

Report of the President's Working Group on Knowledge, Skills, and Creative Dispositions

2017–2018

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Introduction

Bowdoin College is a remarkably successful institution. On almost every measure currently used to assess the quality of undergraduate higher education in the United States, Bowdoin ranks near the top. The College's acceptance and yield rates, four- and six-year graduation rates, endowment, alumni giving, financial aid support, faculty-student ratio, number of national student fellowships received, athletic opportunities, and facilities are all among the best in the nation. Bowdoin is especially well regarded for the quality of its academic and arts programs. Nevertheless, the College is subject to many of the same forces currently buffeting higher education in America—and the nation itself. In just the eight months that have passed since the working group that produced this report first convened, the United States has suffered egregiously from a range of grave crises. Foreign interference in the democratic electoral process, school shootings and other acts of violence against innocent Americans, politically potent challenges to the scientific consensus around environmental change and degradation, the global rise and expansion of authoritarian regimes, and growing nationalist and xenophobic ideologies both within and outside of the nation's borders all have profound implications for the United States and the Bowdoin College community.

Undoubtedly, higher education has an important role to play in addressing these issues. A critically engaged, well-educated citizenry is essential to attenuating political polarization, protecting democratic institutions, and preserving norms of civility. Many colleges and universities—especially liberal arts institutions—are deeply committed to providing a higher education that prepares graduates to confront just these challenges. Over the past decade, however, and partly as a result of rapidly changing political, economic, and social dynamics, higher education itself has entered a period of profound transformation. Critics characterize this moment as one of crisis for colleges and universities and, indeed, the issues currently confronting higher education might collectively be perceived as a crisis. Reductions in state aid to public institutions, the federal imposition of an excise tax on private, not-for-profit endowments, unsustainable student debt loads, controversies over freedom of speech and political correctness, anxiousness over the dominance of STEM fields, a corresponding decrease in support for the humanities and social sciences, a decline in male enrollments nationally, and technological disruption resulting in the rise of online learning have combined to lead many Americans to question the value and effectiveness of what has previously been a hallmark of national progress: access to affordable, high-quality, postsecondary education.

Bowdoin is not immune from these challenges. To date, however, the College has successfully navigated this turbulent period by leveraging its institutional strengths: an increasingly diverse and talented student body, accomplished faculty, experienced student affairs staff, nationally renowned investment management, effective facilities personnel, and strong administrative governance, to name just a few. Consequently, Bowdoin is extremely well positioned to sustain its accomplishments, if not approach this transformative period as an opportunity for institutional advancement. To do so, the College community must simultaneously remain focused on the important work it is currently undertaking while looking forward in time to anticipate the trajectory of present-day issues and, to the extent possible, predict additional challenges that will inevitably arise. And it must do so while respecting the enormous time and effort that community members already invest and expend in their work on behalf of the institution.

In September 2017, the President's Working Group on Knowledge, Skills, and Creative Dispositions was charged with this forward-looking task. Established by President Clayton Rose with the support of Bowdoin College's Committee on Governance and Faculty Affairs, the working group was tasked with the responsibility of producing a report that responded to the question: What knowledge, skills and creative dispositions should every student who graduates from Bowdoin ten years from now possess? That is to say, what should be distinctive about Bowdoin graduates in how they think, reason, and engage the world?

The working group held its first in-person meeting in October 2017 and its last in April 2018.

At the group's first meeting, members discussed the group's charge, a previously assigned text, and Bowdoin College's *Statement on a Liberal Education*.¹ The group held a substantive discussion about its work and agreed to divide into subgroups to conduct research relating to: 1) knowledge, 2) skills, and 3) creative dispositions. Each subgroup developed a research agenda and schedule of meetings (some held in-person, some virtually). The group also agreed that including a wide range of Bowdoin community views in its final report necessitated consulting with an equally wide range of Bowdoin community members. Subsequently, the group's members divided into five additional subgroups in order to solicit input from: 1) faculty, 2) trustees, 3) staff, 4) students, and 5) alumni. Collectively, these subgroups conducted surveys, held focus groups and interviews, and participated in both formal and informal meetings, discussions, and

¹ For a copy of the working group charge, see p. 19. The group read Andrew Delbanco, *College: What It Was, Is, and Should Be* (Princeton: Princeton University Press, 2014). The *Statement on Liberal Education* is found at: <https://www.bowdoin.edu/academics/curriculum/statement-liberal-education.shtml>

conversations. In addition, the working group's members consulted far-reaching sources, including (but not limited to) institutional survey data, course syllabi, distribution requirements, student enrollment data, the Bowdoin College Board of Trustees Committee on the Future Report (2000), and the College's most recent reaccreditation report, as well as higher education media such as *The Chronicle of Higher Education* and *Inside Higher Ed*.²

The working group was both committed to and diligent in soliciting input. Accordingly, its members are confident that this report accurately incorporates many views shared by members of the Bowdoin College community.

Central Question

Most people familiar with collegiate learning would agree that, in the abstract, students enrolled in four-year, liberal arts colleges should acquire knowledge and skills as well as have access to opportunities that foster a disposition toward creative work. For the most part, however, it is only in the abstract that distinctions between knowledge, skills, and creative dispositions remain distinguishable. In practice, the three concepts frequently blur together. Does the teaching and learning that occurs in a visual arts drawing course result in students obtaining knowledge that is distinct from a skill? And are these two discrete from the disposition toward creativity that learning to draw might nurture? Similarly, can the creative act of scholarly analysis in which many students engage in history courses, for instance, be separated from the knowledge and skills acquired through the process of interpreting change over time? Outside of the classroom, the learning that takes place on the athletic field or during a summer fellowship opportunity or in the community as part of a service project often results in students acquiring knowledge, skills, and creative dispositions that are so interwoven that it seems unproductive—if not simply impossible—to disentangle them.

The working group initially used the abstract distinction between knowledge, skills, and creative dispositions to its logistical benefit, dividing into three subgroups for the purpose of defining terminology and pursuing research relating to the subgroup's respective concepts. Very quickly, however, subgroup members found that maintaining abstract boundaries between the three concepts was counterproductive. In addition, the Creative Dispositions Subgroup discovered early in its work that creativity was just one of several dispositions that a Bowdoin education fostered. This report, then, rather than answering the first question with which the working group was charged (What knowledge, skills and creative dispositions should every student who graduates from Bowdoin ten years from now possess?) responds to a slightly revised version of the second: ***A decade from now, what should be characteristic, and perhaps distinctive, about Bowdoin graduates in how they think, reason, and engage the world?***

Response

For over a century, former Bowdoin president William Dewitt Hyde's *The Offer of the College* has informed a vision for the kind of higher education Bowdoin College seeks to provide. Adapted from the original, which was published in 1906 as the foreword to Hyde's volume titled *The College Man and the College Woman*, the version of *The Offer* that Bowdoin currently embraces reads as follows:

*To be at home in all lands and all ages;
to count Nature a familiar acquaintance,
and Art an intimate friend;
to gain a standard for the appreciation of others' work
and the criticism of your own;
to carry the keys of the world's library in your pocket,
and feel its resources behind you in whatever task you undertake;
to make hosts of friends...who are to be leaders in all walks of life;
to lose yourself in generous enthusiasms and cooperate with others for common ends —
this is the offer of the college for the best four years of your life.*³

The working group finds that *The Offer of the College* continues to articulate a compelling vision for a superior residential, liberal arts education in the twenty-first century. Of course, both the College and the world have changed dramatically since Hyde first wrote *The Offer*—and working group members have no reason to suspect that the pace of change will slow anytime soon. With *The Offer* continuing to serve as a guiding vision for a future Bowdoin College education, then, what should be characteristic, and perhaps distinctive, about Bowdoin graduates ten years from now in how they think, reason and engage the world?

² A comprehensive list of sources that inform this report is found on p. 20.

³ Adapted from William DeWitt Hyde's *The College Man and the College Woman* (Boston: Houghton, Mifflin and Co., 1906).

The *Educational Model* on the following page depicts the components of a collegiate education that the working group strongly recommends the College aspire to achieve over the next decade. The model presents an affirmation as well as a challenge. Bowdoin's current success results at least in part from community members' present efforts to bring components of the model to fruition. Nevertheless, the working group asserts that the historical moment in which Bowdoin exists is one that urges comprehensive adoption of this model along with enhancing elements of the current collegiate program to meet challenges posed by forces of change now and in the future. By achieving this model, the working group believes that Bowdoin will realize *The Offer of the College* for the twenty-first century.

