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“...project offers our students a unique chance to spend time in the gorgeous Othmer Library, looking over archival manuscripts, maps, and images from the archive as they piece together history from primary documents.”

Matthew Gold
Department of English

Cover art: 4 IN 1: VERSION 2
Phyllis Rosenblatt, Department of Advertising Design and Graphic Arts

Printing
Digital Imaging Center at City Tech
The Work Matters

Real learning, real work, depends not only on materials however, but also on understanding, skill, and technique, which are the products of practice or repetitive use.

“In my country, only children of the rich could touch such old things.”

Depending upon one’s associations, a reference to historical “primary sources” may evoke either dry, dusty trivia or artifacts almost magical in their power to evoke past times, places, and people. This issue of Nucleus recounts experiences of City Tech students who, working with their professors and librarians from the Brooklyn Historical Society through a FIPSE grant, are having the opportunity to “touch” the past. It is proving to be an awakening, as Architecture Professor Barbara Mishara’s student quoted above affirms.

This is just one example of how the signature City Tech approach to education that melds theory with hands-on experience, long familiar to students in their science, technology, design, and professional studies courses, is becoming a more frequent experience for students in liberal arts courses, as well. By using artifacts and real world problems and case studies, connecting courses across disciplines into learning communities, and composing teams that link students in liberal arts courses to colleagues in technology and design, professors are designing experiences that make learning not merely active but real. They are striving for the motivation that animates Marge Piercy's poem, “To Be of Use”, which concludes:

But the thing worth doing well done
has a shape that satisfies, clean and evident.
Greek amphoras for wine or oil,
Hopi vases that held corn, are put in museums
but you know they were made to be used.
The pitcher cries for water to carry
and a person for work that is real.

Real learning, real work, depends not only on materials however, but also on understanding, skill, and technique, which are the products of practice or repetitive use. Comprehension, apprehension, and prehension all spring from the Latin root prehendere, to seize or grasp. And although the moment of apprehension is often described as a light bulb switching on or a thunderclap, these dramatic illuminations more often announce the moment that one becomes conscious of understanding, a moment that may come only after long and repeated effort, as the result of many attempts, and as Richard Sennett, describes in his wise and powerful book, The Craftsman, after purposefully “dwell[ing] in error.” Sennett writes:

Prehension seems to prepare the hand to be fit and ready, but this is an incomplete story. In making music we certainly prepare yet cannot recoil when our hand does not then fit its aim or purpose; to correct, we have to be willing—more, to desire—to dwell in error a bit longer in order to understand fully what was wrong about the initial preparation. The full scenario of practice sessions that improve skill is thus: prepare, dwell in mistakes, recover form. i

Sennett is writing about hand skills, and specifically about learning to play a musical instrument; however, learning to practice, whether a manual skill or a habit of mind, challenges us to do what for most of us does not come naturally—to linger over our errors long enough to understand them and learn from them rather than to rush past them in the hope that others or we ourselves will not notice. Hands-on learning in any discipline is mindful, reflective learning that uses our attempts, successful or not, to advance our development of understanding or skill. What motivates us to persist in spite of repeated mistakes is—when it’s not sheer stubbornness—conviction that it matters. Precision matters. Skill matters. The work matters.

If this is true of learning, it is equally true of teaching. It is all hands-on work.

Bonne August, Provost

Introducing Kevin Hom

Interim Dean, School of Technology and Design

Kevin Hom is the founder and President of Kevin Hom & Andrew Goldman Architects, a national design firm with education facility projects throughout the country. Under Mr. Hom’s leadership, the practice has won numerous awards including the “2008 Firm of the Year” from the Society of American Registered Architects/New York Council. Kevin Hom received both his Masters of Architecture and B.S. in Engineering from Columbia University.

Barbara Burke: Welcome to City Tech.

Kevin Hom: Thank you, I'm delighted to be here. I'm grateful to the college and to President Hotzler for the opportunity they've given me to embrace the challenges of leading a school of technology at a moment in history when technology is moving extraordinarily rapidly. We recognize that we are no longer living in a manual analog world; constant rapid change is the basic reality of our lives and it has powerful implications for education.

BB: Can you describe your vision for the School of Technology and Design?

