# iFest|TechShop Game Design Challenge
## Request for Proposal

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## Introduction

The TechShop of Pittsburgh and the University of Pittsburgh's School of Information Sciences (iSchool) invites you to participate in the iFest|TechShop Game Design Challenge.

The challenge: **work in teams of three to design and develop an interactive game.**

As part of the challenge, student teams are required to submit a proposal detailing their game idea and concept. Three student teams will be selected, based on their proposals, to develop working prototypes of their games using the tools and services at TechShop. Those three teams will present their game prototypes at iFest 2015 (Feb. 6).

The team judged to have designed and developed the best game concept and prototype will win a prize of $500 per person.

## About TechShop

TechShop Pittsburgh is a community-based workshop and prototyping studio located in Bakery Square. TechShop offers the Pittsburgh maker community more than 16,000 square feet of workshops equipped with world class tools and equipment, computers loaded with design software featuring the Autodesk Design Suite, hundreds of classes each month, and the support and camaraderie of a community of like-minded makers.

Even if you have never used most of the tools and equipment that TechShop has available, that's not a problem. TechShop offers training on every piece of equipment in the facility. The wide range of classes lets you learn how to use the tools and equipment as you need them.

Student teams selected to build working prototypes of their games will have free access to TechShop tools and classes—including laser cutting and 3D printing—from October 20, 2014 to February 6, 2015.

For more information about TechShop Pittsburgh: http://www.techshop.ws/pittsburgh.html

## Project Description

The primary purpose of this RFP is to solicit proposals from student teams for an interactive game that meets the following criteria:

1. Propose a new game concept or significantly improve/modify an existing game
2. Proposed game must have a narrative or a back-story
3. Proposed game must have robotics/physical computing components powered by either Arduino or Hummingbird kits
4. Final prototype must include fabricated pieces made at TechShop and work within the described parameters of the game

## Sample Project 1

**Modified Game:** Battleship: War of 1812

**Narrative:** This game is a modification of the board-game, *Battleship*, in which players take turns and attempt to sink the ships of opposing players on the game-board. In this modified version, the game is themed around a historical event during the War of 1812 and includes the following narrative:

> *The British Navy is attacking Baltimore at Fort McHenry. Player 1 leads the British Invasion. Player 2 leads the Americans. Player 1 (British) starts with more ships, but has to maneuver around various obstacles (sunken ships and sand bars) on his/her side of the board. Player 2 (Americans) has a few ships and the cannons at Fort McHenry. The two sides take turns firing their cannons trying to sink the opposition's ships.*

> *Player 1 (British) can win the game by sinking the ship that Francis Scott Key is on (penned the Star Spangled Banner/national anthem while observing the battle).*

**Physical Components:** Board, ships/game pieces

**Computing Components**: Use of Hummingbird or Arduino kits to move key pieces, light up sections of the board, or produce sound effects.

**Use of TechShop:** 3D-print or laser-cut game pieces (ships), assemble electronic components.

## Sample Project 2

**Modified Game:** Wheel of Fortune & 3 Little Pigs

**Narrative:** This project was created by students during the 2013 Bots & Books events. Students used the TV game show, "Wheel of Fortune" to frame their retelling of the Three Little Pigs. As the wolf blows, a dial spins (the "wheel of fortune") and a new house rises up.

**Physical Components:** Cardboard box, felt, glue

**Computing Components**: Use of Hummingbird or Arduino kits to move the wheel

**Use of TechShop:** 3D-print or laser-cut game pieces (houses, backgrounds), assemble electronic components.

## Sample Project 3

**Modified Game:** Chinese Checkers: Pittsburgh Edition

**Narrative:** The game of Chinese Checkers is modified to include a Pittsburgh theme. Each player must move his/her game pieces to the other side of the game board, following the standard rules of Chinese Checkers. On the way to the other side of the board, players can gain points by landing their pieces on special Pittsburgh spots, like University of Pittsburgh, Squirrel Hill, or Downtown. The player that gets his/her pieces across the board first, and has the most points, wins the game.

**Physical Components:** Game board, checkers (pieces)

**Computing Components:** Use of Hummingbird or Arduino kits to generate sounds and lights when game pieces land on special Pittsburgh spots on the game board.

**Use of TechShop:** Laser cutting for the game board; 3D printing for game pieces


## Sample Project 4

**Modified Game:** Earthquake Jenga

**Narrative:** This game is based on the classic Jenga game, but is modified to be based in earthquake-prone California. Players must build the tallest tower possible, while reacting to random earthquakes. The Jenga tower sits on top of a game-board that includes a buzzer (vibration motor, included in Hummingbird kits). The buzzer is programmed to provide a small vibration during the game at random intervals of time. The player that last touched the tower before it falls loses.

