

HONORS IN HIGHER EDUCATION

A journal of proceedings from HERU (Honors Education at Research Universities) published every two years, concurrent with the biennial meeting of the HERU conference.

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Preface

Welcome to the inaugural edition of *Honors in Higher Education*, the Journal of Honors Education at Research Universities (HERU). HERU was formed in 2013 by members of the Big Ten Academic Alliance (formerly the Council on Institutional Cooperation) as a biennial conference of honors colleges and programs at research-oriented institutions of higher education. It was the hope of the founding committee and inaugural conference that HERU would be an opportunity for our peers to come together, sharing best practices and building relationships that would benefit us all. Furthermore, it was hoped that this structure would allow for the organic growth of HERU that is responsive to changing needs without imposing a cumbersome or restrictive structure. Now, after two very successful conferences, I believe we can confidently say that HERU is a great success and *Honors in Higher Education* is the first of many tangible fruits of this important endeavor.

Honors education has existed in the United States for decades and each honors college or program is as unique and distinctive as the university of which it is a part. Recently more colleges and universities have created honors programs and colleges as a means to attract and retain the highest achieving students. This has led not only to greater awareness of honors education but also to a long overdue consideration of the value of such enhanced academic programs. Higher education in general has become increasingly subject to assessment and accreditation while everyone from parents and students to lawmakers simply look to immediate practical “results” (i.e., employment) as the ultimate indicator of a program’s worth.

Most honors programs, however, engage students in an holistic learning experience. Certainly our students are being educated at the highest level, engaging in challenging curricula, and producing honors theses that are often of publishable quality and worthy of master’s degrees. Yet so much of what our programs offer are less tangible and far more long ranging, such as fostering a community of critical thinkers who value learning for its own sake, developing mentoring relationships between faculty and

students and between the students themselves, and creating an environment where our students are challenged to think not just critically but ethically about the challenges facing our world. These are invaluable components of honors education even if they are difficult to quantify and measure.

Honors in Higher Education is expected to not simply be the official journal of HERU, but the premier outlet for research into the impact and effectiveness of honors education. We are a community based upon and built by those who value research and intellectual engagement and it is appropriate that we turn our gaze upon our own endeavors. In this first volume you will find what we might consider “baseline” essays that are pedagogical in nature, sharing best practices and methods, essays that consider the socio-emotional abilities fostered in honors education, and others that promote effective curricular innovations.

I have often commented that I believe honors education should have two fundamental pillars: innovation and integration. In honors education we are able to be nimble, to innovate and try out new techniques and approaches to education. But we are also to be well integrated into our host institution; when we develop something that enhances the educational experience of honors students, it should be shared with all students. *Honors in Higher Education* is an example of these principles at work, a vehicle for sharing our findings with the broader community so that all might benefit.

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Honors in Higher Education: An Introduction to the Inaugural Issue

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Abstract

This paper introduces the inaugural issue of *Honors in Higher Education*, which includes an impressive array of authors from many disciplinary backgrounds, writing for a broad audience of honors educators and administrators, about issues such as curriculum, research, and community service. Several fundamental themes weave throughout all the articles: What are current practices in honors, how do these accommodate – or fail to accommodate – the needs of honors students? How can current practices be informed and improved through assessment and innovation? How could novel practices in one honors program or college inform those at other institutions? Readers should find *Honors in Higher Education* to be a useful resource, with many examples of programs and ideas that can be replicated across institutions.

Honors in Higher Education: An Introduction to the Inaugural Issue

We are delighted to introduce readers to the inaugural issue of *Honors in Higher Education, The Journal of HERU: Honors Education at Research Universities*. As noted in Brady's preface (this volume), HERU exists to support honors education in research universities, through its biennial conference and now through this journal.

Honors education, administered within over 800 honors colleges and programs in two- and four-year institutions across the U.S. (National Collegiate Honors Council, 2015) and the world (Smith, this volume), serve the best interests of some of the most academically motivated college students. In the course of this service, honors colleges add quality to the academic mission of their host institutions by promoting the highest intellectual standards. Necessarily differing in form and content across individual institutions, all honors programs and colleges share the basic goal of identifying and supporting the most motivated and talented students as they learn how to prepare not only for successful careers, but also for life-long learning and meaningful civic engagement (e.g., Humphreys, 2008). This goal is met through innovative and challenging programming in the areas of curriculum, undergraduate research, and community engagement.

This first issue of *Honors in Higher Education* includes an impressive array of authors from many disciplinary backgrounds, writing for a broad audience of honors educators and administrators, about exactly these issues – curriculum, research, and community service. Several fundamental themes weave throughout all the articles: What are current practices in honors, how do these accommodate – or fail to accommodate – the needs of honors students? How can current practices be informed and improved through assessment and innovation? How could novel practices in one honors program or college inform those at other institutions?

Readers should find *Honors in Higher Education* to be a useful resource, with many examples of programs and ideas that can be replicated across institutions.

A Preview of the Contributions

The first several papers address curricular issues. Kastner, McCall, Cutler, and Dolliver take an interdisciplinary approach (a hallmark of honors education) in describing attempts to change their institution's approach to honors education generally and the curriculum of their introductory honors seminar specifically, by applying research and theory from psychology and sociology. They discuss infusing their curriculum and programs with lessons from, for example, Dweck's work on mindfulness to approach the education of honors students more holistically, more individually.

In the second paper, Smith also discusses an innovative approach to first-year programs, one necessitated by dwindling resources in the face of rising enrollment. In particular, her honors college restructured its first-year seminars and incorporated undergraduate teaching assistants as teaching partners for faculty members. The course redesign also included higher levels of collaborative and self-reflective learning practices. Smith's article provides a practical look at the challenges and opportunities of such a collaborative learning model.

Chang, Hall, and Bottoms provide a broad perspective on curriculum and programming with their discussion of multifaceted efforts aimed at (a) supporting the unique needs of a very diverse student body and (b) realizing the benefits of student and faculty diversity. They present ways they have infused diversity and an appreciation for diversity (broadly defined) throughout honors education, providing many concrete examples of their diversification of course offerings, the honors faculty, and so forth.

Next, Cooke, Quimby, Horvath, and Levin provide a blueprint for a living/learning community anchored by biological sciences-related curriculum, research, and service. Students in this program take classes and conduct research in the life sciences, both on campus and in the community at federal and other biomedical research facilities, where their work entails a service-learning component that benefits students and community partners.

The theme of community-engaged undergraduate research continues in the paper by Amar, Haggerty, Ladenheim, Silka, Welcomer, and Jemison. They describe a multi-disciplinary collaborative research effort focused on sustainable food systems. Students in the program learn to work in partnership with faculty members and community groups such as food banks to pose and answer questions of mutual interest.

The next two papers address a special kind of honors research and scholarship – the senior honors thesis. Students often face significant challenges in completing this capstone accomplishment, perceiving it as a monumental hurdle too high to clear. Both papers offer excellent ways to support students both individually and structurally, increasing the numbers of students completing the capstone thesis. Specifically, Gutgold and Rodgers focus on innovations such as intensive specialized mentoring, dedicated thesis-focused seminars, and structured written thesis guides, while Baker and Williams describe a program using predictive analytics to track student progress, an automated system of milestone reminders for students and their faculty advisors, and various strategies for connecting students to faculty members to facilitate the beginning of a research project.

If curriculum and research are two pillars of honors education, then surely community service and service learning constitute a third. Hoar continues the theme of community engagement started by Cooke et al. and Amar et al. by describing a service-learning program

framed by the tenets of social entrepreneurship. In this model of community engagement, the efficacy of students' service activities, their specific community impact, and the assessment of such take center stage.

Our issue ends with Smith's critical review of the book, *Talent Development in European Higher Education*, which describes honors programs across northern Europe. Honors is an international endeavor, and programs in the U.S. have sometimes served as models for programs in other countries. Much is to be gained by collaborative work with other nations as we all move forward in improving honors education. Smith clarifies what we can all learn from this book.

Conclusion

Most of the articles in this issue describe efforts, varying in scope, to assess the usefulness of the novel programs described. As we pass our editorial duties along to the next editors, we hope that as HERU grows, so too will research in our field and wide dissemination of that research through *Honors in Higher Education*. That is, as an organization – actually, more a collective than a structured organization, by design – one of HERU's goals is to foster the extension of the unique research mission of our institutions to our honors colleges and programs, not merely to assuage the calls for evaluation that all programs in higher education face, but to truly understand the efficacy of our efforts – our programs, our courses, our advising, our student advocacy, and so forth. We are currently experiencing a rapidly increasing use of multivariate social science statistical methods to investigate many aspects of higher education, honors should be no different. In turn, the quality of honors education should continue improving nationally, and even internationally. We hope that this first issue of *Honors in Higher Education* will not only inform current practices in honors colleges across the nation, but also foster creative thought about how to achieve a more sophisticated level of self-examination through research.

Acknowledgements

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Leveraging Insights from Psychology for Pedagogical Innovation

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Abstract

This article details the pedagogical value of psychological insights from Drs. Carol Dweck, Oliver James, and Edwin Friedman. While authored for lay readership, three of their books provided a conceptual basis for the redevelopment of a university-based introductory honors course. By incorporating Dweck's, James's, and Friedman's insights, the course now exhorts students to focus on growing in scholarly competence and often-neglected "emotional" abilities (e.g., decisiveness) important for scholarly leaders. Although anecdotal, evidence suggests that the pedagogical innovation has helped students understand their "scholarly identity" more in terms of their interests, instincts, and skills, and less in terms of their performance.

Leveraging Insights from Psychology for Pedagogical Innovation

Introduction – a tale of two tears

“I cannot stop thinking about how different my semester would look had I not been in the Honors Program. Last semester I attended a workshop you put on in which you discussed interests, instincts, and skills and this changed my outlook on how I should approach college. Additionally, over the summer I read the book, *Mindset* (by Carol Dweck), that you had suggested during the workshop. I have already adapted my thoughts to be focused on growth rather than glorifying success and I see this benefiting me greatly. I could name many other ways that the Program has positively impacted me but I wanted to mention these few as a thank you and encouragement for this upcoming year.”

– UHP student testimonial regarding the helpfulness of Carol Dweck’s book *Mindset* (Anonymous, 2014)

Honors educators routinely observe the emotional and psychological vicissitudes of their students. Metaphorically speaking, a “tale of two tears” can be recounted. On the one hand, educators may observe students whose eyes are full of tears of burnout, fatigue, and hopelessness; such students may be anxiety-ridden, emotionally or psychologically “stuck” in a muddy preoccupation with getting the right grade, fatigued from striving to maintain a performance-based identity. Many such students have lost the joy of learning and, for reasons that at least one psychologist (Dr. Carol Dweck, author of the book mentioned in the student testimonial above) can provide, have *stopped growing* as scholars. On the other hand, honors educators may observe tears of real joy; these students, through a variety of curricular, co-curricular, or extra-curricular means, have found ways to feed their intellectual curiosity, clarify

their sense of personal identity as a scholar, all-the-while growing in competence and scholarly skills. This “tale of two tears” is, admittedly, an oversimplification of a full range of psychological and anthropological issues, and, to be sure, there are no easy quick fixes. However, scholarly insights from the fields of psychology, sociology, and anthropology (just to name three) shed light on how honors educators might begin to strategically steer more students towards joy and fulfillment, giving them a better chance of avoiding burnout and entrenched anxiety. Through a pedagogical approach that leverages three scholars’ insights, a new introductory honors course (*Introduction to the University Honors Program*) was conceived and constructed. Innovators for the course drew on the wisdom of three scholars as expressed in three books: psychologist Carol Dweck and her best-selling book *Mindset: The New Psychology of Success* (Dweck, 2006), psychologist Oliver James and his popular *Affluenza: How to be Successful and Stay Sane* (James, 2007), and the late sociologist Edwin Friedman and *A Failure of Nerve* (Friedman, 2007). Their three books offered theoretical and practical insights that, in a pedagogical innovation described here, helped craft a genuinely “holistic” approach to student teaching. The term “holistic,” used at times in this article, relates to the concept of helping bring about student “wholeness,” and both terms were defined in 2013 by one honors educator:

“By holistic, I mean a perspective that takes into account persons as unified and whole entities...Honors students, like all other students and like all people, are multidimensional, complex, unique, and infinitely varied. In countless different ways, they are a blend, as are all human beings, of mind, body, and spirit. If the ultimate goal in contemporary honors programs and colleges is to help students learn to be, in every way, the best people they are capable of being, remembering that they are not disembodied intellects is necessary. They think, they feel, they

search for meaning, they sweat, they love, they read; they are in short, whole people, and they are best served if educators never forget their wholeness”

(Schuman, 2013).

Insights from Oliver James, Carol Dweck, and Edwin Friedman

“Psychologists squabble over what humans’ fundamental needs are, but usually agree on four: we need to feel secure, emotionally and materially; we need to feel part of a community, to give and receive from family, neighbours and friends; we need to feel competent, that we're not useless, are effective in chosen tasks; and we need to feel autonomous and authentic, masters of our destinies to some degree and not living behind masks” (James, 2007).

In a book intended to persuade (and alarm) readers of Western Civilization’s so-called “Affluenza virus,” a destructive sociological force that fuels (particularly among successful persons) an unhealthy, psychological preoccupation with “money, possessions, appearances (physical and social) and fame” (James, 2007), Oliver James details why and how high-achievers (including, arguably, many honors students) often suffer from psychological and/or emotional distress. Referencing four fundamental human needs recognized by psychologists, James convincingly makes the case that anyone preoccupied with “getting more” (not just money and affluence, but also academic credentials) can find themselves in distress. Drawing on his scholarship as a psychologist, he highlights four fundamental human needs and how high-achievers might find those needs unmet (or disrupted). First, there is the need to feel secure; some high-achievers might experience feelings of insecurity and anxiety:

“If you are always worrying about whether you have enough... You will have a nameless sense that there is something else you should be doing, a free-floating anxiety. You will

be depressively running yourself down because you do not do as well as others, moving the goalposts if you do succeed” (James, 2007).

Second, there is the psychologically acknowledged need to be a part of a community; some high-achievers might find themselves with feelings of alienation:

“In choosing friends you are motivated by their use to you, not a desire to be close, emotionally, and to enjoy shared pursuits for fun rather than competition...Your values prioritise selfishness, not contributing to the wider community, so you miss out on the large satisfaction to be gained from supporting others and feeling supported...” (James, 2007).

Third, James mentions the need to feel competent; in high-achieving culture, there can be a tendency towards self-criticism and perverse feelings of incompetence, along with feelings of insecurity:

“However conventionally successful you are, it is never enough...There is only one response that you know: try even harder....walls of self-criticism and rampant anxiety rise up.” (James, 2007).

Fourth, James references the human need be autonomous and authentic; threats to this need, of course, include feelings of inauthenticity and powerlessness. James argues that “false wants” (in a society where the “Affluenza” virus reigns supreme) are the source of this (James, 2007).

However, in high-achieving honors-education culture, “false wants” of another variety can arise—a preoccupation with nothing more than straight-As, leadership titles, and awards—and lead to students not experiencing their lives as authentic persons.

James argues that the feelings of insecurity and anxiety can fuel a whole range of pathological and destructive behaviors, including (but not limited to) trying to cope with feelings

of inadequacy by narcissistically “falsely building oneself up” and exaggerating one’s “wonderfulness,” desperate attention-seeking, and self-medication through alcohol, drugs, and other “quick fixes” (James, 2007)). With respect to the third human need (the need to feel competent) cited by James, high-achieving academics who are solely focused on “making the grade” may, ironically, fail to grow in real skills and competence. Indeed, one of the great tragedies in American higher education (and, sadly, honors education) is the credentialing of graduates who, “bring very little to the table.” According to educational researchers Richard Arum and Josipa Roksa in *Academically Adrift: Limited Learning on College Campuses*, 45 percent of college students experience no statistically significant gains in critical thinking, complex reasoning, and writing skills during their time at college (Arum & Roksa, 2011).

Psychologist Dr. Carol Dweck, in *Mindset*, perhaps best articulates the psychological insights needed for achieving real growth in skills and competence while steering students away from the very anxieties to which James alludes. Dweck’s book provides a helpful distinction between what she terms the “growth mindset” and the “fixed mindset.” Dweck contrasts the growth mindset and the fixed mindset:

“Believing that your qualities are carved in stone—the *fixed mindset*—creates an urgency to prove yourself over and over” (Dweck, 2006).

“The *growth mindset* is based on the belief that your basic qualities are things you can cultivate through your efforts. Although people may differ in every which way—in their initial talents and aptitudes, interests, or temperaments—everyone can change and grow through application and experience” (Dweck, 2006).

Dweck argues that the fixed mindset can fuel anxiety and, indeed, even arrested development in students, including talented, high achievers. More positively, Dweck argues that

educators (and parents, and coaches) should communicate messages about growth, so that their students begin to attribute their performance (e.g., grades, awards, etc.) to the fact that they have studied and labored (rather than attributing performance to being “smart” or “bright,” improperly understood as fixed abilities). By communicating with growth-mindset vocabulary, educators affirm the development and acquisition of skills, knowledge, and competence and—significantly—create a culture in which students begin to see that they can learn from “failure” rather than descending into an “identity crisis” that is so common amongst high-achieving academics (and others—most notably, athletes) who have cultivated such an unhealthy performance-based identity. Dweck goes on to elaborate:

“Should we try to restrain our admiration for our students’ successes? Not at all. It just means that we should keep away from a certain *kind* of praise—praise that judges their intelligence or talent. Or praise that implies that we’re proud of them for their intelligence or talent rather than for the work they put in.” (Dweck, 2006).

In *Mindset*, Dweck discusses a survey comparing statements of growth-mindset college students and fixed-mindset college students. The contrast is revealing, especially when the two types of students were asked to state the characteristics of being a “successful student.” According to Dweck, “students with the fixed mindset described ideals that could not be worked toward. You had it or you didn’t” (Dweck, 2006, p. 185). The fixed-mindset students stated that their procrastinating habits, desires to quit, and anxieties all came as a result of falling short of their perceived standards of success. On the other hand, growth-mindset students described the ideal successful student as a student who never gave up on learning and saw their grades as a growth opportunity and encouragement to improve, not as their identity. The growth-mindset

students were motivated to reach their ideals of a successful student, whereas the fixed-mindset students felt discouraged and unable to work towards this goal.

In addition to Oliver James and Carol Dweck and their wisdom, Edwin Friedman offers insights from his observations on the sociology of families, institutions, and society-at-large. Prior to his death, sociologist (and family therapist and leadership consultant) Edwin Friedman authored an insightful book that, like Dweck's and James's works, offers guidance for educators seeking to foster a genuinely "holistic" approach to education. If Dweck's *Mindset* and James's *Affluenza* offer psychological insights, Friedman's *A Failure of Nerve* (Friedman, 2007) provides insights into leadership-related problems rooted in the sociology of institutions and the emotional (im)maturity of individuals as well as organizations. While his insights touch on a variety of issues, two of Friedman's insights into leadership-related phenomena ("differentiation" and "decisiveness") can help educators in teaching and caring for high-achieving students including honors students.

Arguing that there is a "chronic anxiety" in poorly led organizations, Friedman insists that leaders should heed the important "emotional dimension" of their organizations (Friedman, 2007), and he argues for the development (i.e., to borrow Dweck's language, *growth*) of emotional strength and maturity—which can never be replaced by concepts, research-based methods, or intellectual ideas. Much of Friedman's theory of leadership is tied to what he terms "differentiation," which—along with intellectual competence—can help a scholar grow into a non-anxious, emotionally "strong," well-differentiated leader (which, he argues, is sociologically essential for all well-led organizations):

“...by well-differentiated leader I do not mean an autocrat who tells others what to do or orders them around, although any leader who defines himself or herself

clearly may be perceived that way...Rather, I mean someone who has clarity about his or her own life goals, and, therefore, someone who is less likely to become lost in the anxious emotional processes swirling about. I mean someone who can be separate while still remaining connected, and therefore can maintain a modifying, non-anxious, and sometimes challenging presence...It is not as though some leaders can do this and some cannot. No one does this easily, and most leaders, I have learned, can improve their capacity” (Friedman, 2007), p. 14).

Friedman connects “differentiated” leadership to a scholar’s development in the capacity of “decisiveness.” Decisiveness, Friedman argues, can help leaders (including honors students aspiring to leadership) become not only scholarly and thoughtful, but also interpersonally (and intra-institutionally) effective leaders. With remarkably holistic insight into human anthropology as well as sociology, he argues for a reorientation of multiple conceptions of leadership including a much-needed shift in emphasis from *being informed* to *being decisive* (the latter of which, Friedman argues, is more important) (Friedman, 2007). Friedman laments that many “leaders tend to rely more on expertise than on their own capacity to be decisive” (Friedman, 2007), p. 12), and he attributes this tendency to an “obsession with data and technique that has become a form of addiction,” turning “professionals into data-junkies” who “avoid or deny...emotional processes within their families, their institutions, and within society” (Friedman, 2007), p. 14). Friedman’s sociological insights, in particular the emotional concepts of differentiation and decisiveness, offer much to honors educators who strive to treat their students as “whole, integrated human beings, with minds, spirits, and bodies” (Schuman, 2013), p. 5).

Incorporating the scholars' insights into the new course

In the redesigned *Introduction to the University Honors Program* class, the insights of James, Dweck, and Friedman are intentionally incorporated in a number of areas. Four particular instances are highlighted here, providing a framework for other honors educators keen to do the same within their curricula. First, and with respect to James' insights into the human need to *feel competent* and Dweck's insights into the idea of *growing* in competence, the opening module (creatively titled "The cruelty of incompetence") features a lecture that encourages students to ponder the areas of competence and knowledge in which they would like to grow. The class session also includes an in-class activity in which students discuss the knowledge, skills, and abilities that they currently possess and, significantly, wish to grow in or acquire. The two discussion questions, which all students discuss privately in pairs, are designed to prompt students to ponder not only their current knowledge, skills, and competence (i.e., "what do you *currently* bring to the table?") but also their *future* growth in such areas (i.e., "what would you *like* to bring to the table?"). The class lecture cites the supreme importance of both James's (the importance of competence) and Dweck's (the healthy aspiration to *grow* in competence), and the module assignment asks students to reflect on these issues in the form of a short essay:

"In 150-200 words, answer the following questions. Recall the importance of continuing to grow in competence and knowledge! What do you "bring to the table?" That is, what do you currently know (about the world, particular areas of interest, etc.), and/or what skills (abilities) do you currently possess? What would you like to "bring to the table?" That is, what would you like to know (about the world, particular areas of interest, etc.), and/or what skills (abilities) would you like to acquire?" (*Introduction to the University Honors Program* course question)

Second, and with respect to James’s insights from his book *Affluenza*, an entire lecture is devoted to “Values: people, money, and ‘affluenza.’” This lecture, which begins with an exercise in which the class, as a group, re-orders the words *use, serve, people, and money* (the correct order being use money, serve people), summarizes Oliver James’s insights into how many high achievers (e.g., successful businesspeople) have ended up experiencing emotional distress because of their preoccupation of acquiring more—not just money, but also fame, credentials, accomplishments, et cetera. The lecture includes a handout, entitled “How ‘Affluenza’ attacks 4 fundamental human needs,” that handsomely summarizes James’s insights on the importance of the need to feel secure, the need to be a part of a community, the need to feel competent, and the need to be autonomous and authentic. The lecture ends with an exhortation (based on the psychological reasons provided by James), to the students, to be less preoccupied with seeking prestige, awards, money, and accomplishments and more focused on serving others through sacrifice and experiencing the joy of seeing others benefit.

A third part of the course leverages Dweck’s growth-mindset insights. Approximately one-third of the way into the course, a handout (entitled “Discovering your scholarly identity,” see Figure 1 below) is distributed and provides a lengthy discussion on the importance of viewing oneself in terms of things *other than performance*. The term “performance-based identity” is used to talk about the unhealthy singular preoccupation with academic performance and accomplishments (e.g., grades, awards, scholarships, titles of leadership positions, et cetera), and is contrasted with a framework, diagrammed in the handout, that presents an alternative way for scholars to view themselves—that is, in terms of their interests, their instincts, and their skills

(which they can *grow* in).

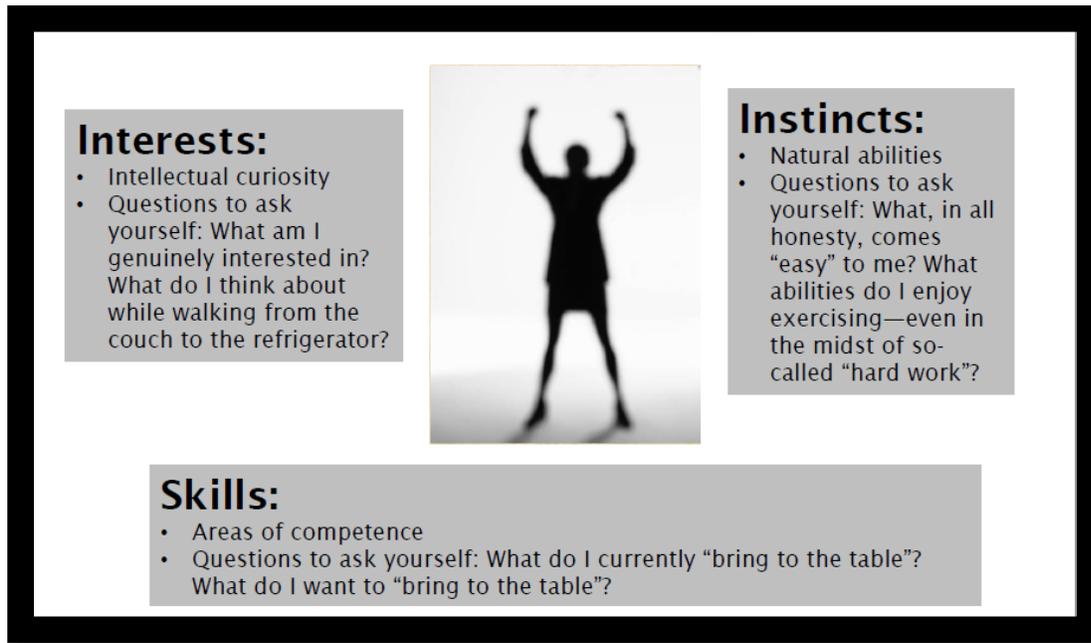


Figure 1. “Discovering Your Scholarly Identity” handout distributed in *Introduction to the University Honors Program*; students are encouraged to see their performance (grades, ACT scores, scholarships, leadership position titles, etc.) as only an expression of their identity, which they are encouraged to view consisting not of marks but “interests,” “instincts,” and “skills” (which they are always growing in).

