THE COOPER UNION

FOR THE ADVANCEMENT OF SCIENCE AND ART

REVENUE

TASK FORCE

FINAL REPORT

OCTOBER 12, 2012



"My earnest desire is to make this building and institution contribute in every way possible to unite all in one common effort to improve each and every human being, seeing that we are bound up in one common destiny and by the laws of our being are made dependent for our happiness on the continued acts of kindness we receive from each other."

— Peter Cooper, Letter to the Trustees, April 29, 1859

INTRODUCTION

In January 2012, President Jamshed Bharucha convened the Cooper Union Revenue Task Force and charged it with identifying \$16,000,000 in creative, sustainable new revenue streams by FY 2018. This figure was later reduced to \$12,000,000 after the Expense Reduction Task Force identified savings of \$4,000,000 in operating expenses.

It should be noted that such areas as minimum trustee contributions, alumni and donor development, and sale of assets were outside the Revenue Task Force's charge.

This report outlines the task force's research into a number of revenue-generating program structures and revenue projections as modeled by CDG, the management consultants contracted by The Cooper Union.

The programs as modeled have not been pedagogically or curricularly defined. It is for the individual faculties to develop and shape programs that are relevant, visionary and consistent with the innovative legacy of their school.



HISTORY

When Peter Cooper conveyed the Deed of Trust to The Cooper Union on April 29, 1859, he also conveyed his wish that the new institution would "open the volume of nature by the light of truth."

The founder's remarkable vision of free education for immigrants and the working class regardless of gender, color or creed has formed the foundation of one of the world's leading colleges in its three areas of expertise: art, architecture and engineering.

However, over the course of its 150-year history, The Cooper Union has from time to time evolved and modified its model in response to the needs of its students, the pressures of current events and the health of its finances.

THE COOPER UNION'S MISSION

The institution's most significant turning point occurred in 1902, two decades after Peter Cooper's death, with a gift from Andrew Carnegie that allowed the school to award full-tuition scholarships to its entire student body.

Carnegie's gift, combined with the revenue generated from the land under the Chrysler Building created a singular identity for The Cooper Union based on education untethered by monetary exchange. The institution's conception of education as its own distinct value is reflected in the school's current mission statement:

The College admits undergraduates solely on merit and awards full scholarships to all enrolled students. The institution provides close contact with a distinguished, creative faculty and fosters rigorous, humanistic learning that is enhanced by the process of design and augmented by the urban setting. Founded in 1859 by Peter Cooper, industrialist and philanthropist, The Cooper Union offers public programs for the civic, cultural and practicable enrichment of New York City.



THE CURRENT CRISIS

Over the past forty years, The Cooper Union has maintained its full-tuition scholarship policy through a series of difficult and much-debated decisions, including the selling of assets, frequent cost-cutting and funding large operating deficits from its endowment.

In 2006, a financial master plan was developed to set the college on a more stable footing. For the following reasons, the plan's goals were not satisfactorily achieved:

- The college's investment portfolio was significantly affected by the 2008-2009 global financial crisis.
- Donations and the capital campaign of 2001–2011 fell short of projections by approximately \$53M (\$197M raised out of a \$250M goal).
- Cost increases following FY2003 expense reductions rose faster than projections.

These circumstances have left the school with an operating deficit of 28 percent for FY 2011.

FULL-TUITION SCHOLARSHIPS FOR UNDERGRADUATES

The learning environment created by The Cooper Union's policy of full-tuition undergraduate scholarships is inimitable, attracting a student body with a high degree of engagement and intensity. Many Cooper students who were admitted on scholarship to other top-tier schools have chosen Cooper for its ethos of scholarships for all.

Rather than competing with one another, Cooper students are known for teaching each other, fostering a culture of collaboration in which the students see themselves as colleagues with the faculty, rather than as consumers purchasing education as a commodity.

Full-tuition scholarships are a 110-year tradition at Cooper Union, and also serve as a counterpoint to the crisis in American higher education, one in which crippling costs, divestment in public funds, and ever-decreasing avenues of access are becoming the new normal.

