

**PROCHASKA, URI**  
**DHS COASTAL RESILIENCE CENTER**  
**RESEARCH PROJECT**  
**YEAR 4 PROGRESS REPORT**  
**July 1, 2018 – June 30, 2019**

**Project Title:**

Communicating risks to motivate individual action

**Principal Investigator Name/Institution:**

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**Other Partners/Institutions:**

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**Short Project Description (“elevator speech”)**

Our research path will complete the validation or Proof of Concept (initiated in year 3) for changing storm preparedness behavior (Get a Kit, Make a Plan, Be Informed), using our Transtheoretical Model (TTM). This TTM tailored online approach with complementary texting; recruitment and intervention will use a census-balanced sample of 700 at-risk participants over a 10-month period. Our targeted end-user transition path includes outreach, needs assessment, recruitment, and implementation with organization(s); protocol development addresses the key elements including participant time demands, organizational costs, intellectual property issues and supporting technologies for program delivery. Our end-user recruitment plan targets organizations that are committed to having their employee or customer populations be adequately prepared for natural disasters.

**1. Introduction and project overview:**

This project has supported DHS in improving its national mission to safeguard people, infrastructure, and economies from catastrophic coastal natural disasters. This research met DHS priorities by strengthening national preparedness and improving the resilience of coastal communities in the face of coastal storm hazards; consistent with NOAA’s coastal missions and programs as well. As such, this research addresses Presidential Policy Directive 8, which calls for increasing our level of National Preparedness by preventing, mitigating, responding to, and recovering from the hazards that pose the greatest risk. This project is specifically tied to strategic priority 1 of the 2014-2018 DHS strategic plan. More specifically we are responding to objective 1.3 aimed at increasing disaster awareness and action. Additionally, this project addresses QHSR Mission 5 (Strengthen National Preparedness and Resilience), which helps develop tools to enhance citizen preparedness, specifically Goal 5.1, Enhance National Preparedness supports efforts to “Empower individuals and communities to strengthen and sustain their own preparedness...build a collective understanding of their risks, the resources available to assist their preparations, and their roles and responsibilities in the event of a disaster.” Hurricanes account for 10 of the top 15 most expensive natural disasters in the United States, including the top 3 (NOAA, 2014).

## 2. **Results:**

Our team has had enormous success in reaching out to end-users in Y04 and engaging them to participate in our program. As mentioned in the workplan, we considered completing the Proof of Concept validation research in Year 4 with a transition partner (e.g. health-related organization) instead of the new survey company. However, our previous experience recruiting such organizations for longitudinal intervention research took at least 12 months just to complete recruitment. For this project, this has not been the case at all. In fact, every organization that we have reached out to has shown enormous interest and have been working with us to figure out how we can implement our program with their employees, some of which have over 14,000 employees.

## 3. **End users:**

The following end-user organizations have been engaged during Y04:

- Major Health Retail Organization (2/25/2019) - Preliminary meeting with the Enterprise Response and Resiliency manager led to a request for a presentation at their national corporate headquarters. During this second meeting our team's feedback was requested in creating tailored in-store messages pertaining to emergency preparedness to be aired in over 9,000 stores. Our team provided feedback to their development team as requested. Currently, communication is ongoing regarding future presentations to be made to a larger scope of the administrative team regarding future utilization of the computer-tailored intervention program (CTI) with possible end-users being their employees and customers.
- Rhode Island Flood Mitigation Annual Conference (4/30/19)– In a collaborative roundtable format, participants were invited to share their agency/ organization's successes and barriers encountered when implementing outreach strategies regarding the reduction of property-related climate risk. Information regarding organizations, businesses, municipalities and state agencies' efforts to educate and disseminate information on this topic. The session concluded with ideas and suggestions regarding next steps for positive outcomes, one being our CTI program.
- Rhode Island Emergency Management Agency (5/13/19) – Presentation given to the director and members of the administrative staff as well as the Rhode Island representative for FEMA. High enthusiasm from all members with unanimous agreement that the program would be a good fit. FEMA representative requested we present to the regional team in Boston. Planning for next steps is process.
- Rhode Island Department of Health (RIDOH) (5/1/19 & 8/20/19) – Our initial presentation led to request for a meeting to discuss questions and potential timeline for implementation of our CTI program in a feasibility study to run concurrently with the pilot study. The RIDOH has requested the employees of the following agencies be recruited by the agencies list-serve to participate in our CTI:
  - Bradley Hospital
  - Butler Hospital
  - Eleanor Slater Hospital
  - Kent Hospital

- Fatima Hospital
- Landmark Medical Center
- The Miriam Hospital
- Newport Hospital
- Providence Veterans Affairs Medical Center
- Rhode Island Hospital
- Roger Williams Medical Center
- South County Hospital
- Westerly Hospital
- Women & Infants Hospital
- Health centers
- Nursing homes
- Assisted living communities
- EMS agencies
- Home health/hospice agencies
- Dialysis centers
- CEPR/HCRI

Lifespan hospitals account for only four out of the fourteen hospitals listed. Lifespan is largest employer in the state of RI accounting for over 14,000 potential participants. Since the scale of this trial would be enormous, we are in the process of assessing what would be required in terms of additional staff effort and financial support for launching this large-scale trial simultaneously with our currently funded study.

