Michigan Section of the American Association of Physics Teachers

2008 Spring Meeting
Saturday, April 12, 2008
Western Michigan University, Rood Hall

8:00 - 8:30 **Registration/Breakfast**

8:30 – 8:45 **Meeting call to order and opening comments (Rood 1104)**
Michael Faleski, MIAAPT President
Welcome by Dr. Paul Pancella, Chair of WMU Physics Department

Morning Session I - Concurrent

8:45 – 10:30 **Developing resources to meet the new MDE content expectations (Rood 2248)**
Drew Isola and Kathy Mirakovits

8:45 – 10:30 **NASA/JPL Center for Astronomy Education Workshops (Rood 2250)**
[If you plan to attend the Astronomy Workshops, please register (for free) at the NASA/JPL Center for Astronomy Education; http://astronomy101.jpl.nasa.gov]
Workshop 1-Implementing Active & Collaborative Learning Strategies in Introductory Astronomy
Workshop 2-Teaching Astronomy Online
Workshop 3-Astronomy Laboratories; In class and Online
Michael C. LoPresto, Steven R. Murrell, Henry Ford Community College
Joseph Lowry, Eastern Michigan University

8:45 – 10:30 **Oral Presentations** (arranged from submitted abstracts) **(Rood 1104)**

8:45-9:00 Encouraging appropriate beliefs about science knowledge in future K-8 teachers
Keith Oliver, Grand Valley State University

9:00-9:15 An analysis of two non-traditional instructional methods on student learning.
Kristofer Pachla, Grand Valley State University

9:15-9:30 Exploring student understanding of equations through the conservation of Energy
Tim Major, Grand Valley State University

9:30-9:45 Two *bodies are tough enough: Helping students learn orbital mechanics*
Bradley S. Ambrose, Department of Physics

9:45-10:00 What's the point of a quiz if you don't even grade it?: The use of pre-tests in an undergraduate mechanics course.
Carrie M. Swift, The University of Michigan – Dearborn

10:00-10:15 Circuit connections through construction, calculation, and composition
Michael Faleski, Delta College

10:15-10:30 Inner-shell photoionization of rare gas clusters
Huaizhen Zhang et. al., Western Michigan University

Break

10:30 – 11:00 **Break**

Morning Session II: Invited Talk

11:00 – 12:00 **Is there a way to use research science to teach science? (Rood 1104)**
Sylvester Jim Gates
John S. Toll Professor of Physics and Center for String and Particle Theory
Director, University of Maryland

Lunch

12:00 – 1:00 **Lunch**

Boxed lunches (sub, chips, cookie, drink) will be available from Jimmy Johns for $7.50. See attached for options. (If you will not arrive before 8:30 and want to order lunch, please email Charles Henderson with your choices.)

Afternoon Session I

1:00 – 1:20 **MIAAPT Business Meeting (Rood 1104)**

Michael Faleski, MIAAPT President

1:20 – 1:45 **My Favorite Demo / Stump the Professor / Questions / Give-aways (Rood 1104)**

1:20-1:30 Stump the professor: Wondering about wheelchairs
David Schuster, Western Michigan University

1:30-1:45 Other contributions as time allows

Afternoon Session II

1:45 – 3:00 **Oral Presentations (Rood 1104)**

1:45-2:00 PAN: Nuclear science boot camp for reachers and students
Zach Constan, National Superconducting Cyclotron Laboratory

2:00-2:15 InterActions in physical science: Helping students think like a scientist
Robert Poel, Western Michigan University

2:15-2:30 The moons of Mercury: Looking up and looking down
Philip Edward Kaldon, Western Michigan University

2:30-2:45 Using "sliders" in Excel to automate data-modeling
Scott Schneider, Lawrence Technological University

2:45-3:00 Conservation of mechanical energy using the rotational inertia demonstrator
Steve Rea, Plymouth High School

Afternoon Session III – Concurrent

3:00 – 4:30 **NASA/JPL Center for Astronomy Education Talks (Rood 2250)**

Assessment of Active & Collaborative Learning in Introductory Astronomy
Michael C. LoPresto, Henry Ford Community College

Telescope Tales: The UM-Dearborn Observatory Unmasked, Part I
Eric J. Rasmussen and Donald J. Bord, University of Michigan-Dearborn

