

# Vegas comes to Ohlone, if only for a day

By ERIC DORMAN  
Editor-in-chief

Don't quit your day jobs, folks. It may not have been the conclusion students were looking for at Friday's Brown Bag Science Seminar, but it was the advice Math Instructor Jeff O'Connell gave to those hoping to "beat the system," Las Vegas-style, through card counting.

"I'm not saying you shouldn't count cards...[but] I don't think it will work out as well as you think it will," O'Connell told the packed house at the seminar, entitled "21—The Math Behind The Movie." In the talk, O'Connell examined how likely it is for one to consistently make money at blackjack and other card games through card counting (answer: not very) and whether the claims of the card counting-based movie "21" were exaggerated (probably).

"21," a film released in March, chronicles the story of how 6 MIT students made millions in casinos through card counting—the process of keeping track of the cards already played from a deck and modifying one's bet based on the odds of a particular card appearing. "21" is based on a true story, but O'Connell suggested, through math and card-playing demonstrations, that the claims might have been exaggerated.

O'Connell began the talk with a simple premise: "If you want to try to beat the system, you have to understand the system." Understanding the system, O'Connell explained, has to start with understanding "expected value"—the average loss or gain a player can expect to see in a given game. A game in which the odds are in your favor will have a positive expected value, while one in which the odds are against you will have a negative one.

But in general, there's no need to calculate the expected value in a casino game. Why? "Every single game played in a casino has a negative expected value," said O'Connell. "Negative expected value is the system."

This isn't to say it's not possible to win money in a game at a casino, said O'Connell. In fact, a quick poll revealed that many of the



Photo by Eric Dorman

## Math Instructor Jeff O'Connell gambles with students at Friday's Brown Bag Science Seminar.

audience had. If you only play a given game a small number of times, the probability of winning, while low, is still significant. However, if you play many games, the probability of coming out ahead decreases drastically—a rule known as the "law of large numbers." Thus, while some bettors playing roulette, for example, may walk away from the table with more money than they started with, the vast majority will lose money. It is the law of large numbers that the casinos are betting on, and it's because of this that they are able to pull in a steady cash flow (for example, a roulette player can expect to lose, on average, 5 cents per \$1 bet).

So if the expected value is always negative, how can one consistently make money at a casino game? While it is statistically impossible to consistently make money at a game of chance like roulette, said O'Connell, games of strategy—like blackjack—are a different story. In roulette, every spin of the marble is independent (in other words, it is not influenced by prior spins), but in black-

jack, cards already played do influence later hands (because the already-played cards are no longer in the deck).

This fact is vital for the success of card counting, O'Connell explained. In blackjack, higher cards tend to form better hands than low ones, so a common card-counting scheme (called the "high/low strategy") calls for the bettor to assign each card played from the deck either a "+1" if the card is low or "-1" if it's high. This way, a player who keeps track of the "count" of the deck can maintain a rough idea of the odds of a particular card coming up. For example, a deck with a low count still has many low cards in it, while a deck with a high count is stocked with valuable face cards (suggesting that it's a good time to bet).

With a little more math, the player can obtain a more accurate assessment of the deck's content by calculating the "true count"—the basic count divided by the number of decks left.

All this math pays dividends, said

O'Connell, when the true count climbs above "+2"—at this point, the player has a one percent advantage over the house. It is with high counts like these that the characters in "21" made their millions, and it was with these kinds of counts that other educated gamblers could presumably make their fortunes, too.

To test how well this really worked, O'Connell staged an experiment with six students and six decks of cards, pre-loaded with high counts. Even with the favorable decks, the house (whose duties were performed by O'Connell) still came out ahead.

Even assuming card counting provided that one percent advantage, though, said O'Connell, the financial rewards were slim and somewhat risky. Betting \$100 per hand, one could expect to make an average of about \$50 per hour using the strategy, he said—but the margin of error for that figure was a whopping \$2,800 per hour. So, on any given hour of playing, a card counter can expect to win anything from \$2,750 to a loss of \$2,750.

After examining the math behind card counting, O'Connell told the audience why he has never counted cards and has no intention of ever doing so: the tremendous amount of work that goes into it isn't justified by the modest (and questionable) rewards. "I think the movie exaggerated things greatly," said O'Connell. "I think it made [card counting] seem like the silver bullet." In his own experiments, said O'Connell, the success of the method has not been clear.

The clincher, though, came with a segment from "21" O'Connell showed at the talk's conclusion. The short clip showed one of the MIT gamblers facing the wrath of a casino hit man. In the clip, the hit man (played by Laurence Fishburne) accosts the student and teaches him a violent lesson about the consequences of attempting to outsmart a casino. "Think you can beat the system?" Fishburne intones to the cowering and bloody student. "This is the system—beating you back."