The model is oriented around four concepts: core values (depicted by the inner-circle and displayed in green), dispositions (depicted by the ring around core values and displayed in light blue), facets of learning (the next ring out and displayed in orange), and sites of learning (the outside ring and displayed in dark blue). It is important to note that the map's rings are meant to spin in opposing directions; that is to say, all core values are related to all dispositions, which are related to all facets of learning, which are related to all five sites of learning.

The model's core educational values include ethical decision making, deep knowledge and scholarship, and creative expression. Over the course of the working group's investigation, community members frequently prioritized these three values as the ones that should result from a Bowdoin College education both now and in the future. In particular, educating students to engage in ethical decision making was cited as a predominant concern for the College.

The eight dispositions that surround the model's core values are those that participants in working group discussions, focus groups, meetings, and survey responses repeatedly claimed should be fostered among students. It is important to emphasize that these dispositions can be fostered in a wide variety of contexts across all five sites of learning. The dispositions also align closely with those commonly cited in the literature on "the future of work" as fundamental to graduates' success in a rapidly changing economy and employment market.

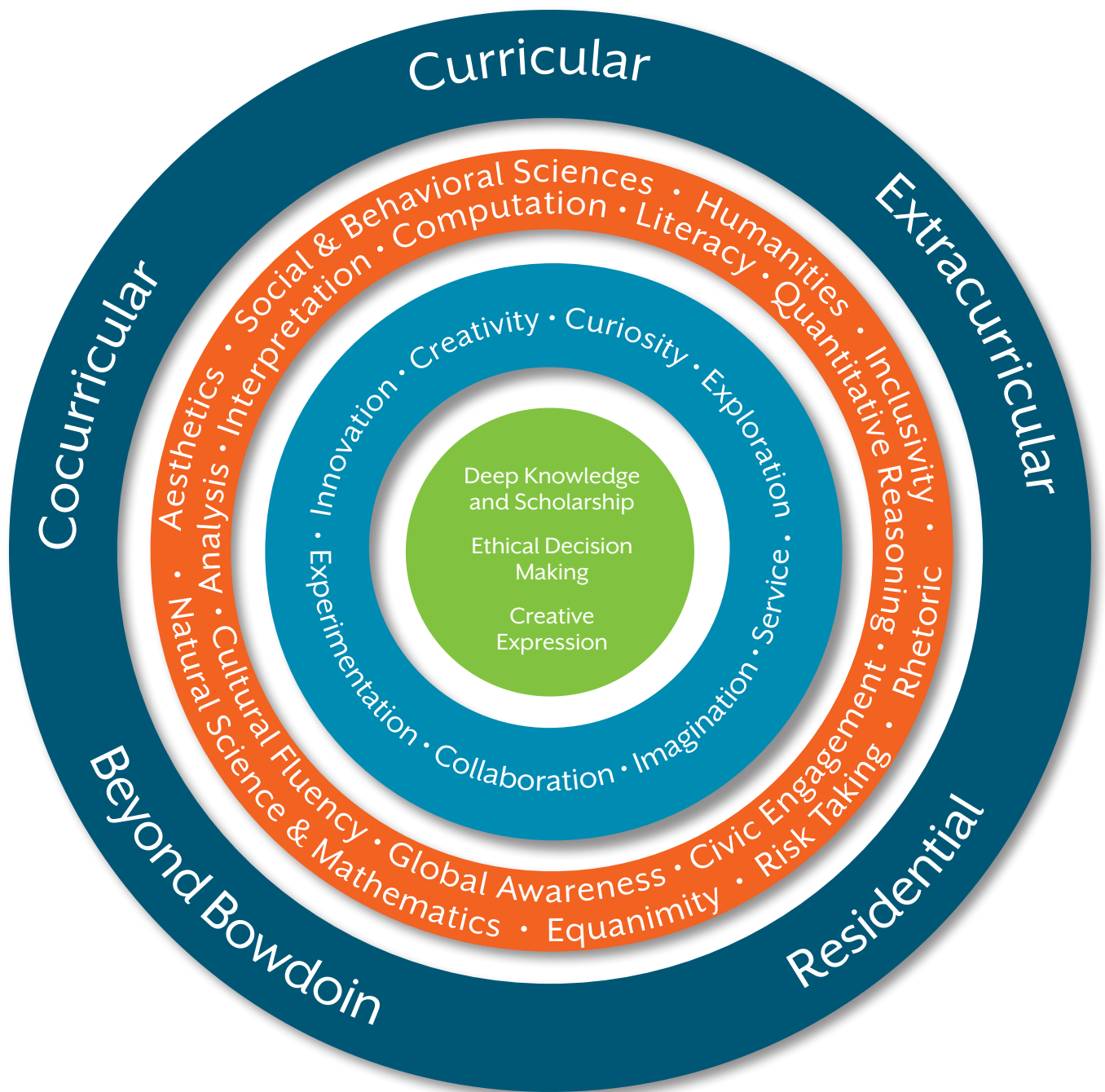
The sixteen facets of learning that appear in the model are among those generated by an excellent liberal arts education. That the model highlights these elements over others should hardly be surprising, for they parallel, and in some cases repeat, the qualities of a liberal education that the College affirmed in the *Statement of Liberal Education* adopted by the faculty in 2004. As that statement claims:

The success of a Bowdoin education is evident in the capacity of graduates to be informed and critically analytic readers of texts, evidence, and conclusions; to be able to construct a logical argument; to communicate in writing and speaking with clarity and self-confidence; to understand the nature of artistic creation and the character of critical aesthetic judgment; to have the capacity to use quantitative and graphical presentations of information critically and confidently; and to access, evaluate, and make effective use of information resources in varied forms and media. These fundamental capacities serve as crucial supports for a commitment to active intellectual inquiry—to taking independent and multifaceted approaches to solving complex problems; knowing how to ask important and fruitful questions and to pursue answers critically and effectively; sharing in the excitement of discovery and creativity; and being passionately committed to a subject of study. Graduates should thus have the ability to engage competing views critically, to make principled judgments that inform their practice, and to work effectively with others as informed citizens committed to constructing a just and sustainable world.⁴

Finally, the *Educational Model* the working group proposes identifies five sites of learning. Of course, not all student learning fits easily into any one site. Some learning cuts across sites, and some spills over into sites not formally affiliated with the College. Still, for the purpose of fulfilling its charge, working group members found that the following five sites provided a useful framework:

- Curricular: Refers to the learning that takes place primarily on campus in the context of credit-bearing courses.
- Cocurricular: Refers to the learning that occurs in contexts related to or in reference to credit-bearing coursework. Off-campus study and Bowdoin-supported summer research provide two examples.
- Extracurricular: Refers to the learning that occurs in activities supported by or facilitated by the College outside of credit-bearing courses and that mostly takes place on campus. Examples include any one of over 100 student-run organizations, such as Bowdoin Student Government and the Alliance for Sexual Assault Prevention.
- Residential: Refers to the learning that occurs in the context of the College's residential experience. This learning may

⁴ <https://www.bowdoin.edu/academics/curriculum/statement-liberal-education.shtml>



Educational Model

- Core Values: Inner-Circle
- Dispositions: First Ring
- Facets of Learning: Second Ring
- Sites of Learning: Third Ring

happen through formal programming sponsored by the Office of Residential Life, such as college house programming and programs like Dinner with Six Strangers, or as a result of the experiences associated with navigating new forms of living arrangements with the support of residential life staff.

- **Beyond Bowdoin:** Refers to the learning that frequently occurs off campus with the support of the College. Examples include internships facilitated and/or supported by the Career Planning Center and Alternative Spring Breaks sponsored by the McKeen Center for the Common Good.

Forces of Change

It is not uncommon for people to believe that the historical moment they occupy is revolutionary or distinguished by “unprecedented change.” While the working group makes no such claim about the present, change indeed occurs over time, and it is both reasonable and institutionally responsible for colleges and universities to identify the forces of contemporary change and, when appropriate, to respond. The working group sought to make sense of the forces of change currently influencing Bowdoin College, while also anticipating forces that might shape the kind of education the College will deliver ten years from now. These forces include:

• **Globalization**

The increasing pace of globalization has resulted in electronic communications shrinking physical distances across the world, while increasing meaningful exchanges between vastly different cultures. Higher education should help students develop the skills to thrive in an increasingly diverse, global community. Colleges, for instance, should deliver an international perspective that helps students understand cultural differences and enables and encourages them to find value in and work with these differences.

