RESEARCH ASSISTANTSHIP FOR DOCTORAL STUDY
in
Transportation Infrastructure Precast Innovation Technology
at
Department of Mechanical & Industrial Engineering
LOUISIANA STATE UNIVERSITY

A research assistantship in the amount of $26,000 - $30,000 per year is available for an incoming outstanding student for doctoral study in Industrial Engineering at LSU MIE Department. An inter-university collaborative research center called as *Transportation Infrastructure Precast Innovation Center* (Trans-IPIC) will support this research which is funded by the U.S. Department of Transportation (USDOT). The assistantship offer is available at LSU as a sub-recipient of Trans-IPIC for 12 months a year beginning on September 1, 2023. The student will be responsible for paying university fees while a tuition exemption is provided for both resident and non-resident tuition. The duties of the student who will be awarded a TIPIC assistantship will consist of only research on the project assigned by the LSU Project Director (Professor Bhaba Sarker). The student must maintain a high GPA of 3.5/4.0 in each semester at LSU. LSU, with 36,000 enrolled students has strong engineering graduate programs (MS/PhD) attended by international graduates from many countries including China (250), India (160) and Bangladesh (120), to mention the top three representative countries at LSU.

This research emphasizes on modeling a precast manufacturing and operational system that will provide an environment to significantly increase the feasibility of incorporating innovative technologies in delivery, maintenance, and management of transportation infrastructure. Precast concrete is manufactured in a controlled environment with multifarious activities and resources. Industrial engineering and operations research methodologies, especially in manufacturing system, production, supply chain of materials, precast logistics, and transportation will play significant research role in this areas that will enable to (a) reduce system costs, (b) increase quality and productivity using advanced design optimization techniques for precast material processing operation, (c) plan and design supply logistics operations of material handling and transportation system, (d) design mass production of different precast products, (e) plan operations sequencing and scheduling of resources for precast operations, (f) incorporate innovative manufacturing methods including additive manufacturing, and (g) devise efficient and cost-effective industrial operating processes.

The candidate seeking funds must have a strong inclination to mathematical modeling and analyzing research problems. An applicant with knowledge of industrial engineering, civil engineering or construction management will have an added advantage. Those who are interested in doctoral studies in industrial engineering and operations research, and have/will have completed BS and/or MS degrees in engineering and/or related mathematical sciences before Fall 2023 should contact Professor Bhaba Sarker (electronically only) with the application materials as soon as possible:

Dr. Bhaba R. Sarker
Elton G. Yates Distinguished Professor
Department of Mechanical & Industrial Engineering
3290T Patrick F. Taylor Hall
Louisiana State University, Baton Rouge, LA 70803
Email: *bsarker@lsu.edu*

The preliminary application should include the following documents, all in ONE pdf file (in the same order):

(1) An up-to-date resume (with your photo at the top-right corner)
(2) A completed *Student's Academic Profile Form* (in single page only) available at https://tinyurl.com/tipic2023
(3) Copies of BS and MS transcripts from all schools attended
(4) TOEFL/IELTS and GRE scores, and
(5) Any journal publications.

A candidate with a bachelor's degree and exceptional results/performance may be considered as well. The requirement for GRE at LSU is temporarily not mandatory but encouraged. Interested candidates should have a strong background in quantitative areas of industrial engineering and operations research. They may refer to *https://www.lsu.edu/eng/mie/people/faculty/sarker.php* for information on the research interests of Professor Bhaba Sarker, the project director. Interested students should submit the preliminary application materials soon and the candidate will be selected as soon as a suitable candidate is identified, preferably by June 30, 2023. The candidate, after preliminary selection, will be contacted for formal admission (if not admitted yet) and other formalities. The selected student will be able to join as early as September 1, 2023.