Telescope Tales: The UM-Dearborn Observatory Unmasked, Part II
Donald J. Bord and Eric J. Rasmussen, University of Michigan-Dearborn

The New Scale Model of the Solar System at Henry Ford Community College
Steven R. Murrell, Henry Ford Community College

3:00 – 4:30 **Oral Presentations and Accelerator Tour (Rood 1104)**

3:00-3:15 Motion matching: a challenge game to generate motion descriptor concepts
Adriana Undreiu et. al., Western Michigan University

3:15-3:30 From motion diagrams to motion graphs
David Schuster et. al., Western Michigan University

3:30-4:30 Tour of the department of physics accelerator laboratory (Accelerator Lab)
Asghar Kayani, Western Michigan University

4:30 **Door prize give aways (Rood 1104)**

Morning Session I: Developing resources to meet the new MDE content expectations

Drew Isola and Kathy Mirakovits

This workshop is designed to be a working session on how to group-regroup the Physics HSSCE's into mini-units of instruction for implementation in Michigan school districts. Some samples of how the HSSCE's can be grouped together will be presented. Participants will be encouraged to interact and share ideas (perhaps bring ideas to share) of demonstrations, lab exercises, Internet sites, lecture content that assist in fostering content knowledge of the Big Ideas in the Core and Essential expectations.

Morning Session I: NASA/JPL Center for Astronomy Education Workshops

Michael C. LoPresto, Steven R. Murrell, Henry Ford Community College
Joseph Lowry; Eastern Michigan University

If you plan to attend the Astronomy Workshops, please register (FOR FREE) at the NASA/JPL Center for Astronomy Education: http://astronomy101.jpl.nasa.gov

Workshop 1-Implementing Active & Collaborative Learning Strategies in Introductory Astronomy

A discussion of how different types of activities, including lecture-tutorials, classroom response, in-class writings and others, can be used to teach various topics in introductory astronomy. Which topics are taught best with which methods, for which topics lecture still works and which topics can be left out as well as resources for finding useful activities will also be discussed.

Workshop 2-Teaching Astronomy Online

A discussion of preparation, delivery, and problems encountered with teaching introductory astronomy online, also including existing useful resources.

Workshop 3-Astronomy Laboratories; In class and Online

A discussion of available resources and methods for teaching an introductory astronomy laboratory course with either traditional classroom or online delivery

Morning Session I: Oral Presentations

Encouraging appropriate beliefs about science knowledge in future K-8 teachers

Keith Oliver, Grand Valley State University

One of my objectives in my science classes for future elementary teachers is that my students leave my course viewing knowledge more like a scientist. I have measured student views about knowledge using the EBAPS (1) survey. Initial results showed a decline in student scientific views about knowledge. After some course modifications, I have seen an improvement in student views. I will present results from several semesters, the changes I made in the course, and discuss implications for the design of future courses.

(1)Epistemological Beliefs Assessment for Physical Science (EBAPS). Andrew Elby, John Frederiksen, Christina Schwarz, and Barbara White. http://www2.physics.umd.edu/~elby/EBAPS/home.htm

An analysis of two non-traditional instructional methods on student learning

Kristofer Pachla, Grand Valley State University

This physics education research study looks at the differences between two non-traditional teaching techniques, (a) the use of guided inquiry and (b) the use of a type of graphical organizer, on the learning of students in a conceptual physics course (PHY 200, "Physics for the Life Sciences") at Grand Valley State University during the Winter 2008 semester. Traditional lecture was not chosen because extensive research has shown that increased learning (significantly better test scores) occurs with cooperative learning as compared to traditional lecture (Anderson et. al, Yamarik). The specific graphical organizer, known as a Concept Definition (C/D) Map, is a visual organization tool that allows students to create a definition of a concept based on principles, applications, and similar and dissimilar concepts. Students in six PHY 200 discussion groups, each with about 25 students, participated in pre- and post-test tasks in order to gauge the learning gains occurring with one or the other of the two different teaching methods. Control groups participated in a guided inquiry activity while experimental groups created C/D Maps for the topic at hand. Each group then finished in-class activities with a class discussion, facilitated by the researcher, in which the students discussed and came to an agreement on the important aspects of the target concept. Pre- and post-test comparisons were made for students in each of the two groups in order to measure and characterize the learning gains in each group, and the results from the control groups and the experimental groups were also compared to one another.