By operating outside higher education's conventional consumer model, Cooper Union's meritocracy has engendered far-reaching creative, cultural, economic and political implications and consequences. The college's twinned commitment to access and excellence is not only the key to the Cooper student's accomplishments inside its classrooms, laboratories, and studios; it is also a model for the field of higher education as a whole.



PROCESS AND CRITERIA

While recognizing the challenges ahead, the Revenue Task Force reached a majority opinion that the good embodied in merit-based full-tuition scholarships for undergraduates outweighed all other considerations except the institution's survival.

Guided by this overriding concern, the Revenue Task Force began its work by generating dozens of ideas that varied enormously in terms of scale and practicality. These ideas were tested against the following criteria:

- Timing of implementation and revenue realization (e.g., short term 2013–14 to long term 2016-2018)
- Estimated net revenue potential
- Appropriateness to school's values, culture and mission
- Attractiveness to potential users/competitiveness with similar programs in the city
- Reliance on existing expertise and current assets (faculty, staff, tech, space, etc.)

Proposals that were judged as deleterious to the school's teaching standards or its academic reputation were not pursued.

By brainstorming, categorizing and prioritizing, the task force formulated three areas of investigation:

- Educational programs
- Space rental
- Intellectual property development.

Three subgroups were formed to study these areas, to generate and test new ideas, and report back to the full membership.

On a parallel track, several members looked into structured programs of support from students, alumni and the parents of students and alumni.

The task force also sought input from the Cooper Community through a web-based forum for comments and suggestions, which included a proposal portal for more developed ideas.

In addition, members of the task force attended meetings and engaged in dialogue with the Friends of Cooper Union, a group of alumni, students, faculty and concerned community members independently seeking solutions to the same problems.



The task force's education subgroup looked at fee-based programs primarily on the post-baccalaureate and pre-college level. Discussions included programs both within and outside Cooper's three specializations of art, architecture and engineering.

The space rental subgroup examined the college's existing footprint, seeking strategies for monetizing the square footage that is available during the school year as well as whatever is unused during the summer months and intersessions.

The intellectual property subgroup studied data on tech transfer, patents and startups. It looked at the experience of Cooper's own C.V. Starr Research Foundation as well as the track record of other colleges.

As it drew up these proposals, the task force was acutely aware that educational programs are the province of the faculty and the deans. Therefore, no curricular recommendations are made.

Rather, the task force anticipated that each academic constituency (the Schools of Art, Architecture and Engineering as well as the Faculty of Humanities and Social Sciences) would develop and implement whichever programs best fit its own governance and scholarly concerns.



RECOMMENDATIONS

Cooper Union Revenue Task Force recommends the pursuit of new revenue streams across the following areas:

- New Fee-Based Post-Baccalaureate and Pre-College Academic Programs
- Optimizing Real Estate
- A Culture of Innovation
- Engagement of Students, Alumni and Parents

NEW ACADEMIC PROGRAMS

Based on the conviction that The Cooper Union is best able to ensure its future by drawing upon the potential of its existing programs, the education subgroup proposed a network of fee-based educational programs designed to support the full-tuition scholarship policy in the three core undergraduate schools.

This "hybrid model" is intended to advance the college's interdisciplinary engagement of art and science in order to engender new modes of teaching and new models of technology and design.

It can run in a variety of configurations, offering multiple opportunities for educational and professional advancement. Its distinguishing characteristics would be flexibility and breadth, constituting a broad range of revenue-generating programs.

All programs would be investigated and developed by the respective faculties. Consequently the full engagement of the faculty must be achieved as soon as possible if this model is to succeed.

Currently, the three degree-granting programs have been charged with developing detailed plans designed to ensure their financial sustainability. The Maguire Report (discussed below) and CDG are being consulted to develop economic models for specific curricular programs envisioned by the faculties of the three schools.



