Engagement Incentive Grant

Engaging the Design Students in Developing An Agricultural Training Facility Prototype to Assist the Veterans: A Service Learning Project

Narrative

Needs Analysis: 1.5 million Iraq and Afghanistan veterans are expected to return home in next few years. Transitioning soldiers bring that number to 2.3 million. The Iraq and Afghanistan Veterans of America group estimates that nearly 1 in 3 soldiers deployed in Iraq and Afghanistan wars suffer from Post-Traumatic Stress Disorder (PTSD), Traumatic Brain Injury (TBI), depression, or chronic fatigue syndrome. The cumulative physiological and psychological strain these service men and women suffered while in Iraq or Afghanistan; require immediate attention. Negligence results in horrific results. An alarming number of these veterans are committing suicide according to Department of Veterans Affairs: each month more than 22 Iraq and Afghanistan war (IAW) veterans commit suicide. Since Kansas hosts three military bases (Forts Riley and Leavenworth, and McConnell Air Force Base), it is estimated that more than 10,000+ veterans have returned and 15,000+ will come back to Kansas in next two years. These soldiers are looking for a meaningful way of life, despite their multiple injuries and physical limitations. As they transition into civilian life, they need healthcare, rehabilitation and different vocational training to support themselves. How can we help them?

Research indicates that 61% of our nation's family farms are struggling to find help as their owners reach retirement age. Average age of our farmer is nearing 60; and 40% of the farmers are over 65 years of age. We will need 1,000,000 farmers over the next several decades to replace these retiring farmers. A survey of veterans indicated that 45% of veterans are interested in farming. Departments of Agriculture, Veterans Affairs, and Labor desire to engage these veterans in farming to bridge this gap. Farming serves as a therapy and aids in recovery of these soldiers.

Since 2010, this principal investigator has worked with these veterans in understanding their needs. Working with Fort Riley medical staff revealed that art, horticulture, equine, pet therapy and bee keeping really clams the veterans with PTSD. In 2014 the principal investigator met retired major Gary LaGrange, who helps returning veterans at Fort Riley by training them on bee keeping and honey extracting process. Major LaGrange has started Soldiers Agricultural Vocational Education (SAVE) organization to assist this soldiers and sought help of the principal investigator in developing SAVE Campus.

This principal investigator is therefore seeking funding in amount of $10,000 to pilot a multi-disciplinary, collaborative engaged curricula across departments that incorporates service learning and evidence based design pedagogy to engage our students in designing an Agricultural Training Campus in Manhattan to assist our veterans.

Proposed Engaged Activities: The principal investigator proposes engaging architecture, product design, interior architecture, landscape architecture and regional planning students in above mentioned community based research and design project that can provide evidence based design solutions for the rehabilitation needs of these veterans. Through this proposed project, graduate students will work with these veterans, their family members and their caregivers, Major LaGrange and other SAVE organization staff members, Fort Riley hospital staff, and local farmers to understand each stake holders' needs. Based on their research findings, students will design SAVE Agricultural Training Campus facility for these soldiers. This campus will include a welcome center, wellness center, educational training center, residential and dining facility, animal care facilities, honey processing center, workshops, equipment and storage facilities.

This specialized **Agricultural Training Campus facility design addresses a very important public issue of health, education, and housing of our veterans,** and will **become a national model that other universities can adapt.** Through this project, the **principal investigator aims to promote research based community engagement activities among the students,** and **mentorship opportunities for the farming community to provide support and assistance our veterans need** to continue their transition into a civilian life. Thus ***this project is aimed at bettering the lives and strengthening the social well-being of underserved veterans'*** population of Kansas and our nation and there by the communities they live in.

On and off Campus Collaborative Partners and Their Roles: The major off campus partners are: Major LaGrange and SAVE Organization board of directors, and staff members, Fort Riley Military Hospital and Topeka Rehabilitation Hospital medical staff, Kansas State Research and Extension

Agent Ms. Kerri Ebert, local farm including Mertz Family Farms, Sunny Day Farms, Wind Song Farms, Steelcase Inc. (Large Furniture Manufacturer), Nurture (Healthcare Furniture Manufacturer, a subsidiary of Steelcase Inc.), Scott Rice office (Steelcase Dealership), Hoefer Wysocki, an architectural firm based in Kansas. The principal investigator has worked with Fort Riley and Topeka Rehabilitation Hospital staff since 2010 to understand the wounded warriors' needs and also worked with Major LaGrange since 2014 to understand SAVE campus needs. The students will visit the Fort Riley and Topeka Rehabilitation Hospitals, local farms to understand veterans' needs and SAVE campus design requirements. The PI has also shared the project information with Steelcase Inc. They are very supportive of this project and are very excited to partner with KSU/APDesign. They are committed to assisting students during this project given the need for and the importance of this project and will hosts the students on their Grand Rapids campus. The cost of student lunches, transportation within Grand Rapids, presentations by their representatives and design professionals will be supported by Steelcase and its approx. value is $3,000.00. Students will visit Steelcase Inc. to understand the importance of ergonomics, anthropometrics, and how properly designed environments can contribute in healing the wounded warriors. Therapists from both hospitals; and professionals from Hoyfer Whysocki, Steelcase, Nurture and local farmers will work with the students and provide their guidance to students in developing their SAVE campus facility design. Thus students will have the opportunity to work with the professionals specializing in healthcare design including architecture, interior design, and engineering that will enhance their knowledge of healthcare facility needs. The faculty members of the diverse disciplines within APDesign and College of Engineering will guide the students on their technical building design questions while College of Human Ecology and Agriculture faculty and local farmers will help students in resolving farm training facility design and crop and animal care questions. Thus students will gain not only design skills but also develop communication, team building, and effective collaboration and leadership skills.