Exploring student understanding of equations through the conservation of energy

Tim Major, Grand Valley State University

Physics students often think "solving problems" means choosing formulas and plugging in given values to get an answer. Many students who are able to use this technique to get correct answers often demonstrate a lack of understanding of the concepts involved when interviewed. Some studies have already been done on student understanding of mathematics in a physical context, involving both students' ability to understand and manipulate formulas, as well as how they relate their math knowledge to physics problems. The context of the investigation is a topic in which there is no universal formula, but rather a law that facilitates the creation of an equation based on a physical concept: the Law of Conservation of Energy. When applying this law to solve problems, students cannot simply "plug and chug", but must construct an equation based on the specific situation described. The research for this project was primarily performed through individual student interviews, which were videotaped for in-depth analysis. By studying the process through which students construct equations from physical concepts such as the Conservation of Energy, some misleading ideas about interpretation, utilization, and the purpose of equations in physics that are common in introductory physics students are elucidated.

Two bodies are tough enough: Helping students learn orbital mechanics

Bradley S. Ambrose, Department of Physics

The study of central forces in mechanics, particularly gravitation, provides fertile ground in which students can learn and apply fundamental conservation laws that they will use later in their undergraduate careers (*e.g.*, quantum mechanics of the H atom). Results from research, however, indicate the presence of specific conceptual and reasoning difficulties, many of which seem to be rooted in fundamental concepts, including angular momentum of point particles and even what it means for a quantity to be "conserved." Evidence from pretests (ungraded quizzes), written exams, and informal classroom observations will be presented to illustrate specific student difficulties as well as to describe teaching strategies that seem effective in addressing those difficulties. This work has guided the development of inquiry-based classroom activities for intermediate mechanics (supported by NSF grants DUE-0441426 and DUE-0442388).

What's the point of a quiz if you don't even grade it?: The use of pre-tests in an undergraduate mechanics course.

Carrie M. Swift, The University of Michigan – Dearborn

Physics students, particularly physics majors, are frequently resistant to new modes of instruction. Convincing students that they can benefit from the use of active learning tools is important in them benefiting from the use of these tools. The speaker has implemented the use of tutorials developed by Ambrose, et al., in UM-Dearborn's Classical Mechanics course over the past two terms. In the first term the tutorials were used in class but the pre-tests were not given consistently. The students were resistant to the use of the tutorials and had difficulty in effectively working in groups. In the second term, the pre-tests were used consistently. Students seemed to be more aware of their own learning when the pre-tests were used and had a more enthusiastic approach to the tutorial activities. Group work became an important part of the learning process. This experience implies that use of the pre-tests is an important factor in the success of the tutorial methodology.

Circuit Connections through Construction, Calculation, and Composition

Michael Faleski, Delta College

Capacitors and resistors connected in series and parallel are encountered by students in all introductory physics classes. The activity described here uses the actual construction with circuit elements as a way for students to make series and parallel connections. Instead of presenting connected circuit elements and asking for equivalent values, students design their own connections in order to achieve a group of desired equivalent capacitances/resistances using identical elements. In addition, schematic diagrams of the connections are made. Symmetries play a large role in understanding the connections and this is seen through the use of sentences describing those connections.

Inner-shell photoionization of rare gas clusters

Huaizhen Zhang,[1] Daniel Rolles,[1, 2] Zoran Pešić,[1, 2] John Bozek[2, 3] and Nora Berrah[1]
[1]Physics Department, Western Michigan University, Kalamazoo, Michigan 49008
[2]Advanced Light Source, Lawrence Berkeley National Laboratory, Berkeley, California 94720
[3]Standford Linear Accelerator Center, Menlo Park, California 94025

The photoionization of variable-size rare gas clusters using angle-resolved photoelectron spectroscopy has been studied at the Advanced Light Source at Lawrence Berkeley National Laboratory. Photoelectron spectra subsequent to the photoionization of valence and core levels of different-size (60-5000 atoms) clusters have been measured in detail. Specifically, we measured the photoelectron kinetic energies and intensities following the photoionization of Ar 2p, Kr 3d and Xe 4d core levels and Ar 3s, Ar 3p, Kr 4p and Xe 5p valence levels. The photoelectron angular distribution parameters as a function of photon energy and average cluster size have been determined. Particularly, the angular distribution parameters of the two-spin orbit components for Xe 5p, 4d, Kr 4p, 3d, Ar 2p have been obtained. We will present measurements demonstrating that the photoelectron angular distributions of the clusters are more isotropic than those of the corresponding free atoms, for the photon energy right above the corresponding thresholds. For the outer valence electrons, differences between the two spin-orbit components in Kr 4p clusters were found. However, for the core electrons, the angular distribution of Ar 2p, Kr 3d and Xe 4d clusters are almost the same to those of the corresponding atoms, within the error bar range.

