

Podium presentation proposal / abstract for the 14th Annual CMAS Conference, Oct 5-7, UNC-CH

Air – Climate – Energy session

Application of an Integrated Assessment Model with state-level resolution for examining strategies for addressing air, climate and energy goals

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The Global Climate Assessment Model (GCAM) is a global integrated assessment model used for exploring future scenarios and examining strategies that address air pollution, climate change, and energy goals. GCAM includes technology-rich representations of the energy, transportation, buildings, and agriculture sectors, which are linked to representations of the economy, climate and land use systems. For various scenarios, GCAM produces outputs such as estimates of technology adoption, fuel use, and climate and air pollutants. GCAM has been used in a variety of high-profile applications, including the production of the Representative Concentration Pathway (RCP) 4.5

W/m² scenario. Development of GCAM continues, and a new version called GCAM-USA now represents the U.S. at the state-level resolution within the larger global framework. We describe GCAM-USA and highlight how the model is being updated to more fully account for U.S. air quality regulations. We also demonstrate the application of the model to examine the state-level climate and air pollutant emissions associated with alternative assumptions about policy regimes. We conclude by discussing ongoing efforts to evaluate how GCAM-USA can be integrated into a decision support framework, with the goal of facilitating state and federal air, climate and energy analyses.