Fourth, the course incorporates Friedman’s insights by devoting an entire module (and class lecture) to the concept of “the competent, well-differentiated leader.” That module features two prose-heavy handouts containing Edwin Friedman’s wisdom on the notion of being differentiated (that is, connected to others while remaining true to one’s own scholarly insights) and the importance of being decisive (which Friedman argues is needed lest scholars become mere information-gatherers or “data junkies,” to use Friedman’s language). In the class lecture, students are encouraged to contemplate what it means to be a well-differentiated leader (i.e.,

“someone who has clarity about his or her own life goals”). The module assignment includes an essay question that focusses on differentiation while also, incidentally, revisiting the already-addressed concept of competence:

“Reflecting on your own life as a scholar, how might *you* grow in both competence as well as the capacity to “self-differentiate”? What would it look like for you to continue to grow into a competent, scholarly, well-differentiated leader? Limit your response to 150-250 words.” (*Introduction to the University Honors Program* course question)

Feedback received

The new course exposes students to the psychological insights of both James and Dweck, as well as those of Friedman, and preliminary anecdotal evidence suggests these scholars’ insights have made a significant difference in individual students’ lives. Scores of students and parents have remarked about “how refreshing” it is to have an introductory course embracing such values as the “growth mindset”—with several remarking, effectively, “This is so refreshing” and “This is exactly what my son/daughter needs to hear.” Many students see not only the scholarly insight of Dweck and James, but also the *practical relevance* of their insights. Just as many talented, promise- and potential-filled athletes burn out—and lose the joy of their sport—because of the pressure to perform, many of today’s potential-filled honors students burn out—lose the joy of learning—because their education has become nothing more than a series of “grade-earning” opportunities to prove their supposedly fixed set of traits, to prove that they are indeed smart, bright, and talented. However, by providing a vocabulary that conforms to the helpful language of such scholars as Carol Dweck, the new course stands to help reverse such problems.

With Dweck's, James's, and Friedman's insights in full view to students, the new *Introduction to the University Honors Program* course has provided students with not only new vocabulary, but also the novel "scholarly identity framework" (see Figure 1, above) that emphasizes what holistic honors education rightly values: intellectual curiosity, the development of scholarly competence (and skills), and the graduation of scholarly, thoughtful, and fulfilled (joy-filled) leaders who can serve society. This programmatic objective can be achieved, in part, through course pedagogy that draws on the insights of Dweck, Friedman, and James; their insights stand to help students keep the joy of learning alive, grow in scholarly skills, and become more emotionally mature as scholarly, thoughtful leaders.

Conclusion and future evaluative steps

If universities are to be intentional in fostering "holistic" approaches in honors education, they might heed insights into what makes honors students "human." Psychology will always offer insights for honors educators, and the new course described in this article reminds us of that. This article detailed (a) the relevance of three psychologists' insights for honors educators, (b) the intentional incorporation of those insights into an introductory course for honors students, and (c) preliminary, albeit anecdotal, evidence of the success of this pedagogical approach. With respect to the latter, the evidence is, to be sure, not sufficiently systematic for robust evaluative purposes. The principal author, during the next year, plans to superintend a larger, second research project that will, amongst other research tasks, gather via focus groups substantial qualitative feedback from past students (drawn from the Spring 2014, Fall 2014, Spring 2015, Fall 2015, and Spring 2016 semesters) on the degree to which they have in fact internalized the theoretical insights presented during the course.

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Supporting Peer Educators in First-Year Honors Seminars at Virginia Tech

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Abstract

First-year seminars help students transition to and get involved in college faster, which can result in higher academic achievement, stronger peer relationships, and deeper self-knowledge: elements of a more successful and satisfying college experience. University Honors at Virginia Tech began offering first-year seminars in the mid-1990s but experienced difficulty maintaining them as our student population grew. This difficulty led us to reform the structure, content, and leadership of the seminars. Now they are co-led by student teaching assistants (STAs) and faculty members. The new seminars emphasize active, collaborative learning and self-reflection. We educate our STAs through pre-semester training and a fall-semester student teaching practicum. This new course model better supports our STAs and encourages students to form good habits early. Although we still have many opportunities for improvement, the new first-year honors seminar and student teaching practicum are fostering reflection, faculty and peer relationships, and campus integration.

Supporting Peer Educators in First-Year Honors Seminars at Virginia Tech

Our Program's Context and Philosophy

Virginia Tech is a public land-grant research institution of over 30,000 students, 1,600 of whom are in University Honors. We serve students from every college within the university and offer multiple diploma options, two living-learning communities, and our own study abroad program.

While the structure of our program has changed over the years, our philosophy has remained consistent: We believe that honors exists in the freedom students achieve when they take control of their education. We coach our students to seek freedom within discipline—to think creatively, to declare their priorities. Our philosophy is eloquently articulated by Parker Palmer in his book, *The Courage to Teach*: “If boundaries remind us that our journey has a destination, openness reminds us that there are many ways to reach that end” (77). Though our students share similar experiences, no two students have ever graduated from University Honors, or “reached that end” in exactly the same way.

Our students select experiences from over a dozen ways of earning honors credit that culminate in one of six honors diplomas. We incentivize high-impact practices such as working closely with faculty, studying abroad, participating in undergraduate research or internships, and engaging in peer education (Kilgo, Sheets, and Pascarella 510–512, 519–523). Our program is not disciplinary. Within the framework of the honors diplomas, our students have institutional support to develop their passions, identities, goals, and agency.

History and Development of Our First-Year Honors Seminars

Our first-year seminars were founded out of necessity. On a September afternoon in the early 1990s, our then-director, Dr. Charles “Jack” Dudley, sat down with a group of honors

seniors and asked who was applying for graduate school or major national scholarships. It was worse than he suspected. Not only did no hands rise, but only a few students had even heard of the GRE (Dudley).

As he tells it, this incident was the impetus for the very first First-year Honors Seminar (FHS) at Virginia Tech. He created one small class of first-year students with impressive potential in their honors applications. Dr. Dudley taught civil argumentation through discussion of current events and literature, he shared information about scholarships and graduate school, and he encouraged the students to learn from each other (Dudley).

While not initially a primary course objective, peer education became a clear strength of the seminar. Students from disparate disciplines and backgrounds found friendships and support, motivation and inspiration. They showed each other creative ways to earn honors credit through undergraduate research, internships, and study abroad. For the first time, Virginia Tech honors students had formed a community (Dudley).

When our first residential community opened in 1994, we made FHS a requirement for residential students. This was easy with only 20 students in honors housing. However, over the next 17 years, our residential population increased to over 400. This growth threatened FHS because every section needed a faculty facilitator.

We struggled to sustain FHS: we expanded class sizes, canceled non-required sections, involved all of the University Honors staff, and asked the same faculty members to volunteer semester after semester. Despite these efforts, it had finally become impossible to recruit enough faculty to lead all of the sections. To continue offering first-year seminars, we needed to significantly revise the course structure.

Four years later—after four program facilitators, extensive literature reviews, and several stages of university governance—we had a new first-year honors seminar that incorporated peer education and a student teaching practicum that I teach to support the peer educators.

The New First-Year Honors Seminar

Our new seminar is designed to promote first-year student success. We keep class sizes small—no more than 15 students per section, and frequently fewer than 10—to foster significant faculty and peer interaction. Class activities emphasize active and collaborative learning, a balance of academic challenge and support, and self-reflection. (For more information about the theories and practices that our seminar supports, see Pascarella and Terenzini 616–626, 651–654; Tinto 145–148; Kuh et al. 11–13, 69–72; Light 45–69; Hunter and Linder 285; Bean 149–168, 173–181; Cuseo et al. 16; and Newton and Ender 40–41.)

The course goals, for example, are elaborated versions of Cuseo, Thompson, Campagna, and Fecas' well-supported “four powerful principles of college success”:

1. We want you to practice an active, curious, creative, engaged style of learning, meaning-making, and participation.
2. We want you to get to know yourself better. We want to help you find your niche at Virginia Tech; to encourage you to choose activities, majors, and minors; and to help you set career paths.
3. We want you to know about the resources and opportunities available at University Honors, Virginia Tech, and the surrounding community.
4. We want you to discover how to use social and community networks to make better connections with faculty, graduate students, upper-class students, and your peers (1).

By developing familiarity with university resources, connections with others in the academic community, self-knowledge, and a pro-active approach to education, students are more likely to have a successful and satisfying college experience.

Leadership

All sections are now co-led by a student teaching assistant (STA) and faculty co-facilitator. This dual facilitation model enables first-year students to work closely with both faculty and peers to form influential relationships (Pascarella and Terenzini 620–621, Newton and Ender 8–9).

Peer education also benefits the STAs, perhaps even more than the first-year students (Kuh et al. 195, Newton and Ender 13–14). The following are some typical benefits to peer educators as presented by Dr. Jennifer Keup, director of the National Resource Center for the First-Year Experience and Students in Transition, at the 2014 Institute on Peer Educators:

- “Experiential education opportunity
- Development of employability competencies
- Academic, personal, and interpersonal skill development
- Greater sense of community and campus integration
- Increased knowledge of institutional resources
- Engagement with faculty and staff
- Intercultural competencies
- Leadership training” (slide 26).

Shared leadership also makes this position more viable for faculty. Though we offer suggestions, we let each faculty–student pair decide how to share responsibilities. Most teams follow our recommendations: STAs manage course logistics—such as taking attendance and

communicating with students—and they plan and lead the majority of classes. The faculty co-facilitators mentor the STAs, teach some classes to connect with students and model good pedagogy, and confirm all course grades based on the STAs' suggestions.

Course Structure

Unlike previous versions of the course, in which every section was autonomous, the new FHS includes a loose curriculum and common assignments. Each week, all sections focus on a theme. The themes provide a shared experience among first-year students, and they enable me to train the STAs on each topic as it occurs during the semester. The themes range from practical topics, such as navigating university resources or applying for scholarships, to more abstract ones, such as diversity of perspective or the purpose of liberal education. This flexible structure gives the STAs and faculty co-facilitators the freedom to bring their own passions and strengths into the classroom within the framework of the course.

First-year students study the course themes through pre-class work, in-class activities, and post-class explorations.

Pre-Class Work

Prior to each class meeting, students complete a short reading and reflective writing assignment. The goal is to introduce students to a concept and give them a foundation to build on in class (Bean 100). Short popular or scholarly articles are the most commonly assigned readings, but the teaching teams also use creative sources: short videos, websites, legal documents, news stories, creative writing, speeches, personality assessments, or even personal interviews with peers or faculty whom the first-year students have not yet met. The pre-class reading can be almost anything that offers new perspectives.

The weekly reflective writing responds to the reading, helping students further process and internalize the weekly theme (Bean 97–98). This writing is exploratory and reflective—messy (Bean 100–101). Students should seek to complicate rather than conclude, to try on new perspectives and to question their own. To help students authentically and productively engage in their writing, we created ten optional prompts to guide their reflection. Here are three of the prompts:

- “What confused you? What questions do you have? Use your response as a way to grope toward your own answer, but prioritize the process of searching for that answer over the temptation to arrive at a final decision” (Bean 101–104, 107).
- “What connections do you see between this week’s reading and something from a past week? Why are these links significant? Demonstrate ways in which the texts compose a conversation for you, one text engaging or ‘revising’ another” (Bean 107, 110).
- “Write about the text from two perspectives: believing and doubting. Rather than just recording what you immediately believe and doubt, try to practice ‘believing’ the unfamiliar ideas and doubting the familiar ones. What would it mean if you believed or doubted these ideas?” (Elbow, *Writing without Teachers* 147–190).

Sometimes students choose to reflect in other creative ways, such as creating video responses, cartoons, 3D models, poetry, maps, or other physical artifacts. The form is arbitrary; what matters is that it catalyzes thinking and learning.

In-Class Activities

The in-class activities emphasize discussion and small group work. The benefits of these activities include (but are not limited to) stronger academic achievement, peer relationships,

feelings of self-esteem and belonging, social skills, leadership and public speaking abilities, and appreciation for diversity (Johnson, Johnson, and Smith 31–32; Bean 167–168).

STAs are trained to facilitate collaboration through the think-pair-share pattern, regular ice-breakers, and discussions in diverse formats such as fishbowls, jigsaws, or debates. (For examples of discussion activities, see Bean 176–178; Johnson, Johnson, and Smith 33–35; and Aronson.) STAs also regularly use in-class writing to help students focus on a point or to guide reflection (Bean 104–106). Finally, STAs plan a variety of activities to engage students with different learning styles: their students perform skits to practice approaching faculty, do collaborative drawing to share their perspectives on service, attempt tasks with distractions to review study skills, or calculate the cost of attending college to contextualize scholarships. All of these activities grow out of the pre-class work.

Post-Class Explorations

Outside of class, students engage in active learning through exploration. These assignments are designed to get students out of their dorm rooms to form relationships, use campus resources, and learn their way around the community: connections that expedite college adjustment (Tinto 163–168, Kuh et al. 268–269, Newton and Ender 40–43). By exploring, students can apply class concepts outside of the classroom independently or in small groups. Some exploration prompts invite residential students to participate in their living-learning community programming. Others draw students off campus: they ride the town bus as a class to learn how to leave campus without a car, they visit the local farmers' market, or they hike the nearby Cascades. Students also explore campus, attending free workshops at the Career Center or Writing Center, open seminars in unfamiliar fields, or local concerts and plays. One of the

best prompts encourages use of our Dine with Faculty program, which lets students treat faculty to a free meal at a dining hall (“Dine with Faculty”).

Students enjoy these post-class explorations. The experiential, collaborative nature of exploring together helps them form friendships and feel at home.

Other Assignments

In addition to the weekly routine, students complete three larger writing assignments throughout the semester. These assignments are designed to focus self-reflection on students’ identities and goals, which is linked to success in the first year of college and beyond (Cuseo et al. 22–24; Upcraft, Gardner, and Barefoot 8–9; Kilgo, Sheets, and Pascarella 510; Keup slide 38). At the beginning and end of the semester, students respond to this “Bookend Reflection” prompt, created by assistance from Virginia Tech English professor, Dr. Paul Heilker:

Who are you? Where did you come from, and what was valued there? Who are you here?

What is this place, and what is valued here? Who will you become? Where are you going, and what values will you work to create there?

To ruminate on their first-semester journey, students assemble a final portfolio comprised of the two Bookend Reflections, their three best weekly reflections, and one final metacognitive reflection. This metacognitive reflection is the third larger writing assignment. It asks students to look over their semester writings and notice what they reveal.

This final reflection is where we see the greatest evidence of growth. Students describe what used to seem impossible that they now do with ease. They acknowledge where they stumbled and outline plans to improve. They articulate goals and plan how they will reach them. We keep these final portfolios in students’ files with the intention of returning them at graduation to provide a final reflective benchmark.

Grading

In such a developmental, relationship-centered class, grading feels like a necessary evil; honors students need incentive, but they could fixate on grades at the expense of the creative risk-taking necessary for constructive reflection. To mitigate that risk while still incentivizing high performance, the course and all of its components are graded as Pass or Fail, and the Pass threshold is set at 80%. This system makes the seminar less stressful and still consistent with our other honors credit opportunities, which require a B or better to count toward an honors diploma. Grading Pass/Fail helps not just the first-year students but also the STAs, who make grade recommendations to their faculty co-facilitators, who then confirm all final course grades. This collaborative process engages the STAs in developmental conversations about evaluation. We discuss how class participation, for example, does not necessarily mean speaking regularly in class—it can also mean actively listening and applying class concepts in writing.

In responding to writing, we advise limiting marginal and terminal comments to specific praise or questions. This system encourages STAs to respond in a conversational, human way, which can inspire their students to think more deeply about their ideas. It also deters STAs from trying to correct, proofread, or otherwise evaluate writing in a way that distracts from the content, overlooks evidence of personal investment, and discourages students. (For more information on this style of responding to student writing, see Sommers 107–116, Daiker 153–163, Elbow “Options” 197–202, and Glenn and Goldthwaite 120–125.)

STA Training and Support

In such a complex and potentially influential class, STA training and continued support throughout the semester is critical. We support the STAs through pre-semester training and a full-semester student teaching practicum.

Training

Though FHS is offered only in the fall, the training process begins back in the spring semester. We advertise the opportunity and collect applications from prospective STAs. Once the new STAs have been selected, we meet to discuss the course, their responsibilities, and their summer assignments: readings and a blank fall schedule to be filled with what STAs would like to assign before, during, and after each class. This assignment is a developmental draft: building the syllabus schedule helps STAs think about the semester holistically and become familiar with the course-planning resources that we provide.

Most comprehensive among these is the Resource Bank, which is pre-sorted by weekly topic and then by pre-class, in-class, and post-class activities. Each activity contains a brief description and length estimate to help STAs balance the amount and type of work that they are assigning. We created this edited collection with suggestions from the honors staff and past STAs. Past STAs also helped us create a booklet of sample activities so that new STA cohorts can use, adapt, or model reliable activities while they are learning how to design their own.

In the week before fall classes begin, we have a full day of training. The training is designed to introduce and practice basic teaching skills such as lesson planning, in-class writing, small group work, discussion facilitation, and responding to student writing. The training is also meant to help the STAs realize and trust what they already know. We attempt all of this through interactive workshops that model teaching techniques and connect new concepts to pre-existing knowledge. For example, they review their syllabus schedule drafts in small groups with a rubric that reinforces the course goals, seeks balance in work loads, and promotes inclusion of each STA's strengths and interests. In another session, a panel of STA alumni discuss their experiences and answer questions. (For details about the concepts and techniques included in our

training, please refer to Newton and Ender 192–211; McCann et al. 8–16, 44–54; Johnson, Johnson, and Smith 27–35; Bean 151–163, 173–181; Sommers 107–116; Daiker 153–163; Elbow “Options” 197–202; and Glenn and Goldthwaite 120–125.)

With this pre-semester training and mentorship from their faculty co-facilitators, STAs can successfully teach their first classes. However, the complexity of their responsibilities requires long-term support. Once the fall semester starts, the STAs begin our student teaching practicum.

Student Teaching Practicum

The student teaching practicum (STP) is a three-credit, Pass/Fail course that is required for STAs and provides the academic credit that compensates them for their work. The STAs have a tremendous influence on their students (Newton and Ender 23–24, 189–190) and therefore on the future of University Honors. This influence makes the STP a valuable resource for strengthening our program.

In class, we practice and reinforce the teaching skills that the STAs learned before the semester began, emphasizing teaching authentically from a place of genuine interest and strength (Skorczewski 99–117, Palmer 9–34). We also prepare for the weekly themes in FHS, providing content training exactly when the STAs need it. Finally, we collaboratively work through issues that arise in their classes. Through this classroom community, the STAs become peer educators not just for their first-year students but also for each other.

For example, STAs prepare for the weekly themes through in-class teaching. Each STA leads a 20-minute activity that they could use the following week in their FHS. The other STAs pretend to be first-year students while I observe, taking notes that I give to the in-class teachers.

After the activity, we discuss its merits, limitations, and delivery in a workshop setting. The STAs are gracious, supportive, and constructively critical with each other.

The in-class teaching is highly beneficial. In terms of content, the STAs practice an activity that they could use in their own class. More importantly, they experience how certain things work (or do not work), and they can apply their teaching knowledge to suggest improvements. By connecting teaching concepts to results in someone else's activity, the STAs can more effectively improve their own activities and instruction.

Another way that the STAs engage in peer education is by performing peer observations. Twice during the semester, they visit another STA's class to observe how another person with the same training and curriculum teaches in a different setting. Then they write a reflection that describes what happened and how the observed techniques would or would not work in their own class, a structure based on Margaret McLaughlin's "focused reading response" (168–176). Again, this assignment provides new perspectives and helps students apply their knowledge in a way that improves their own teaching.

Results

The current structure of the class has been in place for the last one-and-a-half years, and we have strong qualitative indications of its success thus far.

First, the latest STA applications show positive trends. In Spring 2015, we received so many more applications than in previous years that we were able to accept STA alternates for the first time. Furthermore, a large percentage of the Fall 2015 cohort are sophomores who applied because they enjoyed FHS so much as freshmen that they wanted to lead sections of their own. The current STAs also report that many of their students would like to be STAs next year. Though we know that older students could bring more experience to their classes, we are grateful

to have students involved early, making time for honors before their majors become too demanding. We also interpret this interest from current and rising sophomores as an indication that the course is being well received by first-year students.

As the STP instructor, I hear how much the STAs gain from their work, and I see them transform into confident leaders during the semester. Congruent with research (Kuh et al. 195, Newton and Ender 13–14), the 2014 STAs reported these benefits from their work:

- “By the end of this STA course, [I was] a different person with a refined set of values and intuition.”
- “This has been one of the most rewarding and challenging learning experiences of my time in college yet—learning how to take charge, be creative, and step up in a leadership position with the confidence and authority I didn’t know I had.”
- “You get to shepherd in a new generation of students. This is intensely rewarding.”
- “Being an STA has allowed me to become more compassionate.”
- “Speaking in front of an audience for extended periods of time is now a ‘no big deal’ task.”
- “The best benefit from being an STA is learning from my students. They have so many important things to say and are also struggling with many of the same problems that I used to or still struggle with. Some of our in-class conversations have been the highlight of that week.”
- “In many ways, I feel as though I am learning more than my students are on a weekly basis.”

- “Being an STA was one of the most meaningful experiences of my sophomore year. It was the most rewarding thing I’ve done in college and brought so much joy and meaning into my life.”

These testimonials show that peer education had a profound effect on these students. Many of them are not planning to be educators, yet through teaching, they developed skills in leadership, self-awareness, and humanity that will serve them wherever they go.

Looking Forward

In the second year of the new FHS, we can celebrate increased support for our peer educators through stronger course materials and training. However, other parts of our vision for this course have not yet been fully realized.

First, we need to improve our collaboration with the faculty co-facilitators. While many STAs receive valuable mentorship from these relationships, we could do more to better guarantee that result. Currently we send the faculty co-facilitators the course materials, connect them with their STAs during the summer, and invite them to the pre-semester training. Many faculty members cannot attend the training, though, which reduces our ability to communicate with them before FHS begins. We are reluctant to require faculty meetings, but perhaps a series of optional information or work sessions would be more accessible. For example, we could host syllabus-brainstorming sessions to facilitate initial conversations between faculty and STAs with honors staff present to answer questions.

Next, we need to continue improving the quality of feedback that STAs get on their teaching: from me, from their peers, and from their faculty co-facilitators. Ideally, I would visit every class once or twice a semester, but the logistics could be prohibitive. Some other options could include building on the peer observation assignment, offering individual or small-group

conferences, assigning more reflective writing, or more closely partnering with the faculty co-facilitators.

Perhaps our largest need is for formal assessment. We gather data through the STA applications, the first-year portfolios, STP discussions, and end-of-semester feedback. Some of this information has already inspired program adjustments. But without articulated assessment goals, we cannot be sure that we are gathering the data we will need to measure our program's effectiveness.

Finally, we hope to continue building the knowledge base of peer education in honors by recruiting and retaining strong STAs. The work is rewarding, but it is significant, and the learning curve is steep. If we can retain more STAs from one year to the next, the level of STP discussions would rise, which would produce generations of better-prepared STAs and first-year students. We would like to attract so many applications that we can be selective, target experienced students, and have STA alternates every year. Having knowledgeable, committed STAs is a priority for our program: they help students develop their passions and take control of their education, cultivating cohort after cohort of reflective and capable honors students.

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Promoting Diversity in an Honors Curriculum

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Abstract

This paper explores curriculum diversity at UIC Honors College from four perspectives: (1) range and types of courses that integrate multiple manifestations of diversity themes; (2) process of course solicitation that allows assembly of the best talents of diverse faculty scholarly expertise; (3) course instruction that benefits from and is tailored to the needs of diverse topics and student populations; and (4) additional efforts that sustain vibrant energy in maintaining a diverse environment for the Honors curriculum and beyond. Both qualitative and quantitative data are presented, together with explanations of how each is enriched by Chicago's unique environment.

Promoting Diversity in an Honors Curriculum

The University of Illinois at Chicago (UIC) aims to foster a community of academic excellence by bringing together a diverse group of exceptional undergraduate students, faculty, and staff. As such, it is one of the most diverse colleges in the U.S. (US News & World Report, 2015), with a higher percentage of Latino and African American students than any Big 10 university. UIC has also been federally designated both as a Hispanic Serving Institution (in 2015) as well as an Asian American and Native American/Pacific Islander Serving Institution (in 2010) (UIC Office of the Vice Chancellor for Research, 2015).

The UIC Honors College is no exception, being one of the nation's most diverse. In keeping with the Honors College's (2012) Diversity Strategic Plan, the College has undertaken many measures to strengthen all aspects of its appreciation for and promotion of diversity, defined more broadly than the ethnic and racial backgrounds and identities of students. One area of effort has focused on the Honors learning environment.

After articulating the college's definition of diversity and providing a short history of the recent increase in the diversity of the student body and faculty, this paper focuses specifically on our curriculum, a cornerstone of our commitment to diversity as a scholarly topic, an intellectual principle, and a moral obligation.

The UIC Honors College and its Conception of Diversity

The UIC Honors College is the academic home to 1550 outstanding and diverse students from every discipline (about 9% of UIC's undergraduates). In Fall 2014, for example, the 381 freshmen were 9% African American, 36% Asian American, 18% Hispanic/Latino; 33% White; 2% of two or more races; and 2% unknown. Honors Faculty Fellows are tenure-stream faculty matched to small cohorts of six or fewer student mentees from the sophomore through senior

years. As a result of efforts to recruit Faculty Fellows from underrepresented disciplines and ethnicities, the percentage of underrepresented Faculty Fellows in the Honors College nearly mirrors that of UIC's faculty as a whole. For example, in Fall 2014, the 302 Fellows matched with students were 7% African American, 14% Asian American, 7% Hispanic/Latino, 72% White, and 1% unknown.

