

LC/MS for Practicing Chromatographers

Sponsored by the **Mass Spectrometry Discussion Group of Pittsburgh** of the **Spectroscopy Society of Pittsburgh**

Monday, November 24, 2008

Workshop Lecturers: Laura Mulderig and John Van Antwerp

“LC/MS for Practicing Chromatographers” will provide both the novice and seasoned chromatographer with an introduction and overview of the theory, practical approaches and use of liquid chromatography/mass spectrometer detection (LC/MS) in the analytical laboratory, including theory, practical operation and real-world examples. Emphasis will be placed on analytical-scale analysis of small molecules in environmental, industrial and pharmaceutical applications. In addition, biological applications and MS-directed isolation/purification will be discussed.

Laura Mulderig spent many years with Dupont developing methods for trace-level analysis using multi-dimensional LC and LC/MS (/MS) approaches before joining Waters Corporation’s quadrupole LC/MS products group in the Eastern United States where she is a Quadrupole MS Specialist. **John Van Antwerp** has been involved in LC/MS for Waters the last 15 years. He is currently the Business Manager, Quadrupole Products for the Americas.

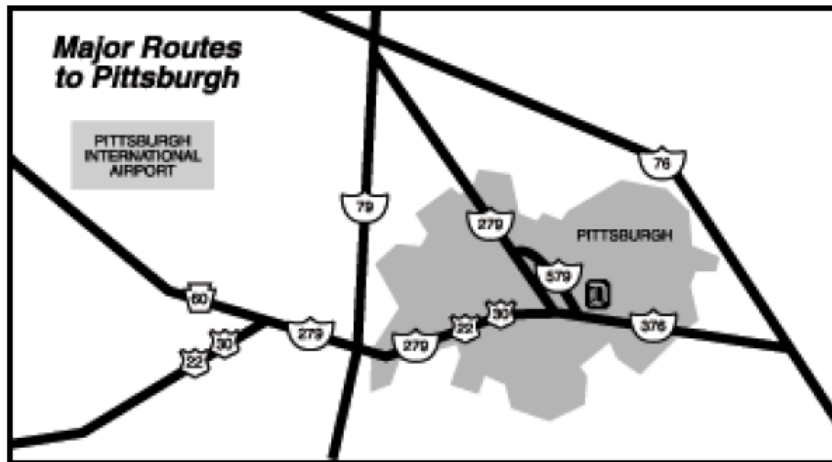
Workshop Outline

8:30 am	<i>Registration / Continental Breakfast</i>
9:00 am	Basics of mass spectrometry – sample introduction, ionization techniques, mass analyzers, vacuum systems, detectors Types of MS experiments/data acquisition Calibration and tuning (MS optimization) Sample preparation for LC/MS(/MS) analyses
10:30 am	<i>Break</i>
10:45 am	Data Processing and interpretation for “small” molecules Use of complimentary detectors Quantitation Confirmation Qualitative analysis Complementary detectors
12:15 pm	<i>Lunch</i>
1:15 pm	Method development and chromatography optimization for MS(/MS) Analyses with samples MS Optimization (Tuning) LC Optimization
2:30 pm	<i>Break</i>
2:45 pm	Preparative and large molecule LC/MS Preparative LC/MS with examples Basics of LC/MS for peptides and proteins

Parking for the short course is available in the Forbes parking garage. Take the elevator to the eighth floor. Follow the red brick sidewalk across Locust Street to the Duquesne Union. The Duquesne Room is on the 3rd floor of the Duquesne Union.



Directions to Duquesne University



NORTH

From I-80:

Follow I-80 to I-79 South Exit 19A. From I-79, proceed to Exit 72, Pittsburgh/I-279 South. Follow I-279 South approximately 15 miles to Exit 8A, I-579 South/Veteran's Bridge. Look for and follow all signs indicating Mellon Arena. Proceed to the traffic light and turn right onto Washington Place. Proceed through the next two intersections. At the second intersection, turn left onto Forbes Avenue. Parking Garage entrance is in the first block on the right hand side.

