

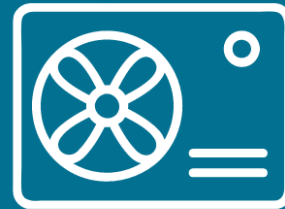
CFD MODELING FOR BIOPHARMA FACILITY DESIGN AND HVAC OPTIMIZATION

Computational Fluid Dynamic (CFD) modelling tools have improved over the past decade to a point that makes its use more practical and more accurate than ever. The application of CFD to facility design offers a data driven basis to:

- Predict particulate levels in clean room during "at-rest" and "in-operation" conditions to meet GMP classifications for aseptic processing
- Predict room recovery times (to comply with ISO 14644-3) based on particulate challenges to model
- Optimize air changes /hour while maintaining room cleanliness to help effectively size AHU capacity
- Optimize supply and return/exhaust diffusers to promote airflow laminarity and minimize turbulence in operational areas
- Predict GMP clean room conditions, including temperature and humidity
- Design for appropriate room pressurizations and differential pressure to adjacent classifications during "at-rest" and "in-operation" conditions
- Determine 'worst-case' locations for Environmental Monitoring during validation and GMP operations

Topics

- Why and When CFD is used
- Traditional vs. CFD Approach to Facility Design
 - How to Build a CFD Model
- Case Study 1: GMP Clean Room Airlock
- Case Study 2: GMP Airlock Air Curtain
 - Case Study 3: Design Development



Speaker



Albert Dyrness, PE

Managing Director
Advent Engineering

Albert Dyrness is the managing director of ADVENT Engineering, a Trinity Consultants Company, an engineering, and compliance solution provider to the life science industry. He has over 20 years of experience in process engineering design, and commissioning of GMP equipment, systems, and facilities. He is a member of the American Society of Mechanical Engineers Bioprocess Equipment (ASME BPE) Standards Committee and is serving as the Chairperson for the ASME BPE System Design subcommittee. Dyrness is also an Industrial Advisory Board Member of the University of the Pacific's Bioengineering program. He received an MS in Mechanical Engineering from Massachusetts Institute of Technology. He holds professional engineering licenses in the state of California for Chemical Engineering and Mechanical Engineering.

REGISTRATION:

[LNKD.IN/ER_7T3G](https://www.linkedin.com/company/er-7t3g)

28 SEPTEMBER 2021
12 NOON - 1 PM

CFD Modeling for Biopharma Facility Design and HVAC Optimization

September 28, 2021

Noon – 1:00PM PT

Sponsored by:



Format:

GoToWebinar

Instructions to join will be emailed one day prior

Program Manager:

Paul Crissman, Principal, Biotechnical Solutions

Moderator:

Justin Cantor, Chief Strategy Officer, PSC Biotech

Speaker:

Albert Dyrness, PE, Managing Director, Advent Engineering

Cost to Attend:

Free for ISPE Members

\$35 Per Session for Non Members

\$250 Webinar Sponsor

Thank You To Our Annual Sponsors

PLATINUM



GOLD



SILVER





ISPE®

Greater Los Angeles
Area Chapter

REGISTRATION INSTRUCTIONS

- 1) Click on the link below then log on using your username and password: <http://www.atdevents.net/register.php>
- 2) Click on the appropriate event. Here is where you can download the event flyer also.
- 3) Scroll through the list of registration options and find the one that applies to you.
- 4) If payment is required, select the payment option of your choice and follow instructions to pay. Make sure to go through all of the steps until payment is confirmed. Since our site has to go to the merchant account site, there are a couple extra clicks involved.

ISPE California Chapter Members:

If you are an ISPE Member in California, please do not set up a new account, as you should already be in our system (takes a few days after joining). You will need your username and password to log on.

How To Find Your ISPE Member Number or Update Your Account to a Member Account:

To update your existing account to a Member account, or to add your new ISPE Member account to our website, please forward your confirmation email from ISPE or your ISPE Membership information to Rob Fleming (rob.fleming@yahoo.com). We need your Chapter name, your ISPE Member number and expiration date. To retrieve this information, log onto the ISPE website. Click on "Account" on the top right side, then "My Account". Your Membership information (not including your chapter affiliation) is on the left side. Please take a screen shot or make a pdf of the page, then email it along with the name of your chapter to Rob Fleming to update your profile on the atdevents.net site.

ISPE Members of Other Chapters:

You will not be in our system unless you have previously set up an account. Please follow instructions for Non Members below then follow the instructions to update your account to a member account (see above).

Non Members:

If you do not have an account, you can set one up on the site using letters (not numbers) as your username.

WEBINAR SPONSOR \$250

Your sponsorship includes your logo on email promotions and event flyers and a link for your employees to join the webinar at no additional cost. You have the option of providing a promotional video of up to 30 seconds to be played during the webinar. You will also receive a link to view the webinar recording after the event and any handouts approved for distribution from the speakers. This information can be shared with your staff after the webinars.

Questions or help with registration, please email Rob.Fleming@yahoo.com

Note: Our system does not email confirmations for complimentary events, however, you will receive a link to join the day before the webinar.

ISPE Greater Los Angeles Chapter
5319 University Dr., Suite 641, Irvine, CA 92612
Tax ID#95-4452996



ISPE®

Greater Los Angeles
Area Chapter

Sponsorship Invoice

CFD Modeling for Biopharma Facility Design and HVAC Optimization

Webinar on September 28, 2021

Name: _____ Company: _____

Phone: _____ Fax: _____

Email: _____

Amount Due \$250.00

Please return with a credit card payment or check. If paying by credit card, please indicate which:

VISA MasterCard AMEX

Name on Credit Card: _____

Signature: _____

Card #: _____

Exp. Date: _____

Make Checks Payable to **ISPE Greater Los Angeles Chapter**
then mail to: 5319 University Dr., Suite 641, Irvine, CA 92612

Should you have any questions, please email Kimberly Syre: ksyre@cox.net
or call Attention To Detail at 949-387-9046 or Fax Credit Card payment to: **949-266-8461**
ISPE GREATER LOS ANGELES TAX I.D. #95-4452996.
www.ispe.org/greaterla