NETL - Penn State

University Coalition for Fossil Energy Research

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Penn State leads the University Coalition for Fossil Energy Research (UCFER) that advances basic and applied research for clean and low-carbon energy based on fossil fuels in support of the U.S. Department of Energy's mission. UCFER focuses on research that will improve the efficiency of production and use of fossil energy resources, while minimizing the environmental impacts and reducing greenhouse gas emissions.

Through a nationwide open competition, the six-year, $20 million dollar project was awarded by the Department of Energy's National Energy Technology Laboratory. Dr. Chunshan Song, director of Penn State's Energy Institute in the College of Earth and Mineral Science and distinguished professor of fuel science and chemical engineering, is the principal investigator and director of UCFER.

UCFER's collaborative research focuses on coal, natural gas, and oil and the research involves one or more of the following five core competencies:

- Geological and Environmental Systems, consisting of research on geomaterials, fluid flow in geologic media, and geospatial and strategic field monitoring.
- Materials Engineering and Manufacturing, consisting of research on the design, development, and deployment of advanced functional and structural materials for use in extreme service environments.
- Energy Conversion Engineering, consisting of the evaluation, integration, control and performance modeling of processes and components for developing innovative energy conversion processes and transformational technologies.
- Systems Engineering and Analysis, consisting of analysis and design of advanced energy systems such as power plants, energy markets, and energy-environment interactions.
- Computational Science and Engineering, consisting of research involving high-performance computing and data analytics that enable the generation of information and insights through the integration of experimental data and engineering analyses.

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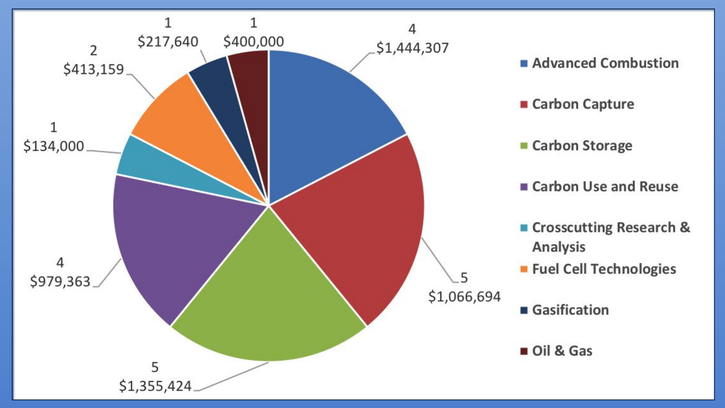
For more information, please visit us at
energy.psu.edu/ucfer

2015-2019 Research Funding



UCFER Proposal Round 1

During the inaugural RFP, a total of sixty-four proposals were received and reviewed by the the external reviewers (universities, national labs, and industry), UCFER Technical Advisory Council (TAC), Core Competency Advisory Board, and Executive Council. Funding available for this RFP was $1.9 million and the total funding requested was $15.8 million. Six projects were selected for funding.

UCFER Proposal Round 2

In 2016, a total of twenty-five proposals were received and reviewed by individual peer review and TAC panel review. Funding available for this RFP was $2.08 million and the total funding requested was $8.16 million. Six projects were selected for funding.

UCFER Proposal Round 3

In 2017, a total of eighty-one proposals were received and reviewed by individual peer review and TAC panel review. Funding available for this budget period of proposals was $4.1 million and the total funding requested was $20.2 million. Eleven projects were selected for funding.

UCFER Proposal Round 4

In 2019, a total of 41 proposals were received for UCFER RFP four. The proposals are currently under review by individual peer review and TAC panel review. Funding available for this budget period of proposals is $1.9 million and the total funding requested was $10.56 million. Selection of projects is anticipated in July 2019.

UCFER Members

Carnegie Mellon University
Dr. Andrew Gellman – TAC
Dr. John Kitchin – CCAB

LSU Louisiana State University
Dr. James J. Spivey – TAC
Dr. Konstantin Kousoulas – CCAB

MIT
Dr. Bradford Hager – TAC
Dr. Ruben Juanes – CCAB

PennState
Dr. Chunshan Song – TAC
Dr. Andri van Duin – CCAB

Princeton University
Dr. Yiguang Ju – TAC
Dr. Eric Larson – CCAB

Texas A&M
Dr. Stratos Pistikopoulos – TAC
Dr. Akhil Datta-Gupta – CCAB

The Ohio State University
Dr. David Cole – TAC
Dr. Andrew Tong – CCAB

University of Kentucky
Dr. Rodney Andrews – TAC
Dr. Rick Honaker – CCAB

University of North Dakota
Dr. Michael Mann – TAC
Mr. James A. Sorensen – CCAB

University of Pittsburgh
Dr. Götz Veser – TAC
Dr. Christopher Wilmer– CCAB

USC University of Southern California
Dr. Kristian Jessen – TAC
Dr. Theo Tsotsis – CCAB

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Dr. Arnis Judzis – TAC
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Dr. Richard Horner – TAC
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Dr. Roe-Hoan Yoo – TAC
Dr. Changmin Son – CCAB

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Vacant – TAC
Dr. Debangsu Bhattacharyya – CCAB