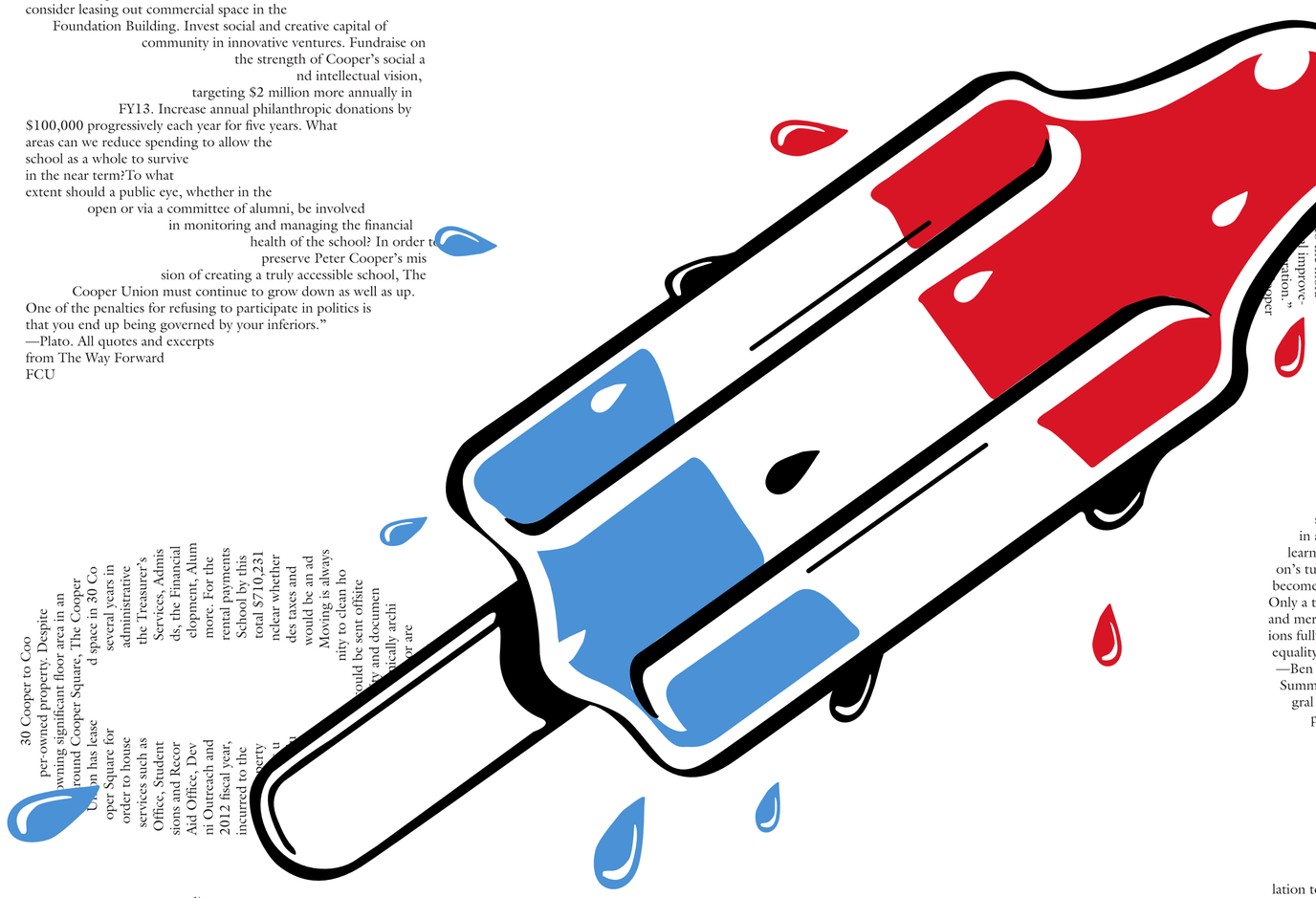
The Pitcher



"I made a resolute
determination that if I could
ever get the means, I would build
an institution and throw its doors open
at night so that th e boys and girls
of this city, who had no better
opportunity tha n I to enjoy
means of infor mation, would
be enabled to i mprove and
better their con arious and useful purpo
dition, fitting th eter Cooper, 1859.Coo
em for all the v ger than a building. It
ses of life." — P ed we hold dear to our
per Union is big unconscionable that we
embodies an id at ideal to be
democracy. It is ut imagining
should allow th ternative. So ho
destroyed witho save Cooper Un
every possible al ion? Because the root of this crisis is not onl
w are we going to y financial, we have come up with ways to
improve Cooper's civic prese nce.aca
demics and mission. D espite
having limited access

to the numbers, we have ident
ified what we believe to be sensible fir
st steps toward closing the deficit. Finally,
during the long, fraught and sometimes te
dious process o f mapping out w
hat seems to us the right and ju
st path for Coo per Union in
the coming mo nths and years,
we've discover ed what is perh
aps the most cr ucial element to
Cooper's survi val: a sense of co
mmunity that transcends disciplines, reac
hes across generations, and in this mo
ment of confusion, has the vision a
nd spirit to point Cooper Union in
the right direc tion. "My hop
e is, to place th is institution in
the hands of t under the con
trol of t will both kno
w the importance of
it, in the mos
t to the mora
l improve-
ment." ation."
Peter Cooper

"Without the requirement of
any tuition payment the members of this diver
se meritocracy are able to engage each other as equals
in a free and open exchange of ideas for the sole purpose
learning from each other and teaching each other. Cooper Uni
on's tuition-free policy is not merely an aspect of its mission, it has
become its fun damental basis.
Only a tuitio n-free model
and merit-b ased admiss
ions fully gu arantee true
equality amon g all students."
—Ben Degen, A' 98, 1st Comm
Summit. Cooper Union's full-tuition scholarship policy is an inte
gral element in the identity of the institution and should be
preserved at all costs. Charging tuition to close a deficit
does not deal with the exponential rise in expen
ses. We must change that trajectory

Minimize noncritical expenses. In Fiscal Year 2010, Cooper paid
$924,000 for all travel and conference and meeting attendance, spe
nt over $360,000 in "advertising," incurred well over $3.3 million in
"office expenses," and spent $1 million on "other." Under norm
al circumstances these exp
enditures might seem justified,
but in a deficit scenario whe
re Cooper is seriously conside
ring reneging on over 150 ye
ars of free education, cutting
these expense-type costs across
the board makes sense.
This could entail minimizing travel, reducing advertising costs, and
waiting to replace furniture until 2018. Reposition Cooper-area real
estate assets for $500,000 annually by 2015. In Cooper's 2010 Form
990, the Stuyvesant Fish was listed as a nontaxable benefit worth over

$120,
000 today. Lease
dorms out at premium rates and
consider leasing out commercial space in the
Foundation Building. Invest social and creative capital of
community in innovative ventures. Fundraise on
the strength of Cooper's social a
nd intellectual vision,
targeting $2 million more annually in
FY13. Increase annual philanthropic donations by
$100,000 progressively each year for five years. What
areas can we reduce spending to allow the
school as a whole to survive
in the near term?To what
extent should a public eye, whether in the
open or via a committee of alumni, be involved
in monitoring and managing the financial
health of the school? In order t
preserve Peter Cooper's mis
sion of creating a truly accessible school, The
Cooper Union must continue to grow down as well as up.
One of the penalties for refusing to participate in politics is
that you end up being governed by your inferiors."
—Plato. All quotes and excerpts
from The Way Forward
FCU

by first
identifying areas
where spending is more variable,
and begin there. Management and General
costs have gone up quite a lot in the last 10 years. "In re
lation to the building of the Cooper Union, I desired to carry it
out as soon as I thought I had the means to ac
complish it, if I was compell
ed to live on bread and wa
ter for the remainder of my life."
– Peter Cooper. A long term goal may be to retu
rn to the days of more "modest" officer
compensation. Yet there are
opportunities to save mo
ney here now. It may be beneficial to bo
th the Institution and its top three highest-paid office
rs if they offered to have a percentage of their salaries de
ferred until 2018, when an extra $25.5
million of Chrysler reve
nue is scheduled to kick in.
This gesture would generate goodwill within
Cooper and its potential supporters, and also help the
institution out financially. Beginning with the
three highest paid officers, exam
ine administrative
compen

Replace academic deans
with rotating faculty. Allocate ad
ministrative responsibilities for each sc
hool to Cooper academic faculty membe
rs, who will ser ve as academic dea
ns for 5-year ro tations for a savin
gs of $650,000 per year. For a
student body o f just under 1,0
00, Cooper em ploys six acade
mic deans. One each for each ac
ademic discipli ne, including the
Faculty of Hu manities and So
cial Sciences, a nd one associate
dean each for Art and Archi
tecture. In 201 0, the annual co
mpensation pa ckage for admin
istrative deans ranged between
$240,000 to $ 320,000, and h
as in general do ubled since 2000.
Altogether, aca demic deanship co
mpensation totaled just under $1.5 mill
ion in fiscal year 2010. Move out of 30
Cooper Square.Save $700,000+ an
nually by relocating services in

30 Cooper to Coo
per-owned property. Despite
owning significant floor area in an
round Cooper Square, The Cooper
Un ion has lease d space in 30 Co
oper Square for several years in
order to house administrative
services such as the Treasurer's
Office, Student Services, Admis
sions and Recor ds, the Financial
Aid Office, Dev elopment, Alum
ni Outreach and more. For the
2012 fiscal year, rental payments
incurred to the School by this
property u total $710,231
nclear whether
des taxes and
would be an ad
Moving is always
nity to clean ho
ould be sent offsite
y and documen
ically archi
or are

Letter from the Editor

Dear Cooper Community,

"Cooper Union is charging tuition." That is a sentence that none of us ever want to hear and hopefully will never hear. On October 31, 2011, President Jamshed Bharucha revealed to the entire community that tuition is on the table as one of the solutions to the financial crisis of Cooper Union. That dreadful announcement on October 31 prompted many initiatives by students, faculty, and alumni over the past months and resulted in my arrival as Editor-in-Chief of the now 91 year old school newspaper, The Cooper Pioneer. We covered many of these initiatives and events from Friends of Cooper Union breakout sessions to the Work Makes Work exhibitions and protests.

Cooper Union suffers from a deficit of $16 million a year and in response to this, there have been cuts across the board. But there was never a firm statement of "Cooper Union is not and will never charge tuition." As you may know already, the Master's programs in Cooper Union will be charging tuition, but tuition will not be instated for the "core" of Cooper for the incoming classes in fall of 2012 and 2013. Unfortunately, this means tuition is still on the table for the "core" of Cooper Union, and it is only a matter of time before this ticking bomb detonates.

As Editor-in-Chief this past year, I have brought quite a few changes to the timing of releases and the amount of content. We have released weekly "mini-issues" and monthly special issues. The release of weekly "mini-issues" covered up-to-date news about the financial situation and the monthly special issues feature news as well as themed stories and the "Faces of Cooper". The "Faces of Cooper" specials reveal to the community the various people who keep Cooper alive and make Cooper more transparent. It has certainly been a tough year for all of us, especially since the threat of tuition has been a major distraction.

I hope that you have enjoyed this past year of The Cooper Pioneer and that you enjoy this final issue of the 2011-2012 school year. This will also be the last issue that I will be leading as Editor-in-Chief. I pass on the torch to Marcus Michelen, CE '14, who will make the paper shine brighter than ever.

And to that end, I hope that Cooper Union will find the spark necessary to revitalize the mission of Peter Cooper and fulfill many more dreams for many years to come. What we need is unity, and not the division that is starting to bloom amongst all of this rage and anger.

Sincerely,

Christopher Hong (EE '13)

Letter from The President of Cooper Union, Jamshed Bharucha

Dear friends and colleagues:

As we approach the end of the academic year, I want to thank you all for the opportunity to become part of this extraordinary community. My most rewarding moments have been getting to know Cooper students. This is indeed a marvelous meritocracy, and your commitment to your work is unsurpassed in my experience.

This spring two task forces have been hard at work, and the community has been engaged in discussions in a variety of forums. I have accepted the recommendation of the Expense Reduction Task Force, which calls for budget reductions based in part on the rate at which expenses have increased over the past few years. These reductions will come disproportionately from the administration, and will total approximately $4 million in savings for next year, bringing the deficit down to approximately $12 million.

We need to address the remaining deficit. In the short term, the challenge is to manage until 2018-19, when we receive a significant increase in the rents we receive from the Chrysler building. However, that respite does not solve our problem. The principal payments on our MetLife loan start coming due at that time. Furthermore, the rent income then does not grow at all - not even with inflation - for ten years beyond that, opening up a new deficit that grows well into the future. So we must also address the medium and long term deficit. The longer we wait, the more difficult it gets. We will discuss these financial projections with the community in the coming weeks. There are no easy options. Frugality and enhanced fundraising, while essential, will not solve the problem on their own.

In its interim report, the Revenue Task Force has recommended exploring a hybrid framework, in which we would seek to preserve the scholarships for our core undergraduate programs by launching programs outside of that core that yield revenues. This framework offers the prospect of doing exciting things academically, particularly if we can bring the schools together to leverage their latent synergies. I will be working with the faculty to brainstorm about possible programs and assess them.

This is a traumatic time for us all. Our institution is at financial risk, we do not have the luxury of moving slowly in our decision-making, and there are no options that will satisfy everyone. We must rise to a high level of civic discourse as we continue to chart our course.

We will get through this together, and we will emerge stronger. Once again, thank you for all that each and every one of you does for to make this the vibrant community that it is.

With warm regards,

Jamshed Bharucha

Letter from Fred L. Fontaine, Professor & Chair of Electrical Engineering

An Open Letter to EE Students **April 25, 2012**

Re: The Master of Engineering Program

Without the Cooper integrated master's program, IMO, the undergraduate education here cannot be considered comparable to what you would have gotten if you attended the other top tier programs you ALL were qualified to attend.
Charging tuition for it-- either for those actually in the master program, or a variation of this such as tuition for courses taken beyond 135 credits- means significantly fewer students will either enter the master's program or take courses beyond those minimally required. Participation in advanced courses and projects will fall below critical mass, and these features of the UNDERGRADUATE engineering education will fade away. This will also stunt improvement of undergrad courses and labs. I will not be a voluntary participant in this, nor am I interested in watching a slow death spiral.

As such:

1) Supervising master theses is voluntary on the part of faculty. In fact, we are compensated for thesis supervision. I will not supervise master theses for Cooper undergrads that are charged tuition in the master program.
2) Every master thesis must be at least co-advised by a full-time faculty in the person's department. If this rule is bent, to bypass #1 above, then I will not vote to graduate any grad student whose thesis is not so supervised.
3) If tuition is charged beyond 135 credits, I will no longer teach elective courses. Students can fulfill their elective requirements by taking required courses from other engineering majors.
4) As it is, engineering faculty are excluded from the admissions process. Since I can no longer in good conscience tell prospective top HS students that the education they would get here would be comparable to what they would receive at other institutions they are considering, I will no longer participate in open house. If my employer obligates my presence, then I will be present but will only say "please refer to the catalog"- as a matter of academic freedom I cannot be forced to say or do anything else.
5) I will encourage all other faculty to join me in this. Non-tenured people can do scholarly activities like write articles and go to conferences, participate in committees etc., in lieu of teaching electives and/or supervising theses.

President Interview

By Marcus Michelen (CE '14)

On Wednesday, April 25th, I emailed President Bharucha requesting an interview with him on either the 26th or the 27th. Thursday, the 26th, I received an email from Annie Hong, Assistant to the President. She informed me that President Bharucha was interested in doing an interview but was unable to meet on either Thursday or Friday. She mentioned that the President suggesting doing the interview via email. On the same day, Thursday, I emailed him eight questions, but failed to mention that my deadline was Saturday morning. I received a call on Sunday morning from President Bharucha and he informed me that he would be sending his response shortly. On Monday, April 30th, I received an email from the President containing only the following text in the body of the message:

"Democracy depends on free expression. I encourage and support civil discourse and free expression by all members of the Cooper Union community."

