



First day of the semester on campus on August 26.

A word from Stefan

Dear Friends of the ACRC,

It is my great pleasure to contribute to our 2nd ACRC Alumni Newsletter. I have been with our Center for close to 20 years now and I am in the pretty unique position to know the place from two sides: both from the student as well as the faculty perspective.

Many things have changed over the years. If you haven't

had a chance to visit Champaign-Urbana in recent years you will probably have a hard time recognizing the place. The good news is that Murphy's is still where it used to be, but it is now surrounded by real high-rise buildings (which are many stories taller than the corn that surround us). Our campus continues to look better each year and I am sure you have heard that currently our Mechanical Engineering

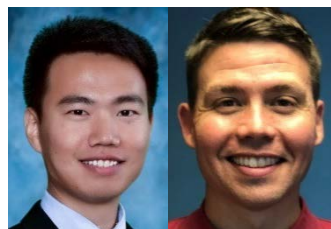
Continues on next page

HEADLINE



6 ACRC students and 2 ACRC alumni attended ICR 2019 - The 25th IIR International Congress of Refrigeration. Page 5

Inside this issue



Title

Interview and testimonial of alumni Lili Feng and Mike Giannavola.

Pages 3 and 4



Title

Stefan Elbel and Min Che won best paper award for their novel heat transfer work.

Page 8

Building is undergoing a major renovation, including a brand-new addition on the east side. Mechanical Engineering Lab has also seen some good upgrades over the years. Long gone are the days where we had to drag gas cylinders up the stairs all the way to the 3rd floor because there was no elevator (although doing that countless times way past midnight with your lab buddies builds friendships for life...)

Despite so much change, many things are still the same: ACRC continues to attract only the best and brightest students from all over the world and we are blessed to have the best

HVAC&R companies as our Center members. Of course, we are counting on our alumni to advertise ACRC among even more great companies in the future.

For me personally, I will always be grateful for being part of ACRC. It has not only given me the opportunity to learn from some of the greatest names in our field when I was a student (thanks Pega, Tony, and Clark), but in addition it also provided me with a career opportunity among the same great guys. As the Center's associate directors, Nenad and I (with great support from Xiaofei, Salome and many others) are making a

commitment to pave ACRC's road to the future for many more successful years to come.

We all hope to see as many of you as possible at our first official alumni meeting this Fall!

Best wishes,

Stefan



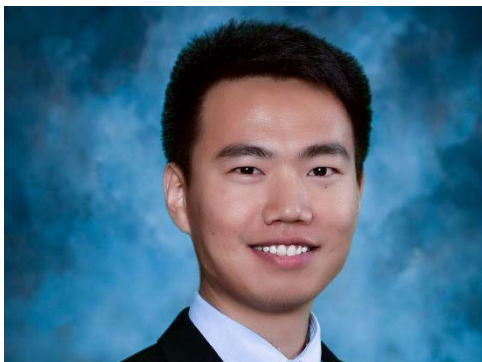
Stefan and Nenad downtown Urbana on September 3, 2019



Fremont California, home of Tesla's car Factory

LILI FENG, GRADUATED IN SPRING 2019 AND WORKS AT TESLA

Lili studied at ACRC in Pega's group from summer 2013 and graduated in December 2018. Thesis title: Intermediate Vapor Bypass: a Novel Design for Mobile Heat Pump at Low Ambient Temperature.



Lili Feng

What sparked your interest in heat transfer engineering?

To improve energy efficiency so we can achieve more by consuming less of our limited resources.

Why did you decide to come to UIUC?

For its excellent engineering research atmosphere and outstanding faculty.

And what is your interest for working at Tesla?

To help achieve higher vehicle thermal system energy efficiency for the most efficient electric vehicle.

What is your current position at Tesla?

Mechanical Engineer in Thermal/Aero Engineering Team.

What type of projects are you involved in?

Novel thermal system and critical component development.

How many people work in your division?

We are a research team of 6, half of which are ACRC alumni. But we collaborate with many other teams throughout the Tesla Team on a daily basis to keep things moving forward.

<https://www.tesla.com/>
AND
<https://www.tesla.com/factory>

What is the most important thing that you learnt at ACRC and which you are now applying at Tesla?

Work hard within bounds of physics.

What are your hopes and dreams at Tesla, for society, and for the world?

