

**U.S. Department of Education - EDCAPS  
G5-Technical Review Form (New)**

Status: Submitted

Last Updated: 06/29/2018 01:17 AM

## Technical Review Coversheet

**Applicant:** University of Florida Board of Trustees (U423A180153)

**Reader #1:** \*\*\*\*\*

	Points Possible	Points Scored
<b>Questions</b>		
<b>Selection Criteria</b>		
<b>Quality of Project Design</b>		
1. Project Design	35	32
<b>Significance</b>		
1. Significance	20	20
<b>Quality of the Management Plan</b>		
1. Management Plan	25	22
<b>Quality of the Project Evaluation</b>		
1. Project Evaluation	20	20
<b>Sub Total</b>	100	94
<b>Priority Questions</b>		
<b>Competitive Preference Priority</b>		
<b>Promoting STEM Education/Computer Science</b>		
1. CPP1	3	3
<b>Sub Total</b>	3	3
<b>Total</b>	103	97

# Technical Review Form

Panel #5 - Supporting Effective Educator Development - 5: 84.423A

Reader #1: \*\*\*\*\*

Applicant: University of Florida Board of Trustees (U423A180153)

## Questions

### Selection Criteria - Quality of Project Design

1. The Secretary considers the quality of the design of the proposed project. In determining the quality of the design of the proposed project, the Secretary considers the following factors:

- (1) The extent to which the proposed project represents an exceptional approach to the priority or priorities established for the competition.
- (2) The extent to which the training or Professional Development services to be provided by the proposed project are of sufficient quality, intensity, and duration to lead to improvements in practice among the recipients of those services.
- (3) The extent to which the services to be provided by the proposed project involve the collaboration of appropriate partners for maximizing the effectiveness of project services.
- (4) The extent to which the services to be provided by the proposed project are focused on those with greatest needs.
- (5) The extent to which the design of the proposed project is appropriate to, and will successfully address, the needs of the target population or other identified needs.

### Strengths:

A primary strength of this application is the partnership formed between the University of Florida's Colleges of Engineering, Education, FLEX, Institute of Food and Agricultural Sciences, and Precollegiate Education and Training is partnering with EDIOS Technology, the Florida High Tech Corridor and 10 county school districts (DeSoto, Glades, Hardee, Hendry, Highlands, Hillsborough, Manatee, Okeechobee, Palm Beach, and St. Johns) for the Engaged Quality Instruction through Professional Development (EQuIPD). In additional detail, EQuIPD is a professional development program designed to produce highly qualified teachers in STEM practices for all children addressing a critical teaching shortage in the field of science. Additionally, many districts report that teachers do not hold proper certification for teaching of STEM courses. (pg. 19-22)

The evidence strength of this proposal is that EQuIPD merges best practices from 3 WWC studies examining teacher professional development, technology education, and workforce development to create an innovative model combining all of the positive impacts with two project goals. This project strength is the complete holistic proposal for a three-year Kindergarten-9th grade teacher professional development program to support teachers in a "train the trainer model" for increased content and pedagogical knowledge using System Thinking as a framework for incorporating technology into STEM inquiry lessons. The project proposes professional development in a "train the trainer" model which is content focused, incorporates active learning utilizing technology, supports collaboration, models effective practice, and provides ongoing coaching and expert support. While complex in its initial presentation, the strength of this applicant is in the multiple models of delivery of the complex professional development for a broad audience. In the first two years of the grant, teachers will be supported with over 240 hours of support, resources and mentoring. In the third year of the grant, district support will focus on incorporation of this program into existing PD structures. The interconnectedness strength of the proposal is that throughout this program teachers will be supported in their work by district personnel, coaches, and experts, and by each other as part of a learning cohort. (pg. 20-23)

Another strength of the application is that EQuIPD is focused on counties designated as low performing, in fact 30% of the lowest 300 performing elementary schools are within the 10 partnered school districts. (pg. 20) Additionally, to meet the greatest need, all of the lowest 300 have over 85% of students labeled economically disadvantaged and are Title 1

schools with having the lowest reading levels in the state.

**Weaknesses:**

This proposal is hindered by the periphery focus and inclusion of the College of Education on pedagogy and teaching methodologies. To accurately focus on the needs of teaching and reaching students, a concentrated alignment between these two colleges would combine the unique needs of STEM and educators that seems to be overlooked by this proposal approach.

