



SILVER STATE-ISTICS

NEVADA Chapter of American Statistical Association



Nevada Chapter News Letter

Vol. 2 No. 2

Many exciting events have taken place during the first half of 2005. We hope you enjoy this issue of the NV-ASA Newsletter.

♣ *Have a fun and safe summer!* ♣

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Upcoming Event

This year, the NV-ASA Annual meeting will be held
October 21-22, 2005 in Reno, Nevada.
We hope to see you all there!

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Message from the President

By Debra Stiver, President

Summer greetings to all of you! The Nevada Chapter has been very busy during the spring months putting on the annual Career Day functions. This April, two career days were given, one week apart, in the Las Vegas area and the Reno area. Both were well attended and introduced several speakers from a wide variety of occupations, agencies, and businesses. We hosted attendees ranging from an entire high school statistics and probability class to professionals working in their fields. And, we want to welcome the new Nevada Chapter members who signed up as a result of attending the functions. Our Chapter hopes to build on these successes in the future. Thanks to all the members who

worked hard to make the functions a grand success. This newsletter and our website contain more detailed articles and pictures for your information.

Kudos to our Nevada Chapter for securing a Strategic Initiatives Grant from the national ASA organization. The chapter was awarded a \$5,000 grant to develop a mentoring program in the state of Nevada. The program was the brainchild of one of our members and past chapter vice president, Dr. Chad Cross of UNLV. Chad wrote the following abstract that summarizes what the Nevada Chapter will be working on in the coming months.

"The program will be designed to establish a professional mentoring relationship between statistics students and successful professional statisticians, or those professionals in a quantitative field with a major focus and/or interest in statistical science. We believe the mentoring relationship will offer an opportunity for professionals and educators to become more actively involved in facilitating educational opportunities for tomorrow's professionals. We also believe the program will increase awareness of the American Statistical Association, and will encourage membership and participation in our relatively young Nevada Chapter which spans two large metropolitan areas at different ends of the state with several smaller cities in between."

Look for information on this program and don't be surprised if you are asked to participate as a mentor yourself!

Summer brings the Joint Statistical Meetings, to be held this August in Minneapolis Minnesota. Hokwon Cho, Nevada Chapter Representative, and I will be attending the meetings to represent the Nevada Chapter. We hope to participate in activities that will benefit the workings and growth of our chapter.

In October, the Chapter will be holding its annual meeting in Reno, Nevada. During the annual meeting the Chapter hosts speakers, holds a mixer and luncheon or dinner, and discusses plans for the coming year. Nominations for officer and chapter elections will precede the meeting, and your new officers will be

announced during the meeting. I encourage you to consider running for an office and participating in chapter activities as a committee member or interested member.

And finally Welcome to our newest and littlest statistician, Sara Elizabeth Wilson. Sara is the daughter of our Chapter Secretary, Dorothy Wilson and her husband, Clint. She made her entrance into the world only one week after the Southern Nevada Career Day function! Congratulations to her proud parents.

With Best Regards ,
Deb Stiver

Call for Nominations

By Sandra Catlin, Past-President and Chair,
Nominating Committee

We will have three officer vacancies at the end of 2005. The positions are President, Northern Vice-President, and Secretary. Please consider nominating yourself or one of the other outstanding candidates available from our membership. You may submit nominations to me by e-mail at catlins@unlv.nevada.edu, regular mail at 4505 Maryland Parkway, Box 454020, Las Vegas, NV 89154, or by phone at (702) 895-0381. Nominations must be received on or before *Friday, September 23, 2005*.

The three officer descriptions follow below. All officers serve as members of the NV-ASA Executive Committee. These positions have a term of two years beginning January 1, 2006. For further details, please see the NV-ASA constitution <http://www.nevada.edu/~nvasa/constitution.html>.

The **President** presides over the Annual meeting, all other meetings of the Chapter, and meetings of the Executive Committee. The President also serves as the chair of the Education Committee.

The **Northern Vice President** serves as co-Chair of the Arrangements and Program Committees. In the event of the resignation or incapacity of the President, the Executive Committee will appoint one of the two Vice Presidents to succeed to the Presidency.

The **Secretary** keeps the minutes of the Annual Meeting and other meetings as directed by the President, serves as Chair of the Membership Committee, and maintains correspondence between the Chapter membership and the American Statistical Association.

Nevada ASA Chapter Awarded 2005 Strategic Initiatives Grant by the National Organization!!

By Debra Stiver, President

In March of this year, NV-ASA was encouraged to submit a grant proposal to the national American Statistical Association's Strategic Initiative Program. Kudos to former NV-ASA board member, Dr. Chad Cross, UNLV, for developing plans for a professional mentorship program in Nevada. His mentorship plans formed the basis of the grant proposal. The proposal was accepted by the ASA program, and the Nevada Chapter has received a \$5,000 grant to develop the mentorship program.