Just like stated in Tesla's mission: to accelerate the world's transition to sustainable energy.



6 students and 2 alumni attended ICR 2019 in Montreal



Links to articles on page 6

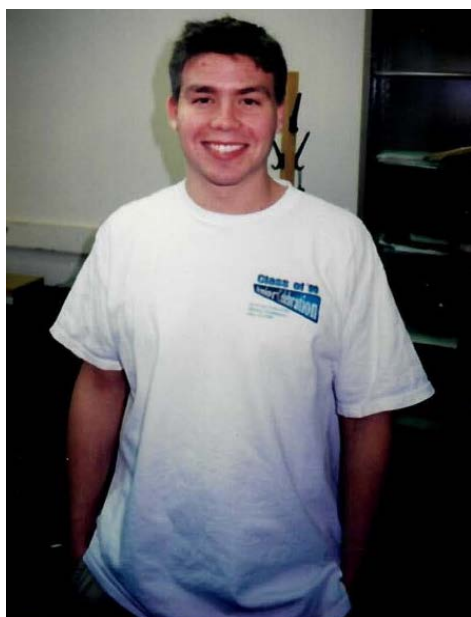


We would love to hear from you! Please send your contributions to the newsletter to salome@illinois.edu

Memories of the good old times at ACRC

by Michael ("Mike") Giannavola

We are happy to share with you fond memories and hope that you will also send us yours, with pictures if you still have any, and great stories!



◆ Mike when he was a student at ACRC

I recall playing frisbee in the hallway and Andy getting hit in the mouth... I still feel bad - sorry! We also had distractions like playing video games on the computers – I think we played RISK? I also remember Andy Musser introducing Google to me!

I also remember that Andy Musser, Stefan, Chris Seeton shared a small office. It was a great opportunity for us to connect and learn about each other and everyone's background and culture.] The US guys were from fairly different areas – NY, GA, and IL and Stefan was from Germany. So the experience was more than just about heat transfer, it was about growing as a person. Much of this growth came from the camaraderie with others from diverse backgrounds.



◆ Mike today

I remember us being in that small office and Stefan getting calls from relatives in Germany. At first, we believed they were arguing because the German accent is so strong and authoritative, but Stefan assured us that the conversation was great. We also used to have the "German word of the day" on the whiteboard. At first, it was Stefan trying to teach us German, but it later turned into us joking and making up 30 letter German looking words that translated to a three letter English words! We had a lot of fun.

For me, these were some of the best times and made my experience at the U of I and the ACRC a great one.