**Reader's Score: 32**

**Selection Criteria - Significance**

**1. The Secretary considers the significance of the proposed project. In determining the significance of the proposed project, the Secretary considers the following factors:**

- (1) The importance or magnitude of the results or outcomes likely to be attained by the proposed project, especially improvements in teaching and student achievement.**
- (2) The extent to which the costs are reasonable in relation to the number of persons to be served and to the anticipated results and benefits.**
- (3) The potential for the incorporation of project purposes, activities, or benefits into the ongoing program of the agency or organization at the end of Federal funding.**
- (4) The extent to which the results of the proposed project are to be disseminated in ways that will enable others to use the information or strategies.**

**Strengths:**

The primary strength of this proposal is the combination of the PD, incorporation of technology into their current pedagogy and curriculum, and the establishment of a support network within and between schools that will help maintain the initiative for the maximum impact among the teachers and students in the identified lowest performing districts. (pgs. 35-36)

The importance of the results and outcomes is another strength since this application does not intend to pretend as if teachers are not already engage in their classrooms but retrain and support teachers. This strengths-identified and strengths-leveraging approach is a novel and effective approach for teachers to feel supported and incorporated into the improvement in their own classrooms. (pgs. 36-37)

Another strength of the application is in the applicant statement that the majority of the grant funding will be applied to the evaluation for replication and impact analysis of the intervention beyond the participating districts. (pg. 38) The EQUiPD software is open source software for anyone to use, which already provides a costs savings for the funds requested. The strength that this application is focused on changing teacher mindsets and efficacy along with the integration of the technology to support STEM learning which will make a longer lasting impact on the participating districts. (pg. 37)

This grant is proposed to address the “teach the teacher” model in which the applicants shift the ownership of the EQUiPD program to the teachers, schools, and districts. This, along with the “Teacher-In-Residence” model employed by the University of Florida’s College of Education, will support the sustainability of the innovation beyond the federal funding period because the funding towards temporary innovations like stipends for graduate education or conference/group expenses.

The strength of dissemination of this proposal is the creation of a “how to” manual for the use of implementation of this open source for other school districts and states. The dissemination proposal also mentions the outreach to practicing teachers, not just to researchers and making a report available on a proprietary website.

**Weaknesses:**

No weaknesses noted.

**Reader's Score: 20**

**Selection Criteria - Quality of the Management Plan**

1. The Secretary considers the quality of the management plan for the proposed project. In determining the quality of the management plan for the proposed project, the Secretary considers the following factors:

- (1) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable.
- (2) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks.
- (3) The adequacy of procedures for ensuring feedback and continuous improvement in the operation of the proposed project.

**Strengths:**

The composition of the management team across the school district-UF teachers-in-residence, the professors in Engineering, and the evaluation team led by [REDACTED] at UNCG, is the strongest possible correlation of implementation, focus on STEM, and the guarantee of a WWC evaluation that meets standards.

The management of the objectives, milestones, and responsibilities is clearly outlined and assigned to the management team that best matches their strengths and maximum contributions to the grant goals and objectives. These are clearly outlined in the tables on pages 42-50.

The proposal's methods for feedback and continuous improvement led by the UNCG research and evaluation team will guarantee the strength of procedural accuracy and adequacy.

**Weaknesses:**

The weakness of this is the confusion associated with the tables for objectives on pages 29. The assignment of tasks and responsibilities using "1.3 PM" is not as clear or obvious to reviewers.

**Reader's Score: 22**

**Selection Criteria - Quality of the Project Evaluation**

1. The Secretary considers the quality of the evaluation to be conducted of the proposed project. In determining the quality of the evaluation, the Secretary considers the following factors:

- (1) The extent to which the methods of evaluation will, if well implemented, produce evidence about the project's effectiveness that would meet the WWC standards with or without reservations as described in the WWC Handbook.
- (2) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes.
- (3) The extent to which the methods of evaluation include the use of objective performance measures that are clearly related to the intended outcomes of the project and will produce quantitative and qualitative data to the extent possible.
- (4) The extent to which the methods of evaluation will provide valid and reliable performance data on Relevant Outcomes.

