**Active Learning in Introductory Physics Courses: Research-Based Strategies that Improve Student Learning**

**Portland, OR July 15-17, 2019**

**Tentative Course Schedule**

Monday, July 15 (8:30 AM—6:15 PM)

8:00 am Coffee, etc.

8:30 am Welcome and Introductions

9:00 am Overview of *Activity-Based Physics Suite:* Active vs. Traditional Learning

9:15 am *Force and Motion Conceptual Evaluation (FMCE)*

9:45 am Break

10:00 am Hands-on with *RTP Mechanics* Labs 1 and 2

11:45 am Introduction to *The New Mechanics Sequence*

12:00 pm Lunch

1:00 pm Continued hands-on with *RTP Mechanics* Labs 3, 4 and 5

3:00 pm Introduction to Interactive Lecture Demonstrations (ILDs)

3:45 pm Clicker *ILDs*

4:00 pm Break

4:15 pm Formation of groups to prepare ILDs

4:30 pm Preparation for presentation of ILDs

6:15 pm Reception on roof

7:15 pm Adjourn

Tuesday, July 16 (8:30 AM - 6:15 PM)

8:00 am Coffee, etc.

8:30 am Presentation of ILDs by Group 1

9:10 am Presentation of ILDs by Group 2

9:50 am Break

10:05 am Presentation of ILDs by Group 3

10:45 am Presentation of ILDs by Group 4

11:30 am Introduction to *Workshop* *Physics (WP)*, *Analytic Mathematical* *Modeling* and *Physics w/ Video Analysis (PVA)*

12:00 pm Lunch

1:00 pm Hands-on with *Analytic Mathematical* *Modeling, PVA, RTP Mechanics* Lab 10 and/or *WP* activities

2:15 pm Introduction to *Interactive Video Vignettes (IVV)* and IVV homework assignment

2:35 pm Introduction to *RTP Light and Optics*

2:45 pm Break

3:00 pm Hands-on with *RTP Light and Optics* Labs 3 and 5

4:15 pm Active learning approach used in *RTP* and *WP* for Heat and Thermodynamics

4:30 pm Introduction to *RTP Electricity and Magnetism*

4:40 pm Hands on with *RTP Electricity and Magnetism* Labs 1-3

5:45 pm Adjourn

Wednesday, July 17 (8:15 AM - 12:00 NOON)

8:00 am Coffee, etc.

8:30 am Discussion of IVV homework assignment

8:45 am Research on the effectiveness of active learning, and discussion on implementation

9:30 am Hands on with *RTP Electricity and Magnetism* Labs 4-6

10:30 am Break

10:45 am Hands on with *RTP Electricity and Magnetism* Lab 10

11:15 am Recitation and tutorial time: *Collaborative Problem-Solving Tutorials* and *Activity-Based Tutorials*

11:30 am Evaluations and closing discussion on implementation issues, etc.

12:00 pm Adjourn