Mike Giannavola



Guess the numbers for the following information about the U of I

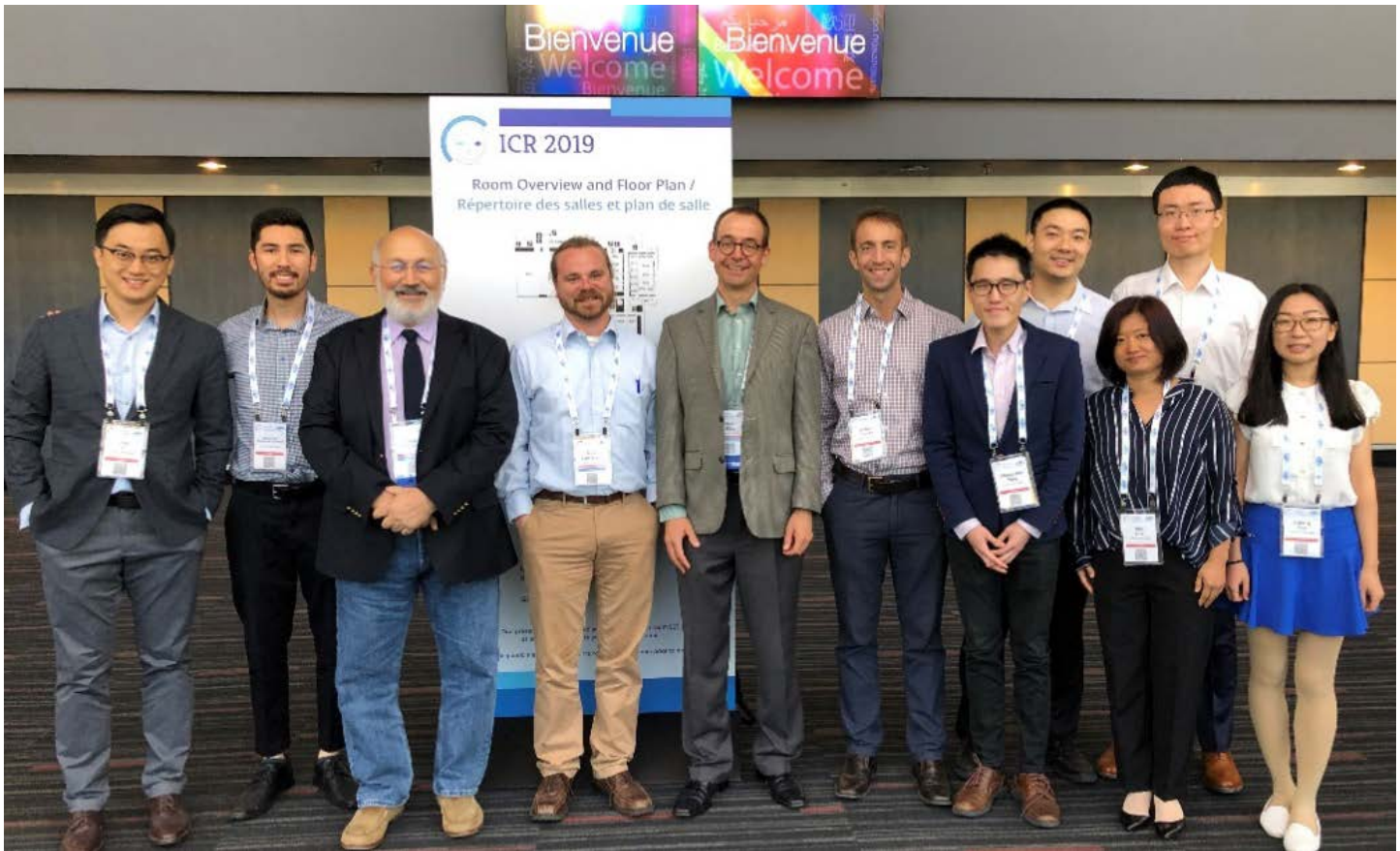
- Undergraduate majors
- Course offerings
- Colleges & schools
- Most disability-friendly campus
- Nobel Prizes
- Pulitzer Prizes
- MacArthur Fellows
- Students from all 50 states and 100+ countries
- Tenure/tenure track faculty
- Volumes in 20+ libraries and collections
- Among all universities in National Science Foundation funding for seven years running
- Living alumni
- Graduates reporting 1st job or grad school spot within six months of graduation

Answers page 8



ICR 2019, The 25th International Congress of Refrigeration, August 24-30, Montreal, Canada

Min Che, Bruno Yuji Kimura de Carvalho, Jun Li, Wenzhe Li, Hongliang Qian, and Yufang Yao, ACRC students, and Bill Davies and Cheng-Min Yang, alumni, attended the ICR 2019 accompanied by Pega and Stefan.

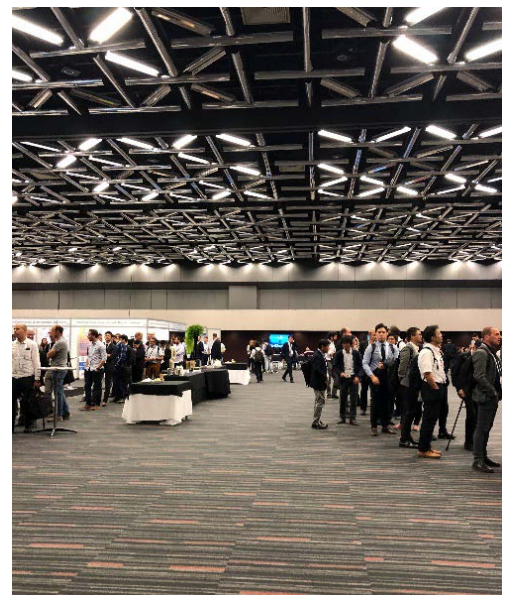


2nd day of the meeting

Everyone obviously had a great time at the conference!



Below, a picture taken during the coffee break on the first day of the conference.