**Note: Applicants may wish to review the following technical assistance resources on evaluation: (1) WWC Procedures and Standards Handbooks: <https://ies.ed.gov/ncee/wwc/Handbooks> (2) “Technical Assistance Materials for Conducting Rigorous Impact Evaluations”: <http://ies.ed.gov/ncee/projects/evaluationTA.asp>; and (3) IES/NCEE Technical Methods papers: [http://ies.ed.gov/ncee/tech\\_methods/](http://ies.ed.gov/ncee/tech_methods/). In addition, applicants may view two optional webinar recordings that were hosted by the Institute of Education Sciences. The first webinar discussed strategies for designing and executing well-designed Quasi-Experimental Design Studies and is available at: <http://ies.ed.gov/ncee/wwc/Multimedia.aspx?sid=23>. The second webinar focused on more rigorous evaluation designs, discussing strategies for designing and executing studies that meet WWC evidence standards without reservations. This webinar is available at: <http://ies.ed.gov/ncee/wwc/Multimedia.aspx?sid=18>.**

#### **Strengths:**

This application claims to evaluate the grant initiatives for a WWC study that will meet standards without reservations (pg. 38), implying a randomized controlled trial (RCT) evaluation for the selection of the 100 intervention teachers and the 150 control group teachers (pg. 35).

The strength of the evaluation plan of this proposal is the partnership with the SERVE Center at the University of North Carolina-Greensboro (UNCG) led by Julie Edmunds as the external evaluator. Dr. Edmunds is acutely familiar with the WWC standards and conducted numerous complex studies that meet standards without reservations. The research evaluation plan outlines the randomization process in clustered RCT formatting (pg. 51) that will guarantee to meet the highest quality of evaluation and impact evaluation for the intervention. Additionally, this application addresses the issues of joiners and attrition that might be the only threat to the WWC study rating.

The outcomes and measures are appropriate and will provide the strongest assessment for the objective performance impact evaluations. These will provide the strongest quantitative and qualitative data and analysis possible.

#### **Weaknesses:**

No weaknesses noted.

**Reader's Score: 20**

#### **Priority Questions**

##### **Competitive Preference Priority - Promoting STEM Education/Computer Science**

- 1. Projects designed to improve student achievement or other educational outcomes in one or more of the following areas: Science, technology, engineering, math, or Computer Science. These projects must address the following priority area:**

**Increasing the number of educators adequately prepared to deliver rigorous instruction in STEM fields, including Computer Science, through recruitment, Evidence-Based Professional Development strategies for current STEM educators, or evidence-based retraining strategies for current educators seeking to transition from other subjects to STEM fields.**

#### **Strengths:**

The primary strength of this proposal is that the PD is being offered through the College of Engineering and the EQuIPD is focused on successful STEM educational programs strongly aligned to STEM workforce needs. Additionally, the proposal connects the concept that teachers who understand possible career pathways for students can design more relevant inquiry-based lessons. This strong proposal recognizes that developing strong STEM networks provides teachers a supportive community in which to situate lessons and develop practice. While the focus of the project is on STEM teachers, the EQuIPD training will be open to core and CTE teachers, in order for these teachers to form a community of practice related to STEM workforce development.

**Weaknesses:**

No weaknesses noted.

**Reader's Score:** 3

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**Status:** Submitted

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## Technical Review Coversheet

**Applicant:** University of Florida Board of Trustees (U423A180153)

**Reader #2:** \*\*\*\*\*

	Points Possible	Points Scored
<b>Questions</b>		
<b>Selection Criteria</b>		
<b>Quality of Project Design</b>		
1. Project Design	35	33
<b>Significance</b>		
1. Significance	20	18
<b>Quality of the Management Plan</b>		
1. Management Plan	25	22
<b>Quality of the Project Evaluation</b>		
1. Project Evaluation	20	20
<b>Sub Total</b>	100	93
<b>Priority Questions</b>		
<b>Competitive Preference Priority</b>		
<b>Promoting STEM Education/Computer Science</b>		
1. CPP1	3	3
<b>Sub Total</b>	3	3
<b>Total</b>	103	96



# Technical Review Form

Panel #5 - Supporting Effective Educator Development - 5: 84.423A

Reader #2: \*\*\*\*\*

Applicant: University of Florida Board of Trustees (U423A180153)

