

**SUBMITTED BY:           STEPHEN M. LANIER, VICE PRESIDENT FOR RESEARCH**

**UNIVERSITY SUBCONTRACT FROM DETROIT ENGINEERING PRODUCTS  
FOR A PROJECT FUNDED BY THE US ARMY (TARDEC)  
TO A COMPANY OWNED BY A WSU FACULTY**

**RECOMMENDATION**

The Administration recommends that the Board of Governors authorize the President or his designee to enter into a contract for research from Detroit Engineering Products (DEP). DEP has received subcontract to perform services under a flow down from US ARMY TARDEC Phase II Small Business Innovation Research grant, W56HZV-17-C-0094, "*Precision In-cylinder Pressure Sensor System for Heavy Duty Diesel Engine*," awarded to "Naeim Henein," a sole proprietorship registered in the state of Michigan and owned by a WSU employee.

**BACKGROUND**

"Naeim Henein," a sole proprietorship, has received a Phase II Small Business Innovative Research (SBIR) grant from the US Army TARDEC entitled, "*Precision In-cylinder Pressure Sensor System for Heavy Duty Diesel Engines*." The preceding Phase I award and a related subcontract to WSU was reported to the Board of Governors in September, 2014. Dr. Naeim Henein, distinguished professor of mechanical engineering in the College of Engineering, and WSU colleagues have previously demonstrated that ion current signals can effectively be used to monitor cylinder gas pressure and other combustion parameters in a single cylinder. Under the Phase I award, Dr. Henein successfully demonstrated that the instrumentation and the data acquisition codes as can be extended from one to all six cylinders in heavy duty diesel engines. The current Phase II award focuses on prototype/product development and performance validation.

"Naeim Henein," a sole proprietorship, was established in 2003 by Dr. Henein. Dr. Henein is a recognized expert in engine combustion and emission controls. Detroit Engineered Products is an engine design, development and consulting company located in Troy, Mi. DEP is also 50% owner of IC LLC. Dr. Henein also has a minority interest in IC LLC. DEP and IC LLC will collaborate on the product development and commercialization under the SBIR award.

The technology related to instrumentation, data acquisition and analyses has been disclosed to the University, WSU Tech ID 13-1160 (the "TECHNOLOGY") and embodied in patent application PCT/US2014/023245 nationalized in the US and foreign territories. WSU has negotiated license with IC LLC that includes the TECHNOLOGY as reported to the Board of Governors on January 27, 2017.

Under the contract from DEP, Wayne State University will test the functionality of the system prototype developed by DEP.

Michigan Conflict of Interest law requires specific sunshine procedures in order for a University employee, or a company owned by a University employee, to contract directly or indirectly with the University:

(A) The employee must disclose any pecuniary interest in the contract to the Board and the disclosure must be made a matter of record in the Board's proceedings.

(B) The contract must be approved by a vote of not less than two-thirds of the full membership of the Board in open session.

(C) The Board's minutes must report:

(i) The name of each party involved in the contract.

(ii) The terms of the contract, including duration, financial consideration between the parties, facilities or services of the public entity included in the contract, and the nature and degree of assignment of employees of the public entity for fulfillment of the contract.

(iii) The nature of any pecuniary interest.

If the Board approves this Recommendation, the minutes will report as follows:

The Board of Governors authorized the President, or his designee, to enter into an agreement with Detroit Engineering Products with Wayne State University.

1. The parties involved in the contract are Wayne State University and Detroit Engineering Products.
2. The contract, in the total amount of \$250,000 (including 53% indirect costs) will support studies related to validation of the product system prototype and data acquisition.
3. The contract will have a term of 2 (two) years, with an estimated start date, February 2, 2018.
4. The Wayne State University College of Engineering Center for Automotive Research facilities will be used to conduct the experiments.
5. The research will be conducted by one Ph.D. and one master's degree student funded by this contract.

6. The pecuniary interest is based on Dr. Henein's ownership interest in "Naeim Henein", the prime recipient of the federal award and Dr. Henein's vested interest in IC LLC as the commercialization entity. Dr. Henein has filed a Conflict of Interest disclosure with the Office of Research Integrity.