• **Dominance of STEM**

Emphasis on STEM continues to diminish student interest in other disciplines, posing a challenge to the arts, humanities, and social sciences. This is problematic because, rather than being at odds, the fields of natural science and mathematics, social and behavioral science, and arts and humanities are complementary. The arts and humanities, for instance, teach students to understand the world from other perspectives than their own—historically, aesthetically, morally, culturally—and to grapple with the big questions about the meaning and purpose of life, at both the individual and the communal levels. They are not adjuncts to science and technology; they are core components of a liberal arts education. As President of Lafayette College Alison Byerly describes in a letter to *The New York Times*, “[T]he major value of a college curriculum, and the reason an undergraduate degree is still preferable to a random menu of massive online open courses, is the opportunity it offers students through a variety of disciplines and the different skills specific to each. A university’s willingness to provide those options, even though some fields may draw more students in a given year, is not a flaw in its business model. It is what you are paying the university to do.”⁵

• **Data**

Data presents both a great challenge and an opportunity. Our world has become data-driven; future leaders will need skills to work effectively in data-rich environments. Colleges should assist students in developing competencies in mathematics, computation, and quantitative reasoning, while also teaching students to use data wisely and meaningfully.

• **Technology**

It is difficult to overestimate the changes technology will generate in the next ten years. Artificial intelligence (AI), for instance, is assuming an increasingly important presence in the classroom, in the workplace, and in society. Workplace automation will likely continue to change the market for labor globally, especially as it moves out of manufacturing and into other areas of the workforce. Finance, for instance, may be particularly vulnerable as machine learning grows more sophisticated and algorithmic optimization continues to be a goal of many companies.

In a technology-driven world, the task of higher education is two-fold. First, colleges should guide students to contemplate what humans can do and AI cannot, while simultaneously teaching them the necessary literacies to work in an AI-intensive environment. Second, as organizations continue to ask whether this is possible, colleges should encourage students to ask questions that cultivate wise and ethical use of technology, such as “Is this moral?” and “Is this wise?”

On a related note, the rapid development of technology challenges traditional ways of acquiring knowledge. Intensive use of electronic devices inside and outside the classroom has multiple consequences. Most importantly, information

⁵ Byerly, Alison. “Role of Humanities in School and Life.” *The New York Times*, November 4, 2013.
<https://www.nytimes.com/2013/11/05/opinion/role-of-humanities-in-school-and-life.html>

packaged in the minimalist units compatible with electronic communication is affecting the attention span of young learners along with their willingness and ability to sustain efforts needed to read texts critically and to think logically. The way students learn and acquire knowledge is changing, and the way knowledge is delivered should change accordingly. New teaching strategies will be necessary to help students develop the skills to learn how to learn and how to think in this new environment, and preferably, will turn the “distractions” of technology into aids of the new learning model.

• **Online Learning**

As suggested above, technology transforms the content of education as well as forms of delivery. One prominent example is the rise of online education. Having moved from the periphery to the center of many colleges’ and universities’ academic programs, online education has become an accepted form of higher education. Its relative low cost and ease of accessibility makes it an affordable and competitive choice for prospective college students.

• **Demography and Inequality**

A falling birthrate, especially in the Northeast and Midwest, has already begun increasing competition among higher education institutions for the most qualified students, both regionally and nationally. As Douglas Belkin writes in *The Wall Street Journal*, “For generations, a swelling population of college-age students, rising enrollment rates and generous student loans helped all schools, even mediocre ones, to flourish. Those days are ending.”⁶

On a related note, rising inequality across the country poses a serious challenge to equal access to higher education. In the United States, K-12 educational attainment correlates with socioeconomic status. Continued rising economic inequality will most likely be accompanied by limited learning opportunities for students whose families are in the bottom half of the income distribution.

• **Questioning the Value of Liberal Education**

In a society where scholarship and intellectual pursuits are frequently held in low regard, the value of liberal arts are often underestimated. Simultaneously, higher education institutions are being compelled to demonstrate how the education they provide is tied directly to student advantage in the labor market following graduation. This, combined with rising tuition costs, is putting pressure on colleges and universities to make transparent what kind of learning takes place and how much of it occurs during what critics have described as the “black box” of the undergraduate experience.

Perhaps traditional buckets of knowledge are becoming obsolete, but not so liberal education. Increasingly, students need the capacity to navigate a vast sea of knowledge. Successful leaders in the future will not be specialized technicians but, rather, penetrating and critical thinkers who have a vision unique to those who are comfortable in a wide variety of settings.

Enhancing a Bowdoin College Education

The working group’s deliberations incorporated substantive conversations about these forces while remaining responsive to long-standing questions regarding the purposes of higher learning. Ultimately, the group’s discussions resulted in members crafting the *Educational Model* described above as well as a series of strategic enhancements to a Bowdoin undergraduate education that the group believes the College should aspire to pursue over the next decade.

For the purposes of this report, these enhancements are organized under four broadly conceived categories: 1) *Problem Solving*, 2) *Technology, Computation, and Quantitative Reasoning*, 3) *Difference, Inclusivity, and Globalization*, and 4) *The Residential College Experience*. It is important to note that none of these categories are identified as such within the *Educational Model* the working group proposes. Although dispositions such as “innovation” and facets of learning such as “computation” are certainly highlighted within the *Technology, Computation, and Quantitative Reasoning* category, for instance, the ideas advanced in all four categories are interwoven throughout the model and touch many elements of the undergraduate experience. By enhancing the work currently being conducted in these four categories over the next decade, working group members feel certain that the entire educational enterprise at Bowdoin College will be enriched.

1) Problem Solving

A liberal arts education should foster the capacity to successfully engage in solving difficult problems. Problems can be solved in many different ways, however, and the College should aspire to enhance graduates’ abilities to creatively problem solve while making the ethical implications of potential solutions central to the decision-making process. In addition, many of the problems that students will confront during their lifetimes will likely demand an interdisciplinary

⁶ Belkin, Douglas. “U.S. Colleges are Separating into Winners and Losers,” *The Wall Street Journal*, February 21, 2018: <https://www.wsj.com/articles/after-decades-of-growth-colleges-find-its-survival-of-the-fittest-1519209001>

understanding of social, political, and economic dynamics that frequently intersect to produce intractable challenges at the local, regional, national, and global levels.

Successful problem solving requires the ability to think about a problem as well as the ability to think around that problem and its complexities. The latter ability, especially, is cultivated by students' introduction and exposure to a range of disciplinary methods and ways of knowing.

A foundational strength of the College's current academic program is its demand that students engage with a variety of disciplines through the mechanisms of divisional and distribution requirements. The College currently describes the curriculum as follows:

The College requires students to seek breadth and depth in their education: breadth through distribution and divisional requirements that encourage exploration and broaden students' capacities to view and interpret the world from a variety of perspectives; and depth through the completion of a major in a department or interdisciplinary program, which challenges students to develop a deeper understanding and self-assurance as independent and creative contributors to an area of study. Students complete at least one full-credit course in each of five distribution areas along with a first-year seminar in their first two years of study, declaring a major in spring of the sophomore year. For graduation, students complete a minimum of thirty-two courses, leaving ample room for exploration of the curriculum.⁷

The working group recommends that the College retain, for the foreseeable future (and certainly the next decade), a core curriculum of required course distributions that embraces and teaches the traditional compendium of curated facts and information that has been codified and validated by scholars as worthy of study. We recommend that this core curriculum be understood as organic and subject to interpretation and modification over time, albeit without diluting the import of the historical and curated knowledge that the core curriculum contains. We encourage the College to consistently reexamine core curricular requirements to ensure that they are aligned with the College's core values.

Bowdoin students should continue to be required to take courses in a variety of disciplines across the College's three curricular divisions: Natural Science and Mathematics, Social and Behavioral Sciences, and Humanities. They should demonstrate, as a condition of receiving a degree from the College, that they have accumulated a sufficient number of credits in diverse fields of study to qualify them as having attained a broad mastery of the liberal arts. This might include, for example, study of a foreign language, statistical and computational skills, and an appreciation for art and music.

The working group privileges as central to a Bowdoin education an appreciation of deep knowledge (that is to say, knowledge that reflects a level of understanding which is thorough, complex, and discerning), respect for scholarship, love of learning, ethical behavior, and a sense of social responsibility for the application of knowledge toward the common good. Substantive engagement in a single subject, usually through the completion of a major, is a necessary and crucial element of the intellectual experience at the undergraduate level. Yet the benefits of developing expertise should not be the final goal of a liberal arts education. The ability to apply that expertise to solve problems—and to understand and assess other forms of expertise—are equally crucial.