I emailed President Bharucha back, asking if that was all he wanted to say, and I received an email from Jolene Travis, Assistant Director of Public Affairs, Media Relations. She introduced herself, reproduced the text from President Bharucha with the following added:

"About April 25:

On April 25th students conducted a work-out and walkout to voice concerns about tuition at Cooper Union and to participate in 1T Day, marking the day U.S. student debt reached $1 trillion. No one from Cooper Union called the police to my knowledge. I am told that large numbers of police followed Occupy Wall Street protesters from Union Square to Peter Cooper Park, and that police blocked entrances and exits to and from the Foundation Building. Cooper Union's Director of Facilities was on hand and speaking with the police. I arrived from a Humanities and Social Sciences presentation at 41 Cooper Square. When the New York Police Department is on site, they assume responsibility for managing the situation. Following the arrests of a Cooper student and alumnus, we have been in touch with police to discuss this further.

About the full-tuition scholarship policy: This is a critical time in Cooper Union's history as we build a sustainable financial model. We are seeking to preserve scholarships for the core undergraduate programs by launching programs outside of that core that yield revenues. I will be working with the faculty to brainstorm about possible programs and assess them. We must rise to a high level of civic discourse as we continue to chart our course."

These were the questions I asked the president:

Aside from the events of April 25th, what do you think of student-led protests and demonstrations in General?

On April 25th, one Cooper student and one Cooper alumnus were arrested during a student-led protest. More than 80 police officers were identified on the scene at one point. Why didn't anyone from Cooper try to talk to the crowd before the protest escalated to such a high level?

Did a member of the administration called the police?

A rumor has been circulating that before the announcement that Cooper would charge tuition to its graduate students a member of the administration warned the NYPD that protests would occur. Is there any truth to this rumor?

Where were you the night of the protesting?

Given the intensity of the protesting, would you consider taking back your decision concerning the graduate schools?

When will more information concerning the graduate school decision be revealed?

Do you have any closing comments for the Cooper community?

The Walkout

By Marcus Michelen (CE '14)

For those of you who live in a total bubble, students gathered outside of the Foundation Building starting at around nine in the morning on April 25th. At first, it was much like the walkout of last semester, very peaceful and fairly quiet. An alumnus, Jesse Kreuzer, was perched atop Peter Cooper's Statue, armed only with a backpack (presumably of food) and a sign, reading "Free tuition/It's our mission." By four, a large crowd of members of the Cooper community had gathered. At that time, the crowd marched to Union Square to join with the Occupy Wall Street gathering that was going on at the same time. A little after five, the protesting members of the Cooper community, along with some protesters from OWS, marched back to the Foundation Building. At this point, a handful of police officers were surrounding our school.

At some point, Kreuzer climbed back to the top of the statue and was leading protest chants, consisting mainly of "Hey hey, ho ho/student debt has got to go." Police backup came and the police decided to clear out the protest area. Immediately after they made the announcement to clear the area, a Cooper Student, Sara Abruna, was arrested for reasons unknown at the time. The crowd was angry, but remained incredibly peaceful (as they had been for the duration of the protest). More members of the NYPD slowly came to the scene. I say NYPD members because it included a hostage negotiation team, a cherry picker and more than five Emergency Service Vehicles. An empty city bus was used at one point to close off the scene from 3rd Avenue. More than fifteen cops on mopeds glided in. After ten minutes of New York's Finest figuring out how to operate a cherry picker, the police anticlimactically brought Kreuzer down peacefully. Shortly afterward, I counted more than 80 (not a typo) NYPD members on the scene.

While much was unknown at the time, a few details have been filled in. After briefly interviewing a few more than ten police officers on the scene (and being turned down by more than half of them), I learn that the police first came to our school because they followed the crowd from Occupy Wall Street.

New York Daily news tells us that Jesse Kreuzer was arrested for charges of "reckless endangerment, criminal trespass, and obstructing government administration" [1]. The same source informs us that Sara Abruna was arrested for "[trying] to duck under a taped-off area." She was charged with "harassment, disorderly conduct and obstructing government administration."

[1] http://www.nydailynews.com/new-york/arrested-tuition-protest-cooper-union-manhattan-east-village article-1.1067760

Christopher Hong (EE '13)

Jenna Lee (ME'15)

Christopher Hong (EE '13)

Jenna Lee (ME'15)

Christopher Hong (EE '13)

Jenna Lee (ME'15)

Jenna Lee (ME'15)

Christopher Hong (EE '13)

Administrative Review, Budget Cuts, and 990s

Interview with TC Westcott

By Christopher Hong (EE '13)

On Tuesday, April 24, 2012, we interviewed TC Westcott regarding the administrative review of Cooper Union, the budget cuts across the entire school, and the 2010-2011 990 tax forms.

Administrative Review

CP: We've heard about it a few months ago and we haven't received many updates. We know that some student groups have met with them, but little was revealed to the community. Can we know some more information about the administrative review?

TCW: The administrative review is actually an ongoing process. It will probably continue into the fall. And the idea here is not to say you should do this or you have to do that, but rather provide the leadership of the various areas with ideas they might consider if they want to reorganize their department or redeploy resources. So it's not you have to do X, Y, or Z. It's supposed to be a tool that is a benefit to the various heads of departments. There are usually some places that you can look for opportunities for savings. And once again the thing about budget cuts is that it's very hard for someone who is not intimately involved with the budget to say you have to do this.

For example, if I told the department you have to cut X, Y, or Z, that might not be appropriate for all the departments. I don't know the guts of how their departments operate so the idea here is not to say you must do something, but to say these are things you can consider as you think about the kinds of budget reductions you need to make.

CP: Do you know who decided that the administrative review was necessary?

TCW: Jamshed wanted to do an administrative review. Remember, he's the new president and this is a way for him to understand how the institution operates. And by the by, I would think that most new presidents would probably do something similar.

CP: Do you know if this review board concluded anything yet?

TCW: They're not going to "conclude" anything. They're going to provide some input to Jamshed and to me so that I can work with managers and say "here are things to consider in your area." It goes back to I don't know every area; the directors and managers of those areas know them and these are just things they can consider as they think about what cuts they want to make or need to make in the future.

CP: How much does it cost?

TCW: It costs $100,000 a month.

CP: Do you think it is worth it?

TCW: Absolutely. Remember, they're doing a very broad range of things. An administrative review is just one part of the work that they're doing. They have built all the financial models that we're using, they provide benchmarking across the industry, they provide us with wisdom on what are parameters for how to build a model. Making sure you don't overlook pieces or parts and all of these models will stay with us. This is not something they take away. It basically belongs to us. We can never do it this quickly, ever. I can meet with them this afternoon and say I need a model that does X, Y, and Z, and I'd have it modeled tomorrow, a real model. Not a little spreadsheet. Granted it's excel, but advanced excel – macros built in, etc. So to think it's just one little thing is wrong and to think that it's not worth it, I can say to you that we are well beyond where we would have been if we had not had this kind of support.

Budget Cuts

CP: What can you tell us about the budget cuts across Cooper?

TCW: The expense reduction task force used an approach that was based on two things. We needed to make a 12% budget cut and let me clarify what that's against because there's lots of different numbers. We started from 12% less so we're looking at numbers that didn't include the debt service, it didn't include employee benefits, it didn't include financial aid and some little things so it's not the regular financial statement number. So it's the things that you can cut.

And what the expense reduction committee decided was that everyone would have to take a 6% cut across the board and the balance up to the 12% would be based on the amount of growth that areas had from 2006 to 2012 in excess of the HEPI, which is the higher education price index. So the idea on the part of the expense reduction task force was to say the departments that had seen the greatest growth would be the departments that would end up with higher cuts. The way it turns out is that central administration for example, the president's office, development, buildings and grounds, business office, overall we need to cut $2.2 million. The academic department's architecture, art, engineering, and humanities and social sciences, they need to cut about $1.3 million. The total cut is about $4 million so there are small cuts in other areas. .

But the point here is and I think you saw this in Jamshed's communiqué from today, the idea is to reduce as much as we can in the central administration so we can keep the cuts to the academic areas as low as possible. The expense reduction task force will be issuing a report, I'm not sure the amount of detail that will be in it ultimately, but that's the break down. So we're looking at cuts in central administration, double what is allocated to the academic areas.

TCW: I'm not sure if we'll go department by department in the final report, that will be up to the committee as a group. We're writing the final report now.

CP: I heard there was a formula that was used to determine these cuts.

TCW: The formula is: everybody took a 6% cut across the board. The rest up to the 12% was distributed based on the amount of growth in excess of the HEPI for the six year period. So let's say in my department, the HEPI said in 2012 my budget should have been $1 million and my budget is $1.5 million, then that $0.5 million above what the HEPI growth said it should have been I'm going to take out a portion of that depending on overall campus status. That's basically the formula.

And by the way, the expense reduction committee recognized they don't know the departmental budgets the way the budget directors do so they weren't in a position to say, well you cut this and you cut that... The report will also have some other recommendations like no meals at meetings and reduction in the use of paper, things like that. And there was no judgment relative to how big a budget had grown. In fact the committee recognized that in some cases, you expect that budgets are going to grow whether they grow with the HEPI or above the HEPI, it doesn't mean that it was bad, it just means that's what it was so we were trying not to make judgments relative to how numbers had grown over time.

CP: This past year, the deficit was about $16 million so we're reducing it by $4 million. We are still in a deficit of $12 million. It seems like we need a big donation.

TCW: The thing is we can't rely on a large donation to save the day. That's what we've been doing for 40 years and we haven't gotten it. Now, that doesn't mean we're not going to try to go out and get a big donation, but we can't rely on it. We have to do other things, such as generate revenues from programs, such as Master's program, certificate programs, post professional programs, summer writing programs, all manner of programs with the goal of preserving the full tuition scholarship on our core three undergraduate programs. That's our goal.

You can't eliminate the deficit by just cutting because there'll just be nothing left. You have to figure out how to have both – budget cuts and revenue generation. Revenue generation takes lots of different forms and some of it comes from philanthropy. We have a new development department. They're professional development people and they're focused on increasing contributions and I think we're going to see growth there. It's just the equation that seems to work. I'd love to know what we can do that doesn't include new programs, but the numbers don't really work.

CP: Do you know how much the master's program will cost?

TCW: We don't know for sure yet. I know that we've looked at what Master's programs charge in the area and they run somewhere from $1200 to $1400 a credit. Now, does that mean that's what we're going to charge? No. It just means that we know that's what NYU and The New School charge.

CP: You mentioned that the final report of the final cuts is being worked on. Is the specific budget cut numbers going to be released?

TCW: I'd rather let the Expense Reduction Task Force release that information because they are the people who worked on it. The managers know that information already. There's a danger in releasing exact numbers to the public. One the one hand, being curious, I get that, on the other hand, I'm not sure it's particularly productive. I understand the

990s

desire to know how much the administrative areas are being cut versus the academic. It's never a happy day when you have to do these things, but we have to do it.

CP: We know they're still being worked on and they're in the finalizing stages since they are being released next month. Can you give us any numbers that are definitely confirmed?

TCW: No I can't. I really need the final 990 because I know if anything changes, I will forever more have to be defending the number that I said. My goal is to get it done as quickly as possible, the latest we can file it is May 15, but I do need the final feedback from our tax auditors.

CP: Do you know when you'll get that back?

TCW: Well, I'm hoping over the next couple of weeks. The thing is we do our 990s here, but our independent auditor, our tax partner reviews it to make sure that it aligns with the audited financial statement and is consistent with the tax requirements so it's not just we complete it and send it on its way. It's a pretty lengthy review process and it's iterative.

CP: There have been speculations about what will be on the 990s.

TCW: There's always speculation. The truth of the matter is the 990 has everything in it and that's a good thing. There's nothing wrong with having those things see the light of day. As soon as it's ready to do, it's going to go and the community will be informed.

CP: Will you release it as a campus notice so everyone will know about it rather than dig it up?

TCW: I think we will publish it on our website [cooper.edu]. A lot of places don't put their 990s on their website because you can go to Guide Star to get it, which is the place the IRS sends it to. The thing about Guide Star is that it's about a year behind. The audit committee and the board have agreed to post it on our website.

I can assure you that the faculty always looks at the 990s and they do at every institution. They are actually conversant with what's in the 990s. As you saw, Richard Stock has done a pretty detailed analysis of 990 information for the past at least 10 years. We provided Richard with the information from all the 990s we post our financial statements as well.

CP: Do you have anything else you want to add?

TCW: To get people to come together is a very valuable thing for Cooper Union and we're going to be stronger for it, much stronger. Nobody wants to be in the midst of these things, but I think we're going to come out stronger and as a unified group.

Visit the reinvention website, https://taskforce.cooper.edu/, for more information about the task forces and obtain minutes from their meetings on https://taskforce.cooper.edu/events

April 25th Summit

Christopher Hong (EE '13)

As many of you know, President Jamshed Bharucha sent out a campus notice on Tuesday notifying the community of the future plans for Cooper Union. The day after, there was a protest fighting tuition in Cooper Union and national student debt. On Thursday, April 25, 2012, Friends of Cooper Union, a group dedicated to saving Cooper, held their second summit.

The summit started with an introduction by Henry Chapman who informed the audience that the students who were arrested in Wednesday's protest are still in jail and introduced the panelists.

Alan Lundgard, a junior of the School of Art, lost his voice from Wednesday's protest and his friend Morgan read his speech fighting tuition in Cooper Union and national student debt. Lundgard wrote, "We cannot forget, we are the sole bearers of the school's worth. Our education, if it is to be understood, then the primary goal of this institution should be prioritized above all other concern and self interest, bureaucrat or otherwise." Student debt has grown greatly over the last few years and it has become more of a business. Longyard wrote, "A national crisis is blooming, the bubble will burst, and we're guarded only because we receive Peter Cooper's gift of full tuition."

After this speech, the panelists were brought on stage and each person was given a chance to speak about the financial crisis. This was moderated by Rocco Cetera, a civil engineering alumnus of 1999.

Litia Perta, a writer who taught as an adjunct professor in the School of Art and the School of Humanities and Social Sciences and author of the Brooklyn Rail article, Why Cooper Union Matters, talked about her thoughts of the financial situation and her question to Mark Epstein in the open forum in the fall semester about whether or not we can legally replace the Board of Trustees. She brought up the question, "How do you reclaim your education?"

Peter Buckley, a professor in the School of Humanities of Social Sciences and historian of Cooper Union, spoke next and answered the question, "Is meritocracy and access at odds with each other?" Buckley brought up some comments he received by the community during Wednesday's protest. One person said, "If students paid, they would work harder." He then ended with talking about how higher education is being sold as a way to improve the economy of the United States.

David Gersten, an alumnus of the School of Architecture in 1991 and a professor in the School of Architecture, talked about "tearing down the barrier" and his attempts to write and draw about this issue. He brought up several questions and read his thoughts. One such question is, "What's the structure of promise?"

Day Gleeson, associate professor and academic advisor of the School of Art, talked about teaching and is optimistic that Cooper Union will find a solution and she stated, "Cooper Union has a history of coming up with a Cooper Union solution and we ought to honor them."

Next, Andrew Leader, a junior electrical engineering student, talked about community and how Cooper Union goes beyond the student-instructor relationship, but rather, the community of Cooper Union is like family. Sarah Crow, a senior art student, then gave her input about how much she learned from her teachers and peers and stated that Cooper Union is "unlike anything else."

Yuri Masnyj, an adjunct professor of the School of Art, then gave his input on teaching and discussed how money has a way of affecting the way you might think about your ideas.

Richard Stock, a chemical engineering professor and Faculty Union President, stated that we really need to look closely at what we do and who we are and how we will go forward. Stock talked about how there is a disjoint between who the public thinks we are, who the administration thinks we are, and who the trustees think we are. He expressed the need for transparency and stated, "The previous administration was fairly opaque, but bleed like a cyst so we find things out. Jamshed's administration doesn't do that and certainly TC runs a tight ship. What we have to do now is to be very sneaky to get beyond the opaque wall."

