** **

**National Science Foundation (NSF)**

**Research Experiences for Undergraduates (REU) Site**

**Integrating Research in Sustainable Energy and the Environment across Disciplines (IR-SEED)**

**June 1 to August 7, 2015**

**Highlights of the IR-SEED USF REU:**

* Ten-week summer undergraduate research program
* $5,000 stipends and up to $1,000 travel allowance
* On-campus housing and meal allowance provided
* Weekly seminars about various research disciplines, technical writing, presentation skills, graduate school preparation, etc.

More information can be found at: [www.tamuk.edu/engineering/research/nsf-reu/](http://www.tamuk.edu/engineering/research/nsf-reu/)

***Please Print or Type. Complete all items, if not applicable then please write ‘NA’ in the space.***

**Full Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Mailing Address:**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Home Phone Number**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Cell #**:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Email Address \*\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date of Birth: \_\_\_\_\_\_\_\_\_**

**\*Please note: You will be notified by email if selected so please write legibly.**

Please check one:

\_\_\_\_I am a current student at TAMUK; K#: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Current Major \_\_\_\_\_\_\_\_\_\_Cumulative GPA\_\_\_\_\_\_\_\_\_\_\_

Are you a senior or junior student? Yes\_\_\_\_\_ No\_\_\_\_\_

\_\_\_\_I am a current student at another U.S. university;

Current Major \_\_\_\_\_\_\_\_\_\_Cumulative GPA\_\_\_\_\_\_\_\_\_\_\_

Are you a senior or junior student? Yes\_\_\_\_\_ No\_\_\_\_\_

Name of University: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Are you a U.S. Citizen or permanent resident? Yes\_\_\_ No \_\_\_

If selected, will you commute\_\_\_\_, or stay in the dorm\_\_\_\_?

***The following request for demographic information is voluntary. Thank you for helping us with this task.***

**Ethnicity:** □ Hispanic or Latino □ Not Hispanic or Latino

**Race: *(Choose one or more response)*** □ American Indian or Alaskan Native □ Asian

 □ Black or African American □ White

 □ Native Hawaiian or Other Pacific Islander

**Gender:**  □ Male □ Female

**Disability:** □ Hearing □ Visual □ Mobility/Orthopedic □ None

 □ Other \_\_\_\_\_\_\_\_\_\_\_

**Educational Plans and Challenges**

Use the provided scale to indicate your level of agreement/disagreement with the statements.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Strongly Agree** | **Agree** | **Neither Agree or Disagree** | **Disagree** | **Strongly Disagree** |
| 1. **Participating in this research program would have an impact on whether or not I complete my degree.**
 | ⭘ | ⭘ | ⭘ | ⭘ | ⭘ |
| 1. **I am committed to completing my bachelor’s degree.**
 | ⭘ | ⭘ | ⭘ | ⭘ | ⭘ |
| 1. **Participating in this research program would have an impact on whether or not I attend a graduate school.**
 | ⭘ | ⭘ | ⭘ | ⭘ | ⭘ |
| 1. **I am interested in attending graduate school.**
 | ⭘ | ⭘ | ⭘ | ⭘ | ⭘ |
| 1. **This program may help determine whether to major in a science, technology, engineering, or math major.**
 | ⭘ | ⭘ | ⭘ | ⭘ | ⭘ |

**Potential Research Projects**

Please rank the research projects that you like best. Using 1 to 10 scale as 1 for the best. Please rank at least the best four projects. Detailed project description can be found at the IR-SEED website.

|  |  |
| --- | --- |
| **Potential Projects** | **Rank**  |
| 1. Impact of membrane material in the electrodialysis metathesis process for desalination of salty water
 |  |
| 1. Feasibility of using desalination concentrate for hydraulic fracturing fluid
 |  |
| 1. Distributed generation impact on congestion relief in electric power grid
 |  |
| 1. Influence of SCIG & DFIG based wind turbine on the voltage stability of a weak distribution power grid
 |  |
| 1. Two-axis position control of solar panels for maximum efficiency
 |  |
| 1. Dynamics and control of wind turbines
 |  |
| 1. Catalysis & catalytic reaction engineering for biomass conversion
 |  |
| 1. Catalysis & catalytic reaction engineering for reducing SO2 emissions
 |  |
| 1. Regeneration of Toxic Vapor-Saturated Activated Carbon via Microwave Energy
 |  |
| 1. Integration of photovoltaic thermal systems in residential buildings for energy saving
 |  |
| 1. Application of seawater-source heat pump in hot climate
 |  |
| 1. Bridging FEA Software in Mechanical Engineering to Nuclear Reactor Neutronics Simulations
 |  |
| 1. Kinetic Monte Carlo Simulation of Hydrogen Diffusion in Tungsten Bulk
 |  |

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

 **\_\_\_\_\_\_\_\_**

**Signature of Applicant Date of Application**

***All application packages must be completed and must be postmarked or emailed by Monday, March 2nd, 2015.***

***To be qualified, you must:***

***1) be a US citizen or permanent resident,***

***2) have 3.0 or above GPA, and***

***3) be senior or junior standing.***

***4) submit the following materials before the application deadline:***

***a) your completed application,***

***b) an unofficial current transcript,***

***c) at least two recommendation letters***

***d) resume, and***

***e) an one page research interest essay***

**MAIL TO:**

Dr. Hua Li

Mechanical and Industrial Engineering

Texas A&M University-Kingsville

700 University Blvd., MSC 191

Kingsville, TX  78363

**EMAIL TO:**

hua.li@tamuk.edu

**FAX TO:**

361-593-4026

++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++

**TO BE COMPLETED BY OFFICE STAFF**

**Date Received: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ by: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**