



MAY REFRIGERATION TOUR

STANFORD UNIVERSITY CENTRAL ENERGY FACILITY (CEF) TOUR

**SPEAKER: ANDREW LAU-SEIM, ASSOCIATE DIRECTOR OF ENGINEERING FOR
ENERGY OPERATIONS AT STANFORD UNIVERSITY**

We welcome you all to our Chapter meeting at Stanford University, conveniently located in Palo Alto, for an evening of sharing knowledge, fun and networking.

Date: May 13th, 2020

**Location: Central Energy Facility at Stanford University
506 Oak Road, Stanford 94305**

Parking for the Stanford Central Energy Facility (CEF) is located at the Searsville parking lot, across Fremont Road from the CEF. Parking is not regulated after 4pm.

Time:

Check-in and Social: 5:00PM

Plant Tour: 5:45PM – 6:15PM

Presentation and Dinner: 6:30PM – 8:15PM

Dinner shall be at Einstein conference room, walking distance)

Dinner Cost:

Registration Fee: \$ 70 by Midnight May 6th

Late Reg./Walk-ins: Not Allowed, Guest List approval required

[CLICK HERE TO REGISTER](#)

Requirements for guests:

- Tour guests going inside the facility are to wear sturdy, closed-toed shoes [no high heels or sandals].
- All guests must wear hard hats, protective eyewear and ear-plugs in the mechanical spaces of the facility, which will be provided upon arrival.
- No food or drink is allowed in the mechanical spaces of the facility.
- The tour includes portions that are indoors and outdoors with varying temperatures, so please dress in layers accordingly.

[See you all there!](#)

Hosts/Speakers:

Andrew Lau-Seim is the Associate Director of Engineering for Energy Operations at Stanford University. He leads the team that performs all engineering activities for the Central Energy Facility, campus electrical and thermal distribution systems on the historic main campus, as well as the new Stanford Redwood City Campus. Andrew joined the Energy Operations team at Stanford in 2015 for the startup and commissioning of Stanford's new heat recovery system, which transformed Stanford's energy system from gas-fired cogeneration and steam distribution to a renewable electric-powered heat recovery system with low temperature hot water distribution. The heat recovery system will save Stanford hundreds of millions of dollars over 35 years; provided an immediate 68% reduction in campus greenhouse gas emissions, which will continue to grow as the California grid becomes more renewable; and also provided an immediate 15% reduction in potable water use. Andrew is an alumnus of San Jose State University.

Leslie Kramer is the Associate Director for Energy Retrofit Programs in Stanford's Department of Sustainability and Energy Management. Her team focuses on improving the energy efficiency of the largest energy-consuming buildings on the Stanford University campus through comprehensive retrofits and on-going commissioning. She works with a variety of stakeholders to identify and implement projects that save energy and money while maintaining or improving overall building performance. Prior to joining Stanford University, Ms. Kramer was a vice president at HDR Engineering, Inc. (formerly Brown, Vence and Associates, Inc.), where she managed the energy efficiency practice and worked as an energy engineer on projects ranging from energy auditing and onsite renewable energy to utility demand-side program management. Ms. Kramer is a certified energy manager and has a Masters of Arts in energy and resources and a Bachelor of Arts in engineering.

Topic:

Stanford University – Central Energy Facility (CEF) Tour

Overview:

The Stanford Energy System Innovations (SESI) project is a \$485 million transformation of the campus district energy system. The transformation was from gas fired combined heat and power with steam distribution to electrically powered combined heat and cooling with hot water distribution. When completed in April 2015, the new heat recovery system became 50% more efficient than the previous cogeneration system on a natural gas basis; or 120% more efficient when state-mandated 33% renewable power is factored in. SESI immediately cut Stanford's Category I and II GHG emissions in half; saved 15% of Stanford's drinking water supply; and will save the university \$420 million over the next 35 years compared to the previous system.

The heart of SESI is heat recovery- capturing waste heat from the district chilled water system to produce hot water for the district heating system. 60% of the waste heat is recovered from the chilled water system to generate 90% of Stanford's heating needs, which led to a 68% reduction in campus greenhouse gas emissions. The new system is the first of its kind, and radically transformed the way district energy systems are viewed around the world. An overview of the new system is shown in the images below.