John Leper, former secretary of treasure of the Cooper Union Alumni Association, then talked about how the school needs to be more open about financials and how Cooper can be more operate better. Leper ended with, "I don't think anybody in this room can stand up and say that Cooper is one of the best operationally run school in the country."

Tom Synott, a former chief economist for the US Trust and an adjunct professor in the School of Engineering, discussed about the ideas that came up in his class. One idea is the buy a bulb for Cooper campaign where alumni buy Cooper bulbs and put the alumni names on the bulbs. The other idea is to ask Oprah to put on a show in the Great Hall.

Toby Cumberbatch, a electrical engineering professor, stated that Cooper Union has lost its way since he first arrived in 1994 and charging for the Master's program is the wrong way to go. Cumberbatch thinks that big changes need to take place and we have to forget about personality and decide what's important for the school – the students and alumni. "If you taught here, some of the people that you come into contact with are really quite incredible and I think that we have to do more for them than we do in the moment.

Sangu Iyer, a writer and an alumna of the School of Engineering in 1999, discussed some history of Cooper and the "amateur program" where students can pay for courses. She expressed the necessity to reclaim this history and determine whether or not Cooper was free from the very beginning.

Karina Tipton, an alumna of the School of Engineering of 1999, talked about the alumni's role for Cooper and they are the source of advertisement for Cooper Union. She also stated that the alumni want to give back and want to help students. They are always returning to have talks and to events to help students with their future.

After a brief talk from each of the panelists, the panelists were given the opportunity to ask questions to other panelists. Sarah Crowe asked a question to the president: "Where were you yesterday when your students were getting arrested outside? President Bharucha stated, "I was participating in a faculty seminar with the Humanities and Social Sciences faculty where we were invited to talk about our interests. We talked a little about music and other subjects. When I came out of the building, I saw that there was somebody on top of the statue and I asked security for a briefing and some students were asking me to come there. And I was very, very strongly advised that my presence would in fact further endanger the situation. I went home and kept in touch with the reports." He stated that he will be trying to get in touch with the head of the police precinct involved and that he will be there for the students.

President Bharucha stated that he love Cooper Union and every day, he thinks about how we can preserve Cooper Union. He stated that on Friday, he went to California to seek funding from alumni and foundations. He asked one question to the panel: "If you were my advisors, what would you advise me to do?"

Buckley suggested for a rewording of the description of Cooper Union on the website because it was not made explicit that Cooper Union is special with a full tuition scholarship. Leper stated that the school needs to be more transparent in order for him to put enough trust into the school and write a check. Cumberbatch suggested getting rid of the entire Board of Trustees. Perta suggested looking up legal actions that the community can take against the board. Leader suggested not getting rid of the board because it is too late in the situation now and that we should work together with the board to save Cooper. It would take too long to find a new board. Perta advised Cooper Union to open our doors to the community and gain the support of the community even if it means losing more money.

At one point, Leper listed five things in response to a question about what steps we should take tomorrow:

1. What was the cash budget for last year?

2. What was the austerity budget going to be?

3. What was the investment performance?

4. What were the investment guidelines?

5. Publish the policies of the procedures manual for physical governance.

There were several confused students. And to end the night, Rob Marano, an adjunct professor of the School of Engineering, "I challenge each and every one of you to go home and ask mom and dad, 'can you give $500 or $1000 dollars to Cooper Union.' I challenge President Jamshed and the administration to not take the scalpel and take the hatchet and hatchet out what the administration that we don't necessarily need to do one thing and that is to educate you all."

At the end of the night, a document called "The Way Forward" was given out and it listed potential solutions and plans to save Cooper Union. The document is posted on http://friendsofcooperunion.org/.

The solution begins with us and we have all hold a piece of the power to save Cooper Union.

Results of Library Usage Survey

By Saimon Sharif (ChE '15)

From March 22nd to April 20th, the Cooper Union Library conducted an online survey on library usage. A bulk email was not sent out, so those that participated likely noticed the signs posted at the entrance and inside of the library. The survey was designed to give insight into library services that cannot be tracked; the general categories of the library's users along with their needs and desires; and the utilization of personal services. The results of the survey are available here: http://library.cooper.edu/survey.html

Ninety-seven students took the survey. Of that amount, 39% were Architecture students, 27% Art, and 34% Engineering. For reference, there are about 1000 students at Cooper Union if graduate students are included into the count. The majority of students, 42%, selected they came to the library "a few times a week" while only 18% selected that they came less often than once a week.

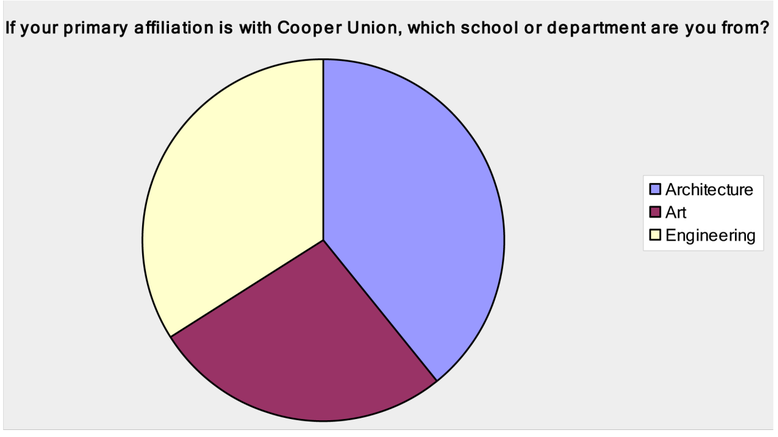
As expected, 90% of the surveyed used the library to "borrow books or other items" and 85% stated they read or studied. Interestingly, 77% stated they "use books or other materials inside the Library." It should be noted that the use of materials without borrowing cannot normally be tracked. Amusingly, 40% stated they looked at the free books and other items that the library gives away.

Julie Castelluzzo provided a selection of Lesser Known Facts deduced from the results of the "Did You Know?..."survey questions. Personally, I did not know students can suggest books to be purchased for the Library collection. Students can suggest the books via email and must provide as much information as possible.

A portion of the survey results is shown below and to the right.

If your primary affiliation is with Cooper Union, which school or department are you from?		
Answer Options	Response Percent	Response Count
Architecture	39%	38
Art	27%	26
Engineering	34%	33
answered question		97
skipped question		0

Spring 2012 Library Usage Survey, all CU student responses



Revenue Task Force Update

By Saimon Sharif (ChE '15)

I met with Sharang Phadke (EE'14) on April 21st, 2012 for one last interview regarding the Revenue Task Force. We are nearing the end of the Spring Semester and the task force has only three meetings left. No members have left or joined the task force since its inception. It is very likely the task force's final report will be available on their website (https://taskforce.cooper.edu/home) and a bulk email will likely be sent out to inform the community.

The task force has received 15 to 20 ideas from the community. They are "in the middle of the process of evaluating them, but none of them have been fully evaluated yet." The original intention involved having TC Westcott's office perform formal revenue projections for the ideas, but none of the ideas have reached that point. However, almost all the ideas will be included in the report in at least a summary in the appendix. Ideas developed by the RTF itself will be also be included.

Very few of the ideas sent the RTF were submitted by students. Sharang attributed this to the intense course load at Cooper and expressed empathy with "[students] can't be expected to spend all their time thinking up ideas to save Cooper." On the other hand, alumni have been very active in submitting ideas, particularly through Friends of Cooper Union.

The task force has had meetings with the consulting firm, CDG, in order to project the costs and revenues associated with specific ideas. These ideas include Cooper's masters, summer, and other educational programs. The task force has also met with McGuire and will discuss the results of McGuire's survey on Cooper's competitive standing in art, architecture, and engineering in their next meeting. McGuire also looked into any changes Cooper may need to make in order to remain competitive.

Reflecting on the task force, Sharang stated "The RTF has done a good job of discussing the issues facing Cooper from the top down, starting with broad ideas about Cooper's history and the role of the full tuition scholarship today, down to the specifics of the various ideas that might help keep Cooper free. We will need to make radical changes to try to save the full tuition scholarship and Cooper as we know it."

Saturday Program Annual Exhibition

By Yara Elborolosy (CE '14)

The Saturday Program offers seven free art classes to over two hundred New York City High School students and it runs from October to mid-April. The classes offered are Architecture, Drawing, Graphic Design, Painting, Portfolio Prep, Sculpture and Sound Composition. The classes, with the exception of Portfolio Prep, are open to students from grade 9 to 12. Portfolio Prep is open to high school seniors.

All materials are paid for and the classes are taught by current undergraduates enrolled in Cooper. At the end of each year, the Saturday program has its Annual Exhibition or End of the Year Show where student's works from all seven classes are put on display. It is open to the public and friends and families of the students are invited to come support the students.

The End of the Year Show was held on the last day of classes, April 7th, and in the morning, the Portfolio Prep was outside the Foundation Building drawing on the sidewalk. Using chalk, the students recreated great paintings by wonderful artists to start off the end of the year celebration.

After a lunch break, the 3rd floor lobby of the Foundation Building was filled with over four hundred people appreciating the students' work, including faculty and students of Cooper. Following the exhibition was a spoken word performance held in the Rose Auditorium. Each class is designated a writing instructor who meets with them once a week for an hour for the entire year.

For the end of the year show, students either performed an individual piece or put together their abilities to create a group performance. Each student was able to demonstrate their creative abilities and beliefs or ideas they held dear. The Saturday Program has helped these kids grow not only as artists but as maturing adults who are ready to take what the world throws at them.

Photos provided by the Saturday Program.

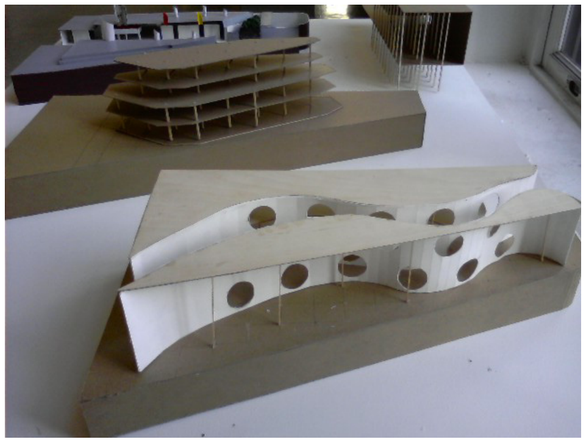
(Top left) Wei and her work.

(Bottom left) Architectural models.

(Top right) Portrais drawn by students of the Saturday Program.

(Middle right) Artwork from the Saturday program.

(Bottom right) Chalk murals being drawn in front of the Foundation Building.



Projects Around Cooper

By Eric Leong (ME '14)

Below are a couple of projects I worked on this semester:

- Suggur
A site I built with a friend from Columbia during the Spring 2012 hackNY hackathon, where students built products from start to finish in under 24 hours. Suggur is a group food recommendation site built on top of foursquare checkins, and in addition to displaying places you've recently checked into, it suggests new places to try. When debating with your friends about a place to go, it can be used to intersect your friends' preferences with yours to find the best place for all of you to enjoy!

http://suggur.com/
http://ericleong.me/web/suggur

- HDR Video Camera
A research project with Gregori Tayco into building a camera that can capture high definition, high dynamic range images for Professor Wolf's Photography class. Utilizing three webcams with three different exposures, recorded with custom software onto a blazing fast computer, three videos capturing different details are stored. Using Matlab, the three videos are processed to produce a single video via a process called exposure fusion. The hope is to bring greater detail into the films of tomorrow.
https://www.dropbox.com/s/2vvai2e67zpcqf8/HDRCompare.mpg

Projects Around Cooper

By Joe Baylon (EE '12), Ethan Elenberg (EE '12), Samantha Massengill (EE '12)

This is an abstract for our Electrical Engineering senior project, iSCISM: interference Sensing and Coexistence in the ISM Band. One of our papers recently won first place in the IEEE Region 1 Student Paper Competition and was published in the April issue of High Frequency Electronics:

The presence of non-WiFi transmissions in the 2.4 GHz Industrial, Scientific, and Medical (ISM) band causes performance degradation in WiFi systems by decreasing throughput and increasing bit error rate. iSCISM seeks to alleviate the effects of various interferers by applying interferer-specific mitigation schemes to a WiFi system. Because both wideband and narrowband interferers exist, iSCISM's

approach is to obviate sources of interference more efficiently by identifying them first. Bluetooth devices and microwave ovens were chosen to represent narrowband and wideband interferers, respectively. A testbench was created in MATLAB to simulate 802.11g WiFi transmissions and the effects of interfering signals on throughput. An algorithm for locating transmission peaks was developed for extracting information from interference signals. Several machine learning classification algorithms were tested for identification accuracy and computational cost, and Naïve-Bayes was selected to serve as iSCISM's method for classifying interferers. Rate adaptation was chosen as the mitigation scheme for Bluetooth interferers, and timed transmission was chosen to mitigate the effects of microwave emissions. Accurate identification has been demonstrated, and mitigation algorithms have been shown to improve throughput in the testbench in the presence of both interferers. A proof-of-concept timed transmission algorithm to mitigate microwave oven interference has been implemented in hardware on a software-defined radio platform, and real-time performance improvements have been demonstrated.

By Peter Renxuan Liu (ChE '13)

Engineering and Art students from Professor Jill Muller's playwright and theatre practicum class performed a series of eleven captivating plays on Friday afternoon in the Rose Auditorium. Each play was written and performed by students with a wide range of genres ranging from romance and tragedy to farce and comedy. There were many spectacular performances from student actors all across the board. A crowd of students and professors were in attendance to observe the fruit of a semester's labor from the hardworking students of the class. The audience was enticed by the enthralling action and drama, enwrapped in the creativity and colorfulness of the plots, and bursting with laughter towards the end of the performances.

From Left to Right. Peter Liu, Lyric Hunter, Jay Dalal, Michael Chambers, Olga Shishkov, Jennifer Guia, Nanwei Chen, Amanda Yuan, Jacqueline Rexford, Lydia Dresser, Jasmine Stein.

Program:

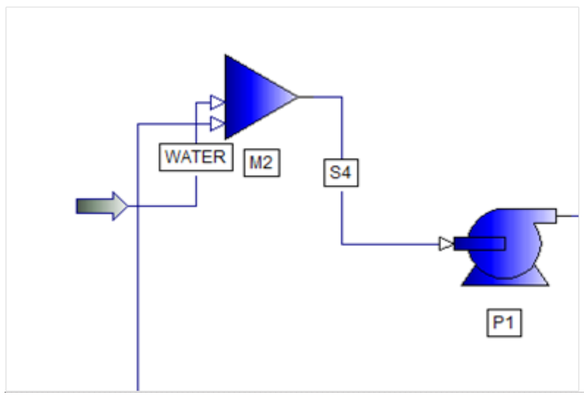
1. "Whole Earth Bakery" by Jacki Rexford
2. "Marrage" by Peter Renxuan Liu
3. "London's Burning with Boredom" by Jasmine Stein
4. "An Extraordinary Event of a Blood Stain" by Nanwei Chen
5. "Rosebud" by Jay Dalal
6. "In Jest" by Olga Shishkov
7. "Con" by Lyric Hunter
8. "The Dating Scene" by Jennifer Guia
9. "Wave Riding and Love Writing at the End of the World" by Lydia Dresser
10. Untitled by Michael
11. "Porn Star Peter!" by Amanda Yuan

Interview with Dan Quang (ChE '12) by Yara Elborolosy (CE '14)

Dan: My name is Daniel Quang, senior chemical engineer, working with Professor David's class. My group mates are Lev Dynkin and Douglas Ma. Our project is designing a hydrogen fuel plant station. The project was assigned. The point of the project is to design a hydrogen plant that uses a methane steam reformer and a water gas shift reaction to produce hydrogen. It takes natural gas from Con Edison and purifies it to methane, reacts the methane with water, and through the reactors it produces hydrogen. You then purify the hydrogen by using several techniques such as pressure swing absorption and you have to design compressors, pumps, and heat exchangers throughout the process. At the end, you have to cost everything to determine how economically buyable the project is. It is only a design, a hypothetical station. We are almost done with it. We just need to design a few more things and then we cost everything to determine the cash flow over a 20 year life span. The plant is going to be a hydrogen fueling station in NYC. It is designed to fuel 200 cars a day with the assumption that each car needs 2 kg of hydrogen to fuel up. We've been working on it for the past month and a half. The senior design project for chemical engineers is essentially several projects every few weeks. This is the last and biggest project for us. It is the culmination of all the skills we have acquired in the class.