Morning Session II: Invited Talk

Is there a way to use research science to teach science?

Sylvester Jim Gates, John S. Toll Professor of Physics and Center for String and Particle Theory Director, University of Maryland

String Theory, a subject at the forefront of research science, has generated enormous attention in media as shown by recent history. Does such a subject present an opportunity for science teachers to harness such interest for educational goals? This talk will describe efforts to explore this question via a concrete project underway.

Afternoon Session I: Stump the Professor

Stump the professor: Wondering about wheelchairs

David Schuster, Western Michigan University

A patient in a wheelchair on a ramp is a pretty simple situation, right? A series of quick questions may ‘force’ you to ‘work’ at it a bit more …

Afternoon Session II: Oral Presentations

PAN: Nuclear science boot camp for teachers and students

Zach Constan, National Superconducting Cyclotron Laboratory

PAN is a free residential summer camp for High/Middle School science teachers and High School students on the campus of Michigan State University. A cooperative outreach program by the Joint Institute for Nuclear Astrophysics (JINA) and National Superconducting Cyclotron Laboratory (NSCL), PAN exposes participants to the latest research in nuclear astrophysics and gives them the opportunity to perform self-designed experiments using laboratory resources. Participating teachers gain the content knowledge, equipment, and experience necessary to incorporate nuclear science in their curriculum. This talk will present the program goals and practices, as well as its impact in the classroom.

InterActions in physical science: helping students think like a scientist

Robert Poel, Western Michigan University

The National Science Education Standards (NSSE) and the AAA's Benchmarks for Scientific Literacy emphasize using inquiry strategies in the K-12 science classrooms to improve student's understanding of basic science concepts and the nature of scientific inquiry. InterActions in Physical Science is a NSF supported full year middle-school physical science curriculum that promotes deeper understanding of basic physical concepts and how scientist make and support their claims. This session will provide an overview of the curriculum and the design strategies that support students and their teachers to achieve these goals.

The Moons of Mercury*: Looking Up and Looking Down

Philip Edward Kaldon, Western Michigan University

While researching a Science Fiction story I was writing, I got to thinking about being able to see small objects from very far away. The Internet can provide students with some fascinating photos -- the International Space Station seen from Earth, Google Earth images of airplanes and ships from space, a recent landslide on Mars from Martian orbit, Earth and Moon seen from the surface of Mars. In addition to the physics and technical difficulties of such magnification, our ability to see increasingly small angles of view also means we are likely to miss small things as well.

*For the record, according to NASA "Mercury has no known moons."

Using "sliders" in Excel to automate data-modeling

Scott Schneider, Lawrence Technological University

The use of "scroll bars" (sliders) in Excel is not new, and has been covered in TPT. But, in case you haven't seen it, or would like to see some real-world examples - we currently use sliders with several of our lab classes and I can show you how to easily set them up (and how to avoid some pitfalls).

Conservation of Mechanical Energy using the Rotational Inertia Demonstrator

Steve Rea, Plymouth High School

The Rotational Inertia Demonstrator provides an engaging way to investigate many of the principles of angular motion. This talk will focus on using the apparatus to demonstrate the conservation of mechanical energy in the transfer of gravitational potential to rotational energy.

Afternoon Sessions III: NASA/JPL Center for Astronomy Education Talks

Welcome

Michael C. LoPresto, Henry Ford Community College

Assessment of Active & Collaborative Learning in Introductory Astronomy

Michael C. LoPresto, Henry Ford Community College

Assessment of student knowledge and learning is an important part of using active & collaborative teaching techniques. Pretests can show what knowledge students are coming into a course with and especially which misconceptions must be dealt with. Gains on post tests can show how well various teaching strategies work and provide useful information for improving instruction. Results of assessment tests at HFCC will be discussed as well as the availability of nationally used instruments and ideas for creating your own.

