

GRETCHEN M. BATAILLE, PRESIDENT

March 4, 2008

The Honorable Michael C. Burgess  
U.S. House of Representatives  
1224 Longworth House Office Building  
Washington, DC 20515

Dear Congressman Burgess,

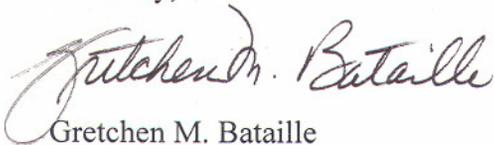
As the U.S. House Committee on Appropriations prepares to consider the Fiscal Year 2009 Appropriations bills, I would like to request your consideration of two programs that have and will continue to offer substantial contribution to our Nation and the State of Texas far into the future.

The first project is known as the Institute for Science and Engineering Simulation (ISES). ISES is a collaborative research program where the university is working closely with the Department of the Air Force. Due to the conflicts in Iraq and Afghanistan, operational tempo of an aging fleet of military aircraft has increased dramatically. This has put heavy strain on airframes and critical aircraft mechanical structures. The primary purpose of this ISES is to perform modeling and simulation on fatigue cracking in structurally significant aircraft components with the goal of extending the flight life of current and future military aircraft to ensure the success and safety of U.S. military personnel.

The second project is known as the Center for Advanced Scientific Computing and Modeling (CASCaM). CASCaM utilizes the University of North Texas's unique scientific computing facility to conduct experiments and predict outcomes, at reduced cost (chemicals, time) and increased safety (reduces the need to expose workers to toxic chemicals, radioactive materials). Scientific computing allows us to determine the probability of whether the combination of chemical elements will explode, become a viable pharmaceutical, the next new nanomaterial, or tomorrow's new alternate fuel source. Using this capability, UNT's Department of Chemistry will address issues relating to alternate energy fuel sources and carbon sequestration, which is one of the most promising means for reducing the buildup of greenhouse gases in the atmosphere.

UNT's commitment to research excellence will maximize the probability of solving problems of national concern and safety, and will substantially contribute to the regional economy, and the educational and research experience on our campus. Thank you for your kind consideration of these two critical research projects.

Sincerely,



Gretchen M. Bataille  
President

# FISCAL YEAR 2009 APPROPRIATIONS REQUESTS

## GENERAL QUESTIONNAIRE -- REP. Michael Burgess (TX-26)

Must be completed and submitted NO LATER than COB March 7, 2008

Please submit completed questionnaire to [josh.martin@mail.house.gov](mailto:josh.martin@mail.house.gov)

***PLEASE NOTE: ALL REQUESTS MUST INCLUDE A FORMAL LETTER OF REQUEST ON OFFICIAL LETTERHEAD EXPLAINING THE PROJECT. THIS QUESTIONNAIRE SHOULD ACCOMPANY, NOT REPLACE, A FORMAL LETTER OF REQUEST AND ANY OTHER QUESTIONNAIRE***

### I. PROJECT BACKGROUND & PURPOSE

1. Please provide a formal name for this project:

Institute for Science and Engineering Simulation (ISES)

2. Please describe the project and its purpose:

Due to increased operations as a result of war in Iraq and Afghanistan, the U.S. Air Force requires modeling & simulation research to extend the life of current military aircraft. The University of North Texas will work closely with the Air Force to remedy this critical requirement by conducting research to predict and reduce the risk of catastrophic failure in key structural components (fuselage, tail, wings) to prevent crashes.

3. Please outline the project plan, including the finance plan:

FY 2009

Research Area: Life Cycle Prediction of Advanced Aerospace Applications:

1. Development of modeling and simulation programs - \$1.2M
2. Development of programs for utilization of characterization and analytical tools - \$1.8M

Research Area: Functionally-graded Hybrid Materials for Aerospace Applications:

1. Advanced technical and computerized modeling and simulation of Materials - \$1.35M
2. Advanced development and application of characterization and analytical tools - \$1.65M

Total FY 2009: \$6.00M

### II. BENEFIT TO THE 26<sup>th</sup> DISTRICT AND/OR THE UNITED STATES OF AMERICA

1. Please explain how this project will improve life, the economy or the general welfare of the 26<sup>th</sup> District and/or the country at-large. Please be specific (i.e. outline number of jobs created, savings to economy or taxpayers, improve national security):

In February of 2008 the House of Representatives held Congressional hearings on the flight readiness of F-15s. It was noted the current fleet of Air Force aircraft has an average age of 24 years, compared to the average aircraft age of 8.5 years during the Vietnam conflict. Not only are the aircraft older, but their extended use is taking a greater toll on operational capability. Since 1996, F-15 maintenance hours have increased 236 percent, flying hour costs have increased 87 percent, and depot maintenance has increased 800 man hours on every F-15.

