

Entire Application

Applicant's Acknowledgements

- * I certify the DUNS number in this application is our only DUNS number and we have confirmed it is active in SAM.gov as the correct number.
- * As required per 2 CFR § 25.205, I certify that prior to submission of this application I have checked the DUNS number listed in this application against the SAM.gov website and it is correct and active at time of submission.
- * I certify that the applicant organization has consulted the appropriate Funding Opportunity Announcement and that all requested activities are programmatically allowable, technically feasible and can be completed within the award's Period of Performance (POP).
- * I certify that the applicant organization is aware that this application period is open from 03/16/2015 to 04/17/2015 and will close at 5 PM EDT; further that the applicant organization is aware that once an application is submitted, even if the application period is still open, a submitted application cannot be changed or released back to the applicant for modification.
- * I certify that the applicant organization is aware that it is solely the applicant organization's responsibility to ensure that all activities funded by this award(s) comply with all applicable Federal regulations, laws, and Executive Order to include Federal Environmental Planning and Historic Preservation (EHP) regulations and Procurement regulations as per 2 C.F.R. § 200.317 through 2 C.F.R. § 200.326 and other applicable federal laws and standards. The EHP Screening Form designed to initiate and facilitate the EHP Review is available at: <http://www.fema.gov/media-library/assets/documents/30521?id=90195>.
- * I certify that the applicant organization is aware that the applicant organization is ultimately responsible for the accuracy of all application information submitted. Regardless of the applicant's intent, the submission of information that is false or misleading may result in actions by FEMA that include, but are not limited to: the submitted application not being considered for award, an existing award being locked pending investigation, or referral to the Office of the Inspector General.

Signed by **Jon L Dorbolo** on **2015-03-18**

Overview

* Are you a member, or are you currently involved in the management of the fire department or organization applying for this grant with this application?	
Yes, I am a member/officer/employee of this applicant	

If you answered **No**, you must please complete the Preparer information below. If you answered **Yes**, please skip the Preparer Information section.

Note: Fields marked with an * are required.

Preparer Information	
*Preparer's Name	
*Address 1	
Address 2	
*City	
*State	
*Zip	-
	Need help for ZIP+4?
*Primary Phone	Ext. Select
*Email	

In the space below please list the person your organization has selected to be the **Primary Point of Contact** for this grant. This should be an officer or member of the fire department or an employee of the organization applying

for the grant that will see this grant through completion and has the authority to make decisions on and to act upon this grant application.

The Primary Contact, as listed below, is the person for which all exchanges of information will be made relative to the application; all information provided must be specific to the contact listed. The Primary Contact must be an employee of the fire department or organization applying for the grant and shall not be a grant writer or a non-employee of the fire department or organization.

In addition to the Primary Contact information, you will be asked to provide two (2) Alternate Points of Contact on the next page. The Alternate contacts must be familiar with the application and should be able to answer any questions relative to this application in the event that Primary Point of Contact is unavailable. When you are finished, click the Save and Continue button below.

Reminder: Please list only phone numbers and email addresses where we can get in *direct contact* with the respective point of contact(s). If this contact changes at any time during the period of performance please update this information.

Note: Fields marked with an * are required.

Primary Point of Contact	
*Title	Associate Director
Prefix	Dr.
*First Name	Jon
Middle Initial	L
*Last Name	Dorbolo
*Primary Phone	541-737-3811 Ext. Type work
*Secondary Phone	541-915-0260 Ext. Type work
Optional Phone	Ext. Type Select
Fax	
*Email	jon.dorbolo@oregonstate.edu
<p>* Is there a grant-writing fee associated with the preparation of this request? This fee must be specifically identified and listed in the application "Request Details" section as a budget line item in order to be eligible for reimbursement.</p> <p>Fees for grant writers may be included as a pre-award or pre-application expenditure. However, fees payable on a contingency basis are not an eligible expense. For grant writer fees to be eligible as a pre-award expenditure they must be paid prior to award, (i.e., paid within 60 days of the end of the application period).</p>	
	No
If you answered yes above, what is the fee?	\$

Contact Information

Alternate Contact 1 Information	
* Title	Graduate Assistant
Prefix	Ms.
* First Name	Béatrice
Middle Initial	S
* Last Name	Moissinac
* Primary Phone	541-908-9182 Ext. Type cell
* Secondary Phone	541-737-2418 Ext. Type work
Optional Phone	Ext. Type Select
Fax	
* Email	beatrice.moissinac@oregonstate.edu

Alternate Contact 2 Information	
* Title	Director of Academic Technolog
Prefix	N/A
* First Name	John
Middle Initial	
* Last Name	Greydanus
* Primary Phone	541-737-9099 Ext. Type work
* Secondary Phone	541-737-2120 Ext. Type work
Optional Phone	Ext. Type Select
Fax	
* Email	john.greydanus@oregonstate.edu

Applicant Information

EMW-2014-FP-00882

Originally submitted on 04/17/2015 by beatrice moissinac (Userid: moissinb)

Contact Information:

Address: 961 NW Hayes ave Apt 38

City: corvallis

State: Oregon

Zip: 97330

Day Phone: 5419089182

Evening Phone:

Cell Phone:

Email: beatrice.moissinac@oregonstate.edu

Application number is EMW-2014-FP-00882

* Organization Name	Oregon State University
* Are you a Fire Department?	No
* Type of Applicant	State controlled institute of higher learning
If "Other", please enter the type of Applicant	
What kind of Fire Department do you represent?	
If you answered "Combination" above, what is the percentage of career members in your organization?	
* Are you a non-fire based EMS?	No
* Type of community served?	Rural
SAM.gov (System For Award Management)	
* What is the legal name of your Entity as it appears in SAM.gov? Note: This information must match your SAM.gov profile if your organization is using the DUNS number of your Jurisdiction.	Oregon State University
* What is the legal business address of your Entity as it appears in SAM.gov ? Note: This information must match your SAM.gov profile if your organization is using the DUNS number of your Jurisdiction.	
* Mailing Address 1	Waldo Hall 316
Mailing Address 2	
* City	Corvallis
* State	Oregon
* Zip	97331 - 4012 Need help for ZIP+4?
* Employer Identification Number (i.e. 12-3456789) Note: This information must match your SAM.gov profile.	61-1730890
* Is your organization using the DUNS number of your Jurisdiction?	Yes
* I certify that my organization is authorized to use the DUNS number of my Jurisdiction provided in this application. (Required if you select Yes above)	<input checked="" type="checkbox"/>
* What is your 9 digit DUNS number ?	053599908 (call 1-866-705-5711 to get a DUNS number)
If you were issued a 4 digit number (DUNS plus 4) by your Jurisdiction in addition to your 9 digit number please enter it here. Note: This is only required if you are using your	