The program will be designed to establish a professional mentoring relationship between statistics students and successful professional statisticians, or those professionals in a quantitative field with a major focus and/or interest in statistical science. NV-ASA believes mentoring relationships will foster interest in the statistical sciences for students, and will offer an opportunity for professionals to become more actively involved in facilitating educational opportunities for tomorrow's professionals.

The program's goals and objectives include the following:

- To establish a mentoring relationship between students in the statistical sciences and professionals in the field of statistics
- To foster student growth via gaining first-hand knowledge from established professionals
- To facilitate educational opportunities for future statisticians
- To allow professionals to become more actively involved with beginning statisticians by potentially serving on student theses/dissertation committees
- To increase student awareness of the variety and scope of career opportunities available to statisticians
- To build bridges between the professional community and the university
- To increase awareness of the American Statistical Association, Nevada ASA chapter and its programs.
- To increase membership in Nevada in both the national ASA and Nevada ASA.

NV-ASA encourages its members to become actively involved in the mentorship program either by volunteering as a mentor or nominating student

participants. Look for more information on the mentoring program on the website and in future newsletter as plans develop. ♣

Northern and Southern Nevada

✂ Career Days ✂

Got Statistics? Here's What You Can Do!!!!

By Carol Thompson, Southern Nevada Vice President

If you like the problem-solving and applied mathematics involved in statistics, but aren't sure how that could translate into a job or career, the Southern NV Career Day on April 16, 2005 was there to give you some ideas. Dr. Richard Numrich, CCSN professor and NV-ASA member, moderated the program for 32 attendees at the Clark County Library on West Flamingo.

Five speakers, from different career fields, discussed their job, how it involved statistics, some interesting statistical problems they face, and the type of background required for the job.

Christopher Brogan, VP Market Research, Mandalay Marketing and Events, discussed some examples of how he uses statistical analysis to better understand current and potential customer preferences for future promotions.

Dr. Eyal Dubovy, VP Global Decision Management, Citibank, N.A., and NV-ASA member, mapped out some career paths in the financial arena. He also described the statistical process of credit scoring that utilizes data from credit bureaus and credit applications to predict the probability of an account defaulting on a loan or credit card. Credit scoring is used to approve/decline credit requests, and to manage the outstanding credit of existing customers.

Dr. Frank DiPuma, Institutional Research Director, CCSN, described aspects of using statistics in a government position, and the variety of stakeholders to which this type of statistician may need to respond.

Dr. Keith Schwer, Director of the Center for Business & Economic Research, UNLV, discussed several projects managed at the center. One of the projects is Kids Count, a nationwide annual survey sponsored by the Annie E. Casey Foundation, for which CBER collects, analyzes, and distributes the best available data measuring the educational, social, economic, and physical well-being of children and youth as the NV segment of this survey (<http://cber.unlv.edu/pub.html>).

Dr. Charles Davis, President, Enviro-Stat and NV-ASA member, described his work with the statistical methodologies for compliance with environmental regulations that led him into his own environmental consulting business. Charles gave additional insight into the pros and cons of working as one's own boss in a one-person business.

As if pre-planned, but not, each speaker noted that one of the most important skills for a statistician to develop is the ability to communicate the statistics to non-statisticians. This means bringing the results out of the analysis details and statistical jargon, and into the words, and/or bottom-line, of the client. A networking lunch fit mid-way among the presentations, handouts describing various statistical careers were available, and the day ended with the distribution of door prizes. Of the program's attendees, seventeen were NV-ASA members, and 13 were students.

We want to thank Chris Rehac from Einstein's Bagels for help with the scrumptious lunch, and all of those who helped set up the lunch and tables. We also want to thank the following statistical software companies for providing a variety of door prizes: Minitab, SAS, S-Plus, and SPSS. David McClellan, Regional Rep from Minitab, also made a short presentation on some of the software's highlights. We also want to thank UNLV's Math Department for their donation toward student registrations. ♣

Statistics – Gateway to the Real World

By Alicia Chancellor Hansen, Northern Nevada Vice President & Debra Stiver, President

Everyone who has taken a basic statistics course has learned about data, statistical software, normality, t-tests and perhaps linear regression. Advanced statistics courses teach many other statistical procedures. Those who have taken statistics courses have pondered the question, "What do people 'actually do' with statistics?" Questioning those who use statistics in their careers reveals a wide and fascinating range of answers.

