

# 51<sup>st</sup> Offering of the Industrial Refrigeration Workshop

Charlotte, North Carolina  
February 19-23, 2018



**KANSAS STATE**  
UNIVERSITY

[conferences.k-state.edu/industrial-refrig/](http://conferences.k-state.edu/industrial-refrig/)

**About the workshop:** A one-week intensive short course on industrial refrigeration as practiced in food freezing, refrigeration and in other low temperature applications. A systematic study is made of the technical background, the practice and the latest developments in low temperature refrigeration. This workshop is offered in February. Started in 1982, this is the 51<sup>st</sup> offering of the workshop.

**For whom:** Engineers and supervisors employed by equipment manufacturers, design firms, refrigerated warehouses, food processors, contractors and chemical firms. The course is intended for designers and builders of new or enlarged plants, supervisors of plant operations, engineers for manufacturers who will learn how their components fit into systems, engineers and managers either new to the industrial refrigeration field, or veteran engineers and managers seeking a refresher. This workshop is intended for those making decisions concerning the plant or facility.

**Objectives:** To provide the participants with much of the knowledge that they would obtain by longer experience in the industry – often through the agony of costly mistakes; to provide a thorough technical grounding in topics crucial to industrial refrigeration; to benefit from the experience of a group of industry experts; and to learn of the latest research and development pertinent to industrial refrigeration.

**Topics to be covered:** Refrigerant properties, single- and two-stage refrigeration cycles, load calculations, construction of refrigerated buildings, liquid recirculation systems, reciprocating and screw compressors, performance and selection of evaporator coils, condensers, energy conservation,

vessel sizing, liquid pumps, pipe sizing, safety, and control of both halocarbon and ammonia systems. A thread that will extend through the week is the design of an ammonia refrigeration system serving a food distribution center incorporating selected low-charge technology. Refrigeration equipment and systems used in this facility are typical of a wide variety of applications.

**CEUs are available:** Participants may receive a Continuing Education Certificate reporting 35 contact hours, which will provide documentation for engineering (or other) Professional Development Hour (PDH) or Continuing Education Unit (CEU) requirements. The cost for this certificate is \$10 with your registration payment.

**Schedule:** The workshop begins Monday, February 19 at 8 a.m., Eastern Standard Time, at the Crowne Plaza Charlotte Executive Park Hotel, Charlotte, North Carolina. Sessions held Monday through Thursday will run from 8 a.m. to 4:30 p.m. Short evening study assignments will be typical. On Friday, sessions continue to noon. Of special interest is the optional "**Quick-Start**" offered Sunday afternoon (February 18) from 3 p.m. to 5:30 p.m. at the Crowne Plaza Charlotte Executive Park Hotel that is recommended as a technical introduction or a refresher session concerning refrigeration fundamentals.

**Workshop Sponsors:** The workshop is sponsored by Kansas State University and the International Institute of Ammonia Refrigeration (IIAR), an association of manufacturers, designers, contractors and end users of industrial refrigeration equipment and systems.

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**Recipient:** For change of address or other mailing instructions, check below and return this page to the address listed above.

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**Workshop direction:** The director is Professor Donald L. Fenton, Kansas State University, Manhattan, Kansas. The Associate Director is Emeritus Professor R. Gary Wilson, University of North Carolina - Charlotte, Charlotte, North Carolina. For answers to questions about the program and local arrangements, please contact Don at 785-532-2322 (email [fenton@ksu.edu](mailto:fenton@ksu.edu)), or Gary at 803-831-2912 (email [RGW.RandE@Yahoo.com](mailto:RGW.RandE@Yahoo.com)).

**Cost and what is provided:** The cost of the workshop is \$1,525 (for current IIAR members the cost is \$1,475), which includes all text materials and lunches for the five days of the course. When three or more people register from the same company, a \$200 discount applies to the third or more persons.