Short Term Goals: The major short term goal of this project is to enhance an existing course by introducing service learning components that facilitates: 1) engagement of our students with the local community, 2) our students' understanding about the importance of service learning and engagement, 3) involvement of our design students in community based service learning research and design projects; 4) development of evidence based specialized Agricultural training facility prototypes that other universities in the nation can adapt to help these veterans in achieving wellness of their mind, body and soul, 5) preparation of future engaged community leaders, 6) a meaningful relationship between students, our University, and Forts Riley and Leavenworth and McConnell Military Bases by sharing the outcomes of this project, 7) in-person presentations and exhibition of student work, 8) publish research papers and articles in reputed journals, 9) presentation of this project at various conferences, 10) development of grant proposal for external funding to further the research outlined in the long term goals below. ***The principal investigator plans to partner with SAVE organization to seek external funding from Departments of Agriculture, Labor and Commerce, Agency for Healthcare Research and Quality (AHRQ), Center for Healthcare Design, and the White House's Joining Forces initiative that encourages organizations and individuals alike in working together to develop solutions to assist these wounded warriors to further this research.***

Long Term Goals: 1) Develop a database of specialized Agricultural Training facility needs of the wounded warriors that other universities can access and adapt; 2) prepare specialized facility design guidelines that these administrators can adapt to renovate their buildings, or build a new facility, 3) Identify strategies that organizations like SAVE can adapt to assist these soldiers in integrating back within the society they left behind when they went to war, 4) develop educational resources that other educators can utilize to involve their students in community based service learning projects.
Based on this research, in future, the principal investigator plans to publish a book on wounded warrior's rehabilitation needs and how designers can assist them in faster recovery and rehabilitation.

Potential Impact on All Collaborators: **Impact on and Warriors' Health and Wellbeing:** this Agricultural Training Facility prototypes will be designed to promote environmentally friendly, community based centers that facilitates the mental, physical and spiritual healing process of the

warriors as described in the narrative and provide them a vocation so that they can support themselves and have a meaningful life. **Impact on Military:** Empirical research indicates that well designed facilities can accelerate healing process, and thereby contribute in reducing suicide rates. **Academic Impact:** this project will enrich the University students, faculty and administrators, through various engaged activities. The students will understand: 1) the impact they can have on the healing process of the warriors through their design, 2) satisfaction of serving people in need, 3) their responsibility as a designer and why they should think of health, welfare and safety of all constituents of their community, 4) why they should give back to the society. These factors will contribute in their development as a compassionate, thoughtful designers. **Impact on the University:** The collaboration among all parties will provide: a) a fertile ground for the germination of new ideas and opportunities, b) contribute in academic and professional growth of students and faculty, c) opportunities for furthering the research, service and community engagement goals of the academy. **Impact on the Professionals**: 1) the satisfaction of assisting students; 2) taking part in students' academic and professional growth. This knowledge share in turn, will be helpful to the warriors, thus they too will contribute in assisting the soldiers. **Impact on the Community:** 1) the local farmers will benefit by receiving interns (veterans') and opportunity to mentor them, 2) Local community organizations can collaborate with SAVE organizers to assist veterans, 3) local community will be able to develop relationships with local farmers; giving them inspiration to support not only the veterans but also buying local produce. This in turn will bring economic growth for our community.

Accomplishment Bench Marks:

Academic Bench Marks: 1) development of students as compassionate and thoughtful designers, keen observers, effective communicators, caring and considerate leaders, 2) Successful completion of service learning project through multi-disciplinary collaborative team approach. **Research Bench Marks:** 1) Development of several evidence based Agricultural Training facility design prototypes for the wounded warriors, 2) Presentation of this project at national and international conferences, 3) Publication of this project in various refereed journals and conference proceedings. **Professional Relationship Development Bench Marks:** Strengthen collaborative relationship with the medical profession, the design profession (including designers and architects), furniture manufacturers. **Community Relationship Development Bench Marks:** 1) development of strong collaborative relationship with Military through engagement activities for Forts Riley and Leavenworth and McConnell Air Force Base, 2) Students - faculty relationship development with multiple constituencies including the wounded warriors, their family members, the caregivers and medical providers and the local farmers and community members.

Budget:

This applicant requests $10,000.00 for this project and will serve as Principle Investigator. Please see detailed budget and justification attached with this proposal. The department will provide match funds of $5,666.40 to cover: 1) plotting and printing costs 2) rehabilitation facility design prototype materials, 3) support staff time, 4) hosting three design reviews of students' work, 5) inviting and hosting medical staff, farmers and professionals, 6) model making equipment service charges including CNC, Laser and wood workshops. The dean of APDesign will provide $1,500.00.

Timeline:

This project will be conducted in four phases: principal investigator will begin phase one research and preparation of this project upon the approval and notification of this grant application on July 1st, 2016. In 2017 Fall term the second phase of this project will be begin wherein students will conduct research on various requirements posed by this project and based on evidence gathered, develop the SAVE facility design during the fall term. They will present their final design solutions to SAVE organizers, Fort Riley staff and KSU community at the end of Fall 2017 term. In phase three, this PI then analyze project research and design elements to prepare papers and conference presentations. In phase 4 the PI will prepare external grant funding. See detailed time line attached with this narrative.