On April 22, 2005, the Nevada Chapter of the American Statistical Association sponsored "Statistics – Gateway to the Real World." Forty-six participants gathered in the Ansari Business building on the University of Nevada, Reno campus to enjoy insights into the use of statistics in government, industry, business and academic careers. Thirty-one of the attendees were students, of which 12 were from a high school probability and statistics class.

The event kicked off with two keynote addresses. President Debra Stiver introduced the keynote speakers.

Jeff Hardcastle, the Nevada State Demographer, spoke about creating population projections for the state of Nevada. In estimating future population, births, deaths and migration are considered and projections made for various demographic groups. This requires collaborative work with the United States Census Bureau. Other government agencies rely on these projections to set policy and plan for the future. Statistical techniques such as linear regression are used to formulate these estimates.

Dr. William Eadington, Director of the Institute for the Study of Gambling and Commercial Gaming gave a talk entitled "Find The Edge: How Casinos Use Probability and Statistics to Maximize Profits and Guarantee Winning." Dr. Eadington enlightened the audience on the basics of probability and the odds of various casino games. His final comments indicated that luck, at least as it applies to games of chance, is a figment of one's imagination.

Following the keynote speakers, all attendees enjoyed a light lunch organized by President Deb Stiver. The Department of Economics at UNR, under the direction of Chairman Mark Pingle, graciously sponsored lunch for all participants.

After lunch, various panelists spoke about uses of statistics in their occupations. The first panel highlighted government and science. Frederick Steinmann, Special Projects Manager for the Reno Redevelopment Agency revealed that his strong analytic skills, learned while earning his Master's degree in economics at UNR landed him his current job. He started his career as an intern hired to do field survey work for the Reno Redevelopment Agency. Following the completion of this work, he parlayed his knowledge of statistics into a full-time position. In his work with the City of Reno, Mr. Steinmann investigates the impact of redevelopment on crime, quality of life and sales tax revenue for various sectors of the downtown area. He will soon be pursuing a Ph.D. in Economics at University of Oregon, focusing on the impact of redevelopment on urban areas.

Alejandra Livingston, an Economist for the State of Nevada Department of Corrections discussed how she uses statistics to project future inmate populations and associated costs in the Nevada corrections system. The Nevada Legislature looks to the Department of Corrections for estimates of the costs involved in changing laws or instituting new penalties for violators.

Thara Salamone, Oral Health Biostatistician for the Nevada State Health Division, spoke about traveling throughout the state of Nevada, looking in people's mouths. (Yes, looking in people's mouths!!) With the help of a dental hygienist, she is involved in a project to evaluate the oral health of the population in Nevada. In recent years, evidence has indicated the existence of

strong connections between oral health and occurrence of disease. Evaluating the current status of oral health in the state, gives policy makers information that helps them decide if more oral health programs are necessary and project what the impact of those programs will be.

Klaus Moeltner Ph.D., a professor in the Department of Resource Economics at the University of Nevada, Reno discussed experiences he has had consulting on a wide range of projects. His examples included: the impact of day use fees on trail utilization for a park system, economic impact of power outages and impact of snowmaking on snow quality, skier visits and pricing structure for Lake Tahoe resorts. He uses many statistical techniques to answer questions related to these and other projects.

The second panel focused on private industry. Stacie Suchsland, a mathematician for International Game Technology, brought in 3 slot reel strips and demonstrated how payoffs and probabilities are calculated for slot machines. The audience participated in this lively demonstration, with prizes provided by IGT. In the gaming industry, slot machines are heavily scrutinized and regulated. Probabilities of win/loss outcomes must be checked and rechecked. Ms. Suchsland explained many people fall prey to the "fallacy of long run averages." If a slot machine has not paid off for a while, many hopeful gamblers tend to believe it must be "due" to provide a winning play. However, audience members were cautioned that every pull of the slot machine has the same probabilities of paying. Thus, beware of this common fallacy and gambler's trap.

Penny Mayer, a real estate broker and co-owner of Mayer & Associates Real Estate spoke about how statistics are changing the real estate market. Almost all decisions regarding mortgage approvals are now based on credit scores. These are numbers calculated based on information about a person such as time at previous residences, duration at various jobs and timing of payments to creditors. Information gathered over the years has been analyzed to come up with models of customers who are considered to be good credit risks. This information is used to calculate credit scores for consumers, which are used in determining credit worthiness. Mrs. Mayer indicated the result of this process could be a double edged sword. If components of your profile fall outside the acceptable ranges, one may be penalized with higher interest rates or perhaps be declined for a mortgage. So, statistics pop up in applications as diverse as gambling and home financing. All speakers provided numerous and interesting examples of the depth and variety of statistical uses in a wide range of careers and fields of study.

