Project Title		Lead University*		Technology or Program Relevance		Project Start Date
Surface Composition of Metal Alloy Hydrogen Purification Membranes		CMU		Materials/Hydrogen Separation		Summer 2005
Integrated Optimization Strategies for Advanced Process Engineering Co-Simulation of Zero-Emission Power Plants		CMU		Computational Science/FutureGen		Summer 2005
Bundling Energy Systems of the Future		CMU		Modeling/Energy Infrastructure		Summer 2005
CT Imaging of CO2 Sequestration in Brine Saturated Sandstone		CMU		Computational Science/Sequestration		Summer 2005
Knowledge Management and Visualization in Support of Vulnerability Assessment of Electricity Production		CMU		Computational Science/Energy Security		Summer 2005
Multiscale Characterization of Degradation of Solid Oxide Fuel Cell Cathodes		CMU		Materials/Fuel Cells		Summer 2005
Accurate Modeling of Gas Hydrates		Pitt		Computational Science/Energy Supply		Summer 2005
Novel Materials and Reactor Concepts for Chemical Looping Combustion		Pitt		Materials/Combustion		Summer 2005
Molecular Design of CO2 Ligands		Pitt		Computational Science/Sequestration		Summer 2005
Environmental Geophysical Technologies		Pitt		Environmental Technologies		Summer 2005
Comprehensive Characterization of Oxy-Fuel/Hydrogen Turbine Systems		Pitt		Turbines		Summer 2005
Enzyme-Based Capture of Carbon Dioxide		Pitt		Sequestration		Summer 2005
Cavitant Adsorbents for CO2 Sequestration		Pitt		Materials/Sequestration		Summer 2005
Aluminum Nitride (AIN) Based High Temperature Actuators		WVU		Materials/Sensors and Controls/Turbines		Summer 2005
Defining for Future Needs for Lubricant Formulations for Hydrogen-Fueled Heavy-Duty Engines: Enabling Technology Development		WVU		Materials/Advanced Fuels		Summer 2005
Development of Multi-Purpose Dynamic IGCC Model for an Energy-Intensive Industry Cluster		WVU		Computational Science/FutureGen		Summer 2005
Developing Novel Costing for SOFC Interconnects		WVU		Materials/Fuel Cells		Summer 2005
Integrated Geoscience Approach to CO2 Leakage Prediction and Detection at Geologic Sequestration Sites		WVU		Sequestration		Summer 2005
Thermal Barrier Coatings for Advanced Oxy-Fuel and Hydrogen Turbines		Pitt		Materials/Turbines		Spring 2006
Development of Advanced Controls for Hyper System		WVU		Control Systems		Spring 2006
Theoretical and Experimental Approaches to the Prediction of Gas Hydrate Equilibria		WVU		Computational Science/Energy Supply		Spring 2006
Assessment of Turbo-Chemistry Models for Prediction of Fuel Composition Effects on GTC Emissions		WVU		Materials/Turbines		Spring 2006
Air Quality Modeling of Emissions from Natural Gas and Oil Extraction and Transmission		CMU		Modeling/Environmental Technologies		Spring 2006
Use of Quantum Monte Carlo Method for Characterizing Weak Interactions Important in Energy Applications		Pitt		Computational Science		Spring 2006
Shape and Size-Controlled Reactivity of Nanoparticulate Catalysts		CMU		Computational Science		Spring 2006

Project Title		Lead University*		Technology or Program Relevance		Project Start Date
Market Analysis of Emerging Electric Energy Storage Systems		CMU		Modeling/Systems Analysis & Planning		Spring 2006
Raman Spectroscopy for Monitoring of Natural Gas Composition		Pitt		Sensors and Controls/Turbines		Spring 2006
Surface Immobilization Nanotechnology for Developing Low-cost Highly Efficient, Multi-Functional Solid Sorbents for CO2 Capture		WVU		Materials/Sequestration		Spring 2006
Degradation of Metallic Interconnects in Coal-Based SOFCs		Pitt		Materials/Fuel Cells		Spring 2006
Group IV/III-N Heterostructure Gas Sensors		WVU		Sensors and Controls		Spring 2006
Electrochemical Separation of CO2 for Oxy-fired Combustion		CMU		Materials (Membranes)/Turbines		Spring 2006
Design and Testing of Multi-Contaminant Sorbent Materials		Pitt		Materials/FutureGen		Spring 2006
Characterization of Hexaaluminate Catalysts		WVU		Materials/Advanced Fuels		Spring 2006
ACT Active Combustion Throttling		Pitt		Sensors & Controls/Turbines		Spring 2006
Catalysts for Selective Hydrogen Sulfide Oxidation		Pitt		Materials/Fuel Processing		Spring 2006
Characterization of Fuel Cell Materials Using EPR and Luminescence		WVU		Materials/Fuel Cells		Spring 2006
Collaboratory for Multiphase Flow Research		WVU		Computational Science/FutureGen		Spring 2006
Modeling Rock and Drill Cutter Behavior Under High Pressure and High Temperature Conditions		WVU		Computational Science/Materials/Energy Supply		Spring 2006
Degradation of Well-Bore Cements Due to CO2 Injection		CMU		Sequestration		Spring 2006
Statistical Methods for Integrating Near-Surface CO2 Migration Modeling with Monitoring Network Analysis		CMU		Sequestration		Spring 2006
Regional Collaboratory for the Study of Trace Elements Associated with Fossil Fuels and Utilization By-Products		Pitt		Environmental Technologies		Spring 2006
An Engineering-Economic Analysis of Syngas Storage		CMU		Modeling/FutureGen		Spring 2006
Assessing Future Supply Curves for Coal in Light of Economic, Technological and Environmental Uncertainties		CMU		Modeling/Systems Analysis & Planning		Spring 2006
Models of Energy Futures and NETL's Local/Regional Economic and Environmental Impact		CMU		Modeling/Systems Analysis & Planning		Spring 2006
Extensions of FRACGEN and NFFLOW		Pitt		Geological Modeling/Fuel Supply		Spring 2006
Fluorescent Sensors for Mercury Contamination		Pitt		Environmental Technologies		Spring 2006
Collaboratory for Process & Dynamic Systems Modeling		WVU		Computational Science/FutureGen		Spring 2006
Assessment of Hydrocarbon Dewpoint, Equations of State Modeling		WVU		Turbines		Spring 2006
Coal Derived Liquids to Enable HCCI Engine Technology		WVU		Advanced Fuels		Spring 2006
Process Simulation and Systems Analysis		WVU		Computational Science		Spring 2006

* CMU (Carnegie Mellon University); Pitt (University of Pittsburgh), WVU (West Virginia University