Utilizing state-of-the-art facilities and equipment at the University of North Texas, the research conducted at ISES, in conjunction with the U.S. Air Force, will be used to predict and reduce the risk of catastrophic failure in key structural components both in current aircraft and in future materials utilized in the development of future combat platforms.

2. Please explain why this project should be considered a priority:

The safety of U.S. combat and transport pilots, already risking their lives in defense of our nation, is of paramount importance to the military and our national security. ISES will greatly contribute to pilot safety, and at the same time save the taxpayer millions of dollars in lost flying time, major aircraft repair, and decreases in aircraft failure.

### III. REQUEST

1. Amount of money you are requesting:

\$6 Million

2. Agency from which you are requesting funds:

U.S. Air Force

3. Account from which you are requesting funds:

Research

### IV. FUNDING HISTORY

1. What is the total project cost and can you provide a federal-state/local-other funding breakdown?

This is a DOD sponsored project. Total project cost is dependent upon needs of Department of Defense.

2. Has the project ever received federal funds before? If so, please elaborate.

Yes. FY 2008, \$2.5 Million.

3. Has the project received state, local or private funds before? If so, please elaborate.

N/A, this is a DOD sponsored project that has direct impact on the warfighter.

4. Can you demonstrate a commitment for future funds from state, local, or private sectors? If so, please elaborate to the extent possible.

N/A, this is a DOD sponsored project that has direct impact on the warfighter.

5. How do you intend to spend federal funds for this project (operating, construction, studies, equipment purchase, salaries, other)?

FY 2009 funds will be used to advance the development of modeling and simulation programs.

6. Does the project request stem from a currently-funded federal program (i.e., an already existing congressional authorization)? If so, please explain and be as specific as possible.

No.

## V. PROJECT HISTORY

1. Please briefly explain the level of support for the project in the local and any other community (if letters of support exist, please attach to this form).

N/A

2. Has the project encountered any objections within the local or other interested communities? If so, please describe (if letters or official records exist noting objections to the project, please attach to this form).

No.

3. Please briefly explain the current stage and expected timeline of the project in a great a detail as possible.

ISES received its first year of funding in FY 2008. The total project timeline and cost are dependent upon needs of Department of Defense.

## VI. CONTACTS

1. Who is the primary point of contact for the request?

Vish Prasad, Vice President for Research

2. Contact information (telephone and e-mail):

940-369-7487, vprasad@unt.edu

3. Mailing address of entity that would receive the funding?

The University of North Texas

P.O. Box 311277

Denton, TX 76203

## VII. TRANSPORTATION PROJECTS

1. How much of this request can be spent in fiscal year 2009?

N/A

2. If this is a highway, transit, rail, or aviation request, did you check eligibility with the state DOT, FTA, FRA, or FAA?

N/A

2a. If yes, did the agency indicate the project is eligible under the account requested?

N/A

3. If this is an FHWA request, is the project considered by the state and/or regional transportation officials as critical to their needs?

N/A

4. If a highway request, is the project on the state's transportation improvement plan?

N/A

# PRIORITY PROJECT REQUEST CRITERIA

## CERTIFICATION:

I, Gretchen Bataille, ATTEST THAT THIS PROJECT REQUEST MADE ON BEHALF OF  
University of North Texas MEETS THE FOLLOWING CRITERIA:

1. All appropriations requests must be a priority for the 26<sup>th</sup> District and/or the country-at large as defined as enhancing life, liberty, or the general welfare.
2. All requests must be a proper and wise use of federal taxpayer dollars and must be justified as such. Projects that include a commitment to match federal funds will receive priority consideration.
3. All requests will be immediately posted on the website and supporting documentation made available to press outlets and interested individuals.
4. None of the funding requested will be used for a building, program, or project that has been named for Congressman Michael C. Burgess, M.D. No request will be made that Congressman Burgess or his spouse has any financial interest.
5. All requests shall be made in accordance with House of Representatives rules, and within Appropriations Committee deadlines. No funding request will be submitted after the deadline established by the Committee

Name of person certifying: Gretchen Bataille

Title of person certifying: President, University of North Texas

Project name as it will appear in the bill: Institute for Science and Engineering Simulations (ISES)

Legal name of entity making request: University of North Texas

Address: P.O. Box 311277  
Denton, TX 76203

Gretchen M. Bataille  
Signature

3/5/08  
Date

# FISCAL YEAR 2009 APPROPRIATIONS REQUESTS

## GENERAL QUESTIONNAIRE -- REP. Michael Burgess (TX-26)

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### I. PROJECT BACKGROUND & PURPOSE

1. Please provide a formal name for this project:

Center for Advanced Scientific Computing and Modeling (CASCAM)

2. Please describe the project and its purpose:

CASCAM uses computing and modeling to conduct and predict advanced scientific laboratory outcomes at reduced cost (chemicals, time) and increased safety (reduces need to expose workers to toxic chemicals, radioactive materials). Scientific computing allows determination of the probability of whether or not two chemicals will explode, become a viable pharmaceutical, the next new nanomaterial, or tomorrow's new alternate fuel source.