Jurisdiction's DUNS number and have a separate bank account from your Jurisdiction. Leave the field blank if you are using your Jurisdiction's bank account or have your own DUNS number and bank account separate from your Jurisdiction.	
* Is your DUNS Number registered in SAM.gov (System for Award Management previously CCR.gov)?	Yes
* I certify that my organization/entity is registered and active at SAM.gov and registration will be renewed annually in compliance with Federal regulations. I acknowledge that the information submitted in this application is accurate, current and consistent with my organization's/entity's SAM.gov record.	<input checked="" type="checkbox"/>
* Please describe your organization and/or community that you serve	<p>Technology Across the Curriculum (TAC) is Oregon State Universities' unit dedicated to improving teaching and learning with technology. TAC's mission statement includes faculty support, students support, emerging technology analysis, systems management, and research.</p> <p>TAC is partnering with Enterprise Risk Services (ERS), the emergency and risk prevention service at OSU. Specifically we are collaborating with Jim Patton (Fire Prevention Officer) and Michael Bamberger (Emergency Preparedness manager). ERS provides TAC with expertise on fire and the OSU campus population.</p> <p>Inclusive to OSU is a population of diverse demographics. Target audiences include college aged students, adult learners, adult faculty/staff, after-hour organizations and activities of all ages, conference centers that host a wide variety of ages and activities, athletic arenas seating 300-46,000 various aged spectators, pre-school aged children, etc...</p> <p>Oregon State University Campus provides a diverse building structure and population, mainly: Assembly, business, mercantile and residence. OSU has a variety of buildings that are an excellent sample of the building styles and materials used throughout the United States. Building materials range from wood, stone, brick, concrete, and glass. Architecture and design span a period of years from 1857 through 2014 and include interior designs from open format to individual rooms.</p>
* What is the permanent resident population of your Primary/First-Due Response Area or jurisdiction served?	70000
* Do you currently report to the National Fire Incident Reporting System (NFIRS)? Note: You will be required to report to NFIRS for the entire period of the grant.	Yes
If you answered "Yes" above, please enter your FDIN/FDID	00076
Headquarters or Main Station Physical Address	
* Physical Address 1	Waldo Hall 316
Physical Address 2	
* City	corvallis
* State	Oregon

* Zip	97330 - 2128
* Mailing Address 1	Office of Sponsored Programs
Mailing Address 2	B308 Kerr Administration Building
* City	Corvallis
* State	Oregon
* Zip	97330 - 2140
Bank Account information	
* The bank account being used is: (Please select one from right)	<p>Note: If this is selected, a 4 digit DUNS plus 4 is required if you answered "Yes" to using the DUNS number of your Jurisdiction.</p> <p>Maintained by my Jurisdiction</p>
Note: The following banking information must match your SAM.gov profile.	
* Type of bank account	Checking
* Bank routing number - 9 digit number on the bottom left hand corner of your check	123206707
* Your account number	0000058003
Applicant Budget	
* What is your department or organization's operating budget (i.e., personnel, maintenance of apparatus, equipment, and facilities; utility costs; purchasing expendable items, etc.) for the current (at time of application) fiscal year and for the previous three fiscal years? Please indicate in the text box next to each of the budget figures what fiscal year that amount pertains to.	<p>289217</p> <p>Budget: 281837 Fiscal Year: 2014 Budget: 311578 Fiscal Year: 2013 Budget: 306748 Fiscal Year: 2012</p>
<p>* Financial Need: Why are you unable to fund this project without Federal assistance? How are the critical functions of your organization affected without this funding? Please provide the details of your current operating budget. Include information on efforts to obtain funding elsewhere and how similar projects have been funded in the past.</p> <p>The Technology Across the Curriculum (TAC) budget is dedicated to supporting existing educational technology systems at Oregon State University (OSU). Educational and research projects with emerging technologies such as FELIX must come from external grant funds, and FEMA is a relevant funding source.</p> <p>The FELIX project is a collaboration of TAC and Enterprise Risk Services at OSU to employ virtual simulation for fire safety education. TAC's current operating budget supports the Second Life simulation environment in which the fire safety simulation prototype has been built. TAC must employ designers, programmers, and research associates to develop and research FELIX.</p> <p>A similar project is "WAVE" which is a 5-yr interdisciplinary project funded by USDA NIFA AFRI in which TAC is developing a virtual learning environment in order to improve health and nutrition education.</p>	
Additional Information	
* This fiscal year, are you receiving Federal funding from any other grant program for the same purpose for which you are applying for this grant?	No
* This fiscal year, are you receiving Federal funding from any other grant program regardless of purpose?	Yes
* Is the applicant delinquent on any federal debt ?	No
* If awarded, will your organization expend more than \$750,000 in Federal funds during your organization's fiscal year? If yes, your organization may be required to undergo an A-133 audit. Reasonable costs incurred for an A-133 audit are an eligible expenditure and should be included in the applicant's proposed budget as an individual line item. Please enter audit costs only once in the "Request Details" section of the application.	No

If you answered "Yes" to any of the additional questions above, please provide an explanation in the space provided below:	
TAC has a partnership with the College of Public Health and Human Science at Oregon State University to develop a virtual learning environment for high school student. The goal of this project is to provide an engaging virtual environment for the students to practise their newly acquired knowledge about nutrition and healthy nutritional behavior. This project is funded by the USDA NIFA AFRI.	

Request Information

Program Name
Fire Prevention and Safety

Request Details Summary

The number of projects and cost for the activity **Fire Prevention and Safety** are listed in the table below.

Activity	Number of Projects	Total Cost
Fire Prevention and Safety	1	\$ 659,624

Fire Prevention And Safety Projects

To review other sections of your application, select the appropriate section from the pull-down menu above and then press the Go button. You may [edit this application](#) if you want to correct a mistake. After you have reviewed all the sections and are satisfied with the information, please click on the Submit Application link on the left to complete your submission.

Note: Fields marked with an * is required.

Fire Prevention and Safety								
General Education/Awareness Project								Action
General Education/Awareness - Capabilities Information								View Details
Project								Action
General Education/Awareness-Public Education								View Details
In the space provided below, please provide a brief synopsis of the proposed project and then identify the specific goals and objectives of your project.								
To develop a Fire Escape Learning Instrument eXperiment (FELIX) training program a videogame style simulation, accessible via Internet, and built to provide a realistic hands-on experience to teach how to safely escape from a building fire. In FELIX, a participant controls an avatar (a virtual body) through the residence hall while the building is on fire and makes decisions that demonstrate skills about fire safety (e.g. Do they check the door before opening it? Etc.). FELIX creates a personalized performance report of each participant, based on the skills identified as necessary to survive an evacuation of a building fire. This project will address the difficulty of annually training over 5,000 new persons at OSU to a satisfactory level of knowledge retention and with very limited resources to reach that audience. The ultimate goal is to make FELIX a standard procedure for any new person on campus, and a resource available at any time for anyone.								
Item	Number of units for first 12 months	Cost per unit for first 12 months	Total Cost in first 12 months	Number of units for second 12 months	Cost per unit for second 12 months	Total Cost in second 12 months	Total Cost	Action
1. Graduate Student 0.49 FTE	1	\$ 42,357	\$ 42,357	1	\$ 43,523	\$ 43,523	\$ 85,880	View Details
2. ERS Training and Assessment 1.0 FTE	1	\$ 18,000	\$ 18,000	1	\$ 18,000	\$ 18,000	\$ 36,000	View Details
3. Design Team 2.0 FTE	2	\$ 18,000	\$ 36,000	2	\$ 18,000	\$ 36,000	\$ 72,000	View Details
4. Fire expert consulting 1.0 FTE	1	\$ 18,000	\$ 18,000	1	\$ 18,000	\$ 18,000	\$ 36,000	View Details
5. Jon Dorbolo Salary Off-set (15%)	1	\$ 13,097	\$ 13,097	1	\$ 13,097	\$ 13,097	\$ 26,194	View Details
6. Kimmy Hescocock salary off-set		\$	\$		\$	\$		