Telescope Tales: The UM-Dearborn Observatory Unmasked, Part I

Eric J. Rasmussen* and Donald J. Bord, University of Michigan-Dearborn

*also Henry Ford Community College

In September 2007, the University of Michigan-Dearborn observatory began regular use in support of astronomy classes offered both at UM-D and neighboring Henry Ford Community College, as well as for public observing events frequently staged in association with planetarium shows given at HFCC. This debut marked the culmination of nearly seven years of planning and effort by faculty and staff at UM-D and HFCC to design, fund, and complete a project that, at its conclusion, exceeded all expectations in terms of cost, complexity, time and, most importantly, educational potential. In this first portion of the tale, we begin with a brief overview of the original conception of the project and our quest to secure funding for it. The modifications to the design of the facility that followed upon its merger into the larger building project that led to the erection of the Science Learning and Research Center (SLRC) on the UM-Dearborn campus are then discussed. We close with a description of some specific challenges that confronted us during the construction of the observatory and the installation of the telescope. Throughout, we will focus on the pitfalls and problems that inevitably accompany projects of this scope and level of detail, and we offer our experience as a cautionary tale emphasizing the need to remain flexible, vigilant, patient and persistent in the face of adversity to those who may embark on similar enterprises.

Telescope Tales: The UM-Dearborn Observatory Unmasked, Part II

Donald J. Bord and Eric J. Rasmussen*, University of Michigan-Dearborn
*also Henry Ford Community College

The installation of the 0.4-meter (16-inch) diameter Ritchey-Chrétien telescope in the observatory on the UM-Dearborn campus in April 2007 marked a major step toward our goal of providing meaningful opportunities for our students and those at our coordinating institution, Henry Ford Community College, to engage in study and research in astronomy using professional grade software and instrumentation. But the path from installation to full functionality, like that of the design and construction of the observatory complex itself, was fraught with its own set of surprises and challenges. Here we discuss some of the problems that beset us during the initial commissioning phase of telescope set-up and the means that were employed to overcome them. We then describe the impact that the completion of the new facility has had on the manner in which astronomy is now (and will be) taught at UM-D and HFCC. We highlight particularly the development of some new laboratory activities at both the introductory and advanced levels, a new astronomy minor program at UM-D, and an expanded program of public events co-sponsored by our two institutions. While perhaps not unique or widely transportable, we conclude that this model of collaboration between 4-year and 2-year schools of higher education is worthy of emulation where possible for its effective use of increasingly scarce resources and for the mutual intellectual and personal benefits it affords the participants.

The New Scale Model of the Solar System at Henry Ford Community College

Steven R. Murrell, Henry Ford Community College

Anyone who has taught an introductory astronomy course is aware that it is difficult to comprehend the size/distance scales of the Solar System and even more difficult to teach or convey that sense of scale to students. At Henry Ford Community College in Dearborn, Michigan, we have designed and built a scale model of the Solar System into which the students can be immersed as an aid in the development of their sense of the scales involved. This model consists of eleven glass covered, mounted displays, each representing one of the eight planets, the Sun, the asteroid belt and the "dwarf planet" Pluto. The Sun, modeled as the size of a softball, is located in the science building as are the four inner planets and the Asteroid Belt. The remaining planets and Pluto are located in positions consistent with the overall scale of the model, which is 1 meter per 15 million kilometers. At this scale the planet Mercury, mounted on the head of a pin, is only a few steps away from the Sun display while Pluto is located near the edge of our campus about a quarter mile away. As students are often very surprised to learn, at this scale the nearest star would be located in Arizona. In this talk, we will describe the overall layout of our model as well as the design, fabrication and mounting of the display cases. One of the actual display cases will be on hand in case participants wish to see an example.

Afternoon Sessions III: Oral Presentations and Accelerator Tour

Motion matching: a challenge game to generate motion descriptor concepts

Adriana Undreiu, David Schuster, Betty Adams and Philip Kaldon
Western Michigan University

We demonstrate a minds-on challenge activity used as an invitation to study motion. Real observed motions are translated into verbal descriptions, followed by attempted translation of descriptions back into real re-enacted motions. First attempts can be hilarious, with the re-enactor deliberately producing 'wrong' motions from inadequate descriptions. This leads students to generate for themselves the basic kinematic quantities required as motion descriptors, in a process of successive refinement. Thus concepts of initial position, speed, direction, speed change and rate arise naturally from a perceived need. The activity also offers teaching opportunities for other relevant ideas, such as point particle representation, rate of change quantities, and frames of reference.