## Questions

### Selection Criteria - Quality of Project Design

1. The Secretary considers the quality of the design of the proposed project. In determining the quality of the design of the proposed project, the Secretary considers the following factors:

- (1) The extent to which the proposed project represents an exceptional approach to the priority or priorities established for the competition.
- (2) The extent to which the training or Professional Development services to be provided by the proposed project are of sufficient quality, intensity, and duration to lead to improvements in practice among the recipients of those services.
- (3) The extent to which the services to be provided by the proposed project involve the collaboration of appropriate partners for maximizing the effectiveness of project services.
- (4) The extent to which the services to be provided by the proposed project are focused on those with greatest needs.
- (5) The extent to which the design of the proposed project is appropriate to, and will successfully address, the needs of the target population or other identified needs.

### Strengths:

The proposed project represents an exceptional approach to the competition priority with the goal to create a three-year teacher Professional Development program to support K-9 teachers in a train-the-trainer model for development of highly qualified STEM teachers. The project model is appropriately based on three evidence based-studies (two for Professional Development models and one technology training model) in which interventions were found to have positive outcomes on student achievement. Elements to be studied in the project that are potentially beneficial are: (a) a one-week summer boot-camp focused on computational programming, sensor technology and engineering design to prepare teachers for classroom technology integration, (b) training in System Thinking as a frame for the design, implementation and analysis of STEM lessons focused on science/mathematics standards, (c) STEM workforce focus for lesson development relevancy, (d) train-the-trainer model where teachers trained in years one and two become primary instructors of teachers in year three, and (e) support for teachers seeking a STEM related industry certification.

The Professional Development services to be provided by the project are of sufficient quality, intensity, and duration to lead to improvements in practice among the recipients. Project teachers will participate in the project for three years, continuously supported by project staff as they implement new skills in their classrooms. A strength of the project is that it will use an NSF-funded sensor program, SENSE-IT, which encourages teachers to develop environmentally aligned technology lessons through use of sensors. Additionally, the project will use Scratch computer programming modules developed by the PI that incorporate robotics, computer programming, and engineering design. The services to be provided by the proposed project involve the collaboration of appropriate partners that include the University of Florida College of Engineering and College of Education, the Florida High Tech Corridor, and ten participating school districts.

The services to be provided by the project are focused on those with greatest needs, and the design of the project is appropriate to the needs of the target population. The districts involved in the project account for over 30% of elementary schools in Florida that have at least 85% of students labeled economically disadvantaged. Districts participating in this grant have high numbers of teachers leaving or not being retained in positions. Some districts participating in this grant have purchased technology for use by teachers, but many have found that teachers are not utilizing technology in lessons or are only using technology in a facile way for students. This provides an opportunity for the project to be impactful in

improving this situation.

**Weaknesses:**

The proposed project has many elements involved with the teacher professional development plans. This leads to the concern that teachers may be overwhelmed with all the components of the project to which they are exposed, and they will find it challenging to learn and implement all of them. The proposal would be strengthened by presenting a clear plan for presenting the project elements to teachers in a way that will minimize those who will be overwhelmed or confused by how the elements fit together.

**Reader's Score: 33**

**Selection Criteria - Significance**

**1. The Secretary considers the significance of the proposed project. In determining the significance of the proposed project, the Secretary considers the following factors:**

- (1) The importance or magnitude of the results or outcomes likely to be attained by the proposed project, especially improvements in teaching and student achievement.**
- (2) The extent to which the costs are reasonable in relation to the number of persons to be served and to the anticipated results and benefits.**
- (3) The potential for the incorporation of project purposes, activities, or benefits into the ongoing program of the agency or organization at the end of Federal funding.**
- (4) The extent to which the results of the proposed project are to be disseminated in ways that will enable others to use the information or strategies.**

**Strengths:**

The outcomes likely to be attained by the proposed project will be important to improving teaching and student achievement in STEM. The large scope of the project is a strength with a minimum of 100 teachers in high-needs districts providing an impact on over 10,000 students during the grant. The costs are generally reasonable in relation to the number of persons to be served and to the anticipated benefits. A strength is that most grant costs are associated with evaluation to meet WWC standards without reservations. There is some potential for the incorporation of project activities and benefits into the ongoing program of the organization at the end of Federal funding as the project teacher-participants will run district led and funded Professional Development for other teachers to spread and create a shift in ownership from the project to local level. By providing a model for supported teacher acquisition of credentials, the project provides a working model for districts to replicate to grow their own STEM teachers from local classrooms.