(20%)	1	18,368	18,368	1	18,368	18,368	\$ 36,736	View Details
7. Development Team 2.0 FTE	2	\$ 18,000	\$ 36,000	2	\$ 18,000	\$ 36,000	\$ 72,000	View Details
8. Second Life resource	1	\$ 1,000	\$ 1,000	0	\$ 0	\$ 0	\$ 1,000	View Details
9. Pre-loaded USB	1	\$ 1,200	\$ 1,200	0	\$ 0	\$ 0	\$ 1,200	View Details
10. Marketing campaign	1	\$ 500	\$ 500	1	\$ 500	\$ 500	\$ 1,000	View Details
11. Participant Incentive	1	\$ 10,000	\$ 10,000	1	\$ 10,000	\$ 10,000	\$ 20,000	View Details
12. Travel to conference	2	\$ 9,075	\$ 18,150	2	\$ 9,075	\$ 18,150	\$ 36,300	View Details
13. Project Management and Administration 0.25 FTE	1	\$ 8,878	\$ 8,878	1	\$ 8,878	\$ 8,878	\$ 17,756	View Details
14. Individual work station	5	\$ 2,000	\$ 10,000	0	\$ 0	\$ 0	\$ 10,000	View Details
15. Second Life region lease	1	\$ 2,520	\$ 2,520	1	\$ 0	\$ 0	\$ 2,520	View Details
16. Indirect Cost OSU	1	\$ 104,231	\$ 104,231	1	\$ 96,807	\$ 96,807	\$ 201,038	View Details
17. "After the Fire" guest speakers	1	\$ 4,000	\$ 4,000	0	\$ 0	\$ 0	\$ 4,000	View Details
Total		\$ 342,301			\$ 317,323		\$ 659,624	

General Education/Awareness Project(s)

View Project

General Education/Awareness Project Information	
*1. Project	Public Education
*If you selected other, above, please specify	
*2. Who is the target audience for the planned project?	High risk group
*3. What is your estimated size of the target audience?	40000
*4. How was this target audience determined?	None of the above
If none of the above, briefly describe the method used to determine target audience	
Student and staff population size of a 3-campus university	
* In the space provided below, please provide a brief synopsis of the proposed project and then identify the specific goals and objectives of your project.	
<p>To develop a Fire Escape Learning Instrument eXperiment (FELIX) training program a videogame style simulation, accessible via Internet, and built to provide a realistic hands-on experience to teach how to safely escape from a building fire. In FELIX, a participant controls an avatar (a virtual body) through the residence hall while the building is on fire and makes decisions that demonstrate skills about fire safety (e.g. Do they check the door before opening it? Etc.). FELIX creates a personalized performance report of each participant, based on the skills identified as necessary to survive an evacuation of a building fire.</p> <p>This project will address the difficulty of annually training over 5,000 new persons at OSU to a satisfactory level of knowledge retention and with very limited resources to reach that audience. The ultimate goal is to make</p>	

FELIX a standard procedure for any new person on campus, and a resource available at any time for anyone.

* 5. In the space provided below, please explain your experience and ability in developing and conducting (i.e., timely and satisfactory project completion) past fire prevention and safety projects. Additionally, please demonstrate the experience and expertise you have in managing the type of project you are proposing:

OSU Technology Across the Curriculum (TAC) has been developing a Virtual Learning Environments (VLE) like FELIX for almost 4 years. A similar project to FELIX is "WAVE", a 5 year interdisciplinary project funded by USDA NIFA AFRI in which TAC is developing a virtual simulation environment to improve health and nutrition education. WAVE will be deployed in August 2015, and is cable of being used by more than 320 high school students simultaneously. The WAVE project is the latest example of TAC's experience of using a team to develop large problem solution focused projects, and collaborating with other entities to develop content and software.

TAC is already collaborating with OSU Enterprise Risk Services (ERS), specifically with Michael Bamberger (Emergency Preparedness Manager) and Jim Patton (OSU Fire Prevention Officer) and has developed a proof of concept of the FELIX simulation. FELIX's prototype is implemented using the Second Life platform and currently has a reproduction of an apartment style residence hall. (See Section 6.f for prototype access). Jim Patton is providing TAC with fire expertise for content development. Michael Bamberger is TAC's interface to OSU's campus safety programs and residence halls, where the target student audience is located.

6. The narrative portion of the application should contain supporting information that allows for evaluation of this project. If you are applying for a grant in the Fire Prevention and Safety Activity, your Narrative Statement must address the evaluation elements as outlined in the Funding Opportunity Announcement.

Keep in mind that the evaluation of your application will also be based on a clear understanding of your proposal, your ability to meet the objectives of the program, and your probability of successfully delivering your project to the population targeted. You need to fully explain how the funds will be used to accomplish the goals of your project. To that end, be sure to include descriptions/justification for all budgeted items - items not justified may be disallowed.

Your narrative is broken out into 5 separate sections which are required, with an optional Additional Comments section. Each section will address each of the criteria on which your application will be evaluated and scored. Due to the built in "time-out" feature, we recommend you create the narrative text in your word processing system and then copy it into the spaces provided below. Images, attachments, and special characters of formatting (i.e.: quote marks, bold print, bullet points, symbols, etc.) are not allowed.

***6a. Vulnerability Statement: What is the vulnerability in your community that you have identified? What statistics correspond with and support your project and target audience? Please describe the steps which were taken to determine the vulnerability and target audience and describe the methodology for determining all of the above.**

OSU requires all new students (freshman and international students) to reside in residence halls on campus. This is typically the first long-term living experience away from a home environment for more than 5,000 occupants, and OSU has experienced several incidents typical of young adults learning to live, cook, and reside in a shared space. When a single incident occurs, over 200 to 800 occupants of the building are affected and have to know how to respond correctly to evacuate and protect themselves.

The current verbal and static web based presentation method of educating residents is conducted upon initial occupancy, but these methods are not the best for retaining or measuring knowledge and skill proficiency, which is needed throughout the year, not just the first week after training. This has been anecdotally observed during scheduled and unscheduled evacuation incidents by resident hall leadership. This then translates to poor life skill performance once the student moves out of the controlled residence hall environment and into different living and work arrangements, where they are even more dependent upon these personal skills that they were taught during their residence hall experience.

A recent incident at OSU confirms the statistics and observed behavior that we want to address. In May 2014, a small fire in the Men's Restroom of the Memorial Union building triggered the fire alarm. The responding firefighters had to forcefully evacuate the building (http://www.dailybarometer.com/news/fireforcesmemorialunion-to-evacuate/article_3696448cda6111e38abd0017a43b2370.html)

An interview process was designed and implemented to collect data to determine if what was being observed was in fact true. The questions described a fire situation that gradually escalated in the residence hall. Samples of questions are: 1. Imagine this room is your dorm room. It is late at night and you are lying on your bed. Suddenly,

you hear the fire alarm. What would you do? 2. Now, you made it out of your room, and you are standing in the hallway, and the hallway is full of smoke from ceiling to floor. What would you do?

The questions covered the skills identified by the OSU Fire Prevention Program as necessary to evacuate and survive a fire situation. These same skills are taught via the aforementioned training method. Over 20 OSU students currently living in or have lived in residence halls were interviewed in 30 minute sessions. Post analysis of the study indicates:

50% of the participants did not demonstrate they knew to check the door's temperature before opening it

95% of the participants declared they would try to go through a hallway completely filled of smoke.

10% of the participants declared they would likely not evacuate upon hearing the fire alarm.

80% of the participants would rely on others to call 911

65% of the participants did not demonstrate knowing what to do if they were stuck in a room during a fire.

Our interviews also revealed some examples of the less than desired knowledge/decision process being used:

When asked: Q: What else could you possibly think about doing for your safety?, the following answer was given:

A: There is also the power of googling! It takes 20 seconds to Google it and to get a list of 10 things to do, in those 10 things there might be one bullet that brings me aware of something to save my life; When asked Q:

What they would do for their friends pet living next room, A: I do not particularly like cats, but if it was a dog I would probably open the door.