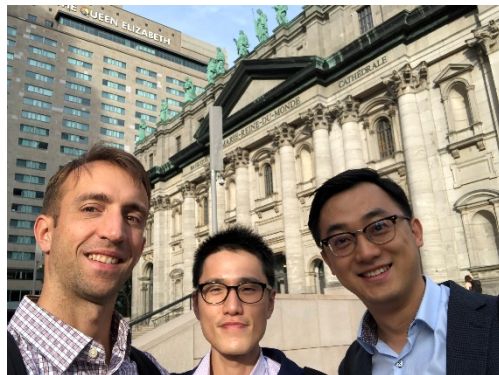


<https://icr2019.org/>

The conference took place at the Palais des congrès of Montreal, infinitely vibrant, welcoming multicultural, modern and historical city.

News from Montreal and links to papers

Students presented their papers, links below, and enjoyed the city, even though there was not much time left for site seeing outside the conference schedule.



Alumni Bill Davies and Cheng-Min Yang, and graduate student Jun Li in front of Basilique Cathédrale Marie-Reine-du-Monde

Papers

<https://uofi.box.com/v/Che-Elbel-ICR2019>
<https://uofi.box.com/v/bChe-Elbel-ICR2019>
<https://uofi.box.com/v/Davies-Hrnjak-ICR2019>
<https://uofi.box.com/v/bDavies-Hrnjak-ICR2019>
<https://uofi.box.com/v/Houpei-Hrnjak-ICR2019>
<https://uofi.box.com/v/bHoupei-HrnjakICR2019>
<https://uofi.box.com/v/Hrnjak-ICR2019>
<https://uofi.box.com/v/Kimura-Hrnjak-ICR2019>
<https://uofi.box.com/v/bKimura-HrnjakICR2019>
<https://uofi.box.com/v/J-Li-Hrnjak-ICR2019>
<https://uofi.box.com/v/W-Li-Hrnjak-ICR2019>
<https://uofi.box.com/v/bW-Li-Hrnjak-ICR2019>
<https://uofi.box.com/v/Qian-Hrnjak-ICR2019>
<https://uofi.box.com/v/bQian-Hrnjak-ICR2019>
<https://uofi.box.com/v/cQian-Hrnjak-ICR2019>
<https://uofi.box.com/v/Shi-Hrnjak-ICR2019>
<https://uofi.box.com/v/bShi-Hrnjak-ICR2019>
<https://uofi.box.com/v/cShi-Hrnjak-ICR2019>
<https://uofi.box.com/v/Xiao-Hrnjak-ICR2019>
<https://uofi.box.com/v/bXiao-Hrnjak-ICR2019>
<https://uofi.box.com/v/Yang-Hrnjak-ICR2019>
<https://uofi.box.com/v/bYang-Hrnjak-ICR2019>
<https://uofi.box.com/v/Yao-Hrnjak-ICR2019>

Stefan Elbel and Neal Lawrence won best paper award at the ICR



Stefan on the right, with the other award winners



Stefan and Neal (picture on the right) won best paper award at the ICR. A few years ago, Stefan was invited to write a review paper named “Review of recent developments in advanced ejector technology” together with his former PhD student, Dr Neal Lawrence. For that paper they were awarded at this year’s congress with the IJR’s best paper award for the year 2016 (they count number of downloads, scientific relevance, quality of work, etc.). They received the award from the journal’s Chief Editor, Prof. Felix Ziegler during the opening ceremony of the congress. The research was supported by the Air Conditioning and Refrigeration Center (ACRC).

Many fruitful conversations were exchanged

And to the right, Pega talking with Prof. Akio Miyara from Sage University, Japan, Mr. Tomonori Asano from Noritz Corporation Japan, and Hongliang Qian, graduate student at ACRC right after the Technical Session 325: Flow Pattern

