

What's going to happen at Light Scattering University?

Light Scattering University (LSU) is designed to get you up and running with your Waters | Wyatt instruments as quickly as possible. The syllabus includes light scattering theory and lots of hands-on work with MALS instruments and ASTRA software. Pass the exams, and you'll receive a Master of Light Scattering certificate, in Latin or Greek, guaranteed to impress your boss and coworkers!

Our small class size and student-teacher ratio allow for one-on-one support, including the chance to go over your data with an application scientist. You can find more information on the topics covered on our website at www.wyatt.com/LSU; just scroll down and click on the **LSU Topics** tab.

Please note that our instruments are designed to be compatible with a wide range of chromatography systems. Our focus is on the interpretation of the light scattering data and on the proper use and maintenance of the detectors, and as such, we will not provide training on specific chromatography hardware or software or chromatography method development.

What is covered in the curriculum:

Day 1

- General light scattering theory and batch light scattering applications
- Intro to ASTRA as well as Instrument maintenance and flow cell cleaning

Day 2

- Applications of chromatography with MALS, including guidelines and best practices for producing the highest quality SEC-MALS data
- Building ASTRA methods and sequences as well as data processing

Day 3

- Introduction to dynamic light scattering (DLS) and phase analysis light scattering (PALS) Elective Scatter Sessions for specialized applications and instrumentation
- One-on-one data review

What is not covered in the curriculum:

- Building sequences and performing sample injections using chromatography control software (e.g., OpenLab, Unicorn, Empower, or Chromeleon)
- Care and maintenance of specific liquid chromatography systems
- Due to time and instrumentation constraints, we are unable to accommodate requests from LSU attendees to run their sample while they are attending LSU

What other courses may be added:

- Students with both MALS detectors and DynaPro or Mobius detectors may attend both LSU and DynaLSU in the same week
- Calypso and Eclipse owners may spend an extra day (Friday) for specialized training on their particular instrument

See <http://www.wyatt.com/training/lsu-training-dates-us.html> for available dates for Calypso, Eclipse, or Mobius training and DynaLSU.

Who should attend:

The course is appropriate for both novice users and people with more light scattering experience. Our students have diverse educational backgrounds from bachelor's degrees in biology to Ph.D.s in physics. The lessons learned in LSU will be of tremendous benefit to those individuals who

- Purchased a new DAWN, miniDAWN, or μ DAWN multi-angle light scattering detector
- Changed job responsibilities and will be using a Waters | Wyatt MALS detector for the first time
- Have been using a MALS detector and want to increase their knowledge of light scattering, data analysis, and applications
- Are responsible for finding new applications for light scattering within their research group
- Intro to ASTRA as well as instrument maintenance and flow cell cleaning

How to prepare for Light Scattering University?

There is no required reading list or homework in preparation for the course. However, feel free to peruse our application notes and webinars at www.wyatt.com/library to find applications of light scattering similar to your own. Sign up for Support Center access at www.wyatt.com/Support to stay up-to-date with all the latest software updates, manuals, technical notes, and more.

If you have already performed some measurements:

- Bring your data files! Don't forget data for standards and blank injections. We will have opportunities to discuss your particular data and applications during the class although it is not necessary to have data in order to attend class.
- Bring your questions! Ask your colleagues what they are interested in learning from you.

If you have not performed any measurements:

- Get the tour of your instrumentation. Make sure you have an idea of what kind of HPLC or batch setup you are using, what your typical mobile phase(s) will be, and what other instrumentation is in line with your Waters | Wyatt detectors (e.g., UV detectors or third-party viscometers).
- If your instruments are newly installed, review the Field Service Report and other documentation from your Waters | Wyatt scientist or engineer.

Basic prerequisites:

You don't need a Ph.D. in applied physics to understand the theory and application of light scattering to your samples. However, there is some basic terminology that we'll use throughout the course, and it may be helpful to review these resources:

- Molar mass distributions: https://en.wikipedia.org/wiki/Molar_mass_distribution
- Introduction to size exclusion chromatography: https://en.wikipedia.org/wiki/Size-exclusion_chromatography
- Why is the sky blue? <http://science.howstuffworks.com/nature/climate-weather/atmospheric/sky.htm>

***We look forward to working with you. Please contact us if you have any questions.
Welcome to the world of light scattering!***