On Thursday, October 2, Coo- per Union welcomed Professor Daniel Barber, Associate Chair of the Department of Architect- ure at the University of Penn- sylvania, to deliver a free, public lecture on how structural design responds to the environment and to global climate change.

"LESSONS FROM MODERNISM"

On September 22nd, a troop of students hurriedly made their way to each room in the dorm, with a huge bucket of lights in their possession. When I opened the door to them, they quickly stated their plea, and I felt a whirlwind of red lights in their wake.

These students are part of Free Cooper Union, which protests against the unfolding tuition debate and student debt cri- sis. We hung up the lights they gave us and in twenty minutes, the entire dorm building was flooded in red lights. People on the street stopped, stared, asked questions and left in awe at the amazing unity of the residents in the dorms.

The idea for the "Red Light District Project" stemmed from the Quebec student protests that occurred in 2012. During these rallies, students wore red squares to protest the dramati- cally increasing tuition they faced. In addition, The Cooper Union alumni and upperclass- man made the huge clock in the Peter Cooper suite red dur- ing their occupation. Reflecting on these two situations, a group of freshmen in the dorms de- cided to implement these ideas into a form of a visual protest. Believing that the freshman will be adept with the newly instilled tuition and adminis- tration, Free Cooper provided a way for freshmen to voice their opinion without hesitat- ing to display dissent. "We wanted to give them an oppor- tunity to speak anonymously, show solidarity to students who were participating," comments a freshman who wished to re- main anonymous.

The Roxy Auditorium hosted Prof. Barber as he took his au- dience through the historical progression of an architectural movement he calls "retromodern- ization," which he described as a specific undertaking of the larger modernism movement of the 20th century.

As an architecture historian, Prof. Barber studies how other architects consider scientific and historical knowledge of the glob- al environment and incorporate them in their own work.

In his talk, he cited the work of Victor and Adalaj Olgyays pio- neers in the field of bioarchitec- ture in the mid-century, as an example of using purposeful structural designs as a means to maintain the climate in a space. He emphasized the benefits of this approach, as opposed to mechanical systems, for heat- ing, ventilation and air-condition- ing (HVAC), implemented in almost every modern high-rise. The Olgyays researched a precise definition of the universal comfort zone, which involves the optimal balance of environmental parameters such as temperature, humidity, and sunlight. To maintain this balance, the Olgyays designed the free-solids, a sunshade that deflects sunlight, which is now a commonly used structural feature in landmark buildings, such as the UNESCO head- quarters in Paris and The New York Times building.

In the informal Q&A session following his lecture, Prof. Bar- ber also commented on the need for more open and fre- quent public discourse on this matter. He voiced his opinion about changing the conversa- tion from refraining to discussing how previous decisions in histo- ry have resulted in the current climate crisis, and instead move towards openly discussing what needs to be done now. He said "we're sick of hearing about how we should have done it dif- ferently." They say hindsight is 20/20 and there is no doubt that learning from mistakes made in the past can prevent foolish repetition of the same mistakes. However, the need for clairvoyance is now and for decisions for our future must be made in the present. Respond- ing candidly, Prof. Barber echoed this sentiment by say- ing that "[if we could all spend time] marching up and down (5th Avenue) in reference to the People's Climate March on September 21), but the political interpretations may not align necessarily with the needs to be done for the climate.

In the architecture school, the word “analysis” has a rather specific meaning. It is a type of project that involves looking extremely closely at one object or building, and producing your own drawings or models that explore and emphasize specific aspects of your subject.

Analysis is in the spotlight in the architecture school right now for two reasons. The first is that both the second year and third-year studios are working on analysis projects, under professors Agrest and Rauten respectively. The second reason is that the Architecture Archive has been working tirelessly over the past months to set up an exhibition that covers the past five years of analysis projects at Cooper Union.

A series of seven window displays in the architecture school are enjoying it, some describe it as being too broad, and Ian House (A '17) says, “I think it’s fabulous.” Jory Peraula (A ’17) commented that the most useful type of analysis project is “analy- sis with an agenda, working to- wards the studio at the end.” While the second-years are suf- fering under the typical second-year workload, Yana Torabi (A '18) commented that the project has made her unable to look at a building passively any- more. She says, "It became the side of the creator instead of the observer. Analysis makes me think."

JAKE POTTER (ME ’16)
The Cooper Pioneer interviewed current students from the art, architecture, engineering schools to find out about their summer experiences. The interviews will be published as a series. We hope they will serve to highlight the diverse achievements of our student body.

