

The Double Helix
A Strategic Plan for The College of Arts and Sciences
New York Institute of Technology

2023

Executive Summary

This strategic plan is the result of the hard work and dedication of over 30 faculty, staff, and advisory board members. Dubbed “The Double Helix Project,” this college-wide, 8-month-long effort establishes new directions for CAS, with a specific focus on building the faculty, enhancing research, and reviewing and enhancing the college's portfolio of programs.

The planning process began last June at a launch event in Manhattan, attended by select faculty and CAS Advisory Board members. In July, the chairs of CAS met at a retreat to begin to structure the Double Helix initiative. In August, the chairs were joined by the coordinators and directors of the college. At this second, day-long retreat, the group gave more structure to the three working groups that formed the backbone of the effort and outlined specific charges for each. During this past fall semester, the working groups were formed, chairs were appointed, and the work began. Each group successfully completed its task and submitted a final report to my office. The strategic plan below draws deeply from the ideas and proposals of these groups.

The Double Helix name represents this strategic plan in two important ways.

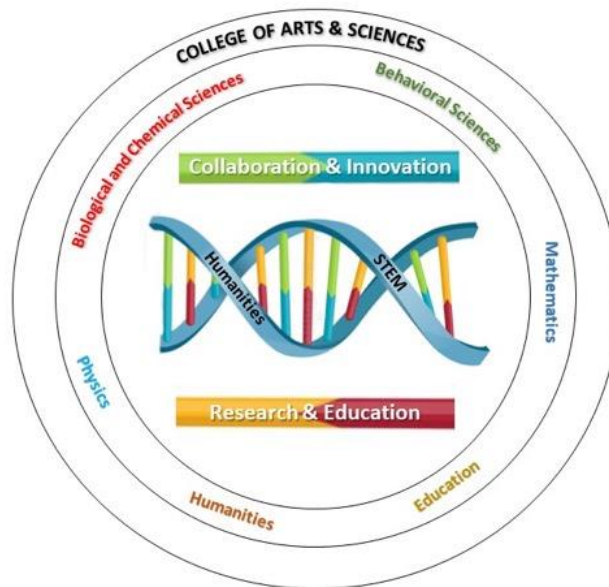
First, the College of Arts and Sciences balances the dual strands of (1) its obligation to provide the foundational education for all New York Tech students through the general education courses it offers, and (2) its commitment to develop and expand on its own portfolio of excellent undergraduate and graduate programs of study.

Second, the inter-connected double helix strands represent the dual nature of our program offerings: STEM and Humanities. At many institutions, and indeed at times here at New York Tech, these two fields of study remain siloed. Each strand has its own identity. However, the trajectory of higher education at both the undergraduate and graduate level is towards the interweaving of these two fields of study.

Both strands of the double helix work together to support the New York Tech mission of providing career oriented professional education, access to opportunity to all qualified students, and to further support research and scholarship that benefit the larger world as we collectively move toward gaining R2 status as an institution.

CAS Vision Statement

In five years, the College of Arts and Sciences will be known as a center for cutting-edge undergraduate curricula blending science, mathematics, technology, and culture. All CAS programs will proactively recruit and include diverse undergraduate and graduate students and faculty, will support issues of diversity, equity, inclusion, and belonging throughout our curriculum and teaching practices, and will be designed for a diverse community. CAS will also be known for its innovative and robust portfolio of interdisciplinary graduate degrees and professional certificates based primarily, but not exclusively, in biological and chemical sciences, psychology, counseling, and education. CAS will be committed to supporting outstanding research at both the undergraduate and graduate levels, in line with New York Tech's drive toward a higher-level Carnegie R2 research classification.



The Double Helix Strategic Plan: Context and History

Why Do the Plan?

A Dual Mission

Since its first iteration in the early 1990s, the College of Arts and Sciences has served two different but equally important roles.

It has always and continues to serve as the home of the foundational and core courses for every major at New York Tech. While the specific details of the core have changed three times since the late 1980s, the importance of all foundational courses, both those in the formal core curriculum as well as those that are essential to the education of future engineers, architects, health care professionals, business owners, biologists, chemists, mathematicians, and data analysts, has remained constant. Our faculty take this foundational work very seriously. Even though it might not be their first love as scholars, they devote countless hours researching, redesigning, and re-tooling these courses to provide our ever-changing student body with the foundational knowledge they will need. And we are committed to continuing this work.