KH: In my view, the School of Technology and Design (SoTD) has significant potential in several areas. Given that students who are entering the workforce now are likely to change jobs as many as ten times over their life spans, we must produce versatile students who are motivated to find solutions to complex societal challenges. As a public institution, we have a social and a moral obligation to help students to participate in the American dream. We can do this by equipping them to succeed in private enterprise as technology workers, leaders, and entrepreneurs. We can be an incubator center for the industries that are reflected in our curriculum by providing a research platform to support and advance innovation. City Tech can produce effective models of educational practice for other institutions (the SoTD's two NSF Advanced Technological Education grants have this goal).

BB: What is the place of General Education in technology programs?

KH: At Columbia University, where I studied as an undergraduate, the core curriculum has been the centerpiece of the curriculum for most of the twentieth century and I have found it to be of value throughout my career. I am committed to the idea that all of us should be broadly educated and have an opportunity to read deeply, communicate well orally and in writing, learn mathematics, have a basic understanding of the scientific method, and develop an appreciation of literature, art, and music. However, for a school of technology, I'd take it a step further: beyond these fundamental areas of knowledge, future technologists also require more advanced mathematics, grounding in computer science, technical reading skills, and have dexterity in assimilating new information.

BB: What are your immediate priorities?

KH: My first priority is to provide a better experience for students here, especially through improved advisement and career planning. Second, I'd like to strengthen our research capacity so that it is commensurate with our mission; we can offer industry a research platform that advances innovation in the technology sector in New York. Third, we must continue the curriculum transformation work that is under way so that students are afforded the opportunity to think and problem-solve from interdisciplinary perspectives. Fourth, we must continue to build partnerships with industry to expand internships and work-study opportunities for students so that they can enter the job market with skills gained in industry settings, not merely mediated through the curriculum. Finally, we must put Voorhees back together again so that we are able to realize the first four priorities.

BB: Thank you and best wishes for a productive and happy tenure.

Barbara Burke, Director of Sponsored Programs
Julia Jordan: Congratulations on being named City Tech’s first Director of Undergraduate Research. How do you envision your role?

Selwyn Williams: Thank you. I consider it quite an honor to be asked to serve in this new capacity. The position of Director of Undergraduate Research was created by the Provost in direct response to an ongoing institutional emphasis on increased growth and expansion of undergraduate research. My overall role as director is to actively affirm the increasing importance of undergraduate research as an experience critical to the training and development of students possessing 21st century competencies in the knowledge, skills, ethics and technologies essential to the modern workplace. I will work to develop, strengthen, and expand the scope and impact of research training while fostering growth in such opportunities for students and faculty at the college. The directorship is clearly in its nascent phase and as we begin to engage diverse groups in conversations about undergraduate research at City Tech, some emergent aspects of the job are still in the process of being defined.

JJ: What are your goals?

SW: Simply put, our ultimate goal is the institutionalization of undergraduate research at City Tech. In my estimation this means the development of a cohesive, sustainably supported institutional umbrella under which existent research-based programs such as Emerging Scholars and the Black Male Initiative can continue to grow, and where new opportunities and resources for undergraduate training in research can be created. Essentially, we aim to make a diverse array of research experiences accessible to all of our students, so that they form part of the college’s broad, structural core of educational offerings. We hope that centralizing the coordination of these initiatives, opportunities, and resources can collaboratively forge a rich research culture for both students and faculty.

JJ: Did you have research experiences as an undergraduate and how did they shape your future development as a biologist?

SW: Absolutely! My seminal experience in research came as an undergraduate at Brooklyn College where I was a biology major in the premedical program. Acting on the advice of my peers, I volunteered as a research assistant in the lab of one of my cell biology professors. What

Students at the 9th Annual Poster Presentation, November 17, 2011
began as an experience that I had hoped would increase my competitiveness for medical school turned out to be a real epiphany… I unearthed a real passion for scientific inquiry and became hooked on research. From then on my career trajectory changed from med school to grad school and the research project I began as an undergraduate subsequently developed into my dissertation thesis.

To this day I still marvel at how much of my career as a scientist I owe to that initial knock on the door of my mentor’s lab, and to the pivotal role undergraduate research played in the genesis of that journey.

JJ: Undergraduate research is considered a high-impact educational practice. Why is research participation such an effective tool for engaging students?