#### **4. Transition:**

The above-mentioned end-user organizations received in-person presentations detailing the history of our work on this project, including preliminary trial results, an overview of the evidence regarding the efficacy of the Transtheoretical Model of behavior change, its applicability to the process of change in becoming better prepared for weather-related emergencies and the computer tailored intervention program designed to provide individualized feedback interventions to each user based on their own personal stage of readiness.

A Frequently Asked Questions handout was developed and provided to all we met with.

Two promotional videos are in the process of being produced by film and media students at URI's Harrington School of Communication. One video is being developed to augment our power-point presentation designed for engaging interest among end-user *organizations*. A shorter version is designed to inform and encourage potential end-user/*participants* to agree to utilization of the program to help them better prepare. Since these videos provide testimonials from climate impact leaders and various experts in areas related to preparedness and extreme weather as well as show evidence of recent changes in weather and its impact on communities it advances our current presentation modality with a more dynamic experience for the viewer considering our program. We expect future presentations utilizing these promotional videos will lead to an increase in the likelihood of end-user engagement. Our hope is that higher end-user engagement with our CTI will lead to a more informed and prepared general citizenry, savings in money and/or property, increases in the operational efficiency of business communities as well as greater resiliency in communities as a whole.

## **5. Project Impact:**

In year 4 our outreach to end users far surpassed our expectations and our goals. After two presentations of our digital program for helping participants progress through the stages of change to become prepared for severe storms, the chief of the center for emergency preparedness and response (CEPR) at the RI Department of Health enthusiastically wants to offer our preparedness program to employees of its following organizations: 1. All 14 hospitals Rhode Island; 2. All federally funded health centers; 3. All nursing homes; 4. Assisted living communities; 5. EMS agencies; 6. Home/Hospice agencies; 7. Dialysis centers and 8. CEPR/HCRI. These agencies serve a broad range of diverse and vulnerable populations whose lives would be at increased risk if they could not receive this health services that are needed.

We had similar enthusiastic response from the Director of Emergency Preparedness for one of the nation's largest multi-tiered health companies. The goal would be to provide our program to the 300,000 employees of this company and potentially to the 5,000,000 customers they serve each day. Similarly, the Directors Preparedness programs for the US Naval instillation in Rhode Island want s our programs to be delivered to Navy personnel.

The Challenge is that our grant does not have the resources to deliver our preparedness programs to so many organizations and populations. In year five we are planning to serve as many organizations and populations as we can and to work to discover how funding can be found for organization s to serve their key personnel and their vulnerable populations to reduce their risks and to protect the health and lives of the populations they serve.

## **6. Unanticipated Problems:**

Our legal team at URI has been working diligently with the survey company since the notice of Y04 funding in January 2019 to secure a contract to recruit our 700 baseline participants for our proof of concept trial. We are 90% of the way there and plan to recruit our baseline sample as soon as that is signed. Due to the later notice of award and more communication between URI's legal department and the survey company, this is happening later than anticipated but we remain hopeful that this will materialize in the next few weeks and we will be able to start recruitment.

## **7. Student Involvement and Awards:**

Lauren Hanna, a URI graduate student in environmental management, was funded by leveraged sources in the second half of year 4. Her role was to support the team in developing messaging for texts related to preparedness. Additionally, she has been assisting on video development and outreach to end users.

In addition, two undergraduate film and media majors have been completing an internship to develop short videos for outreach to end users. Sarah Angeloni and Joshua Hastings have done extensive work to prepare for and shoot these videos with experts in the field. In addition, they recently attended Prep Con (Rhode Island's Annual Rhode Island Preparedness Conference)

## **8. Interactions with education projects:**

None

**9. Publications:**

- Mundorf, N., Redding, C.A., Prochaska, J.O., Paiva, A.L., & Rubinoff, P. (2017). [Resilience and Thriving in spite of Disasters: A Stages of Change Approach](#). In A. Fekete & Fiedrich, F. *Urban Disaster, Resilience and Security*. Berlin: Springer.

**10. Year 4 Research Activities and Milestone Achievements:**

**Year 4 Research Activities and Milestones: Status as of 6/30/2019**

<b>Reporting Period 7/1/2018 – 6/30/2019</b>			
<b>Research Activity</b>	<b>Proposed Completion Date</b>	<b>% Complete</b>	<b>Explanation of why activity/milestone was not completed</b>
Proof of Concept - Review/revise text messages sent to participants with FEMA/RIEMA colleagues	3/1/2019	100%	
Proof of Concept - Contract with Survey Company for Time 1 (baseline) and T2 (follow up); implement T1 assessment; begin sending text intervention	3/1/2019	90%	Contract is in negotiations with URI's legal team and the survey company.
Proof of Concept - Analyze baseline assessment	5/1/2019	0%	Contract with survey company is not yet signed.
Proof of Concept - Text messages sent to participants for 10 months	1/1/2020 (outside the reporting period)		
Proof of Concept - Reassess participants for longitudinal study	1/15/2020 (outside reporting period)		
Proof of Concept - Analyze follow-up data	1/31/2020 (outside reporting period)		
<b>Research Milestone</b>			