Yara: Any last words?

Dan: As a suggestion for all future projects, the professor should not assign groups because it stifles the creativity and the effort that can be put into it. I understand why they're trying to do it: they're trying to put everyone to the same level so that students who are not so strong can work with students who are strong. That just leaves you with a bunch of mediocre projects. I feel it would be much better if we could have a few not so great project and a few really great projects. That is what the electrical engineers are doing and I feel that is more appropriate. That is my opinion.



Projects Around Cooper

By Dale Short

70 miles per hour. This is the answer to "how fast does it go?" which is the first thing people always ask when they see the Cooper Union Formula SAE car, so I'll just put it here at the top. A better question would be, "how fast does it accelerate?" because with slick tires and a high power to weight ratio, the answer is much more impressive than the top speed which is mainly limited by the style of competition and gearing. The next thing to be concerned with is, "how fast does it go for a car entirely designed and built by students that isn't tested rigorously to manufacturer and federal standards?" The answer to this I assure you is, "plenty fast."

Formula SAE is a competition where students design and build an-open cockpit style racecar that competes in both dynamic events (such as acceleration and braking tests) and static events (design and business presentations). The power of the cars is limited by a 20mm diameter intake restrictor that forces all the engine air to come through a relatively small opening. Teams must build an entirely new design for every competition year.

The Cooper Union FSAE team designed a car to compete at FSAE Michigan which occurs May 9-12. Our car is based around a GSXR600 motorcycle engine and we use our own intake, exhaust, and engine electronics to overcome the restriction as much as possible. Everything besides the engine had to be designed and built by the team at some point. Currently the car is running and has done its first test day for competition. While we've identified problems with the intake leaking and the electronics aren't properly charging the battery, we should have these problems resolved before competition.

Working on the Formula car is an exercise in building and managing a project as much, if not more, as it is an exercise in engineering theory. When people express regret that they can't participate on the team because they're say, a Chemie, I try to explain to them that my morning was spent on the phone telling a motorcycle shop in Ohio to communicate to their part supplier in Florida that they're GatorChow if I don't have a 2001 GSXR 600 engine by Friday or that I'm really proud of the fact that I bought a sewing machine to stitch new tire covers for the car. Don't get me wrong, we still need a lot of F=ma and Solidworks to make the car though. The biggest thing that got me involved in working on the car was I realized no one on the team knew what they were doing, or how they were going to do it, but they figured it out. If you can do that too you can help the Formula team. The other thing is people feel like they have to give up their lives to work on the car. We do spend long hours but it's more a result of how much the project means to us more than a requirement.

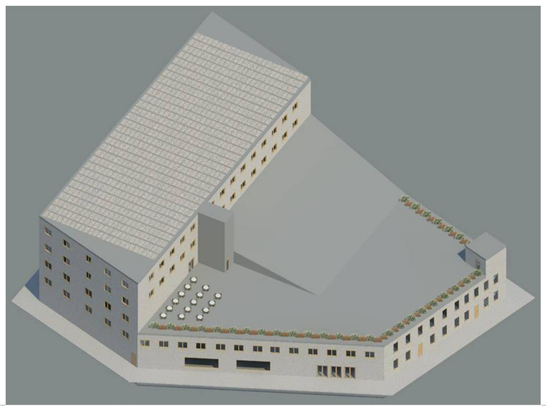
Becoming part of the Formula team also requires mastering a constantly expanding and evolving vocabulary of terms and phrases. For those who haven't overheard it in the halls, the official team greeting is a monotone "hallo wie gehts!" butchered into "Hallow Wee-Gates", while the team goodbye is unprintable. Formula-Speak is mainly developed around the objects the team uses the most, namely car parts, shop tools, and curse words. The linguistic basis of Formula-speak is vowel substitution and inside jokes. To illustrate these effects on nouns, the chop saw is referred to as the "chirp saw" while the hack saw becomes the "Jeff Hackner saw." Any tool being used outside its intended use as blunt force weapon to hammer some uncooperative part is referred to as a "science tool" usually accompanied by some ironic reference to skills supposedly developed by students participating in a FSAE design competition. Ultimately a veteran team member is able to communicate fluidly using sentences like: "BIMB! Can you hand me the Richard Prylers? I need to science this Spyro block with my sheet metal fabrication skills."

When the current Cooper Union entry leaves for competition in Michigan on May 8th it will represent three years of hard work by a very dedicated group of students. Tim "Captain" Fedullo, Robert "Mr." Smith and Alex "Zinc" Zichettello designed and built most of the suspension, exhaust, and brakes before graduating last year. Current core team members Muneeb "o hai" Hai, Greg "Shixer 600" Shikhman and I, Dale "Dalecat" Short, have completed the remainder of the car with help from younger active team members and other now dormant team members as well as too many other students, alumni, faculty and staff members to name here. We are very grateful to all those who have generously donated in time, money, and resources to help us complete this ambitious project. We especially owe many thanks to honorary team members Sinisa "Easy Job" Janjusevic and Mike "Angry Mike" Schaff who are always willing to lend a tool or turn a CNC job around in a week, and we are lucky to have Professor "Dr. D" Delagrammatikas as our faculty advisor. Seeing the dedication these people share in making a car from the ground up is the kind of attitude that makes me glad I came to Cooper Union.

Interview with Christina Milone (CE '12), James Collins (CE '12), Madeline Foster (CE '12), and Steven Nikolidakis (CE '12) by Yara Elborolosy (CE '14)

Christina: I am Christina Milone and I am a senior Civil Engineer. I am doing a senior design project called the Hawk's Nest (because Cooper's mascot is the hawk) with James Collins, Madeline Foster, and Steven Nikolidakis. It is a multipurpose university complex for Cooper and it is going to be located at 51 Astor Place. It has a gymnasium, fitness center, cafeteria, book store, offices, computer center, private study room, and dormitories. We surveyed the students for the amenities they wanted and designed in accordance to their needs and desires.

James: My name is James Collins. There are four of us in the group and three of us play on a team here at Cooper. When we moved out of the old building, there was no longer a workout center and a lot of people were complaining because of it. For a while, Frankie didn't have any space here; he was in the basement. He used to have this big kitchen and lounge in the old building. That became one of our inspirations that helped us come up with the survey to figure out what amenities students here wished they had. We were lucky enough to design a building for Cooper students that they need. It is a cool project, right here in our neighborhood, and it is a Cooper building. A lot of groups are building fictional buildings like museums, bridges but we wanted to do something for the Cooper Community.



Yara: Do you have a specific professor for your group?

James: The way the senior design works for civil engineering is that all three professors work with all of the students. In other majors, each professor will be assigned a group of kids to work with. In the civil department, each professor has a different specialty; one is an expert in soils and foundations, one is an expert in water and plumbing, and the last one is an expert in structural. It is kind of a cool thing to work with all three of them rather than just talk to one professor every week.

Yara: How long have you been working on it?

Christina: It is a year-long project and we started fall semester last year. During that semester, it was more of the planning, designing, checking of permits, and figuring out what goes into actually designing and building a building. This semester is more of the technical stuff where we're looking into the structures, what type of beams, size columns, the foundations, and etc. We only have one thing left for this semester and then we submit a final paper.

James: Our project is all theoretical; we don't actually make anything, unlike mechanical and electrical engineering. But it is cool because you are able to take everything you learned from all the classes that you've taken and bring it all together. The first semester is all about that and you learn that there is so much that goes on behind the scenes. Some people have worked with project managers so they know some of the logistics that go into this. Before you can actually start designing, we came up with initial designs and ranking them. We do a lot of work with modeling it on software but there is no actual building of it. It is kind of anti-climatic but we are really glad to have done it; it is still a really cool project.

18th New president inauguration

31th ESC Open Forum, Tuition put on the table

October

Professor Ahmad is back
Cooper Pioneer is back

24th Residence Hall Leak

5th-7th, Cooper Union attends iGem World Championship at MIT

7th, Open Forum With Mark Epstein

10th, Interview with Jamshed Bharucha

21st, The Pioneer is Online

November

2nd Walk-Work-Act Out

6th, Robin runs 26.2 miles

8th, Joint Student Assembly
9th, Joint Student Assembly 2

15th, 36th Annual Cooper Mile

29th , On the Table: An exhibition for Free Education (week long)

5th, Community Summit

December

Cooper Union Makes a Contract with FJC

January

Hiring in Alumni Affairs during Hiring Freeze
Revenue Task Update
January, James is Staying

26th, Friends of Cooper Breakout Session 3

7th, Wreath Laying Ceremony

9th, NSBE held a date auction, raising money for SociaLite

21st, Professor Cumberbatch apologizes

25th, Saturday Program displays artwork

February

Revenue Task Force Update 2
Volunteer Tutoring Initiative

4th-5th , Pinhole Photography
7th, ESC Open Meeting

13th – March 8th, Work Makes Work

21st, Friends of Cooper Union Pin Up

March

Closing of the Cooper Union Library is considered
Students' List of Best Professor
Revenue Task Force Update 3
Grand Staircase Safety Makeover
Online Registration at Cooper is official

1st, Very Young Girls Screening

9th, Observing Translation

13th, Frankie gets Vending Machine

21st, Friends of Cooper Union Strategies (FOCUS)

24th, Team World Vision 5K

31st, Culture Show

7th, Saturday Program chalk murals in front of Foundation Building

21st, Revenue Task Force Update

24th, Interview with TC Westcott

26th, Friends of Cooper Union Summit

April

1st, The Dining Table

20th, Library Survey (3/20~)

24th, President Bharucha announced that the Master's program will charge tuition

25th, Student Protest

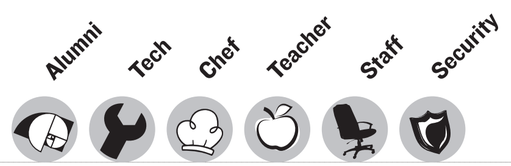
27th, Jill Muller's playwright and theatre practicum class final plays

Jenna Lee (ME '15)

Faces of Cooper

Who's who in Cooper. Find out.

Photos taken by Jenna Lee (ME '15) and Christopher Hong (EE '13)
Dean Baker's photo obtained from the CU athletics site.
Orback's and Smyth's photos were obtained from cooper.edu.



David Wootton

Associate Professor of Mechanical Engineering

714 NAB

Cooper Pioneer: Where are you from?

David Wootton: I grew up in an academic family in Ithaca, NY, with a couple of important years in Cambridge (England) and Palo Alto (California).

CP: Can you tell me about your educational and professional background?

DW: I went to public high school and private music school, and was an apprentice violin restorer, continuing that work while I went to Cornell University. I majored in Mechanical Engineering, and worked briefly as a transportation noise and vibrations consultant at a small firm, before starting my MS program at MIT, where I developed a new ways to calculate vibrational mode shapes and transient dynamics of lattice space frames. After completing my master's I was a crashworthiness and safety engineer at General Motors for almost 4 years, working mostly on front structure design requirements for new accelerometer-based airbag sensor systems, and competitive vehicle evaluation testing and data. I did my PhD research in biofluid mechanics at Georgia Tech in Atlanta, concentrating on the effect of flow on thrombosis (blood clotting in a blood vessel) in atherosclerosis (heart disease), but also doing some side projects, developing a novel gel biomaterials and investigating the conditions under which a narrowed artery can partially collapse in atherosclerosis. I did a postdoc in biomedical engineering at Johns Hopkins University developing models of clot-busting (thrombolytic) drug therapy, and was an assistant professor in mechanical engineering and mechanics at Drexel University before joining the faculty here.

CP: When did you first learn about Cooper Union?

DW: When I was a college student I heard about Cooper Union's reputation among the top small high-quality engineering schools in the US, and that it was in NYC. Having Union in the name sounded pretty cool to me, since I had formed the "Peg-Clippers Union" (2 members) to annoy my boss when I worked in the violin shop.

CP: What brought you to Cooper Union? When did you start working at Cooper?

DW: After four years at a research-driven institution where I was regularly asked if I could spend less time on teaching, I realized that I was only spending one day per week on teaching and I wanted more, not less. I consider teaching the most important thing that I do, so I started looking for positions at more teaching-oriented schools where I hoped to continue my biomedical engineering research with a few bright students, and teach 2 or 3 classes a semester. When Cooper Union advertised my job in 2006 to fill Dr. Macou's position, I jumped at the chance to join the faculty, and was impressed with the small cell and tissue lab that was available thanks to her efforts. The lab meant that I could continue collaborations in tissue engineering manufacturing research, as well as my computational modeling of biofluid mechanics in respiratory and cardiovascular systems.

CP: What is your role in Cooper? What is your department's role in Cooper?

DW: I have a traditional academics role: I teach fundamental courses about the mechanics of fluids and solids, how you can analyze them to build models that explain and develop design relationships, or the differences between heath and disease. I teach fundamentals and applications courses in biomechanics and bioengineering, specifically about injury and safety design, transport in biological systems, and (in the past) tissue engineering. And I mentor design projects for freshmen and seniors, and oversee the Kanbar Center for Biomedical Engineering, which is a home for many (but certainly not all) of the bioengineering projects here. We also do our best to keep track of other opportunities for students interested in bioengineering and biomedical sciences. Our department's role is guiding, challenging, and supporting 25 to 30 students every year to acquire the theoretical foundations and professional skills they need to practice in and beyond the very broad profession of mechanical engineering.

CP: How much do you like your job at Cooper?

DW: It's the most fun and the most challenging job that I've ever had. We have a tiny faculty, but are very diverse intellectually (in ME we have a tissue engineer who produced some of the best man-made cartilage on the planet and a fine artist), and diverse in our approach to students. We are all passionate about our work, and I love being part of this school.

CP: What advice would you give to Cooper students?

DW: Take your work seriously, and never stop asking questions about the world and about your own work and beliefs.

CP: Who is your favorite professor at Cooper? Why?

DW: I have too many favorite professors here to pick just one, and I haven't taken courses from any of them (yet). Can I co-opt the question and tell you about my favorite professor? Bart Conta taught thermodynamics at Cornell, was socially active and innovative, and had a gentle personality and a twinkle in his eye (Paul Bailyn reminds me of him). Professor Conta wanted us to think about things from all sides, and not to get too focused on one technical approach to a problem. Here are a few quotes: "Nuclear fission seems like an awfully complicated way to boil water." "Small is beautiful."And, "This is a refrigerator. You keep your beer inside to cool it, but the mouse that lives underneath it thinks it is a heater." Cornell gives an annual student award in energy and the environment in his memory.

CP: What are some of your hobbies?

DW: Music (I play violin and fiddle and sing), bicycling, soccer, woodworking, fishing, and gardening.

CP: What are your plans for the summer?

DW: I will have more time to play with my sons (2 ½ and 4 years old), and to finish the deck that I started building last summer in my backyard. I'll be presenting tissue engineering manufacturing and Apnea biomechanics research at two conferences, and some personal travel to see family and friends

CP: Do you plan on traveling anywhere with your family?

DW: The Adirondacks, Finger Lakes, and if there is time the coast (Delaware or Connecticut).

CP: What are your goals for the summer?

DW: I'm planning to finish at least one and hopefully two research papers about sleep apnea mechanics, and learn how to use the particle image velocimetry (PIV) system for our apnea research project. I'm also mentoring two MS students (both of whom have started med school) as they finish their theses, and several undergraduate students researching sleep apnea, tissue engineering, and prosthetic heart valve fluid mechanics.

CP: Do you have any recommendations for what Cooper students should be doing over the summer?

DW: Work on a project or an internship that develops your creativity and intellect, if possible some place interesting (like NYC or Philadelphia or Ithaca or Iceland).