The UNR Department of Economics co-sponsored this

event along with the Nevada Chapter of the ASA. SAS, SPSS and Minitab also graciously provided prizes for the event's attendees. SAS donated a copy of SAS Learning Edition and a certificate for any book in their catalog. The SAS prizes were won by Kelly Wilkin and Tomoe Yasui. SAS also provided information on their software and personalized pens for all participants. A full version of Minitab 14 went to student Kara McNally. Minitab also provided lanyards and pens to all participants. Economics graduate student, Toni Sipic, took home a copy of SPSS. The Department of Economics at UNR rewarded Thara Salamone and Ija Vidaurri with departmental shirts, while Frederick Steinman proudly donned an Econ Department Hat. Several bundles of statistics journals were donated by UCCSN System Computing Services. The journals were won by Sean Denney, Dan Li, Jarod Collens and Lisa Crosby.

A special thanks goes out to our co-sponsor, the Department of Economics, University of Nevada, Reno and its chair, Mark Pingle. We greatly appreciated all the prizes donated by Minitab, SAS & SPSS. Thanks to the sponsors and donors, this event was a great success. We couldn't have done it without you! ♣

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**2005 K-12 Statistics Poster  
 Competition Results**  
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By Carol Thompson, Southern Nevada
 Vice President and Alicia Chancellor Hansen,
 Northern Nevada Vice President

The Second Annual Nevada K-12 Statistics Poster Competition was a smashing success. Teachers from Clark, Washoe and several rural counties, who teach data analysis and statistics, were asked to engage their students in this learning experience. 331 students participated, creating 146 posters. Teachers and NV-ASA members judged the posters against a pre-defined rubric on February 19th in each of four grade categories: K-3, 4-6, 7-9, and 10-12. The winning posters were showcased at the annual meeting of the Nevada Mathematics Council on February 25, and were submitted to ASA's national poster competition. Small monetary awards are given to the students with winning posters, and plaques are given to the schools of the first place posters. To view the winning posters please visit the NV-ASA Website at <http://www.nevada.edu/~nvasa/>.

We are delighted to announce that the first place K-3 winner, *Cookie Carnival*, earned an honorable mention award in the National Poster Competition for 2005.

The NV-ASA would like to thank the following sponsors of this event: Nevada Mathematics Council, Anteon

Corporation, Debra Stiver and Alicia Chancellor Hansen. Furthermore, several organizations supported this event, including the NV-ASA, Southern NV Regional Professional Development Program, University of Nevada, Las Vegas and University of Nevada, Reno.

Special recognition goes to Maria Dufek and David Thiel, from the Southern Nevada Regional Professional Development Program, for spearheading and coordinating the competition. Also, special thanks goes to the teachers and NV-ASA members who helped judge the competition. ♣

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**STAT CAMP 2005**  
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By David Thiel, Education Committee

Take a group of high school students, mix in a few teachers, add some pastry and pizza, then roll it up in a college-level final examination. What do you get? The answer is STAT CAMP.

On April 23, forty-nine high school statistics students gathered at Durango High School to take part in *STAT CAMP 2005: A Preparation for the Advanced Placement Statistics Exam*. A joint venture of the Southern Nevada Regional Professional Development Program, Clark County School District's Math/Science Institute, and NV-ASA, STAT CAMP was started in 2004 as a way to prime students for the AP Statistics Exam administered by the College Board. Because of the high-stakes nature of the exam, and the fact that AP Statistics is sometimes the only AP course taken by students, statistics teachers saw the need to provide these students with an experience to practice for the test and reduce anxiety over it.

The STAT CAMP day started low key with a continental breakfast, but quickly became more intense. Following the juice and pastries, students from eleven valley high schools took a three-hour examination that closely mirrored the real test to be taken on May 4. The test consists of a 90-minute, 40-question multiple-choice section and a 90-minute, six-question free response section. Before each section was administered, students were provided with test-taking strategies by the staff of experienced AP Statistics teachers and exam readers.

A pizza lunch was a nice break before the second half of the day, the debriefing. Students were given solutions to the mock exam to compare to their responses. Teachers and statisticians, including several NV-ASA members, mingled with the students answering questions, and giving instruction on statistical concepts and procedures. Between the detailed answer sheets and small-group

discussions, students can smooth out rough spots in their understanding of statistics, and better know what is expected of exam responses. The mock exam and its solutions were also provided to area AP Statistics teachers as a review instrument for those who could not attend.

The feedback from STAT CAMP has been overwhelmingly positive. Many students expressed their appreciation for the experience and said that they felt more comfortable about taking the actual exam. Because of its success, plans are already in the works for STAT CAMP 2006. ♣

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