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MIDDLE TENNESSEE STATE UNIVERSITY

January 27, 2018

Dear NIST Unmanned Aircraft Competition Selection Committee:

This letter is written in support of the Middle Tennessee State University (MTSU) Aerospace Department UAS students' entry to the NIST Flight and Payload Challenge competition. MTSU began a UAS Operations degree program in the fall of 2015, and the students comprising the competition team are members of first graduating class. These students have already completed all required UAS coursework, but were so enthusiastic about the field that they requested the ability to enroll in a Problems in Aerospace elective course this semester. The problem they elected to work on as part of that course was developing a long endurance lost cost system, as a departmental relationship with the TN Department of Forestry has indicated this need. Preliminary research led the students to identify a potential design from the manned aircraft world which may have application to the problem of long endurance flight. Over the winter break, the students traveled to the Frontiers of Flight museum located in Dallas to see and talk to engineers about a World War II experimental aircraft, the Vought V-173 which has been restored and resides there. The students are currently working at improving upon that design, and ultimately building a proof-of-concept UAS. Given the charge of the NIST competition, the students believe the re-alignment of their original goals to fit the needs of the contest will be minor, and are enthusiastically embracing that challenge.

The students came to the UAS program with backgrounds ranging from engineering, manned flight, search and rescue, and manufacturing, providing a wide variety of skill sets to the project. In the Aerospace Department UAS Lab, they have the ability to take an idea and develop it in a short period of time, from modeling prototypes to 3D printing the designs, and then flying them at the university testing facility. They also have the backing of the Aerospace Department faculty and staff, who collectively have decades of experience in the Aerospace and Engineering fields. This, coupled with a sincere desire to learn all they can about the quickly evolving UAs industry, will make them strong contenders for this competition. If I may provide any additional background, please do not hesitate to contact me at wendy.beckman@mtsu.edu or 615-494-8755.

Sincerely,

Wendy S. Beckman
Chair, Aerospace Department

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o: 615-898-2613

MIDDLE TENNESSEE STATE UNIVERSITY

January 27, 2018

Dear NIST Unmanned Aircraft Competition Selection Committee:

This letter is written to convey my support of the Middle Tennessee State University (MTSU) Aerospace Department UAS students who are submitting an entry to the NIST Flight and Payload Challenge competition. Now in its third year of existence as a degree program, our UAS Operations program is currently comprised of 75 enthusiastic students who are at the leading edge of UAS research and development; the six students who have chosen to enter this competition represent the best and brightest of those students.

These students are in their final semester at MTSU, have finished the required sequence of UAS courses, but requested that they be able to participate in an elective course this spring as they complete their other remaining degree requirements so they could continue to work on current industry problems. Our UAS program coordinator has a working relationship with the TN Department of Forestry, and based on input from that organization, the charge for the students' project for the semester was to design, build, and test a long endurance but low cost UAS for Forestry Service land survey applications. Their preliminary research into this problem led the students to an interest in the design of the Vought V-173 aircraft, which was developed during World War II but never evolved past the experimental design phase. The students were able to travel to a museum to see this aircraft over the winter break, and intend to develop their design with characteristics of this aircraft as a basis. As the NIST competition criteria align well with their original goals for this project, the students are quickly adjusting their design criteria to match the NIST criteria.

Within the Aerospace Department UAS Lab and flight testing facilities, the student group has access to the equipment necessary to design, 3D print components, build, and then test prototypes with a very short turnaround time. They will also have the guidance and benefit of the Aerospace Department faculty, and especially the UAS program coordinator, throughout the project. This particular group of students are self-motivated, determined to contribute to the UAS industry, and have exhibited the work ethic necessary to follow through on an endeavor such as this challenge. Please feel free to contact me at bud.fischer@mtsu.edu or 615-898-5508 if you have any questions regarding this recommendation.

Sincerely,

Robert Fischer

Robert Fischer
Dean, College of Basic and Applied Sciences

Vought Heritage Foundation Inc

a non-profit Corporation

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www.vought.org

27 January 2017

NIST Unmanned Aerial Systems Flight and Payload Challenge

To Whom It May Concern:

Members of the Vought Aircraft Heritage Foundation had the pleasure to meet with the MTSU UAS team when they visited the Frontiers of Flight Museum on January 11, 2018. The students were eager to see firsthand the authentically restored airplane that was the basis for their preferred aerodynamic design for the USA project. Our engineers who met with the team were impressed with their thorough knowledge of aviation principles and the extent of their research on the unique aerodynamic capabilities of the “Flying Pancake”.

It is with much enthusiasm that I recommend the MTSU UAS team for the National Institute of Standards and Technology (NIST) Unmanned Aerial Systems Challenge. Their application of proven, yet underutilized technology in Charles Zimmerman's V-173 "Flying Pancake" will give them an advantage in a first responder drone. The unique design of the V-173 gave it unconventional flight characteristics. I believe those characteristics will be very beneficial for this competition.

Based on our discussions with the team and the knowledge they may have gained during our visit, we are confident that they will be a serious contender in this competition. Please let me know if there is anything else I can provide. I look forward to following their success.

/s/
Richard Guthrie
Project Manager, V-173 Restoration
VHF Director

phone: (817) 478-1571 - email: voughtheritage@vought.org