It is a top priority for the Honors College to remain at the forefront of diversity efforts on campus and nationally. This work is guided by the College's Diversity Strategic Planning document, a multifaceted plan developed in 2012 by the Diversity Strategic Planning Committee made up of faculty, staff, and students. Following its recommendations, the Honors College revised its bylaws and established a permanent Diversity Committee in December 2012 to plan and recommend diversity-focused actions and assess progress in realizing Honors-specific goals regarding diversity, broadly defined, as related to programs, policies, and procedures, including, for example, matters concerning curriculum, climate, student recruitment and retention, faculty affairs, campus engagement, outreach and visibility, and so on. The plan conceives of the diversity of students, faculty, staff, and administrators in terms of race, ethnicity, gender, sexual orientation and gender identity, disabilities, socioeconomic status, culture, and religion. The College considers diversity to include majors, colleges, course offerings, and areas of expertise. People at the intersections of these categories, and college programs, policies, procedures, and outreach, are shaped and served by this conception of diversity (UIC Honors College, 2012, 2015).

A centerpiece of the Honors College diversity efforts has been the Presidential Award Program-Honors Scholarship (PAP-H), the campus's most significant scholarship program, providing full tuition and housing, a new laptop computer, and a two-week pre-college summer

enrichment program that orients highly qualified underrepresented students to scholarly disciplines and prepares them for leadership. PAP-H students reside in the Honors living-learning community and benefit from the entirety of an immersive Honors experience, including evening advising and other campus housing programming. The program matches students with their assigned faculty mentor in their second semester as freshmen, as compared to the regular assignment of Fellows in Honors students' sophomore year. This earlier assignment, coupled with Fellow-student relationship workshops, helps PAP-H students to become acclimated to academic culture and interaction and takes advantage of their exceptional high school preparation and academic qualifications. PAP-H students are also required to engage in a series of touchstone activities in all subsequent semesters, prompting their participation in scholarly and community activities. The PAP-H program thus contributes to college-wide and campus-wide diversity through various integral programs including and impacting curricular diversity.

With the 83 inaugural PAP-H recipients in 2012, the Honors College welcomed its most diverse first-year class ever (i.e., one-third Hispanic, African American, or mixed ethnicity students) as well as its strongest in recent years (with a mean ACT score one point higher than last year's -- not that this really matters: At UIC, above an ACT score of 21 or 22, ACT is not correlated with graduation rates, after taking into account membership in the Honors College). We admitted 45 more freshmen into this program each ensuing year. The PAP-H program has successfully advanced the goal of diversifying an already diverse student body in the UIC Honors College, with underrepresented minorities now comprising 20% of the entire College and 30% of the freshman class, approaching the all-campus composition, and matching it for African Americans (8%). The overall 6-year graduation rate is 88% (by far, most Honors students graduate in 4 years) at a campus with a non-Honors rate of 58%, and the achievement gap is

closing (Latinos = 84%, African American = 75%). With the first cohort of students now approaching their senior year, the retention rate is 99.3% and the admissions yield rate is 73%, averaged across all cohorts and years. These students win prestigious national awards (e.g., Truman, Goldwater, Rangel) and have a long list of other accomplishments including high grade point averages, internships, study abroad, research here and across the country. An important part of this success story is the scholarly community and the academic conversation these students have entered and contributed to, especially in Honors courses, described next.

Curricular Diversity

Diversity in higher education is not merely about numbers – numbers of students, staff, or faculty. It is about the infusion of difference and inclusiveness into all aspects of education and an intentional reflection on the very concept of diversity and the reasons to value it in higher education. Working from the assumption that diversity is not a requirement nor a given, but something to be implemented and activated -- a benefit to be reaped -- we have designed our Honors curriculum using variegated aspects of social, racial, and intellectual sophistication unique to the urban public research university.

The UIC Honors College explores curriculum diversity from the following four perspectives, each enriched by and benefiting from Chicago's unique urban environment, and discussed in turn below:

1. range and types of courses that reflect and integrate multiple manifestations of diversity themes,
2. process of course solicitation that assembles the best talents of diverse faculty members with distinct scholarly expertise,

3. course instruction that benefits from and is tailored to the needs of diverse topics and students, and
4. additional efforts that sustain vibrant energy and enthusiasm in maintaining a diverse context for the Honors curriculum and beyond.

Range and Types of Courses

The first perspective concerns the range and types of courses that reflect and integrate multiple manifestations of diversity themes. The Honors College primarily offers two kinds of courses: interdisciplinary Honors Core Courses and Honors Seminars. For the academic year 2014-15, for example, the College offered 33 Honors Freshman Core Courses and 32 Honors Seminars taught by 52 instructors. Honors Core Courses are three-credit-hour courses for freshmen that fulfill general education requirements. These “freshman seminars” are small, with 20 to 24 students, and are taught by faculty who not only challenge students with high-level academic materials, but also understand the challenges of transitioning from high school to college and are supportive in helping students develop into critical thinkers and writers, which lays a firm foundation for their success broadly at the university. Honors Seminars are one-credit, pass/fail courses available to all Honors students. Honors Seminars emphasize discussion and participation and offer unique perspectives on issues that are not addressed elsewhere in UIC’s traditional course offerings. They often bring real world experience into conversation about theory or translate theory into practice.

Honors Cores and Honors Seminars are taught by a diverse faculty from a wide range of disciplines and backgrounds, including humanities, social sciences, natural sciences, engineering, and medicine and health-related disciplines, as well as by industry experts. Interdisciplinary courses build links among different fields.

Diversity-relevant courses. The college has been aggressively adding new diversity-relevant courses taught by a more wide-ranging faculty in terms of both specialty and ethnicity.

Diversity in the curriculum is illustrated in this sample list of diversity-relevant courses:

- Diversity and Cultural Experience: An Intergroup Dialogue Experience
- An Introduction to Faculty Research on Diversity
- Common Concerns, Different Responses: A Framework for Explaining Diversity
- Global Health Advocacy
- Race, Racism, Power, and Education in the United States
- Slaves, Convicts, Shameful Beginnings: Writings from the Caribbean and Australia
- The Politics of Public Space
- Race and Ethnicity on the American Stage
- Psychological Adaptations of Immigrants
- Introduction to American Sign Language and Deaf Culture
- Atlantic Slavery: The Strength and Sinews of the New World
- African American Music
- Asian American Popular Culture
- The Sexual and Racial Politics of American Popular Media
- Introduction to American Sign Language and Deaf Culture

A few courses are particularly noteworthy. First, the college regularly offers “Diversity and Cultural Experience: An Intergroup Dialogue Experience,” which is the first on campus to use Intergroup Dialogue (IGD) pedagogical techniques. Honors Faculty offered the course in Fall 2007, and it produced the campus’ first formal Intergroup Dialogue course in 2010, with a teaching manual designed to allow others to replicate its success. The course is a model for other

dialogues-based curricular initiatives on campus, including the UIC First-Year Dialogue Seminar (CC120), a unique 1-credit dialogues seminar offered campus-wide, which grants elective credit for students in all majors and is mandatory for students in the College of Architecture, Design, and the Arts (Thakral, Vasquez, Bottoms, Matthews, Hudson, & Whitley, 2015).

Second, “An Introduction to Faculty Research on Diversity,” established by the dean in conjunction with the first diversity strategic plan in the college, introduces Honors College students to the range of UIC faculty members’ scholarly work on topics related to race, ethnicity, prejudice, discrimination, diversity, and social identity, by featuring guest lectures from faculty across the campus. Aiming at increasing understanding, awareness, and appreciation of diversity-related scholarship (broadly defined), the Seminar has been taught on a yearly basis since Fall 2012. A sample of the faculty contributors and their lecture topics illustrates the range of course offerings:

- *Kevin Kumashiro*, Professor of Asian American Studies. “Approaches to Teaching and Teacher Education that Challenge Different Forms of Oppression in Schools and Society”
- *Chris Boyer*, Associate Professor of History and Latin American and Latino Studies. “Social and Environmental History of Modern Mexico”
- *Bette L. Bottoms*, Professor of Psychology and Dean of the Honors College. “The Influence of Case, Victim, Defendant, and Juror Characteristics (e.g., Race, Ethnicity, and Sexual Orientation) on Juror Decision-Making”
- *Ralph Keen*, Professor and Arthur J. Schmitt Foundation Chair in Catholic Studies. “Religion and Diversity: The ‘Golden Age’ Construction of the Early Church (circa 500) by Counter-Reformation Catholic authors”

- *Rick Kittles*, Associate Professor of Hematology/Oncology. “Tracing the Ancestry of African Americans via DNA Testing”
- *Tanya Berger-Wolf*, Associate Professor of Computer Science. “The Intersection of Population Biology and Computer Science Examining Social Groups (e.g., Sibling Groups), and How These are Reconstructed”
- *David Xavier Marquez*, Assistant Professor of Kinesiology and Nutrition. “Disparities in Physical Activity and Disease/Disability among Latinos”
- *Sharon Haar*, Professor of Art and Architecture. “Role of Entrepreneurship, Design Innovation, and Global Networking in the Transformation of Architectural Practices Devoted to Social Activism and Humanitarian Relief”
- *Michelle Boyd*, Associate Director of Programs for the Institute for Research on Race & Public Policy, and Associate Professor of African American Studies & Political Science. “Combining Documentary Storytelling and Ethnographic Methods to Create Accounts of Social Injustice”
- *Silvia Malagrino*, Professor of Art and Design. “Cataloguing the Experiences of Exiles, Migrants, Refugees, and Other Individuals Exposed to the Impact of Political Events in Their Personal Lives”
- *Karina Reyes*, Associate Professor of Psychology. “Academic Achievement, Success, and Resilience among Inner-City Youth”

The College increases curricular diversity by sometimes employing instructors from outside the Faculty Fellow group. For example, Directors of the Latino Cultural Center and the African American Cultural Center, Drs. Rosa Cabrera and Lori Barcliff Baptista, respectively,

team-taught a special Honors Seminar on cultural issues: “Common Concerns, Different Responses: A Framework for Explaining Diversity.”

Team-taught and guest-speaker courses. Another powerful means to bring diversity to the curriculum is to include a range of speakers within individual Honors courses. Beyond the tradition of the single-instructor course, Honors courses often involve guest speakers and teams of instructors who address particular issues that weave together over the fifteen weeks of the semester. Innovative instructional flexibility broadens students’ horizons and allows them to benefit from the expertise and insights of colleagues who might not usually teach undergraduate students. Examples of team-taught courses include seminars such as:

- Current Perspectives in Diabetes and Treatments
- Leadership in Higher Education
- Great Cities: UIC's Metropolitan Commitment
- Global Health Advocacy
- Introduction to Clinical and Translational Sciences, and
- A Decade of Pharmacy Experiences: From Pharmacy Student to Pharmacist in the Workforce.

The Honors Seminar “Global Health Advocacy” is a particularly noteworthy example. It came to life after Honors students Mansi Kathuria and her friends took the initiative in 2011 to bring global health education to the Honors College. They consulted professors about possible course contents, enlightening viewpoints, and interdisciplinary benefits, and explored the logistics of having the seminar offered at the Honors College. Taught by Professor Andrew Dykens of the Department of Family Medicine, “Global Health” is now an established seminar that continues to be well-received and to benefit many students across disciplinary boundaries,

encouraging them to understand the connection between health and culture from a global perspective. The Honors Seminar “Leadership in Higher Education” was led by Bette Bottoms, then Honors College Dean and Vice Provost for Undergraduate Affairs, and Lon Kaufman, UIC’s Provost (and former Honors College Dean), who hosted guest speakers from myriad administrative posts across the campus, giving students a unique “insider’s look” at the administration of a university.

Community and industry experts. Finally, a unique feature and benefit of our location in the city of Chicago is the Honors College’s access to a remarkable range of industry experts and accomplished leaders, some UIC Honors alumni/ae. These experts bring their insights from all aspects of life to students and help students integrate theory with practice. Here are some examples of courses they have taught:

- Leadership Seminar
- Introduction to Legal Writing and Advocacy
- Music Therapy and Music Medicine: A Multicultural Examination
- Creative Shakespeare: Finding New and Renewed Life in Old Verse

“Introduction to Legal Writing and Advocacy” and a follow-up “Advocacy” Honors Seminar have been taught by Eric Leafblad, Arunas Buntinas, and Shelley Keane, all Assistant States Attorneys from the Cook County State's Attorney's Office. “Music Therapy” and its various iterations have been taught by Laura Pawuk, a certified music therapist; and “Creative Shakespeare” was taught by Shakespeare expert Rob Clare (internationally recognized educator and Shakespeare specialist from England with O-1 visa for aliens with extraordinary ability), who has also shared his work on the rehabilitative use of drama in the criminal justice system.

Summary. In summary, the UIC Honors curriculum welcomes multiple viewpoints.

With roughly 30% new courses every semester and the inclusion of faculty from an expanding array of departments, together with guest speakers from academia or industry, the College curriculum is more diverse than ever. Combined with our efforts in actively soliciting new course proposals, the Honors College curriculum for the past few years has been invigorated, with three to five new Core Courses (out of a total of 15 courses) and five to six new Honors Seminars (out of a total of 15-18 seminars) offered per semester.

Process of Course Solicitation

Our commitment to excellence in teaching and learning is evident from the dynamic strategies used to foster a distinctive and influential curriculum—including implementing course submission policies guided by the college’s faculty Educational Policy Committee (EPC). Through both structural and interpersonal efforts, we have been able to recruit the best teachers from the entire campus and beyond and expand the range of offerings.

Specifically, although we have a dedicated group of 350 faculty members from across campus who have 0% appointments as Faculty Fellows and serve as mentors to our students, we do not have a defined set of those who teach for the College. Instead, we solicit course proposals through campus-wide calls-for-proposals each semester, but we also actively study the faculty at UIC and their interests, watching for those who stand out in terms of disciplinary innovation, teaching awards, external and internal research awards (e.g., University Scholars, Distinguished Scholars), major grants, interest in undergraduate education, and so forth. Going beyond the best talents at UIC, the College sometimes also invites community and industry leaders to contribute to Honors curriculum by offering Honors Seminars. The process may appear to be simple, but in fact is a very labor-intensive, yet fruitful and essential, process, sometimes involving extensive dialogue among faculty members proposing courses and the Honors College EPC. As such, each

semester's curriculum design can be said to be a new adventure, with new contributors and course ideas to energize the curriculum. The result is that the Honors College offers Core Courses and Honors Seminars taught by faculty from disciplines such as Anthropology, Art, Architecture, Biology, Communication, Educational Policy Studies, Engineering, English, Geography, Germanic Studies, Music, Ophthalmology and Visual Science, Psychology, Law, and more.

One key to ensuring extraordinary curricular quality and consistency, as well as fairness and openness that encourages a diverse pool of outstanding individuals to participate, is having detailed and clear Core Course and Honors Seminar submission policies and procedures. Our policies detail the character and format of our curricular offerings, submission procedures and deadlines, and evaluation criteria. They are online for ease of access to anyone considering submitting a proposal.

Once proposals are submitted, the Honors College EPC members carefully evaluate every course proposal and provide feedback to prospective instructors. Composed of five faculty members representing natural sciences, social sciences, and the humanities, and led by an Honors Associate Dean for Academic Affairs, this interdisciplinary committee guards standard of quality through a rigorous review process. The EPC also serves as a "think tank" for the Honors curriculum, taking on tasks including (a) continual evaluating, planning, and reinventing of Honors curriculum; (b) evaluating the feasibility of on-line or blended courses; (c) measuring the quality of offerings, and (d) helping faculty to improve their courses. The EPC helps the College review its curriculum periodically and eliminates, adds, and modifies courses as needed.

Course Instruction

The third perspective on curricular diversity involves methods of course instruction. The leadership of the College and its EPC members work with instructors to ensure that elements of diversity are embedded within all Honors courses. The Honors College has focused on many ways of infusing issues related to diversity into its curriculum and courses, including offering an Instructors' Roundtable Luncheon every semester, incorporating diversity elements in Honors freshmen seminars, and promoting community involvement as a site of instruction.

“Instructors' Roundtable: Diversity Matters.” The UIC Honors College has hosted an Instructors' Roundtable Luncheon every semester since 2011 to provide the opportunity for instructors to share their ideas about diversity, and beyond, with each other. The nature of the event is captured in this invitation sent to all Honors course instructors from the Associate Dean (Chang) who handles curriculum:

Given that diversity is a defining feature of UIC, allowing us to reap benefits in so many different ways, for this semester's roundtable, I think it is a good time for us to discuss diversity issues to help further enrich Honors College curriculum. This is, in fact, consistent with one of the recommendations recently put forth by the Honors College Diversity Strategic Planning Committee. The point is that every Honors College course can and should have elements of diversity appreciation embedded within it. I would like to invite you to share your ideas about diversity issues in our upcoming Instructors' Roundtable... We will start with a brief introduction and then move to presentation/discussion; for the second hour, we will enjoy a light lunch while continuing to discuss/entertain ideas about your course! Every one of our invited instructors will be able to participate and respond to questions such as: What do you see as “diversity,” what

are some of its manifestations, and what should or can we do about it in our courses?

From both a philosophical and practical perspective, is focusing on diversity likely to be seen as divisive, or can it lead to an enriched teaching and learning environment, or both? How can some of the different aspects of diversity be integrated into your teaching and in what ways? What are some pedagogical tools that we can use to enrich our teaching, specifically, and the curriculum as a whole? Of course, you are most welcome to bring your own questions and/or share your ideas with other instructors. During the meeting, we will also share many interesting class exercises that help address issues of diversity. Here are a few good examples: Ask students to complete 10 sentences beginning, “I am...” to explore the linkage between culture and identity. Ask students to write, “I am [an adjective],” and “I am NOT [an adjective],” to explore their perceptions of stereotypes. Sample students’ diverse languages by asking them to talk so others can hear different voices. Of course, how diversity should be integrated depends on the nature of the course, and this is why the Roundtable discussion is important.

In this roundtable discussion, instructors are invited to share ideas about diversity issues, including what they see as “diversity,” their reflections on its manifestations, and their ideas for how instructors should or can benefit from diversity in their courses. Instructors discuss philosophical as well as practical concerns confronting classes and students, and they talk about how different disciplines may approach diversity from different angles, their best pedagogical tools, and so on.

The Instructors’ Luncheon has become a standard calendar item, held at the beginning of every semester, and the instructors continue to share ideas about diversity in their courses beyond the luncheon. In this way, the Honors College provides a rare opportunity for instructors

to encounter a diverse range of topics and teaching methods from other disciplines, because most faculty interact only with colleagues in their home disciplines and departments. By exchanging ideas with those outside one's disciplines, one not only benefits from alternative expertise and viewpoints but also unexpectedly find commonalities across disciplinary boundaries. Faculty members are uniformly positive about this opportunity. Like the Honors College leaders, they realize that diversity is not just a concept, but is actualized in the process of cross-disciplinary dialogue. The luncheon provides an excellent forum for instructors to share ideas with each other. Encouraging and promoting teacher exchange and sharing are top priorities for the College, as interaction among faculty not only energizes but also allows our instructors to find better ways to enhance student learning. These highly successful gatherings accomplish our mission in diversity in many ways.

Freshman seminar to incorporate diversity. The College regularly offers a one-credit HON 101: Freshman Seminar for new freshmen, a classic seminar to help ease students' transition to college. The College has revised it in recent years to incorporate more awareness of and appreciation for diversity throughout the course in terms of readings and assignments, including using tenets of intergroup dialogue methodology and theory when possible. The course helps orient students to college life, informing students how best to reap the benefits of diversity from the very outset and to recognize its great importance, not just for studying at UIC, but for their lives as a whole.

The community: A site for engaging with diversity. A third important feature of our curriculum is that it involves Chicago's diverse neighborhoods. One good example is "Think Global, Act Local: Global Health Service Learning Program," a seminar that engages students in a service learning project with a local community organizations, including Lawndale Christian

Health Center, Asian Human Services Family Health Center, Illinois Heart Rescue, ChildLink, and Casa Juan Diego. Students learn to apply global health concepts in local settings by working in teams with one of the community organizations to plan and implement a service learning project that addresses a community-identified health-related need. Students gain real-life experience enhancing their understanding of global health concepts such as the burden of disease, health disparities, and social determinants of health, while building their competencies in cultural exchange, professionalism, communication, project planning and implementation, and teamwork. Most importantly, through their projects, students learned to contribute to improving health in Chicago neighborhoods, and to appreciate the great diversity of an urban city like Chicago as well as of the world in general.

Additional Efforts

We have also increased intellectual and cultural diversity through our Postdoctoral Fellowship in Teaching and Mentoring; co-curricular programming and activities, including Chicago Signature Honors Programming; programs at Honors housing; co-sponsoring activities and events; and the newly launched *Interdisciplinary Undergraduate Research Journal*, each discussed next.

Honors Postdoctoral Fellows in Teaching and Mentoring. The dean established a postdoctoral program in 2011 to provide Honors undergraduates with faculty-in-residence for teaching and mentoring resources, and to provide newly minted UIC PhDs with an exceptional opportunity to gain teaching and advising experience under the mentorship of the Dean and Associate Deans, in preparation for quality teaching-oriented tenure-track jobs. The program provides an additional track for young scholars of diverse specialties and disciplines to enter the profession and to shape the Honors experience for our students. Thus far, the position has been

held by one African American man from the field of Education, two native Russians (one from Philosophy, one from Germanic Studies), and one white woman from the discipline of English.

Chicago Signature Honors Programming. This extra-curricular initiative, born in 2011, engages UIC Honors students with the cultural and intellectual diversity that the Chicago urban environment provides. It broadens students' sense of cultural and urban citizenship outside the classroom setting. At no cost to them, students experience cultural performances, museums, and city theaters, and are often able to speak with performers, directors, and artists afterward. Their excursions are organized and led by the Honors Postdoctoral Fellows in Teaching and Mentoring. For example, in the 2014-15 academic year, students participate in 19 programs (e.g., Chicago Symphony Orchestra, the Alvin Ailey American Dance Theatre, United Capoeira Association workshops, the Museum of Contemporary Art, and more) with an average of 18 participants in each program. This is an excellent example of one of the varied ways that an Honors education supports the growth of engaged, curious citizens.

Faculty visits to Honors housing. Another initiative involves visits of faculty to Honors housing to engage with students on a more informal level. Honors housing provides a focused college experience, proximity to classes and professors, peer networking, and easy-access advising. The College's partnership with UIC Residence Life has been very strong. About a third of Honors Students live in campus residence halls, with over 250 (including all Presidential Award Programs-Honors scholars) living in one of two Honors-only living communities, the Honors House. Honors College advisors have special evening advising hours there, and one of the Honors Associate Deans, Hui-Ching Chang, is even a Faculty-in-Residence in Honors House. Since Spring 2014, more than twenty UIC faculty members and visiting scholars have visited, from various ethnic and racial backgrounds themselves and from diverse disciplines including

Psychology, English, Mechanical and Industrial Engineering, Clinical Anesthesiology, Dentistry, Biology, Pharmacy Education, Epidemiology, Nursing, and Oral Biology.

Other activities/lectures. The Honors College sponsors and co-sponsors many lectures and events focused on the diversity of the university, the city, and beyond. For example, a co-sponsorship of the Department of Political Science's "Future of Chicago" lecture series has brought to students public-sector leaders ranging from former Illinois Governor Jim Edgar and former Chicago Public Schools CEO Barbara Byrd-Bennett. The College has a particularly strong partnership with the university's six Centers for Cultural Understanding and Social Change (i.e., African-American Cultural Center, Asian American Resource and Cultural Center, Disability Resource Center, Gender and Sexuality Center, Latino Cultural Center, and Women's Leadership and Resource Center), and provides funding to co-sponsor many of their events. These include the Annual Lavender Graduation ceremony, "Peers to Allies Leadership Retreat: Bystander Leadership Training," "UIC Heritage Garden," "Reimagining Masculinity Initiative," and "Chicago Families Exhibit and Programs (a project with the Chicago Cultural Alliance)."

A number of other high-impact sponsored events this year celebrated various aspects of the long and difficult history of civil rights in the United States. For example, in November 2014, the Honors College marked the 30th anniversary of civil rights work in the deep south by hosting an event entitled "Freedom Summer: 1964." This panel discussion included five Freedom Riders (Roy DeBerry, Jim Lewis, Aviva Futorian, Peter Orris, and Hollis Watkins) in conversation moderated by Honors Faculty Fellows Natasha Barnes and Johari Jabir from the departments of English and African American Studies. The event drew an impressive community audience. Further, the Diversity Committee and Honors College staff, led by Faculty Fellow Nancy Cirillo, worked with the Richard J. Daley Library to present a film series on the legacy of slavery,

including the Academy Award winning *12 Years a Slave* and the 1927 version of *Uncle Tom's Cabin*. To deepen students' understanding, the screenings were hosted by a guest lecturer specializing in the visual culture of *Uncle Tom's Cabin*, Dr. Rob Obey from Bowling Green State University. Such guest speakers and follow-up discussions provide substantive explanations, grounding them in their historical contexts.

Conclusion and Future Directions

The UIC Honors College promotes diversity within its curriculum in myriad ways. Rigorously and conscientiously following its core standards for excellence in teaching and learning, the Honors College actively develops and communicates challenges and opportunities through Honors-only courses, research, civic engagement, and internships, while providing unique and stimulating experiences through student publications, leadership and professional development, extensive and well-monitored mentoring, and engagement with a community of peer scholars. Honors students succeed not just by in excelling in their coursework, but also in their research endeavors and community engagement, cultivating a solid foundation for which a future of success and lifelong learning after graduating.

Building upon this solid foundation and in collaboration with the Honors College Diversity Committee, we continue to work to ensure curriculum diversity, among all other efforts that represent our commitment to diversity. The UIC Honors College is a model program that ensures undergraduate success and a demonstration that there is no end to what our talented faculty, staff, and students can achieve. We continue to endorse the principle that diversity is a benefit to be reaped and something to be actively implemented, and we have successfully designed our Honors curriculum to take advantage of the varied resources of social, racial, and intellectual sophistication that the city of Chicago has to offer.

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Integrated Life Sciences (ILS): A New Honors Living-Learning Program at the University of Maryland

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Abstract

Integrated Life Sciences (ILS) is a new living-learning program for life-science students offered at the University of Maryland (UMD). This program consists of four components: 1) a residential community composed of 60-72 students entering each year, 2) an honors track of life-science classes designed according to recent national initiatives in undergraduate biology education, 3) research experiences on the UMD campus and at the federal research and biomedical institutes in the Washington, DC area, and 4) service-learning experiences. Several assessment measures indicate that ILS is successfully meeting major objectives of national biology initiatives, as well as realistic student and program expectations.