**Physical Components:** Game board, Jenga blocks

**Computing Components:** Use of buzzer (vibration motor) included in Hummingbird kit to shake the game-board at random intervals of time, according to a random number generator.

**Use of TechShop:** Laser cutting for the game board; 3D printing for game pieces


## Teams

Each team will consist of no more than three students. Each proposal will be evaluated by the iSchool faculty and staff advisory panel and a representative of the Pittsburgh TechShop. Three winning proposals will be funded for development. Funding will include:

1. Three months of membership at the Pittsburgh TechShop for each team (one rotating membership per team)
2. Up to three classes at the TechShop per team
3. Materials required for design, development, prototyping and producing the proposed game

**Important note:**

There is no limit on how many teams can submit proposals. However, only three proposals will be selected and funded by the iSchool and TechShop Pittsburgh.

Teams that create more than one game concept/idea may submit multiple proposals for consideration.

## Communications and Help

Please direct all RFP-, proposal-, project-related, and technical questions to the joint iSchool/TechShop advisory/consulting panel:

### RFP and Proposal Questions and Help
1. Alexandra Cole (ATCOLE@pitt.edu)
2. Michael Depew  (mdepew@pitt.edu)

### Training Questions and Help
1. Dmitriy Babichenko (dmb72@pitt.edu)
2. Pittsburgh TechShop Dream Consultants

### Technical Questions and Help
1. Hummingbird kits:  Dr. Leanne Bowler (lbowler@pitt.edu)
2. Arduino kits: Dmitriy Babichenko (dmb72@pitt.edu)
3. Design questions: Robert Perkoski (perks@pitt.edu)
4. Laser-cutting and 3D printing: Pittsburgh TechShop Dream Consultants


## Deliverables and Deadlines

The deadline to submit proposals has been extended to **October 17, 2014 at 11:59pm**.

Submit proposals as a PDF or Word doc to **mdepew@pitt.edu.**

- October 17, 2014, 11:59pm - Proposal due
- October 20, 2014 - Proposal winners announced
- October 20, 2014 - TechShop memberships and classes are available to the three winning teams
- November 14, 2014 - First progress report due
    - Detailed description of the game
    - List of game rules
    - Mock-ups or technical drawings of the games components
    - Full list of materials required
- January 16, 2015 - Second progress report due: Demo of working components
- February 6, 2015 - Final product presentation at iFest/TEC 2015

# Response (Proposal) Guidelines

## Project title

Title of your game

## Executive Summary (Abstract)

A two paragraph summary of the game.

## Contacts/Team

List all of your team members. Be sure to include their names, titles, expected roles in the project, as well as email addresses.

## Detailed Description of the Game and its Rules

Provide a detailed description of the proposed game and its rules.

## Proposed Technical Solution(s)

Describe in detail the plan for how the project objectives will be achieved. Start with a description of the overall approach, then provide details on technical solutions, and how anticipated problems will be managed. Include how the project team will be organized, what development and collaboration tools will be used, and how the plan will be updated along the way.

## Required Training

Provide an estimate of what type of training you will need in order to complete your project. You can view a full list of classes and workshops available at TechShop here: http://www.techshop.ws/take_classes.html?storeId=14

Be realistic about your knowledge and skills when you are proposing your game and estimating timelines and materials. For example, if you have never used a laser cutter before, you would need to learn how to use Corel Draw or Adobe Illustrator (tutorials available on Lynda.com at lynda.pitt.edu) and take a TechShop course on laser cutter use and safety.

## Required Materials

Provide a detailed list of materials required for your project and their costs. Item(s) listed below are examples, replace them with your own estimates.

| Item | Vendor | Price | Quantity | Cost |
|------|--------|-------|----------|------|
| Arudino Uno Board | Amazon.com | $30.00 | 2 | $60.00 |
| 24in x 24in x 1/8in birch plywood | Lowes | $5.00 | 4 | $20.00 |
| Force sensor (FSR) | Sparkfun.com | $5.95 | 6 | $35.70 |
| LED lights (various colors) | RadioShack | $1.25 | 20 | $25.00 |
| | | | Total: | $140.70 |

## Appendix

This is where you should include additional charts, graphs, reports, etc. that were cited in the proposal, but not appropriate to place in the main body of the document.

## Attached Documentation

| Document Title | Description |
|---|---|
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