CP: What do you think about Cooper's financial situation?

DW: I'm optimistic that we can survive and grow from this situation, if we focus on our core mission of educating our students and if our alumni and friends can take more responsibility. It will be difficult and I think it will require a change in our culture. The increased openness of our administration about our finances has been a healthy step forward, and it seems clear that building our new building without enough donation support is one big part of the problem. But students benefit immensely from the full scholarships that minimize the debt they carry after graduation, and our alumni need to develop a much stronger sense of duty to support the school after they start their careers.

I have a personal perspective on this because like a Cooper Union student, I benefitted from a full tuition scholarship as an undergraduate student at Cornell. My father was on the faculty and at that time I only had to pay some nominal fees (around $1000 per semester) and living expenses. That scholarship gave me the freedom to keep reasonable part-time work hours while I was a student (10 – 15 hours per week), to take a somewhat low-paying position to explore my interest in acoustics and vibrations, and to go to graduate school without a big debt looming. It also meant that once I started working at GM, I could quickly pay off my wife's substantial law school debt, even though she was a public-interest lawyer not earning much money. I think the full-tuition scholarship that sets us apart gives most Cooper alums the ability to pay some of the costs of their education once they graduate and start a good job, or as their studio or practice or startup business takes off. I have always felt a duty to support Cornell because of the tuition scholarship and the value of my education. So I was surprised at how low the alumni donation rate is for Cooper Union, especially compared to some very high-cost schools. I'm glad to see that it is improving, and I think our future depends on alumni taking responsibility for a larger share of the cost of operating Cooper Union, especially if we are clear in public about our costs and our finances, explaining how much of our program can be supported by the endowment.

CP: What do you think about the student body trying to help resolve the financial situation?

DW: I think it is imperative that the students help in every way they can; from a practical perspective, they have the most to lose as we consider charging tuition. The most important thing students can do is to excel as students and then as professionals, and promote Cooper Union's name and reputation as they have done for generations but need to do even better. But it should include working to change student attitudes toward supporting Cooper Union as alumni and friends and families of the institution. It may sound crazy, but could the students raise enough donations from alumni to rename 41 Cooper Square the Alumni Building? The building debt is about half of our deficit

CP: Do you have any closing remarks?

DW: Enjoy your summer, don't forget too much, and stop by the Kanbar Center if you are interested in a bioengineering project.

Christopher Hong (EE '13)

Carl Sable

Associate Professor in the Electrical Engineering Department

Room 614

Cooper Pioneer: Where are you from?

Carl Sable: I grew up in Fair Lawn, New Jersey. I have lived in NYC for about 15 years now and I consider it my home.

CP: Can you tell me about your educational and professional background?

CS: I was an undergraduate Electrical Engineering student at Princeton and a Computer Science Master's and Ph.D. student at Columbia. Before graduate school, I worked as a software engineer at Microsoft for close to 4 years.

CP: When did you first learn about Cooper Union?

CS: One of my younger cousins was an undergraduate here. I had heard of Cooper Union before that, but I think that was when I really learned about it.

CP: What brought you to Cooper Union? When did you start working at Cooper?

CS: I started working at Cooper Union in 2003, shortly after completing graduate school. As a graduate student, I got to teach an introductory programming course a few times and I loved doing that, so I was looking for positions where I would get to do a lot of teaching. I sent a resume to Cooper using an e-mail alias I found on-line, not even knowing if they were looking for anyone. I got extremely lucky.

CP: What is your role in Cooper? What is your department's role in Cooper?

CS: I think everyone knows the department's role! Everyone here has many roles, but I think perhaps most importantly, I tend to teach courses that are integral to the Computer Engineering track, and I consider it my responsibility to make sure they stay up-to-date.

CP: How much do you like your job at Cooper?

CS: I love it. I feel very fortunate to have it. I know there are legitimate things that many people are not happy about, but I separate those things from the parts of the job that keep me happy.

CP: What advice would you give to Cooper students?

CS: Make the most of your time here. Don't be afraid to talk to professors outside of class.

CP: Who is your favorite professor at Cooper? Why?

CS: As a professor, I just cannot answer this one!

CP: What are some of your hobbies?

CS: I'm a pretty big movie buff. I tend to be most interested in movies that are not mainstream, including independent films and documentaries. I wish I had more time to take advantage of the ongoing film festival right now! Also, I consider myself a pretty good poker player.

CP: What are your plans for the summer?

CS: Many little things. I have been promising my wife for years that I would start to study Korean, and I plan to finally delve into that more seriously; I think that will be one of the tougher things I do this summer.

CP: Do you plan on traveling anywhere with your family?

CS: Two or three summers ago, I would have had interesting answers to this question. This summer (like last summer), nowhere.

CP: What are your goals for the summer?

CS: Prepare for next year, in many different ways.

CP: Do you have any recommendations for what Cooper students should be doing over the summer?

CS: It's different for everyone, I can't give general advice for this question.

CP: What do you think about Cooper's financial situation?

CS: Of course, it is very unfortunate, and I am not going to pretend that I really understand it. More than ever, since this has become public, I have come to think that the free tuition policy is integral to the school, and I really hope this does not change.

CP: What do you think about the student body trying to help resolve the financial situation?

CS: This depends on how I interpret the question. I don't want to see mandatory rules that make students indebted. Of course, there are many ways that people can potentially help, and we need all the help we can get.

Christopher Hong (EE '13)

Robert Smyth

Associate Professor of Mathematics

312 NAB

Cooper Pioneer: Where are you from?

Robert Smyth: I was born in New Jersey and have lived most of my life there. I currently live in Edison, NJ.

CP: Can you tell me about your educational and professional background?

RS: I have a B.S.E. from Cooper Union (1990), an M.S. in mathematics from NYU (1992) and a Ph.D. from Rutgers (1995). Most of my pre-Cooper career was spent at Georgian Court University where I taught math and comp sci, and served as the graduate mathematics program director. I also had short stints at Solomon Smith Barney as a programmer in the Global Equities Division and at Bucknell University as a visiting professor.

CP: When did you first learn about Cooper Union?

RS: I first learned about Cooper from a high school guidance counselor who convinced me to apply to the Engineering School. Though I didn't accept Cooper's original offer of admission, I transferred in for the spring term of my freshman year.

CP: What brought you to Cooper Union? When did you start working at Cooper?

RS: I came back to Cooper as a faculty member in 2006. At the time I was tenured at Georgian Court and not looking for a new position. Still, I accepted a friendly offer from the math department to visit, give a talk, and have lunch. One thing led to another... and, well, here I am.

CP: What is your role in Cooper? What is your department's role in Cooper?

RS: It's my department's responsibility to teach the core mathematics that engineering students will need for their major courses and their future careers. Of course, we also strive to reveal the beauty of the mathematics we teach.

CP: How much do you like your job at Cooper?

RS: I really enjoy working with Cooper students. They tend to be friendly and interesting as well as talented and hard-working. And it's both amazing and very satisfying to see how much they develop intellectually in just four years.

CP: Do you plan on traveling anywhere with your family?

RS: Last summer my family sampled life in China residing in an apartment complex on the outskirts of Shanghai for about five and a half weeks. This summer we don't have any plans. We'll probably stay close to home.

CP: What are your goals for the summer?

RS: I hope to make progress on one or more of my "backburner" projects. I'd like to refine the exposition in my draft manuscript on Galois theory and re-implement the supporting software using open source tools. I'd also like to advance a project for foreign language learners which provides real-time pop-up translations of DVD subtitles.

CP: Do you have any recommendations on what Cooper students should do over the summer?

RS: I've written so many recommendation letters for REUs, summer internships, and study abroad programs that I know very well that Cooper students are adept at finding useful and engaging summer opportunities. Since the interests and objectives of Cooper students are so diverse, the only general piece of advice I'd give is to make sure to find some time to relax and recharge.

Robin Kutner (ChE '13)

DAVID ORBACH

Visiting Assistant Professor, Pre-Medical Advisor, Assistant Director for the Kanbar Center for Biomedical Engineering

206 NAB, 704 lab NAB

Cooper Pioneer: Where are you from?

David Orbach: Rochester, NY.

CP: Can you tell me about your educational and professional background?

DO: Public high school. Cornell Ag. & bioengineering. University of Rochester biomedical engineering graduate school (it helped to have a great hospital near an engineering school.)

I worked in industry for a summer developing an assay to measure protein transport across the walls of ePTFE (GoreTex) vascular grafts (artificial arteries). During my final week there, I got a chance to watch a surgical implant trial with grafts like the ones I helped optimize. I quickly became interested in surgery. I returned to graduate school and started shadowing orthopedic surgeons and the entire plastic surgery team at Strong Memorial Hospital as well as various physicians in private practice. I studied hard for the MCAT, and when the score came back, I thought I could gain entrance to combined MD/PhD programs. That didn't work out. I got into PhD programs here and MDs there, but nothing combined. I was bummed.

The summer just before medical school began, I worked at the NIH analyzing neurosteroids using combined gas chromatography-mass spectroscopy. We were trying to elucidate the reason that seizure thresholds change during the menstrual cycle (catamenial epilepsy). The next summer, I worked for the US Govt at Lawrence Livermore National Lab, developing pathogen detection systems. The research was published in 2004, so I'm probably allowed to talk about it now. This was based upon indirect ELISA (antibody) tests done on the surface of microscopic beads to create a rapid, sensitive, and specific detection systems, with multiplex capability.

I worked on some of the immunochemistry and assay precision and demonstrated a nicely improved limit of detection over the current published one. Forty days after presenting a poster on things like anthrax detection in airports, Sept 11th happened. I thought hard about returning but decided to finish medical school instead. That lab ultimately won the $37 million Govt contract for pathogen detection. For more info, see http://www.nti.org/analysis/articles/sensor-technology-biowatch/

CP: When did you first learn about Cooper Union?

DO: I actually heard about Cooper during high school when I was applying to engineering schools. I knew it was an outstanding, tuition-free school with a project-based curriculum, but I couldn't find much information about it on-line at the time. I applied to places closer to home and ultimately went to Cornell University instead.

CP: What brought you to Cooper Union? When did you start working at Cooper?

DO: August of 2008. After working 80 hours a week for a full year as a hospital intern at Stony Brook, with my then-fiancé commuting 2.5 hours EACH way four days a week, we moved back to Manhattan, right next door to the private tutoring company she ran. I took two simultaneous, post-doc fellowships, each for two-years. One was at a hospital in Brooklyn developing a clinical research efficiency study to track and improve patient throughput and satisfaction in the emergency room. I also worked with our hospital IT dept to automate the electronic record/patient database extraction process to facilitate future quality assurance studies. My second job was at Cooper teaching biology courses and serving as the pre-med advisor and lab technician.

CP: What is your role in Cooper? What is your department's role in Cooper?

DO: To evolve. To inspire. To teach a set of fundamental knowledge. Then motivate self directed learning for the rest. To prepare students to anticipate, lead, and create the future. I inventory student interests on day 1 of every class. I give out a list of learning styles so students can try out different things. I ask them to list their short and long term interests. I enrich lectures based upon those interests.

I design biology courses with labs, proofread resumes and personal statements, identify strengths and weaknesses of pre-med students and help them find clinical opportunities to help application to medical/dental school. I wrote composite letters of recommendation and helped get 9 out of 10 students get into medical school that year (the remaining one got in two years later).

I also mentor student research (e.g., developing various medical products), and develop labs such as the cardiac cell sheet tissue engineering project. This one was especially great. It tripled as an independent study project, summer research for posters and publications, and an educational platform for the bio classes from which to teach embryology, dissection, cardiac pharmacokinetics, cell isolation, mammalian cell culture, and histology. I wanted to expand it so mechanical engineers could test the contracting heart tissue, chemical and civil engineers could test pharmaceuticals and toxins on it, electrical engineers could stimulate the electrically excitable tissues, and everyone could do image capture and biostatistical analysis. Unfortunately this project was shut down by the "safety" committee, I suspect because someone intentionally mislabeled it "partially hatched chicken eggs" before sending it upward to the powers that be for a final decision. It was never a safety issue.

It was a sad day. I switched to IGEM using bacteria after that. No one has a moral issue killing bacteria.

CP: How much do you like your job at Cooper?

DO: I love the students and the mission of Cooper. Teaching brilliant students who want to learn is great. Teaching biology, health and medical stuff to premeds and engineers is even more fantastic. I don't really want to give it up. I'll definitely keep teaching in whichever field I end up.

CP: What advice would you give to Cooper students?

DO: Try your hand at teaching, both one on one and small groups. Share teaching and learning methods and ideas with each other. Help each other learn. You'll be doing it for life.

Cooper is more like graduate school. It's so cooperative here. Enjoy it while you're here. Take advantage of it. Come to office hours and learn from your peers too. Monetize your knowledge. Apply, innovate, and build entrepreneurial skills. Learn to program iPhone apps.

If you find that you frequently just can't seem to study effectively, you owe it to yourself to get checked out for cognitive things like ADHD, depression, learning disabilities, etc. There are professional learning coaches and psychologists who specialize in study skills. Seeing them once or twice is far better than trying to go online to diagnose yourselves or trying caffeine, alcohol or other substances. Even if you had a disorder in high school, the work difficulty level asked was low, such that you probably could craft workarounds and get by with a 3.9 GPA. In college and later, when things become less structured and more complicated, self structuring your study time might be difficult.

Dean Lemiesz is awesome at referring free counseling. Call (212)420-2882.

Learn the DSM IV criteria for depression and anxiety and look out for each other too. If you see someone sulking or get the sense that the person isn't happy, let them know you're there for them. Cooper is an awesome community.

CP: Who is your favorite professor at Cooper? Why?

DO: I was VERY impressed by Nina Tandon's ability to organize the TEDx symposium at Cooper. She gave two presentations that night; one official one as listed, and one far bigger one demonstrating how one can organize a symposium, bring art, architecture, and engineering together in a targeted way to provide highest quality education and commentary about a wide range of topics and archive it so all that commentary is indeed free as air and water, forever on the internet in an organized, searchable way.

I love Robert Uglesich's teaching methods and style; he calls on students randomly using index cards, gets everyone talking, takes notes, really seems to get to know the students, and writes stellar letters of recommendation for them as a result. He cares so much. He should be dean someday.

I've read some books on teaching and design; it's awesome to watch George Delagrammatikas actualize all that theory as he carefully speaks to the senior mechanical engineering design students on day 1. Wow, that man can teach.

I love the content of prof Savizky's biochem courses, and from what I hear, he's doing some really innovative things with proteins and computation. I'd love to take his courses.

Dr. Wootton is a great mentor and is doing some really cool research in the Kanbar BME lab with sleep apnea, airway mechanics, exercise, behavior change, etc.

Robert Dell has many innovative ideas.

Alan Wolf is an articulate, concise, linear thinker who knows how to play the game, can sway politics, and influence important people. Respect!

My newest favorite professor is President Jamshed Bharucha. Where else does the president of the university make him/herself so accessible and actually teach students? Wow!

I want to take so many more courses and learn so much more because I'm sure everyone here has wonderful things to offer, I've just not been exposed to it all yet.

What do you mean, you were only looking for one favorite professor; you know this is an impossible assignment at a place like Cooper.

CP: What are some of your hobbies?

DO: I love downhill skiing. I raced in high school and was a ski instructor in graduate school. I also enjoy ballroom dancing and am always reading science, medicine, engineering, and technology journals. I also enjoy education and have been helping my wife's business grow by helping her create educational iPhone apps for kids. Check out "What Does Not Belong" on the app store (the first 10 questions are as free as air and water. Then if you like it, the next 90 are just a $1.99 in-app download. So far, she's had over 40,000 hits). It would be cool to make apps to help kids learn physics and engineering concepts long before they study them in school. Also, if you know anyone who sees the value of high test scores, please refer them to www.Brain-Grow.com

CP: What are your plans for the summer?