**Integrated Life Sciences (ILS): A New Honors Living-Learning Program
at the University of Maryland**

This paper reports on the development of a new living-learning program for high-achieving honors students called Integrative Life Sciences (ILS) at the University of Maryland (UMD). ILS students are enrolled in various life-science disciplines offered at the UMD campus, including biological sciences, biochemistry, and bioengineering. ILS is structured as a modified 2+2 honors program, with the first two years devoted to academic courses and initial co-curricular experiences, and the second two years devoted to more ambitious co-curricular experiences and leadership opportunities. The first ILS class entered in Fall 2011 and graduated in Spring 2015.

In abbreviated form, the mission statement of ILS is: to inspire and prepare life science students to pursue meaningful careers that will advance our knowledge in the life sciences, improve the health of our world at all levels from individuals to the environment, and express active leadership in the life sciences in our global, interdependent world. To accomplish this mission, the ILS program is composed of four major components:

- 1) An interactive, supportive, and scholarly residential community composed of 60-72 students entering each year,
- 2) An honors track of accelerated courses in the life sciences offered by accomplished scholar-teachers,
- 3) Meaningful research experiences on the UMD campus and at the federal research and biomedical institutes in the Washington, DC area, and
- 4) Engaging service-learning experiences related to healthcare, STEM education, and environmental sustainability.

The (immodest) goal of ILS is to create a model for contemporary undergraduate education in the life sciences at large research universities.

Background

The overall design of ILS is guided by the academic and residential opportunities offered by the Honors College at UMD, and by the national initiatives to reform undergraduate biology education.

The Honors College at UMD is designed to recruit, educate, and launch the careers of the large number of high-achieving students enrolling each year at the University. It is noteworthy that the public schools in Maryland are often ranked first in the nation,¹ with the result that UMD is able to recruit approximately 1,000 outstanding honors students representing 25% of the total freshmen class. The Honors College at UMD offers seven different living-learning programs to entering honors students. These programs provide the experiences of living together in residential communities to those students who have identified common academic and/or co-curricular goals. In essence, the Honors College at UMD is following an extensive body of education research literature that documents the effectiveness of living-learning communities for promoting student learning, engagement, sociocultural tolerance, and self-efficacy.² In the

¹ Education Week Research Center. 2013. State and national grades issued for education performance, policy; U.S. earns a C-plus, Maryland ranks first for fifth straight year. *Education Week*. http://www.edweek.org/media/QualityCounts2013_Release.pdf. Accessed 10 July 2015; and Education Week Research Center. 2015. Quality Counts introduces new state report card; U.S. earns C, and Massachusetts ranks first in nation. *Education Week*. http://www.edweek.org/media/qualitycounts2015_release.pdf. (MD ranks third in this index.) Accessed 10 July 2015.

² For example, see Inkelas, K.K., Zaneeta, E.D., Vogt, K.E., and Leonard, J.B. 2007. Living-learning programs and first-generation college students' academic and social transition to college. *Research in Higher Education* 48: 403-434; Inkelas, K.K., Soldner, M. Longerbeam, S.D., and Leonard, J.B. 2008. Differences in student outcomes by types of living-learning programs: The development of an empirical typology. *Research in Higher Education* 49: 495-512; Lichenstein, M. 2005. The importance of classroom environments in the assessment of learning community outcomes. *Journal of College Student Development* 46: 341-356; Longerbeam, S.D. (2010) Developing openness to diversity in living-learning program participants. *Journal of Diversity in*

Honors College, all these outcomes are also seen in the UMD living-learning communities, plus much higher retention and graduation levels as compared to the overall campus levels.³

Although further discussion of the Honors College outcomes falls outside of the goals of this paper, it is worth noting nevertheless that living-learning programs in general offer significant advantages for both the quality of undergraduate education *and* for the metrics used to determine national rankings of universities.

One-half of all honors students at UMD participate in the general honors program called University Honors, which is largely modeled after the Swarthmore Honors Program that almost a century ago was the first honors program instituted in the United States.⁴ The fundamental structure of University Honors is known as a traditional 2 + 2 program. In the first two years, University Honors offers its students a wide range of different honors seminar courses that are specifically designed to be more rigorous than regular courses covering similar subjects. Each year University Honors offers over 125 honors seminars having enrollment limits of 20 students in all major academic disciplines. 70% of these courses are taught by distinguished MD faculty, and the other 30% are taught by government officials and other off-campus authorities drawn from the local Washington, DC area. In their final two years, University Honors students are encouraged to engage in original scholarship working under the mentorship of individual UMD faculty in various programs that are collectively referred to as Department Honors.

Higher Education 3: 201-217; and Szelenyi, K., Denson, N., and Inkelas, Women in STEM majors and professional outcome expectations: The role of living-learning programs and other college environments. *Research in Higher Education* 54: 851-873.

³ Dorland, W.D. 2014. *University of Maryland Honors College Self-Study Report*. UMD, College Park.

⁴ Aydelotte, F. 1944. *Breaking the Academic Lockstep: The Development of Honors Work in American Colleges and Universities*. Harper & Brothers, New York; Wood, R. (2012). *Transforming Campus Culture: Frank Aydelotte's Honors Experiment at Swarthmore College*. University of Delaware Press, Newark, DE; and Swarthmore College. 2015. Honors Program. <http://www.swarthmore.edu/honors-program>. Accessed 10 July 2015.

The other half of all honors students at UMD participate in six thematic living-learning programs,⁵ which are currently structured as either 2-year academic and co-curricular programs that also offer additional leadership opportunities, such as peer mentoring and undergraduate teaching assistantships, to their upperclassmen, or a 4-year program called Gemstone that forms small undergraduate teams to conduct interdisciplinary research on important problems. The 2-year programs have been given names that are more or less self-explanatory: Advanced Cybersecurity Experience for Students (ACES), Design | Cultures & Creativity (DCC), Entrepreneurship & Innovation (EIP), and Honors Humanities (HH) (for further information, see UMD Honors College, 2015b)⁶, plus the Integrated Life Sciences (ILS) program described in this paper.

In general, these programs offer a core of advanced academic and co-curricular courses, plus a capstone experience that requires research scholarship, creative arts, special projects, and/or business plans, as is appropriate to the specific goals of each program. Although some students from the thematic programs proceed to participate in Department Honors, most students do not seek additional honors experiences, in part due to the redundancy between their capstone experiences and Department Honors, and in part due to the limited carrying capacity of the honors programs offered by most departments. Furthermore, most thematic programs emphasize professional development, in order to help prepare the students for enrolling in professional schools and/or for entering the workplace following their graduation from UMD. For example, ILS organizes advising presentations from the UMD Health Professions Advising Office,

⁵University of Maryland. 2015a. Honors College. <http://www.honors.umd.edu>. Accessed 10 July 2015.

⁶University of Maryland. 2015b. Honors College 7 Living-Learning Program Comparison. https://docs.google.com/document/d/1eaJeLUK3-C0JAQ1b_Hitx4XEVHA-fapjj0XiRE004D0/pub. Accessed 10 July 2015.

because many ILS students are intending to pursue academic, clinical, and research experiences that will strengthen their future goal of applying to medical school.

The national initiatives to reform undergraduate biology education are the second major consideration affecting the design of ILS. The most significant drivers of this effort are two initiatives from prominent scientific organizations that were published in recent years.

The report called *Vision and Change in Undergraduate Biology Education: A Call to Action* (American Association for the Advancement of Science, 2011)⁷ presents the efforts of the biology education and biology education research communities to develop a shared vision for undergraduate biology education and to identify the practices necessary to achieve that vision. This vision focuses on: fundamental principles, core competencies, and disciplinary practices that should be mastered in the biology curriculum; innovative, student-centered pedagogies that engage students as active participants, not passive recipients, of scientific reasoning; and effective integration of authentic research experiences into the curriculum. Moreover, assessment tools, professional development opportunities, and institutional changes necessary for implementing that vision are also described in this report.

Over the past 20 years, undergraduate biology educators realized that the adjustments being routinely made to align the biology curriculum to the Medical College Admissions Test (MCAT) had become a major impediment to proposed efforts to reform that curriculum.⁸ In addition, the standard course requirements for pre-medical students were established a century ago by the so-

⁷ American Association for the Advancement of Science. 2011. *Vision and Change in Undergraduate Biology Education: A Call to Action*. AAAS, Washington, DC.

⁸ For example, see pp. 111-112 in National Research Council. 2003. *BIO 2010: Transforming Undergraduate Education for Future Research Biologists*. National Academies Press, Washington, DC.

called Flexner Report (1910),⁹ and thus, it was timely to address the question of whether the Flexner pre-medical curriculum was still appropriate for training contemporary students.

The resulting report called *Scientific Foundations for Future Physicians* (Association of American Medical Colleges, 2009)¹⁰ identifies the scientific competencies that pre-medical students are expected to demonstrate before their entry into medical school. Of particular note, this report emphasizes the fundamental knowledge, reasoning skills, and scientific practices, as opposed to specific required courses, for designing the new curriculum for training pre-medical students. This report prompted the dramatic revision of the MCAT, and new MCAT 2015 was launched in Spring 2015.¹¹ MCAT 2015 is specifically designed to require students to apply basic principles, fundamental knowledge, and quantitative reasoning from the physical, natural, and social sciences to answer questions that they were unlikely to have encountered before.

In essence, the *Scientific Foundations* report transformed the standard pre-medical curriculum so that it became aligned with the emerging consensus among biology educators that would soon result in the publication of the *Vision and Change* report. What both biology and pre-medical educators came to realize is that thinking like a scientist is virtually identical to thinking like a physician. Thus, it is anticipated that the reforms recommended in the *Vision and Change* report should greatly improve the quality of the undergraduate education for all biology students, including those in the pre-medical track. Together, the *Vision and Change* and *Scientific Foundations* reports provided the guidelines for designing ILS within the framework of the Honors College at UMD.

⁹ Flexner, Abraham. 1910. *Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching*. The Carnegie Foundation for the Advancement of Teaching: New York, NY.

¹⁰ Association of American Medical Colleges. 2009. *Scientific Foundations for Future Physicians*. AAMC: Washington, DC.

¹¹ Association of American Medical Colleges. 2015. Medical College Admission Test®(MCAT®) <https://www.aamc.org/students/applying/mcat>. Accessed 10 July 2015.

Students

ILS is composed of exceptional students. For the class entering in Fall 2014, the mean weighted high school GPA is 4.57, which reflects the fact that ILS students are typically awarded 30 or more UMD credits due to their high scores on Advanced Placement and International Baccalaureate exams. Almost all entering ILS students have already participated in several meaningful service, clinical, and/or research experiences during high school, which are often the basis for their decision to major in the life sciences and to join ILS. Another noteworthy consequence of these co-curricular experiences is that many ILS students have developed a genuine commitment to serve those less fortunate than themselves. From the perspective of ILS faculty and staff, this commitment makes it quite rewarding to have the opportunities to teach, mentor, and advise these students.

ILS students enroll in life-science majors according to the following distribution: 60% Biological Sciences, 20% Biological/Chemical Engineering, 10% Biochemistry/Chemistry, and 10% other life-science majors. Many ILS students complete a second major or a minor in other science and non-science subjects. Only a few students have left the ILS program in order to pursue other majors than the life sciences, so that the 4-year graduation rate for the first graduating class was 92%. To date, almost all ILS students have expressed their strong interest in attending professional schools after earning their BS degrees: 55% MD, 15% MD/PhD, 20% PhD, and 10% other degree programs.

Academic Program

The academic program of ILS consists of an honors track of accelerated courses in the life sciences offered by accomplished scholar-teachers. All students entering ILS are expected to have earned high scores on the Advanced Placement Biology Exam so that they can waive the

freshmen sequence of molecular and cell biology and of evolutionary biology and ecology, or to have taken that sequence at UMD or another institution. In general, ILS classes follow the guidelines in the *Vision and Change* report, namely, they emphasize the mastery of fundamental principles and core concepts in the life sciences; the application of multidisciplinary perspectives toward understanding major problems; the use of learner-centered pedagogies, especially collaborative learning; and the integration of research techniques, results, and perspectives into the classes (Table 1).

Of particular value are the genetics and genomics, biomathematical modeling, and scholarship-in-practice courses, because they provide perspectives, skills, and knowledge for doing contemporary research in the life sciences and for applying its results toward solving important problems. The HLSC 100 service-learning course helps students develop the skill of self-reflection that is critical for meaningful service learning and future career planning. The HLSC 207 integrated organismal biology course is designed to help students master the use of multidisciplinary perspectives toward understanding major principles in the physiology, structure, and diversity of all organisms in subsequent science courses. ILS students will usually take all the above courses within their first two years at UMD, except that engineering students waive the mathematical modeling course, because it is redundant with other courses required in their majors. ILS classes substitute for required sophomore- and junior-level courses in most life-science majors, but they are taught at more challenging levels with greater expectations for classroom participation than the comparable courses offered to non-honors students.

In addition to their academic goals, these classes are purposefully designed to contribute to the personal development of ILS students. Initially, these students are often quite averse to doing group work, because during high school, they felt that they had to contribute

disproportional efforts to group assignments in order to ensure the high grades they expected to receive for completing those assignments. Nevertheless, their future professional successes in the life sciences, including medicine, will be crucially dependent on their ability to work on collaborative projects with other people having different skills. ILS courses, especially those offered in the first semester, provide numerous in-class projects and homework assignments that reward students for their willingness to work together without suffering the negative consequences typically associated with group work.

Another concern is that ILS students, like most honors students, are accustomed to viewing themselves as being the best students in their classes. Thus, a major challenge in ILS courses is: how to support the healthier aspects of competitive behavior, e.g., the effort to do one's best, while discouraging the more destructive, and ultimately futile, behavior of trying to one-up everyone else. In order to reduce unhealthy competition, all ILS courses are graded on an absolute scale, which means that grades are awarded according to pre-specified cutoffs based on expected levels of subject mastery, as opposed to grading each student based on his/her performance relative to the rest of the class. More significant for the development of healthy competition may be the efforts devoted to building a strong sense of community among ILS students, including the collaborative learning described above. Indeed, ILS students almost unanimously view the ILS community as being the most important aspect of the ILS experience. The central role that community plays in the ILS experience will be explored in subsequent papers.

Research Experiences

It is an extraordinary time to encourage undergraduate students to become life-science researchers. In the 21st century, life scientists are developing new perspectives, methods, and

equipment that are leading to the rapid discovery of new knowledge at an unprecedented rate. This research will undoubtedly shape the future careers of ILS students, and it is therefore critical that the students acquire a deep appreciation for the research process responsible for generating that new knowledge.

The research component of the ILS program is designed to facilitate meaningful experiences in basic biological, biomedical, and clinical research on the UMD campus and at federal research centers and biomedical institutes in the Washington, DC area, such as National Institutes of Health in Bethesda, Food and Drug Administration in College Park, US Agricultural Research Center in Beltsville, and Smithsonian Institution in Washington. All these federal institutes have international reputations for research excellence, and thus, they offer many internship opportunities for doing cutting-edge research that are readily accessible to ILS students.

All ILS students are expected to complete at least one authentic research experience, including an electronic portfolio of their experiments, results, and reflections, during their first two years on the UMD campus. Over the last four years, 37% of ILS students have participated in research internships on the UMD campus, 33% at National Institutes of Health, 16% at other federal laboratories in the DC area, and 14% at other university, public, and commercial laboratories. These internships have spanned all the life sciences, including human physiology, molecular biology, environmental sustainability, infectious diseases, public health, biomedical engineering, ecology, cell biology, genomics, and bioinformatics.

Furthermore, ILS sponsors the UMD undergraduate research team in the international Genetically Engineered Machines (iGEM) competition.¹² iGEM is the premier synthetic biology competition at which student-directed teams from major universities worldwide present novel

¹² International Genetically Engineered Machines Foundation. 2015. iGEM synthetic biology based on standard parts. http://igem.org/Main_Page. Accessed 10 July 2015.

synthetic biology projects targeted towards addressing real-world problems. The UMD team, including eight ILS students, earned a gold medal at the Fall 2014 Giant Jamboree competition for its work developing a biosensor for detecting the presence of *Perkinsus marinus*, which is a devastating bacterial pathogen that is killing oysters growing in the Chesapeake Bay. A second ILS/UMD team was also awarded a gold medal in the Fall 2015 Giant Jamboree competition for its work developing a new approach for stabilizing plasmids in engineered microbial cells without the use of antibiotics.

Service Learning

Service learning is an educational approach that connects traditional classroom instruction, community service, and guided reflections about personal attitudes, socioeconomic considerations, and alternative strategies for addressing real-world problems.¹³ It is claimed that Maryland was the first state in the USA to require high-school students to engage in service-learning activities as a compulsory condition for their graduation.¹⁴ Consequently, it should not be surprising that many students entering the ILS program are already aware that they have been given great gifts by their families, mentors, and educations, and thus, they are often planning on career paths that will help them share those gifts with others who are less fortunate than themselves. In fact, service learning was not included in the original design of ILS, but the first cohort of ILS students insisted that ILS incorporate service learning as an essential component of the overall program.

In essence, the goal of the service-learning program is to cultivate the abilities of ILS students to develop into future leaders who can capably serve their local and global communities.

¹³ Jacoby, B., Ed. 1996. *Service Learning in Higher Education*. Jossey-Bass, San Francisco, CA; and Jacoby, B. 2015. *Service-Learning Essentials: Questions, Answers, and Lessons Learned*. Jossey-Bass/Wiley, San Francisco, CA

¹⁴ Maryland Department of Education, 2015. Service Learning in Maryland. <http://www.marylandpublicschools.org/MSDE/programs/servicelearning>. Accessed 10 July 2015.

In the HLSC 100 class that is offered in the first semester of the ILS program, student teams provide around 800 hours of community service to various providers of STEM education (e.g., several underserved high schools and the Upward Bound Pre-college Program), environmental sustainability (e.g., CHEARS Community Garden and 4-H Adventures in Soil Science), and health and social services (e.g., Kids Enjoy Exercise Now, Capital Area Food Bank, Loaves and Fishes Soup Kitchen, and NIH Children's Inn). Moreover, every year ILS sponsors an alternative spring break experience called Terps Helping Turtles for 10-12 students that involves a week of volunteer service at the Karen Beasley Sea Turtle Rescue and Rehabilitation Center in Topsail, NC.

In the semesters following HLSC 100, ILS students are embracing their roles as service leaders on the UMD campus. They have assumed leadership roles in numerous campus organizations dedicated to community service, such as Health Leads, Engineers without Borders, UMD Health Center Advisory Board, American Medical Student Association, American Medical Women's Association, and UMD Honors College Student Advisory Board. Lastly, ILS students have founded and are directing new student organizations providing volunteer service to underserved communities in STEM education (e.g., Foundations in Science and Health) and health care (e.g., Eyes on Health, Global Dental Brigades, and Supporting Hospitals Abroad with Resources and Equipment). Global Dental Brigades won the Grand Prize in the 2015 Do Good Challenge competition among student service organizations on the UMD campus.¹⁵

Awards

Even though ILS is a small program, its students received an impressive number of academic and co-curricular awards in academic year 2014-2015 (Table 2). Of particular note, an ILS senior received a Rhodes Scholarship for graduate study at Oxford University that was the first

Rhodes Scholarship awarded to a UMD student in over 40 years, and two ILS juniors received Goldwater Scholarships that are given for undergraduate research excellence in science, technology, engineering, and mathematics (STEM) fields. ILS students have also received noteworthy recognition for their collaborative efforts: ILS students are leading the student service organization that won the Grand Prize in the UMD 2015 Do Good Challenge for outstanding social philanthropy,¹⁵ and ILS students formed most of the UMD research team that won Gold Medals at the 2014 and 2015 iGEM competitions described in the Research Experiences section above.

Assessment

ILS has a robust, ongoing research and internal evaluation process. Current research on ILS students focuses on understanding how they participate in collaborative learning, and how their learning expectations and the various features of the ILS community constrain and afford the productive collaborative learning¹⁶. Data collected for ILS research and evaluation efforts include observations and field notes from classes, discussion sections, and community activities; program assessment meetings; and informal gatherings in the dormitory. Other data include videos of students working together in class and in the dorm, recorded focus groups and semi-structured interviews, and annual surveys.

Detailed analysis of this large set of data is beyond the scope of this paper. However, a overview of some survey data can provide meaningful insights into students' perceptions of the program along important dimensions of the mission of ILS. Quotes from interviews and focus groups serve to elaborate on survey results. Two salient aspects of the ILS mission can be

¹⁵ UMD School of Public Policy. 2015. Do Good Challenge. <http://www.dogood.umd.edu>. Accessed 10 July 2015.

¹⁶ Jardine, H., Levin, D.M., Quimby, B.B., & Cooke, T.J. (2016). Understanding collaborative learning in a life sciences living-learning program through multiple grains of focus. Paper presented at the Annual Conference of Ethnography in Education, Philadelphia, PA.

viewed through students' eyes: the value of the living-learning experience in building community and the alignment of the program with undergraduate biology education reform. The survey results reported here primarily come from the 2015 annual survey that was given to first-year (N=50) and second-year (N=63) ILS students.

Building community through the living-learning experience: Ideally, the living-learning experience helps students to develop a sense of belonging to the program, resulting in positive attitudes that tend to promote students' satisfaction, their retention in the program, and ultimately, their academic performance.² In a survey conducted among first year students in an earlier year, a group of survey questions from each student was used to create a composite score for "sense of belonging." This composite score showed a correlation between sense of belonging and grade point average (GPA). A hierarchical regression model was conducted in which GPA was regressed on sense of belonging at the first level and "social support" (another composite score) at the second level. Sense of belonging was shown to be a positive and significant indicator of GPA and explained 10% of the variance, $R^2 = .101$, $F(1,81) = 9.08$, $p = .003$.

Results from a similar group of survey questions on the 2015 annual survey suggest an overall strong sense of belonging among ILS students, particularly in the first year (Table 3). The small differences between the first year and second year students' responses are not statistically significant, but the program is concerned with sustaining students' sense of belonging as they move through the program. The first year is more intense, as students live together for the first time, and are encouraged by the program and instructors to know each other well and to work together to learn science. An important finding from the internal evaluation is that the program needs to continually make efforts to maintain the strong sense of belonging that is so salient in the early part of the program.

In an interview, a second year student described what she valued about the program coming in as a first year student, and changes from first to second year:

“I like the community aspect of ILS. Coming to UMD that was what helped me a lot, the community is that initial safety net...support group. Now all of us as sophomores have our own lives on campus, we don't do everything together anymore, but it's still nice that the support group is still there.”

Alignment of the program with undergraduate biology education reform: Analysis of the annual surveys also provides insights into how students perceive the program's alignment with priorities of undergraduate biology education reform, including a focus on particular fundamental principles, core competencies, disciplinary practices, students' abilities to apply of multidisciplinary perspectives toward solving problems, and students' participation in collaborative learning.

On the annual surveys, both first and second year students are asked to check core biological concepts and competencies that they perceive were addressed in each of their ILS courses. Tables 4 and 5 show the perceptions of the 2015 first year students (N=50). Generally, the first year students perceived the ILS courses to address the core concepts and competencies, with very few students perceiving particular omissions (Table 4). The numbers are slightly lower for the second year students, but this is likely because coursework becomes more specific, and concepts and competencies covered in those courses are unavoidably more specialized.

The surveys also ask students specific questions aimed at gauging their appreciation of the nature of science and interdisciplinarity in science (Table 5). These data are generally encouraging. The decrease in perceptions of biology as being about memorizing facts potentially suggests that the program supports in coming to understand science as a way of knowing that

requires much more than just accumulating information. The survey also suggests that students have an appreciation for the relevance of physics and mathematics in biology.

The annual survey can also provide some insight into the intensity of competition that students feel and the extent to which collaboration in the program balances or mitigates that issue. Insofar as ILS students enter this program with the self-perceptions of being high achieving and competitive students, they often perceive high levels of competition among themselves and often compare themselves to each other (Table 6). It is somewhat disconcerting that the proportion of students perceiving competition increases between the first and second year. This could possibly be related to the decrease in collaborative learning opportunities, as suggested by the last two questions, and the possible decrease in sense of belonging reported earlier. Again, the program remains committed to sustaining the strong sense of belonging, supporting student collaboration, and discouraging unproductive competition. Students recognize and appreciate the program's commitment to encouraging collaboration, demonstrated by the response of one student to an open-ended survey question: "The emphasis on group work helped form a bond between peers and establish group study habits."

In addition to data collected by ILS, it is worth considering the survey data collected by Student Advisory Board of the UMD Honors College (Fig. 1). This survey, which was designed, administered, and analyzed by UMD honors students, is interesting, because it reflects those features of the UMD Honors College that the students view as being the most important. This survey was conducted as an on-line survey of several questions that were answered on a standard Likert scale from strongly disagree (1) to strongly agree (5) response.

Judging from their responses to these four statements, ILS students have quite high perceptions of the ILS program. Because ILS students are high-achieving honors students, it is

reassuring that 100% agreed or strongly agreed with statement Q2 (“My LLP classes were challenging”), and 92% agreed or strongly agreed with statement Q3 (“I learned a lot in LLP classes”). These results suggest that ILS is achieving its goal of encouraging academic excellence. It is also worth noting that the acceptance into their preferred living-learning program was influential for a high percentage of UMD honors students in making their decision to attend UMD. This result implies that the living-learning programs are a significant factor contributing to UMD’s ability to recruit such a large number (~1,000) of outstanding honors students each year. Finally, UMD students indicate that the LLP’s in general, and ILS in particular, do frequently meet their expectations, but they were not asked to identify the precise nature of those expectations in this survey.

Campus Impacts and Potential Scalability

It is crucial for their long-term survival that honors programs at flagship universities are not perceived as being isolated programs serving only elite students. Instead, honors programs should act as good campus citizens to support the overall mission of quality undergraduate education. Accordingly, ILS serves as an incubator for developing new courses, innovative pedagogies, classroom activities, and/or laboratory exercises that are being incorporated in the regular curricula for life science majors. For example, ILS faculty developed BSCI 330H Cell Biology, which is a flipped cell biology course featuring on-line videos, class discussions, and experimental laboratory exercises that is now being taught as a regular course in the Biological Sciences curriculum, and they are developing new bioinformatics exercises for HLSC 322 that are also intended for the regular genetics course. ILS supported the development of HLSC 374 Mathematical Modeling in Biology that will soon be made available to all Biological Sciences majors as a more biologically relevant elective following the required Calculus I and II sequence.