The results of the project will be disseminated in ways that will enable others to use the information and strategies. There will be at least one research article meeting WWC standards submitted to a high-level peer reviewed journal (e.g. AREA, JEE, JSET, JRTE, JRST) as well as presentations at NSTA, ASEE, and AERA to reach a broad audience of researchers, districts, and practicing teachers. In addition, a website will be provided to serve as a data repository, including access to all lesson modules and training materials developed through this grant. A strength of the dissemination plan is that project personnel will give talks and presentations within and between districts and to workforce/industry partners to share lessons learned.

**Weaknesses:**

The costs benefit analysis of the project is weak and would be improved by including a more quantitative cost analysis of project benefits. Also, a more detailed plan for how to transition from encouraging teacher involvement with stipends to not having Federal funding would be helpful to evaluating the likely long-term success of the project.

### Selection Criteria - Quality of the Management Plan

1. The Secretary considers the quality of the management plan for the proposed project. In determining the quality of the management plan for the proposed project, the Secretary considers the following factors:

(1) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable.

(2) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks.

(3) The adequacy of procedures for ensuring feedback and continuous improvement in the operation of the proposed project.

#### Strengths:

The goals, objectives, and outcomes to be achieved by the proposed project are specified and measurable. The important primary goal of the project is to develop highly qualified STEM teachers and to this end, two components have been developed: (A) a robust professional development experience that merges systems thinking, engineering design, and technology use in the classroom to enhance student learning, and (B) experiences to bring the real world of STEM industry work into the classroom. Responsibilities, timelines, and milestones for accomplishing project tasks are provided in Figure 4 (pg. 24) and Figure 5 (pg. 30). The PI is well qualified to lead the project with prior experience as Director of Undergraduate Laboratories and Faculty lecturer in the Department of Materials Science and Engineering and developer of laboratory curriculum for several NSF funded engineering education research projects. The procedures for ensuring feedback and continuous improvement in the operation of the project are adequate and include two leadership team meetings each semester, where progress towards key goals and objectives will be evaluated and followed up on.

#### Weaknesses:

The proposal does not provide a clear presentation of the alignment between project goals and objectives. The proposal would be strengthened by using formats for the tables on pages 24 and 29 that do not require the reader to dig into the accompanying text to figure out what is planned for the project management.

### Selection Criteria - Quality of the Project Evaluation

1. The Secretary considers the quality of the evaluation to be conducted of the proposed project. In determining the quality of the evaluation, the Secretary considers the following factors:

(1) The extent to which the methods of evaluation will, if well implemented, produce evidence about the project's effectiveness that would meet the WWC standards with or without reservations as described in the WWC Handbook.

(2) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes.

(3) The extent to which the methods of evaluation include the use of objective performance measures that are clearly related to the intended outcomes of the project and will produce quantitative and qualitative data to the extent possible.

(4) The extent to which the methods of evaluation will provide valid and reliable performance data on Relevant Outcomes.

Note: Applicants may wish to review the following technical assistance resources on evaluation: (1) WWC Procedures and Standards Handbooks: <https://ies.ed.gov/ncee/wwc/Handbooks> (2) "Technical Assistance Materials for Conducting Rigorous Impact Evaluations": <http://ies.ed.gov/ncee/projects/evaluationTA.asp>; and (3) IES/NCEE Technical Methods papers: [http://ies.ed.gov/ncee/tech\\_methods/](http://ies.ed.gov/ncee/tech_methods/). In addition, applicants may view two

webinar recordings that were hosted by the Institute of Education Sciences. The first webinar discussed strategies for designing and executing well-designed Quasi-Experimental Design Studies and is available at: <http://ies.ed.gov/ncee/wwc/Multimedia.aspx?sid=23>. The second webinar focused on more rigorous evaluation designs, discussing strategies for designing and executing studies that meet WWC evidence standards without reservations. This webinar is available at: <http://ies.ed.gov/ncee/wwc/Multimedia.aspx?sid=18>.