Here is our interview with Allison Tau (CE ’15).

The Cooper Pioneer: Where did you attend school and major?
Allison Tau: I was part of an REU program in engineering education at Otis College of Engineering. My project involved using a method called discourse analysis to look at transcripts of student team meetings in undergraduate design courses.

TCP: What was your daily routine?
AT: I worked with ten other students (and later two K-12 teachers) in the same studio for five days a week, usually 8 to 9 hours. Studio culture could get draining, especially because we were all friends, but it also created an environment where we all knew what each other was working on and could share relevant information about each other's projects.

We had research meetings several times a week. I looked at a lot of literature and worked on basic mathematical problems. Then, I used machine learning and robotic techniques to create a model that could predict the behavior of the students. I was interested in how students interact and share information in order to complete their projects.

At the end of the summer, I presented my research at the American Society of Engineering Education conference in Washington D.C. I gave a talk on my work and a poster of my research. I also attended other conferences and workshops related to engineering education.

The Cooper Pioneer: What was the best part about your internship in architecture?
AT: It was being able to work with a student researcher rather than just a research assistant. My partner and I were able to take our own direction with the data we had. If we needed more direction, our mentor was able to provide guidance but for the most part we had the freedom to study what interested us.

Our story is part of a larger trend in architecture where students are encouraged to work independently and collaboratively. This trend began with the emergence of the so-called "dematerialization" of the architectural profession.

TCP: How was it different from what you'd done thus far?
AT: I had been involved in research programs before during my junior year, but this project was a new experience for me. We were working with students from different background and we had to come up with a plan that would fit our needs. We also had to work with limited resources.

TCP: What are your hobbies?
AT: My hobbies include playing the piano, working out, and traveling. I also enjoy spending time with my family and friends.

TCP: What advice would you give to Cooper students?
AR: I would recommend that students take advantage of the opportunities available to them. I would encourage them to get involved in research and other extracurricular activities. It is important to build a network of contacts and to build a strong foundation for their future.

The Cooper Pioneer: The Cooper Pioneer recently sat down with Professor Anita Raja, who is the new Associate Dean of the Cooper Union School of Architecture and a new computer science professor.

The Cooper Pioneer: Where are you from?
Anita Raja: I was born in India and grew up in the coastal city of Chennai. I came to the U.S. as a teenager to do my undergraduate education. I have lived in Philadelphia, Western Massachusetts, New York and now in New York.

TCP: Can you tell me about your educational and professional background?
AR: I received a B.S. in Computer Science and a minor in Math from Trinity College. I graduated from the University of California at Berkeley with a Ph.D. in Computer Science.

I have been involved in research and teaching in Artificial Intelligence and Multiagent systems from the University of Massachusetts. My Ph.D. advisor is considered one of the founders of Distributed Artificial Intelligence and I was his 25th Ph.D. student. I feel blessed to be in the company of such an accomplished network of peers many of whom are doing cutting edge research in Artificial Intelligence and Robotics.

Immediately after graduation, I accepted a tenure-track position at the College of Computing, becoming the first female faculty in the Department of Software and Information Systems at SUNY College at Albany.

AR: I was excited to grow the theoretical contributions we had made in the field. I received tenure in 2009. One of the highlights of my career was working with students and collaborating with researchers from both academia and industry. I have worked with companies ranging from Economics, Electrical and Computer Engineering teaching Visual Analytics and Political Science. I have been the primary research advisor for two Ph.D. students and dozens of undergraduate and Masters level students.

TCP: What brought you to Cooper Union? When did you start working at Cooper?
AR: I was interested in moving to Cooper Union because of the strong academic reputation and the fact that it is located in New York City. I wanted to be closer to the academic and cultural scene.

I started working at Cooper Union in 2015 as a faculty member. Since then, I have been involved in outreach programs aimed at providing educational opportunities to those who cannot afford it. I am happy to be at Cooper Union and I am excited about the future of my research.

TCP: How do students interact with you at Cooper?
AR: I have been involved in the day-to-day operations of the school for more than two years. I have had the opportunity to work with a wide range of students and faculty members. I have been involved in several projects and have contributed to the development of new courses.

TCP: What advice would you give to Cooper students?
AR: I would recommend that students take advantage of the opportunities available to them. I would encourage them to get involved in research and other extracurricular activities. It is important to build a network of contacts and to build a strong foundation for their future.