It is clear that the curricular and pedagogical innovations designed in ILS are transferable to the regular life science curricula on the UMD campus.

ILS is also making other contribution to the UMD campus. As a service available to all UMD students, ILS curates the on-line Life Sciences Research Internship Database that links to the websites of over 50 undergraduate research internship opportunities in the life sciences. In addition, the ILS director coordinates a seminar series on recent advances in biology education research that is offered to UMD graduate students and instructional faculty.

Finally, it is important to consider the related questions of scalability and of transferability of the entire ILS program. The current resources needed to support academic and co-curricular experiences for the first- and second-year ILS cohorts and additional programming and leadership opportunities for the third- and fourth-year cohorts include: 1) the salary lines of one Ph.D.-level staff member for program administration, admissions, and the scholarship-in-practice course and of one M.S.-level staff member for student advising, service learning, and activity programming, 2) a budget of \$30,000 for student programming and service learning, and 3) the in-kind faculty contributions from the UMD biology departments to teach the organismal biology, genetics and genomics, and biomathematical modeling courses in lieu of teaching comparable, albeit larger, versions of these courses in the regular Biological Sciences curriculum. One of these three faculty members is also serving as the half-time faculty director of the ILS program. Based on our limited understanding of the finances of other honors colleges, we anticipate that these expenses are roughly comparable with the amounts spent to provide equivalent experiences to comparable numbers of honors students at other universities.

In our opinion, the ILS program is certainly scalable to larger sizes provided that the cost per student remains constant. Indeed, some cost savings could potentially be achieved with larger

class sizes, because several ILS courses use a small-group active-engagement pedagogy with circulating undergraduate teaching assistants that can scaled up to larger sizes in appropriate active-learning classrooms while still being taught by a single faculty member. However, we envision that the major constraint on both the scalability of the ILS program to larger sizes and its transferability to other institutions would be the availability of research experiences and service-learning opportunities in the surrounding community. This constraint may not apply to large universities located in most major metropolitan areas, such as Washington, DC, but it is likely to provide a significant challenge in other universities having rural locations.

Conclusion

It is reasonable to conclude that ILS students, staff, and faculty working together have successfully created a new living-learning program emphasizing academic excellence, research experiences, and community service for talented honors students in the life sciences. Because ILS is following rather closely the guidelines from the report *Vision and Change in Undergraduate Biology Education*, it appears that ILS has the potential to become a national model for achieving effective student-centered education in the life sciences.

Table 1. Brief descriptions of ILS classes.

<p>HLSC 100 Integrated Life Sciences: Developing Life Scientists for the Global Good (1 credit) – focuses on service learning, community building, and other academic skills, such as resume preparation and course selection. Service learning involves team projects in healthcare, environmental sustainability, and STEM education.</p>
<p>HLSC 207 Principles of Biology III: Organismal Biology (3 credits) - utilizes fundamental mathematical, physical, chemical, genomic, and evolutionary principles to develop multi-disciplinary perspectives toward the functioning and evolution of all organisms, including humans.</p>
<p>HLSC 322 Genetics and Genomics (4 credits) – a lecture and laboratory course providing an overview of basic Mendelian and molecular genetics, and then focusing on the understanding and application of genomics to contemporary research, medicine, biotechnology, and societal issues.</p>
<p>HLSC 374 Mathematical Modeling in Biology (4 credits) - applies advanced mathematics and modeling techniques in order to address important problems in human physiology, epidemiology, and complex biological systems, such as viral pandemics and global climate change.</p>
<p>BSCI 330H Cell Biology (4 credits) – a flipped cell biology course with on-line videos, in-class discussions, and experimental laboratory exercises exploring the biochemical and physiological mechanisms underlying cellular structure and function.</p>
<p>HLSC 377 Research and Application in Life Sciences (3 credits) - a scholarship-in-practice course integrating the academic and experiential aspects of ILS to help students approach real-world problems in the life sciences, such as infectious diseases, ageing, green energy, and synthetic biology by developing their skills for the reading of primary research articles and by writing an NIH-style grant proposal</p>

Table 2. A partial list of university, national, and international awards won by ILS students during the academic year 2014-2015. Awardees are designated by their ILS class: Sr, senior; Jr, Junior; and So, sophomore.

Students	Award	Description
1 Sr	Rhodes Scholarship	For graduate study at Oxford University
1 Sr	German Academic Exchange Service (DAAD) Scholarship	For graduate study at a German university
2 Jr	Goldwater Scholarship	For outstanding undergraduates pursuing STEM research careers
1 Jr	Critical Language Scholarship	For outstanding students to study critical-need foreign languages (US Dept. of State)
1 So	Hollings Scholarship	For outstanding undergraduates interested in oceanic, atmospheric, and other environmental science (NOAA)
4 Sr, 3 Jr	Omicron Delta Kappa Inductees	For outstanding undergraduate leadership (ODK is national leadership honor society)
2 Sr, 2 Jr	HHMI Undergraduate Research Fellowships	For outstanding research projects in medicine-related fields on UMD campus
1 Sr, 1 Jr, 1 So	UMD Do Good Challenge Grand Prize	For outstanding student organization dedicated to social philanthropy in the UMD Do Good Challenge (ILS students represent >50% of organization leadership)
1 Sr	UMD Undergraduate Researcher of the Year	For outstanding undergraduate research on the UMD campus
6 Jr, 2 So	iGEM Gold Medal	For outstanding project and presentation at the iGEM Giant Jamboree (>50% of UMD iGEM team composed of ILS students)
1 Sr	UMD University Medal	For the most outstanding graduating senior at UMD
1 Sr	UMD H.C. Byrd Citizenship Prize	For the graduating male senior who most contributed to the advancement of UMD

Table 3. ILS students’ sense of belonging (4-point scale: 1- strongly disagree, 2-disagree, 3-agree, and 4-strongly agree).

Question	Mean (first-year students)	Mean (second- year students)
I feel I belong in the ILS program.	3.30	3.00
Being a student in ILS is an important part of who I am.	2.80	2.79
I feel like an outsider in the ILS program.	1.98	2.11
Others label me as an ILS student.	2.71	2.76
My peers in ILS care about my personal well-being.	3.30	3.11
My peers in ILS help and support me academically.	3.10	3.14
I feel a sense of community with other people in the ILS program.	3.14	3.03
Living with other ILS students is a valuable experience.	3.38	3.00

Table 4. Numbers of 2015 first-year ILS students who believe that core concepts and disciplinary competencies are addressed in the first-year ILS courses (N=50)

Core Concepts	HLSC207	HLSC322
Evolution	47	48
Structure and Function	49	38
Information	36	37
Pathways	48	21
Systems	47	24
Disciplinary Competencies		
Applying the process of science	42	40
Using quantitative reasoning	40	35
Using modeling and simulation	42	29
Interdisciplinary nature of science	43	32
Communicating and collaborating with other disciplines	34	30
Understanding relationship between science and society	20	49

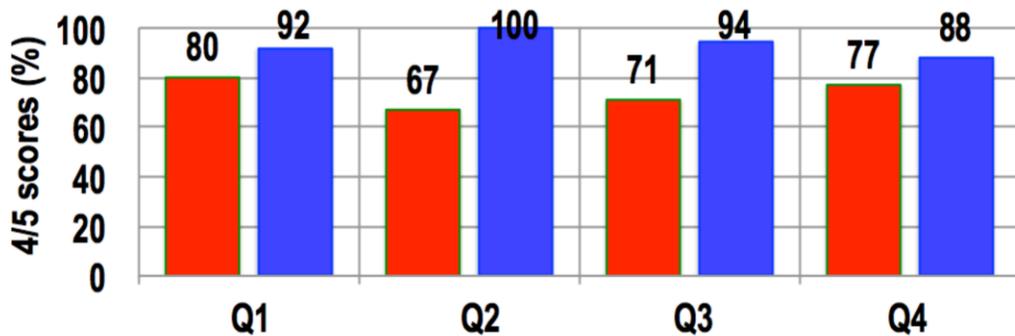
Table 5. ILS students' perceptions of the interdisciplinary nature of science (4-point scale as in Table 3).

Question	Mean (first-year students)	Mean (second-year students)
Learning biology is about memorizing the facts presented	2.76	2.37
Physics and math are relevant for understanding biological processes.	3.44	3.27
Discussing subjects such as physics or math in a biology course is not necessary.	1.56	1.71

Table 6. ILS students' perceptions of competition and collaboration (5-point scales - first question uses: 1 – none, 2 – low, 3 – some, 4 – high, and 5 – extremely high; and all other questions use: 1 – never, 2 – rarely (once or twice a semester), 3 – sometimes (monthly), 4 – often (weekly), and 5 – extremely often (daily)).

Question	Mean (first-year students)	Mean (second-year students)
What do you perceive as the level of competition?	3.30	3.54
How often do you find yourself comparing yourself to other students?	2.86	3.63
I work with other ILS students on HW and studying for ILS courses.	3.39	3.00
I work with other ILS students on HW and studying for courses I am taking outside of the ILS program.	3.24	3.00

Fig. 1. Student perceptions of the living-learning programs in the UMD Honors College. The data are presented as the percentage of combined agree (4) and strongly agree (5) responses over the total number of responses. The percentages of combined 4 and 5 answers from ILS students are shown by the blue bars. The percentages of combined 4 and 5 answers for the UMD Honors College (red bars) were calculated as the mean percentages of all seven living-learning programs (LLP's) in the Honors College. Each program had a response rate of at least 30%. Source: UMD Honors College Student Advisory Board. Used with permission.



- Q1 – Getting into my LLP was influential in my decision to attend UMD.
- Q2 – My LLP classes were challenging.
- Q3 – I learned a lot in my LLP classes.
- Q4 – My LLP met my expectations.

The Authors

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Leveraging the Research Capacity of the Doctoral University for Honors Education:

The “Research Collaborative” Model

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Abstract

The Sustainable Food Systems Research Collaborative (SFSRC), housed in UMaine's Honors College, provides a structure for interdisciplinary, community engaged research. It complements the academic offerings of the College to enhance opportunities for students to begin research projects with community partners. Students from any discipline may participate in helping to frame and solve problems that are posed by community groups such as food banks, institutional dining services, economic development organizations, and farmers markets, or that may arise trying to understand the social forces that drive food choice and consumer behavior. The research collaborative model promotes early exposure to research, interdisciplinary thinking, and sustained engagement with partners over time.

Leveraging the Research Capacity of the Doctoral University for Honors Education: The “Research Collaborative” Model

The faculty reward structures (tenure, promotion, and post-tenure review) of the doctoral university favor an emphasis on graduate research and the associated grantsmanship with which it is intimately related. The capacity for research is high because of the accumulated expertise, instrumentation, and other resources such as graduate stipends and library holdings. However, undergraduates are regarded as less central to a thriving research enterprise because they have less time and a less developed theoretical and technical skill set to devote to a research project than graduate students and because of the time and effort needed on the part of faculty to develop their technical and content expertise (Dolan & Johnson, 2010).

Undergraduate research broadly construed has important benefits for students, including development of process skills and habits of mind as well as disciplinary identity. It has been found to be correlated with increases in retention, probability of attending graduate school and an increase in faculty job satisfaction. Undergraduate researchers also take on the organizational challenge of executing and communicating their project (Webber, Laird, & BrckaLorenz, 2013; Crowe, 2008). We argue that Honors programs have a special place in research-intensive institutions in creating an environment in which undergraduate research is valued and can thrive. Not only do Honors colleges or programs usually require undergraduate research for the thesis or other capstone, but also they generally support the enterprise with curricular offerings and advising that helps students negotiate the process successfully. Honors can mediate access to faculty mentors and can use its interdisciplinary ethos to help students reach across traditional boundaries to create and execute their projects.

Here we report on our new Sustainable Food Systems Research Collaborative (SFSRC) housed in the Honors College; we also discuss the generalizable features of this *research collaborative model* that takes advantage of the multi-disciplinary academic environment fostered by Honors to accomplish several educational goals for students. These include broad contextualization of specific research projects within a larger thematic that is generated at the nexus between many disciplines; creation of a dynamic meeting space where academics—both faculty and students—and community partners can co-define engaged research projects; opportunities for community and university partners to create longer-term relationships that span several cohorts of undergraduate researchers; and a scaffolded approach to the research that will eventually lead to the undergraduate Honors thesis.

In the following section we provide some context for the research collaborative model within the UMaine Honors College curricular framework, then discuss the development, successes, and challenges of our first example, the SFSRC. Finally we comment on the potential for broader applicability of the model.

Honors Context at the University of Maine

Honors at the University of Maine was instituted in 1935, making it one of the oldest programs in the US. The program became a college in 2003 and presently features most of the characteristics of a fully developed Honors College under the guidelines published by the National Collegiate Honors Council (NCHC Online Guide, 2015). The Honors College was designated one of seven institutional Signature Programs of Excellence (UMaine Signature, 2016)—all programs identified by their strengths in research and education—and presently graduates about 100 students a year or about 5% of UMaine’s graduating class.

During the first two years, students take a required four-course core sequence, *Civilizations, Past, Present and Future*, in which they explore the foundations of western thought and culture including aspects of science and technology in small seminar style precepts. This common experience takes place in classrooms that are located in the Honors residence halls, further building the living-learning community that is Honors at UMaine. The make-up of the classes and the core curriculum promote interdisciplinary perspectives helping to broaden the students' thinking, while the rigorous year-long thesis process at UMaine encourages an in-depth look at a topic or problem in the student's major.

A bit more detail about the Honors thesis is germane, as this part of the Honors curriculum is strongly affected by the new collaborative model. Students assemble their own 5-person thesis committee in consultation with their thesis advisor. At least one member of the committee comes from the Honors faculty. The committee meets with the student at least once as a group in the early stages of the research where the student presents his or her thesis proposal. The student then meets regularly with the advisor throughout the research project and may also meet with other committee members as needed to assist with specific aspects of the project. The committee is brought together one final time for the defense of the thesis. One special feature of the thesis defense, in addition to the presentation and defense of the thesis project itself, is the discussion of the student's "reading list", an annotated list of texts (broadly construed) that have been influential in the student's intellectual and personal development during university. Thus even when the students have been working at a highly specialized level they are asked to construct this reading list, which reflects their broader understanding and perspectives.

SFSRC reinforces this model of breadth *and* depth in the intellectual engagement with a research topic by providing students an opportunity to explore collaboratively multiple and

varied aspects of the food system while working on individual projects of their own. We will discuss this in more detail later in the paper.

Origins of Research Collaborative Model

One of the goals of the collaborative model is to engage students to begin thinking about their thesis work earlier in their college career. For more than five years, one model that accomplishes this for a particular group of bio-related disciplines is the Honors College's participation in the NIH-sponsored Idea Network for Biomedical Research Excellence (INBRE), a program that provides funding for several specialized research courses in genomics for Honors students. In addition it provides for about a dozen junior-level, thesis, and summer research fellowships each year. While not specifically tied together, the courses provide each cohort of students valuable training that prepares them for their eventual thesis work. The model we describe here is partly inspired by the scientific lab group model but is more expansive in that it incorporates multiple disciplines and a component of community engagement.

A confluence of student and faculty research interests; the Honors College's expertise in fostering undergraduate research through the thesis process; and an opportunity for funding resulted in the formation of the Sustainable Food Systems Research Collaborative. In fall of 2013, a group of Honors faculty submitted a proposal in response to an RFP for start-up funding for new sustainability initiatives that originated in our institution's Sustainability Solutions Initiative (SSI). Nearing the end of their large NSF-funded project, SSI (since renamed the Senator George J. Mitchell Center for Sustainability Solutions) was interested in seeding and collaborating in areas of interest on campus that had not previously been integrated into its research portfolio. It is worth noting that the SSI's primary focus was on faculty and graduate (rather than undergraduate) student collaboration and involvement with community-engaged

research. The originators of SFSRC (all co-authors of this paper) were already very involved in a broad attempt to foster community-engaged scholarship at the *undergraduate* level and many of them were also doing work on aspects of the food system. A search of the records of the Honors College revealed that in the prior five years, approximately fifteen Honors students had written their theses on some aspect of food production, nutrition, food policy, or agriculture. Most of these projects had little or no linkage to each other, nor did they build on or create ongoing relationships with community partners. However it was clear from all of this work on food systems by both faculty and students that the potential existed to create a different research model within Honors that could have a real impact on both our college and our community.

Thus we sketched out a proposal to establish the SFSRC that would bring together faculty from Honors and others units on campus, undergraduate Honors students majoring in a variety of disciplines, and community partners who needed research resources and expertise. As was hoped, the proposal, with its focus on *undergraduate* research, did find traction with the SSI funders (Aktas, 2015). The fundamental principle underlying the SFSRC is the Knowledge-to-Action principle (Silka, 2010) of sustainability science: to find solutions to real problems by coproducing the knowledge that is needed through “close collaboration between scholars and practitioners” (Clark & Dickson, 2003, p. 8059).

Goals of the SFSRC

As outlined in the original proposal, the SFSRC was conceived as a working group that would:

- Foster broad, interdisciplinary conversations about Sustainable Food Systems (SFS) while supporting students in their research projects.
- Host seminars, workshops and informal gatherings related to SFS.

- Engage the University of Maine Honors College community in important work at the local, regional and even international levels by organizing the broader conversations and linking stakeholders to co-create particular research projects.
- Serve as an on-ramp to research for sophomores and juniors who are still seeking to define and contextualize a research effort.
- Enhance the College's ability to attract funding to support students, faculty and community partners in their joint work.

Beyond these objectives and outcomes related directly to the topic, we also envisioned the SFSRC's collaborative model would have additional benefits, specifically related to retention, the research experience itself and community partnerships. We will say a bit more about this aspect in the Discussion section.

As will be outlined next, all of these goals and activities have been initiated and sustained through the first cohort of three students starting in May 2014 and the second cohort of five students beginning in May 2015.

Beginnings (Spring/Summer 2014)

The initial funding stream from SSI (NSF-EPS-0904155) supported the formation of a steering committee consisting of the present co-authors and allowed the SFSRC to engage three undergraduate students as research fellows in a month-long exploration of community engaged research, topics in the food system, and research methods, while initiating research projects of their own (May-June, 2014). Typically students are compensated for about 3 or 4 weeks at the rate of \$500/week.

As the essence of the SFSRC model stems from the detailed collaboration of students, faculty, and community partners, we present a bit more detail on these initial collaborations,

somewhat in the spirit of a case-study. We also note that, in addition to the three undergraduate fellows who began working in spring of 2014, another student, Shannon Brenner, whose research began in 2013 and culminated in her 2014 Honors thesis: *Bridging Gaps and Building Solidarity*, can be thought of as a transitional project between the single thesis mode of work and the collaborative mode. Her thesis was based on research with a local community organization's SNAP benefits program at the local farmer's market. While the start of Brenner's work predated the establishment of the SFSRC, her thesis project and defense were entwined with the group and formed the basis for an ongoing partnership; her work was presented along with that of the first SFSRC cohort at several local and national meetings including a national meeting on Food & Agriculture in June 2014 and at the 2014 NCHC conference in Denver. (Haggerty et al., 2014a,b)

The initial cohort of Honors fellows in the SFSRC (May 2014-April 2015) included Audrey Cross '16 and Ashley Thibeault '15, both Ecology & Environmental Sciences majors who chose projects related to the *Real Food Challenge*, a national effort to move the food purchasing needs of higher education institutions towards more "real" food: food that is more local, more nutritious, and more fairly produced (Real Food, 2015). Cross examined the networks that enable and hinder institutional change at universities committed to the Real Food Challenge, while Thibeault used the Real Food Challenge's online calculator app to determine the present percentage of "real food" purchased by UMaine Dining Services. The third of the initial fellows, Danielle Walczak '15, was a journalism major whose thesis, "Forward Not Back: Young People's Search for Community and Farming in Maine," is a piece of literary journalism that has recently been published as a major online article in the state's second largest newspaper (Walczak, 2015). Again, we present a bit more detail on these projects and their authors to

emphasize both the breadth of interests that can be incorporated into the model and to point out the synergy that comes from two students (Thibeault and Cross) using a common framework to accomplish a larger project, while carving out individual thesis topics within it.

Ongoing work of the SFSRC

Through Fall 2014 and Spring 2015, the faculty, students and community partners of the SFSRC have been invited to participate in local and regional workshops including the Maine Hunger Dialogue (Ladenheim et al., 2014a, b) and the University of Maine System Community Engagement Summit as a showcase project (Amar, Ladenheim, & Sheridan, 2015). The SFSRC was also invited to create an inaugural food strand at the 6th annual state-wide Sustainability and Water conference in March of 2015 (Haggerty et al., 2015). The resulting set of sessions brought together food researchers and activists from around the state and has prompted continuing conversations that have resulted in invitations to the SFSRC to participate in new projects and grant proposals. Through all of this work, students have continued to be the best ambassadors of the program.

The faculty members of the SFSRC decided to offer a junior-level Honors tutorial course entitled *Sustainable Food Systems: Principles, Policies & Practices* in Spring 2015 for seven students from a range of disciplines that could function as an on-ramp for students potentially interested in working on food systems research in conjunction with SFSRC. Kate Sheridan, the then Food and Agriculture Coordinator of one the community partner organizations, was invited to join the team that taught this course. This course provided students a broad and interdisciplinary understanding of food systems and an exposure to community engaged learning that functioned as a bridge to ongoing research in the SFSRC. Specifically, research projects initiated in the course became the basis for students' applying for a new round of SFSRC

research fellowships and three of those students were successful in obtaining one. In this course, the students gained critical skills that could be transferred to the fellowship setting: critical reading of the literature, learning to think about issues from interdisciplinary perspectives, exposure to a broad range of issues in the food system, navigating a class with multiple teachers, working with a community partner, and negotiating the tension between theoretical and applied research. While the course was successful in getting several of the students involved in the SFSRC and giving them a head start on their thesis research projects, the students did struggle with the number of “cooks in the kitchen” as all were accustomed to a much more conventional model of one professor per class. In their evaluations students reported the classes were worth attending (4.20/5.00) and that they had learned a lot in the course (4.40/5.00), but their responses to questions related to organization and assessment were less positive. Thus while the course itself remains a valuable means of generating interest and imparting information, we would consider reevaluating the roles of the multiple faculty members and a community partner as instructors before repeating the course.

Supplemental funding for Spring 2015 allowed the SFSRC to engage a second cohort of five new fellows in May of 2015. Two of these students, Afton Hupper (Ecology & Environmental Science) and Brady Davis (Business) have begun a project, *Exploring Food Hub Models: Implementation and Strategy* with the local town economic development office, jointly advised by Honors faculty member, Mark Haggerty, and Geoff Gordon (Orono Economic Development Corporation). Most gratifying was the town’s willingness to continue funding one of the students to do research through the summer of 2015.

Other May 2015 fellows included Sarah Mullis (Sociology) who is currently working with John Jemison researching the impact of the Orono Community Garden on food security and

social isolation of the neighboring senior citizens who are recipients of the garden's produce. Interestingly, Mullis' project is the continuation of the initial work of another member of her cohort, Ginger Kieffer (Political Science) who originally began the work on the Orono Community Garden, though notably Mullis is asking different questions than those Kieffer explored. The fifth fellow, Alan Bennett (Journalism) is examining how the news media frame obesity in the state of Maine and he is being advised by Eric Petersen (Communication & Journalism).

The increased visibility of the collaborative is one way in which Honors has been able to attract the interest of disciplinary researchers and thus "leverage" the research capacity of the institution in the service of Honors education. Participants in the SFSRC now include faculty from Economics, Business, Food & Nutrition, Political Science, Cooperative Extension, Honors, Engineering, Journalism and more either participating or expressing interest. As the SFSRC has grown and become more well known on campus, it has been sought out by on- and off-campus constituents alike. For example, SFSRC was invited to send representatives to a newly formed Climate and Agriculture working group on campus and has collaborated on an undergraduate research training grant submitted to USDA by members of UMaine's School of Food and Agriculture. Also, the SFSRC has recently been approached by new off-campus partners, the Maine Farmland Trust and the Orono Economic Development Corporation, who expand our funding model through collaborative grant-writing and direct funding of Honors undergraduate research.

Outcomes and Discussion

The SFSRC has achieved, at least in the short term, the goals outlined above. While the model described here was inspired by local concerns, it is clear that similar efforts have been and

are taking place elsewhere and in slightly different forms. For example, a paper presented by Sylvia Torti (University of Utah) at the 2nd HERU conference described her institution's "Praxis Labs" which engage students and faculty and a local community partner in a two-semester course-based research/service project (Torti, 2015). We note several other similar models of engaged research have been discussed in journals such as *CUR Quarterly* (Cutucache et al., 2014), *Honors in Practice* (Fink & Lunsford, 2009), and *Journal of the NCHC* (Stark, 2013).

We asked each cohort of students to complete a written evaluation following their summer fellowship. We asked specifically about the experience of working in a collaborative and what was the most and least beneficial to them in terms of their individual research projects. Reflecting on the first two years of the SFSRC, the successes and enthusiasm of students and other stakeholders are apparent. The students report the SFSRC helped demystify the research process for them. They learned research skills such as how to access relevant materials, how to assess the usefulness of scholarly articles to their project, how to hone their research questions, how to communicate their ideas, and how to work well in a diverse team. One student in the 2nd cohort wrote:

"The biggest impact for me came in the way knowledge was shared. Instead of a one-way teacher to student transfer of knowledge, I appreciated the fact that I could sit at a table with faculty members and engage in a two way conversation where my knowledge advanced the understanding of not just students, but faculty and community members. In being viewed as a partner and not a student on this project, there was a great deal of pride in the work I did and the ideas I shared. I really felt like my insights were valued and that my efforts would contribute to a project that could have tangible benefits for the surrounding community."

And another member of the cohort reported:

"The Sustainable Food Systems Research Collaborative not only helped me decide on and narrow down a thesis topic, it helped me become a better researcher, collaborator, and critical thinker... Through the collaborative, I changed topics, debated ideas, and refined my focus into a project much more refined than I had initially proposed. I learned the value -- and the struggles and frustrations of -- independent research, and I couldn't be more

pleased with the results.”