DO: To co-advise IGEM at Cooper in partnership with Columbia University again. Last year, we aimed to use the molecular biology and genetic engineering techniques learned in Bio 101 (cell and molecular), EID 320 (microbiology), and biochemistry, and the practical skills from the lab and from our awesome lab tech Dionne Lutz, to modify safe strains of E coli (intestinal/gut bacteria) to produce semi-conducting nanocrystals called "quantum dots." Yup, ask yourself how that was possible. Seriously, pause now for 10 seconds to think about one would do it.

The students involved made a plasmid by inserting the DNA that encoded for a metal binding protein (like those found in plants, which don't like to have heavy metals there and have evolved methods to sequester/wall off or export them out of the cell). We put the plasmid vector with the DNA coding for the protein of interest into bacteria, and modified the promoter in front of it, to make it light activated so we could attempt to control the level of expression, and hence the size of the dots made, thereby controling the color of light that the dots produced when electromagnetic energy was shined on them.

If you think that sounds cool, come take my biology 101 and microbiology courses and join IGEM this summer.

We were very grateful for funding from trustee Stanley Lapidus who personally donated $5000 to our efforts within 45 seconds of his hearing about it when we asked him for any contacts in the biotech industry who might want to sponsor our team project. We didn't even have to ask him; he just offered instantly. Also I'd like to thank Bill Sandholm who gave Cooper 1 million dollars to build up the biology offerings for Cooper students.

CP: Do you plan on traveling anywhere with your family?

DO: Don't laugh. We have a cat stroller. Our cat "Rhino" loves going to Central Park to watch the birds. He had a cold when we adopted him so we named him "Rhino-virus".

I've already spent summers in or lived in Israel, Australia, Western Europe, Chicago, Florida, California, Washington DC, and in at least 5 cities in NY State. I've driven along both coasts and across the USA. At some point, my wife wants us to travel to Paris. I wouldn't mind going to a conference in Asia one day.

CP: What are your goals for the summer?

DO: IGEM. Write student letters of recommendation. Publish research from my hospital efficiency work.

CP: Do you have any recommendations for what Cooper students should be doing over the summer?

DO: Join IGEM of course. Take two jobs to help you decide what you want to do in the future. You gain experience in both directions. Later, when you decide, you can drop one off the resume.

CP: What do you think about Cooper's financial situation?

DO: It seems a bit like receiving a diagnosis of diabetes due to previous unhealthy lifestyle choices. It's not our fault, but it is our problem. No sense complaining about it. It is what it is. Now, let's work together to move forward and help rectify the situation. We all start from where we are. We all need to put our minds to it and exercise so we can have nice assets.

CP: What do you think about the student body trying to help resolve the financial situation?

DO: I would love to see more ideas and fewer protests from the students. First of all, it's disruptive. Second of all, air and water are not free anymore. Cars have catalytic converters that help clean the exhaust before it's released from the muffler. This decreases fuel efficiency and increases costs.

"Education is a human right?" No way, not at this level. Public high school level education is free (well, tax dollar supported). There are a lot of jobs for which college is not necessary. Not everyone should have to go to college, but our high schools should be better. Citizens need an improved basic education. Maybe America should insert a choice of either a tax-funded pre-vocational year or a pre-college year after the 4th year of high school. I also think there should be a "second chance" at college later in life (5-10 years later), so everyone has at least a few chances to improve their standing in life.

"Keep tuition free as air and water?" Last I looked, the price of water in NYC was as shown in the table below.

Source: http://www.nyc.gov/html/nycwaterboard/html/rate_schedule/index.shtml

Try graphing that over time. Notice that's a 60% increase over four years. Do you REALLY want education to be AS "free" as air and water? Really? 60% increase over the last four years?!?!

Notice by the way that it costs more to get rid of ANY water than it does to obtain clean water in NYC. The more important issue here is how to save water in NYC. Take shorter showers.

Here's an idea for Cooper engineers, architects and artists for NYC, Haiti, and Ghana/Kenya Africa. Erect solar stills to serve not only to distill dirty/salty water but to double as a clean water transport mechanism in NYC as well as in developing nations. Route the salty ocean water passively through a series of giant solar distillation stills arranged such that the output of one becomes the input of the next, like the multi-segmented earthworm (biomimicry of the earthworm kidney.) You'll desalinate it, transport it without adding energy, and provide clean cholera-free drinking water for all in Haiti. It will also eliminate mosquito breeding grounds and help prevent malaria. How's that for integrating 7 of the 11 grand engineering challenges in one solution. This works at home and abroad.

The students are the smartest, most energetic people at Cooper. Definitely, they should be contributing to the solutions. Students and alumni definitely should give back too. Unless you need the money for a medical emergency, there is never a reason to withhold giving back to the college from which you graduated. At the very least, do it to keep up their rankings and thus your own resume. Even if only for selfish reasons, you need to give back every single year.

Come up with some number that's meaningful to you and write a check or donate on-line to represent your feelings at that time. Can you imagine the show of force if a bunch of people all donated a certain amount and what a powerful message THAT would be? Instead of a boisterous protest that lasts only one day or one week long, you'd have a permanent record on the development office legers of how you all felt about an issue. They couldn't forget about that.

Some examples for you to think about at three different giving levels depending upon your perspective and your ability to donate:

Announcement date for George Campbell leaving office: Nov 27, 2011 (11/27/11) $11.27 or $1127 or $11,270,

Date Jamshed Bharucha took office: July 1, 2011 (7/1/2011) --> $7.11 or 71.11, $7120.11 or $712,011.

Valentine's Day: "I love your mission Peter Cooper" $2.14 $214 $214,000

Choose something symbolic and have a permanent voice. Make a statement that way, but don't ever skip giving. Have fun with it, and spread the word to your friends. I would be thrilled to see >90% participation this year. Given this suggestion, there's no reason not to give something.

CP: Do you have any closing remarks?

DO: Sure. Even healthcare, which arguably is even more of a fundamental right than a high quality college level education, is not free. Sure, a basic level should be free (vaccines, initial antibiotics, a pain-free death, free contraception, and free, safe abortion for all). But the artificial heart and other costly contemporary things should not be free. You only get it if you can afford it. There has to be some incentive to work hard in high school and behod.

Saimon Sharif (ChE '15)

Fiscal Year	Period Covered	Change in metered water	Water Rate per 100 cf (748 Gals)	Sewer Rate per 100 cf (748 Gals)		Total W/S
2012	7/1/11-6/30/12	+ 7.5%	$3.17	159% of water =	$5.04	= $8.21
2011	7/1/10-6/30/11	+ 12.9%	$2.95	159% of water =	$4.69	= $7.64
2010	7/1/09-6/30/10	+ 12.9%	$2.61	159% of water =	$4.15	= $6.76
2009	7/1/08-6/30/09	+ 14.5%	$2.31	159% of water =	$3.67	= $5.98
2008	7/1/07-6/30/08	+ 11.5%	$2.02	159% of water =	$3.21	= $5.23

BRIAN CUSACK

Alumnus, Senior Systems Engineer, Adjunct Professor

812 NAB

Cooper Pioneer: Where are you from?
Brian Cusack: I am from central New Jersey by way of Pennsylvania and Michigan (long story).

My wife Lynn (ChE '04) and I (ME'01) live in Cranford, NJ with our pug Tully. I met the love of my life at Cooper in the swing-dance club.

CP: Can you tell me about your educational and professional background?

BC: I went to St. Joseph's High School in Metuchen NJ before I came to Cooper Union for both my bachelors ('01) and masters ('03) in mechanical engineering.

CP: When did you first learn about Cooper Union?

BC: My older brother Sean went to Cooper as a BSE. I had the wonderful opportunity to visit him and sit in on some classes while I was contemplating colleges. I loved the environment I saw, the camaraderie of the student body, and the whole atmosphere of Cooper. I applied early admission and got the best Christmas gift ever on Dec 21st 1996 – a phone call accepting me into the engineering program at Cooper.

CP: What brought you to Cooper Union? When did you start working at Cooper?

BC: I started working for Robert Hopkins as a student in '97. He hired me full time in '03 to write some web-applications and upgrade our email system. As more projects came, and adjunct positions opened, I learned that I never wanted to leave.

CP: What is your role in Cooper? What is your department's role in Cooper?

BC: Recently I have been appointed Co-Systems Administrator of the Datatel System, but I also maintain email, websites, web-applications and server based roles. I develop new applications on an as-needed basis for IT and various other departments. IT, as Prof. Hopkins likes to say, is everything on campus that has wires coming out of it (telephony/network/AV).

I am also blessed with the opportunity to teach some classes (CS102 and ME153 most recently). Being able to interact with students academically puts everything I do administratively into perspective.

CP: How much do you like your job at Cooper?

BC: I love Cooper – the quality/maturity/responsibility/loyalty of the students, the dedicated and talented staff and faculty, the entire Peter Cooper Vision. Many of my colleagues are also my personal friends. I smile every day that I get to work here.

CP: What advice would you give to Cooper students?

BC: Work hard, but don't 'just' work hard. Explore your world. Learn what makes you happy and what you can contribute to the world.

CP: What are some of your hobbies?

BC: Sometimes I think my hobby is collecting hobbies… most involve crafts of some sort. Currently I am most busy with: cooking, carpentry (custom furniture), lutherie, maintaining and improving our house, reading (mostly sci-fi and food related) and playing guitar.

CP: What are your plans for the summer?

BC: On Campus: Overseeing the EE section of the Summer Research Internship Program, teaching CS102, and continuing the Datatel rollout.

At Home: Building an acoustic guitar, misc home improvements and vacation!

CP: Do you plan on traveling anywhere with your family?

BC: Lynn and I will be taking a foodie road trip from NJ to Maine. If you have any suggested stops, let us know!

CP: Do you have any recommendations for what Cooper students should be doing over the summer?

BC: This advice is for the engineers: Internships. Cooper students are among the best in this country – but they are not alone. Other schools have big budgets for larger internship programs and co-ops with companies. When you graduate you will be compared with students on par with you. They will have relevant work experience. You should too. This means being proactive, networking, and aggressively pursuing internships – not just sending your resume to a few dozen companies.

CP: What do you think about Cooper's financial situation?

BC: Many in the Cooper community knew we were in a bad situation as of few years ago (every school was seeing hard times with the market downturn), but we believed that we were weathering the storm better than most. We believed that measures were being taken to mitigate risk, minimize expenditure and improve our finances. I am deeply disappointed to find out these impressions were false.

We need to address the missteps of the past while figuring out solutions for the future. I think a great deal of individuals who were not involved in the decision-making process that got us to where we are now, are nonetheless going to bear sacrifice. If we can maintain our mission statement:

"The College admits undergraduates solely on merit and awards full scholarships to all enrolled students"

Then I believe that those sacrifices will be worth it.

CP: What do you think about the student body trying to help resolve the financial situation?

BC: As an alumnus, I'd like to personally thank the students for everything they have done and continue to do. Keep it up!

I would like to add that the students do need to balance activism with academics. Every student at Cooper worked hard to earn their place here, but that is not to say that the gift of free tuition is in some way compensated for by diligence and hard work. Every student here has been given a very special gift from Peter Cooper.

A student's primary responsibility is to make the most of that special gift – study, explore, create. Learn. Become the best Artist/Architect/Engineer you can in the time you have here – then when you've graduated and moved on - remember that gift you were given and give back to support future students.

My wife and I are committed to giving at least 1% of our annual salaries to Cooper Union every year – I challenge graduates to do the same.

CP: Do you have any closing remarks?

BC: Drop by anytime to chat about cooking, guitars (especially heavy metal), robotics, wood working, or just about Cooper Union.

Jasmine Ahuja (EE '13)

PETER BUCKLEY

Associate Professor and Historian of Cooper Union

316 NAB

Cooper Pioneer: Where are you from originally?

Peter Buckley: I was born in Newcastle, England which is where professor Swann is from, but I'm from a better part of town.

CP: Can you tell me about your educational background?

PB: My educational background was, uh, pleasant. (laughs).

CP: Where did you go to high school and college?

PB: I went to high school at what was called a direct grant school which was an all scholarship private high school. So you can see the patter here. I went there and then I went to University of Sussex which was a so called "New University". My major was going to be English Literature and then, fortunately, I woke up and realised that American Literature was a much better option and a rare option in England at the time. There were only three places where you could major in American Literature in England. There are many more now. So I switched majors and then I had the equivalent of Junior year abroad, which was in this case to the United States. I studied for a year at Smith College which was an all girls school and still is. And there are stories there that would entertain your readers should I care to provide those stories. Then I finished in England and then pursued graduate work in American History at both SUNY Stonybrook, where Om Agrawal was, then CUNY Graduate Center which was then on 42nd street and is now on 34th. And that's it, I think.

CP: So what year was it that you came to America?

PB: I believe that the first time I came to America would have been 1975. Then I would have come back to graduate school here in 1977.

You mentioned you majored in American Literature. Do you have any favorite authors you'd like to plug in the Pioneer, so to speak?

Who would I like people to read? Yes. The more I read Henry David Thoreau, the better he becomes. I think Walden is a profoundly moving book and the fact that it's also the first real kind of ecological text is also useful. So that's what I would recommend. Thinking of that, I should probably assign it next semester except it doesn't fit in the course.

CP: How was it that you first learned about Cooper?

PB: I was at the time a Graduate Fellow, post-doc fellow at NYU and there was a notice on the main building that there was a job available here. Did I know about Cooper Union? Not as a living institution but only as a historical object because I had done much of my graduate work on 19th century New York. So I knew it existed but I probably thought of it as "The Cooper Institute" which it was largely called by that name throughout the 19th century even though, actually, its name hasn't changed. Most people referred to it as "The Cooper Institute" because by the time Cooper opened, the term "union" had been largely associated with labor unions. So most people didn't refer to it as "Cooper Union" because it was probably going to designate an institution devoted to barrel-making.

CP: What is your role at Cooper, aside from being a full time professor?

PB: Aside from being a professor? Well, my role. I have a couple of hats. I am the chairperson of the Planning and Assessment council and also the vice president of the CUFCT, the faculty union. In previous moments I was the chair of the Middlestates self study committee and also, for one year, acting dean of Humanities and Social Sciences before the current incumbent arrived.

CP: What advice would you give to Cooper Students?

PB: Don't think that the so called intensity of study means you can't enjoy yourself here. So occasionally leave the building, would be my number one recommendation.

On a more serious note, what do you think of Cooper's financial situation, if you're willing to discuss it?

Yes, I am. Cooper's financial situation is very trying and I am convinced we're in a genuine crisis. But I'm also convinced it's solvable without resorting to charging tuition for the undergraduate programs. I think most people know that everything I've been doing over the past year has been directed towards that outcome. I'm very impressed by the activism, especially by the younger alumni. The pressure they've bought to bear has been considerable and it's made a difference. I'm fairly convinced that without that protest, we will be charging tuition very shortly.

CP: Do you have any closing remarks?

PB: My closing remark is that Cooper will not close.

Clever enough.

Yes, I think I'd like to say one more thing. To say that I think Cooper should remain tuition free, at the undergraduate level, doesn't mean that I don't think Cooper should change. In other words, we will have to change. We should change whether or not there is a financial crisis. There are all kinds of curricular innovations that should take place anyway ,not least of which are finding ways for students to introduce more flexible scheduling of courses.

I think that this place has become more devoted to a certain kind of work ethic. It's not that students are working harder, they're just working longer. It seems that there's less and less time for everybody which I find really unusual: less time for faculty to meet each other; less time for students to engage in the kind of necessary associations and voluntary activities. I'm pleased to see that the Pioneer is back because for close to almost a decade, it hardly came out. You'd be lucky if you get three issues a year. I think that was a signal of something changing.

Marcus Michelen (CE '14)

DAVID GERSTEN

Professor of Architecture

210 NAB

Cooper Pioneer: Where are you from?

David Gersten: I'm from Albany, NY. I had the great good fortune to grow up working in a truck and tractor-trailer fabrication shop.