As the boundaries between traditional disciplines are becoming increasingly blurred, and as facts and information are easily acquired but in minimalist units, knowledge integration is becoming increasingly important. The ability to integrate knowledge can be taught intentionally in the classroom setting. This ability can also be honed through independent research projects and culminating experiences that guide students to practice synthesis and integration driven by their own ideas and initiative. To develop this capacity, students need to become comfortable with experimentation and with exercising creative and independent thinking. They need to learn to generate new hypotheses and ideas as well as develop the mental fortitude required to challenge one's own work and to withstand challenges from others. How do we teach students to tackle new areas of knowledge, to integrate knowledge, and to solve complex problems?

This question captured the attention of many community members whose input the working group solicited. Responses were far-reaching and included recommendations that ran from the particular, such as rethinking department and program minor courses of study to serve as curricular spaces for interdisciplinary engagement, to the overarching, such as establishing a center for interdisciplinary study. Nevertheless, most suggestions strongly encouraged providing greater opportunities and support for academic flexibility, creativity, and innovation both by and for the faculty.

The College's current system of course offerings is very restrictive. There are only four basic models for courses (First-Year Seminars, 1000-level, 2000-level, and 3000-level) and, with relatively few exceptions, each course level has a

⁷ <http://www.bowdoin.edu/academics/curriculum/index.shtml>

predetermined enrollment cap. This fairly lock-step hierarchy creates hurdles for faculty interested in experimenting with curricular and pedagogical innovation, including team teaching and other forms of instructional and interdisciplinary collaboration. Still, faculty who contributed input to the working group described with enthusiasm the types of academic experiences they would like to develop for students, while asserting that creating opportunities and support for curricular innovation is a crucial prerequisite for any meaningful enhancement of the College's academic program. The working group urges an "opening up" of the current system of course offerings to provide for greater flexibility and opportunities to innovate.

Concurrently, the working group identified four compelling examples of academic and curricular innovation that the College has undertaken in recent years. The four projects share the goals of interdisciplinary and innovative approaches to teaching and learning as well as the objective of powerfully enhancing the liberal arts education to which Bowdoin remains deeply committed. All four also required institutional commitment in order to creatively leverage the strengths of existing college resources. These projects include:

- **The Bowdoin Marine Science Semester**

This project makes use of the Schiller Coastal Studies Center to offer an immersive experience—through unique curricular modules—in marine field work, lab work, marine biology, biology, biochemistry, chemistry, earth and oceanographic science, and environmental studies.⁸

- **The Ivory Mirror: The Art of Mortality in Renaissance Europe**

Centering on a major international loan exhibition at the Museum of Art and curated by a member of the College's faculty, this project integrated the exhibition with guest lectures, performances, film screenings, panel discussions, and a wide range of courses in the humanities, as well as work with students interested in embarking in the health professions.⁹

- **Mellon Course Clusters**

Through this initiative, areas within the existing curriculum are coordinated as multiyear course clusters connected by a common theme. Each cluster is designed to offer opportunities for students to engage with faculty research, provide support for independent student research, and incorporate symposia and lectures involving distinguished visiting speakers. Clusters have included (among others): Mediterranean Studies, Public Health, Medieval and Early Modern Studies, Civil War, and Beauty.¹⁰

- **The Roux Center for the Study of the Environment**

This new facility is intentionally designed to bring faculty from across the curricular divisions together to "create innovative opportunities for coordination and collaboration in research, teaching, and scholarship and enable new and enhanced engagement with those involved in teaching, research, policy, practical uses, and stewardship of the environment locally, in the region, across America, and around the world."¹¹

In the short term (and with the Roux Center currently under construction), we urge the College to use the first three projects as models for future programming by developing a call for proposals for *Enhancing the Liberal Arts*, an initiative focused on experimenting with a wide range of possible ways to enhance the liberal arts curriculum. Funded proposals would include stipends and grants to support cohorts of faculty and academic staff who would meet for extended periods of time during the academic year and across the summer months to engage in project development. Through these undertakings, the Marine Science Semester, for instance, might serve as a model for a similar project with the humanities at its core. The Ivory Mirror might serve as a model for future exhibitions that could engage thematically with issues central to many areas of academic inquiry (e.g., globalization, diversity, beauty, modernization, the environment). Mellon Course Clusters might provide a model for a project that clusters course offerings around the concept of ethics or creative expression.

In the long term, the working group recognizes that projects such as these require both time and energy to generate and implement. It would be unreasonable to expect faculty to enhance the academic program in this way without the College providing greater institutional support and flexibility along with additional resources for experimentation and innovation. As one working group member observed, "How can we expect students to become disposed toward innovation if faculty aren't given the opportunity to innovate?"

8 <http://www.bowdoin.edu/coastal-studies-center/courses/>

9 <http://www.bowdoin.edu/art-museum/exhibitions/2017/Ivory-Mirror.shtml>

10 <http://www.bowdoin.edu/humanities/>

11 <http://community.bowdoin.edu/news/2016/02/roux-family-gift-to-transform-study-of-the-environment-at-bowdoin-college/>

To provide institutionalized space, support, time, and opportunity, the working group recommends that the College establish an *Academic Innovation Center*. Designed to act as catalysts for innovation in pedagogy, curriculum, research, publication, and artistic expression, academic innovation centers are being adopted in varying forms across higher education. As reported in *The Chronicle of Higher Education*, these centers or “hubs” are “a support system for people with big ideas.”¹² They frequently involve faculty in “design thinking” in a multitude of arenas, including instructional design, use of digital platforms, harnessing the power of social media, community-based course development, multimedia production, and interdisciplinary projects in teaching and research. The centers provide a dedicated space where faculty teams convene to work on project creation. To support these efforts, especially in the center’s early years, the College should retain the services of facilitators in design thinking to work alongside faculty and academic staff in supporting project development.

To provide the time necessary to engage in project planning, the College might offer a new form of support—the *Academic Innovation Fellowship*—to faculty members dedicated to pursuing a multiyear project from conceptualization to implementation through assessment. These two- to three-year fellowships would provide course reduction, summer support, and additional resources for project development.

The working group recognizes that funds for course development are already available, on a competitive basis, to faculty members eager to improve upon existing courses or create entirely new ones. Those resources should continue to be made available to faculty, most of whom access them for individual pursuits. Academic innovation of the kind described here is inherently more complicated and will most likely involve cohorts or teams of people working across disciplines in collaboration with staff in offices such as the Center for Co-Curricular Opportunities, Academic Technology and Consulting, the McKeen Center, and the Center for Learning and Teaching. As such, the institutional support that the College provides this undertaking must be proportionate to the level of innovation in which faculty and staff seek to engage.

Finally, working group members concurred that students should have the opportunity to participate in a capstone learning experience toward the end of their undergraduate careers. Capstone projects are educationally meaningful in that they provide opportunities for synthesis, knowledge integration, and reflection. The working group greatly values these qualities and believes that the College should aspire to provide a capstone experience for all students.

A review of the College curriculum reveals that many departments and programs already employ a variety of approaches to capstone experiences. Currently, a capstone can be a single, advanced course (3000-level) that all senior majors in a department or program are required to fulfill. Alternatively, some departments and programs refer to a series of 3000-level courses as capstones and require that seniors enroll in one or more of the courses in the series. Yet other departments and programs require majors to complete an advanced independent study or a culminating project.

Working group members respect the way departments and programs that currently require capstone projects have structured those experiences; the structures undoubtedly arise from thoughtful reflection by faculty members about disciplinary practices, learning goals, and department and program resources. For this reason, the working group discourages any attempt to legislate a single capstone model. Instead, the working group encourages engaging in academic innovation in conceiving of new kinds of capstone exercises. Faculty might consider creating a new kind of 3000- or 4000-level seminar, for instance, one that is interdisciplinary in nature. While established department and program capstone courses are typically designed for majors and require a host of prerequisites, the new interdisciplinary seminars for juniors and seniors would be focused around topics or problems and by design would enroll students from a variety of disciplines. These seminars, which might be team taught, would have as their learning goals developing creative problem-solving skills, mastering independent and group thinking, collaborating on interdisciplinary teams, and developing confidence. Faculty members and students have expressed excitement when discussing the possibility of developing and taking such courses and have described the knowledge and creativity they believe such seminars would unleash.