Also in this initial period, members of the SFSRC have collectively participated and presented in 11 conferences and 8 workshops including several invited talks. A student thesis has been published as a major newspaper article (Walczak, 2015) and several other theses are in process as the projects they are based on near completion. One student developed a website to summarize and disseminate her work on food hubs (Hupper, 2015). New partnerships have been forged and funding streams are in the pipeline.

As Table 1 shows, seven of the eight students selected as SFSRC research fellows in the last two years remained part of SFSRC, three have completed their theses and the rest are on track to do so. The eighth student is continuing to work on a food-related topic but outside the SFSRC “umbrella.”

Student/ Major(s)	Academic Year*	Community Partner	Thesis/ Other outcomes	Funded work
Brenner/ Sociology	Senior	Food & Medicine	Completed/ 2 presentations	N/A
Cross/ Ecology & Environmental Science	Junior	Real Food Challenge	Anticipated Spring 2016/ 3 presentations	Summer Research Fellow, Travel Support
Thibeault/ Ecology & Environmental Science	Junior	UMaine Dining	Completed/ 2 presentations	Summer Research Fellow, Travel Support, Thesis Support
Walczak/ Journalism	Junior	N/A	Completed/ 5 presentations, Publication	Summer Research Fellow, Travel Support
Bennett/ Journalism	Junior	N/A	Anticipated Spring 2016/ 3 presentations	Summer Research Fellow, Travel Support
Davis/ Business	Sophomore	Orono Economic Development Corp	Anticipated Spring 2017/ 2 presentations	Summer Research Fellow
Hupper/ Ecology & Environmental Science	Sophomore	Orono Economic Development Corp	Anticipated Spring 2017/ 2 presentations, Website	Summer Research Fellow, OEDC Intern
Kieffer/ Political Science	Sophomore	Orono Community Garden	Continuing Honors food research outside SFSRC	Summer Research Fellow
Mullis/ Sociology	Junior	Orono Community Garden	Anticipated Spring 2016 1 presentation	Summer Research Fellow, Thesis Support

*The second column refers to the academic level of the student when they first engaged with the SFSRC.

In spring of 2015, at least a dozen Honors theses with some connection to food and agriculture, whether from a historical, cultural or biological/nutritional perspective were

successfully defended including the two completed under the aegis of the SFSRC and listed in Table 1. This represents a large increase from the 15 or so in the prior 5 years. Clearly SFSRC's emergence is timely with respect to the growing interests of stakeholders at the University of Maine and around the state.

While any of the food systems research projects sponsored by the SFSRC might have been undertaken by any one of the students on their own, as previous history indicates, we anticipated that working collaboratively would add value to the research experience. For example, we expected that the collaboration would yield cross-fertilization of ideas and approaches to research, that students would benefit from exposure to multiple perspectives, that certain synergies would occur among and between that would not otherwise be possible, and that research questions might be addressed from different disciplinary perspective both simultaneously and longitudinally. Overwhelmingly, students commented on the value of learning together, of "bouncing" ideas off one another. One student wrote in her evaluation of the experience: "Being able to collaborate [with] community partners, [fellow students], and Honors Faculty was the most beneficial for me during the fellowship...because I always had someone to bounce ideas off of" while another student wrote, "Every conversation revealed different insights from all of our different backgrounds and perspectives."

It is worth reflecting also on the *challenges* posed by the collaborative model. Central to a collaborative of this type is the question of how to satisfy the needs of both academic and the community partners. One clear issue is the tension between the academic requirements of a student thesis and the needs of partner organizations for other kinds of deliverables (such as a data summary or brief policy analysis). Another is the difference in timelines and calendars of the organizations impacting availability of students and other stakeholders to participate in

particular meetings or meet certain deadlines. Clearly there is no simple answer to this question except to establish strong and equitable lines of communication calling on the best practices of community-engaged research and sustainability science (Wolff & Maurana, 2001).

Another important question is under what conditions is the SFSRC model sustainable? The initial phase of the project has been supported by grant funding. While most of this funding has gone to support student research fellowships, faculty members have also received modest stipends (on the order of \$1000) to manage the intensive May fellowships. In addition, the College has been able to assign some administrative time to help manage this effort. While the core faculty members have incorporated the SFSRC into their own research programs, the extra overhead associated with intensive collaboratives can be problematic. Some form of released time will be required to continue this key aspect of the collaborative and to account for differential commitments of different faculty members. Also the work product of collaborative project with a student and a community partner may be less valued in the academic reward structure.

The start-up funding allowed us to create the structures that enabled community members to partner with the research university to help foster and support undergraduate research both organizationally and financially. However, it remains challenging to find institutional support for faculty work and to run the broader, interdisciplinary elements of the collaborative that support and train students.

As more students become interested in the topic of the food system and more faculty and community partners become involved, the question of scalability arises. Given the size of our thesis cohort (about 100 students per year), it is unlikely that the student numbers in any one cohort would grow beyond about 8 to 12 or roughly 10%. However, the collaborative includes

students from sophomores to seniors and so events, workshops, and other working sessions could eventually involve 20 or more students in various stages of the work. Peer mentoring models and a managed set of commitments by participating faculty should help propel this effort. Thus we do not see a specific, topical research collaborative as a model that needs to scale to reach *all* Honors students in the institution. A set of three or four such topical collaboratives (see below) could reach say 50% of our Honors students, leaving room also for the individually mentored projects that have been the norm up to now.

Another question that arises is that of ownership of the SFSRC. Piloted in Honors, could students who are not in Honors but interested in the work be allowed to participate? How can a relatively porous structure be designed that could allow non-Honors students to be accommodated with appropriate institutional support? Is this model another case of using Honors as an engine of pedagogical innovation that then exports the model for the benefit of the institution as a whole?

It is quite likely that the collaborative model will find itself replicated for other thematic areas. Already, the INBRE/genomics cluster team has been working to form a Genomics Research Collaborative to supplement the course and research efforts already in place for that area of study. An area such as climate change, which has a very strong research presence at UMaine, will also be a good candidate for the collaborative model. It will be most interesting to see if the model can be exported to the arts and humanities that tend to be a bit more solitary enterprises. Honors has worked closely with the University of Maine Humanities Center (UMHC, 2016) and one of our Honors preceptors has already experimented with the creation of a Humanities Lab (Harlan-Haughey & Warner-Evans, 2014).

The Sustainable Food Systems Research Collaborative at UMaine is an instance of a model for community-engaged research that provides an early on-ramp to research for Honors students by creating an environment for early access to multi-disciplinary perspectives, workshops that build research skills and practical connections with community organizations with needs in applied research, and a nexus for building a longitudinal set of partnerships and funding streams. The model adds both breadth (in terms of interdisciplinary thinking) and depth (in terms of training and partnering opportunities) to the existing models of Honors thesis research.

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Thesis Support: A Comprehensive, Multi-Support Approach

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Abstract

The completion of an undergraduate thesis may be the single most rewarding and most challenging aspect of graduating with honors. However, simply encouraging students is not enough to ensure that most students will complete the thesis successfully. Research shows that students need more than verbal encouragement. The multi-support approach, which includes face-to-face meetings, peer mentoring, online discipline-specific thesis guides and a dedicated thesis course throughout the curriculum have reduced the number of thesis related withdrawals, and have likely improved the quality of the theses from the Schreyer Honors College at Penn State University. In this article, the supports that have been implemented are described to offer any institution or program requiring a thesis a variety of proven best practices to support students through their thesis process.

Thesis Support: A Comprehensive, Multi-Support Approach

There are many benefits to students, faculty, institutions and society of the publication of undergraduate theses. However, honors programs that require undergraduate theses can improve completion rates by offering students support during the process. One of the undeniable benefits of writing a thesis is that it offers honors students the opportunity to deeply explore an area of academic interest and to contribute original research to their academic discipline. Through their thesis writing process students begin a relationship with leading researchers in their area of honors. Pragmatically, for students angling toward graduate school, writing a thesis provides them with a ready writing sample, often required in the graduate admission process. Employers are likely to view with favor the skills that are required for a student to successfully complete a thesis. Years after a student graduates with honors, it is likely the thesis will remain in their minds as a memorable and significant project that helped the student grow academically and personally since it requires organizational skills, stamina, and confidence to complete a thesis.

For faculty, supervising a thesis is an opportunity to engage in research with some of the brightest and most motivated undergraduate students at their institution. As much as students learn from working with leading Scholars, faculty gain the fresh perspectives, initiative and enthusiasm that comes from seeing their scholarship through a young Scholar's view. It may have a rejuvenating effect on their work, leading to more studies, experiments and even publications. In many ways the undergraduate thesis experience is an ideal academic arrangement. Indeed, the benefits of writing a thesis are not reserved only for students, as the college or university benefits from the prestige of having students complete undergraduate research and even society benefits as original discoveries are made that result in advancements in disciplines across the entire spectrum of academic study.

A number of scholarly articles in a range of disciplines offer specific strategies that have proven to be successful. John J. Siegfried writes in the *Journal of Economic Education*, that for economics majors who wish to complete a thesis, a required econometrics course and a policy seminar prepare students, and a series of short-term deadlines helps combat procrastination.¹ Brian Paltridge, in the *Journal of English for Specific Purposes*, argues that students are able to produce better theses research when presented with the range of thesis options that might be open to them when pursuing their thesis research.² And Ford, Bracken, and Wilson present a two-semester course sequence that serves as a capstone experience for students' writing, designing, editing and presentation skills.³

In this article, we contend that a variety of supports are most effective to ensure better theses and a higher completion rate. Writing an undergraduate thesis is also an exclusive academic activity. Once admitted to the Schreyer Honors College at Penn State, thirty-six credit hours of honors coursework, a grade point average of 3.4 or higher and original research in the form of a thesis are the requirements that afford students the honor of graduating. Completing honors work, maintaining a high GPA and writing a thesis are opportunities to make the most of undergraduate education.

Yet, for all the benefits of writing a thesis, there are as many challenges associated with it. By design, the thesis is the most ambitious undertaking by students aspiring to graduate with honors, and it can be one of the toughest academic challenges for them. For some students it is the generation of a thesis topic that keeps them from moving forward. Some students struggle to communicate successfully with busy faculty whom they need to work with to complete their project. Others find they simply can't make the time to write, or the research question they started out with has fizzled in the light of more research so their motivation to continue has

waned. Assessment of academic programming has revealed that the seemingly complex process of completing the thesis is a leading reason why some students withdraw from the Schreyer Honors College, despite the successful completion of honors coursework and a high GPA.

Every year students withdraw from the honors college because they are struggling to complete their thesis than for any other reason.⁴ Some students withdraw as late as the second semester of their senior year, and the reasons associated with their decision to leave the honors college because of the thesis requirement include trouble completing the research and writing needed, the attainment of desirable employment, and complications in working with their thesis supervisor.⁵ In 2013, forty-four Scholars (which makes up 2.3% of our students population) withdrew from the honors college and 76% of these withdrawals were due to the thesis requirement.⁶

Through a multiple support approach, the academic department has developed several strategies to support Schreyer Scholars with the tools they need to successfully navigate the thesis process with relative ease, with the goal of reducing the number of students who leave the honors college because of thesis complications and difficulties. Benchmarking of other honors programs offered a number of insights that have been incorporated into our multi-support approach. And, after a year of implementing our new supportive tools, we have seen a slight decrease in the number of scholars withdrawing; in 2014, 33 scholars withdrew; for the spring semester of 2015, only 19 withdrew. We firmly believe the processes put in place helped decrease the number of scholars who withdraw due to the thesis process.

The academic department of the Schreyer Honors College has focused on supporting students with the thesis process in a number of ways:

Face-to-Face Communication

This is a meta-communication part of the support since several members of the honors college staff and faculty meet face to face with our Schreyer Scholars to offer advice about the thesis and other graduation requirements during the course of their time as honors students. During these meetings, which include the freshmen orientation, one-on-one and small group meetings as well as the senior group meeting (held at the end of the junior year for all rising seniors), staff and faculty underscore the importance of effective communication management with professors and honors college personnel in order to progress successfully toward the completion of the thesis. Some of these communication management tips include:

- Respect professors' time by allowing for time for review of work instead of submitting work and expecting a 24-48 hour turnaround. A week is the minimal amount of time you need to provide a professor to review your thesis materials.
- Include your honors college designation on your email signature to signal to professors your academic seriousness
- Be willing to meet with faculty at their convenience, not yours.
- Do not be overly sensitive about harsh criticism of your academics. While you may be a star student, your faculty member is more experienced and can guide you to greatness, if you are willing to be tough about criticism. Original research is at a higher level than coursework, even honors coursework, so be ready to be communicated with as a peer and don't panic if the professor is harsh.

Group Senior Meeting

These mandatory meetings are for all rising senior Schreyer Scholars to help them prepare for their final semester(s). The academic team reviews important information regarding the thesis process and key due dates to prepare our Scholars to successfully graduate with honors. We also underscore the moral hazard of leaving the honors college after enjoying all of the benefits of being a Scholar either since freshman year or when they entered, either through the Sophomore or Junior Gateway admission process.⁷

Been There, Wrote That: The Ins and Outs of Thesis Writing

Both a helpful “how to” and an inspirational talk to our Senior Schreyer Scholars on the ins and outs of writing a thesis presented by a graduate student in a similar field to the attending group of Scholars. This peer-to-peer mentoring has proven helpful because it offers students advice from someone who has recently been through the process successfully.

Thinking about the Thesis with the Associate Dean

This is an informal brainstorming session for all Schreyer Scholars who want to think about their thesis whether they are at the beginning of the process or at the very end. For many writers, simply beginning and developing potential topics can prove to be the most difficult aspect of writing a thesis. For this reason, a helpful and supporting “thinking” session is one venue where multiple ideas may be developed and students develop a relationship with the academic department of the honors college, thus giving them support to help them in other ways, including their topic formation.

Curricular Structural Support

One of the most comprehensive supports for the thesis is curricular structural support in the form of a uniform thesis course. All academic colleges or departments (depending on the

college size) have created a uniform thesis research course, (at Penn State this will be Thesis Research 494H), and that title will appear on Scholars' transcripts. The course ranges from 1-6 credits for research and writing. Having this course appear on the student's transcript signals to employers and grad schools that the student completed a thesis, instead of the previous listing of "independent research" or "independent study." Furthermore, grading the thesis credits creates a more systematic approach to quality for the thesis work. Previously, some faculty felt obligated to offer honor students an "A" for thesis work, simply because they are honors students and by nature are performing at a higher level than they would if they were not honors students. However, all theses are not "A" work and should be graded more accurately. Instructions to faculty for the new grading policy are as follows:

Grade honors thesis research as you would any other course, in accordance with the expectations set forth in the syllabus for 494H. The grade should accurately reflect the quality of the student's work, attendance and participation.

1. Honors thesis or project coursework graded "B" or higher in all components will count toward graduation credit and fulfillment of graduation with honors from the Schreyer Honors College.
2. Honors thesis or project coursework graded "B- or below" will count toward graduation credit but not fulfillment of SHC requirements
3. If the course is offered twice, we leave the grading of the first semester to the discretion of the department. An R either for ongoing research may be offered or an actual letter grade that evaluates the quality of the research. The grade in the final 494H course must be B or higher for the student to graduate with honors.

Best Practices Guides by Department or College and Other Online Resources

Books and articles that offer general how-to advice for writing theses and dissertations can only go so far to help a student who is writing an undergraduate thesis. We have found a number of book length references for students who are writing theses or dissertations, and all are generic in nature. James Mauch and Naomi Park offer the fifth edition of their popular *Guide to the Successful Thesis and Dissertation: A Handbook for Students and Faculty* (2003). Allan A. Glatthorn and Randy L. Joyner 's *Writing the Winning Thesis Or Dissertation: A Step-by-Step Guide*, (2005) is divided by sections, focusing on each specific part of the process. Raymond L. Calabrese's book, *The Elements of an Effective Dissertation and Thesis: A Step-by-Step Guide to Getting it Right the First Time* (2006), and Susan Carter, Frances Kelly and Ian Brailsford's *Very thorough Structuring Your Research Thesis* (2012) offer the basics for thesis development. While they are helpful additional reference material for students who are writing theses, they fall short of individually guiding students through the hurdles that they are bound to face during the process.

Whether the student is working in engineering, history, science or math makes a difference in the structure or the department requirements, which is why discipline-specific guides are so valuable.

Like many honors colleges, we place discipline supervision in the hands of the discipline experts within colleges and departments. Therefore, the discipline-specific guides are written by the departments, not the honors college. Because there are twelve colleges, and more than 160 majors, students writing theses benefit most from having a discipline-specific example from which to base their thesis writing. Links to each college or department guide are housed on the Schreyer Honors College website for students to find the resource easily.⁸

Formatting and Writing Support

Structural and communication support and not the only barriers students face when writing a thesis; the actually formatting and finding quit time to write can serve as a frustrating road block. The following processes have become very popular amongst our students.

Thesis Boot Camps

Thesis Boot Camp is a one day (7 hour) thesis writing program to help Schreyer Scholars progress through the sometimes difficult stages of the thesis journey. By offering a supportive environment for this intense and focused project, the camp provides participants with the structure and motivation. Formatting and technical support, as well as a brief “pep-talk” from our associate dean take place during this time. We also provide the Scholars with breakfast and lunch for these 7 hour sessions. We offer three camps for spring graduates during their final semester.

Thesis Formatting Sessions

Students are invited to a one-hour session led by our Student Academic Services Specialist, to go over the template and specific formatting requirements step by step. We end each session with an open Q&A. These are beneficial to Schreyer Scholars who are having difficulty navigating the formatting on their computers. Our Student Academic Success Specialist demonstrates the proper formatting through both a PC and a Mac computer.

Format Review

Each Scholar is required to electronically submit a draft of their thesis for review of the formatting. This is *not* a submission of the final form of the thesis; rather it is simply a review of the *format* of the thesis. We check, for example, to make sure of the proper use of fonts, tables, and pagination. We do not expect Scholars to have their thesis completed at this point, but they

must submit a draft so that we can review the format. Each student receives individual feedback via an email.

Presentational Practice

R.O.A.R. (recording of academic research) – This practice will improve Scholars communication skills; the Recording of Academic Research, known as the ROAR contest, has been developed to require students to make a 2-3 minute video of their thesis research.⁹

Technological Support

Online Submission

Every completed and approved thesis is submitted electronically through the library and will be displayed on the World Wide Web for eternity. This gives Scholars the incentive to create the best possible thesis.

Bibliography

An online bibliography to assist students and a lending library for thesis prep books is available to Scholars. In addition, special thesis related meetings are held regularly.

Conclusion and Future Direction

The thesis is a crowning achievement for any high-performing student, however; a good honors program must support its scholars through the thesis process in multiple ways to ensure success. This article offers the ways that Penn State's Schreyer Honors College has supported students through the thesis process through face-to-face, structural, formatted and presentational methods. In the future further support for thesis preparation at Penn State and elsewhere may include an honors exclusive writing center; perhaps staffed by seniors or recent alumni. Another way to improve and strengthen the thesis process would be to institute a university-wide defense of the thesis. The goal of all of this support is to offer students the best possible academic

experience during their thesis process. This support will prepare them for graduate school and/or the world of work, where they will likely draw upon the skills of perseverance, communication, both oral and written, and the determination to see a project through to completion in order to experience success.

Notes

¹ Siegfried, John J. "Principles for a Successful Undergraduate Honors Program." *The Journal of Economic Education*, 32.2 (2001) 169-177.

² Paltridge, Brian. "Thesis and dissertation writing: an examination of published advice and actual practice," *English for Specific Purposes*, 21.2 (2002) 125-143.

³ Forde, Julie Dyke; Bracken, Jennifer L. and Gregory D. Wilson. "The Two-Semester Thesis Model: Emphasizing Research in Undergraduate Technical Communication Curricula." *Journal of Technical Writing and Communication*, 39.4 (2009) 433-453.

⁴ The academic department conducted an assessment of emails sent to the honors college dean during academic year 2014 and determined that the greatest percentage of those leaving the college did so because they did not want to complete the thesis.

⁵ This data was a result of the assessment of emails from 2014.

⁶ Ibid.

⁷ The Gateway entry process is based upon an evaluation of a student's performance and research potential. The evaluation of all applications is done by the faculty and/or administrators of an academic unit.

The evaluation is typically based on:

Academic achievement since beginning college, desire, ability and motivation to conduct research or creative projects leading to the completion of an undergraduate honors thesis;

interest in and aptitude for leadership, civic engagement, and international experiences as an undergraduate.

⁸ Thesis Guides Appear on the Schreyer Honors College website: <https://www.shc.psu.edu/academic/thesis/help.cfm> (accessed January 20, 2016).

⁹ The Recording of Academic Research (ROAR) videos appear on the Schreyer Honors College website: <https://www.shc.psu.edu/academic/research/roar.cfm> (accessed January 20, 2016).

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The Undergraduate Thesis: Structured for Success

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Abstract

From scientific experiments to the scholarly analysis of literature, the undergraduate thesis is an ideal way to offer the self-directed learning that the honors experience is known for yet it can be difficult for students to complete such an endeavor. The Honors College at Oregon State University offers one way to restructure and support the undergraduate honors thesis using backward design, long-range planning, predictive analytics to track progress, automated reminders for students and thesis mentors, along with supports to connect students to faculty and research projects. In addition, the structure stresses the importance of messaging to prospective students, current students and faculty members communicating the value gained by completing the thesis. The Honors College Thesis Success in Stages (TheSIS) guide removes many of the barriers associated with completion of the undergraduate thesis. These tools support every honors student through the entire thesis process.

The Undergraduate Thesis: Structured for Success

The undergraduate thesis is both a defining feature and an ongoing challenge for many honors programs and colleges. The complex nature of the thesis project produces important benefits—research indicates that it is a valuable capstone experience that allows students to develop key critical thinking and communication skills, (Bauer, & Bennett, 2003; Mauch, & Park, 2003) —but it can be difficult for those same reasons. When students do not complete the thesis project, they cannot reap all of the rewards. The impact on completion rates can also be problematic for honors colleges or programs that assess their own success in part by that metric. A research university context intensifies the challenges as well as the opportunities that the thesis presents; students may have a broader array of research opportunities, for instance, but more difficulty establishing connections with faculty mentors.

At Oregon State University (OSU), the Honors College (HC) is a degree-granting college of approximately 1000 high-achieving students comprising about 4% of OSU's undergraduate population on campus pursuing any undergraduate major OSU offers. Honors students receive the benefits of small class sizes, priority registration, specialized academic advising, and undergraduate research and mentorship, as well as being members of a close-knit community within a large public land grant university. They fulfill honors requirements as well as academic major requirements, taking a more diverse curriculum and completing an undergraduate thesis as a part of their jointly-awarded Honors Baccalaureate degree. The thesis must be a significant scholarly project; most students choose a project related to their major, but they may also work in another discipline if they have the interest and necessary expertise. Each thesis committee includes the primary faculty mentor as well as two other faculty members and/or experts, all of whom participate in the final defense.

Historically, HC students have found the thesis requirement challenging to complete. Longitudinal data shows students withdrawing from the HC in the third year of study, the point at which they are expected to select a mentor and solidify a thesis topic, at a higher rate than students in their first or second year of study. Additionally, many students describe their reasons for leaving the college as not seeing the value in completing the thesis, not finding the right mentor or topic “fit,” and/or finding it difficult to manage the intense self-directed learning on top of advanced coursework in their major. Reviewing these long-term trends highlighted the need to structure the thesis experience to support students in moving through the process and completing the Honors degree. To work toward that goal, we used a “backward design” approach. We conducted in-depth interviews with a variety of audiences in order to identify the key steps and characteristics of an effective thesis process and then designed a comprehensive set of resources and personalized tools that allow students to create and follow their own map to thesis success.

Backward Curriculum Design and the Thesis

The concept of backward design is prevalent within curriculum design literature, and suggests three broad steps: (1) identify the desired outcome, (2) determine acceptable evidence, and (3) plan learning activities and experiences (Macdonald, 1971; Wiggins, & McTighe, 1998; Childre, & Pope, 2009; Miller, 2011). The backward design framework requires not only articulating clear learning outcomes but also implementing appropriate assessment to provide evidence of outcome achievement. It offers a foundation for continuous process improvement (Baughman, Brumm, & Michelson, 2014). Backward design fits the thesis process well because the outcome has already been identified and its value established. Many institutions have experimented with different forms of support for achieving that outcome (Gutgold, & Rogers,

2015; Burke, Heinonen, & Goepferd, 2015; Gellens, 2015). Some focus on finding a faculty member to coach a student throughout the thesis process, or addressing the challenge of writing, revising and incorporating feedback into a thesis, while other institutions support the thesis predominantly through the curriculum. As we have learned from those models and innovations, we hope that others will be able to take something away from our approach to the process and/or from the specific tactics we have adopted to support student success in the thesis.

At the HC, the thesis corresponds to one of the two distinct learning outcomes underpinning our degree requirements and curricular and co-curricular programming. The outcomes focus on two areas: engaged inquiry and scholarly inquiry. The latter states that honors graduates will have “developed the ability to engage in pursuits that create new knowledge and contribute to one or more scholarly areas of study” and will demonstrate a specific set of skills related to the thesis:

- Ability to choose a relevant and meaningful topic to study within a scholarly area
- Ability to employ a sound approach in creating new knowledge within a scholarly area of study
- Ability to synthesize and/or analyze results from a significant, self-directed, and open-ended project
- Ability to find multiple sources of relevant information
- Ability to evaluate the quality of information resources
- Ability to write an honors thesis: a significant, self-directed, and open-ended project
- Ability to present an honors thesis
- Ability to defend an honors thesis (Honors College, n.d.)

The thesis serves as the capstone for the HC experience, emphasizing the importance of learning outside the traditional classroom, communicating across disciplines, and gaining real-world research experience.

Having established the learning outcome (scholarly inquiry) and determined the evidence that students had achieved that outcome (the undergraduate honors thesis), we adapted backward design to develop the structure that would support students in making progress toward that goal. Grant Wiggins and Jay McTighe (1998) explain the concept by way of two analogies that are especially pertinent:

Backward design may be thought of...as purposeful task analysis: Given a worthy task to be accomplished, how do we best get everyone equipped? Or we might think of it as building a wise itinerary, using a map: Given a destination, what's the most effective and efficient use? (19)

We understood the thesis to be a “worthy” and highly complex undertaking, and wanted to “equip” students to complete that task by providing a “map” that would enable them to plan and follow “a wise itinerary.”