SW: One of the vexing conundrums encountered in the teaching of the disciplines is that although the effects of scientific, technological, and mathematical phenomena are fundamental to understanding the world around us, many students find the theoretical concepts that describe such phenomena to be abstract, esoteric, and irrelevant to their real-world experiences. Immersing students into inquiry-driven research experiences synthesizes theory and practice into applied outcomes that have the potential to create new knowledge. This is the strength of undergraduate research; the driving questions are not formulaic. Rather, they are open-ended and the process of finding answers integrates many critical aspects of learning. It taps into our inherent human curiosity to discover, learn, and solve. Also, research participation resituates the student’s learning experiences from the classroom to the “laboratory” and transforms relationships from the generic teacher-student to a more personalized mentor-mentee. The latter provides a more intimate context for student development via partnership-based research participation and is thus effective in stimulating and sustaining engagement.

JJ: What is your first order of business?

SW: Though we are still in the embryonic stages of this new position, we plan to move expeditiously towards our primary objectives. Over the past few years City Tech has successfully established a robust cohort of initiatives that focuses on undergraduate research: Emerging Scholars, Louis Stokes Alliance for Minority Participation (LS-AMP) and NSF Research Experiences for Undergraduates (NSF-REU) to name a few. Our first order of business is to have a series of organizational meetings with PIs, program coordinators, committees and faculty involved in research across the curriculum. These planning sessions will identify and address fundamental issues surrounding the development of undergraduate research given City Tech’s unique context and mission. From these conversations, we will map out incremental steps toward building a vibrant undergraduate research culture.

Julia Jordan, Acting Director of Faculty Commons
Brooklyn Historical Society Draws Students and Faculty into the Archives

The Brooklyn Historical Society (BHS) was founded as the Long Island Historical Society in 1863, when Brooklyn was the third largest city in the United States. The society’s landmark Queen Anne style building built in 1881 at Pierrepont and Clinton Streets in Brooklyn Heights, was designed by George B. Post, a major 19th century American architect. The mission of BHS is to preserve and encourage the study of Brooklyn’s extraordinary 400 year history. The society now holds the largest collection of Brooklyn-related materials in the world. Through an innovative partnership with three Brooklyn-based higher education institutions—City Tech, Long Island University (Brooklyn), and St. Francis College entitled Students and Faculty into the Archives (SAFA), first-year students from these colleges conduct archival research and then create physical and digital exhibits on their research topics. SAFA is funded by the U.S. Department of Education Fund for the Improvement and Support of Postsecondary Education (FIPSE). Participating City Tech faculty members describe their projects:

Barbara Smith Mishara
ARCH 1121, History of Architectural Technology, has 16 first-year students. Our class has focused on one style of architecture—gothic—as a means of reflecting on the nature of architecture itself. Brooklyn Heights, a neighborhood adjacent to the college, has a significant number of Gothic Revival churches built between 1830 and 1860. These buildings were the starting point for our study. First, students viewed historic photographs of the churches at BHS. Then they visited the actual churches and compared them to their photographs. Using their newly acquired vocabulary, students analyzed church forms and stylistic elements and discovered that architecture is not static and that styles evolve over time to meet emerging needs. A church, for example, is not only a building but also a community of people with human needs and desires that an architect must take into consideration. The class visit to BHS made the greatest impression on students. They marveled at the detailing of the brick and terra cotta exterior, the massive staircase, the two story space of the library, the intricately carved wood bookcases, and even the smell of the old books. The students felt honored to touch original documents. One student remarked, “...in my country, only the children of the rich could touch such old things.”

Peter Catapano
My history class project focused on the topic of popular culture during the Guilded Age. Our class Web site, What is Vaudeville? The Brooklyn Experience, engages teams of students in examining maps, photographs, and guide books on one vaudeville theater in Brooklyn at the turn of the last century. Each student was asked to write a description of their assigned theater. The link to my class site is http://safa.brooklynhistory.org/catapano-f11/
**Geoff Zylstra**

SAFA changes the way students perceive history. Instead of passively learning about the past, students become historians who actively construct knowledge. Through the work of analyzing and interpreting documents like slave indentures, contemporary accounts of the Revolutionary War, and nineteenth-century maps of Brooklyn's water supply system, students experience firsthand the process of constructing historical knowledge. Most of the students at City Tech arrive on our campus thinking that a history course means absorbing information about the past. Through the activities at the Brooklyn Historical Society the students come to realize that studying the past can be a contentious process and that, at a fundamental level, history entails interpretation.

