The Satellites, Weather and Climate (SWAC) program at the University of Vermont began in 2008 and concluded its pilot phase in 2010. It is an innovative professional development opportunity for in-service K-12 science and mathematics teachers to deepen their content knowledge in the atmospheric and climate sciences, while acquiring geospatial skills that could be used in the classroom. Teachers participate in both a Summer Institute and monthly meetings during the academic year. Core content in climatology, meteorology and engineering is presented in "learning modules", accompanied by "hands-on" practical exercises. SWAC teachers then use a process of Backward Design and Project-based learning to create inquiry-based learning experiences for students. Their progress through the program is tracked by formative and summative assessments.