We began by taking stock of the current system and resources. Because the thesis had been a long-standing challenge, the level and type of support had evolved over time. For about fifteen years, the HC had been offering a one-credit “Introduction to the Thesis” course in various forms; this course has moved from being discipline-specific to more general, and from optional to required to optional again. Approximately five years ago, the HC delineated four key stages in the thesis process--roughly corresponding to one per year in a traditional undergraduate trajectory--and had continued to adjust their content and requirements. Resources were shared through a Blackboard organization to which all HC students belonged. While this system was

useful in breaking down the thesis process and centralizing some resources, it had significant limitations; most notably, it did not allow the HC to track students' progress or offer targeted support if they began to struggle.

To prepare for a comprehensive overhaul of the thesis process that would facilitate such individualized tracking and support, we sought a clearer picture of the thesis experience from the student and faculty perspectives and a stronger sense of the successful elements of other thesis programs at OSU. The HC Director of Student Success and Engagement facilitated individual and small group interviews with students, mentors, and advisors involved with the honors thesis or other thesis programs on campus, asking all interviewees the same questions about the process, responsibilities, and support structure:

What does your ideal thesis process look like?

What do you view as key activities to the process?

What events trigger the process to start?

What are the normal end points/states and what are the exceptions for each point/state?

What gaps exist between what you expect and what you are currently receiving?

What responsibilities do students/mentors/the HC organization as a whole have?

What problems or issues impact your performance?

What other thoughts would you like to share?

She then analyzed the responses carefully to seek the dominant improvement areas or themes that emerged. Within each theme, she distilled recommendations and action items, and formed teams of HC faculty and staff to address each of those over the course of a summer. The recommendations fell into two general groups: (1) creating a comprehensive overview of the thesis process and communicating with students and faculty mentors about key milestones and

resources, and (2) enhancing existing support and adding new sources of support at especially challenging steps in that process. The following sections explore in detail the two sets of recommendations and corresponding actions taken.

Structured Changes I: Maps and Messages

The first set of recommendations highlighted the need to make the thesis process transparent and accessible, with relevant materials and clear communications correlated with each stage. At the same time, the structure had to retain enough flexibility to allow students to personalize their approach to the thesis in accordance with their specific project, discipline, mentor's guidance, and individual circumstances. As we will discuss in more detail below, the HC built out the four stages of the thesis system to be more robust and distinct and asked each student to create a map pinpointing when they expected to hit each milestone. With Salesforce, a Customer Relationship Management system used within the college, we were able to track students' progress individually and also send timely updates to their faculty mentors.

One broad recommendation that came out of the conversations was to *create a network of timely, topical resources to utilize on the HC website, ensuring accurate information is inclusive, condensed, and integral to the thesis process, conveying clear requirements*. To those ends, the HC dissolved the Blackboard organization previously in use and developed the new Thesis Success in Stages (TheSIS) guide on the main HC website at honors.oregonstate.edu/thesis. The guide goes beyond dividing the thesis process into a series of manageable stages to lay out the essential tasks within each stage and pair those tasks with resources to support the students along their paths. **Start**, stage 1, involves learning about the thesis requirement and mapping out a personalized timeline; **Learn**, stage 2, requires students to explore research at OSU by examining previous thesis work and speaking with OSU faculty; **Undertake**, stage 3, prompts

students to select a thesis mentor and work with that mentor to select a topic, develop a research plan, and complete a formal thesis proposal; and **Graduate**, stage 4, supports students in the process of actually writing the thesis, including drafting and revising chapters, designing a poster, planning a thesis defense and submitting the approved, bound thesis.¹ Since each thesis journey is unique, not all students utilize the same available resources; however, the TheSIS guide keeps students on track towards completion in a purposeful, organized and timely way (Honors College, n.d.). All stages are shown on the Thesis Map in Figure 1.

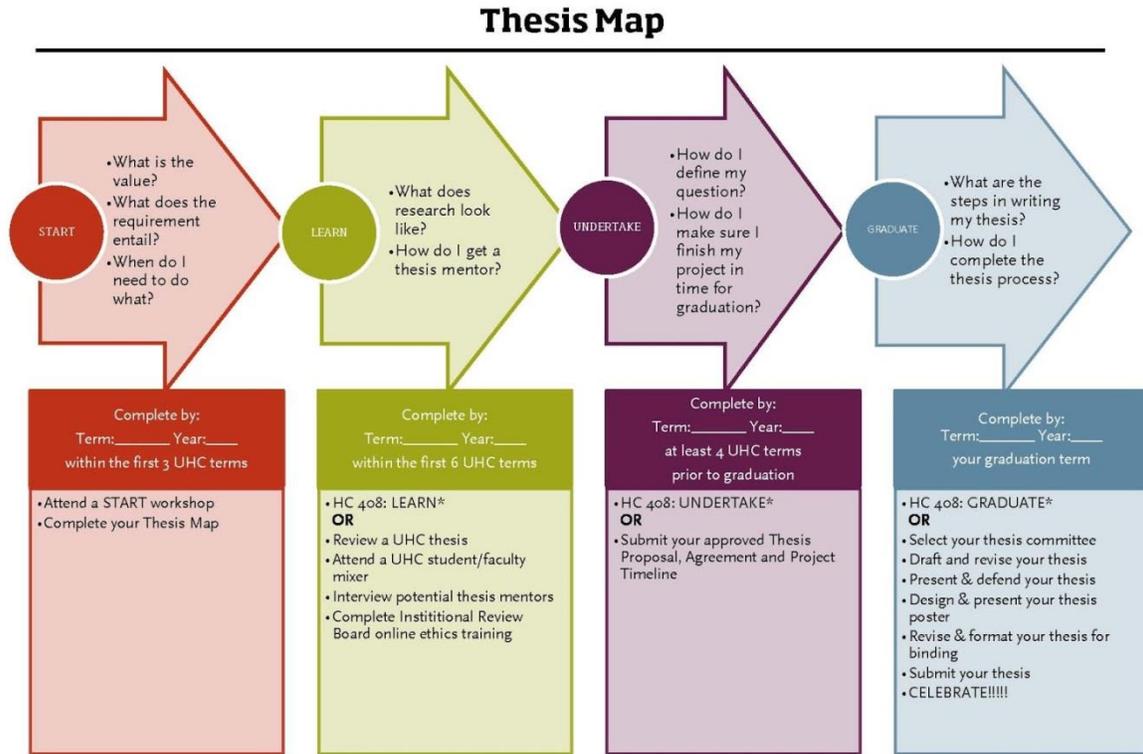
The four stages include specific tasks or courses to assist students in gaining the skills needed to move forward. Each stage focuses on a few guiding questions, and then walks students through steps that will help them discover the answers for themselves. “Learn,” for example, prompts students to consider “What am I truly curious about?” “What qualities should I seek in a thesis mentor?” “What is the best project for me, considering my career and life goals?” and “What projects have other students done successfully?” Students are asked to review and reflect on a completed thesis, attend a faculty-student matching reception (which we will return to in the next section), interview a potential mentor and share their takeaways from that conversation, and complete online training in research ethics. Although the HC recommends due dates for each of the four TheSIS stages, enforced completion dates are based on the individual plan the student sets.

That plan takes the form of a Thesis Map, the tool that grew out of the recommendation *to create a system by which thesis milestones are tracked in order to ensure timely completion*

¹ The names of each stage correspond to the primary tasks included, but were also chosen to fit the acronym SLUG. The slug has become a beloved, if unofficial, mascot of the HC because SLUG was also the tongue-in-cheek acronym for the student computer lab in the basement of our former building: Students Learning Under Ground.

and pertinent communications, as well as accountability. The Thesis Map, shown in Figure 1, asks students to develop a general plan for completing the various thesis stages, working back from their ideal graduation date. They select the term and year by which they expect to complete each stage and specify whether they anticipate completing the steps independently or by enrolling in one of the thesis workshop courses (more on those below). The Thesis Map provides an undergirding structure that is still highly customizable; all planning decisions are left up to the student, with the only fixed deadline being the final thesis submission date. In consultation with a HC academic advisor, students submit their expected completion dates for all four stages of the thesis process, allowing the HC to closely track progress. As the project evolves, the student can adjust the timeline on the map as needed.

Figure 1.



Submit your individualized Thesis Map at: honors.oregonstate.edu/START |

* See reverse side for HC 408 course descriptions

While this exercise in long-range planning and goal-setting is valuable for its own sake, the Thesis Map alone does not create the ongoing accountability that our interviews had suggested would be most helpful for students. We did not want it to be a form that was filled out, filed, and forgotten, but instead a blueprint that would be consulted regularly and would evolve as the thesis project itself did. In order to track student progress through the thesis stages and specific tasks critical for success, we needed a high level of information integration and so the HC worked with a developer to create a Salesforce application. This Customer Relationship

Management System made it possible to integrate thesis stages and tasks with a student's data record. Students enter information (including the thesis map itself as well as the responses to specific tasks, like their reflections after reading a complete thesis) directly onto the TheSIS guide website via survey forms, and Salesforce then links the data to the student record. As students progress through the stages and tasks, their progress is tracked within Salesforce. This information can be reported in the aggregate (to analyze the progress of an entire cohort) or individually (to track each student's progress).

With the development of information integration within Salesforce also came the ability *to create a set of communications to alert students and thesis mentors of milestones*, another recommendation set forth in our initial findings. Emails were created that were automatically sent to students introducing the overall process and when a stage or specific task was completed; these messages congratulate the students, outline the remaining stages and/or tasks still to be completed, and point to resources and materials that may be helpful for those next steps. For example, one excerpt from an email within stage 1, Start, reads as follows:

As you know, the Thesis Success in Stages (TheSIS) guide is designed to support students as they work toward completion of their HC thesis. The first step in this process, START, provides an introduction to the thesis requirements and an outline of thesis resources for students. Students are expected to complete START within their first year in the HC. **Our records indicate that you have completed the very first task of START: having attended a START workshop. Now all that remains to complete the START stage is to submit an individualized Thesis Map.**

In addition, students are sent messages if they miss a deadline they set on their Thesis Map, reminding them of their long-range plan and encouraging them to take the next step (and/or

adjust their Thesis Map based on how their project is taking shape). An email reminder to students to complete stage 2, Undertake, includes:

We know from experience that students who do not submit a thesis proposal during the early stages will face more issues in successfully completing their thesis in parallel with other program and graduation requirements. Our course, HC 408 Thesis: Undertake, can be valuable in your efforts to identify a thesis mentor, select a thesis topic, and write your thesis proposal. These are critical steps in the thesis process. The earlier you can start, the more likely that you will be able to successfully write and defend your thesis without extending your time to graduation. There are still spots available in HC 408 Thesis: Undertake for spring term but if the course does not fit into your schedule, plan to make progress on this stage by utilizing the Thesis Proposal, Agreement and Timeline template online within UNDERTAKE.

These communications tie back to the online TheSIS Guide, creating a coherent system of information and support for students. All reminders ask students to take a specific action and at minimum reach out to their HC academic advisor for consultation. Ultimately, if a student does not take action after several reminders, and being placed on warning, the student will be disenrolled from the college.

We wanted thesis mentors to be plugged into the same system. Any tenured or tenure-track member of the OSU faculty can serve as a thesis mentor, and their levels of connection to the HC and of experience mentoring honors undergraduates vary widely. The HC Associate Dean and the Director for Student Success and Engagement collaborated to develop a series of targeted emails to thesis mentors to be sent at three crucial points in the thesis process: upon submission of the thesis proposal, three months after the proposal submission (when most

students will be making substantial progress), and at the beginning of the term in which the student plans to defend (according to the timeline they set). These emails were similar to the student messages in that they explained what to expect in the next stage and recommended resources and materials for support, but these messages focused on the mentor's role and responsibilities and provided a big-picture view of the honors thesis process that faculty outside the HC might not have. For instance, the third email began,

This is the final message of the series designed to support you and your student through a positive and successful mentoring process. Previous messages covered beginning the project and making progress; this message includes resources and FAQs relevant to preparing for the thesis defense. In this final phase, most mentors and students focus on preparing for a successful defense, creating a thesis poster, and submitting the final thesis.... Thank you again for mentoring your student through this valuable and rewarding process!

The message goes on to underscore the critical deadline for thesis submission; provide links to the relevant sections of the Mentor Guidelines and TheSIS guide online; answer a few common questions about the defense format and policies, thesis poster, and submission process; and provide contact information for any other questions or concerns. The automation of these communications was crucial, enabling us to provide information and feedback at the point at which it is most relevant for each student and mentor.

Structured Changes II: Support in Stages

Whereas the first group of recommendations was aimed at establishing an overarching structure and system for tracking and encouraging progress, the second set offered suggestions for supporting students and mentors effectively during specific steps on the Thesis Map. The

faculty mentor has the primary responsibility for guiding the student's research and determining the appropriate format and style for an undergraduate honors thesis in their discipline, so the HC sought to design tools and resources that would provide support at critical stages *and* be adaptable across disciplines. The stakeholder interviews indicated that new and/or expanded resources would be helpful at three significant milestones for students: connecting with a mentor, creating a proposal and establishing shared expectations, and writing the thesis document. Each of these milestones requires students to tackle a complex task for which their previous coursework and experiences might not have equipped them; we wanted to ensure that students had the skills and support to succeed at these tasks.

The need for additional assistance at an early phase led to the recommendation to *create a process by which students can learn about faculty and their research interests*. Many students reported feeling anxious about independently contacting potential faculty mentors and we wanted to alleviate that anxiety by hosting events dedicated to connecting students and faculty with shared interests. These events also build networking and communication skills that students can draw on during the later stages of the thesis project. Over the previous several years, we had begun hosting student-faculty matching receptions with some academic colleges. This recommendation pushed us to support Honors College students from all majors by expanding these events to every college with undergraduate programs at OSU. The two-hour receptions are co-hosted in partnership with a single college (e.g., College of Engineering) or a collaborative group (e.g., the Division of Earth Systems Science, which includes the Colleges of Agricultural Science; Forestry; and Earth, Ocean, and Atmospheric Sciences). We aim for one reception with each college or division per year, which translates to about two events per quarter. During the first hour, faculty have two to three minutes each to present their research interests, current

projects, and opportunities for students; in the second hour, the group is encouraged to mingle, with students and faculty discussing the research and opportunities presented. These events help students identify faculty who are interested in working with high-achieving undergraduates and have an area of specialization that can develop into a thesis project. Students may also meet potential thesis committee members and learn more about the directions and conventions of research in their chosen field. To ensure that all have access to these benefits, the HC requires each student to attend at least one matching reception during the second stage of the thesis (Learn); as with other tasks, completion is tracked on Salesforce.

Once a student has connected with a mentor and agreed with them on a general topic, the next recommendation comes into play: *create tools that assist students and thesis mentors in communicating expectations and needs*. Interviewees advised that tools should clearly state the responsibilities of the student, the mentor, and the HC. The Associate Dean revised the Thesis Mentor Guidelines, carefully employing language that is inclusive of a variety of scholarly disciplines to create a comprehensive reference that offers more detail on the duties of the thesis mentor in regards to the proposal, thesis committee, thesis defense, thesis poster, and thesis submission. The Director of Student Success and Engagement and a HC academic advisor also redesigned the Thesis Proposal with those aims in mind, adding an Expectations Agreement and Timeline.

Now, in addition to submitting a project proposal that includes an introduction, thesis statement/hypothesis, approach/methodology, and expected results and significance, students and mentors sign a statement that outlines their mutual responsibilities. Some of these are common to all Expectations Agreements—students commit to sharing a final draft with the thesis committee at least ten business days before the defense, for instance—while others are specific

to the project—the mentor identifies the appropriate citation style, for example. The Timeline complements the Thesis Map, providing a more fine-grained schedule for the final stage (Graduate). Both the Expectations Agreement and the Timeline work in concert with the email messages described above, which reinforce student and mentor responsibilities at each stage and remind them of where they have been and where they are headed. Bundling these elements with the proposal resulted in a comprehensive set of tools to assist students and mentors in establishing clear communication and an agreed-upon timeline. The HC sees the thesis proposal as an essential component in moving towards a strong and manageable project; adding the Expectations Agreement and Timeline provided a coherent path to completion.

The final recommendation in this set spoke to the need to *create a fourth option in the suite of TheSIS workshops and courses to support the thesis writing process and assist students in the final stretch to graduation*². As the recommendation indicates, the HC by this point was offering one workshop and two courses intended to guide students through the earlier stages of the process (Start, Learn, and Undertake). The one-hour Start workshop, led by the HC Dean, is offered several times each term; it is non-credit-bearing, and required for all students. HC 408 Thesis: Learn and HC 408 Thesis: Undertake are one-credit courses offered every term that provide guidance and structure for completing the second and third stages of the process. HC 408 Thesis: Learn is designed as an introduction, where students become more familiar with the stages and tasks involved in a thesis and begin to build skills in approaching others and having conversations around common interests. HC 408 Thesis: Undertake is for students seeking additional support selecting a mentor and topic and crafting the thesis proposal. Students may

² For a copy of the current version of the syllabi please contact the Oregon State University Honors College at honors.college@oregonstate.edu.

choose to take either or both of these HC 408 courses, or to complete the necessary steps independently. Many similar undergraduate thesis programs at other institutions require coursework specific to these stages of the thesis; however, when interviewing current HC students, they advocated for a flexible system where students have the freedom to work autonomously but could utilize coursework if desired.

In their interviews, students also expressed the need for writing support in the fourth and final stage of the process (Graduate) and we discovered that other successful thesis programs at OSU offered some form of writing workshop. The Director of Student Success and Engagement and the Associate Dean jointly designed a curriculum focused on drafting and revising the thesis, designing a successful thesis poster, and preparing for the thesis defense. The final version of HC 408 Thesis: Graduate, taught by the HC Associate Dean, incorporates a number of research-based strategies for productive writing and—consistent with the emphasis on self-directed but supported learning throughout the thesis process—encourages students to experiment with developing their own best practices. They establish individual writing goals for each of the three assigned drafts, which permits them to tailor those goals to the nature and status of their thesis rather than forcing a one-size-fits-all approach. For the first draft, they use Write365, an online tool that encourages them to write at least 365 words per day (a pilot project led by OSU Director of Writing Tim Jensen); for the second draft, they receive and give feedback on excerpts in a peer workshop. The class also discusses how the skills they develop through the entire thesis process might be useful and relevant as they apply to and enter graduate programs, professional training, or internship and employment opportunities. HC 408 Thesis: Graduate is now offered each term, completing the suite of thesis course and workshop options and the increased support at all three critical stages, from finding a mentor to finishing the final draft.

Conclusion

The HC has been revising the thesis process for some time, and student completion of stages and tasks suggest promising results from the most recent changes. While the previous system makes it impossible to arrive at a precise number for comparison, we estimate that approximately half of HC students in earlier cohorts were completing the workshop task within the Start stage by the end of their first year; at the end of the first year of implementation for the new system, 91% of first-year students in the HC have engaged in the TheSIS process by completing that task. This encouraging result is in line with our established goals, which call for 30% of first-year students to complete the full Start stage by the end of the first term, 60% by the end of the second term, 90% by the end of the third term (which translates to the end of the first year on the quarter system), and 100% by the end of the fourth term of enrollment.³ Using Salesforce reporting and automated reminders, we are able to keep up to date on student progress and quickly communicate information.

Despite initial success among first-year students, much progress remains to be made. Second-year and third-year students continue to show lower levels of completion, with 54% having participated in the second stage (Learn) and 39% of third-years having submitted a proposal, agreement and timeline, the culminating task in the third stage (Undertake). A lack of engagement may signal that the student is likely to withdraw from the HC, as mentioned above; under the Retention and Satisfactory Progress policy, students who do not make progress along their Thesis Map can also face removal from the HC. Our primary focus, however, is on

³ Goals are very similar for the Learn stage: We would like to see 30% of second-year students complete this by the end of their fourth term, 60% by the end of their fifth term, 90% by the end of the sixth term, and 100% by the end of their 7th term. For the Undertake stage, we hope to see 25% of third-year students complete this by the end of their 7th term, 55% complete by the end of their 8th term, 80% of students complete by the end of the 9th term and 100% complete by the end of their 10th term.

providing the resources and support that will enable every student who commits to completing the thesis to do so, because we believe they accrue numerous and significant benefits in the process.

Structuring a successful thesis process is a challenging undertaking and the precise dimensions of that challenge will vary even among similar institutions. Many of the specific elements described above, such as the Thesis Map, could be adapted on a piecemeal basis by other honors colleges or programs. In addition, the “backward design” model—identifying the learning outcome, interviewing stakeholders, developing a picture of a successful thesis process as a whole, dividing it into manageable steps, and building a structure that balances accountability with support—offers an effective approach to designing a supportive system for the honors thesis that is tailored to a specific institutional context.

By beginning with the end in mind and gaining a clear picture of a successful thesis experience, the HC was able to identify key elements necessary in supporting students to completion—our own version of Wiggins and McTighe’s “map” (1998). The TheSIS Guide, with its four principal stages subdivided into essential tasks, provides the outlines of that structure; students fill it in with goals that fit their particular project and support tools that suit their particular needs. By collecting and integrating their planned milestones into Salesforce, we can track progress and deliver timely feedback and support throughout the thesis process. When progress stalls, we can intervene early and direct students to a robust set of support options.

This structure does not leave progress to chance or to individual motivation or preparation; instead, it provides a transparent and accessible path forward while requiring both long-range planning and step-by-step progress. The Thesis Success in Stages guide offers ongoing relevant and clear communications, allowing for a flexible and dynamic thesis

experience. And with additional support for students to connect with mentors, create a proposal and shared expectations, and write the thesis document, students are more willing to tackle these challenging milestones. This structure supports the high-achieving student through the thesis process in a purposeful, organized, and timely way.

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Appendix A:

HC Learning Goals

The Oregon State University Honors College has established specific program outcomes in support of student achievement of each of the two HC Learning goals.

Scholarly inquiry – As a HC Graduate, you will have developed the ability to engage in pursuits that create new knowledge and contribute to one or more scholarly areas of study.

Engaged inquiry – As a HC Graduate, you will have developed the capacity to fully engage in meaningful dialog, which incorporates cross-disciplinary and multi-disciplinary perspectives.

Scholarly inquiry

- Ability to choose a relevant and meaningful topic to study within a scholarly area
- Ability to employ a sound approach in creating new knowledge within a scholarly area of study
- Ability to synthesize and/or analyze results from a significant, self-directed, and open-ended project
- Ability to find multiple sources of relevant information
- Ability to evaluate the quality of information resources
- Ability to write an honors thesis: a significant, self-directed, and open-ended project
- Ability to present an honors thesis
- Ability to defend an honors thesis

Engaged inquiry

- Ability to fully engage in meaningful conversations outside of your discipline

- Capacity to demonstrate your understanding of diverse perspectives in conversations in the classroom and/or field settings
- Ability to effectively communicate your unique disciplinary perspective to inform the Learning of others

Appendix B:

Thesis Structure: Interview Questions

What does your ideal thesis process look like?

What do you view as key activities to the process?

What events trigger the process to start?

What are the normal end points/states and what are the exceptions for each point/state?

What gap(s) exist between what you expect and what you are currently receiving?

What responsibilities are students / mentors / the HC organization as a whole?

What problems or issues impact your performance?

Other thoughts:

Appendix C:

Thesis Process Improvements: Themes, Recommendations and Action Items

Conversations focused on the HC thesis experience, identified gaps in support and processes that require further attention.

A. Conversation Themes:

- Materials should be: updated to be inclusive of all disciplines, organized with check boxes and timelines, condensed, consistent, and easily accessible. Focus on an individual with no prior knowledge being able to self-navigate.
- Communicating Responsibilities – materials need to be created to support students and their mentors in managing expectations and communications.
 - Create materials that clearly state what the student is responsible for, what the mentor is responsible for and what the HC is responsible for;
- Tracking – General overall agreement to track students’ progress, but a strong voice around the challenges with how we do that in a process that is individualized.
 - Multiple ideas shared regarding how we hold students accountable, what is or should be required, and how do get students to do the work.
 - Some worried we may become too prescriptive where both students and mentors will not want to participate. Others expressed constant struggle around being supportive and requiring students to do the work necessary;

A. Recommendation:

Examine how materials are made available and how information is delivered to students in a timely manner as they progress on their thesis.

A. Action Items:

1. Create a network of timely, topical resources for students, advisors and thesis mentors to utilize on our website. Ensure accurate information can be found on the TheSIS organization on Blackboard and on the HC website. Materials need to be rewritten and/or redesigned to ensure inclusive, condensed information is available. Materials need to clearly define what is integral to the thesis process and convey clear requirements.
2. Create a tool(s) that assists students and thesis mentors in communicating expectations and needs; Tool(s) should clearly state the responsibilities of the student, mentor and the HC.

3. Create a system by which thesis milestones are tracked in order to ensure timely completion and pertinent communications, as well as accountability.
4. Create a set of mentor communications to alert thesis mentors of milestones for their mentee.
5. Establish a process in which practices and policies are reviewed annually and improved.

B. Conversation Themes:

- Clear path from Start to completion and where to go for help
 - Assist students with outlining a timeline that is appropriate for their chosen path, and with an emphasis on individualization, as many students find it difficult to fit the thesis in with all of the other things demanding time and attention
 - Assist students with determining when is the best time to Start the thesis process. The current structure stresses getting Started early which may be overwhelming for some who feel they need to acquire additional knowledge and skills.
 - An emphasis on the student having a go-to person within the HC when a crisis comes up or exceptions need to be made.
- Mentor and project fit - Finding a research interest and mentor that is a good fit. Very little investment currently in this process, while students need support/advise through a research/interview process;
 - Additional assistance with discovering what research is happening and how to present self to get involved.

B. Recommendation:

Utilize the HC academic advisors to support and personalize a student's experience when navigating the HC thesis process. Having established and built a relationship with the student the academic advisor would act as a student's go-to person for thesis process support.