2) Technology, Computation, and Quantitative Reasoning

Many of the abilities students should expect to acquire through a liberal arts education, including the ability to think and read critically, to consider competing ideas simultaneously, to discuss difficult, controversial, and complex issues productively, and to speak and write persuasively and with clarity are as important in the twenty-first century as they have been in the past. The rise of information technology, however, has shifted the landscape on which Bowdoin College provides this education. To be a citizen of the twenty-first century is to encounter the digital at every turn. It is incumbent upon Bowdoin College to enhance elements of the collegiate experience that develop students’ capacity to successfully

12 McMurtie, Beth. “The Hope and Hype of the Academic Innovation Center,” *The Chronicle of Higher Education*, 64 (20), January 26, 2018: <https://www.chronicle.com/article/The-HopeHype-of-the/242284>

and responsibly navigate life in a world that is increasingly shaped by the influences of computation and artificial intelligence. Concurrently, the College should educate all students to reason with quantitative information and interpret visual representations of information at a level that is equivalent to that at which it educates all students to reason with textual information.

Our world is ever-more driven by computers and information technology; artificial intelligence already shapes many aspects of our lives, and it is reasonable to assume that this influence will increase. Simultaneously, the world is becoming data rich. The ramifications are profound.

The rise of big data has important implications for how problems in many disciplines are being framed and investigated. In some fields, this development has already led to conversations among scholars regarding the end of hypothesis-driven research; in the future, big data will suggest the hypothesis, rather than the hypothesis suggesting what data are needed to test them. In other fields, reductionism, used for centuries to study problems or systems by dissecting them into parts, by shifting from large to small, from macroscopic to microscopic, and from complex to simple, is being made obsolete by big data. In this regard, the direction in which information flows in the future may be reversed, with the goal of research becoming the prediction or understanding of the properties of the whole system by integration from its component parts.

It is important to note that these changes are not restricted to science and mathematics. In the arts, computation is facilitating new forms of creative expression. In the humanities, computational tools allow for the study of texts, images, and historical data at vastly increased scales and through new forms of visualization and rhetoric. In the social sciences, new paradigms such as social networks provide data at a remarkable scale. In short, the combination of information technology and big data are offering entirely new ways of exploring, investigating, and relating to the world.

Successfully confronting these changes will require new ways of thinking and learning. A decade from now, thriving in a data-driven world will require some level of facility and comfort with computation. Incorporating the study of technology and computation into the undergraduate experience in a thoughtful way, however, requires attention to multiple dimensions, including fundamental principles underlying technological change, comprehending basic principles of computers and networks, and communicating across social media platforms. Contexts of technological change, especially historical and cultural understandings of the reasons for and effects of these changes around the globe, should be considered, as should the consequences of differential access to technology. Moreover, the study of technology should incorporate an examination of the values and ethics associated with technological development, including issues concerning power, privacy, prediction, and the unintended consequences of technological innovation. Of central concern should be the question of what societal problems might be best solved by the application of existing or new and emerging technologies.

The working group recognizes that Bowdoin's Departments of Mathematics and Computer Science already make important contributions to student learning in these areas. The mathematics department, for instance, states the following as a learning goal: "To recognize and appreciate the important role of technology in mathematical work, and to achieve proficiency with the technological tools of most value in one's chosen area of concentration."¹³ Similarly, the computer science department's learning goals include, "Have critical thinking skills enabling the solution of problems by developing and analyzing algorithms" and "Be able to recognize, identify, and analyze the social and ethical issues that arise from the use of computer science techniques in society."¹⁴ Still, the College has been slow in developing a coordinated approach to educating students for participation in a society and workforce being profoundly influenced by technological change, with the greatest institutional commitment seeming to come in the establishment of the Digital and Computational Studies Initiative (DCSI).

DCSI affords students the opportunity to use digital and computational tools to examine questions, solve problems, and engage in creative expression across the curriculum while also fostering critical understanding of the historical and ethical implications of these tools and the kinds of knowledge and social practices they allow. By bringing computational proficiency and critical perspectives together in students' educational experience, the initiative seeks to shape the next generation of those tools and the scholars and leaders who use them. As the initiative's website describes:

New and emerging technologies are transforming the production and dissemination of knowledge. Digital and computational methods and analysis are creating the ability and opportunity to address new questions and data sets and adding new perspectives to the core questions that have always concerned the humanities, social sciences, and natural and physical sciences.

¹³ <http://www.bowdoin.edu/math/learning-goals/index.shtml>

¹⁴ <http://www.bowdoin.edu/computer-science/learning-goals/index.shtml>

But these technological transformations are not solely a one-way street. The liberal arts, broadly speaking, also have the power—perhaps the responsibility—to participate in and shape the development, use, and interpretative capabilities of these tools. Bowdoin’s *Digital and Computational Studies Initiative* invites faculty across the College to work together to integrate new technologies, methodologies, and forms of knowledge production into our curriculum and our scholarship.¹⁵

This description implies that DCSI’s objectives are well aligned with the enhancements the working group encourages above. The initiative, however, has yet to become fully and firmly established at the College. The working group recognizes that, as is often the case when innovative initiatives are introduced into traditional organizational structures, it takes time for participants to determine the most productive path forward. Given the compelling need identified by Bowdoin community members for the kind of learning DCSI fosters, the working group urges the College to move quickly and comprehensively to institutionalize Digital and Computational Studies.

DCSI takes a two-pronged approach to educating students: 1) appointed faculty teach courses in DCSI (with contributing faculty teaching courses cross-listed with DCSI) and 2) appointed faculty collaborate with colleagues across campus to integrate digital and computational curricular modules into their courses and/or support colleagues in developing new courses. The latter approach should prevent digital and computational studies from becoming siloed on campus. On the other hand, it seems unrealistic to expect the relatively few appointed DCSI faculty and one postdoctoral fellow to have an expansive reach in supporting colleagues across the curricular divisions. The working group recommends that the capacity of DCSI be expanded in proportion to the College’s need to address student learning in this area.

A second area of student learning that is related to technology and computation, yet also distinct from it, concerns educating students to reason quantitatively. While sharing goals with mathematics and computer science, quantitative reasoning nevertheless differs from those disciplines. Quantitative reasoning (also referred to as quantitative literacy) is the ability to process quantitative information along with the capacity to critique, reflect upon, and apply such information in making arguments and informed decisions. This form of literacy encompasses mathematical ability as well as a willingness to engage quantitative information in a reflective and systematic way and use it to support valid inferences. As the National Council on Education and the Disciplines reports:

Quantitatively literate citizens need to know more than formulas and equations. They need a predisposition to look at the world through mathematical eyes, to see the benefits (and risks) of thinking quantitatively about commonplace issues, and to approach complex problems with confidence in the value of careful reasoning. Quantitative literacy empowers people by giving them the tools to think for themselves, to ask intelligent questions of experts, and to confront authority confidently. These are the skills required to thrive in the modern world.¹⁶

Similarly, the American Association of Colleges and Universities (AAC&U) has identified quantitative reasoning “as one of the few key outcomes that all students, regardless of major or academic background, should achieve during undergraduate study.”¹⁷ A Bowdoin student who recently completed a humanities course with a quantitative reasoning component offered a similar observation when she claimed, “...Quantitative reasoning is a useful skill for all fields of study, not just traditionally quantitatively-focused ones like math and science. Being able to analyze and interpret data accurately is important because the conclusions drawn from data have implications for everything from social norms to public policy. It’s easy to manipulate and misinterpret data, so it’s important to know not just what you’re looking at, but whether or not the data is being presented in a faithful and accurate manner.”