The proposed programs include but are not limited to:

- Pre-college programs and summer intensives for high school students
- Post-baccalaureate non-degree programs
- Master's degree programs in Art, Architecture and Engineering
- Summer intensive sessions and "master classes" for professionals
- Specific professional development courses
- Certificate programs
- Online courses and partnerships

GRADUATE INSTITUTE FOR INTEGRATED DESIGN

The task force discussed the potential for cross-disciplinary engagement, which could be realized through a new graduate institute that would combine the strengths of The Cooper Union's programs in art, architecture and engineering.

Such an institute could embody the vision of an integrated study of design, which has been the goal of many within the Cooper Union community for years. The institute would focus on the transformative potential of collaboration and integration, engaging in both local and international partnerships.

Although the task force understands that such an entity could take years to develop, it also recognizes that crises can sometimes disrupt institutional conventions and accelerate a process of evolution already underway. The group believes that this is an opportunity not to be missed.



ANALYSES OF EDUCATIONAL PROPOSALS

CDG, the management consultants contracted by The Cooper Union, has made financial analyses of a range of proposals from the task force, as well as those from the Cooper Community which met the criteria that the task force applied to itself (see Process and Criteria, above). Some of the community proposals were submitted through Cooper's Reinvention website, while others were published in the Friends of Cooper Union's document, *The Way Forward*.

The proposals recommended below are those that make the most of our current assets in terms of personnel and space, and that can be ramped up in a reasonably short period of time.

The net revenue figures given are estimates for FY2018. CDG's financial models used the outlines of the Revenue Task Force and community proposals, integrated input and advice from the appropriate Cooper Union personnel (projected student enrollment, faculty need, etc.), reviewed comparable programs when appropriate, and utilized estimates previously determined by the Cooper Administration.

The revenue estimates for all programs total \$12,900,000. However, it may not be possible to ramp up all of these programs within the next five years, and some that are initiated may fail. Therefore, it is prudent to follow standard practice when assessing startups and apply a risk factor of 50%, which would bring the estimated total revenue to \$6,450,000 if all programs were implemented.

It must be noted that the programs outlined below will necessitate a reduction in undergraduate student enrollment of up to 30%. For those programs designated as off-site, the cost of renting space has been factored into the model.



MAJOR PROGRAMS

Recommended by the Revenue Task Force (Spring/Fall 2012); financial modeling by CDG

MASTERS IN ART, ARCHITECTURE AND ENGINEERING*

Name of Program	Credits	Students	On Site/Off Site	PT/FT	Revenue Estimate
Expanded Eng. Masters One year	30	70	ON	FT	\$2,127,000
Arch M-Arch II One year	30	36	ON	FT	\$1,200,000
Arch M-Arch II Two years, summer	30	46	ON	PT	\$246,000
Art MFA Two years	60	29	ON/OFF by FY18	FT	\$427,000
Art MFA Three years, summer	60	46	ON	PT	\$416,000
Art MA (non studio) One year	30	25	ON	FT	\$440,000
Engineering Leadership Five semesters	30	96	OFF	PT	\$922,000

^{*}The faculties of the three schools are to decide which of these programs to pursue.

OTHER POST-BACCALAUREATE PROGRAMS

Name of Program	Credits	Students	On Site/Off Site	PT/FT	Revenue Estimate
Graduate Institute for Integrated Design	30/1-yr 60/2-yr	50/1-yr 97/2-yr	OFF OFF	FT FT	\$2,553,000
Global Studies	30	20/1-yr 39/2-yr	OFF OFF	FT PT	\$529,000
Post-baccalaureate training for medical school Two years	n/a	88	ON	n/a	\$2,162,000



PRE-COLLEGE PROGRAMS

Name of Program	Credits	Students	On Site/Off Site	PT/FT	Revenue Estimate
Art Fall/Spr/Sum sessions	n/a	216 for Fall/Spring	ON	PT	\$798,000
		344 total for four Summer sessions	ON	FT	
Engineering Fall/Spr/Sum sessions	n/a	n/a	ON	PT fall/spr FT sum	\$767,000

