



## QEP Call for Proposals for Integration of Making into Courses

Date: October 16, 2017



We are excited to announce the second call for proposals for the program aimed at encouraging faculty to integrate making into the undergraduate curriculum. Making is an iterative learning process of tinkering, designing and building. Making is a highly collaborative process that turns ideas into objects.

As part of the 2017 Quality Enhancement Plan (QEP), competitive funds will enable faculty across the College of Arts & Sciences to develop courses that incorporate design thinking and hands-on project-based learning through making. Recipients of the funds will:

- Receive orientation and support in the campus' makerspaces and
- Participate in a Faculty Learning Community facilitated by the Center for Faculty Excellence and BeAM (Be A Maker@Carolina).

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### Timeline

Friday, January 19, 2018 (by 5pm): Applications due

Friday February 9, 2018: Recipients notified

March and April 2018: Recipients will participate in orientation and two planning meetings

Fall 2018-Spring 2019: Recipients will participate in faculty learning community

## Quality Enhancement Plan (QEP)

The Makerspace program focuses on one aim of the QEP: translating the novel ideas that arise through discovery into tangible form. The existing BeAM Makerspaces already integrate design and creation with curricular and extracurricular activities. BeAM programming enhances undergraduate research across disciplines. Students are empowered to apply creativity and innovation in all of their academic, research, and co-curricular pursuits, forging natural connections between the arts and humanities and the sciences. A broad goal of all QEP programs is for students to learn about failure, iteration, and resilience. Makerspace courses have a unique opportunity to give students the time to experience and grow in these ways.

Below are some student learning outcomes from Makerspace courses. Students who complete a Makerspace course will be able to:

- Apply a design-thinking and/or iterative processes to developing ideas related to course concepts.
- Articulate specific ways experiential learning through Making has enhanced their understanding of course concepts.
- Produce work that shows evidence of innovation, risk-taking, collaboration, a design process, fabrication, documentation, and communication of process.
- Effectively critique others' work and use critiques of their own work for improvement.

## Project Ideas

Making brings hands-on collaborative learning to students and can take many forms. Here are a few examples to spark your creativity for your students' learning: Here are a few examples of previously accepted projects:

- To teach students physics through the use of everyday objects and applications, this class have students create escapements (the "ticking" part of a clock) and explore the physics of time.
- A cross-listed course between Communications and Art Studio will have students explore the modalities and methods of creating cinema. Students will create their own film, and explore and create prototypes for new methods of movie making.
- A psychology class that is part of applied service learning will have students using the Makerspace design and create novel models that can help educate a wide range of people about neuroscience processes.

These and others can be found at: <https://qep.unc.edu/courses/>

Strong proposals will be framed around the characteristics of successful project-based learning (PBL). These are projects that extend over a semester, are challenging, include student input and reflection, teach effective critique, and include public-facing components. An article from TeachThought nicely summarizes the difference between projects and PBL: "Projects can represent a

range of tasks that can be done at home or in the classroom...quickly or over time. While project-based learning (PBL) also features projects, in PBL, the focus is more on the process of learning and learner-peer-content interaction than the end-product itself.”

### **Makerspace Resources**

These state-of-the-art facilities house woodworking, metal working, electronics and digital fabrication equipment along with knowledgeable staff to guide faculty and students. A full list of the BeAM resources and facilities may be found at: <http://beam.unc.edu/> *We strongly encourage you to schedule a visit.*

### **Instructor Eligibility**

Full-time faculty members in all academic units are eligible to apply. They must also be listed as the instructor of record for the course. Applicants need not have prior experience with the makerspace tools. Instructors must be willing to learn and apply new technologies and pedagogies. Applicants must also take responsibility for the development and execution of their projects. Instructors may apply in pairs for shared projects.

### **Course Eligibility**

Existing courses taught at least once during the 2018-2019 academic year, including summer session courses, are eligible. Small or large classes in any discipline are eligible, as are courses falling under categories such as First Year Seminars or Honors courses.

### **Constraints**

The proposed integration should not rely on regularly scheduled class meetings in the BeAM facilities due to limited physical space and time constraints in the BeAM Makerspaces. The assignment should have students working both individually and in small groups outside of class. This should be considered an integration of an extended assignment, not a course redesign.

### **Awards**

Accepted applicants will receive \$5,000 for course development and Faculty Learning Community (FLC) participation upon successful completion (see Deliverables section below). This award of \$5,000 may be split between two instructors working on a joint proposal. BeAM will provide the materials for the accepted projects.

### **Deliverables**

All FLC participants are expected to submit a complete course that incorporates design and making at the conclusion of the FLC. This will ideally be available on Sakai, and will include course objectives for making, a syllabus, learning exercises, an early semester making experience, a full semester making project, and rubrics

that assess the processes and outcomes involved in design and making for the course.

### Faculty Learning Communities

Grant recipients will take part in regularly scheduled Faculty Learning Community (FLC) meetings. These meetings will allow faculty to share ideas, problems and solutions around their integration of making projects into courses. The FLCs will meet five to seven times in a calendar year. Recipients will also participate in faculty surveys and interviews, and facilitate documentation of student projects and minimal student surveys regarding the project's efficacy.

### How to Apply

#### *Step 1: Schedule required consultation*

Please fill out the form at <https://makerspacecfp.web.unc.edu/> to schedule a consultation appointment with Matthew Belskie. The objective of this consultation is to help you submit the best proposal possible. You do not need to have a proposal written to schedule the meeting, but it will be helpful to have in order to best ensure that all required parts of the proposal are present and presented well.

#### *Step 2: Develop proposal*

Proposals will be reviewed by a committee of faculty and staff members. The proposal should include:

1. A signed letter or memo from your department chair endorsing the proposed course and the plan to offer it in the 2018-2019 academic year (including summer sessions).
2. A brief narrative of ~ 1,500 words that addresses
  - A description of the course and plans for how integration of making or fabrication activities will improve student learning.
  - How this course supports learning that is consistent with the aims of the QEP and the learning outcomes described above.
  - Typical student enrollment: class size, whether it meets General Education or academic major requirements, etc.
  - Project's significance within a course/curriculum
  - Scope/ambition of the proposed making project(s).
  - How your proposal aligns with the characteristics of Project-Based Learning (PBL)
  - Student learning objectives for your proposed project and how you plan to assess whether these objectives have been met
3. A statement of feasibility (your pre-application consultation will help you determine your project's general feasibility)
  - Feasibility of proposal implementation within the stated timeframe
  - Project sustainability beyond the initial offering

- Any experience you may have with making or design-thinking that will help contribute to the success of this project. Prior experience in making is not required.
4. Signed letter acknowledging the following responsibilities:  
“I will participate in a faculty learning community (FLC) that will meet five to seven times in the 2018-2019 academic year to share ideas, problems and solutions with colleagues and professional staff related to the integration of making in my course. I will participate in assessment activities, including: surveys/interviews/focus groups about my experience with the learning community; facilitating student surveys about their experience with BeAM; and permitting student work to be evaluated by external reviewers. In addition, I am willing to share what I have learned with faculty in a future FLC or seminar.”

Proposals must be submitted by **5 p.m. Friday, January 19, 2018.**

If you have questions, please contact Matthew Belskie at [belskie@unc.edu](mailto:belskie@unc.edu)

#### **About BeAM**

BeAM (Be A Maker@Carolina) at Carolina is a network of makerspaces where the UNC community can come together in the design and making of physical objects for education, research, entrepreneurship and recreation. The spaces foster experimentation, invention, creation and exploration through design thinking and project-based learning.