Meeting Summary

Meeting began at 10:10 and was held in room 211, University Tower, Central Florida Research Park, 12201 Research Parkway, Orlando FL 32826.

Faculty and UCF Regional Campuses staff who attended: Melody Boeringer, Valencia College; Brad Kibbe, Osceola Public Schools; Steve Husebye, Lake-Sumter College, Van Quach, Seminole State College; Hiram A. Malaret, Seminole State College; Deanna Squire, Wildwood Middle/High School; Julie Staton, Lake County Schools; Mike Hampton, UCF; Ange Peterson, UCF Regional Campuses; Scott McCord, Cocoa Beach High School; Bridget Logan, The Villages Charter School, Kim Paschall, Orange County Public Schools; Mike Kesten, Celebration High School; Sybil Brown, Lake-Sumter College; Angelia Vagle, Valencia College; Richard Tamburro, Daytona State College; Diana Boyette, Seminole State College; Maryke Lee, Valencia College; Chris Burk, Sumter County Schools; Nichole Moses, Lake County School Board; Donovan Dixon, UCF; Lisa Cohen, Valencia College; C. Lynn Dorn, Valencia College; Pedro Patino, UCF; Karen Endebrock, Daytona State College, John Shea, Lake-Sumter College; Michelle Sandage, Osceola Public Schools; Mike Cooney, UCF Regional Campuses

Mike Hampton and Ange Peterson welcomed all the participants and asked everyone to introduce themselves and to name the educational institution they represent. Mike stated it was a diverse group, which was represented by faculty and administration from K-12, state colleges and UCF.

The minutes from previous curriculum alignment meetings were reviewed and there were no questions, comments or recommended changes.

Mike stated this was the first joint meeting for Math and Chemistry Curriculum Alignment and asked if participants wanted to work within their own discipline or together. Everyone agreed to work together during the entire meeting.

Mike asked what topics the group would like to discuss that were relevant to both disciplines. The first topic was Dimensional Analysis and the difficulty students have once they are taking college-level courses. The following is an overview of the discussion:

- Several college faculty stated students do not understand the connection between the answer to a non-theoretical number and its relationship to physical properties (e.g., mass, volume, weight or speed). This is blamed largely on the use of
calculators and students not being taught there is a relationship between a non-theoretical number and the correct answer.

- Many of today's students have been conditioned to get a number quickly and not bother to determine if their answer makes sense relative to the problem. For example, a student will insist they have the correct number even when the answer is, "I drove 2,000 miles per hour."
- The K-12 faculty pointed out that one reason students have difficulty relating to Dimensional Analysis in college is that they typically take algebra, geometry and work on word problems in the 7th grade. In most cases it is a minimum of six years until they enter college and would begin using what they've learned. Everyone agreed this is a long time to remember the concepts taught, and suggested a refresher in the final year of high school.
- One suggestion was to use the time between end of course exams in the 12th grade and graduating from high school as a time to give students a refresher in Dimensional Analysis. This would help them be better prepared for entering college or the university.
- One math faculty discussed the pressure involving teaching units and dimensional analysis in math classes. Trying to serve every possible follow-on course requires understanding many different systems of units and is not really practical.
- Several faculty agreed that a good foundation in statistics appears to help students understand and apply it to Dimensional Analysis concepts when they reach college.
- To help students succeed in statistics, The Carnegie Foundation recently developed a new way of teaching that is being used at Miami Dade College, Tallahassee College and Valencia College. The new teaching methods are called Statway and Quantway. For more information go to: http://www.carnegiefoundation.org
- Not understanding Dimensional Analysis makes it very difficult for students to succeed at Stoichiometry once they are in college chemistry.
- Another problem is that the colleges and university requires different pre and co-requisites to advance in college chemistry.
- Students are still asking the question, "Why do I need to know this? When will I ever use it?" No one seems to be helping them understand the relationship between math and everyday life.

The Curriculum Alignment Conference

Ange reported she has been unable to find a venue for the Curriculum Alignment Conference. Kim Paschall with the Orange County Public Schools offered to check with the Orlando Science Center. In addition, the group decided the Conference should be held on either November 2 or 9.

Mike asked if Math and Chemistry faculty wanted to meet together or separately during the conference. Attendees agreed to meet separately in the morning and together in the afternoon.

Morning session will focus on 1) best practices (proven) and teaching methods in each discipline, 2) discuss the timing of when subjects are taught and when the content is
used by students, 3) differences between courses, 4) course goals, 5) what course content is needed for students to succeed and when, and 6) identify best pre and co-requisites to help ensure student success.

The following people agreed to help facilitate during the morning session:

Math: moderator - Lori Dunlop-Plye & recorder - Diana Boyette, Seminole State College
Chemistry: moderator - Melody Boennger, Valencia College & recorder - Nichole Moses

The afternoon joint session will combine goals and decide on common outcomes. The following people agreed to help facilitate the afternoon session:

Moderator - Diana Boyette, Seminole State College
Recorder - Steve Husebye, Lake-Sumer College

The group also suggested incorporating the following into the day's activities: 1) show real math and chemistry problems to demonstrate how subjects like Dimensional Analysis are used in each subject, and 2) faculty should bring the text books they use for each math and chemistry to display.

Other topics that were discussed:

Ange reported that UCF is following the State University System (SUS) Board of Governors who recently mandated that dual enrolled students graduating from high school with an Associate of Arts degree be admitted as advanced freshmen. In addition, they are required to attend Freshmen Orientation and specialized advising before taking Junior-level courses. SUS institutions have found that the advanced freshmen need support to adjust to the highly competitive upper division course work required in the majors.

PERT is replacing CPT and End of Course Exams is being used in the 12th grade instead of FCAT.

Meeting adjourned at 2:00 p.m.