### **Strengths:**

The evaluation is designed to provide evidence about the project that will meet the WWC Evidence Standards without reservations for teacher outcomes and with reservations for student outcomes. The appropriate research design will employ a 2-year randomized control trial to estimate the effect of the project on instructional quality and student achievement. To reduce variance between treatment and control groups, before randomization, teachers will be blocked by district, prior-year mean math test score, and relevant teacher demographics and assigned within blocks. Attrition data will appropriately be analyzed for evidence of significant differential attrition, following guidelines from the WWC Standards Handbook. The evaluation team will estimate impact of the project on student science and math achievement in grades where state assessments at that grade level and a mathematic assessment at the grade level immediately prior to serve as a baseline (grade 4-8 for math and grades 5 and 8 for science). The project will appropriately check for baseline equivalence between treatment and control groups in the analytic sample using standardized test scores from the spring before randomization.

The External Evaluator is a program director at the SERVE Center at the University of North Carolina at Greensboro and well-qualified to be responsible for the overall design and implementation of the evaluation. She has over 15 years' experience conducting evaluations including randomized controlled trials and quasi-experimental studies that are designed to meet WWC standards. The methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes. The SERVE Center will gather formative data through participation data, teacher surveys, and interviews and will conduct program implementation analyses throughout the grant period to inform continuous improvement.

The methods of evaluation include the use of objective performance measures that are clearly related to the intended outcomes of the project and will produce quantitative and qualitative data with Figure 7 (pg. 34) clearly showing the alignment between research questions, performance measures, and data collections proposed. The methods of evaluation will provide valid and reliable performance data on relevant outcomes. To assess changes in teacher practice in the domain of inquiry-based instruction, SERVE will appropriately conduct classroom observations using the EQUIP (Electronic Quality of Inquiry Protocol) observation tool. EQUIP is an externally validated observation instrument that is designed to measure quantity and quality of inquiry instruction being facilitated in K12 math and science classrooms.

### **Weaknesses:**

No weaknesses found.

**Reader's Score: 20**

### **Priority Questions**

#### **Competitive Preference Priority - Promoting STEM Education/Computer Science**

- 1. Projects designed to improve student achievement or other educational outcomes in one or more of the following areas: Science, technology, engineering, math, or Computer Science. These projects must address the following priority area:**

**Increasing the number of educators adequately prepared to deliver rigorous instruction in STEM fields, including Computer Science, through recruitment, Evidence-Based Professional Development strategies for current STEM educators, or evidence-based retraining strategies for current educators seeking to transition from other subjects to STEM fields.**

**Strengths:**

The proposed project is designed to improve student achievement in STEM. Teacher Professional Development will include the following strong STEM elements: (a) a one-week summer boot-camp focused on computational programming, sensor technology and engineering design to prepare teachers for classroom technology integration, (b) training in System Thinking as a frame for the design, implementation and analysis of STEM lessons focused on science/mathematics standards, and (c) STEM workforce focus for lesson development relevancy. A strength of the project approach is that teachers will have eight opportunities each year to take field trips to local STEM industries to speak with workers about how they use STEM skills. These field trips will help teachers make real life connections from workplace to curriculum. A unique feature of the project is that it will support teachers in obtaining industry certification in Autodesk Inventor, Engineering Core Certification, Agritechnology, Agricultural Biotechnology, LabVIEW, Robotics, IC3 Computing Fundamentals, and Solidworks.

**Weaknesses:**

No weaknesses found.

**Reader's Score:**     **3**

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**Status:**             Submitted

**Last Updated:**     06/29/2018 08:44 PM

Status: Submitted

Last Updated: 06/28/2018 09:36 PM

## Technical Review Coversheet

**Applicant:** University of Florida Board of Trustees (U423A180153)

**Reader #3:** \*\*\*\*\*

	Points Possible	Points Scored
<b>Questions</b>		
<b>Selection Criteria</b>		
<b>Quality of Project Design</b>		
1. Project Design	35	33
<b>Significance</b>		
1. Significance	20	20
<b>Quality of the Management Plan</b>		
1. Management Plan	25	22
<b>Quality of the Project Evaluation</b>		
1. Project Evaluation	20	20
<b>Sub Total</b>	100	95
<b>Priority Questions</b>		
<b>Competitive Preference Priority</b>		
<b>Promoting STEM Education/Computer Science</b>		
1. CPP1	3	3
<b>Sub Total</b>	3	3
<b>Total</b>	103	98