The working group received input from a wide range of community members that underscored the need for the College to enhance students’ quantitative reasoning and use of quantitative tools. As one alumnus observed, “It’s very difficult for students to graduate from Bowdoin without having learned to read and write. It’s much easier to graduate without being quantitatively literate.” Senior and alumni survey results support this claim. Whereas approximately 90 percent of recent graduating seniors reported that the College contributed to their ability to write effectively and communicate well orally, just 70 percent reported that Bowdoin contributed to their ability to use quantitative tools.¹⁸ Similarly, alumni five and ten years following graduation were asked about the positive effect the College had on their skills and abilities. Of the eight areas about which they were surveyed, including writing effectively, understanding and appreciating the arts,

15 <https://www.bowdoin.edu/digital-computational-studies/>

16 National Council on Education and the Disciplines, *Mathematics and Democracy: The Case for Quantitative Literacy*, 2001, p.2: <https://www.maa.org/sites/default/files/pdf/QL/MathAndDemocracy.pdf>

17 Association of American of Colleges and Universities. *Liberal Education Outcomes: A Preliminary Report on Student Achievement in College*, 2005: www.aacu.org/advocacy/pdfs/LEAP_Report_FINAL.pdf

18 Bowdoin College Self-Study for Decennial Reaccreditation Review with New England Association of Schools and Colleges, September 20, 2017, 93-97.

and thinking analytically and logically, the area in which respondents claimed the College was least successful was using quantitative tools, with only 60 percent of respondents reporting that their Bowdoin education had a positive effect¹⁹

The working group believes the College would benefit from supporting additional curricular programs and pathways dedicated to achieving the goal of educating all students to reason quantitatively. The working group identified the Quantitative Reasoning (QR) Program, located in the Center for Learning and Teaching, as one obvious site for augmenting such opportunities. Currently, the QR program undertakes the following:

- Assessing first-year students' quantitative literacy.
- Advising students, in coordination with academic advisors, regarding appropriate quantitative courses.
- Establishing study groups and drop-in tutoring for quantitative courses.
- Providing individual tutoring, in coordination with the course department, for students in quantitative courses.
- Offering dedicated QR courses, most notably MATH 1050: Quantitative Reasoning and DCS 1200: Data Driven Societies.
- Offering supplemental support to quantitative courses, as requested by faculty.²⁰

In the summer of 2017, the QR program also introduced a program called *Rhetorical Numbers: A Workshop for Quantitative Writing and Argumentation*, which focused on developing course materials that incorporate quantitative reasoning and argumentation. With eight faculty from across the curricular divisions participating, this program provides a useful model for developing constructive approaches toward enhancing quantitative reasoning at Bowdoin.

A second possible site of curricular opportunity may be the creation of a *Quantitative Literacy Seminar*. Given the benefit that students reap in learning traditional literacy skills, including critical reading and writing, through the current First-Year Seminar Program, it seems reasonable that a parallel seminar dedicated to quantitative literacy may be of equal benefit.

First-year seminars are offered primarily to students in the fall of their first year because, in addition to the literacy skills taught, these courses introduce students “to what it means to undertake serious intellectual work at the college level” along with “library research and an overview of the expectations of academic honesty and citing sources.”²¹ Given that this introductory work is conducted as part of students' first-year academic experience, the working group suggests that a distinctive feature of the sophomore-year academic experience could become a quantitative literacy seminar.

The working group recognizes that its members are not the first to suggest a seminar of this kind. Members are also acutely aware of the institutional challenges that implementing a sophomore-year seminar program would pose. Moreover, distribution requirements should not simply be developed without engaging faculty in a serious study of the benefits and costs to students and faculty as well as the broader curriculum. Consequently, the working group encourages a pilot project building on the *Rhetorical Numbers* summer program described above. Perhaps drawing on the *Enhancing the Liberal Arts* recommendation the working group offers in this report's previous section, a cohort of interested faculty would be provided stipends and grants to be used in support of developing between four and eight quantitative literacy seminars. As with first-year seminars, these would be anchored in their respective disciplines while intentionally incorporating significant quantitative elements.

The goals and characteristics of these courses would be informed by the guiding principle that “quantitative literacy is inseparable from its context,” and enrollment would be capped at sixteen sophomore students.²² In the spirit of curricular innovation, participating faculty would collaborate with DCSI, QR, and CLT faculty and staff to engage in out-of-the-box curricular and pedagogical design. As the pilot is meant to inform the feasibility of broader curricular expansion, the working group recommends that the cohort of participating faculty include those from across the College's curricular divisions.

3) Difference, Inclusivity, and Globalization

Over the course of the year that the working group conducted its research and deliberations, Bowdoin community members consistently identified as a priority the need for the College to foster among students greater awareness of difference, inclusivity, and the influences of globalization. This need was described in a variety of ways. One community

¹⁹ Ibid.

²⁰ <https://www.bowdoin.edu/qr-program/index.shtml>

²¹ <https://www.bowdoin.edu/academics/curriculum/first-year-seminars>

²² National Council on Education and the Disciplines, *Mathematics and Democracy: The Case for Quantitative Literacy*, 2001, p.17: <https://www.maa.org/sites/default/files/pdf/QL/MathAndDemocracy.pdf>

member claimed that students should develop “a predisposition for always being open to considering reasonable points of view and acknowledging and respecting differences based on perspectives, backgrounds, and experiences.” Another said, “Bowdoin graduates should have a thirst for learning, understanding, and engaging with individuals and groups of varied cultural and economic backgrounds.” Yet another observed that students should gain “an appreciation for difference in all of its forms.” Students, themselves, emphasized the need to both understand cultural differences and find value in working within them. “Students need to be prepared to work in a variety of foreign environments,” they claimed, “whether directly (by living in a foreign space) or indirectly (through interactions with people of other backgrounds).” “It is worth noting,” they continued, “that for some students, Bowdoin is already a foreign environment, creating further need to nurture the understanding of cultural difference throughout one’s time at the College.”

The College tends to pride itself on students’ ability to engage in difficult discussions on topics of great importance, including race, ethnicity, social class, and gender. Many students, however, disagree with this characterization and believe that the College should enhance its current efforts to provide students with formal and explicit instruction in engaging with differences in thought, determining what voices are absent from dialogue, seeking out and inviting those voices into conversation, and actively listening and amplifying those voices. The working group concurs. Students should also be taught to avoid placing the burden for diversity and inclusion work on minority community members and should learn to be active participants and inducers of inclusivity throughout their lives.

Building on the success of Bowdoin’s *What Matters* conversations program and modeled on the work of the University of Pennsylvania Project for Civic Engagement, the working group encourages the College to develop a *Democratic Dialogues* workshop to provide students with greater opportunities to practice engaging in civil dialogue, especially with those whose political views differ from their own. The success of *Democratic Dialogues* is sometimes predicated upon collaboration between a college or university with a student body that leans in one particular political direction and another institution whose student body leans in a different direction.²³ The program brings students from these institutions together to participate in a facilitated discussion of important contemporary issues and then encourages reflection upon the experience. The working group recommends that the College retain the services of a trained facilitator to lead the program’s initial dialogues, during which time interested Bowdoin faculty and staff can be trained to assume this role.

Students arrive at Bowdoin having just completed a rigorous, competitive college admissions process that emphasizes individual merit and achievement. For some students, the rhetoric of individual achievement is familiar and comfortable; for others it conflicts with values of family and community responsibility. All students, however, will graduate into an increasingly interdependent and interconnected world. How do we teach students to think and problem solve as both individuals and members of a larger community, particularly one that reaches beyond the United States and recognizes increased cultural diversity within its borders?

The College has taken significant steps in recent years to constructively address this question. Nevertheless, continuing concern among community members regarding these issues suggests that the pace of social, political, and economic change may often outstrip the institution’s capacity to respond. Momentary lapses notwithstanding, for instance, globalization is ongoing if not accelerating. Future Bowdoin graduates will need to acquire the mixture of abilities necessary to work effectively in an increasingly globalized world, including the ability to be comfortable in diverse and international environments, to effectively collaborate as part of a diverse team, and to navigate cultural, ethnic, and socioeconomic differences respectfully and productively. Some of these skills can be acquired in credit-bearing courses, others can be acquired through cocurricular and extracurricular activities, still others can be obtained in residential spaces and through activities facilitated and supported by Bowdoin beyond campus.

For all students to engage in this learning, however, all must feel welcome on campus. They must be assured access to educational experiences in the five sites of learning the working group proposes in its *Educational Model* as well as receive support and mentoring in navigating the challenges of a four-year, residential, undergraduate liberal arts education.

In 2017, the Bowdoin College Ad Hoc Committee on Inclusion submitted its final report to President Rose in response to a charge with which it had been tasked the previous year. The charge was to consider and respond to the study on diversity and inclusion at Bowdoin College that President Rose had previously commissioned Camile Z. Charles (Edmund J. and Louise W. Kahn Term Professor in the Social Sciences, University of Pennsylvania) and Rory Kramer (assistant professor, Villanova University) to conduct. President Rose also requested that the ad hoc committee recommend approaches to making the campus more inclusive, to making the College a place of “deep engagement and discourse by our students on

²³ For reporting on this program at the University of Pennsylvania and Cairn University, see: <http://www.philly.com/philly/education/Two-schools-of-thought-PennCairn-try-to-bridge-political-divide.html>

the most difficult and uncomfortable ideas and issues,” and to examine “the challenges posed to first-generation students and low-income students to fully participate in College activities.”²⁴

The ad hoc committee ultimately recommended that the College adopt an inclusive excellence model of education with the goal of more fully embracing “the integral value of diversity and inclusion in fulfilling the promise of a liberal arts education.”²⁵ The committee also recommended that the College establish an Office of Diversity and Inclusion and appoint an officer who would drive efforts toward inclusive excellence.