This intellectual activity, the creation of historical knowledge, which students publicly display on their Web pages, has an inspirational influence on their work. These students are no longer passive learners, they are creators.

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**Matt Gold**

This fall, my SAFA English class, which is paired with two architectural technology courses, explored ways in which Brooklyn’s built environment has been shaped by fire, disease and catastrophe. This project offers our students a unique chance to spend time in the gorgeous Othmer Library, looking over archival manuscripts, maps and images from the archive as they piece together history from primary documents.

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**It’s my hope that they’ll develop an appreciation for the ways in which the smooth historical narratives we hear about the past are belied by the rough, discordant, always fascinating and sometimes frustrating primary record.**

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**Jody Rosen**

In “Telling Brooklyn Stories,” a Learning Community made up of my ENG 1101: English Composition I and Justin Davis's SPE 1330: Effective Speaking courses, students had several interactions with the Brooklyn Historical Society. Each visit gave students more than two hours with the BHS staff and archives, and emphasized from the beginning of the semester the community between the two courses. Classroom activities in 1101 developed around the questions “What do you see?” and “What does it mean?,” engaged students’ observation skills with visual and written texts that they could then apply to the walking tour, maps, and documents they would encounter at and around BHS.

The experts from BHS demonstrated these observation and interpretation skills for the class, and modeled for our students how to tell a story to engage an audience in the material rather than just stringing together facts or disparate observations. This helped students think about how to engage an audience, which students could use in both their writing and their public speaking assignments. This semester’s SAFA experience has exposed students to various aspects of Brooklyn's past and present, orienting them to City Tech’s neighborhood, and beginning them on a path of inquiry into the stories surrounding their new environment. Justin Davis and I, throughout the semester, have collaborated to develop a Learning Community that uses the hands-on experience afforded to students at BHS and the in-class activities and assignments on each of our syllabi to enhance the first-year experience with our students, engendering through written and oral communication interest in community and interest-driven inquiry.
ON THE HORIZON

Spring 2012, City Tech is delighted to welcome assessment expert Dr. Ashley Ater Kranov who will join us in a conversation about the role of assessment in teaching and learning – and how to use the rich data that assessment provides to improve our practice.

Why Assessment Matters
Dr. Ashley Ater Kranov on March 2, 2012

A City Tech U.S. Department of Education (Title V) grant, A Living Laboratory: Redesigning General Education for a 21st Century College of Technology, is promoting a culture of assessment by integrating comprehensive outcomes assessment in the General Education curriculum. It is within this context that City Tech welcomes Dr. Ashley Ater Kranov, who will present a keynote address that will kick off a day of discussions and activities related to Gen Ed Assessment led by the Office of Assessment and Institutional Research (AIR) team. Its Director, Dr. Tammie Cumming, “is confident that the work of City Tech faculty can only be enhanced by working with this prominent educator”.

Dr. Ater Kranov is ABET’s Managing Director of Professional Services. Her department is responsible for ensuring the quality training of program evaluators, partnering with faculty and industry to conduct robust technical education research, and providing educational opportunities on sustainable assessment processes for program continual improvement worldwide. She is Principal Investigator of an NSF-sponsored validity study of her direct method for teaching and measuring the ABET professional skills. During her more than 21 years as a higher education administrator and educator, she has led university-wide assessment initiatives, coordinated regional and professional accreditation activities, taught at the undergraduate and graduate levels, and conducted faculty development workshops.

Timothy Sudweeks RA, Department of Architectural Technology
Recent PSC CUNY Awardees Describe Their Work

**Camille Goodison**  
Department of English

“One of my field areas while completing my doctoral studies was orality in literature, or orature. It includes the study of epics, legends, and the folktale among other things. Out of this interest came a desire to craft a collection of stories which work as contemporary fairy or folktales. Looking at contemporary writers such as Patrick Chamoiseau and Japanese novelist, Haruki Murakami, who share this storytelling aesthetic, I focused on writing a series of short stories which bridged the gap between Romanticism and Realism, in order to reach current generations living in a postmodern age, with all its mystery and traps... PSC CUNY funding allowed me to complete the collection, and gave me the confidence to continue with other work.”

**Costas Panayotakis**  
Department of Social Science

“The focus of my project was the book *Remaking Scarcity: From Capitalist Inefficiency to Economic Democracy*, which has just been published by the British publisher, Pluto Press. The PSC CUNY grant helped me by providing me with release time, which was essential in view of City Tech’s heavy teaching schedule.”