***6b. Implementation Plan: Provide details on the implementation plan which discusses the proposed project's goals and objectives. What are the methods and specific steps that will be used to achieve the goals and objectives? If applicable, what examples can you provide of marketing efforts to promote the project? Who will deliver the project and what partnerships may be involved along with how they will support this project? How will the materials or deliverables be distributed?**

FELIX is a continual collaboration between TAC and OSU Enterprise Risk Services (ERS). Within ERS, TAC is closely collaborating with the Fire Prevention Officer and the Emergency Manager. We have established an MOU to specify the partnership and expectations for each agency to ensure success of the project. The methodology to achieve our goals and objectives is:

Design decisions: Expand and develop the existing experimental/learning prototype of FELIX (based on one residence hall and a fixed fire source) to meet a more universal building environment and diverse training population. TAC will collaborate with ERS to complete FELIX's design to include:

1 Adding more universally representative buildings of Assembly, Business, Mercantile and Residence functions. OSU Campus provides a diverse building infrastructure and population to gather various types of user feedback on the pilot project. OSU existing building database is an excellent sampling of a variety of buildings styles (spanning a period of years from 1857 through 2015 and include interior designs from open format to individual rooms) and building materials (e.g. wood, stone, brick, concrete, glass) that are used throughout the United States.

2 Expanding FELIX to include multiple population demographics. OSU has current and accurate data of its supported population, which includes college aged students, adult learners, adult faculty/staff, afterhour organizations, preschool children, and activities of all ages. Additionally, OSU controlled venues and events are representative of what can be found throughout any community conference centers that host a wide variety of ages and activities, athletic arenas with seating from 300 to 55,000 various aged spectators, preschool aged children, etc.

3 Refine learning objectives and additional learning materials (audio and/or video recordings, visual display in the simulation, downloadable reference texts) to support participants and instructors using FELIX.

4 Develop an Instructor's control board. Even though participants can go through the simulation in autonomy, FELIX will provide tools to help Fire Safety instructors monitor the students, and control the simulation (e.g. make the simulation harder or easier, decide the type of building, print a report of the student's performance)

5 Develop and implement experimental protocols: TAC will design protocols for experiments to evaluate several types of pedagogies (e.g. whole groups doing the simulation at the same time, tutoring etc.) and how to maximize the use of FELIX with each type of group. The Avatar form of teaching is very novel but becoming more mainstream and we want to ensure its effectiveness as a teaching tool.

Construction: Once the project's collaborative leaders have approved the Design of the various components, TAC will virtually construct the buildings and code the simulation in the buildings. This software engineering phase will involve extensive testing of the platform with volunteer testers from the OSU community. The construction of FELIX will focus on three priorities: 1. Teach the right thing 2. FELIX is easy and enjoyable to use 3. Instructors need minimum time and effort to learn to teach through FELIX.

Pilot Test: The pilot is when we test FELIX with the people whom FELIX is meant to serve – instructors and learners. The pilot and construction components are very much intertwined, as it is how we obtain feedback as each component is built and modified before the final product. Therefore, TAC has partnered with Shawn Simons and Alvaro Llanos (Authors of the 'After The Fire' program, survivors of the Seton Hall University fire in 2000 in South Orange, NJ, which killed 3 other students). Their real-world experience feedback will be very important to making FELIX relevant and accessible.

Deployment: The deployment of FELIX will consist of a joint effort between TAC and ERS to implement with the OSU population via standardized training (annual employee and student training, focused presentations, integration of FELIX into the new student and employee orientation required training/checklist) and special events (pre-event training for facility ushers).

Dissemination: We intend to present the results of our surveys and evaluation to key national conferences on fire safety (e.g. Center for Campus Fire Safety Fire Forum, Campus Fire & Security Safety Expo) and online education (e.g. Immersive Learning Environment Network) to disseminate FELIX nationally. Also, information will be distributed via the Emergency Management communication channels to augment the distribution to Fire Safety channels. FELIX's open source code and documentation will be available freely on Internet for others to use and customize to their environment. It is possible for anyone desiring a copy of the simulation to buy a region in Second Life and install their own copy of FELIX for their own usage.

A timeline is presented in section 6.f

***6c. Evaluation Plan: Will the proposed project be periodically evaluated for its impact on the community? If yes, describe the methodology and steps you plan to take in order to conduct the evaluation.**

FELIX's evaluation plan has 4 steps:

1. Conduct a more encompassing assessment across all the representative groups at OSU (faculty, staff, other students etc.). The assessment will have the same format described in our Vulnerability Statement (section 6.a), and will be adapted to the population and building (e.g. adult faculty/staff won't answer questions about a residence hall). This assessment forms the benchmark for our analysis (represents the average level of skills on Fire Safety of our target population).
2. Evaluate FELIX's teaching performance during Deployment: After using FELIX (not immediately, but within a month), participants will complete an interview identical to Step 1. The comparison of both assessments (before and after using FELIX) will form the evaluation of FELIX's performance as a tutoring program.
3. Evaluate FELIX's ease to use: Immediately after using FELIX, instructors and learners will be asked a short series of questions to evaluate their comfort with the system (e.g. a short questionnaire to scale participant's comfort or confidence from 1 to 10.). If a pattern is identified, we will produce recommendations on the best ways to use the system to facilitate the usage by the universal community.
4. Evaluate marketing strategy: Our evaluation will also contain information relative to the efficacy of the marketing campaign. If a pattern is identified, we will summarize recommendations on what is the best way to advertise such a novel training system in order to facilitate its adoption in the community.

***6d. Cost Benefit: Does your project demonstrate a high benefit for the cost incurred? Are the costs associated with the project reasonable for the target audience that will be reached? If so, demonstrate the above in addition to the cost benefits and how you plan to maximize the level of funding that goes directly into the delivery of the project.**

The main items of the budget are as follow:

- Indirect charges: OSU and FEMA have agreed on a rate for indirect charges. Indirect charges are used to maintain the computer labs we will use to run the Pilot and Deployment. It also maintains the technologic infrastructure (email, servers, computer systems) we must use to implement FELIX.
- Personnel: This covers the programmers costs, designer costs, personnel costs for conducting assessment directly related to creating FELIX.
- Travel: This covers the travel expenses of two persons for each year of performance in order to disseminate FELIX nationally. See Section 6.b. Dissemination.
- Participant Incentives: This item covers the cost to conduct studies. A small incentive (e.g. gift card, pizza etc.) is

extremely helpful to find participants for the pilot phase in a timely manner.

Additionally, OSU will provide non-monetary involvement, through the collaboration with ERS Michael Bamberger and Jim Patton.

FELIX has many advantages:

- 1 Repeatability at extremely low cost
- 2 Can support up to a 100 connection at once. We estimate being able to train the entire OSU population in less than a year (~40,000 persons).
- 3 Realistic and hands on experience, involvement, and interactivity to facilitate learning (i.e. learning by doing) without the cost or risk of running people through a simulator trailer or actual building fire.
- 5 Ease of measurement of demonstrated skills without the need for direct instructor interaction (i.e. FELIX generates a report on the student's performance automatically)
- 6 Ease of access via Internet, 24/7, all year long.
- 7 Ability to create randomized scenario, with controlled level of difficulty.
- 8 Ease of dissemination of the technology outside of OSU.
- 9 Small maintenance cost (Second Life Region costs \$2,550/2-year)
- 10 Scientific evidences to show that the positive impact on changing behaviors (see section 6.f for references)

FELIX has very few disadvantages:

- 1 Requires a household internet connection (5Mb/sec)
- 2 Needs 15 minutes of initial training to learn how to use the avatar, for which is incorporated into the beginning of the simulation.
- 3 Needs 30 minutes training for the instructors to learn how to use the Control panel
- 4 Due to the complexity of the project development, assessment, and evaluation, FELIX needs a 2 year period of performance to develop a complete package that can be made available to any user (see timeline in section 6.f)

***6e. Sustainability: Is it your organization's intent to deliver this program after the grant performance period? If so, how will the overall activity be sustained and what are the long-term benefits? Examples of sustainable projects can be illustrated through the long-term benefits derived from the delivery of the project, the presence of non-federal partners likely to continue the effort, or the demonstrated long-term commitment of the applicant.**

TAC has had a long-term commitment with this project. TAC started the development of the FELIX prototype two years ago, on its own initiative. This includes the purchase of the Second Life region's lease and the developer's payrolls. Once the design and software of FELIX are completed, TAC is committed to maintain the Second Life lease on the region and guarantee free access to FELIX for future trainings, studies and continuity projects.

