

# Charles Center May Seminars Application Form

INSTRUCTIONS: This form should be used for all applications.

Please submit your proposal as an email attachment to [jxschw@wm.edu](mailto:jxschw@wm.edu) by 5:00 p.m. on Friday, April 1, 2016.

1. Name, email and campus phone # of project coordinator.

Wouter Deconinck, [wdeconinck@wm.edu](mailto:wdeconinck@wm.edu), 757-221-3539

2. Names of other collaborators / seminar participants:

Co-organizer: Josh Erlich

Other participants will be solicited through WM Digest postings.

3. Brief project summary (1-2 sentences):

Week-long May seminar on the use of novel makerspace technologies in the liberal arts classroom and in COLL courses.

4. Project duration (1 day to max of 5 days):

5 days

5. Budget (\$100/person/day):

8 persons for 5 days = \$4000

(continued on reverse)

## 6. FOR ALL COURSE / CURRICULUM DEVELOPMENT PROPOSALS

CHIS requires that, subject to department/program and EPC approval, each new, or newly revised, course developed with Charles Center funds will be offered at least once in the academic year following the fellowship period. However, departments/programs should be prepared to offer successful courses on a permanent basis. Please discuss this issue with your Chair/Director and indicate here your plans for teaching the course you are developing.

No specific courses will be developed during this May seminar, though the outcomes will likely affect multiple existing or already planned courses, as happened in the case of the May 2015 seminar.

In no more than two separate pages, describe your project in terms intelligible to a non-specialist. In particular, outline its goals and the specific steps that will be taken to achieve those goals.

Please note: The coordinator of the funded project will prepare a detailed report (about 2 pages) explaining what has been achieved, attaching relevant materials such as syllabi, edited readings and the like. Reports must be forwarded to the Director of the Charles Center by the end of the first week of Fall 2016 classes.

## May Seminar: Makerspace Technology in the College Curriculum (W. Deconinck)

I am proposing to organize a **week-long May seminar** on the use of **novel makerspace technologies in the liberal arts classroom** from **Monday May 16 to Friday May 20**. This will be the second edition of this May seminar after a widely successful first run in May 2015.

The [Small Hall Makerspace](#) is a space where students and faculty with interests in innovation, design and technology, can meet, socialize and collaborate on projects. A *makerspace* can be viewed as an open community lab that incorporates elements of machine shops, workshops and arts studios. It is a place where *makers* can come together to share resources and knowledge to build things. The makerspace provides the tools, the makers bring creativity.

Rather than merely learning to reproduce what someone else has designed or thought out, makerspaces foster an environment that encourages the students *to create*. At the Small Hall Makerspace students do indeed innovate, learn and build at the intersection of art, culture, science and technology. This philosophy connects strongly with the interdisciplinary nature of the new college curriculum, as well as the increased focus on non-written modes of communication (including for example final projects, multimedia, and performance/arts).

The technologies available to students in the Small Hall Makerspace include a 3D scanner and a 3D printer; a laser cutter for cardboard, wood and acrylic; a computer-controlled milling machine for fabrication in wood; robotics platforms; and development kits for making measurements and controlling motion and sound with microcontrollers and microprocessors.

In May 2015 we had participation from faculty across the arts & sciences: Jon Starman (economics) started the development of the construction of a hydraulic model of the nation's economy using Arduino electronics; Eliot Dudik (art & art history) experimented with the production of holograms and laid the initial contacts for the big camera obscura currently installed outside Small Hall; Michael Draeger (art & art history) used the 3D printer for prototyping in two courses this past semester; and Nabeel Sidiqqi (American studies) integrated virtual reality headsets in a course on new media technologies. Many other participants attended individual days of the May 2015 seminar (without compensation). If this seminar is approved for May 2016, I will advertise more widely on the W&M Digest and I am confident that I will find a dynamic group of week-long participants from various departments.

A tentative schedule for the week would start with two days of introductory tutorials on how to use the available technologies, including safety considerations and training for individual use. In the last three days the participants will work on a specific project that will result in a **concrete deliverable to be included in a course** as a demonstration object or as an active learning component for a course in the new curriculum.

A tentative schedule for the May seminar (subject to change) is appended below.

- Monday AM: Additive manufacturing: 3D design, scanning, and printing
- Monday PM: Subtractive manufacturing: computer-controlled fabrication in wood

- Tuesday AM: Arduino: installation and setup, simple sketches with motors and LEDs
- Tuesday PM: Embedded systems (systems on a chip): Raspberry PI, Intel Edison
- Wednesday AM: Development of project ideas and their educational goals
- Wednesday PM through Friday AM (2 days): Development of project prototypes with periodic group discussions and feedback
- Friday PM: Project showcase, lessons learned and group discussion