**Lufeng Leng**  
Department of Physics

“The focus of my project was to mitigate stimulated Raman scattering cross-talk in distributed Raman amplification... The PSC CUNY grant financially supported an undergraduate student to assist me in developing the mathematical model of the physical processes. We’re currently working on further investigations based on the model.”
### FACULTY COMMONS CALENDAR HIGHLIGHTS

**WINTER 2012**

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<th>Date</th>
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<tbody>
<tr>
<td>12/1-2</td>
<td>CUNY Annual IT Conference</td>
<td>9:00am – 4:00pm, Venue: John Jay College</td>
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<td></td>
<td>OpenLab Drop-in</td>
<td>10:30am – 11:30am</td>
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<td></td>
<td>12/7</td>
<td>Brahmadeo Dewprashad: Writing a Case Study</td>
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<td>12/7</td>
<td>Minimal Marking and Efficient Grading Strategies Writing Fellows WAC Workshop</td>
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<td>12/8</td>
<td>Professional Development Plan: What It Is and Why It Matters (especially for new faculty)</td>
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<td>12/16</td>
<td>A Living Laboratory: Welcome Gen Ed Fellows</td>
<td>9:30am – 11:30am, RSVP: <a href="mailto:facultycommons@citytech.cuny.edu">facultycommons@citytech.cuny.edu</a></td>
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<tr>
<td>1/10-12, 1/17</td>
<td>Teaching Portfolio Four-Day Workshop</td>
<td>Multi-day Event &amp; Presentation, RSVP: <a href="mailto:facultycommons@citytech.cuny.edu">facultycommons@citytech.cuny.edu</a></td>
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<tr>
<td>12/6</td>
<td>Pamela Brown: Pedagogical Innovation and Research Opportunities at the NSF</td>
<td>10:00am – Noon, RSVP: <a href="mailto:facultycommons@citytech.cuny.edu">facultycommons@citytech.cuny.edu</a></td>
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<tr>
<td>12/12</td>
<td>Monica Devanas: Engaging Students in Learning</td>
<td>9:30am – 11:30am, RSVP: <a href="mailto:facultycommons@citytech.cuny.edu">facultycommons@citytech.cuny.edu</a></td>
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<td>12/24</td>
<td>Rubric Development</td>
<td>9:30am – 11:00am, RSVP: <a href="mailto:AIR@citytech.cuny.edu">AIR@citytech.cuny.edu</a></td>
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<td>12/7</td>
<td>Ashley Ater Kranov: Why Assessment Matters</td>
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<td>12/8</td>
<td>City Tech Surveyor Workshop</td>
<td>2:30pm – 4:00pm, RSVP: <a href="mailto:AIR@citytech.cuny.edu">AIR@citytech.cuny.edu</a></td>
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<td>12/16</td>
<td>Test Blueprint Construction Workshop</td>
<td>3:30pm – 5:00pm, RSVP: <a href="mailto:AIR@citytech.cuny.edu">AIR@citytech.cuny.edu</a></td>
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<td>3/2</td>
<td>Ashley Ater Kranov: Why Assessment Matters</td>
<td>9:00am – 11:00am, RSVP: <a href="mailto:facultycommons@citytech.cuny.edu">facultycommons@citytech.cuny.edu</a></td>
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<tr>
<td>3/3</td>
<td>N.Y. Women in Mathematics and Computing</td>
<td><a href="https://sites.google.com/site/nywmcnets/">https://sites.google.com/site/nywmcnets/</a></td>
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<tr>
<td>3/20</td>
<td>Data Dashboard Workshop</td>
<td>2:30pm – 4:00pm, RSVP: <a href="mailto:AIR@citytech.cuny.edu">AIR@citytech.cuny.edu</a></td>
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**Contact us at extension 5225 • facultycommons@citytech.cuny.edu • https://facultycommons.citytech.cuny.edu/**

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**JANUARY 6, 2012**

City Tech deadline to submit your proposal

**PSC-CUNY RESEARCH AWARD**

There are three levels of awards.

- Traditional A Awards: up to $3,500
- Traditional B Awards: up to $6,000
- Enhanced Awards: up to $12,000

Questions: ebergonzo@citytech.cuny.edu or 718-260-5173