Abstract:
Dayton, Ohio natives, Wilbur and Orville Wright, are recognized as the inventors of the heavier-than-air powered flying machine. They were able to solve the many problems of flight by conducting a series of flight and wind tunnel experiments between 1899 and 2005, at Kitty Hawk, North Carolina and at Dayton. The talk will discuss many of the technical aspects of their invention, what they knew, and what they didn’t know. The flight control system will be discussed in some detail, along with the propulsion system and the wind tunnel experiments. In the world of aeronautical engineering, the Wrights are unique because they had to fulfill all the roles: researchers, designers, builders, pilots, salesmen, instructors, airframers and propulsion engineers.

Bio:
Tom Benson works in the Inlets and Nozzles Branch at the NASA Glenn Research Center. He has a bachelor’s and master’s degrees in aerospace engineering from Ohio State University in 1971, and then spent four years in the Air Force. While stationed on AFB, he was involved with high speed inlet testing and instilled engine performance calculations for the F-15, YF-17 and F-117A. He returned to graduate school at OSU in 1975 and placed the throttles for a NASA flight. Benson started at NASA in 1978; during the 1980’s, he built, verified, and applied computer fluid dynamics (CFD) programs to model the flow of gases through high speed inlets, working on the NASA project, and serving on an international AGARD Working Group on computational modeling. He worked for several years in developing CFD models for microgravity liquids, he worked on various papers on CFD simulation of fundamental fluids problems, including jet-in-crossflow and unsteady flow past a cylinder.

For the last 15 years, Mr. Benson has also worked in educational outreach. He is the author of The Beginner’s Guide to Aeronautics (http://www.grc.nasa.gov/WWW/K-12/airplane), a large educational website that explains the science and math of airplanes, jet engines, and rockets. He has written many interactive computer programs to demonstrate the science, including FoilSim, EngineSim, and RocketModeler. One version of FoilSim shows the effects of aerodynamics on the flight of a baseball or soccer ball and has been displayed at the Baseball Hall of Fame exhibit. Mr. Benson is a teacher for NASA’s Digital Learning Network, delivering lessons on Rocket Science, Humans in Space, and Simple Machines to students using interactive television. During the Centennial of Flight Celebration (2000–2010), he and Roger Storm gave educational presentations around the country describing the invention of the airplane as Wilbur and Orville Wright. These efforts also led to the development of a Wright Brothers’ website (http://wright.nasa.gov) and an educator’s guide called “Learning to Fly.”

Hosted by: Dr. Benzakein, Benzakein.2@osu.edu, 614-292-7699
For information on AAE 8890 seminars contact Jenny Shields at 688-4528 or shields.68@osu.edu