Proof of Concept - Baseline assessment completed	4/1/2019	0%	Contract with survey company is not yet signed.
Written quarterly progress update delivered to DHS	10/1/18; 1/1/19; 4/1/19; 6/30/19	100%	
Proof of Concept - Text messages completed and longitudinal assessment implemented	1/15/2020 (outside reporting period)		
Proof of Concept – Analysis completed; reported to/discussed with to CRC/DHS; webinar #2	1/31/2020 (outside reporting period)		

## 11. Year 4 Transition Activities and Milestone Achievements:

### Year 4 Transition Activities and Milestones: Status as of 6/30/2019

Reporting Period 7/1/2018 – 6/30/2019			
<b>Transition Activity</b>	<b>Proposed Completion Date</b>	<b>% Complete</b>	<b>Explanation of why activity/milestone was not completed</b>
Summarize the sample that was collected at T1 including region, demographics, stage of change, time spent on the program/assessment, and how many participants opt into the text messaging feature. This summary will indicate that we were able to recruit the sample needed for our proof of concept.	3/1/2019	0%	Contract with survey company is not yet signed.
Engage end-users in series of Webinars to share research findings, and market use to end- user organizations. <ul style="list-style-type: none"> <li>Preliminary outcome and new baseline for proof of concept.</li> <li>Preliminary outcomes and opportunities and benefits of adoption.</li> </ul>	4/1/19; 8/1/19 (outside reporting period)	100%	Have presented preliminary outcomes and benefits of adoption to many potential end-user organizations.
Identify and meet with 3 potential end-user organizational partners (quarter2), no less than 6 candidates, located in RI and Nationally (face-to-face or teleconference). Understanding the organizational facilitators and barriers to using this tool and identifying options to reduce barriers as part of protocols.	8/31/2019 (outside reporting period)	100%	Have surpassed original requirements for this activity. We have met extensively with 6+ potential end-user organizations all expressing interest in utilizing the program.

Demonstrate online program to potential end-users such as FEMA, RIEMA, and companies that might be interested in adopting this program for their employees.  Walk potential end-users through the program and explain impacts that it can have on the participants. This walk-through will demonstrate the interactive nature of the assessment and tailored feedback as well as the short duration of the program	8/2019  (outside reporting period)	50%	
Compiling proposed Protocol components for transition end-users such as costs, time, and training.	11/2019  (outside reporting period)	75%	This has been completed with the exception of estimated cost.
<b>Transition Milestone</b>			
Develop and share a fact sheet with potential end users that will contain components related to demands on participants, costs to sponsoring organizations, intellectual property issues and supporting technologies for delivering the program.	8/31/2019  (outside reporting period)	100%	
Summarize progress for program adoption and organizational facilitators and barriers to using this tool and identifying options to reduce barriers.	12/31/2019  (outside reporting period)		
Close on at least one Letter of Agreement with an end user to move onto the next end user	4/20  (outside reporting period)		
Draft Protocol related to demands on participants, costs to sponsoring organizations, intellectual property issues and supporting technologies for delivering the program.	3/2019	100%	

**12. Tables:**

**Table 1: Research Project Product Delivery**

Product Name	Product Type (e.g., software, guidance document, knowledge product)	Delivery Date	Recipient or End User(s)
End-user Organization FAQ Handout	Guidance document	4/20  (outside reporting period)	<ul style="list-style-type: none"> <li>• RIEMA</li> <li>• RI Department of Health and affiliated agencies</li> <li>• Major Healthcare Retail Organization</li> </ul>

**Table 2: PROCHASKA PERFORMANCE METRICS**

<b>Metric</b>	<b>Year 1</b> (1/1/16 – 6/30/16)	<b>Year 2</b> (7/1/16 – 6/30/17)	<b>Year 3</b> (7/1/17- 6/30/18)	<b>Year 4</b> (7/1/18- 6/30/19)
HS-related internships (number)				
Undergraduates provided tuition/fee support (number)				
Undergraduate students provided stipends (number)				
Graduate students provided tuition/fee support (number)	1			
Graduate students provided stipends (number)				
Undergraduates who received HS-related degrees (number)				
Graduate students who received HS-related degrees (number)				
Graduates who obtained HS-related employment (number)				
SUMREX program students hosted (number)				
Lectures/presentations/seminars at Center partners (number)	2	2		
DHS MSI Summer Research Teams hosted (number)				
Journal articles submitted (number)				
Journal articles published (number)				
Conference presentations made (number)				
Other presentations, interviews, etc. (number)				
Patent applications filed (number)				
Patents awarded (number)				
Trademarks/copyrights filed (number)				
Requests for assistance/advice from DHS agencies (number)	2	2		
Requests for assistance/advice from other agencies or governments (number)				
Dollar amount of external funding	\$0	\$100,000	\$100,000	
Total milestones for reporting period (number)	4	5		3
Accomplished fully (number)	4	3		3
Accomplished partially (number)	4	2		0
Not accomplished (number)				1