Bowdoin has since established an Office for Inclusion and Diversity and appointed Michael E. Reed senior vice president for inclusion and diversity. The working group recognizes the College’s commitment to diversity and inclusivity as demonstrated by Michael Reed’s appointment and looks forward to his leadership in this area. The ad hoc committee report, however, also offered “additional recommendations” that align with the working group’s findings, making them worth repeating here. The ad hoc committee noted, for instance, and the working group concurs, that the College should aspire to enhance programming that supports a sense of belonging on campus among low-income, first-generation, and underrepresented students. The committee—and now the working group—also recommends strengthening the College’s mentoring programs, while establishing new programming aimed at easing students’ transition to college.

Along with student academic achievement, the three areas of belonging, mentorship, and transition serve as the guiding principles of the College’s newly established *THRIVE* initiative.²⁶ As its website describes, this initiative is committed to ensuring that all students, especially low-income, first-generation, and underrepresented students who may come from families with limited experience with higher education, have an opportunity to thrive during their undergraduate careers in ways that are equivalent to the most advantaged students. With this initiative in its early stages, and with the College only recently appointing a *THRIVE* director who will inform the initiative’s development and expansion, members of the working group anxiously anticipate learning more about the programming that will come from this effort over time.

4) The Residential College Experience

In recent years, the rapid growth of online learning has combined with the adoption of narrow assessments of higher education student learning to lead critics to challenge the “value added” of the residential college experience. In stark contrast, the working group affirms in the strongest possible terms the benefit that students reap from being enrolled in a four-year residential college with intentionally designed, ambitious, and well organized academic and student affairs programming. As noted previously, Bowdoin continues to regard *The Offer of the College* as a central guiding vision for the kind of higher education the institution seeks to provide. *The Offer*, however, can only be fully realized through a comprehensively developed and integrated living and learning community in which students study and share meals together, engage in self-governance, celebrate victories and confront losses on the athletic field, form, lead, and participate in extracurricular organizations, and experience both the richness and challenges of residing in a community different from the ones in which they were raised.

The opportunities that the residential college experience offers for learning how to live a meaningful life provided an important source of community member input on ways to enhance the four-year undergraduate trajectory. One of the themes that emerged from the working group’s meetings, interviews, focus groups, and surveys was the need for the College to more assertively encourage students to take risks in exploring their interests and potential. This suggestion was almost always linked to the need for students to also learn to accept and manage the failure that accompanies risk taking. “Aspirationally,” claimed one student affairs department head, “we should teach students persistence and resilience, and teach them not to be averse to risk.” Members of the academic staff concurred. “Students should be resilient risk-takers,” one explained. “They should understand the circumstances under which failure is an acceptable outcome. They should obtain the skills of flexibility and adaptability and be able to learn in multifaceted environments and from multiple methods.”

Simultaneously, many community members acknowledged that the rigor of the educational experience at Bowdoin can tax the hardest student and exacerbate physical and emotional challenges relating to anxiety, stress, and perfectionism. However, the ability to lead a life in which academic, social, cultural, and physical pursuits are balanced and satisfying can be encouraged and learned. It is one of a group of abilities that can dramatically improve the quality of the lives students lead while they are enrolled at the College, while also being an important component of achieving a satisfying

24 Bowdoin College Report of the Ad Hoc Committee on Inclusion, 2016-2017, pp. 3-4.

25 Ibid., p. 8.

26 <http://www.bowdoin.edu/thrive/>

and healthy life following graduation. In contrast with the often theoretical knowledge that students learn in the context of credit-bearing courses, the working group chose to label this kind of learning “practical knowledge.”

Working group members recognize that, as with the superficial distinction between knowledge, skills, and creative dispositions, there are no clear boundaries between course-based theoretical knowledge and the practical knowledge described here. Still, the distinction is helpful in bringing attention to a group of abilities that many community members believe the College should more directly support students in attaining. It is worth noting, moreover, that when student members of the working group held a tabling event at Smith Union and asked their peers what “knowledge and skills” they hoped the College would provide before they graduate, a large majority of responses included such practical knowledge as “oratory skills” and “personal finance and how to invest money and spend wisely.”

The working group acknowledges that its members are not the first to suggest the College be more proactive in teaching practical knowledge. Former Bowdoin College President Barry Mills, for instance, previously led a series of workshops for seniors called *Get Ready for Life After Bowdoin: A Crash Course in Practical Skills* and student affairs staff have, for several years, been working to develop a *Core Skills Initiative* that addresses many of these topics. Indeed, some topics already receive attention through programs offered by campus offices such as Career Planning and the Office of Residential Life. In light of these widely recognized needs and the College’s previous efforts to address them, the working group recommends that Bowdoin develop a more comprehensive, yearlong series of evening and weekend workshops that take practical knowledge as their central concern. Topics for these workshops might include:

- **Self-Knowledge and Resiliency**

Understanding core traits, skills, and values builds self-awareness and supports the intentional pursuit of personal and professional goals and opportunities. Students should learn the importance of risk taking and managing failure as a path to success.

- **Goal Setting and Achievement**

Students should learn that focused reflection as well as establishing and reaching challenging but achievable goals is fundamental to academic, personal, and professional success.

- **Effective Oral Communication**

Students should learn how to speak eloquently and to articulate persuasive arguments. They also need to know how to tailor their communications to fit their audiences.

- **Professional Development**

Preparing students for professional life after graduation includes learning résumé writing, interviewing, identifying and cultivating strategic relationships, and building and maintaining personal and professional networks.

- **Personal Finance**

Securing a full-time job exposes graduates to a new level of personal finance. Students should understand financial literacy, including personal budgeting, retirement planning, and basic investing.

- **Etiquette**

Understanding reception and dinner table etiquette and the importance of writing thank-you notes are just two of the practices that students should learn in order to make a positive impression in professional settings.

- **Conflict Management and Resolution**

Dealing appropriately with conflict is necessary to create healthy and productive professional and personal environments. Students should learn techniques including active listening, negotiation, and mediation.

- **Living a Healthy and Balanced Life**

Academic rigor combined with the extensive number of co- and extracurricular activities available at the College place significant demands on students. It is essential for them to learn the importance of self-care, nutrition, physical fitnesses, and methods of reflection.

Practical knowledge workshops such as these could be offered multiple times throughout any one student’s undergraduate career, making them fairly convenient and accessible. However, the working group also envisions using practical knowledge workshops to enhance the sophomore student experience.

Of the four years that comprise the undergraduate career at Bowdoin, the sophomore year seems the least distinctive. During their first year at the College, students participate in a number of shared experiences, including Orientation Trips and the First-Year Seminar. During the junior year, students actively pursue their declared major and many study off campus. The sophomore year, however, seems to lack a particular emphasis. Perhaps practical knowledge could serve as the basis for a series of sophomore programs offered through relevant college offices or as part of residential life.

The working group also identified the McKeen Center as an important site of student engagement at the College and one that could make a significant contribution to a reimagined sophomore experience. Recently, the center launched the Bowdoin Public Service Initiative, which aims to “help students gain insight into the rewards and challenges of serving the common good by working in and through government agencies, political offices, and nongovernmental organizations engaged in policy work.”²⁷ One component of the initiative is a sophomore-focused program titled Bowdoin Public Service in Washington. This program, through which students explore government and public service work, includes a seven-week seminar leading up to a week-long experience in Washington, DC, during the first week of spring break.²⁸ Along with practical knowledge workshops (and the pilot quantitative literacy seminars described in this report’s *Technology, Computation, and Quantitative Reasoning* section), the Bowdoin Public Service Initiative serves as an example of innovative programming that could enhance the distinctiveness of the sophomore year.

Conclusion

Possibly the greatest challenge the working group confronted in fulfilling the task with which President Rose charged it in September 2017 involved the project’s scope. Given the rapid political, social, economic, and technological changes currently underway in the United States, it seemed no small feat to accurately identify what should be characteristic, and perhaps distinctive, about Bowdoin graduates in how they think, reason, and engage the world a decade from now. Yet, the working group benefitted from Bowdoin community members’ high level of interest and constructive engagement with the project; working group members were never short on input. The working group also noted extensive overlap in the ideas and suggestions that faculty, staff, students, administrators, trustees, and alumni shared. These stakeholders live and work in a wide range of settings and have an equally wide set of higher education experiences from which to draw their impressions. Working group members found that this overlap focused their deliberations and was advantageous in fulfilling their charge.