# Technical Review Form

Panel #5 - Supporting Effective Educator Development - 5: 84.423A

Reader #3: \*\*\*\*\*

Applicant: University of Florida Board of Trustees (U423A180153)

## Questions

### Selection Criteria - Quality of Project Design

1. The Secretary considers the quality of the design of the proposed project. In determining the quality of the design of the proposed project, the Secretary considers the following factors:

- (1) The extent to which the proposed project represents an exceptional approach to the priority or priorities established for the competition.
- (2) The extent to which the training or Professional Development services to be provided by the proposed project are of sufficient quality, intensity, and duration to lead to improvements in practice among the recipients of those services.
- (3) The extent to which the services to be provided by the proposed project involve the collaboration of appropriate partners for maximizing the effectiveness of project services.
- (4) The extent to which the services to be provided by the proposed project are focused on those with greatest needs.
- (5) The extent to which the design of the proposed project is appropriate to, and will successfully address, the needs of the target population or other identified needs.

### Strengths:

The applicant seeks to establish an exceptional approach to a professional development model for teachers in grades 3-8 to produce highly qualified teachers in STEM practices for underserved, high needs schools and districts in Florida (p.1). This novel approach based on wrapping professional development in the frame of Systems Thinking (pp. e92-e96) will provide teachers who typically have generalized K-8 or 1-9 teaching certification with in-depth training on low and high levels of system thinking. The applicant references the alignment between Bloom's taxonomy and ST and describes how teachers will be trained to not only identify elements in technology lessons that align to the these various levels of thinking, but also in the development of future lessons based on the ST mindset (p. e94). EQUIPD is job embedded and meets multiple research based criteria of effective professional development including; content focused, prolonged engagement in learning, teacher collaboration and communities of practice, engaging activities and active learning, and life-long learning (pp. 13-14). The detailed information provided about the partners demonstrates that their expertise and experience will support the work of the grant (pp. e101-104). The selected partner districts have high levels of poverty (over 85%), high numbers of ELL and minority students, high numbers of teachers leaving and low numbers of certified teachers in STEM related classrooms (p. 15).

### Weaknesses:

The applicant did not include information about a collaboration plan between the partners.

Reader's Score: 33

### Selection Criteria - Significance

1. The Secretary considers the significance of the proposed project. In determining the significance of the proposed project, the Secretary considers the following factors:

- (1) The importance or magnitude of the results or outcomes likely to be attained by the proposed project,

especially improvements in teaching and student achievement.

(2) The extent to which the costs are reasonable in relation to the number of persons to be served and to the anticipated results and benefits.

(3) The potential for the incorporation of project purposes, activities, or benefits into the ongoing program of the agency or organization at the end of Federal funding.

(4) The extent to which the results of the proposed project are to be disseminated in ways that will enable others to use the information or strategies.

**Strengths:**

Data collected by the FL University system shows a significant decline of students selecting teaching degrees and high numbers of teachers leaving the field. Additional research on education in Florida points to the severe teacher shortage in general, but with greater need in both math and science. Teaching and student achievement will be impacted through the recruitment of at least 100 teachers and the training provided to them that is anticipated to impact over 10,000 students during the course of the grant (p.17). EIS trained district staff members will return to full-time work at their respective district upon conclusion of the project, increasing the likelihood of sustaining the professional development and additional teachers receiving training. Additionally, in the third year, EQulPD provides a supported transition process that includes developing a network of local support partners (p. 19). Based on the number of teachers and students impacted in the first three years the cost of the project is reasonable. Dissemination of the results will occur at the district, state and national level through publications in journals, a website developed by UF and presentations to schools, districts and workforce/industry partners (p. 22).

**Weaknesses:**

No weaknesses are noted.

**Reader's Score: 20**

**Selection Criteria - Quality of the Management Plan**

1. The Secretary considers the quality of the management plan for the proposed project. In determining the quality of the management plan for the proposed project, the Secretary considers the following factors:

(1) The extent to which the goals, objectives, and outcomes to be achieved by the proposed project are clearly specified and measurable.

(2) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks.

(3) The adequacy of procedures for ensuring feedback and continuous improvement in the operation of the proposed project.

