

Teacher reveals the 'Physics of Music'

By **FRANKIE ADDIEGO**
Staff writer

The connection between music and physics was explained in detail last week as part of a Brown Bag seminar for students and faculty. Ohlone astronomy instructor Charles Hepburn was the speaker and he titled his presentation "The Physics of Music."

He began by explaining the relationship between theory and experimentation, which is central not only to the relationship between music and physics, but also to science in general.

"The first music was made by experimenting, as opposed to trying out a theory," he said. "It's only when we get to electronic music... do the theory and the experiment go hand-in-hand."

Throughout the lecture, Hepburn demonstrated the various physical theories behind how music is created with a number of different instruments. Among the instruments he brought to class were a variety of different flutes, clarinets, other wind instruments, brass instruments, a synthesizer, an acoustic guitar and an electric guitar.

He demonstrated the theories behind sound waves with the different wind instruments. He pointed out that, unlike with some instruments, the material out of which the wind instruments are made makes a difference. This includes the metals, woods and even the reeds in the mouthpiece. He also went into the differences between cylindrical and conical wind instruments.

He explained the role a phenomenon called the Bessel function in

drums and other percussion instruments, he said that it creates dissonance and an "infinite tone."

While he barely used either of the guitars he brought to demonstrate the theories behind them, he did demonstrate how a string creates waves.

He said, "the frequency for the guitar string will be a little bit like we had with the sample string," referring to a string that was not from a musical instrument which he had dangling to demonstrate a more broad theory of movement in physics.

After the lecture was over, a number of attendants stayed to ask him questions about his equipment and instruments. One of the most popular pieces of equipment among those who stayed for the question and answer session and unoffi-

cial post-lecture symposium was Hepburn's wind synthesizer. The device is blown into and held like a normal wind instrument, but can electronically emulate the sounds of any other wind instrument, similar to how keyboard instruments can reproduce the sounds of other instruments.

The Ohlone Brown Bag seminars are hour-long presentations which usually include a lecture followed by a question and answer session.

The next Brown Bag will be presented by Brittany Tuitou, a former Ohlone student. Her presentation is titled "A Flight Without Wings: the Story of a Methamphetamine Survivor" and be presented on Oct. 20 in Room 3201 from 1 to 2 p.m. The event is open to the public at no cost. Refreshments will be provided before the seminar.



Photo by Michael Aburas

Instructor Charles Hepburn plays his wind synthesizer at the Brown Bag.

Hans gets a behind-the-scenes upgrade

By **MICHAEL ABURAS**
Staff writer

Fall has been a season of updates. The first of the semester was WebAdvisor, now followed by the library database Hans. Hans is a module that is part of the Voyager program. The upgrade is mandated by the Endeavor Company - they provide the software and upgrade their product annually.

"This upgrade was more complex because of the server upgrade. The old hardware was about six

years old," said Systems Librarian Kathy Sparling. In addition, the server got an upgrade as well.

"There is a standard called Unicode, which our system is now compliant with," said Sparling.

The previous program was not Unicode compliant. The "Voyager with Unicode Release Handbook" explains that "Unicode is an encoding scheme for written characters and text. The standard is international in scope and includes characters (more than 40,000) from all of the major scripts of the world, as

well as commonly used technical symbols...The Unicode standard includes support for all of the JACKPHY languages (Japanese, Arabic, Chinese, Korean, Persian, Hebrew and Yiddish), as well as a number of other scripts including Cyrillic."

In other words, it will be easier for Hans to upload and display things like Chinese characters. Even though there isn't very much material in Chinese available at the library.

Other improvements include the

book bag feature becoming visible. According to Sparling, "The book bag works like an online shopping site, where you can save things you're shopping for and look at them later."

Although Hans will have some improved capabilities for students, it will mainly remain the same. It's the behind-the-scenes changes for staff that will be improved. Students can still reserve books and use all previous functions.

Hans was named in dedication of Hans Larsen, the first director of

the Ohlone College Library and also stands for "Have a Nice Search."

Additionally, Voyager, the program used to check out books at the circulation desk, came back online recently. It was offline for about a week.

Employees at the circulation desk had to check books out with paper slips and faculty access was unavailable. "We're able to process books using Voyager, we're not using paper anymore," said Library Technician Lynda Ernesta Shagnusson.

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