From motion diagrams to motion graphs

David Schuster, Eric Arsznov, Betty Adams and Adriana Undreiu
Western Michigan University

Many students have difficulties with representations such as diagrams and graphs and relating them to real physical phenomena. We demonstrate a large-scale participatory 'floor activity' where students first produce motion diagrams from real motions and then generate the corresponding motion graphs by "sweeping out' a time axis. We discuss how viewing diagrams and graphs from an 'interval' or 'delta' perspective can provide conceptual understanding of both kinematic concepts and graph characteristics, visually linking space and time intervals to graph rise and run, slope and shape, and relating these to the observed motion.

Tour of the department of physics accelerator laboratory

Asghar Kayani, Western Michigan University

A major research facility of the department of physics, Western Michigan University is the High Voltage Engineering Corporation 6-MV model EN tandem Van de Graaff accelerator, which has been in continuous use for more than 30 years. During this long history, the accelerator laboratory has established itself as an important research and research training facility and as an educational facility through a broad spectrum of uses and applications. Furthermore, the laboratory played a key role in the establishment of the Ph.D. program during the last decade.

Department faculty have utilized the accelerator for research in atomic, condensed matter, nuclear, and applied physics. This research has resulted in numerous publications in leading physics journals, and has also formed the basis for several Ph.D. dissertation projects (since 1995) and numerous M.A. thesis projects (since 1970). The accelerator facility has been, and continues to be, an important component in faculty research that has received external support.

In addition to its uses as a research facility, the accelerator has, throughout its history, been used extensively as an educational training tool. Specifically, atomic and nuclear collision experiments (e.g., Rutherford scattering) have been incorporated into the department's undergraduate modern physics laboratory that is generally taken by sophomore level students, and into the advanced laboratory course taken by upper level undergraduate physics majors and by graduate students. The laboratory has provided the basis for several undergraduate Honors College thesis research projects, independent study projects, and high school science mentorship projects for the Kalamazoo Area Mathematics and Science Center. Also, students from area colleges (Kalamazoo College, Albion College, Andrews University) and high schools come to the university on a regular basis to use the accelerator to conduct collision experiments as part of the physics curricula at their home institutions. Thus, during its long history as a teaching facility, the accelerator lab has served as an instructional tool for literally thousands of university and high school students. It is noted that WMU is one of six institutions nationwide participating in the so-called PhysTEC project, an NSF-funded project with the goal of improving the preparation and training of future K-12 science teachers in the U.S. In this regard, a major component of our undergraduate physics program is the preparation of secondary education teachers. All of these latter students are required to take the modern physics laboratory that includes experiments in the accelerator laboratory.

Michigan Section of the American Association of Physics Teachers

2008 Spring Meeting
Saturday, April 12, 2008
Western Michigan University, Rood Hall

Lunch Options

$7.50 (includes sub, chips, cookie, and beverage)

Choose one from each list (from Jimmy John's):

Sub	Chips	Cookie
#1 PEPE Real applewood smoked ham and provolone cheese garnished with lettuce, tomato, and mayo.	**Regular**	**Chocolate Chip**
#2 BIG JOHN Medium rare shaved roast beef, topped with yummy mayo, lettuce, and tomato.	**BBQ**	**Oatmeal Raisin**
#3 TOTALLY TUNA Fresh housemade tuna, mixed with celery, onions, and our tasty sauce, then topped with alfafa sprouts, cucumber, lettuce, and tomato. (My tuna rocks!)	**Salt & Vinegar**	
#4 TURKEY TOM Fresh sliced turkey breast, topped with lettuce, tomato, alfafa sprouts, and mayo. (The original)	**Jalapeño**	
#5 VITO The original Italian sub with genoa salami, provolone, capicola, onion, lettuce, tomato & a real tasty Italian vinaigrette.		
#6 VEGETARIAN Layers of provolone cheese separated by real avocado spread, alfafa sprouts, sliced cucumber, lettuce, tomato, and mayo.		

An assortment of beverages will be available.