The college also has many well-established programs in biology, chemistry, psychology, counseling, education, and interdisciplinary studies. Our faculty continue to maintain, develop, and deliver more advanced study for our own majors, all with an eye to creating career opportunities for our graduates.

This strategic plan looks to acknowledge, accept, and enhance the dual nature of our college. It does so by recommending a new formal structure, the Foundations Hub, to coordinate foundational courses and support across disciplines and encourage continuous research into the latest national trends in student academic success. The plan also calls for a new Double Helix Science and Humanities Center, one that will explore new exciting undergraduate and graduate programs that connect these two strands.

Why Now?

A Re-focused Identity and a New Strategic Action Plan

With President Foley's arrival, New York Tech began a studied refocusing of its mission and direction. From its original mission, the institute had slowly evolved into what many, including outside reviewers from MSCHE, categorized as a small regional comprehensive university. Beginning in 2017, the school re-focused its identity into a new type of Engineering and STEM-focused polytechnical institution, one with the additional benefits of thriving programs in medicine and health care, architecture, and management. This re-focusing forms an important part of the recently completed institute strategic plan.

Such a shift in direction presents particular challenges to the College of Arts and Sciences. While the sharpening of identity has been readily taken up in our STEM facing departments, with fledgling programs in Applied and Computational Mathematics and Physics, the humanities faculty now need to re-focus on new fields of study that align more closely with the flagship programs at New York Tech. Recent significant reductions in full-time faculty through retirements, particularly in the humanities, provide an excellent opportunity to bring in faculty in such fields as Medical Humanities, Science, Technology, and Society (STS), and others that entwine the humanities with the sciences. This work of rebuilding the faculty has

already started with the recruitment of a small but talented number of newer faculty in Math and the Sciences, but far more needs to be done.

Building from the institute's new strategic action plan, the College of Arts and Sciences immediately started the process that has led to this Double Helix Initiative-- a plan for the college that will direct its growth over the next five years.

The Double Helix Strategic Plan: Areas of Focus

The Double Helix plan has three major areas of focus: Faculty, Programs, and Research. Building in each of these areas is crucial for establishing a new identity for the college and for reaching its goals over the next 5 years.

Faculty

CAS will build the faculty, in numbers, strength, and diversity, and will instill and empower the faculty towards a culture of stewardship of the college.

Strategy 1: Rebuild the Facultyⁱ

Over the next five years, plan an aggressive recruitment strategy for re-building the size, strength, and diversity of the faculty in CAS, with a particular focus on areas most strongly impacted by recent retirements, new program initiatives, and future program development.

1. Tactic 1: Work with each department to create a 5-year recruitment plan that aligns with departmental, college, and institutional goals.ⁱⁱ
2. Tactic 2: Work with both the newly formed Double Helix Center for Science and Humanities and the Foundations Hub to create a recruitment plan for cross-disciplinary faculty with an eye to future programs.
3. Tactic 3: Develop, in conjunction with New York Tech's *Office of Diversity, Equity, Inclusion, and Belonging*, a comprehensive recruitment plan, one that critically examines current hiring practices and procedures, to augment the diversity of the faculty of CAS.ⁱⁱⁱ

Strategy 2: Instill a Culture of Stewardship

Over the next three years, work with the faculty to enhance faculty governance, administrative development, and faculty mentoring opportunities.

1. Tactic 1: Review, recommend, and formalize departmental-level and college-level committee structures to ensure faculty input on all important departmental decisions.
2. Tactic 2: Following best practices in higher education, clarify and standardize faculty service and work to distribute service more equitably. Work with DPCs and SPCs to revise and clarify standards of faculty service for tenure and promotion.^{iv}
3. Tactic 3: Build out entry-level faculty administrative positions, appropriate to each department, to develop future departmental, college, and institutional leaders. Provide support for external development opportunities for these faculty.
4. Tactic 4: Work with the Center for Teaching and Learning to augment faculty professional development at all career stages, including a robust junior faculty mentorship program, and a mid-career program to invigorate and re-focus more recently tenured faculty.^v

Research^{vi}

CAS will plan for and build its research capacity over the next 3 years, preparing the college to join in the institute's goal of attaining R2 status. The college will also expand its promotion of our research to enhance its reputation and to help sharpen its identity.