"Stop counting."

The next Brown Bag will be held Friday, Nov. 7 from 1 to 2 p.m. in Room 3201. The speaker will be Adjunct Anthropology Instructor Mark Dobbs, who will deliver a talk called "Forensic Anthropology."

# ASOC takes tentative step toward free speech

By ANNA BIARITZ ROLDAN  
Staff writer

The Associated Students of Ohlone College (ASOC) took another step toward possibly making the entire campus a "free speech area" at the meeting Tuesday.

After student Zuhul Bahaduri, who is spearheading the effort, argued in favor of abolishing the current free speech area (at the bottom of the Building 1 stairs by the Palm Bosque) in favor of making the entire campus a free speech area, the ASOC decided that further deliberations on the necessity of the project were needed. It opted to vote on forming a committee on the project at next week's meeting.

Should the ASOC approve the formation of the committee, one of the committee's first tasks will be to send out a survey to the student body regarding the free speech area. Though a survey concerning this area has already gathered several hundred signatures, the ASOC plans to draft its own and circulate that.

ASOC President Jackie McCulley said of the proposed project, "this is an important change that will [be in] effect for the rest of the school's existence so we should keep in mind that this will take a while. This may even carry over to the next semester."

Also mentioned during the meeting was the 140th anniversary of the last major earthquake along

the Hayward Fault on Tuesday. The fault's activities are especially pertinent to the college, since it runs close to Ohlone. Chief of Police Steve Osawa talked about preparing for the earthquake at a recent safety meeting. Osawa mentioned that everyone should keep about two days' worth of clothes, as well as handy flashlights.

In addition, families should also be sure to set a meeting place, and they should know that in case of emergency, text messages are more likely to get to the intended recipient than phone calls.

The ASOC also announced that the new Hyman Hall furnishings will be ready at the beginning of next year. According to ASOC

Vice President Kevin Feliciano, the furnishing updates will include new upholstery and fresh paint.

The ASOC also discussed several money requests. These include money requests for Ezups tents, the ASOC meet and greet program, and the speech department. Ezups tents are primarily for ASOC use, but may also be borrowed by other organizations/ clubs on campus once purchased. The tents are designed to be easier to set up and take down than the ones currently in use by the ASOC.

The money request for the meet and greet program is for the food given away and other supplies used for the program for students on campus.

Representative from the forensics team Carissa Hatchet was present at the meeting to present what their money request is for, which is for the hiring of a speaker who will talk about student success.

Finally, the ASOC discussed the inaugural Coffee Cart Concert, which kicked off Tuesday at the coffee cart. The general consensus was that the event went well, but that the music was too loud. It was suggested that the volume might be made significantly softer to suit the idea of a "Coffee Cart Concert."

Coffee Cart Concerts feature a variety of artists from around campus who perform at the coffee cart from noon to 1 p.m. every third Tuesday of the month.

# Chance for mathletes to flex their synapses

By KYLE STEPHENS  
News editor

Friday, Oct. 24, Ohlone will be hosting a national Student Math League pre-calculus competition from 5-6 p.m. in HH-218.

The top five scorers will receive \$50, and two second-tier scorers will be chosen via a dice roll.

The prize money comes from individual donations from the

math department faculty and the ASOC.

"Not every good math student is still taking math, or math related classes," said Geoffrey Hirsch, math instructor and club advisor. The cash prizes encourage a greater turn out, and with it stronger talent. Prior to the cash prize, Ohlone ranked 86th in the nation. After it, Ohlone went to 8th, then 4th, then back to 8th – an 80 place jump at the least.

In 2007, Ohlone was ranked 7th in the nation among community colleges, with Terence Lee tied for 9th in the nation.

Test questions come from (and are given on the eponymously named test) an organization called AMATYC - American Mathematical Association of Two-Year Colleges, which is "the only organization exclusively devoted to providing a national forum for

the improvement of mathematics instruction in the first two years of college," according to their website, <http://www.amatyc.org/>.

Questions on the AMATYC are applied pre-calculus problems, going beyond what one finds in a standard textbook. Hirsch called them "Brilliant."

The AMATYC has a unique scoring system as well: correct answers net 2 points, and incorrect answers

deduct 0.5 point. Answers left blank earn no points. This system is meant to discourage guessing.

The Ohlone Math Club,  $\mu\alpha\theta$  ("Muu Alpha Theta") meets on Fridays at 3:45 p.m. in HH-218.

Those interested in preparing for the test may look at previous SML tests, 10 of which are available at the Ohlone Math Club website, [www.ohlone.edu/org/mathclub/Amatycetest.htm](http://www.ohlone.edu/org/mathclub/Amatycetest.htm).