



Strategic Plan 2016-2017

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Overview

About TIDES

The Technology Innovation Design and Entrepreneurship Studio, known as TIDES, is a community makerspace inspired by the DIY culture of the 21st century, that serves students and faculty of the College of Charleston. TIDES is currently located on the second floor of Towell Library, and is open five days a week for all members. We provide access to over \$10,000 worth of machines and software such as 3D CAD software, 3D printers, vinyl cutters, and programmable micro-controllers. Membership is free, and instruction by TIDES mentors is available upon request at no cost.

TIDES is a student run organization, operating on a \$20,000 annual grant from the Department of Supply Chain and Information Management, School of Business. Our staff consists of 10 volunteer mentors, and leadership responsibilities are divided between four executives.

Mission

The mission of TIDES is to connect all liberal arts students at the College of Charleston who have ideas, creative potential and a desire for self-directed learning with the digitally enabled tooling of the 21st century to safely explore, experiment, create, test and learn.

Motivation

The motivation behind TIDES is rooted in DIY (do-it-yourself) culture. The DIY culture, has a long history of engaging people of all ages, backgrounds and skill levels in collaborative work across a wide array of disciplines by providing a low barrier to entry and participation. The DIY community as a whole is made up of countless sub-communities focused more specific disciplines, that provide an informal and often unstructured environment for collaboration. This encourages people of all professional and educational backgrounds to engage in the sharing of ideas.

A 2010 study by Carnegie Mellon, examining six DIY communities and over 2,000 of their members, found that the pollination of ideas and information across such a broad spectrum of participants results in rapid interdisciplinary skill building. When studying the source of motivation in these DIY communities, the overwhelming majority of participants cited “self-expression”, and “learning new skills” as their primary and secondary reasons for participating.

At TIDES, we work every day to shape a community at the College of Charleston that embodies the DIY culture at-large. This is reflected in our Mission statement, and our vision for the future. We believe that by creating a space for students to interact and collaborate outside of the classroom environment, we can foster a community of interdisciplinary and autodidactic learning that will enrich the College of Charleston community as a whole.

Vision and Goals

Vision

The vision of TIDES is to grow and support an inclusive, interdisciplinary, autodidactic community of student scholars through state-of-the-art digital design, automation, and fabrication technologies.

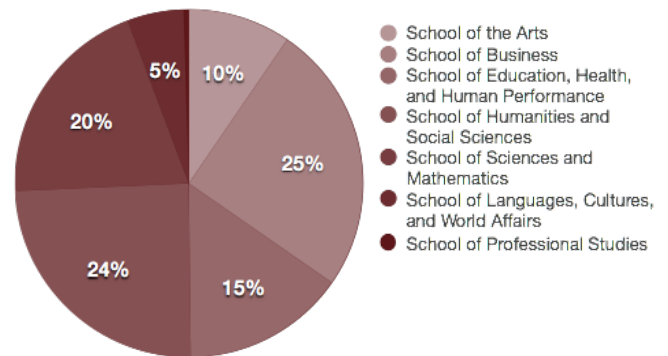
Goals

TIDES has two major five-year goals. Because TIDES is only in its third official month of operation, the timetables set in our Key Performance Indicators (KPI), are limited to the next calendar year. Our KPI will be reassessed in one year's time; but our goals will remain the same. Each is considered a critical success factor, and both essential to realizing our vision.

Goal 1: *Foster an environment of inclusion*

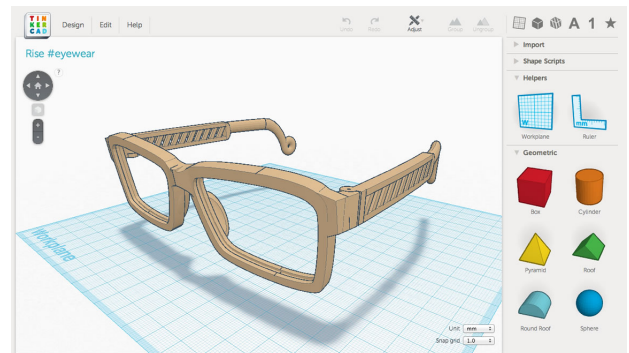
In the true spirit of DIY culture, we aim first and foremost to build and shape our community such that it fosters an environment of inclusion and participation. In order to engage students and faculty across all disciplines, our composition must reflect that of the College of Charleston community as a whole.

Right: The College of Charleston student body as divided by school. Over the next 3-5 years, this chart will serve as a benchmark for shaping our community.



Goal 2: *Make state-of-the-art technology accessible*

In our first three months of operation, we have observed that the technologies we offer can be intimidating to students who do not come from a background of computer science or graphic design. Moving forward, it is essential that we not only prioritize the acquisition of entry-level machines and software, but that we actively work to engage students in a way that encourages risk-taking, self-learning, and self-expression.



Free web-based programs such as Tinkercad provide a beginner-friendly GUI that make it easy to start 3D Printing. 21st century technology now lets anybody create incredible models.