Ultimately, the working group developed a strong consensus and high level of confidence around the accuracy of the *Educational Model* members believe the College should aspire to achieve over the next decade. In the near term, the group anticipates that reflecting on the model’s core values and dispositions as well as facets and sites of learning will provide a focus for fruitful, campus-wide conversations about the future of a Bowdoin College education.

Simultaneously, working group members assert that the College should adopt as priorities the series of strategic enhancements identified in this report. The significance the working group ascribes to these enhancements—and the programmatic recommendations that derive from them—can only be fully appreciated when they are considered in context. Still, while the programmatic recommendations are inherently linked to their contexts and should be appraised in light of them, working group members felt it important to restate them here. They are briefly summarized below along with the page numbers on which they are described in the report.

Programmatic Recommendations

- Current System of Course Offerings (“open up” to provide for greater flexibility and opportunities to innovate; see pages 8-9).
- Enhancing the Liberal Arts (develop this initiative to support faculty in experimenting with a wide range of possible ways to enhance the curriculum; see page 9).
- Academic Innovation Center (establish on campus as a catalyst for innovation in pedagogy, curriculum, research, publication, and artistic performance; see page 10).
- Academic Innovation Fellowships (establish to support faculty who seek to engage in academic innovation; see page 10).
- Capstone Experiences (offer students innovative, interdisciplinary capstone opportunities; see page 10).
- Digital and Computational Studies Initiative (expand capacity in proportion to the College’s need to address student learning in this area; see pages 11-12).

²⁷ <http://www.bowdoin.edu/mckeen-center/public-service/>

²⁸ <http://www.bowdoin.edu/mckeen-center/public-service/washington.shtml>

- Quantitative Reasoning Program (augment with the aim of educating all students to reason quantitatively; see pages 12-13).
- Quantitative Literacy Seminar Pilot (establish with the aim of informing the feasibility of broader curricular expansion; see page 13).
- Democratic Dialogues (establish this program to provide students with greater opportunities to practice engaging in civil dialogue; see page 14).
- Practical Knowledge Workshops (develop a comprehensive, yearlong series of evening and weekend workshops focused on “practical knowledge”; see page 16).

Higher education institutions are sometimes referred to pejoratively as ivory towers. Criticized for being apart from “real life,” liberal arts colleges, especially, have been besmirched in recent years by those who believe higher education institutions of all kinds should adopt occupational training as their central, if not sole, priority. Through this project, the working group received input from hundreds of people who vigorously disagree. Most of those who shared their perspectives with working group members believe strongly in higher education’s capacity to educate students to confront the complex challenges of the twenty-first century. They expect colleges such as Bowdoin to teach students to be deeply knowledgeable citizens who seek to advance democracy and contribute to the public good. They believe that these colleges are particularly well suited to instruct students to engage in responsible and ethical decision-making in their personal and professional lives. They maintain that Bowdoin should instruct students to express their interests, ideas, and beliefs in creative and compelling ways. In short, they have far greater expectations for residential, liberal arts colleges than those institutions’ critics.

It has been the working group’s privilege to dedicate an academic year to speaking with those who hold Bowdoin College in high esteem as well as aspire for it to become an even more effective higher education institution. Inspired by those conversations, the working group concludes that Bowdoin should take full advantage of the changes associated with this period of transformation for US higher education to become a national model of higher learning in the twenty-first century. The working group hopes that its findings, as described in this report, will guide the institution in that effort over the next decade.

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KSCD Working Group Charge

What **Knowledge, Skills, and Creative Dispositions (KSCD)** should every student who graduates from Bowdoin ten years from now possess? That is to say, what should be distinctive about Bowdoin graduates in how they think, reason, and engage the world?

The Working Group charged with addressing this question will be chaired by Associate Dean for Academic Affairs Chuck Dorn and be comprised of faculty, trustees, staff, and students. The Group will undertake its work in the spirit of being deliberate in our goals for delivering on our mission and The Offer of the College, comfortable questioning what we do and have done, and willing to experiment and embrace change when appropriate—all in service of remaining a preeminent liberal arts college over the next ten to fifteen years, and well beyond.

The Group's work will include developing an understanding of:

- 1) What is meant by each of “knowledge,” “skills,” and “creative dispositions?”
- 2) What KSCD are developed in our graduates today and through what components of the college's programs?
- 3) What forces might we reasonably anticipate shaping the KSCD that the College should deliver in ten years (e.g., globalization, technology and digitization, speed of change, shifting national and international demographics)?

The Group will seek insights from members of the Bowdoin community as well as individuals and institutions outside of Bowdoin.

The Group will produce a report that includes an analysis of the above (among other topics the Group identifies) and a set of recommendations for what changes the College might consider in what we do and how we do it, and how that may inform resource allocation, to allow us to provide our graduates with the KSCD within ten years.

The committee will report to President Rose no later than the end of the 2017-2018 academic year. The President's Office will provide the Group with financial resources for travel, data, etc.

Sources

Sources included but were not limited to those listed below. Collectively, Working Group members received input from over 800 individuals, a large majority of them members of the Bowdoin College community. In addition, the working group consulted Senior Survey results pertaining to “skills and abilities” from 462 of the 2017 graduates:

- Student focus groups, interviews, tabling event, and survey
- Alumni Council meeting
- Alumni Fund Directors meeting
- Faculty focus groups
- Student Affairs department head meeting
- Staff focus groups and survey
- Administrator (both current and former) interviews
- Higher education media (both print and online) such as *The Chronicle of Higher Education*, *Liberal Education*, and *Inside Higher Ed*
- Professional association publications, including the Association of American College and Universities and the National Association of Colleges and Employers
- Alumni employment data
- Alumni Survey data
- Senior Survey data
- Student enrollment data, including capstone courses, honors projects, double majors
- College division and distribution requirements
- Course syllabi
- Bowdoin College Mission Statement: <https://www.bowdoin.edu/communications/publications/mission.shtml>
- Bowdoin College Statement on Liberal Education, adopted by the Faculty, May 2004: <https://www.bowdoin.edu/academics/curriculum/statement-liberal-education.shtml>
- Bowdoin College Statement on The Curriculum: <http://www.bowdoin.edu/academics/curriculum/index.shtml>
- Bowdoin College Self-Study for Decennial Reaccreditation Review with New England Association of Schools and Colleges, 2017
- Bowdoin College Core Skills Initiative Draft Proposal
- Informal survey of attendees of the American Association of Colleges and Universities Annual Meeting, 2018
- *Committee on the Future Report*, Bowdoin College Board of Trustees, 2000
- *Report of the Ad Hoc Committee on Inclusion*, Bowdoin College, 2016-2017
- *Report on Diversity and Inclusion*, Bowdoin College, Camile Z. Charles and Rory Kramer, May 2016
- *The Future of Undergraduate Education*, Commission on the Future of Undergraduate Education, The American Academy of Arts and Sciences, 2017: http://www.amacad.org/multimedia/pdfs/publications/researchpapersmonographs/CFUE_Final-Report/Future-of-Undergraduate-Education.pdf
- *Mathematics and Democracy: The Case for Quantitative Literacy*, National Council on Education and the Disciplines, 2001: <https://www.maa.org/sites/default/files/pdf/QL/MathAndDemocracy.pdf>
- *Liberal Education Outcomes: A Preliminary Report on Student Achievement in College*, Association of American of Colleges and Universities, 2005: www.aacu.org/advocacy/pdfs/LEAP_Report_FINAL.pdf
- Belkin, Douglas. “U.S. Colleges are Separating into Winners and Losers,” *The Wall Street Journal*, February 21, 2018: <https://www.wsj.com/articles/after-decades-of-growth-colleges-find-its-survival-of-the-fittest-1519209001>
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- Delbanco, Andrew. *College: What is Was, Is, and Should Be* (Princeton University Press, 2014)
- Hyde, William DeWitt. *The College Man and the College Woman* (Boston: Houghton, Mifflin and Co., 1906)
- McMurtie, Beth. “The Hope and Hype of the Academic Innovation Center,” *The Chronicle of Higher Education*, 64 (20), January 26, 2018: <https://www.chronicle.com/article/The-HopeHype-of-the/242284>
- Rainie, Lee and Janna Anderson. *The Future of Jobs and Jobs Training*, Pew Research Center, May 3, 2017: <http://www.pewinternet.org/2017/05/03/the-future-of-jobs-and-jobs-training/>

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