6f. Additional Comments: If you have any additional comments about your project, please provide them here.

TIMELINE

Month 1 to 3: Design decisions
Month 4 to 10: Construction
Month 11 to 16: Piloting
Month 17 to 24: Deployment

ACCESS FELIX's PROTOTYPE:

We invite you to try FELIX's prototype! Go to www.secondlife.com, download the Second Life viewer (it is like an internet browser for virtual environments), create an avatar, then go to the following address in Second Life:
<http://maps.secondlife.com/secondlife/OSU/95/87/2008>

This address is the location of the start of the prototype simulation. Click on the Disco Ball, select 'no' when asked if you want to dance (for your convenience), and the simulation will start! The goal is to safely exit the building before the fire gets out of control.

SCIENTIFIC REFERENCES:

There is continued growing evidence and studies which suggest that hands-on simulations like FELIX have a real and measurable positive effect on learning and changing behaviors due to the immersion, interactivity and learning by doing effect.

Some selected academic references supporting our work:

- [1] Patrick S Bordnick, Amy Traylor, Hilary L Copp, Ken M Graap, Brian Carter, Mirtha Ferrer, and Alicia P Walton. Assessing reactivity to virtual reality alcohol based cues. Addictive behaviors, 2008.
- [2] Olaya GarciaRodriguez, Sara Weidberg, Jose GutierrezMaldonado, and Roberto SecadesVilla. Smoking a

virtual cigarette increases craving among smokers. Addictive behaviors, 2013.

[3] Paul Krebs, Jack Burkhalter, Shireen Lewis, Tinesha Hendrickson, Ophelia Chiu, Paul Fearn, Wendy Perchick, and Jamie Ostroff. Development of a virtual reality coping skills game to prevent post hospitalization smoking relapse in tobacco dependent cancer patients. Journal For Virtual Worlds Research, 2009.

[4] Robin S Rosenberg, Shawnee L Baughman, and Jeremy N Bailenson. Virtual superheroes: Using superpowers in virtual reality to encourage prosocial behavior. PloS one, 2013.

[5] Barbara Olasov Rothbaum, Larry Hodges, Benjamin A Watson, G Drew Kessler, and Dan Opdyke. Virtual reality exposure therapy in the treatment of fear of flying: A case report. Behaviour Research and Therapy, 1996.

[6] Debra K Sullivan, Jeannine R Goetz, Cheryl A Gibson, Richard A Washburn, Bryan K Smith, Jaehoon Lee, Stephanie Gerald, Tennille Fincham, and Joseph E Donnelly. Improving weight maintenance using virtual reality (second life). Journal of nutrition education and behavior, 2013.

[7] Darren ER Warburton, Shannon SD Bredin, Leslie TL Horita, Dominik Zbogor, Jessica M Scott, Ben TA Esch, and Ryan E Rhodes. The health benefits of interactive video game exercise. Applied Physiology, Nutrition, and Metabolism, 2007.

Budget Item

*Item	Jon Dorbolo Salary Off-set (15%)
*Select Object Class	Personnel
If you selected other above, please specify	
First Twelve Months:	
Number of units, first twelve months	1 (Whole number only)
Cost per unit, first twelve months	\$ 13097 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 13097
Second Twelve Months:	
Number of units second twelve months	1 (Whole number only)
Cost per unit second twelve months	\$ 13097 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 13097
* Description	Jon Dorbolo is the associate director of TAC. He will be supervising the entire project. This budget item represent 15% of his salary, meaning that he will devote 15% of his time and effort to this project. The rest is covered by OSU for the usual management of TAC.
The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.	This item will be the cost share of OSU.

Budget Item

*Item	Second Life resource
*Select Object Class	Supplies
If you selected other above, please specify	
First Twelve Months:	
Number of units, first twelve months	1 (Whole number only)
Cost per unit, first twelve months	\$ 1000 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 1000
Second Twelve Months:	
Number of units second twelve months	0 (Whole number only)
Cost per unit second twelve months	\$ 0 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 0
* Description	

The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.

Second Life is an open platform where developers can create and sell their own work. In order to save time and man-hour, we can find and buy elements that we need directly in Second Life instead of developing them ourselves (e.g. A fire truck , fire animation etc...).

Budget Item

*Item	Indirect Cost OSU
*Select Object Class	Indirect Charges
If you selected other above, please specify	
First Twelve Months:	
Number of units, first twelve months	1 (Whole number only)
Cost per unit, first twelve months	\$ 104231 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 104231
Second Twelve Months:	
Number of units second twelve months	1 (Whole number only)
Cost per unit second twelve months	\$ 96807 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 96807
* Description The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.	<p>Indirect cost with rate negotiated with OSU Year 1 rate is 46.5% Year 2 rate is 47%</p> <p>Those cost helps OSU provide TAC with adequate building and personnel. For instance, it helps maintain the computer labs that we will be using to run the pilot and deployment of FELIX. It also help maintain the servers, communication systems (phone, e-mail) that TAC will use during FELIX's development.</p>

Budget Item

*Item	Second Life region lease
*Select Object Class	Equipment
If you selected other above, please specify	
First Twelve Months:	
Number of units, first twelve months	1 (Whole number only)
Cost per unit, first twelve months	\$ 2520 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 2520
Second Twelve Months:	
Number of units second twelve months	1 (Whole number only)
Cost per unit second twelve months	\$ 0 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 0
* Description The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of	<p>Second Life region (virtual space where we build FELIX) and server usage (how much computational power is provided) is a 2-yr lease from Second Life.</p>

travel. Budget justification for travel should also be included in the project narrative.

Budget Item

*Item	Project Management and Administration 0.25 FTE
*Select Object Class	Personnel
If you selected other above, please specify	
First Twelve Months:	
Number of units, first twelve months	1 (Whole number only)
Cost per unit, first twelve months	\$ 8878 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 8878
Second Twelve Months:	
Number of units second twelve months	1 (Whole number only)
Cost per unit second twelve months	\$ 8878 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 8878
* Description The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.	Temporary appointment from OSU staff to manage the project and its administrative aspects. This does not exceed 3% of the total budget. This represents a .25FTE (10hrs/week) to support the team (track hours for the undergraduate students, manage the project documents etc...)

Budget Item

*Item	Graduate Student 0.49 FTE
*Select Object Class	Personnel
If you selected other above, please specify	
First Twelve Months:	
Number of units, first twelve months	1 (Whole number only)
Cost per unit, first twelve months	\$ 42357 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 42357
Second Twelve Months:	
Number of units second twelve months	1 (Whole number only)
Cost per unit second twelve months	\$ 43523 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 43523
* Description The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.	This item will cover the stipend and tuition of our lead developer, Beatrice Moissinac, who is a PhD student in Computer Science. Beatrice has been our development leader for the WAVE project for the last two years. This budget covers the 0.49FTE stipend (\$21.20/hr), the tuitions (\$4639/term), and the hourly work during summer (40hr/week). 100% of Beatrice's effort will be devoted to working on the design, implementation, management of the development team, as well as maintaining the collaboration with ERS.