This was a wonderful community of craftsmen, founded in 1896 by my great grandfather, Jacob Becker, builder of wagons and sleighs, this shop evolved over the years and through the generations. Along with trucks we also fixed the local Ferris-Wheel and Merry Go Round, built fire trucks and horse wagons, and moved an occasional building from one site to another. It was the kind of wonderful place where everyone taught each other. There was a great respect for knowledge and people and making. The older people really knew what they were doing and they would share what they knew and really take care in what they did. The younger people would contribute in ways that they could - lifting, holding, crawling into structures, where only they could fit, to put the last bolt, and also taking care and listening. At the time, of course, I did not fully understand how rare such a community is; I was a very lucky kid. It was a difficult, but important decision for me to leave this place but I did it. When I was 18, I came to NYC on my own and got involved in architecture.

CP: Can you tell me about your educational and professional background?

DB: Well, when I first moved to NYC I went to an architecture school at NYIT, I was there for 3 years and then I transferred to The Cooper Union in 1987 and graduated from the School of Architecture in 1991. While I was a student at Cooper, I also did about two years of philosophy classes at the Graduate Faculty of The New School for Social Research. In those days, we had an exchange program and it was easy and great to take all kinds of intense seminars over there. In addition to teaching, writing, drawing and making in my studio, I have also done a number of diverse things professionally. In 1992, I founded Tree-Time Workshop, Inc. and served as the company's president until 1998. We worked mostly in the film, television, music and theater industries, providing production design and management, art direction, lighting design and wood, metal, plaster, paint and print-work. We had a large wood and metal shop, as well as a production company, edit suites, etc., and we worked on hundreds of projects for dozens of artists, including some of the greats like Leonard Cohen, Bob Dylan, Pink Floyd, the Fugees, Michael Jackson, and many others. A lot of the work was for Sony Music but we also did a number of projects for Columbia Records, Epic Records and PBS Television, etc. I learned a lot doing all of those projects, about people and imagination, about authorship and how certain parts of the world worked. It was a wild time as I was also teaching, and drawing and writing in my studio quite intensely during that period, it was a 24 hr decade. Then when Dean Hejduk asked me to be his Associate Dean, I knew I had to make a choice, so I got out of the film Industry and came to work with Dean Hejduk and the school and of course continue focusing on my studio work.

Then in 2003, I co-founded a finance and development company called Maimar, where I was a managing director until 2010. This was with another kind of experiment with a fascinating wonderful group of people from finance, land planning, architecture, water and energy management, people who all share the belief that land development and use is a form of stewardship of both the land and the community that lives there. We focused on sustainable growth as well as inventing new programs that would improve the communities and their environment. I am very proud of the work we did together, much of which continues to have a significant impact on people's lives.

These days in a different way some of the questions of film and theater are coming back into my teaching and creative pursuits. I'm working in a number of different ways with film and theater as ways of asking questions, of gathering us together and developing new modes of knowledge and new social contracts.

CP: When did you first learn about Cooper Union?

DG: The first time I ever heard of The Cooper Union was from Sanford Feldblum my drafting teacher in Albany High School. I took a two-year drafting program in the vocational school. But I really did not hear of Cooper Union again or know anything about it, until I met Rodolfo Imas at NYIT. Rodolfo is a wonderful architect, teacher, and magician who I was very lucky to meet when I first came to NYC. I'm not sure I would have ended up staying here if I had not met him. He opened up a whole world for me that I knew nothing about. In addition, to people like Jerzy Grotowski, Julian Beck (and more) , Rodolfo kept talking about John Hejduk and Raimund Abraham and The Cooper Union!

CP: What brought you to Cooper Union? When did you start working at Cooper?

DG: The creative intensity, depth and ethical dimensions of the community at Cooper, that's what captured me. When I first moved to NYC, the loss of a caring, knowledgeable community of truly generous people was a bit overwhelming. Other then Rodolfo and a very few close friends, it was difficult to find anyone who really knew something and was truly willing to share it. Then one day I saw John Hejduk speak. It was extraordinary. I saw an individual who carried all of the deep sense of humanity I had left (in the community of my youth) and at the same time he embodied the very creative yearning that brought me to NYC. I saw an uncontainable energy of the creative intellect at work and I knew I wanted to be apart of this community. I applied as a transfer student, was rejected, applied again and got in. Then when I graduated John asked me to stay and teach, draw and write, and I have been here ever since. As John might say, 'I have been a real lucky duck!' to go from the uncommon, astonishing community of my youth to another uncommon, astonishing community at Cooper, where I have been able to continue to grow and ask questions, to develop as a creative individual.

CP: What is your role in Cooper? What is your department's role in Cooper?

DG: I teach studios and seminars in the School of Architecture.

CP: How much do you like your job at Cooper?

DG: Well, I would have to remove the words job and like.

I LOVE COOPER UNION.

CP: What advice would you give to Cooper students?

DG: I think it was William Burroughs who said; advice is a form of nostalgia, and I'm not prone to either (advise or nostalgia). But I would say, as my students often hear; all we can do is search for our questions, and by this I mean literally, what we are really curious about, what we just know in our stomach that we need to go after. Our questions, our need to comprehend and act, ultimately are the only thing that can keep us moving forward. In addition to this, I start each studio by telling the students that I have only three criteria: risk, precision and honesty, with all three of those, anything and everything is possible, take away any one of those and basically, its over.

CP: Who is your favorite professor at Cooper? Why?

DG: Cooper is filled with wonderful people, people of depth and character with a great generosity of spirit. Across the entire community I have many friends who create the place who contribute to a human environment of creative questions, of care, craft, thought, depth and humor. It is one large living conversation that I am blessed to participate in. It makes no sense to single out any individual, having said that I would add that Monica Shapiro is one of the most precise, intelligent and unique people I have ever met. To quote John Hejduk 'I love Monica Shapiro, and do you want to know why, because she keep her promises!' Having mentioned humor, I also have to give a high five to my friend James, at the guard station in the new building, without his human humor on a daily basis, I'm not sure I could survive that building.

CP: What are some of your hobbies?

DG: Not sure hobby works here but in any case; I draw, I write, I make, I teach, I listen to people.

CP: What do you think about Cooper's financial situation?

DG: Much of how I feel about this I have said publicly already. In the Great Hall, I gave two short talks, one is called 'Education is a Human Right' and the other is called 'Removing barriers mobilizes resources', I believe both of these are available on-line.

CP: What do you think about the student body trying to help resolve the financial situation?

DG: The students voices are essential in this moment, the first step and most essential step in solving the financial situation is a clarification of our mission. The more precisely we can articulate our mission, the more credibility we can express our value, the stronger our credit rating will be. It may sound simple, but just look at the last few hundred years of transformation in any arena, the fuel driving transformation always moves into the most precisely articulated vision of a possible future. The students are key to this, they have a great capacity to articulate the meaning of this place; they are at once the beneficiaries of this structure and the elements that create it. It's a moment that requires radical invention; we should take the radical move of listening to the students for vision and ideas.

CP: Do you have any closing remarks?

DG: I would simply thank all of the people of this great school for their creative contributions. It could be said that a place of spirit is the greatest gift of memory, and making is the acceptance of that Gift or Place. I certainly have been blessed and honored to work and create in the particular community of The Cooper Union. School is not a means to a predetermined end, but, rather, a place for significant works; where the debates within the works reflect the debates within the school; where the depth of the works reflects the depth of the school; where the ethical dimension of the works reflects the ethical dimension of the school. That's what makes Cooper Union such a powerful community. With the depth of the people here and all of the debates that have occurred within this place over the last 150 years, we literally 'stand on the shoulders of giants'. As we continue to debate, it is all of our work and our works that will navigate the school.

Christopher Hong (EE '13)

STEVEN BAKER

Associate Dean of Students and Director of Intercollegiate Athletics

6th Floor, 30 Cooper Square

Cooper Pioneer: Where are you from?

Steven Baker: I was born in Manhattan, Washington Heights.

CP: Can you tell me about your educational and professional background?

SB: I went to Dewitt Clinton High School in the Bronx. I went to New York University and Columbia University. My academic life previous to Cooper Union pales in comparison to Cooper. I had some great opportunities in terms of colleges because of what I could do athletically and I did okay academically.

The thing I am most proud of is that I was associated with all three schools of Cooper Union. I was associated with the school of Architecture, Engineering, and Art. I taught at all three schools which gave me a complete understanding of the students, faculty, and administration, the philosophy, the purpose, the dedication, and the passion of each of the three schools. I think that I still have that advantage of being the associate dean of students of having the affiliation of all three schools and I have friends in all of them. I spent a year in Columbia before I came to Cooper Union so I have been here for forty six years. Professionally, it was all about the one year at Columbia so then forty six years at Cooper Union. It is a lot of living, enjoyment, and working together with you guys. I was trained to teach biology, earth science, hygiene, and physical education. When you have been prepared to teach all of those things, you can teach anything.

CP: When did you first learn about Cooper Union? What brought you to Cooper Union? When did you start working at Cooper?

SB: The crazy thing about it was that I was always aware of Cooper Union as a little kid and I ended up here. Everyone was aware of Cooper Union. When you grow up in Manhattan, you knew that Lincoln spoke here, all of the history and the traditions of it. I mean, no one in my neighborhood went to Cooper Union: it was the most difficult school in the world to get into. I was put up in pretty tough neighborhoods. I was always aware of it because of what it stood for academically.

When I was in Columbia, I was working in New Hampshire that summer and I got a call. I was recruited for Cooper Union, which was pretty cool. I got a call from the athletic director of Cooper Union and he said that he talked to people in NYU, Columbia, and all of the metropolitan area's athletic directors. He said "From what I hear, you are the number one guy for teaching and sports, which was a nice compliment. I was a little bit reluctant to come down from New Hampshire for the interview but I realized what it was all about. I was at Columbia, which was great, where I was coaching freshmen baseball and I coached there at '64 and '65. I was already getting established as a very young guy at the college level. I had some pretty good teams and a lot of success. But the urge to go to Cooper Union was too great. I am an academic snob when it comes to you guys and what I felt was an opportunity to work at Cooper Union would give me just the right amount of dosage of that: to be associated with you guys, mainly the students.

When I took the interview, I knew I wanted the job which was really pretty cool. The president of the school shook my hand, in front of the foundation, and turned to me at the end of the interview and he said "Tell me three things about yourself." I said I am ambidextrous, amphibious, and resourceful being brought up in Manhattan. I knew, since they asked the right questions, that I would take the job. I didn't realize how special it was until about three months into the job. There used to be a place called Wallman's lounge in the engineering building and you weren't allowed in there unless you were dressed up. Halfway through the first semester, the freshmen in the lounge said they wanted to talk to me. I told them I couldn't come in, there were rules. They were cocky freshmen and kept telling me don't worry you can come in, you can come in. So I went in and there were five freshmen who said that they needed my help.

Then I realized that I belonged here because I was so impressed that five students needed my help with something and coming from where I came from, it meant so much to me that I could help some of the brightest students in the world. From that point on, I became a better person and professional from seeing that and hearing that. It influenced me for the rest of my time here. I think all of the times that I need your help so it always comes back.

CP: What is your role in Cooper? What is your department's role in Cooper?

SB: Initially, we had a required course in physical education in addition to some varsity sports, which were limited. There was bowling, fencing, sailing so that was when I first got here plus intramurals. I eventually became a professor but I started up as an instructor. That was the initial department. What happened was there were financial cutbacks which affected our department and the physics department. Both of the bosses of those departments were retiring so they decided that to save money they would just do away with both of those departments. It lasted about a year and a half but they came to me because the students had turned around and wanted me to stay. They also wanted me to become a dean so they created a spot and then we had to create this whole department. It was between you, the students, and me.

We have developed this whole thing in the last thirty six years and it has all been developed between you and me. That's what makes this whole thing so special. Everything you see has been started by us; how unique is that? Especially at Cooper. That's Peter Cooper in a nutshell in terms of how we're doing something, how we started, how we're perpetuating, how we're making it better and how we're enjoying it. It's a very special thing. The biggest problem was that more kids from Cooper, percentage wise, went to get their Ph.Ds. than any other school, in physics and math. By losing that department, it was upsetting to lose those kids. They paid off the professors with a severance pay but here was the thing. As a tenured professor, if I left, than they couldn't hire anyone else to do what I was doing. When they made that decision, they turned around and gave me a job and made me a dean.

At that time there were only four deans, now there are a lot of deans. I was the youngest guy made a dean or even a professor. That was so special that they put us together so I sat with the students like I still do and when we started the ski trip, eventually started basketball. Tennis was the first sport we had. That's a little bit of history of the department. My boss started that whole thing in 1940 and he had to retire in 1975. I have that great understanding and the good fortune of being both a professor and a dean.

CP: How much do you like your job at Cooper?

SB: I don't consider it a job number one and I think every single day that I come in; I know it's enjoyable because you are around people who have the right work ethic, tremendous passion, don't look at a clock, and can work seven days in a row. I don't think what I do is a job or will ever consider it one. It's something that when you're in an environment of excellence, you're preparing and performing at all times. The students are, the faculty is, and I am. You have to be prepared at all times and you have to perform at a level that I don't take any time off in that sense. When you're doing things at this level, you have to get better at every single thing you do.

When I taught or when I coach something, I want to make sure the second half of practice is better than the first half. I want it to be so enjoyable and thorough. I think that's one of the reasons we don't talk about winning and losing. We're in an area where we have to get better at the things we do. You guys are going to be leaders and successful people but I don't think that this is a job. Especially in a place like this; you can't think like that. That's the important thing; I think about you guys first and Peter Cooper and what he stood for and what the school is all about. I have never had a bad day at Cooper Union and I won't let you guys have a bad day. I believe in the Cooper Union, I really do.

CP: What advice would you give to Cooper students?

SB: Take your time to enjoy the people you are around because I think for the rest of your life, you will never be around so many brilliant, intelligent people that you can enjoy things in common with. The work ethic and the levels of success is always a common thing. I think we're getting geekier: as a school, we're getting geekier and the people are getting geekier. I think that's a great thing considering that's the world you guys are going to be entering in. In the ski trip and Cape Cod, you have those experiences where you don't lose sight of what you have to do but you realize what it's all about. I don't like to give advice but I do it for a living. As a cooper student, you have to take the humility hat off and look at who you're with, what you're doing, what you're thinking about, and what you're able to do. All of those things are wrapped up in what is expected of you and what you expect of yourself. I don't think there are too many environments where you can be involved in a way you are here at Cooper. Wherever I go, whether it be summer jobs or I used to give some advice in different companies, I always remember who I'm representing and who I'm involved with every second of every day. I think it's an environment you can't compare it to with anywhere else. I've talked to people who have gone to law, medicine, corporate business, and they don't forget what they did here. Professor Brazinsky remembers the things he did here; people don't forget. I am the keeper of all secrets. The conversations I have, things I see, people enjoying themselves, the culture show, the talent show, the interactions. If I see you with a Professor, I won't come near that. How special is that; that interaction between professor and student that he or she will take the time to talk to you. You guys influence me so you think I can let up?

CP: Who is your favorite professor at Cooper? Why?

SB: Professor John Bove is my favorite professor because he lived it. He loved to teach, research, prepare, and he loves the students. He understood the life of the student, professor, and the responsibilities. He never used the book when he taught his classes. He was always dedicated, prepared, and was extremely articulate. Plus he's a Yankee fan but he's a great friend of Cooper Union, of mine, and more importantly, the students. He's a great friend of learning the real approach of learning. He set a level of excellence that was just really appreciated by the people in this school.

I thought that John Hadick was a tremendous representative of the Architect profession. He shaped the school and the world in appreciating architecture. He was a great friend of Cooper and a graduate. He was an exceptional teacher and had an unbelievable passion for his specialty. He incorporated everything you could incorporate into education. Two very special people but John Bove was my favorite. He set an example for everyone in how he continued to set the standards, to be the best. Everyone who got to know him knew how valuable of a professor he was. He was a real professor to me. He professed his passion, he wanted people to learn, to be educated, sophisticated, and that was the essence of his being. For a guy to teach for as long as he has, with the level of excellence he does, is remarkable. You can't do that unless you have all the ingredients that he has. That's not to insult anyone who has ever taught here before. No one speaks as much as I do but I listen, I pride myself on that.

CP: What are some of your hobbies?

