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## FOR IMMEDIATE RELEASE

**Unlock the Secrets of the Invisible Radio Universe with SuperKnova®**  
***STEM coursework is available without cost to learners of all ages from the U.S. National Science Foundation National Radio Astronomy Observatory, thanks to funding from the Amateur Radio Digital Communications***

**August 28, 2024** — Wireless technology is central to our modern world. You may be reading these words on a smartphone or tablet using WiFi — all of these devices use the same electromagnetic spectrum (EMS) as radio astronomy. Learning these fundamentals can offer a better understanding of the technology we use in our daily lives and provide valuable, transferable skills required in many present and future careers.

The U.S. National Science Foundation National Radio Astronomy Observatory (NSF NRAO), and its administrator Associated Universities, Inc. (AUI), have created [SuperKnova](#), an online educational platform that provides inclusive, equitable access to radio technology learning and training. “Our goal is to broaden participation in STEM by offering no-cost training and education in skills that help prepare learners for STEM careers,” shares Valarie Bogan, NSF NRAO SuperKnova Program Manager. The [SuperKnova website](#) has a wealth of free educational resources for teachers and learners of all ages. Topics include history of radio astronomy, the physics of radio technology, and even cube satellites.



*SuperKnova instructor Jesse Alexander (WB2IFS) with students Sullivan Gutierrez Torres, Logan Slimp, and Nejon McBride-Stubbs (KJ5AXD), from the pilot cohort at the HamSCI 2023 Workshop.*

## **The Electromagnetic Spectrum and Ham Radio**

The NSF NRAO is excited to announce that, thanks to a generous grant from [Amateur Radio Digital Communications](#) (ARDC), learners can now enroll in two self-paced courses to learn the fundamentals of radio communications. The [Technician Amateur Radio License and EMS Course](#) introduces learners to the electromagnetic spectrum using amateur (ham) radio as a vehicle, and helps them to prepare to take the exam for licensure. Starting with the basics of radio waves, electronics, and simple radio equipment, students then continue learning challenging topics, such as frequency, propagation, antennas, and general circuitry.

Those who have earned their Technician license can advance to the [General Amateur Radio License and EMS Course](#), where learners will have, over the course of twelve lessons, more in depth instruction on the electromagnetic spectrum and amateur radio, including electrical principles such as reactance, impedance, resistors, capacitors, and inductors. The course then delves deeper into these subjects with lessons on filter types, oscillators, the structure of the ionosphere, and FCC rules.

Project instructor Jesse Alexander (ham radio call sign WB2IFS) adds, “This is a great opportunity to share amateur radio with a new generation of potential ham radio enthusiasts.

We've designed this course to introduce learners to the electromagnetic spectrum while developing radio skills and knowledge.”

Lyndele von Schill, director of the NSF NRAO office of diversity and inclusion, notes that many organizations have come together to make these resources possible. “Thanks to the support of the U.S. National Science Foundation, with administration by AUI, and additional support from the ARDC, the SuperKnova program has emerged as a valuable and free resource to students and educators across the country.”

“The electromagnetic spectrum is fundamental to amateur radio and significant in many professional fields,” says Rosy Schechter (KJ7RYV), Executive Director at ARDC. “Developing coursework on an accessible platform like SuperKnova benefits both the learner and the longevity of amateur radio. I love the work that is happening with this program at NRAO, and I’m so happy to see this curriculum out in the world.”

### **About Amateur Radio Digital Communications (ARDC)**

Amateur Radio Digital Communications (ARDC) is a California-based foundation with roots in amateur radio and the technology of internet communication. The organization got its start by managing allocations of the AMPRnet address space, which is designated to licensed amateur radio operators worldwide. Additionally, ARDC makes grants to projects and organizations that follow amateur radio’s practice and tradition of technical experimentation in both amateur radio and digital communication science. Such experimentation has led to broad advances for the benefit of the general public – such as the mobile phone and wireless internet technology. ARDC envisions a world where all such technology is available through open source hardware and software, and where anyone has the ability to innovate upon it.

Learn more about ARDC at <https://www.ardc.net/>.