

Promoting Innovation and Impactful Curriculum: Housing Camp

Enrollment

Current: New courses (not applicable)

Anticipated:

We anticipate between 10 and 20 graduate students and between 10 and 20 professionals will participate in Housing Camp courses in the second six weeks of summer semester 2020.

Investigators:

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Work to be done

We will be developing content for, delivering, and disseminating insights from a new curriculum targeted at both professionals and graduate students whose studies, work, or interests would benefit from exposure to education about affordable housing. The grant will support:

- Administration of the curriculum, including development and implementation of policies for instructional design, hybrid online instruction, micro-credentialing, integration of graduate students with professionals, compatibility of modular system with credit hour system, quality control, impact measurement, and stakeholder engagement.
- Curriculum development and delivery in summer 2020
- Preliminary evaluation and development of best practices guidebook

Background

Virginia's communities and households, like most throughout the U.S. and in many countries, face a housing affordability crisis. This crisis manifests in many ways:

- Households are cost burdened, meaning that they tend to devote more than 30 percent--and often more than 50 percent--of their incomes to housing costs.
- Living in affordable housing often means compromising on location, with regard to public health, access to quality education, proximity to jobs, and other aspects of quality of life.
- Cutting-edge housing technologies, many of which could have positive financial, health, and other impacts for a household, are often not affordable.
- Housing stock that is affordable to middle-income and lower-income households is often older, has higher maintenance costs, and difficult to adapt to changing needs.
- A lack of housing affordable across the income spectrum can lead to economic and fiscal stagnation and decline for local governments.
- Despite recent high-profile pushback against single-family zoning, higher density housing options--which can be more efficient and affordable--remain limited.

The basic mission of housing policy--to ensure that all can find a decent home in a suitable living environment--is still far from being realized, and is quickly becoming out of reach not only for low-income households but for those that are middle class and working class.

The Virginia Center for Housing Research has long been committed to studying and disseminating information about housing problems, and identifying solutions that can help prevent them or mitigate their impacts. As an extension of this mission, we are spearheading an educational initiative to give current and future professionals the skills, tools, and knowledge to confront the affordable housing crisis with innovative policy, governance, and technology. We are dubbing this educational initiative *Housing Camp*, and we describe it in detail below. The initiative aligns strongly with 4-VA's goals of supporting the development of innovative, accessible, and impactful curricula that can improve the economic and social well-being of the public in the Commonwealth.

This proposal outlines our vision for *Housing Camp*. We orient our work to five goals:

- using a problem-based, applied pedagogy with a balance of real-time engagement (synchronous or in-person) and self-directed content (asynchronous);
- bringing together industry leaders, early career professionals, and graduate students in a common learning setting;
- providing a flexible curriculum built around 250-minute modules (1/3 of a traditional credit hour) and micro-credentials that can be tailored to meet both general and specific needs;
- tackling the affordable housing crisis through a holistic approach that includes design, construction, finance, development, infrastructure systems, management, planning, and regulation; and
- expanding curricular offerings to regional housing markets throughout the Commonwealth via collaborative partnerships with educational institutions and other stakeholders in those markets, including those universities that participate in 4-VA.

Housing Camp's Innovative Approach to Learning

We divide this section into two parts. First, we describe the pilot phase, which will occur in the summer semester in the 2020 academic year. In this section, we describe in detail the structure of *Housing Camp* and the ongoing collaboration with the Graduate School, with Continuing and Professional Education (CPE), and with Technology-enhanced Learning and Online Strategies (TLOS). During the pilot phase, our focus is on developing and delivering a high-quality learning experience, evaluating the experience of both the instructors and the learners, and summarizing our nascent best practices for further development. During the second phase, our focus is on learning from Phase 1 and on building out our original vision for *Housing Camp*, which included: a Graduate Certificate; a five-day, intensive, in-person learning experience in the National Capital Region; integration with *Housing X* and *Housing Summit*, which are major conferences supported by VCHR; and collaboration in development of market-specific modules with other universities.

