and E-M-E (“moon bounce”)
• On-the-air radio contests (some just for schools)
• Proving emergency and public service communications
• Experimenting with radio and electronics
• Making friends around the world
• And LOTS MORE
The Club

• We’ve been around since 1913
• U-M ham radio stations have occupied buildings all around campus
• Monthly meeting for club business and interesting presentations on Ham Radio topics
• Help students get (or upgrade) their FCC Amateur Radio Licenses
The W8UM Station

• The center of club activity
  – **Learning** how to use a Ham Radio station
  – Casual operating (nets, calling “CQ”, etc.)
  – Chasing “DX”
  – Competing in **contests** (by yourself or with many other club members)
  – **Building** things for yourself, the club station, or a student project or course
  – Just hanging out and socializing

• An incredible resource
  – We have **amazing** equipment, antennas, and our own tower on the **EECS** building (stay for the TOUR)
Activities
Some Technical Info

• Ham radio equipment spans a wide range
  – Modern, state-of-the-art technology (DSP and software-defined radio, 100+ GHz experimental equipment), all the way back to vacuum tubes

• Hams use a wide variety of modes
  – Voice, PC-based digital modes, Morse Code, even several types of Television

• We have allocations (by the FCC) all over the radio spectrum
Our New Tower and Antennas
The Ham "Bands"

US Amateur Radio Bands

US Amateur Power Limits
At all times, transmitter power should be kept down to that necessary to carry out the desired communications. Power is rated in watts PEP output. Except where noted, the maximum power output is 1000 Watts.

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KEY
- KITTY and data
- phone and image
- CW only
- 5035 phone
- USB phone only
- Fixed radio phone forwarding systems only
- E = Amateur Extra
- A = Advanced
- G = General
- T = Technician
- N = Novice

Above: CW operation is permitted throughout all amateur bands except 60 meters.
MCW is authorized above 11.1 MHz, except for 219-220 MHz.
Test transmissions are authorized above 51 MHz, except for 219-220 MHz.

60 Meters (5.3 MHz) USB/ LSB
- 6330 - 6345 kHz
- 6365 - 6385 kHz
- 6371 - 6395 kHz
- General, Amateur, and Amateur Extra licensees may use the following five channels on a secondary basis with a maximum effective radiated power of 50 W PEP relative to a half-wave dipole. Only upper sideband suppressed carrier voice transmissions may be used. The frequencies are 6330.5, 6345.5, 6365.5, 6371.5, and 6395.5 kHz. The occupied bandwidth is limited to 3.5 kHz centered on 6332.5, 6347.5, 6366.5, 6373, and 6395 kHz respectively.

40 Meters (7 MHz) E T A G T N
- 7050 - 7080 kHz
- 7125 - 7150 kHz
- 7200 - 7225 kHz
- 7250 - 7275 kHz
- Phone and image modes are permitted between 7075 and 7105 kHz for FOC licensed stations inITU Region 1 and 2 and for FCC licensed stations in ITU Region 3 (first 30 degrees) west longitude or south of 30 degrees north latitude (See Sections 97.206(c) and 97.207(b)(1)). Novice and Technician licensees outside ITU Region 2 may carry on CW only between 7125 and 7150 kHz, except for 7275 kHz. These exceptions do not apply to stations in the continental US.

10 Meters (28 MHz) E A G T N
- 28.000 - 28.300 kHz
- 28.500 - 28.800 kHz
- 28.000 - 28.300 kHz
- All licensees except Novices are authorized all modes on the following frequencies:
  - 3000-21000 kHz
  - 2390-2450 kHz
  - 24.0-25.7 MHz
  - 24.0-24.2 MHz
  - 21.0-21.3 MHz
  - 21.0-21.3 MHz
  - 76.0-90.0 MHz
  - All above 276 MHz

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Why Join the Club?

• A once-in-a-lifetime opportunity
  – **W8UM** is a world-class Ham Radio station just for club members

• Everyone needs an **“Elmer”**
  – Learn how to operate a Ham Radio station
  – Get your own FCC Amateur Radio License (and call sign)
  – Why read a book when you’ve got EE students (and professors) bending over backwards to explain how radio works?
Be a Leader…It’s Your Club!

• **President:** Calls and runs meetings, interfaces with the University and students
• **Vice president:** Helps run the show (and gets ready to be president)
• **Treasurer:** Handles the money
• **Secretary:** Takes minutes, does PR and correspondence
• **Station Manager:** Keeps W8UM in top shape, creates policies, helps others learn how to use the equipment
How do I join?

1. Fill out an application
2. Pay $20 dues

That’s it!
Stick around!

• At the end of the Info Session we are going upstairs to W8UM and will give a demo of the station’s capabilities and answer any of your questions one-on-one

• Q&A, comments, and introductions…