3. Please outline the project plan, including the finance plan:

FY 2009

Facilities Modification	\$250,000
Personnel	\$940,000
Computer hardware and software	\$1,170,000
<u>Operation and Maintenance</u>	<u>\$140,000</u>
TOTAL	\$2,500,000

### II. BENEFIT TO THE 26<sup>th</sup> DISTRICT AND/OR THE UNITED STATES OF AMERICA

1. Please explain how this project will improve life, the economy or the general welfare of the 26<sup>th</sup> District and/or the country at-large. Please be specific (i.e. outline number of jobs created, savings to economy or taxpayers, improve national security):

Recently, CASCAM was able to make a significant discovery with just one year's funding by developing an approach to accurately and efficiently calculate the energy of chemicals, which is critical to solving a vast array of problems ranging from the ability to predict the efficacy and effectiveness of experimental pharmaceuticals to the next nanomaterial. Funding will address issues relating to alternate energy fuel sources and carbon sequestration, one of the most promising means for reducing the buildup of greenhouse gases in the atmosphere. CASCAM's work can model applications such as improving the biocompatibility of implantable biomimetic electronics and biosensors that can sense changes in blood chemistry and correctly stimulate the body's nervous system for the purpose of healing an injury or defending against disease. In addition, strategies for catalytic detection and destruction of chemical warfare agents; next-generation materials for fuel cells and the hydrogen economy; development of new ozone friendly fire retardants; modeling of catalysts for production of value-added biomass-derived products; atmospheric modeling to understand the fate of environmental pollutants; development of better drug therapies and improved agrochemicals; and modeling of organic polymers in areas including photoconductivity (converting sunlight to electricity) and electronics (optical computers, batteries and display devices).

2. Please explain why this project should be considered a priority:

CASCaM is a cutting edge research facility with applications to help solve some of our country's critical needs today. It can save the U.S. Taxpayer significant amounts of money through experiments performed via scientific computing, so the expensive 'trial and error' phase of much research can be simulated computationally. CASCaM is designed to allow researchers from all over the country utilize the Center's capabilities in the fields of medicine, energy, national defense, and the environment.

**III. REQUEST**

1. Amount of money you are requesting:

\$2.5 Million

2. Agency from which you are requesting funds:

U.S. Department of Energy

3. Account from which you are requesting funds:

Science

**IV. FUNDING HISTORY**

1. What is the total project cost and can you provide a federal-state/local-other funding breakdown?

Total project cost is dependent upon needs of the Department of Energy.

2. Has the project ever received federal funds before? If so, please elaborate.

FY 2005: U.S. Department of Education \$248,000; FY 2008: U.S. Department of Energy \$717,000.

3. Has the project received state, local or private funds before? If so, please elaborate.

No.

4. Can you demonstrate a commitment for future funds from state, local, or private sectors? If so, please elaborate to the extent possible.

No.

5. How do you intend to spend federal funds for this project (operating, construction, studies, equipment purchase, salaries, other)?

FY 2009

Facilities Modification	\$250,000
Personnel	\$940,000
Computer hardware and software	\$1,170,000
<u>Operation and Maintenance</u>	<u>\$140,000</u>
TOTAL	\$2,500,000

6. Does the project request stem from a currently-funded federal program (i.e., an already existing congressional authorization)? If so, please explain and be as specific as possible.

The Science line in the DOE budget is funded by an annual appropriation.

## V. PROJECT HISTORY

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N/A

2. Has the project encountered any objections within the local or other interested communities? If so, please describe (if letters or official records exist noting objections to the project, please attach to this form).

No

3. Please briefly explain the current stage and expected timeline of the project in a great a detail as possible.

Dependent upon the needs of the Department of Energy.

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N/A

2. If this is a highway, transit, rail, or aviation request, did you check eligibility with the state DOT, FTA, FRA, or FAA?

N/A

2a. If yes, did the agency indicate the project is eligible under the account requested?

N/A

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N/A

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Title of person certifying: President, University of North Texas

Project name as it will appear in the bill: Center for Advanced Scientific Computing and Modeling (CASCaM)

Legal name of entity making request: University of North Texas

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Signature

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Date