Phase 1: Pilot

The basic curricular unit or learning object is a 250 minute module, which equates to one third of a traditional credit hour. Each module is oriented to problem-based learning built primarily around real-world case studies and stylized scenarios, and each includes at least 50 minutes of real-time learning (synchronous online or face-to-face) and at least 50 minutes of asynchronous, self-paced learning. For example, one module might require completion of 200 minutes of asynchronous content with a 50 minutes of in-person engagement at the end. Another might require completion of 100 minutes of asynchronous content, with 150 minutes of synchronous online learning. The size of the module is driven by our awareness that a single-credit hour—which requires 750 minutes of contact time—is often simply too large to accommodate a rapidly changing industry and learners who have myriad demands on their time and attention.

Each module will also be linked to one distinct micro-credential, or badge. These will require completion of a distinct, applied learning task, with validation both by a module's instructor and by an external expert from the affordable housing industry. Additional cross-cutting micro-credentials that require completion of multiple modules may also be developed.

To adapt to the existing credit hour system that dominates higher education, degree-seeking graduate students will enroll in single credit hour courses and will then choose a cluster of three modules from among a menu of options that are appropriate to the single credit hour course. These courses have already been developed in cooperation with Dean Karen DePauw and Associate Dean William Huckle, and submitted for approval to the Graduate School and Office of the Registrar. Each course uses the GRAD 5984 Special Studies designator. The single credit hour course shells include:

GRAD 5984 SS: Housing Camp: Construction 1
GRAD 5984 SS: Housing Camp: Construction 2
GRAD 5984 SS: Housing Camp: Policy
GRAD 5984 SS: Housing Camp: Data & Analysis
GRAD 5984 SS: Housing Camp: Law
GRAD 5984 SS: Housing Camp: Finance

GRAD 5984 SS: Housing Camp: Design
GRAD 5984 SS: Housing Camp: Internship

As of April 1, 2020, the 250-minute modules include:

Aff. Energy Efficient Housing Systems (Paige)	H Housing Data & Analysis 1 (Jones)
Human Factors in Zero Energy Housing (Agee)	H Housing Data & Analysis 2 (Jones)
Residential Constr. Fundamentals 1 (McCoy)	Local Housing Policy (Jones)
Residential Constr. Fundamentals 2 (McCoy)	Low Income Housing Tax Credits (Skuzinski)
Residential Construction Technologies (McCoy)	State Preemption & Aff. Housing (Skuzinski)
Architect's Small House Service Bureau (Tucker)	Env'tl Regulation & Aff. Housing (Skuzinski)
Affordable Housing Policies (Paige)	Innovation in Housing Design (Morton)
Fair Housing Policies (Paige)	Innovations in Residential Constr. (McCoy)
Federal Rental Assistance Policies (Lee)	BIM for Facilities Management (Gao)

With a list of 18 modules and nine instructors, a graduate student could earn up to six credit hours and 18 micro-credentials. These modules can be mapped roughly to the single credit hour course shells listed above. By using a small learning object that is consistently a defined portion of a credit hour (here, one third), we are able to create a highly innovative curriculum without requiring extensive institutional changes. For professionals, the construct of the credit hour is of no concern, with registration occurring directly for the desired modules and the micro-credentials to which these attach. We are actively working with TLOS to develop a learning management system through the Canvas platform that will accommodate and manage both graduate student and professional learners. We are also working with them to ensure consistent quality in asynchronous content, synchronous content, and micro-credential tasks and validation practices.

The target deadlines for *Housing Camp* are:

May 15th: Canvas site and registration sites and workflows operational

June 15th– August: Asynchronous content fully developed and populated in Canvas course shells

July 27th – August 14th: Synchronous or in-person content delivery

Phase 2: Expansion

In Phase 2, beginning in Summer 2021, we hope to grow Housing Camp in several ways. First, we hope to realize the original vision of Housing Camp (and the inspiration for its name) by having each module include an in-person component during a **five-day, intensive, learning experience in the National Capital Region that brings together all learners, both graduate students and professionals**. We anticipate using the many ongoing affordable housing developments in the NCR market as opportunities for on-site learning, and engaging robustly with industry experts in the region. The Housing Camp experience would culminate with a **one-day “hackathon”-type experience** that brings together the entire Housing Camp cohort to develop solutions to a real-world affordable housing challenge.

We also hope to **integrate Housing Camp with *Housing X* and *Housing Summit***, which are key conferences supported by VCHR in alternating years. *Housing X* is typically a late spring or early summer event that is focused on innovation and cutting-edge practices in affordable housing, and we hope the attendees at this event will become both instructors and learners in Housing Camp the following summer. Thus, a learner would have a **continuous, multi-month learning experience, bookended by a conference and a hackathon-type experience**.