Budget Item

*Item	Participant Incentive
*Select Object Class	Other
If you selected other above, please specify	Participant incentive

First Twelve Months:

Number of units, first twelve months	1 (Whole number only)
Cost per unit, first twelve months	\$ 10000 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 10000

Second Twelve Months:

Number of units second twelve months	1 (Whole number only)
Cost per unit second twelve months	\$ 10000 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 10000

*** Description**

The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.

The pilot of FELIX will require extensive testing with real-world participants. In order to secure the commitment of participants, we must provide an incentive. Our experience with the WAVE project tells us that small gift cards, cash and food are usually sufficient to motivate someone to come and try our system for 2 hours.

With \$20 per participant, we can incentivize 500 participants for each 12 months period. We will have at least 4 pilots sessions, with various settings in each sessions (group exercises, one-on-one tutoring, complete autonomy etc.), thus 100 to a 150 participants per pilot sessions is a sufficient number to cover all type of population on campus.

Budget Item

*Item	ERS Training and Assessment 1.0 FTE
*Select Object Class	Other
If you selected other above, please specify	Personnel

First Twelve Months:

Number of units, first twelve months	1 (Whole number only)
Cost per unit, first twelve months	\$ 18000 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 18000

Second Twelve Months:

Number of units second twelve months	1 (Whole number only)
Cost per unit second twelve months	\$ 18000 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 18000

*** Description**

The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.

Undergrad worker supervised by ERS and TAC to help with assessment (conducting interview, transcribing, analyzing the results) as well as help train instructors on FELIX.

Standard undergrad student hourly rate about \$10/hr

This item was put in the 'Other' category because the system would not account it in the Total budget when put under 'Personnel'

Budget Item

*Item	Design Team 2.0 FTE
*Select Object Class	Other
If you selected other above, please specify	Personnel

First Twelve Months:

Number of units, first twelve months	2 (Whole number only)
Cost per unit, first twelve months	\$ 18000 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 36000

Second Twelve Months:

Number of units second twelve months	2 (Whole number only)
Cost per unit second twelve months	\$ 18000 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 36000
* Description The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.	<p>The design team is composed of undergraduate students working hourly (Standard undergrad student hourly rate ~\$10/hr) to produce the bulk of the elements. They create the 3D environment. 100% of their time and effort is devoted to FELIX.</p> <p>This item is in 'Other' instead of 'Personnel' because when under 'Personnel' the Total Budget would not account for it. (The website must have a bug somewhere)</p>

Budget Item

*Item	Kimmy Hescoc salary off-set (20%)
*Select Object Class	Personnel
If you selected other above, please specify	

First Twelve Months:

Number of units, first twelve months	1 (Whole number only)
Cost per unit, first twelve months	\$ 18368 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 18368

Second Twelve Months:

Number of units second twelve months	1 (Whole number only)
Cost per unit second twelve months	\$ 18368 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 18368
* Description The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.	<p>Kimmy Hescoc is TAC's in-house designer. She will design the virtual environments for FELIX (buildings, rooms etc.) and supervise the Design team. This budget item is her salary off-set: she will work 20% of her time on FELIX, the rest will be TAC's usual work (and paid by OSU).</p> <p>Within this protected time, 100% of her effort will be toward FELIX.</p>

Budget Item

*Item	"After the Fire" guest speakers
*Select Object Class	Other
If you selected other above, please specify	Consulting

First Twelve Months:

Number of units, first twelve months	1 (Whole number only)
Cost per unit, first twelve months	\$ 4000 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 4000

Second Twelve Months:

Number of units second twelve months	0 (Whole number only)
Cost per unit second twelve months	\$ 0 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 0
* Description The space to the right should be used to provide	

further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.

We are collaborating with Shawn Simons and Alvaro Llanos ("After The Fire"). This budget item include their speaker fee, a showing of the "after the Fire" movie, travel expenses (hotel, food, domestic plane) to Corvallis, as well as a consulting fee for them to test out FELIX and provide us with feedback. See "Pilot" step in our Implementation plan.

Budget Item

*Item	Individual work station
*Select Object Class	Equipment
If you selected other above, please specify	
First Twelve Months:	
Number of units, first twelve months	5 (Whole number only)
Cost per unit, first twelve months	\$ 2000 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 10000
Second Twelve Months:	
Number of units second twelve months	0 (Whole number only)
Cost per unit second twelve months	\$ 0 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 0
* Description The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.	This budget item will be used to buy computers for our development team. One computer per FTE.

Budget Item

*Item	Fire expert consulting 1.0 FTE
*Select Object Class	Personnel
If you selected other above, please specify	
First Twelve Months:	
Number of units, first twelve months	1 (Whole number only)
Cost per unit, first twelve months	\$ 18000 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 18000
Second Twelve Months:	
Number of units second twelve months	1 (Whole number only)
Cost per unit second twelve months	\$ 18000 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 18000
* Description The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.	Undergrad student worker (Standard undergrad student hourly rate ~\$10/hr) supervised by Jim Patton (Fire Prevention Officer) to help with the production of educational content for FELIX.

included in the project narrative.

Budget Item

*Item	Pre-loaded USB
*Select Object Class	Supplies
If you selected other above, please specify	
First Twelve Months:	
Number of units, first twelve months	1 (Whole number only)
Cost per unit, first twelve months	\$ 1200 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 1200
Second Twelve Months:	
Number of units second twelve months	0 (Whole number only)
Cost per unit second twelve months	\$ 0 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 0
* Description The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.	Second Life requires a browser to connect to FELIX. This browser (similar to Firefox or Chrome) can be run from a USB stick. Pre-loaded USB stick can be ordered to save man-hour. Running the browser from a USB stick allow us to test the system from anyone's computer without losing time downloading and installing the program. This will be particularly useful when reaching out to very busy individuals such as staff and faculty.

Budget Item

*Item	Marketing campaign
*Select Object Class	Other
If you selected other above, please specify	Marketing
First Twelve Months:	
Number of units, first twelve months	1 (Whole number only)
Cost per unit, first twelve months	\$ 500 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 500
Second Twelve Months:	
Number of units second twelve months	1 (Whole number only)
Cost per unit second twelve months	\$ 500 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 500
* Description The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.	The advertisement of FELIX's pilots and deployment will be done through marketing across the campus: printing posters and printing ads in the campus' newspaper.

Budget Item

*Item	Development Team 2.0 FTE
*Select Object Class	Personnel
If you selected other above, please specify	

First Twelve Months:

Number of units, first twelve months	2 (Whole number only)
Cost per unit, first twelve months	\$ 18000 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 36000

Second Twelve Months:

Number of units second twelve months	2 (Whole number only)
Cost per unit second twelve months	\$ 18000 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 36000

<p>* Description</p> <p>The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.</p>	<p>The development team write the code for the software of FELIX. They are undergraduate students hired hourly. Standard undergrad student hourly rate ~\$10/hr</p> <p>They effort will be 100% devoted to FELIX.</p>
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Budget Item

*Item	Travel to conference
*Select Object Class	Travel
If you selected other above, please specify	

First Twelve Months:

Number of units, first twelve months	2 (Whole number only)
Cost per unit, first twelve months	\$ 9075 (Whole dollar amounts only)
Total for First Twelve Months:	\$ 18150

Second Twelve Months:

Number of units second twelve months	2 (Whole number only)
Cost per unit second twelve months	\$ 9075 (Whole dollar amounts only)
Total for Second Twelve Months:	\$ 18150

