



Research News

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Using Stories in Games to Teach Girls Computer Science

The National Science Foundation has funded the Advancing Informal STEM Learning project, *"The Role of Story in Games to Teach Computer Science Concepts to Middle School Girls"*. Dr. Elisabeth Gee of Arizona State University is the project PI; Professor Carolee Stewart is the Kean University co-PI and Gail Carmichael of Carleton University is also a co-PI. Kean University will receive about \$75,000 in funding.

The team will design a game called "Gram's House", an online, collaborative educational puzzle game designed to teach Computer Science principles to middle school girls. The central character is a young girl who wants to assist her elderly grandmother in remaining at home despite her increasing physical limitations; to do so, she must solve a number of problems requiring computational thinking.

Gram's House is the focus of an ongoing collaboration among a team of researchers at three universities, three of whom are the key partners in the current NSF-funded project:

Early work on this project was supported with a Kean 2012 Students partnering with Faculty (SpF) award to Professor Stewart and her team of three students. The SpF research resulted in a journal article published in the *Journal of Computing Sciences in Colleges* with all three students as co-authors.

Research on learning and games suggests that stories may help learners adopt an *identity* and feel part of a field's academic activities. A story's structured progression of events can be used to ensure problems are *well-ordered*. A story setting might be able to give context to information needed *on demand*, but a story could help control the flow of information so it is not only *just in time*, but also more deeply meaningful. Essentially, while the context of a story setting may help situate educational content, a story can do so in a more structured and meaningful way.

Well-designed games can engage players in active and sustained learning, allow them to take on and play with new identities, promote situated understanding of new concepts, and provide experiences that can serve as a basis for later reflection and assessment.

The focus in this project primarily is on identifying the optimal combination of games, setting, and story to teach Computer Science concepts and to support the development of computational thinking as valuable in itself, as well as to prepare students for future learning in Computer Science.

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Prof. Carolee Stewart-Gardiner

Research Compliance Matters

Materials all applicants should be familiar with

All applicants to the Institutional Review Board are strongly urged to take the time to familiarize themselves with the IRB materials. On the IRB webpage at <http://compliance.kean.edu> there is a collection of resources and materials that have been made available for all applicants. The purpose of these documents is to provide guidance on putting together an IRB application.

On the website you can find sample consent, assent, and debriefing forms. The goal of these documents is to provide applicants with an outline as to what these forms should look like and what type of material they should contain.

This material is made available in an attempt to help further educate the community about the IRB process.

You will also find on our website a checklist which walks applicants through the IRB application and what type of information to include in their submission.

Contact Dr. Joseph Cronin jcronin@kean.edu or ext 73464 for questions and guidance related to all aspects of research compliance.



Grant Administration

Budget Revisions/Re-Budgeting

Budget Revisions are initiated in writing by the Project Director/Principal Investigator or a designee to the Grants Post-Award Administrator (GPAA). In some cases a budget revision will be initiated by the GPAA or Grant Accountant if they find an error during the day to day monitoring of expenditures and budget of the grant or contract.

The GPAA will determine whether the transfer is allowable by the funding agency and will receive funding agency approval if needed.

Budget revision requests will be denied if the request to transfer funds is to allocate funds to cost categories that are not allocable or allowable to the grant or contract. Once approved by the GPAA, the request is sent to the Budget Office for processing. Processing normally occurs within 48 hours.

Contact Brenda Dunlop bdunlop@kean.edu or ext. 73345 for questions and guidance relating to all aspects of grant administration.

Deadlines & Reminders

Save the date! Kean Research Days 2015 will be April 28—29



Tuesday, October 21

Education Research and Program Funding Workshop

Tuesday, October 21

IRB Application Deadline

Saturday, November 1

Internal Research Applications Open — RTR, UFRI, FFRA, SpF

Saturday, November 1

Research Days Faculty Presentation Registrations Open

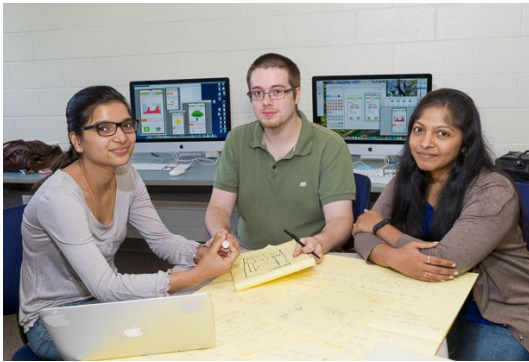
Wednesday, November 5

Science Research and Program Funding Workshop

Tuesday, November 18

Health and Wellness Research and Program Funding Workshop

Student Spotlight



SpF student team shown left to right above: Shruti Mishra , Jeremy McAllister, Thejasri Dowluri