**Hotel accommodations:** All sessions will take place at the Crowne Plaza Charlotte Executive Park Hotel, 5700 Westpark Drive, Charlotte, North Carolina 28217 (phone 704-527-9650). A block of guest rooms has been reserved for participants at the special rate of \$110 per night (block deadline is January 26, 2018). To obtain the special rate, be sure to mention “Industrial Refrigeration Workshop” when making your reservation. Courtesy van service is available between the hotel and the Charlotte Douglas International Airport.

For additional information about the workshop and the hotel reservation link, please visit the official workshop website at:

[conferences.k-state.edu/industrial-refrig/](http://conferences.k-state.edu/industrial-refrig/)

**How to register:** Please select one of the following methods.

1. Register ONLINE by going to [conferences.k-state.edu/industrial-refrig/](http://conferences.k-state.edu/industrial-refrig/) and clicking on “Registration.”

2. MAIL the completed registration form to: Industrial Refrigeration Workshop Registration, Global Campus, Kansas State University, 1615 Anderson Ave., Manhattan, KS 66502.

3. FAX your registration to 785-532-2422.



For questions concerning registration, please call the Registration Office at 785-532-5569 or 1-800-432-8222. Registration is limited so that personal contact between the participants and staff can be maintained. Early registration is encouraged. Registrations can be held for two weeks, allowing time for the registration fee to arrive.

**Workshop Staff:**

Director and Instructor  
Don Fenton, 785-532-2322  
Associate Director and Instructor  
Gary Wilson, 803-831-2912

**Industry Staff:**

Hank Bonar, Bonar Engineering,  
Jacksonville, Florida  
Dennis Carroll, Frick by Johnson Controls,  
Mobile, Alabama  
Josiah Royer, Colonial Webb,  
Norfolk, Virginia  
Mike Reiner, GEA Refrigeration,  
York, Pennsylvania  
John Kollasch, Evapco,  
Taneytown, Maryland

**Refund/Cancellation Policy:** If you must cancel your registration, please do so as soon as possible. The cancellation policy is: Full refund if canceled by January 5, 2018; \$200 cancellation charge between January 6 and January 19, 2018; and no refund after January 19, 2018. A substitute may replace the original registrant.

**Special Assistance:** A participant in a conference or noncredit program with a disability who needs accommodations or has special dietary requirements should indicate services needed at the time of registration. If you have further questions, please contact Kelli Park-Fuhrmann, Meeting Planner, at [kelli6@k-state.edu](mailto:kelli6@k-state.edu) 785-532-2584. Early notification is required to ensure that accommodations can be provided in a timely manner.

**Notice of Nondiscrimination**

Kansas State University is committed to nondiscrimination on the basis of race, color, ethnic or national origin, sex, sexual orientation, gender identity, religion, age, ancestry, disability, military status, veteran status, or other nonmerit reasons, in admissions, educational programs, or activities and employment, including employment of disabled veterans and veterans of the Vietnam Era, as required by applicable laws and regulations. Responsibility for coordination of compliance efforts and receipt of inquiries concerning Title VI of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, and the Americans With Disabilities Act of 1990 has been delegated to the director of Affirmative Action, Kansas State University, 214 Anderson Hall, Manhattan, KS 66506-0124, 785-532-6220 or TTY: 785-532-4807.

**REGISTRATION FORM**  
**Industrial Refrigeration Workshop**  
**February 19-23, 2018**

First Name	Last Name	
Company		
Street Address		
City	State	Zip + 4
Country		
Phone	Fax	
Email		

**Fees:**

- \$1,525 Registration Fee
- \$1,475 IIAR Member Registration Fee
- Discount (\$200 for 3<sup>rd</sup> or more)
- \$10 CEU/PDH Certificate (optional)
- Total Due**

**Method of Payment:**

- Check Enclosed (payable to K-State)
- Invoice My Company
- Purchase Order #

Please Charge My:

- Visa  MC  AmEx  Disc

Card Number:

Expiration Date:

CVV Code:

Cardholder's Name (print):

Cardholder's Signature: \_\_\_\_\_

Please indicate any special assistance needed: \_\_\_\_\_

**Roster Release**

Initial here if you do not want your name listed in the roster of participants.