B. Action Items:

1. Create a customizable map to be used by students and advisor to chart a path for successful completion. The map should incorporate a Starting point, graduation date and term dates for major milestones along the way. The map needs to be trackable for all milestones in order to deliver communication and interventions as needed.
2. Create a process by which students are coached in identifying a thesis project and mentor, independent of the Learn and Undertake courses. The process should consider the various ways by which students can Learn about faculty and their research interests. In addition the process should help to build skills students may need to be successful with the thesis such as communication, and exploration of personal values and interests.

3. Create a professional development plan to train and empower advisors to answer questions from students or mentors regarding the process, mentor/mentee expectations, and to assist with crises or suggest and approve exceptions as needed.

C. Conversation Themes:

- Support for the writing process - ‘It can be the dreaded element and what often postpones a student’s completion.
- Consistent course policies are necessary with the HC 408 course for make-ups, incompletes, etc.

C. Recommendation:

Explore gaps in the current TheSIS curriculum and develop additional course(s) to teach skills needed in order to complete the thesis.

C. Action Items:

1. Create a fourth course in the suite of TheSIS courses designed to supplement the thesis writing process. This Graduate course should focus on assisting students in the final stretch to reach graduation. Guiding materials to consider include WR 599 (Burton), INTL 408 (Fleury), or BRR 406 & 407 (Crannell);
2. Establish common policies for late work, missed class sessions or missing assignments among all of the HC 408 courses.
3. Work with Student Multimedia Services to create a video tutorial on creating a scientific poster.

D. Conversation Themes:

- Messaging – Our organizational voice around the thesis is too vague. Shared desire to show the value to students within our marketing materials, ‘surround them with the evidence of the benefits.’ Some stressed the need to collect data to track the actual benefit.

D. Recommendation:

Examine the messages sent to prospective students, current students and alumni regarding the value of the thesis.

D. Action Items:

1. Create a marketing plan directed to current students that conveys the value of completing a thesis with the HC. The marketing plan should deliver specific messages at various milestones along the path to completion.
2. Integrate the marketing plan into Start, Learn, Undertake, and Graduate courses as well as thesis guidelines for mentors

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**Another Kind of Service-Learning:
Integrating Social Entrepreneurship in Honors Education**

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Abstract

Service-learning has been dubbed a “high-impact practice,” and has become a favorite of Honors programs, because it delivers a particularly robust set of learning outcomes for students.

However, these outcomes set aside consideration of community impact. Since social entrepreneurship requires its practitioners to conceptualize problems in actionable terms, it offers a framework in which student learning is directly linked to the effectiveness of service activities.

This article will outline the implementation of a social entrepreneurship project at The Ohio State University, and will suggest ways in which the assessment of student learning and community impact can be more intimately connected.

Another Kind of Service-Learning:

Integrating Social Entrepreneurship in Honors Education

The term “service-learning” was first used in 1967, during a decade defined by both grassroots movements and national programs to advance civil rights and address poverty. Though the term is relatively new, the practices it names are not; as Robert Kraft has shown, service-learning traces its lineage back to American educational reform in the early twentieth century (134). The kinds of connections forged between school and community in service-learning are many. More emphasis can be placed on the service side or the learning side, depending on the desired outcome. This flexibility became clear in a 1990 study, which counted 147 distinct definitions of “service-learning.” Despite these variations, scholars tend to return to the capacious, single definition of the term that comes from Barbara Jacoby, who defines service-learning as “a form of experiential education in which students engage in activities that address human and community needs together with structured opportunities for reflection designed to achieve desired learning outcomes” (26).

Jacoby’s definition captures the most common format for service-learning: the discipline-based model, in which students perform service as part of the requirements of a course, and regularly reflect on their service activities using the conceptual tools provided in course material. If we examine this model of service-learning more closely, however, we discover an important gap at its heart, revealed in Jacoby’s definition by “together”: the “structured opportunities for reflection” that constitute the main exercises in these courses happen at a remove from the students’ activities in the community. The forms of student assessment used in these courses might measure students’ aptitude with course content, or the depth of their reflective efforts, but these bear no relation to the impact of the students’ service activities on the problem they are

studying. The expected learning outcomes are accordingly distinct from any measure of community impact.

The treatment of service-learning in George Kuh's taxonomy of "high-impact practices" in higher education similarly leaves aside the question of impact on the population served. In his 2008 AAC&U report, *High-Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter*, Kuh identifies two crucial components of service-learning: students "apply what they are learning in real-world settings and reflect in a classroom setting on their service experiences" (11; original emphasis). Clearly, Kuh's conception of service-learning depends on community-based activities, but it also privileges the intellectual exercises of conceptual application and reflection. The service activities themselves seem to do little more than provide the material on which the academic exercises in the classroom can act.

The exclusion of any consideration of community impact certainly raises concerns about the relationship of service-learning to social justice. Dan Butin has cogently articulated the stark disparity between the "dreams for social justice" in the context of service-learning courses and "their fulfillment" in the community, and proceeds to cite a slew of studies that reveal how few service-learning courses follow "meaningful and sustainable practices that foster respect and reciprocity to their local communities" (8). If a service-learning enterprise has a negligible or even negative impact on the population it serves, but still achieves learning outcomes for students, can it be considered worthwhile? Another way to approach the problem is to ask: are truly robust learning outcomes really attainable in service-learning *without* attention to the impact on the community? Achieving the learning outcomes Kuh associates with high-impact practices, especially critical-thinking skills and personal and social responsibility, seems to entail the rigorous accountability of the service activities being undertaken. If students are invited to

think critically, for example, they should exercise this skill with regard to the service activities they perform, just as they are asked to do with course readings and lecture material.

Truly attuning service-learning to its impact on the communities it serves requires a rethinking of the relationship between the desired outcomes usually associated with the classroom and the specific outcomes of the service activities with which they are associated. The following will propose that the habits of mind, and practices of social entrepreneurship, offer a robust connection between classroom-based learning and community-based practice. Whereas the discipline-based model of service-learning separates the academic understanding of a social problem from the actions that address it, social entrepreneurship conceives of the problem it addresses only in actionable terms; the conceptualization of the problem and the response to it are joined in a feedback loop, such that the conceptualization is constantly tested and revised based on its effectiveness in action. Cultivating the skills and practices of social entrepreneurship enters students into a relationship with a complex social problem that burgeons beyond the first encounter within a course, and expands to include service and research. Since this deep form of academic engagement meshes nicely with the priorities of the Honors program, this article will use the case of ENCompass (Empowering Neighborhoods of Columbus), a project at Ohio State that trains student volunteers to connect local residents with health-related resources, to suggest a roadmap of five steps that models the implementation of an integrated social entrepreneurship experience for Honors students.

Social Entrepreneurship in Undergraduate Education

Before proceeding to the case study of ENCompass, it is essential to settle on a definition of social entrepreneurship that is suited to the undergraduate classroom and co-curriculum, especially since social entrepreneurship is, in no way, native to the university, but sits

somewhere on the spectrum between social activism and business-minded innovation. Definitions of “social entrepreneurship” have proliferated in the same quantity as “service-learning,” and each prioritizes different dimensions of the practice. As Alex Nicholls and Albert Hyunbae Cho conclude, this great variety of definitions is evidence of a vital, young field just beginning to understand itself. Existing definitions can be sorted roughly according to whether the *social* or the *entrepreneurial* is weighted more heavily.¹ As an example of the former, J. Gregory Dees insists that social entrepreneurship is distinguished by its social mission, and that social entrepreneurs are leaders in the “social sector” (4). Along the same lines, Charles Leadbetter argues that a signal outcome of social entrepreneurship is the creation of “social capital,” the relationships infused with a collaborative spirit that enable a community to tackle its biggest problem. Those who weight the entrepreneurial side of the equation tend to praise social entrepreneurship for the business acumen it brings to social challenges. Ginesh Prabhu, for instance, argues that it is the innovativeness of the approach to a social problem that distinguishes the social entrepreneur.

In contrast to these approaches, an account of social entrepreneurship appropriate for higher education needs to value the educational elements of the experience at least as much as the social impact or innovativeness of the project. Recent work by Ryszard Praszkiar and Andrzej Nowak provides a theoretical framework for understanding social entrepreneurship that captures its unique educational potential. In their account, social entrepreneurship is a systemic form of social change distinguished by “*methods that empower the society and enable the unfolding of potentialities inherent in the system*” (37; original emphasis). Whereas other

¹ A far more exhaustive survey of the academic literature on social entrepreneurship can be found in Weerawardena and Mort, “Investigating Social Entrepreneurship: A Multidimensional Model.”

approaches tend to isolate either the entrepreneur's creativity or the grassroots action of the community, Praszkie and Nowak argue that social entrepreneurship is defined by a relationship of continual feedback between entrepreneur and community, between idea and reality. Social entrepreneurship can deliver outcomes out of proportion to the effort invested because it does not seek to impose an entirely new vision onto a community, but makes small changes to existing practices that tap into unrealized potential. As Praszkie and Nowak put it, social entrepreneurs "are not *introducing change* but instead [] are *acting as catalysts* for a natural change process" (48; original emphasis). It is social entrepreneurship as a "nonlinear process," marked by "feedback loops" between ideas and action, that makes it so well-suited to undergraduate education, since it predicates the understanding of a social problem that might otherwise be purely intellectual on the ability to effect real change in a community (48). For the purposes of undergraduate education, social entrepreneurship measures *understanding as it is reflected in action*. From an educational standpoint, the main desired outcome of a social-entrepreneurial project is the students' autonomous ability to assess their effectiveness and to act on this feedback, a learning process that may begin in a course, but which continues long after. Students undertaking a social-entrepreneurial project learn to collect, interpret, and act on feedback autonomously, using the measures of their project's effectiveness to test and adjust their understanding of the problem, which is then used to make adjustments to the project, and so on.

From Curriculum to Community: The ENCompass Model

One of the challenges in both the practice and teaching of social entrepreneurship is replication. The following is an attempt to make a successful example useful to others by breaking it down into its essential steps. A theme that runs throughout this process is the need for collaboration between faculty, administrators, and students. In addition to integrating social

entrepreneurship within a course syllabus, faculty play an essential early role in forming and supporting a cohort of students committed to advancing an idea for a project. For a venture to be successful beyond this early “germ” stage, the organizational units involved also need an infusion of the entrepreneurial spirit, including a flexibility about roles, a willingness to seize opportunity, and a certain level of comfort with steps in the process that do not fall neatly within one discipline or department. The position of the Honors program or college within the research university as a trans-disciplinary unit committed to excellence in undergraduate education makes it the perfect candidate to lead such a charge.

This section will outline the five phases that have culminated in the creation of ENCompass, an entirely student-run service that connects Columbus residents with health-related resources. These phases comprise the initial idea for the project in a global public health course, its further development in a one-credit seminar, its transition to a co-curricular experience, the securing of community partnerships, and the pilot phase of operation. As of this writing, ENCompass has 65 student members and has completed three years of operation, serving over two hundred clients at both social service sites and healthcare providers.

ENCompass sites are spaces provided within partner organizations such as clinics and food banks, which places volunteers in direct contact with potential clients, and complements the services partners already provide. Student volunteers are trained in the use of HandsOn Central Ohio, an online database of free and low-cost providers of everything from food and utilities assistance to eye and dental care. During one-on-one consultations, students gather information from clients about their needs, prioritize them, and use the database to find resources that can help meet them. Volunteers then provide any assistance clients might need in arranging to visit

the resource, and follow up with clients by phone to determine whether the resource has been helpful.

ENCompass has a direct, measurable impact on local residents' usage of medical and social services, and it achieves this result by serving as a catalyst that empowers Columbus residents to access, on their own, resources for which they are already eligible. ENCompass reflects Praszkiel and Nowak's understanding of social entrepreneurship in that it makes a small but crucial intervention that unlocks unused opportunity for clients.

The Course

For the purposes of Honors education, we have defined social entrepreneurship as the conceptualization of a problem in actionable terms. Incorporating social entrepreneurship within a college course therefore begins by modeling this way of reconceptualizing a problem, ideally one students have already studied from other angles. The impetus behind ENCompass comes directly from Dr. Amy Acton, in whose Introduction to Global Public Health course the idea first emerged. The course itself reorients students' thinking about illness and health to account for the influence of social determinants, such as the availability of basic resources like food. To demonstrate a social-entrepreneurial response to this kind of challenge, Dr. Acton screened for her students a TED talk by Rebecca Onie, the founder of a nationwide non-profit, *Health Leads*. In the talk, Ms. Onie models the crucial moment of reconceptualization that sees a problem--the illness of medically underserved populations--in terms starkly different from the way doctors and some policymakers see them. Doctors focus on the correct diagnosis of disease, while policymakers tend to focus on the *availability* of certain health-related resources. But between the disease and the treatment, Ms. Onie shows, are important enabling conditions, which can be summed up as a problem of *access*: What if the patient can't get to the pharmacy? What if there

are contributing factors to the illness, like poor heating or stressful living conditions? *Health Leads* was formed when Ms. Onie recognized two *existing* resources that were not being fully leveraged: first, as an undergraduate herself, she realized the amount of free time many college students enjoyed; and second, she noticed that patients spend a great deal of time in hospital waiting areas that could be put to more productive use. The organization trains college student volunteers to use online tools that identify existing free and low-cost resources and to connect patients with them.

The Collaborative

After presenting the *Health Leads* example, Dr. Acton was approached by a group of students who asked whether the *Health Leads* model could work in Columbus. Dr. Acton's strategy for fostering her students' initiative was to develop a one-credit course to follow her Introduction to Global Health, which she called the IDEAS (Innovative Design in Education, Action, and Service) Collaborative. This course served as a crucial incubator and preparatory step leading up to the formation of a student-led group because it provided students the time, structure, and resources to accomplish three important objectives: (1) locate and involve campus and community stakeholders in discussions about the project's feasibility; (2) learn more about the specific client populations in Columbus neighborhoods, their particular needs, and the challenges and opportunities unique to Columbus; and (3) develop a vision for the project that accounts for the unique needs of the client population. Together, these objectives represent the students' first real opportunity to exercise social-entrepreneurial thinking, because it required them to begin their project by assessing and leveraging the unused potential both on campus and in local neighborhoods. In other words, the students only truly internalized social-entrepreneurial thinking when they began to look for concrete instances of underutilized

resources specific to the areas they would serve, just as Ms. Onie did. The first objective brought in an infusion of advisors from the College of Medicine, the College of Social Work, and the Wexner Medical Center. It also connected the project with Dr. Bill Hayes, an expert in health policy and health services at the Wexner Medical Center, who has served as the project's chief advisor. The second objective placed students in contact with community leaders whose support for the project would be essential. The third, meanwhile, prompted students to respond creatively to the requirements of their client population. While *Health Leads* works exclusively in healthcare settings, the students in Dr. Acton's IDEAS Collaborative learned from community partners that social-service sites would enable them to serve Columbus residents more effectively. Accordingly, the students evolved a different vision for a service that would be primarily embedded in communities, which would place student volunteers in closer proximity to their clients and increase their ability to serve them, rather than in flagship medical centers that draw their patients from larger geographic areas. In doing so, they embedded their understanding of the way Columbus residents access health-related resources in the very design of the project. Moreover, the selection of the name "ENCompass," with the first three letters standing for "Empowering Neighborhoods of Columbus," makes clear that the organization's main objective is to equip local residents with the skills and knowledge to utilize existing resources on their own.

Co-Curricular Transition. At the conclusion of the IDEAS Collaborative, the venture found itself in that curious space between the curricular and the extra-curricular. While the group did establish itself as a student organization with the Office of Student Life, its close ties to Dr. Acton's course made it very different from an extracurricular activity or open-membership student club. It is at this point that ENCompass connected with the Eminence Fellows Program, a part of the Honors program for high-ability students that requires a long-term service project.

The identity of its next phase became clear: ENCompass would function as a *co*-curricular rather than an extracurricular experience because it would require that students exercise decidedly academic skills, but independent of any specific course. As the students worked to build the project, they would assign themselves discrete research projects, which would require them to consult resources across campus and report back to the group. For example, students setting up a new site at OSU Hospital-East encountered HIPPA requirements, which did not affect social service sites. In response, the students consulted experts on patient privacy at the medical center. The campus and community stakeholders who first became involved during the IDEAS Collaborative now began to take on roles as advisors, on hand to respond to the challenges students would identify, whether formulating research questions or shepherding them through the IRB approvals process. Even as it focuses on serving clients, ENCompass continues to function like a coordinated set of undergraduate research initiatives in which students learn to frame specific problems, identify the resources to deal with them, collect and synthesize information, and then reach conclusions about the information.

To complete the transition from a faculty-supported exploratory course to a *co*-curricular experience, the students also worked in consultation with advisors to form a leadership structure. They recognized early on that the leadership template of a student organization, which (at Ohio State at least) requires positions like president, treasurer, and secretary, was far too general to enable the students to address the specific challenges their project presented, so they developed a committee-based leadership structure, with one committee for each major action-item, and a vice president at the head of each committee. Executive committee meetings bring together the vice presidents of the various committees with the *co*-presidents and secretary, which enables effective communication and coordination between the committees. In addition, the executive

members report to an Advisory Council of faculty, staff, and local leaders, who assemble three times per semester, and who provide guidance and facilitate connections within the community. Since this organizational structure has evolved in response to specific needs, it has enabled ENCompass to remain responsive and adaptive to real-time challenges--the hallmark of the social entrepreneurial venture.

Partnerships

On its way to beginning operations at sites around Columbus, ENCompass next formalized partnerships with the institutions where it would be operating. Whereas *Health Leads* works within major hospital systems, ENCompass's community-based approach took it initially to food pantries and a neighborhood-based branch of Ohio State's Wexner Medical Center. Advisors recruited during the IDEAS Collaborative played an essential role making introductions to prospective partners, guiding students through the steps of forming partnerships, and teaching the practices that sustain them. This phase provided a very different kind of educational value for students: they learned how to address the questions and concerns of their partner institutions in a timely, professional, and informed manner. Students involved in the formation of these partnerships routinely cite the experience as the most challenging and rewarding part of the project to date. The group working with the Wexner Medical Center East hospital, for example, was asked to deliver its proposal to hospital leadership, who posed fine-grained questions about a range of issues, including how well the students were prepared to deal with issues of patient privacy. At that moment, the students were no longer being treated as students, but as potential partners of a community hospital.

Pilot

Less than one calendar year from the conclusion of the IDEAS Collaborative, ENCompass began its pilot at the food pantry in Broad Street Presbyterian Church in Columbus. Leading up to the start of operations, the benefits of the committee structure became readily apparent: the Information Technology committee set up volunteers with an online database of health-related resources, which would enable them to match clients with the services they needed quickly and efficiently; Membership Recruitment and Development organized a day-long training session where volunteers would learn about their client populations and participate in simulations to prepare them for working with clients; and the Sites committee established a workspace at the food pantry and developed strategies for dealing with client flow. During the pilot phase, crucial adjustments were made to the project. For instance, when volunteers at the pilot site noticed a need for follow-up with clients after the initial consultation, they brought the issue to the attention of the executive committee, and a follow-up procedure was in place within a couple of weeks.

Assessment

Initial efforts at assessment have focused on the project's effectiveness in carrying out its mission, and these have been conducted entirely by students. Since the project's inception, the student leadership has drafted a yearly "Advisory Report" that both compiles vital data about the project and presents the results of specific surveys designed to improve the services provided to clients. From September 2014 to November 2015, ENCompass recorded 134 client visits. Detailed information about these clients makes a very clear case for the concept of ENCompass. A full eighty-five percent of clients possessed health insurance, but only about forty percent visited an ENCompass site seeking basic health resources, while ninety percent requested

resources related to household needs such as food and rent assistance. In other words, even though they are highly likely to have health insurance, almost every client coming through the door still demonstrates need in the area of social determinants of health. During the same period, sixty-four percent of clients reached by phone for follow-up reported having used at least one of the resources to which ENCompass had referred them. Since the measure of success is a client's use of a resource rather than just their visit to ENCompass, the students have undertaken a study of the challenges that prevent clients from accessing recommended resources.

With the help of its Advisory Council, ENCompass is currently in the process of developing multiple forms of assessment of the student experience. First, the student committee in charge of professional development is drafting learning outcomes specific to the project. Second, they plan to develop a post-graduation survey in order to capture the impact of ENCompass on participants' educational and career trajectories. Third, the project will begin to track total student hours, in order to compare the level of involvement with other forms of service-learning. Finally, a form of qualitative assessment that ENCompass will begin implementing during the spring semester of 2016 draws from the practice of narrative medicine, which trains health care practitioners to appreciate and reflect on clients' stories and their roles in them. ENCompass volunteers will take part in writing exercises that allow them to record and process their experiences working with clients. Making the narrative connections between their actions and a client's outcome will enable students to articulate their role in the client outcomes that are otherwise only reported as data. This form of self-assessment will provide a record of the connection between student learning and project impact that is the signal strength of social entrepreneurship.

Conclusion

ENCompass offers a very clear example of the connection social entrepreneurship makes possible, between educational value and community impact. For starters, there is a crystal-clear measure of success for the project: each client's successful use of a resource to which ENCompass refers them. This measure is actually a gauge of community behavior, not a simple capture of the services students provide; it indicates the extent to which clients are being equipped to connect to resources *on their own*. Returning to the terms with which this article began, we can say that this number measures ENCompass's effect as a catalyst of connections that take place independently of the service the students provide. Until the number reaches one-hundred percent, the shortfall will serve as a complex but exciting challenge for students to find new ways to activate connections between clients and resources. What factors enable or impede clients' access to the resources to which they are referred? One angle the students are currently pursuing is the role of transportation options available to clients, and they are currently developing a transportation study that is being funded by Ohio State's Undergraduate Research Office. Here is where community impact and student learning outcomes converge: the very process of investigating the needs of the community being served in order to improve community impacts involves students in research, another high-impact practice that builds critical thinking, quantitative literacy, and written and oral communication, among others. As they penetrate further into this and related issues, the students will be examining the social determinants of health in truly actionable terms.

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Book Review:

Wolfensberger, Marca V.C. (2015). *Talent Development in European Higher Education: Honors Programs in the Benelux, Nordic and German-Speaking Countries*. Cham, Heidelberg, New York, Dordrecht, London: Springer. 335 pages. Print (ISBN: 978-3-319-12918-1, USD \$24.99) and online (ISBN: 978-3-319-12919-8).

Reviewed by Amber Zoe Smith, Virginia Tech University.

Talent Development in European Higher Education is a first comprehensive survey of honors programs in northern Europe. Commissioned by the Dutch Sirius Program, this book defines honors education, identifies honors programs in 11 countries, and describes the programs and the cultural climates that led to their formation (or lack thereof). Dr. Marca Wolfensberger is a respected Dutch professor and researcher who adds this book to her already substantial contributions to honors education in Europe.

Globalization has arrived at higher education institutions, and many European countries have responded with interest in better understanding their neighbors' practices and in helping their students become more internationally competitive. This book directly addresses both of those needs by cataloging all current honors programs in northern European countries and by placing them generally within their cultural contexts.

To focus her exploratory mission, Wolfensberger begins by defining honors as programming with selective admission criteria that challenges motivated and talented students to excel and accomplish specific goals (12). These programs can be disciplinary, interdisciplinary, or multidisciplinary, and they commonly exist at both the bachelor and master degree levels. Program content ranges from coursework to collaborative local problem solving, and the emphasis is often influenced by cultural attitudes toward excellence.

Wolfensberger finds that despite recent interest in enhanced education, many European nations are inhibited by cultural egalitarianism. Traditionally, talent and ability have been seen as divisive qualities akin to religion or ethnicity that could be detrimentally used to imply that some people have more inherent worth than others. While Europeans believe in supplementing the education of the weakest students, many stop short of ensuring that talented students are sufficiently challenged, believing that strong minds will find ways to advance themselves. All

countries investigated in this book struggle against this potential for discrimination. The Nordic countries of Denmark, Norway, Sweden, Finland, and Iceland display the highest levels of egalitarianism, which is defined here as equality of educational outcome. Other countries, such as the Netherlands and Germany, focus more on equality of opportunity to comprehensive education for students of all levels.

Nevertheless, honors programs have been established at 72 European higher education institutions, most within the last decade. Half of them are located in the Netherlands; a quarter are in Germany; and the rest are divided among Belgium, Denmark, Finland, and Austria (242). No programs were found in Luxembourg, Norway, Sweden, Iceland, or Switzerland. For each program, Wolfensberger describes its general structure and provides quantitative data that is also organized in charts, tables, and maps. She reminds readers that a lack of honors programs—that meet her definition—does not necessarily indicate a lack of provision for talented or motivated students. All countries support differentiation for outstanding athletes and artists, for example, and many do so for general academics at the primary or secondary school levels. Wolfensberger calls her findings a foundation for future research.

Indeed, the book's greatest strength is its potential to catalyze future studies. The information is both staggering in volume and meticulous in detail. From her research process to the people she interviewed, Wolfensberger has been transparent. The most expansive information is appropriately about the honors programs themselves: enrollment numbers, students served, type of program and higher education institution, and links to website and contact information. She also describes the local primary and secondary school systems for context. Structurally, she has organized every country's data in the same format: education system, local culture and political policy toward excellence, recent developments, and finally the

program-by-program report. This consistent structure makes reference and inter-country comparison easy.

Given the colossal scope of this project—to identify and describe all honors programs in northern Europe—one expects some minor weaknesses. The sections about “culture and policy towards excellence” seem heavily weighted toward politics, perhaps viewing law as documentation of culture. This emphasis makes the summation of non-political culture feel comparatively thin. That said, many chapters do include short quotations and descriptions of specific honors program initiatives. In addition to injecting a welcome human presence, these real-world examples also help readers better compare the northern European programs to their own. In terms of readability, the information is dense, and there are occasional vague transitions and moments of awkwardness in translation and editing. However, these imperfections do not diminish the significance of Wolfensberger’s achievement.

Overall, this book decisively accomplishes its mission of creating the first inventory of northern European honors programs. Higher education institutions, politicians, and educators from the 11 countries in this study can immediately benefit from viewing their situation in a regional context. International honors educators and administrators can better understand and contextualize their work with this global perspective. Perhaps best of all, this report benefits researchers. Wolfensberger has modeled a clear, replicable process, and she has laid the foundation for critical studies about overall goals, efficacy, and impacts of honors programs. Given the cultural barriers that she describes, it seems that future studies will have to investigate the personal and communal effects of honors to allay fears of discrimination if honors is to gain traction in egalitarian cultures. To interested researchers: hurry. Or Wolfensberger might beat you to it.

References

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