OTHER PROGRAMS

Name of Program	Credits	Students	On Site/Off Site	PT/FT	Revenue Estimate
Summer programs in Art (non-degree)	n/a	20	ON	FT	\$152,000
Summer master classes in Arch	n/a	n/a	ON	FT	n/a
3-D Prototyping Certificate (\$750/course x 3 courses)	n/a	71/semester 213/annual	ON	n/a	\$91,000
Berlin Program	n/a	30	OFF	FT	\$43,000
Friend membership to library	n/a	n/a	ON	n/a	\$22,000
Curriculum training for international graduate students	1	10	ON	FT	\$10,000



CONCERNS

These programs hold a great deal of potential, but they also run the risk of taking more time than expected to develop.

Even though, in the aggregate, these proposals yield more than the \$12,000,000 in new revenue streams that the task force was charged to identify, if the 50% risk factor for new programs is applied, the income will not cover the entirety of Cooper Union's fiscal shortfall.

It should be also noted that new graduate degrees will require registration with the State of New York and additional accreditation. This process can take two years or more.

Additionally, while the task force recommends the implementation of online courses and partnerships, which could generate significant revenues, this is a curricular decision and requires partnerships from other institutions. At this point no discussions along these lines are currently underway.

THE NECESSITY OF A SOUND FINANCIAL PLAN

It is clear that Cooper Union's policy of merit-based full-tuition scholarships cannot be sustained without a significantly improved financial position. Prospective and incoming students deserve a complete accounting of the status of the scholarship policy.

The Revenue Task Force urges the Board of Trustees to fortify its stewardship of the full-tuition scholarship policy by adhering to the following steps:

- Based on the college's 30-year financial plan, ensure that the annual financial obligations assumed by the school remain consistent with Cooper's long-term viability.
- Clarify the financial obligations anticipated over the four-year tenure of each incoming class prior to acceptance.



INSTITUTIONAL SURVIVAL

The Revenue Task Force recognizes that, given a compressed time frame, the amount of revenue that needs to be raised, and the risk involved with starting up many new programs simultaneously on an institution-wide scale, other measures may need to be taken to ensure Cooper Union's survival.

In the winter of 2012, The Cooper Union retained the services of Maguire Associates to model the potential income to be raised from undergraduate tuition. Maguire Associates also advised the school on the associated costs of recruitment, financial aid, and improved student services. Their final report was issued in June 2012. The Maguire Report recommends at most a 25% across-the-board reduction in Cooper Union's merit scholarship. The report indicates that a scholarship reduction greater than 25% would present additional risks to the institution which would need to be better understood.

Gross annual revenue of \$6M (\$1.5M from each class) could be reached by FY 2018. Expenses (increased marketing and admissions personnel, expanded student services and financial aid) that are necessitated by the implementation of tuition revenue can amount to as much as \$3M; this figure does not include potential academic investments. However, CDG has created a hypothetical model in conjunction with the Engineering School, which puts Engineering's potential "no frills" annual investment, at least for year one (which would be the costliest) at \$650,000.

Such a change in policy, even at the 25% reduction level, still entails execution risk to The Cooper Union (i.e., the costs involved, including the necessity of enhanced marketing and recruitment, and the uncertainty of success), not to mention the impact on its ethos, learning environment and reputation. Such a change should be implemented only when all other measures fall short of ensuring the survival of the school. However, they should also be taken in a timely and orderly manner so that their financial ramifications and their effect on the college's culture can be minimized.



ALLOCATION OF SPACE

New academic programs and curricular offerings will require new or reconfigured space depending on the program. The task force recommends a thorough analysis of the allocation of academic space throughout the institution so that, wherever possible, new programs can make use of existing space. Space is limited and needs to be properly assessed, and, as noted above, the number of undergraduates admitted needs to be addressed in order to accommodate the increased number of graduate students.