<p>* Description</p> <p>The space to the right should be used to provide further clarification on the costs (i.e. personnel costs: number of hours/rate/staff; or meeting costs: number of meetings/days/attendees). When describing personnel costs please include an hourly rate per person and percentage of effort. When describing travel costs, please include cost per person/per trip and detail out airfare costs, lodging costs, per diem costs and other costs as well as number of days of travel. Budget justification for travel should also be included in the project narrative.</p>	<p>We are targetting 3 conferences:</p> <ul style="list-style-type: none"> • Center for Campus Fire Safety Fire Forum for two persons \$3,900 - Per person: Domestic Flight (500), Registration (575), Transportation (250), Food (250), Hotel (125*3) • Campus Fire & Security Safety Expo for two persons \$3,900 - Per person: Domestic Flight (500), Registration (575), Transportation (250), Food (250), Hotel (125*3) • Immersive Learning Research Network for three persons \$10,350 - Per person: International flight (2000), Registration (400), Transportation (250), Food (300), Hotel (125*4) <p>We intend on going each year to present on-going progress and then final results, as well as creating and fostering connection with other university fire safety teams.</p>
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Research And Development Projects

Budget

Budget Object Class			
Budget Amount	First 12-Month Period	Second 12-Month Period	Total
Personnel	136,700	137,866	274,566
Benefits	0	0	0
Travel	18,150	18,150	36,300
Equipment	12,520	0	12,520
Supplies	2,200	0	2,200
Contractual	0	0	0
Construction	0	0	0
Other	68,500	64,500	133,000
Indirect Charges	104,231	96,807	201,038
Total	342,301	317,323	659,624
Indirect Cost Details (complete this section only if you have a Federally approved Indirect Cost Rate agreement). Please note you must add the Indirect Costs as a line item within the Request Details section as they are not automatically calculated.			
Agency Indirect Cost Agreement with	Oregon State University		
Indirect Cost Rate	47 %		
Agreement Summary	OSU has an agreement with FEMA for indirect costs: year 1 is 46.5% and year 2 is 47%.		
Total Federal and Applicant Share			
Federal Share	\$ 628,214		
Applicant Share (Cash OR In-Kind)	\$ 31,410		
Applicant Share of Award (%)	5		
* Non-Federal Resources <i>(The combined Non-Federal Resources must equal the Applicant Share of \$ 31,410)</i>			
a. Applicant	\$ 31,410		
b. State	\$ 0		
c. Local	\$ 0		
d. Other Sources	\$ 0		
If you entered a value in Other Sources other than zero (0), include your explanation below. You can use this space to provide information on the project, cost share match, or if you have an indirect cost agreement with a federal agency.			
Total Budget	\$ 659,624		

Narrative Statement

The narrative for Fire Prevention and Safety is provided when adding Fire Prevention and Safety Projects under the Request Details section.

FEMA Form SF 424B

You must read and sign these assurances. These documents contain the Federal requirements attached to all Federal grants including the right of the Federal government to review the grant activity. You should read over the documents to become aware of the requirements. The Assurances and Certifications must be read, signed, and submitted as a part of the application.

Note: Fields marked with an * are required.

O.M.B Control Number 4040-0007

Assurances Non-Construction Programs

Note: Certain of these assurances may not be applicable to your project or program. If you have any questions, please contact the awarding agency. Further, certain Federal awarding agencies may require applicants to certify to additional assurances. If such is the case, you will be notified.

As the duly authorized representative of the applicant I certify that the applicant:

1. Has the legal authority to apply for Federal assistance and the institutional, managerial and financial capability (including funds sufficient to pay the non-Federal share of project costs) to ensure proper planning, management and completion of the project described in this application.
2. Will give the awarding agency, the Comptroller General of the United States, and if appropriate, the State, through any authorized representative, access to and the right to examine all records, books, papers, or documents related to the award; and will establish a proper accounting system in accordance with generally accepted accounting standards or agency directives.
3. Will establish safeguards to prohibit employees from using their positions for a purpose that constitutes or presents the appearance of personal or organizational conflict of interest, or personal gain.
4. Will initiate and complete the work within the applicable time frame after receipt of approval of the awarding agency.
5. Will comply with the Intergovernmental Personnel Act of 1970 (42 U.S.C. Section 4728-4763) relating to prescribed standards for merit systems for programs funded under one of the nineteen statutes or regulations specified in Appendix A of OPM's Standards for a Merit System of Personnel Administration (5 C.F.R. 900, Subpart F).
6. Will comply with all Federal statutes relating to nondiscrimination. These include but are not limited to: (a) Title VI of the Civil Rights Act of 1964 (P.L. 88-352) which prohibits discrimination on the basis of race, color or national origin; (b) Title IX of the Education Amendments of 1972, as amended (20 U.S.C. Sections 1681-1683, and 1685-1686), which prohibits discrimination on the basis of sex; (c) Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. Section 794), which prohibits discrimination on the basis of handicaps; (d) the Age Discrimination Act of 1975, as amended (42 U.S.C. Sections 6101-6107), which prohibits discrimination on the basis of age; (e) the Drug Abuse Office and Treatment Act of 1972 (P.L. 92-255), as amended, relating to nondiscrimination on the basis of drug abuse; (f) the Comprehensive Alcohol Abuse and Alcoholism Prevention, Treatment and Rehabilitation Act of 1970 (P.L. 91-616), as amended, relating to nondiscrimination on the basis of alcohol abuse or alcoholism; (g) §§523 and 527 of the Public Health Service Act of 1912 (42 U.S.C. §§290 dd-3 and 290 ee-3), as amended, relating to confidentiality of alcohol and drug abuse patient records; (h) Title VIII of the Civil Rights Acts of 1968 (42 U.S.C. Section 3601 et seq.), as amended, relating to nondiscrimination in the sale, rental or financing of housing; (i) any other nondiscrimination provisions in the specific statute(s) under which application for Federal assistance is being made; and (j) the requirements of any other nondiscrimination statute(s) which may apply to the application.

7. Will comply, or has already complied, with the requirements of Title II and III of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) which provide for fair and equitable treatment of persons displaced or whose property is acquired as a result of Federal or federally-assisted programs. These requirements apply to all interest in real property acquired for project purposes regardless of Federal participation in purchases.
8. Will comply, as applicable, with provisions of the Hatch Act (5 U.S.C. §§1501-1508 and 7324-7328) which limit the political activities of employees whose principal employment activities are funded in whole or in part with Federal funds.
9. Will comply, as applicable, with the provisions of the Davis-Bacon Act (40 U.S.C. §§276a to 276a-7), the Copeland Act (40 U.S.C. §276c and 18 U.S.C. §874), and the Contract Work Hours and Safety Standards Act (40 U.S.C. §§327-333), regarding labor standards for federally-assisted construction subagreements.
10. Will comply, if applicable, with flood insurance purchase requirements of Section 102(a) of the Flood Disaster Protection Act of 1973 (P.L. 93-234) which requires recipients in a special flood hazard area to participate in the program and to purchase flood insurance if the total cost of insurable construction and acquisition is \$10,000 or more.
11. Will comply with environmental standards which may be prescribed pursuant to the following: (a) institution of environmental quality control measures under the National Environmental Policy Act of 1969 (P.L. 91-190) and Executive Order (EO) 11514; (b) notification of violating facilities pursuant to EO 11738; (c) protection of wetlands pursuant to EO 11990; (d) evaluation of flood hazards in floodplains in accordance with EO 11988; (e) assurance of project consistency with the approved State management program developed under the Coastal Zone Management Act of 1972 (16 U.S.C. §§1451 et seq.); (f) conformity of Federal actions to State (Clean Air) Implementation Plans under Section 176(c) of the Clean Air Act of 1955, as amended (42 U.S.C. §§7401 et seq.); (g) protection of underground sources of drinking water under the Safe Drinking Water Act of 1974, as amended (P.L. 93-523); and, (h) protection of endangered species under the Endangered Species Act of 1973, as amended (P.L. 93-205).
12. Will comply with the Wild and Scenic Rivers Act of 1968 (16 U.S.C. Section 1271 et seq.) related to protecting components or potential components of the national wild and scenic rivers system.
13. Will assist the awarding agency in assuring compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C. 470), EO 11593 (identification and protection of historic properties), and the Archaeological and Historic Preservation Act of 1974 (16 U.S.C. 469a-1 et seq.).
14. Will comply with P.L. 93-348 regarding the protection of human subjects involved in research, development, and related activities supported by this award of assistance.
15. Will comply with the Laboratory Animal Welfare Act of 1966 (P.L. 89-544, as amended, 7 U.S.C. 2131 et seq.) pertaining to the care, handling, and treatment of warm blooded animals held for research, teaching, or other activities supported by this award of assistance.
16. Will comply with the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. Section 4801 et seq.) which prohibits the use of lead based paint in construction or rehabilitation of residence structures.
17. Will cause to be performed the required financial and compliance audits in accordance with the Single Audit Act Amendments of 1996 and OMB Circular No. A-133, "Audits of States, Local Governments, and Non-Profit Organizations."
18. Will comply with all applicable requirements of all other Federal laws, executive orders, regulations and policies governing this program.