SB: I like to ski, skiing is my favorite thing. I like to swim and I am taking up this wood carving. I like music. The thing that I enjoy the most is writing, I'd rather write than read especially in this stage of the game. When I write, Im writing my own stuff, when I'm reading, I'm reading someone else's stuff. I want to make sure I break it down that it's coming from me than from a book; I teach you how to ski differently from a book would. I always like to swim because it gives me a feeling of who I am in a domain or presence, where we're not supposed to be able to do anything. We're trying to breathe and swim like a fish.

We're trying to do something different. It puts me in an area where no one will bother me. I don't have to talk to anyone and it puts me in an environment that I really love to be involved with. I mean, skiing gives me elevation; it gives me freedom to express myself. Swimming gives me a chance to focus on something we're not supposed to be doing. I write every night, two hours of homework a day.

The woodcarving is something new, Professor Cusack gave me a piece of wood, he's an expert in it, and I am carving the lighthouse that's underneath the Washington Bridge. He gave me a special piece of wood and I have all the tools. The owners of Mount Sutton gave it to me. The owner of Sutton, Bromount, and two other Canadian guys go to my house in Cape Cod in March to play golf. Last year they gave me some really professional carving tools. I always consider myself amphibious. I'll try things not so much as a hobby though. If I saw you doing the unicycle, I'd say why can't I? Id talk to you about it, I might borrow it, and see if I could do it. If you can, why can't I? There was always a stimulus there for me to try these things. I still have the ability that if you're interested in something, I would figure out why you like it while I'm trying to do it myself. It always helped me because I always wanted to do more things, and do them well.

When I was a kid, I didn't have time to learn how to play music and I never owned a record. I go to that talent show and I think it's incredible. I go to the culture show and it's amazing to see people come from all different backgrounds and trying things from cultures they're not even familiar with. Theyre taught how to do it and they participate in it. With me, I like to try things. Everyone has talent so why not do those talented things? Especially here at Cooper, you have to make time because look at what you're doing. For those thirty weeks of the year, you got to be ready to go twenty four hours a day. My idol was Roger Bannister who in 1954 ran the mile in four minutes. He became a doctor. At the end of every race, he collapsed out of mental, physical, and emotional exhaustion. He gave everything he had. I want to figure out a way where I can collapse at every race, like I gave it my best, but I think there's more to me than just that. I want to have the ability to get right back up and run that same race even better. That's the attitude I've always had.

I'm trying to have you have something on reserve so you can, after getting your brains beaten in physics; you can walk right into chemistry exam five minutes later and have that same level of energy. Through your inspirations, I have that ability. Around you guys, there are certain words I don't use or let you use like tired, busy, a whole bunch of things. You got to keep pushing. What Roger Bannister did was great but what we do is even better; to give everything you have and then find it again very quickly to do it again and again and again so you don't just collapse. You got to do it, don't let anyone see that you're physically emotionally or mentally drained and get right back into it. That's what makes this place special.

No one is going to sympathize with you if you say you're tired or I'm busy. Everyone is in it the same and that's the beauty of it, regardless of your major. That's the beauty of being here and I take that approach every single minute of every single day. It's all about you guys. To me, there are so many comparisons to Sutton to Cooper, just when you think you got one turn mastered, there is still more to go there. That's one of the reasons I keep going up there. Everyone is different, that's what the beauty of it is as well.

CP: What are your plans for the summer?

SB: There are two things about the summer. One, I want to spend a lot of time in Cape Cod and because it's a presidential election in November, I want to spend a lot of time evaluating the direction of the country, the opinions of the people running for office, all the different levels of office. I am very interested in that kind of stuff and I will have time to think about it. I will go to at least eight or ten Yankee games. I will play several rounds of gold and I am going to be sitting home waiting for postcards from special friends from people going to Iceland, Spain, and everywhere else the engineers go with the program. We'll also be planning for all the trips.

CP: Do you plan on traveling anywhere with your family? What are your goals for the summer?

SB: My family and I will spend a lot of time in Cape Cod with the teams. We're going to a couple of weddings but we won't be traveling anywhere. It's a year where Cape Cod is going to be very important because we really want to enjoy Cape Cod. We're going to spend a lot of time there.

CP: Do you have any recommendations for what Cooper students should be doing over the summer?

SB: I often wonder how you guys do it. There are no clocks for fifteen weeks, and then May tenth it's over. I think it's too much time, intellectually, for you guys to have off. At the level that you guys have to perform at, you will need a couple of days unwind, spend time with your family, and closest friends to get it out of you. That level of intensity is with you so you got to get it out. Most people work until August 1st, have time to travel, and then the athletes come to Cape Cod. Your brain is so active and then you're away from Cooper. Then all of a sudden, you're away for too long.

In my opinion, I think school should start August 1st. It's amazing how you guys can come back in September and then all of a sudden, it starts all over again. It's not as if you guys go to Harvard or Princeton or NYU where you have a couple of days to get acquainted. Everyone on the first day is all relaxed from the summer, the second day, you're initiated right back and by the third day, you're already saying "I got to do this, I got to do that." You're going from a level of intensity that is in your face all the time to all of a sudden relaxation. Then you got to some back. I am always amazed how you can go to the end of the line like Bannister, collapse, re-gather yourself until September. You're not going to take that same level of intensity into a summer job.

That's why I ask so many questions at this time of year and when you come back because that's when I listen so much. I find out what you did this summer, where you went, and what you did. You hear the craziest combination and they go everywhere. That's why I have postcards from all around the world every year. I often wonder what that level of intensity is because I see the pride people have about that intensity. You're going to do something so different from that level. There are very few people in the world like me that are doing things that they like so much with the passion I have, especially about Cooper.

While you're a student in the summertime, do the things you really like to do. Don't worry about getting paid but just do the things you really like to do. For the rest of your life you're going to be doing things to make a better world for everyone else. Sometimes, you have to think about yourself, so if you have the opportunity to do something you like to do, take it. Whether that's being a monk or volunteer your time or doing something with young or old people or whatever it is, you want to do those types of things when you have the time to do them and now is that time.

Your work ethic is going to be the same forever, your level of expectations as well. At the award ceremony, I showed a picture of a guy who got his Ph. D. in math, two architects, two guys who graduated from the University of Michigan Law School, a Fulbright scholar, and a dentist. You guys are going to do better than that. I'm sitting there pointing out this one time and there are people in the audience who might be doing things that are better than that. Sebastian is purifying the water in Haiti, or he's in a Panama. You figure out something and you do the things you like to do. You're always going to do something that's going to help somebody because of what you're preparing yourselves to be. I go out to the tennis center last night, we play St. Joes, and there's a high school match going on next to us.

The coach of one of the high school teams comes up to me and says "Hello, Mr. Baker. I'm Alexander McDonald." He played little League baseball for me. He's remembering things and now he's coaching tennis and teaching at the Trinity School. How rewarding is it for me to say those things about the people in the picture or if I can talk about Robin or if I can talk about James or anyone in that room. I might be a hundred years old but if I am a hundred years old, I'm really two hundred years old because I have had a hundred winters and a hundred summers. Most people when they finish their education are going to start working fifty weeks in the year so they don't have that winter – summer. I work at Cooper in the winter and in the old days I used to take a summer job. I think that's one of the reasons I have such a great memory because I can say alright in the summer of 1973, I did this or I can remember the class of 1973 or all the different teams. You will have several different jobs but you might as well do the things that you may not have a chance to do. It's more about doing the things you like to do.

If I didn't like what I do, I wouldn't be here a day. I wouldn't be here a minute because I am only going to do things I like to do and I have always been that way. I think you have to, especially as a young person and the way you work here, do the things you really like to do. You're around people, in Cooper, who are so humble but yet they're confident. They're humble because they don't want to say they played the piano and it's amazing at what they can do. Yet, they're talented, driven, and passionate. I listen and then all of a sudden, I find out that you play the piano. I tell the tennis players, take the extra shot to make the point. It was as if someone came in here to interview you from IBM. You would be so courteous, so polite, but I would tell them to take to ask you an extra question or two and if they just click on that one thing, it opens you up. Then they can hear how great you are, how you do things, how in depth you think about things, just by asking that extra question. You'll hit something that you're really good at it and get really comfortable with it and keep up the conversation.

Always do something you like not something new because people get turned off quickly. I don't ever turn around and say I should have said this or done that. I say and do it all, gave it my best, and no one sleeps like me because I don't go to bed thinking about anything. You don't have the opportunity to do that too many times and I've been given that opportunity here. To do what I do, I've been very lucky, but it's all been created by you and me, with Peter Cooper in mind, which is the very special part of it.

CP: What do you think about Cooper's financial situation?

SB: I think we have a great opportunity as a family to correct the financial status of the school. I think we've, on occasion, spent too much money but I think we have the ability to correct that. I know the students didn't spend the money and I would like to see all of us solve a family situation. The fact that I am here for forty six years, I have seen four or five financially tough times that we have had to deal with. There is no academic institution in the world that is similar to Cooper Union in its mission or its financial responsibility so we can't just start to charge a hundred dollars more a credit because we don't have any tuition. It's a big difference. I think there are sacrifices to be made. It's a very meaningful thing to society and the academic world to maintain what we do.

CP: What do you think about the student body trying to help resolve the financial situation?

SB: We all have a responsibility in this. Cooper Union is known for developing problem solvers so the students should have an active role and a part of in the discussion including the faculty and the administration. We have all got to be involved with this. I think the students have to realize where the scholarship comes from and totally appreciate it. The whole philosophy was Peter Cooper and how we maintained it including donations from the outside and the alumni. We made some great financial decision and each of us plays a role in that. For example, I was very disappointed with four professors who I had a conversation with in front of the foundation building. At no time, did they mention the students, Peter Cooper's Union. They only talked about their own union. Its client appreciation; you guys are the clients.

We are all here for you. We spent a lot of money, it's done, the money is spent but we're not going to spend a lot more. We have to gather up and keep the level of productivity and product here. We have the best students and professors here and we want to keep it that way. I think we have the ability to maintain that level of excellence, if we have to change the hours of the school or condense a little bit or add something.

When I first came to the school, there was a day school and a night school. The day students had to vacate the premises after about 5 p.m. and the night school students came in. Now it changed, and there's a lot of space and flexibility of things that can be done, seeing what I've seen. Very few people have seen what I've seen. We have to promote our students more than we are. That's why we're all here. Peter cooper encouraged all of us to be autonomous, to speak up, to encourage one another, to do something better for this world. I think the students can play an even more active role and it's never been a political school even during the Vietnam world or during Kenn State shooting. It wasn't big for us.

There were two separate demonstrations yesterday, one in front of each of the buildings. That showed that there was one thing going on in front of each of them. There was a good amount of students going about their normal rigor as Cooper Union Students so it was a great day for Cooper Union, in a lot of ways. I think that they have to think about all the positive stuff. It's how you spend the money that's important. The students can play an active role and we need to open it up to have discussion with students, administration, and the faculty. I think the students are brilliant, they can help out, but we have to do it as a family. Everybody has got to have a role in how we're going to go about it.

The money might have been spent for you in some ways but the thing I valued the most was the joint faculty meetings with the three faculties. You would have varied opinions but we were all pulling for the same team. Most people point to the foundation building and say "Oh, it's the art school" as if you are not welcome in there or "that's my building". Its Cooper Union's building, give me a break. It's unbelievable. If the artists see the dean of engineering, they don't know who he is. If the engineers see the dean of art, they don't know who she is. If the engineer or artists see the dean of architecture, they won't recognize him. You guys are the ones in charge.

This is such a beautiful place but we're being threatened with this financial stuff; we spent too much, whether it's the new building, or it's the renovations, or the programs. We spent it at a time when we thought it was okay to do it and they overspent. Now we have to raise it but I have seen it happen. We all have to be pulling together and I think we all have strengths to help the situation. With the new president, you have a great opportunity to do this. I think he stands a real good chance of getting it done. I think the trustees, the faculty and the students are all going to help us. I think it's a good team. It's a special time for special people to do special things in a big time way and I think we can do it.

We had discussions with our players and we're going to cut back but rely on the way we raise money for the teams. I am always optimistic but I think it's going to be a tremendous challenge. It's almost like everyone is ready to take a stand. You guys are the best group of students I have ever seen and you are ready for this. I think the faculty is really going to have to step it up. I think they have a good mixture of young professors who want to help so you have to give them the opportunity to help. When you look at it, the morale isn't as good as it should be. We're having the greatest time between the students and us. We're ready to help in a big time way.

CP: Do you have any closing remarks?

SB: I am glad to see what the Pioneer is doing. It has been dormant for so long. It's a giant and it's an expression, especially in such a media driven society. It's amazing to see what you guys have been doing. It has created an interest, it's timely, and it's everything. The fact that we're getting geekier and it's a great way of expressing what's going on all across the three schools. It's a very interesting thing that's going on. It's a really great time to be a student at Cooper Union because of who's here right now. The students are the best for everything that's going on, in terms of participation, involvement, wanting to do more, having the ability to do more with a passion, to do well academically and still show the talent that they have. I am finishing my forty-sixth year with a higher level of intensity, enjoyment, and love for the Cooper Union and the students. It's something that one of our great professors said to me last year when I had the heart attack. They said "You received hundreds of letters and emails and phone calls, thousands, and the great thing is you're still alive to see it all". It's a great thing for me. In closing, there's no place like it and I wouldn't trade places with anybody. Nobody.

Yara Elborolosy (CE '14)

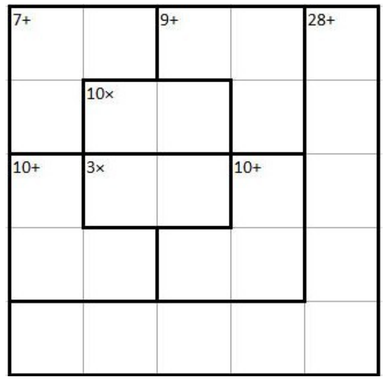
Ken Ken

Marcus Michelen (CE '14)

KenKen is a Japanese paper puzzle by Tetsuya Miyamoto much like Sudoku, only it involves both math and logic. It roughly translates to "cleverness-cleverness."

Instructions: Like Sudoku, each row and column must contain the numbers from 1 to 5. The number in the upper-left corner of the bolded shape made up of squares is the number you need to get by using the operation next to the number. For example, the "7+" rectangle in the top left corner can be filled in with a 1, 2, 4.

The solution to this puzzle will be released sometime in the future. The solution to the KenKen from Mini-Issue #12 is on the bottom of the page.



Cryptoquote

Marcus Michelen (CE '14)

A Cryptoquote is an encoded quote. It is encoded such that each and every occurrence of a letter is substituted with a different letter of the alphabet. Using clues such as frequency of occurrence and placement, the original quote can be found. For instance, the word XBDIKCXXBZ could be deciphered to reveal the word LONGFELLOW.

YDH KNXDY YB KHZHWWNBV

NO YDH KNXDY YB OHHU

I DNXDHK KLWH, IVF VBY

YB MIVFHK NV AHKH WIM-

WHOOVHOO.

-XHBKXH HWNBY

The following is a reconfiguration of Robert Frost's Fire and Ice. I have always loved this poem due to its simplistic, yet profound portrayal of the spectrum of destruction. After some slight alterations it is quite applicable to the creative spectrum, which we experience directly here at The Cooper Union. Following Frost's lead, I suppose this would be called Science and Art:

Some say the world depends on science,
Some say on art.
From what I've measured of appliance,
I vote for those who further science.
But if we did not cherish heart,
We likely would not procreate;
    i say that for seduction
art communicates
    and that's a start

Michael Ketigian
BSE 2012

The solution to Mini Issue #12's cryptoquote is:

RELIGIONS DIE WHEN THEY ARE PROVED TO BE TRUE. SCIENCE IS THE RECORD OF DEAD RELIGIONS.

-OSCAR WILDE

The solution to Mini Issue #12's Ken Ken is below:

2	4	5	1	3
4	5	2	3	1
3	2	1	5	4
5	1	3	4	2
1	3	4	2	5

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