Strategies

Detailed below are the strategies that will be used in the next calendar year to meet our KPIs. As of November 2016, TIDES is only in its third month of operation, thus strategies are designed specifically for the next calendar year. As TIDES grows, our capabilities will too. While our strategies will be revisited, our goals will remain the same.

The Goal	Fostering an environment of inclusion.
The Challenge	The College of Charleston's community consists of a diverse faculty and student body, whose interests and skills represent a multitude of disciplines. Our challenge to provide an inclusive atmosphere, that promotes interdisciplinary collaboration and autodidactism, regardless of school, department, or academic subject.
Our Strategy	<p>Location A visible and centralized location on campus with a open floor plan and glass perimeter (see Concepts) will promote student engagement and interaction. A centralized location, without department affiliation, will eliminate the perception of exclusivity, by eliminating physical barriers that can promote it.</p> <p>Personnel Having a diverse team of student and professional mentors that reflects the demographics of the student body will be essential to promoting inclusivity. As part of their training, mentors will be given a variety of strategies to aid in actively promoting interdisciplinary collaboration and autodidactism.</p> <p>Curriculum Integration TIDES aims to become a resource for faculty, offering our technology and expertise as a supplement to the traditional curriculum. By doing this, we gain access to a unique group of students that are less apt to engage in a DIY community, who will be exposed to TIDES through the avenue of academic responsibilities.</p>
The Key Performance Indicators	<ul style="list-style-type: none">• Membership consists of at least one student from every school, and represents at least 30 different majors by December 2017• The number of female members is at least 50% of total membership by December 2017• At least 25% of mentors are female by May 2017• At least 10% of members are college faculty and staff by December 2017

The Goal	Making state-of-the-art digital technologies accessible
The Challenge	The vast majority of students at the College of Charleston have had little or no exposure to basic digital design, automation, or fabrication technologies. For these students, first exposure can often be intimidating or discouraging. Our challenge is to prioritize accessibility across all of our technologies and services.
Our Strategy	<p>Technology By offering technology that utilizes GUIs at a high level of abstraction, we can reduce the factor of intimidation that is often symptomatic of low-level technologies with a steep learning curve. By offering regular workshops and individualized instruction, we can provide the appropriate support for members to feel confident taking the risks necessary to learn new technologies, and develop new skills.</p> <p>Personnel Having a team of mentors, each with a breadth of knowledge and skills, is critical to making our technologies accessible to beginners. It is essential that our mentors be willing and able to assist all members who wish to learn a new skill, or experiment with a new technology. All prospective mentors will be expected to demonstrate basic proficiency in each of the disciplines necessary to use laboratory technologies, and must demonstrate advanced proficiency in at least one discipline.</p> <p>Curriculum Integration For students that are being exposed to TIDES for the first time through academia, the structure of the academic environment can provide the necessary motivation to overcome initial intimidation that is often felt when being exposed to our technologies for the first time. TIDES will develop an advisory team of experienced mentors who will work in tandem with faculty to develop course-specific projects that incorporate one or more of the TIDES' technologies. In addition, the advisory team will ensure that all mentors are able to provide the project-specific assistance to students along the way.</p>
The Key Performance Indicators	<ul style="list-style-type: none"> • By December 2017, at least 80% of students visiting TIDES for the first time have complete one or more 15-minute "starter" projects • By December 2017, At least 25% of students visiting TIDES for the first time complete a 15-minute "starter" project on a microcontroller or microprogrammer • At least five faculty adopt TIDES' technologies into their curriculum by December 2017

Concepts

These concept laboratory designs illustrate TIDES' vision for a future laboratory.



Figure 1: A glass perimeter in a central location will promote engagement and participation.



Figure 2: An open floor plan with multi-use work tables will encourage interdisciplinary collaboration.

Conclusion

In less than one year, TIDES has grown from two students and one faculty member, to 10 founding members. It is our passion for technology, self-learning, and self-expression that drives us each day. With the support of the School of Business, we have created the first-ever community makerspace at the College of Charleston.

However our work is not done. Our vision is to grow and support an inclusive, interdisciplinary, autodidactic community of student scholars through state-of-the-art digital design, automation, and fabrication technologies. To do this, we have established two, 3-5 year goals that we believe are critical to TIDES' success. The strategy for each goal has three parts: location/technology, personnel, and curriculum integration. We believe that if we successfully execute each strategy, we will not only meet our KPIs, but exceed them.

An essential part of our vision is the laboratory itself. We believe that our goals of inclusion and accessibility place an even greater emphasis on the physical environment in which we work. A centralized location on campus, glass perimeter, and open floor plan will promote inclusivity, interdisciplinary collaboration, and participation.

In the coming months, we will begin to implement the strategies that will allow us to realize our vision of an autodidactic community that engages students and faculty of all backgrounds and disciplines. We believe that TIDES will continue enrich the College of Charleston community for many years to come.