Strategy 1: Plan and Build

- 1) Tactic 1: Immediately begin a 360° Review and Analysis of the current state of all current CAS research- activities, including but not limited to:^{vii}
 - a. Faculty areas of research
 - b. Inventory and distribution of current research-related space and equipment
 - c. Research-related administrative infrastructure and processes
 - d. Inter-connections to institution-wide research support infrastructure
 - e. Current financial support and methods of allocation for faculty research
 - f. Future faculty recruitment plans (*see Faculty, 1,1. above*)
 - g. Regional and national benchmarks in each of the categories above
- 2) Tactic 2: Develop a 5-year budget plan for funding expansion of research in CAS
 - a) Work with the CAS Director of Operations and Administration as well as Financial Affairs to create ambitious yet realistic expanded budget plans for
 - i) Increased operating expenditures
 - ii) Long-term capital expenditures
 - b) Work with the Office of Development to create a coordinated development plan to seek additional revenues to support the items in number 2 above.^{viii}

Strategy 2: Connect and Promote

1. Tactic 1: Create a central digital CAS Research Hub; a web site devoted to CAS related research. The hub will:^{ix}
 - a. Collect and keep updated on all research activity in CAS
 - b. Be a communications hub to facilitate sharing of information from OSPAR and others and to allow research faculty to connect with each other
 - c. Be a repository for sharing resources related to research
2. Tactic 2: Create a robust speaker forum for faculty researchers to share their work both with colleagues and with others outside the university.
3. Tactic 3: Work with Communications to streamline and enhance promotion and advertising of the research efforts of CAS.^x

Programs^{xi}

CAS will embrace the two strands of its DNA by; 1. coordinating and enhancing our work in preparing all New York Tech students for future studies and for a full career and, 2. linking more fully the humanities and the sciences to foster new cross-disciplinary programming and research.

Strategy 1: Enhance Foundational Education for All New York Tech Students^{xii}

- 1) Tactic 1: Create the Foundations Hub. The hub will be a centralized body charged with:
 - a) Coordinating Student Success initiatives in all foundational courses.^{xiii}
 - b) Researching and staying current with new developments and initiatives in higher education, foundational course work and initiatives, additional support systems for first- and second-year students, and cutting edge retention efforts.^{xiv}
 - c) Coordinating the colleges' outreach to the other schools and colleges at New York Tech to support the continued success and further development of foundational skills necessary for our students to have successful lives and careers.^{xv}

Strategy 2: Link the Humanities, Math, and Science^{xvi}

- 1) Tactic 1: Create the Double Helix Center for the Humanities and Science. The center will be overseen by four Senior Fellows, nominated by the faculty, and will serve for a set term. The center will be charged with:
 - a) Recommending and, where appropriate, creating new cross-disciplinary programs that cross between the two strands
 - b) Providing forums for cross-disciplinary exchange of research between departments and with other schools and colleges at the institution and fostering and supporting specific projects that link the humanities with Math and Science^{xvii}
 - c) Sponsoring and organizing co and extracurricular events that highlight the connections between these two strands.

Conclusion

The Double Helix strategic plan moves the College of Arts and Sciences forward by deploying the dual strands of sciences and humanities to create innovative programming designed to lead to cutting-edge research opportunities and careers for New York Tech students and to develop one of the College's key responsibilities, in part through the Foundations Hub initiative, to provide foundational general education courses. The plan supports and builds a diverse faculty with the skills and motivation to lead the College into a new era as an integral part of a level R2 research institution and provides a detailed 360° review and analysis and 5-year budget for expanding research. Finally, by combining humanities and technology in novel ways, the Double Helix Science and Humanities Center will become a signature resource for promoting cross-disciplinary work in science, technology, medicine, literature, and culture, all while giving the College a cohesive identity and an innovative new direction.

The Double Helix/New York Tech Strategic Plan Cross Connections

ⁱ *Drive Innovation and Discovery With Diverse Talent (DID)*

ⁱⁱ DID, 1.1.1

ⁱⁱⁱ DID: 2.1; 2.2; 2.3

^{iv} *Optimize Student Success (OSS)*

^v OSS 1.1.2

^{vi} DID

^{vii} DID 4.1

^{viii} DID 4.2.2

^{ix} 4.2.4,6

^x *Sharpen Institutional Identity (SII) 3.3*

^{xi} SII

^{xii} DID 3.1, 3.2; OSS 2, OSS 3

^{xiii} OSS 2.1

^{xiv} OSS 2.1

^{xv} OSS 3.1; DID 3.2

^{xvi} DID 4; SII

^{xvii} OSS 2.2