Dr. Patricia Morreale is the faculty mentor

Mobility by Design: Information Visualization for Constraint-driven Navigation

This 2014 SpF student team, working with Dr. Patricia Morreale, explored the questions influencing factors for adoption of and participation in a home energy monitoring system (HEMS) using a persuasive design of a mobile application.

Drawing from research areas such as data science ("big data"), sensor networking, sustainability, and human computer interface, the SpF team examined approaches to information visualization in support of energy conservation. The student researchers also conducted a user survey to determine which approach was more likely to result in the desired outcome.

"Smart grid" research aimed at determining practical methods to reduce carbon dioxide output has not focused on giving residential

consumers a way to visualize their energy grid usage, enabled by the deployment of smart meters. Encouraging the sustainable, preventative behavior of reducing energy usage has several major factors motivating research and development processes:

- (1) human side of behavioral and motivational psychology using various factors to influence adoption and participation in an energy visualization system,
- (2) environmental concerns of rising levels of "normal" electricity usage every year
- (3) technical aspects of smart grid deployment and home energy monitor implementation.

One challenge is how to engage home users and encourage them adopt behaviors which will conserve energy.

ORSP News

Workshop Highlights

Register at <http://orsp.kean.edu>

Education Research and Program Funding Workshop

Presented by: ORSP

Tuesday, October 21
12:30 PM – 1:30 PM - UC 226



This workshop will present a guide to "who funds what" in education and suggest ideas for creating a grant opportunity calendar. Topics include: education research funding from the Institute for Education Science; funding priorities of the US Department of Education for fiscal 2015 NJDOE grant programs program funding for STEM education from the National Science Foundation.

The major foundations that focus on specific education topics, such as literacy and arts

Science Research and Program Funding Workshop

Presented by: ORSP

Wednesday, November 5
12:30 PM – 1:30 PM - UC 226

The workshop will focus on research funding programs from the National Science Foundation (NSF) especially the major NSF crosscutting programs, such as Research in Undergraduate Institutions (RUI), Major Research Instrumentation (MRI), Investigator-initiated research, and programs designed to improve STEM education.

The major foundations that focus on science research (not health-related) will also be covered.



Health and Wellness Research and Program Funding

Presented by: ORSP

Tuesday, November 18
12:30 PM – 1:30 PM - UC 226



This workshop will present an overview of the major federal programs that fund health-related research and health and wellness research and implementation projects.

The focus will be on examining the priorities of these funders, specific research examples, and typical annual deadlines. Topics include funding programs from HRSA, SAMHSA, NIH, and DOJ.

Some of the major foundations that support health research will also be covered.

Government Grant Opportunities

Opportunity Title	Due Date
NSF – Improving Undergraduate STEM Education – Exploration projects	10/22/14
NEA - Research: Art Works	Step 1 due 10/26/14; Step 2 due 11/18/14
NSF – Chemistry of Life Processes	10/31/2014
NSF – Investigator-initiated Research Projects – Division of Molecular and Cellular Biosciences	11/17/14
NEA - Literature Fellowships: Translation Projects	12/8/2014
Environmental Protection Agency - 12th Annual P3 Awards	12/16/2014
NSF - Political Science – due January 15	1/15/2015
NSF – Major Research Instrumentation	1/22/2015
NSF – Division of Environmental Biology – Core Programs	1/23/2015
NSF – Long Term Research in Environmental Biology	1/23/2015
NSF - Scholarships for Service	Deadlines in October and November
NSF - Research in Undergraduate Institutions (RUI)	Deadlines vary by program

Foundations and Corporations

Opportunity Title	Due Date
IRA Esther Zolt Academic Research Grant	11/15/14
AAUW – Summer/Short-Term Research Publication Grant	11/17/14
The Spencer Foundation – Research Grants	11/ 18/14
Rockefeller Foundation – Bellagio Residency Programs	12/1/14

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