OPTIMIZING REAL ESTATE

A review was made of the revenue potential of Cooper Union properties with the conclusion that Cooper retain the services of a consultant on a formal basis (which might be without initial cost if contingent) to assess the following options:

DORMITORY:

The dormitory currently generates sufficient income to cover expenses and some indirect costs. Constructed in the 1990s, it offers housing to 178 first-year students, enabling Cooper to expand its applicant pool and advance the institution from a commuter school to one with a high national and international profile.

Additionally, there is data indicating a decline in New York City high school graduates, which could shrink Cooper Union's pool of commuting students and would make the dorm more valuable as a recruitment asset.

Nonetheless, there are questions about whether a Cooper-owned dormitory is still in the college's best strategic interest, given the opportunities available through companies such as Educational Housing Services (EHS).

Alternate uses include reconfiguring the dormitory for offices (which would require rezoning), replacing 30 Cooper Square, or selling it. These options do not fall within the purview of the Revenue Task Force.

It should be noted that Cooper does not own the dorm's first two floors, an arrangement that would complicate any potential sale.



LIBRARY:

It has been suggested that the space now occupied by the library would be put to better use by renting it as retail space or renovating it to accommodate new revenue-generating programs.

The Task Force recommends reconfiguring the library in order to accommodate new programs, but in such a way that the layout remains in keeping with John Hejduk's original vision.

EVENT RENTALS:

Rental of the Great Hall and Rose auditorium should be optimized by an alliance with a promoter to assure that the facilities are used when available and that the rental rates are competitive with comparable spaces.

Any unused space should be considered for rent as long as Cooper's educational mission, public safety and institutional liability are not compromised.

The following table includes current and potential rental rates:

Location	Estimated Rate		
Great Hall	\$12,000-\$15,000 for full day rate or \$4,000-\$5,000 for every 4 hours (\$2,500 not-for-profit organizations)		
Rose Auditorium	\$1,500 for 4hrs (\$1,000 for not-for-profit organizations)		
Film shoots	Typically \$20,000 per day		
Art studios	\$35,000 for studio rooms 901, 902, 903 and main studio space for 9 weeks		
Classrooms	\$12,000 for four classrooms for 2 weeks during January 2013 break (Hofstra) \$35,000 for two classrooms for 48 days during summer of 2014 (Holt)		



A CULTURE OF INNOVATION

A review was made of the revenue potential from intellectual property generated at Cooper Union, including startups and patents, with the following conclusions:

- Research that leads to intellectual property (IP) and tech transfer requires
 a long lead time and steep investment, considerable skill and some luck.
- Therefore, IP and tech transfer are not the path to a reliable, sustainable revenue stream. However, the principles embodied by innovation and entrepreneurship are the essence of Cooper, and steps should be taken to catalyze this kind of thinking.

See Appendix for details.

ENGAGEMENT OF STUDENTS, ALUMNI AND PARENTS

The social responsibility of students, alumni, and parents who have benefited from the full-tuition scholarship policy must be addressed.

- For current students, a modified version of the plan being explored by the
 University of California, Riverside, should be considered. For example, graduates
 would agree to a nonbinding lifetime pledge of 2% of after tax adjusted gross income.
 CDG estimates that by FY 2018, this arrangement would yield \$94,000
 in donations from new graduates.
- For alumni, a reciprocal pledge should be requested, as well as a catch-up and bequest program to include Cooper in their estate planning.
- For parents of current students and of alumni, the same reciprocal pledge should be requested, as well as a catch-up and bequest program to include Cooper in their estate planning.
- Student fees at Cooper Union have been low, and constant, for many years. Increases tied to inflation are justified and necessary.



REINVIGORATED OUTREACH

While development was technically outside the scope of this task force, the "hybrid" plan cannot succeed without a significant increase in philanthropic giving to the school, or other sources of revenue. The Cooper Union has proven itself to be a significant asset to the physical development, cultural life and entrepreneurial spirit of New York City.