From I-79 South:

Use Exit 72, Pittsburgh/I-279 South and follow I-279 South approximately 15 miles to Exit 8A, I-579 South/Veteran's Bridge. Look for and follow all signs indicating Mellon Arena. Proceed to the traffic light and turn right onto Washington Place. Proceed through the next two intersections. At the second intersection, turn left onto Forbes Avenue. Proceed on Forbes to Duquesne University parking garage; turn right at main garage entrance.

SOUTH

I-70:

Follow I-70 to I-79 North. Proceed on I-79 North to Exit 59A, Pittsburgh/I-279 North. Follow I-279 North approximately 7 miles through the Fort Pitt Tunnel, staying in the right lane as you approach the tunnel. Use the right exit for Monroeville/I-376 East at the end of the Fort Pitt Bridge. Proceed approximately two-tenths of a mile and exit left at Grant Street/ Exit 1C. Proceed on Grant to the fifth traffic light at Forbes Avenue. Turn right onto Forbes Avenue and proceed approximately one-half mile to Duquesne University parking garage; turn right at main garage entrance.

I-79 North:

Use Exit 59A, Pittsburgh/I-279 North. Follow I-279 North approximately 7 miles through the Fort Pitt Tunnel, staying in the right lane as you approach the tunnel. Use the right exit for Monroeville/I-376 East at the end of the Fort Pitt Bridge. Proceed approximately two-tenths of a mile and exit left at Grant Street/ Exit 1C. Proceed on Grant to the fifth traffic light at Forbes Avenue. Turn right onto Forbes Avenue and proceed approximately one-half mile to Duquesne University parking garage; turn right at main garage entrance.

PA Route 51 North:

Follow Route 51 North to Liberty Tunnel; turn right into tunnel. Proceed through tunnel and across Liberty Bridge; use Forbes Avenue/Downtown exit. At traffic light, turn right onto Forbes Avenue. Go through two more traffic lights to Duquesne University parking garage; turn right at main garage entrance.

EAST

I-76 Pennsylvania Turnpike (Westbound)/I-376:

Follow I-76 West to Exit 57, Pittsburgh/Monroeville I-376. Proceed on I-376 West approximately 12 miles to Exit 2B, Blvd. of the Allies. Continue on Blvd. of the Allies approximately one mile staying in the right lane. Blvd. of the Allies divides into a Y as you pass Mercy Hospital (look for helicopter pad on the right). Follow far right lane to stop sign. Proceed straight ahead to Bluff Street and the Duquesne University campus. At the intersection of Bluff Street and McAnulty Drive, turn right down the hill. Proceed through the stop sign; turn right onto Forbes Avenue at the traffic light. Proceed on Forbes to Duquesne University parking garage; turn right at main garage entrance.

WEST

PA Route 60/U.S. 22-30 East (Airport Area):

U.S. 22-30 East merges with I-279 North at the intersection with I-79. Follow I-279 North approximately 7 miles through the Fort Pitt Tunnel, staying in the right lane as you approach the tunnel. Use the right exit for Monroeville/I-376 East at the end of the Fort Pitt Bridge. Proceed approximately two-tenths of a mile and exit left at Grant Street/ Exit 1C. Proceed on Grant to the fifth traffic light at Forbes Avenue. Turn right onto Forbes Avenue and proceed approximately one-half mile to Duquesne University parking garage; turn right at main garage entrance.

I-76 Pennsylvania Turnpike (Eastbound):

Use Exit 28 Cranberry, I-79 South. Follow I-79 South to Exit 72, Pittsburgh/I-279 South. Follow I-279 South approximately 15 miles to Exit 8A, I-579 South/Veteran's Bridge. Look for and follow all signs indicating Mellon Arena. Proceed to the traffic light and turn right onto Washington Place. Proceed through the next two intersections. At the second intersection, turn left onto Forbes Avenue. Proceed on Forbes to Duquesne University parking garage; turn right at main garage entrance.