Third, we will **pursue opportunities for collaboration with faculty at other 4-VA universities to design modules that are specific to other markets**, such as Hampton Roads, Norfolk, and Richmond. The

affordable housing crisis and the solutions developed in response to it manifest differently in different contexts. By engaging collaborators with intimate experience of those problems and solutions in our innovative instructional model, we hope to have a greater impact on the Commonwealth.

Lastly, we hope that by expanding the number of modules we will eventually have a large enough portfolio to support a **graduate certificate**. We also hope to have a clearer structure, in which learners can **engage at three different levels (core, expertise, innovation), and can also pursue distinct specializations**. We graphically portray this in the diagram below, in which each cell is a 250-minute module with an allied micro-credential, each row (nine modules) is a substantive area in which a learner could specialize (equivalent to three credit hours), and the area outlined in bold black equates to a nine credit hour graduate certificate.

		→→→ Adaptive Lifelong Learning Levels →→→				
		Core <i>Fundamentals targeted to graduate students and professionals with knowledge gaps in key areas;</i> <i>Instruction: mostly VT faculty</i>	Expertise <i>Understanding of U.S. best practices targeted to advanced graduate students and early-career professionals;</i> <i>Instruction: mix of VT faculty and regional professionals</i>	Innovation <i>Cutting-edge practices drawn from the U.S. and international markets; driven by Housing X / Summit</i> <i>Instruction: regional and national thought leaders</i>	↓Specializations↓ <i>A participant new to a substantive area could choose all three Core modules in a Substantive Area, then up to six from the Expertise and Innovation levels (here only six are shown by area, in future years we might have more). That bundle would be a three credit hour specialization. Each of these substantive areas/specializations would be the responsibility of a single faculty lead.</i>	
Substantive areas	Finance→	Development timeline			Housing finance	
		Sources				
		Uses				
	Law→	Property			Housing law	
		Contracts				
		Land Use				
	Design→	Housing typologies			Housing design	
		Building systems				
		Accessibility				
	Construction→	Key documents			Housing construction	
		Materials				
		Methods				
	Markets→	Consumers			Housing markets	
		Producers				
		Bubbles and crises				
	Policy→	Key stakeholders			Housing Policy	
		Supply-based				
		Demand-based				
		Graduate certificate →	= 6 credit hours certificate core	= 2 credit hours of graduate electives (mix-and-match of 6 cells)		“Hackathon” (750 minutes of contact time = 1 credit hour capstone for each certificate)
		Professional certificate →	= 8 credit hours professional certificate (mix-and-match of 24 cells)			

Impact to the institution

Housing Camp is the first initiative at Virginia Tech to bring together both professionals and graduate students in a highly flexible, problem-based learning structure built around sub-credit hour modules and micro-credentials. Inherent in this structure is a recognition that tackling complex, real-world problems requires individuals oriented to flexible, adaptive, lifelong learning and curricula that foster such an orientation. The course is consistent with the *Ut prosim* ethos of Virginia Tech through its engagement with learners in communities throughout the Commonwealth, with *Beyond Boundaries* through its targeting of hands-on, minds-on learning, and with Intelligent Infrastructure for Human-Centered Communities Destination Area.