It is critical that The Cooper Union fully engage the philanthropic community of New York at this time of unprecedented personal wealth for so many of its citizens, as well as the broader philanthropic community nationwide.

With the debate over higher education and college affordability in the forefront of academic and political circles, the Revenue Task Force, in keeping with Cooper Union's mission, recommends that financial aid be the top priority of Cooper's philanthropic outreach.

NEXT STEPS

The Cooper Union's culture has always been one of community, civil debate and constructive critique. Today, Cooper needs to affirm those bonds and values more than ever.

Cooper Union as a school and as a model for peer institutions will not survive and prosper unless a unity is forged among all of the parties who are most concerned about its future. To that end, the Revenue Task Force asked CDG to assess all proposals put forward by the Cooper Community that fit the evaluative criteria used by the task force to test its own recommendations (see Analyses of Educational Proposals, above).

All solutions must realistically take into account the scope of the current crisis while supporting Cooper's ideals and commitment to the highest educational standards. It is a difficult but not impossible path, and one that could lead to a more significant role for The Cooper Union in New York City and the world.



A SINGLE, UNITED COMMUNITY

The Revenue Task Force wishes to acknowledge, thank and commend the community members who have put a tremendous amount of time and work into developing potential solutions to Cooper Union's financial crisis.

The program of meetings organized by the Friends of Cooper Union has been particularly extensive and yielded a set of thoughtful recommendations. The Revenue Task Force also requested suggestions and proposals from the Cooper Community, many of which were submitted through the Reinvention website at cooper.edu.

It is the hope of the Revenue Task Force that this information will be useful to the President of Cooper Union, the Board of Trustees, the four faculties, the student body, the alumni and the broader community.

Respectfully submitted,

THE COOPER UNION REVENUE TASK FORCE

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Vice Chairs

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APPENDIX: INTELLECTUAL PROPERTY AND TECH TRANSFER

Can patents and tech transfer provide a reliable sustainable revenue stream for Cooper?

Lead Time and Investment

- Research that leads to intellectual property (IP) and tech transfer requires a long lead time and steep investment, considerable skill and some luck.
- Therefore, IP and tech transfer are not the path to a reliable, sustainable revenue stream. However, the principles embodied by innovation and entrepreneurship are the essence of Cooper and steps should be taken to foster this kind of thinking.

Economics of IP

Over the past 20 years, US universities have spent a total of \$641 billion on research resulting in 267,500 invention disclosures, 147,00 patent applications, 55,000 awarded patents, 42,765 active license and options and 6,885 startups.

- Most universities lose money on research.
 Only 16% of make money.
- Patents are usually held for a long time before they get licensed and commercialized.
- Blockbusters drive most of the revenues, but big winners take a long time to mature.

The Cooper Experience

- 19 active patents, 14 of which stem from the Cooper Cooler
- The Cooper Cooler is now marketed by Revolutionary Cooling Systems, which has five Cooper-patented products on/about to hit market:
 - -Vin Podium (wine stand w/chilling capabilities)
 - -Blitz Chiller (a mini cooper cooler for cans and small bottles only)

- -Stock Chiller (chilling large amounts of liquid stock to avoid bacterial growth)
- -Mini-Stock Chiller (smaller version of the above)
- -Multi-Purpose Expandable system (modular container for Cooper Cooler products)
- Only the Cooper Cooler has generated revenue to date: about 500K over 12 years.

Barriers to Expanded Research

- Little time for faculty and students to conduct research
- Limited resources
- No PhD program
- Faculty interests may not coincide with available research funding
- Lack of space for students to pursue their own revenue-generating ideas

Proposed Solutions

- "Innovation class"
- Additional classes to build entrepreneurship skills
- Educate students about the patent process
- The creation of a venture capital fund accessible to students
- Encourage student startups through faculty mentoring
- Hackathons: programming competitions where students collaborate on interesting projects which can develop into startup ideas
- Tech talks: speakers who will encourage start-up culture