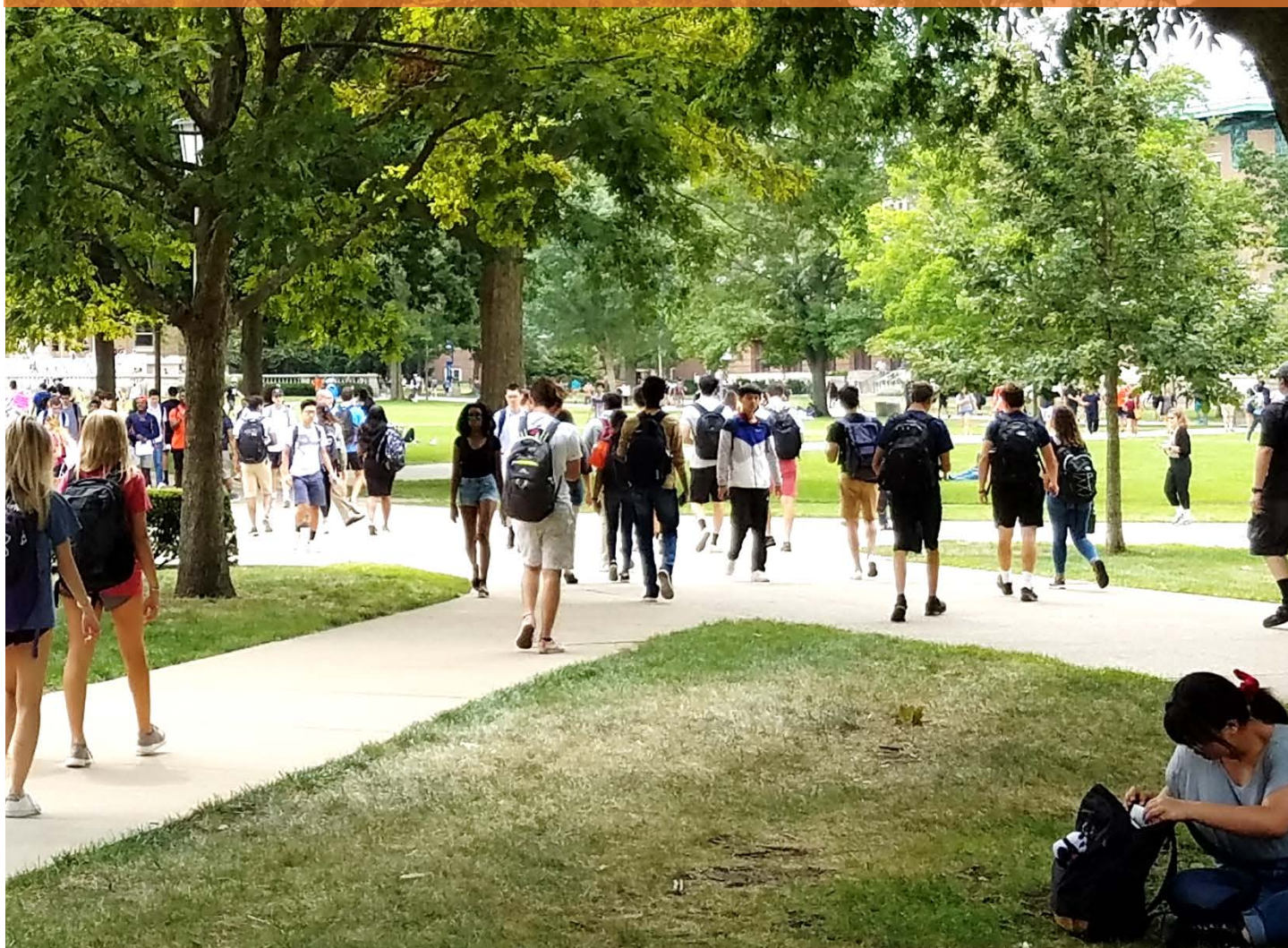


& Visualization (3) on Wednesday, August 28.



UNDERGRADUATE STUDENTS RETURNED TO CAMPUS ON AUGUST 23

After a beautiful summer, a new promising semester has just started. Campus is again crowded with students bringing along new energy transforming the University, which is more vibrant than ever!



Highlights

Stefan Elbel and Min Che win best paper award novel heat transfer work



<https://mechanical.illinois.edu/news/elbel-che-win-best-paper-award-novel-heat-transfer-work>

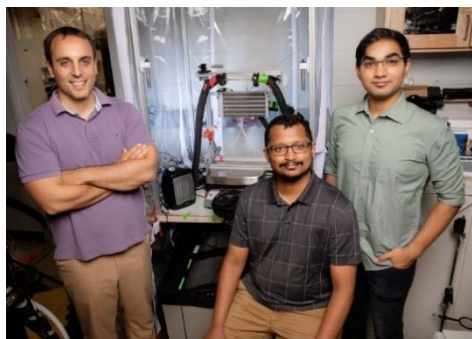
Doctoral student Min Che and her advisor, Research Assistant Professor Stefan Elbel, earned a Best Paper Award at the 2019 HEFAT (Heat Transfer, Fluid Mechanics and Thermodynamics) for their work, "Quantification of Local Air-side Heat Transfer Coefficient Using Color-change Coatings."

