

Abstract for Fall 2014 ASU engineering seminar

September 16, 2014

Issues in Carbon Management

The latest IPCC report states that any scenario that avoids serious risk of severe climate change involves long period of negative emissions during the rest of the 21st century. This IPCC statement is based on two observations. First, natural forces will remove some of the carbon dioxide that is emitted to the atmosphere, but a large fraction will linger for thousands of years. Avoiding catastrophic climate change requires more than just a reduction in the rate of CO₂ emissions. The integral of all emissions since the start of the industrial revolution must be kept below a dangerous threshold. Second, declaring a need for negative emissions is an implicit admission that the world has waited too long and cannot solve the climate change problem anymore by simply stopping emissions. In order to achieve negative emissions, technologies need to be developed that can extract excess carbon from the environment and store it safely and permanently. The talk will outline options and research proposals to develop such a technology base in our new Center for Negative Carbon Emissions.