**Strengths:**

The applicant provided the qualifications and experience of key personnel assigned to the project (pp. 22-24). Detailed objectives to support the goals are indicative a thorough and well planned process to achieve the project goals. The external evaluator, [REDACTED], is prepared to conduct this complex study given her significant experience conducting trials and studies that meet the WWC standards, as well as being the recipient and grant manager of multi-million dollar grants (p. 23). The leadership group will develop a list of actions at team meetings that the project manager will be responsible for (p. 28).



**Weaknesses:**

The applicant did not discuss how completion of the proposed project would be on time and within budget. The chart labeled Milestone Timeline with Responsible Parties (p. 29) provide the essential management information but it is challenging to understand due to the use of initials for the responsible party.

Reader's Score: 22

**Selection Criteria - Quality of the Project Evaluation**

1. The Secretary considers the quality of the evaluation to be conducted of the proposed project. In determining the quality of the evaluation, the Secretary considers the following factors:

(1) The extent to which the methods of evaluation will, if well implemented, produce evidence about the project's effectiveness that would meet the WWC standards with or without reservations as described in the WWC Handbook.

(2) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes.

(3) The extent to which the methods of evaluation include the use of objective performance measures that are clearly related to the intended outcomes of the project and will produce quantitative and qualitative data to the extent possible.

(4) The extent to which the methods of evaluation will provide valid and reliable performance data on Relevant Outcomes.

Note: Applicants may wish to review the following technical assistance resources on evaluation: (1) WWC Procedures and Standards Handbooks: <https://ies.ed.gov/ncee/wwc/Handbooks> (2) "Technical Assistance Materials for Conducting Rigorous Impact Evaluations": <http://ies.ed.gov/ncee/projects/evaluationTA.asp>; and (3) IES/NCEE Technical Methods papers: [http://ies.ed.gov/ncee/tech\\_methods/](http://ies.ed.gov/ncee/tech_methods/). In addition, applicants may view two optional webinar recordings that were hosted by the Institute of Education Sciences. The first webinar discussed strategies for designing and executing well-designed Quasi-Experimental Design Studies and is available at: <http://ies.ed.gov/ncee/wwc/Multimedia.aspx?sid=23>. The second webinar focused on more rigorous evaluation designs, discussing strategies for designing and executing studies that meet WWC evidence standards without reservations. This webinar is available at: <http://ies.ed.gov/ncee/wwc/Multimedia.aspx?sid=18>.

**Strengths:**

The applicant provides evidence that the methods of evaluation will provide performance feedback through periodic assessment of progress toward achievement. The evaluation design meets the WWC standards to provide evidence without reservations for teacher outcomes and with reservations for student outcomes (p. 33). The comprehensive details provided for both studies indicating that the WWC standards are satisfied. The project includes eight relevant research questions that will seek to confirm the impact of the study on teacher practice, student achievement and sustainability of the project (pp. 52-52). Specific data sources are included for each research question and there is evidence that the evaluation will provide valid and reliable performance data on relevant outcomes.

**Weaknesses:**

There are no weaknesses noted.

Reader's Score: 20

**Priority Questions**

Competitive Preference Priority - Promoting STEM Education/Computer Science

1. **Projects designed to improve student achievement or other educational outcomes in one or more of the following areas: Science, technology, engineering, math, or Computer Science. These projects must address the following priority area:**

**Increasing the number of educators adequately prepared to deliver rigorous instruction in STEM fields, including Computer Science, through recruitment, Evidence-Based Professional Development strategies for current STEM educators, or evidence-based retraining strategies for current educators seeking to transition from other subjects to STEM fields.**

**Strengths:**

The applicant provides a detailed three-year professional learning plan to that includes technology enhanced lessons, based computer programming, use of sensors and probeware and simple robotics. Additionally teachers will receive ST training to determine the quality of ready-to-go lessons. In the second year, the professional learning will shift to support their own development of rigorous lesson in STEM fields (p. 7). The training begins with a summer boot camp and coaching is provided in small groups or one-on-one throughout the first year (p. 8). Two Saturday workshops and a site-based EQuIPD Instructional Specialist will work directly with teachers to support the implementation of thinking-focused lessons. In the final grant year, LEAs will receive support to have the trained teachers' lead professional development for other teachers in the district (p. 10).

**Weaknesses:**

There are no weaknesses noted.

**Reader's Score: 3**

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