You must read and sign these assurances.

Certifications Regarding Lobbying, Debarment, Suspension and Other Responsibility Matters and Drug-Free Workplace Requirements.

Note: Fields marked with an * are required.

O.M.B Control Number 1660-0025

Applicants should refer to the regulations cited below to determine the certification to which they are required to attest. Applicants should also review the instructions for certification included in the regulations before completing this form. Signature on this form provides for compliance with certification requirements under 44 CFR Part 18, "New Restrictions on Lobbying; and 44 CFR Part 17, "Government-wide Debarment and Suspension (Non-procurement) and Government-wide Requirements for Drug-Free Workplace (Grants)." The certifications shall be treated as a material representation of fact upon which reliance will be placed when FEMA determines to award the covered transaction, grant, or cooperative agreement.

1. Lobbying

A. As required by the section 1352, Title 31 of the US Code, and implemented at 44 CFR Part 18 for persons (entering) into a grant or cooperative agreement over \$100,000, as defined at 44CFR Part 18, the applicant certifies that:

(a) No Federal appropriated funds have been paid or will be paid by or on behalf of the undersigned to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with the making of any Federal grant, the entering into of any cooperative agreement and extension, continuation, renewal amendment or modification of any Federal grant or cooperative agreement.

(b) If any other funds than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of congress, or an employee of a Member of Congress in connection with this Federal grant or cooperative agreement, the undersigned shall complete and submit Standard Form LLL, "Disclosure of Lobbying Activities", in accordance with its instructions.

(c) The undersigned shall require that the language of this certification be included in the award documents for all the sub awards at all tiers (including sub grants, contracts under grants and cooperative agreements and sub contract(s)) and that all sub recipients shall certify and disclose accordingly.

2. Debarment, Suspension and Other Responsibility Matters (Direct Recipient)

A. As required by Executive Order 12549, Debarment and Suspension, and implemented at 44CFR Part 67, for prospective participants in primary covered transactions, as defined at 44 CFR Part 17, Section 17.510-A, the applicant certifies that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, sentenced to a denial of Federal benefits by a State or Federal court, or voluntarily excluded from covered transactions by any Federal department or agency.

(b) Have not within a three-year period preceding this application been convicted of or had a civilian judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain or perform a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property.

(c) Are not presently indicted for or otherwise criminally or civilly charged by a government entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (1)(b) of this certification: and

(d) Have not within a three-year period preceding this application had one or more public

transactions (Federal, State, or local) terminated for cause or default; and

B. Where the applicant is unable to certify to any of the statements in this certification, he or she shall attach an explanation to this application.

3. Drug-Free Workplace (Grantees other than individuals)

As required by the Drug-Free Workplace Act of 1988, and implemented at 44CFR Part 17, Subpart F, for grantees, as defined at 44 CFR part 17, Sections 17.615 and 17.620:

(A) The applicant certifies that it will continue to provide a drug-free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the grantee's workplace and specifying the actions that will be taken against employees for violation of such prohibition;

(b) Establishing an on-going drug free awareness program to inform employees about:

- (1) The dangers of drug abuse in the workplace;
- (2) The grantees policy of maintaining a drug-free workplace;
- (3) Any available drug counseling, rehabilitation and employee assistance programs; and
- (4) The penalties that may be imposed upon employees for drug abuse violations occurring in the workplace;

(c) Making it a requirement that each employee to be engaged in the performance of the grant to be given a copy of the statement required by paragraph (a);

(d) Notifying the employee in the statement required by paragraph (a) that, as a condition of employment under the grant, the employee will:

- (1) Abide by the terms of the statement and
- (2) Notify the employee in writing of his or her conviction for a violation of a criminal drug statute occurring in the workplace no later than five calendar days after such conviction.

(e) Notifying the agency, in writing within 10 calendar days after receiving notice under subparagraph (d)(2) from an employee or otherwise receiving actual notice of such conviction. Employers of convicted employees must provide notice, including position title, to the applicable FEMA awarding office, i.e. regional office or FEMA office.

(f) Taking one of the following actions, against such an employee, within 30 calendar days of receiving notice under subparagraph (d)(2), with respect to any employee who is so convicted:

- (1) Taking appropriate personnel action against such an employee, up to and including termination, consistent with the requirements of the Rehabilitation Act of 1973, as amended; or
- (2) Requiring such employee to participate satisfactorily in a drug abuse assistance or rehabilitation program approved for such purposes by a Federal, State, or local health, law enforcement or other appropriate agency.

(g) Making a good faith effort to continue to maintain a drug free workplace through implementation of paragraphs (a), (b), (c), (d), (e), and (f).

(B) The grantee may insert in the space provided below the site(s) for the performance of work done in connection with the specific grant:

Place of Performance

Street	City	State	Zip	Action
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If your place of performance is different from the physical address provided by you in the Applicant

Information, press *Add Place of Performance* button above to ensure that the correct place of performance has been specified. You can add multiple addresses by repeating this process multiple times.

Section 17.630 of the regulations provide that a grantee that is a State may elect to make one certification in each Federal fiscal year. A copy of which should be included with each application for FEMA funding. States and State agencies may elect to use a Statewide certification.

Signed by Jon L Dorbolo on 04/07/2015

FEMA Standard Form LLL

Only complete if applying for a grant for more than \$100,000 and have lobbying activities. See Form 20-16C for lobbying activities definition.

Submit Application

Application 100% complete, Submitted

Please click on any of the following links to visit a particular section of your application. Once all areas of your application are complete, you may submit your application.

Application Area	Status
Applicant's Acknowledgements	Complete
Overview	Complete
Contact Information	Complete
Applicant Information	Complete
Request Information	Complete
Request Details	Complete
Budget	Complete
Narrative Statement	Complete
Assurances and Certifications	Complete

PLEASE READ THE FOLLOWING STATEMENTS BEFORE YOU SUBMIT.

- **YOU WILL NOT BE ALLOWED TO EDIT THIS APPLICATION ONCE IT HAS BEEN SUBMITTED.** If you are not yet ready to submit this application, save it, and log out until you feel that you have no more changes.
- When you submit this application, you, as an authorized representative of the organization applying for this grant, are certifying that the following statements are true:

To the best of my knowledge and belief, all data submitted in this application are true and correct.

This application has been duly authorized by the governing body of the applicant and the applicant will comply to the Assurances and Certifications if assistance is awarded.

To sign your application, check the box below and enter your password in the space provided. To submit your application, click the Submit Application button below to officially submit your application to FEMA.

Note: The primary contact will be responsible for signing and submitting the application. Fields marked with an * are required.

I, Jon L Dorbolo, am hereby providing my signature for this application as of 17-Apr-2015.