

LOWELL REGIONAL PHYSICS ALLIANCE

Thursday, April 9, at 3:00pm

UMass Lowell

Building and Launching High Altitude (100,000 ft) Balloon Systems in the Physics Classroom

Lou Broad, Timberlane Regional H.S., NH

Since 2000, Lou has taken students to extreme heights by having them build and launch high altitude (100,000 ft) balloon systems carrying amateur radio and scientific packages. Systems need to be built to conform to FAA regulations, survive low temperatures and pressures, have sufficient parachutes, radar reflection systems, onboard power, and to survive

OVER

followed by

Shared Demonstrations

Bring a physics demonstration in any area and enter the demonstrators' raffle. Please limit your demonstrations to no more than FIVE minutes.

ROOM:	<i>Olney Hall -218 (see www.uml.edu/maps/olney.htm for directions)</i>
PARKING:	<i>Parking permit for Riverside lot is enclosed</i>
SCHEDULE:	<i>3:00 Registration and Discussion</i>
	<i>3:45 "Building and Launching"</i>
	<i>4:45 Announcements and Raffle</i>
	<i>5:00 Shared Demonstrations</i>
	<i>6:00 Conclusion</i>
INFORMATION	<i>Art Mittler (978) 934-3775</i>
& ENQUIRIES:	<i>Arthur_Mittler@uml.edu</i>

Abstract

“Building and Launching High Altitude (100,000 ft.) Balloon Systems in the Physics Classroom”

Lou Broad

Since 2000, Lou Broad, physics teacher at Timberlane Regional High School, has taken students to extreme heights by having them build and launch high altitude (100,000 ft) balloon systems carrying amateur radio and scientific packages. Systems need to be built to conform to FAA regulations, survive low temperatures and pressures, have sufficient parachutes, radar reflection systems, onboard power, and to survive dropping into water, trees, and power lines! Students have developed and tested models for ascent, descent, and on board telemetry. These systems introduce students to very complex modeling that resembles constructing and launching a ‘simulated satellite’. Lou will share lessons learned from over 20 attempts of building, launching, tracking, recovering and analyzing these systems and how amateur (HAM) radio, GPS, and balloons can be used in the classroom.

LOU BROAD *has been teaching chemistry and physics for fifteen years at Timberlane Regional High School, Plaistow NH, where he has implemented several innovative and cross disciplinary programs, including a course that team-teaches English and Science called Humanity and the Cosmos, a coordinated approach to Algebra II and Physics and this year a year-long block format comprehensive Physics/Chemistry. He is the winner of several prestigious awards and grants including; Toyota Tapestry, Verizon Growth Initiative For Teachers (GIFT) and the Best Buy Children’s Foundation Award. Lou is the 2008 New Hampshire winner of the Presidential Award for Excellence in Mathematics and Science Teaching. Lou Broad received his BA in Chemistry and Physics Teaching from the University of New Hampshire in 1993.*