Alignment to 4-VA

Table 1. Alignment of *Housing Camp* with 4-VA goals

<p>Increases opportunities and success rate for students in STEM, and access of students to preparation for rewarding careers</p>	<ul style="list-style-type: none"> • The development of affordable housing and housing in general have major impacts on infrastructure systems and the environment, and professionals in civil engineering, environmental engineering, environmental science, earth science, natural resources, and watershed management regularly interface with developers, local planners, and others in the housing industry. Innovative and sustainable development are increasingly regarded as complex engineering and science problems, and <i>Housing Camp</i> provides flexible, adaptive learning opportunities that can complement and enhance existing graduate offerings and help students build networks with professionals. • Flexible modules and micro-credentials offered primarily in the summer semester are more likely to be compatible with graduate STEM degrees that offer limited room for elective courses. • Modules are oriented to problem-based, applied learning that is highly valued by employers, and requiring each course to have a centerpiece deliverable capable of earning a micro-credential furthers the emphasis on hands-on, minds-on learning.
<p>Defines or improves instructional models</p>	<ul style="list-style-type: none"> • The modular instructional model detailed above presents a highly granular, flexible, and adaptive structure that can readily be mimicked in other graduate and undergraduate degree and certificate offerings. • The 250-minute module is widely compatible both with the credit hour system found in higher education and with the crediting systems found in many continuing and professional education schemes. • The 250-minute module encourages more involvement by faculty and by external professionals in instruction that is responsive to quickly changing contexts, whether that responsiveness is motivated by crisis (economic, public health, etc.) or by changes in a field, discipline, or industry. • The instructional model is learner-centered, both by allowing lifelong access to module content and by allowing students to be more selective about how and when they acquire specific skills and knowledge as their needs change.
<p>Increases research competitiveness</p>	<ul style="list-style-type: none"> • The Virginia Center for Housing Research, by having consistent educational offerings that engage both graduate and professional students, would have a system in place through which broader impacts could be articulated and achieved. • The data gathered on student learning outcomes from this novel instructional model will encourage research contributions to scholarship on education.

Project management: Development, delivery, and dissemination

Table 2. General project management

Pilot Year—Spring 2020 through Fall 2020	
Description of task	Time frame
<u>Development</u> : Course approvals (one credit hour) <i>Deliverable: multiple special studies GRAD 5984 courses in timetable</i>	April 1 – April 30
<u>Development</u> : Agreements with instructors <i>Deliverables: signed documentation indicating obligations, payment scheme</i>	April 15 – April 30
<u>Development</u> : Module preparation (video and audio asynchronous content; readings; case studies; assignment) <i>Deliverables: syllabuses; Canvas course sites</i>	April 1 – May 29
<u>Development</u> : Micro-credential design for modules <i>Deliverables: badge approval in appropriate workflows</i>	April 1 – May 29
<u>Development</u> : Testing web interface for learners (including Canvas instance, registration site through CPE, VCHR website) <i>Deliverables: Canvas instance and registration workflow beta testing</i>	April 6 – June 15
<u>Delivery</u> : Asynchronous module content completion by learners <i>Deliverable: monitoring of student progress through Canvas data</i>	June 15 – July 26
<u>Delivery</u> : Synchronous or in-person module content completion <i>Deliverable: Validation of badges and/or grades for learners as appropriate</i>	July 27 – August 14
<u>Debriefing</u> : Survey and interview of learners <i>Deliverable: Report on findings from surveys and interviews</i>	August 3 – August 21
<u>Debriefing</u> : Stakeholders meeting <i>Deliverable: Best practices report</i>	September

Budget

Category	Amount	Justification
Administrative stipend for VCHR Associate Director of Education, who manages <i>Housing Camp</i>	\$23,000	See below
Stipend for graduate wage student to support and maintain <i>Housing Camp</i> infrastructure	\$5,000	See below
Instructor stipends for faculty to design and develop each module	\$22,000 (eleven modules, \$2,000 each)	See below
* Current Associate Director of Education is Thomas Skuzinski. The graduate student currently targeted for the wage position is Andrew Barnes in the Myers-Lawson School of Construction. Anticipated instructors include Andrew McCoy, Melissa Jones, Hyojung Lee, Freddy Paige, Phillip Agee, Lisa Tucker, Xinghua Gao, Elizabeth Morton, and Thomas Skuzinski.		
Total	\$50,000	

BUDGET JUSTIFICATION (4-VA)

A.	<u>Senior Personnel</u>	\$23,000
	<ul style="list-style-type: none">• Thomas Skuzinski will serve as the manager of the Housing Certificate pilot in his role as Associate Director of Education for Virginia Center for Housing Research (VCHR). Work will include coordination of external funding applications, meetings with key university, college, department, and program personnel, coordination with Housing Camp faculty, development of contracts and marketing materials in coordination with VCHR, and other tasks as needed. His effort spans January 2020 through August 2020 and equates to roughly 2.5 months summer salary paid as an administrative stipend	
B.	<u>Other Personnel</u>	\$27,000
	<ul style="list-style-type: none">• One graduate student (Myers-Lawson School of Construction) to assist the core strategic team and provide additional curricular design and instructional support. \$5,000• Faculty instructors to be paid at a rate of \$1,000 for module development and an additional \$1,000 for delivery of each module. 4-VA would support eleven of the modules. \$22,000.	
TOTAL		\$50,000