Their paper won in the Air Conditioning and Refrigeration category at the conference, which was held in Wicklow, Ireland, July 22-24.

Che and Elbel are developing a novel measurement technique to accurately quantify local air-side heat transfer coefficients for realistic heat transfer surfaces and geometries. Their new method is based on the analogy between heat and mass transfer and bears several substantial advantages over conventionally used methods in terms of accuracy and user-friendliness.

Read more

<https://mechanical.illinois.edu/news/elbel-che-win-best-paper-award-novel-heat-transfer-work>



Mechanical science and engineering professor Nenad Miljkovic, left, and graduate students Kalyan Boyina and Yashraj Gurumukhi collaborated

Researchers develop technique to de-ice surfaces in seconds

with researchers at Kyushu University, Japan, to develop a system that can de-ice surfaces in seconds.

Photo by L. Brian Stauffer

Read more

<https://news.illinois.edu/view/6367/802384>

Welcome to the world, Lucas!

Minwoong Kang, graduate student in Stefan's group, had a baby! Congratulations to him and his wife!

Their son's name is Lucas, he is born on September 1, 2019 @ 12:37 pm and weighs 7lb 9oz.

We wish Minwoong and his family all the happiness in the world!



Quiz answers

- **150** Undergraduate majors
- **5,000+** Course offerings
- **15** Colleges & schools
- **#1** Most disability-friendly campus
- **24** Nobel Prizes
- **25** Pulitzer Prizes
- **7** MacArthur Fellows
- **46,000+** Students from all 50 states and 100+ countries
- **1,900+** Tenure/tenure track faculty
- **24,000,000+** Volumes in 20+ libraries and collections
- **#1** Among all universities in National Science Foundation funding for seven years running
- **425,000+** Living alumni
- **89%** Graduates reporting 1st job or grad school spot within six months of graduation

News from MechSE

LU MEB CONSTRUCTION AND RENOVATION UNDERWAY

Update from Tony Jacobi

Construction and renovation at the Sidney Lu Mechanical Engineering Building began this past May, and we are all looking forward to the grand re-opening of the facility in 2021.

The Lu MEB will be an incredible space used by all of MechSE, and even those of us working mainly in the Mechanical Engineering Laboratory, where the ACRC labs are concentrated, look forward to the exciting changes enabled by this transformative project. An expansive café and gathering space will serve as a center of gravity for all of MechSE, giving us a central place to step away to, for a break, a brainstorming session, or to socialize and share ideas with friends. Plans for a massive makerspace in the Lu MEB have us dreaming of additional creation, design, and fabrication opportunities related to the ACRC. A side benefit comes from the movement of most of our instructional labs from MEL to the Lu MEB, because that move frees badly needed space for research in MEL.

A new web section detailing plans and updates of the Lu MEB can be found on the MechSE site at mechse.illinois.edu/Lu-MEB. Two different cameras provide “live looks” at the construction site, and there are



Tony Jacobi and Damon McFall on MEB construction site

floorplans, renderings, blogs, and photo slideshows to view. You will also find some informative articles on Mr. Sidney Lu, the MechSE alumnus who made the entire project possible.

Lu MEB Progress Photos: Slideshow

<https://mechanical.illinois.edu/news/lu-meb-progress-photos-slideshow-2>



ACRC Seminar, August 14, 2019

Prof. Ullrich Hesse and Dr. Christiane Thomas, Technical University of Dresden, Germany

CURRENT RESEARCH IN THE FIELD OF REFRIGERATION, CRYOGENICS, AND COMPRESSOR TECHNOLOGY AT THE TECHNICAL UNIVERSITY OF DRESDEN, GERMANY

[ABSTRACT](#)



ACRC Seminar, September 12, 2019

Prof. Yangying Zhu, University of California, Santa Barbara

MICROSCALE THERMAL-FLUIDS ENGINEERING FOR NEXT-GENERATION ENERGY AND ELECTRONIC SYSTEMS

[ABSTRACT](#)