

## **UNLV College of Sciences and Clark County School District (CCSD)**

### **Collaborations**

#### **Center for Math & Science Education**

<http://cmse.unlv.edu/index.htm>

In fall 2004, UNLV launched the Center for Mathematics and Science Education (CMSE), a collaborative venture among faculty from the College of Sciences, the College of Education, and mathematics and science personnel from the Clark County School District (CCSD). The Center is dedicated to improving science and mathematics teaching and learning. As its primary mission, the center encourages cooperation among the three partners, emphasizes research, supports externally funded projects, and serves as a focal point for outreach to the CCSD. The Center includes an advisory board, including the Deans from the College of Sciences and the College of Education, the Vice-President of Research and Graduate Studies, and the Superintendent of the Clark County School District. In addition to more than two million dollars in federal grant projects (MIST and PASS grants), the Center offers professional development courses for teachers in the Clark County School District. In addition Center for Math Science Education and CCSD colleagues are working to submit an NSF proposal to develop graduate assistantships in the area of K-12 education. The Center is also leading an effort to develop online evaluations, in partnership with the UNLV Center for Evaluation and Assessment, in order to create an electronic mechanism that incorporates course/teacher evaluations with credible assessment based questions.

#### **SCI 101 and SCI 108**

SCI 101: Introduction to Scientific Studies, is a course required for all College of Sciences majors in their first year at UNLV. In coordination with CCSD this course is also be offered at to high school seniors (in some high schools) and during all three-summer terms. This is a “freshman experience course”, designed to prepare science majors in the rigors of scientific course work, study skills, mathematical skills, critical thinking, analytical thinking, information technology, and scientific ethics.

SCI 108: Developmental Mathematical Logic is a course designed to aid students who are identified as “at risk” with regard to their mathematical skills. This is not a remedial course, but rather a course designed to teach students to learn math and to understand the logic behind the subject matter and how this information is applied.

The Department of Mathematics is developing a special 100 level course for students identified as “learning challenged” in the area of mathematics. This course uses unique teaching paradigms to teach students who have difficulty learning math using more traditional educational paradigms.

### **Pre-Professional Advising**

<http://sciences.unlv.edu/advising/pre-prof.html>

High school students and UNLV undergraduates are encouraged to meet with the College of Sciences pre-health advisor in the early stages of their academic careers in order to understand the academic and service requirements required for acceptance to health science professional schools (medical, dental, physician assistant, veterinary, pharmacy, occupational therapy, physical therapy, and chiropractic schools). In group and one-on-one meetings, students receive important information on resources for the investigation of curricular requirements (required courses), non-curricular requirements (community service, research, and clinical experience), and target grade point averages for each of the health science professional programs. The pre-health advisor is available to all area high school students and UNLV students interested in pursuing careers in the health sciences, regardless of the student's major field of study.

### **Beal Bank Nevada Southern Nevada Regional Science and Engineering Fair**

<http://sciences.unlv.edu/engineeringfair/>

This annual science fair, sponsored by Beal Bank Nevada hosts projects prepared by students (grades 5-12) from Clark County School District and other Southern Nevada counties participate in a multi day science fair, with prizes awarded to participating high schools and first, second and third place winners of each major subject area. The project judged as the best submission by a panel of experts is chosen to attend the International Sciences Fair (Intel).

### **Southern Nevada Regional Science Bowl**

<http://sciences.unlv.edu/scienceBowl.html>

The UNLV College of Sciences, in collaboration with the Nevada site office of the U.S. Department of Energy's National Nuclear Security Administration, hosts the annual [Southern Nevada Regional Science Bowl](#). During the event, teams of students are quizzed in the areas of biology, chemistry, physics, mathematics, astronomy, earth sciences, and computer science. The winners of this regional competition receive prize money for their schools and earn a chance to compete in the National Science Bowl in Washington, D.C. The Science Bowl is a proud tradition at UNLV. Enthusiastic teams and supporters have been gathering on campus for the bowl since 1991. High school students test their scientific knowledge in a series of competitions. While on campus these visiting students also meet UNLV professors, graduate students, and staff who offer presentations and mini-symposiums on such topics as high-pressure physics, the study of tsunamis, and the role of mathematics in modern computer science. National Security Technologies, LLC is the main sponsor for this event. Additional supporters include the Nevada Power Co., Stoller-Navarro Joint Venture, the Desert Research Institute (DRI), and Wackenhut Services Inc.

### **Nevada Junior Science Bowl**

Junior High School students from across the state participate in a one day science knowledge completion.

### **Outstanding High School Juniors Night**

The College of Sciences hosts an annual dinner event recognizing outstanding Clark County and Nye County high school juniors who have demonstrated excellence in math and science courses, and who are nominated by their teachers. UNLV welcomes the students, parents, and teachers to campus for a social gathering and to learn more about the College of Sciences, including its diverse teaching, research, and community service programs.

### **Mojave Max Education Project**

<http://sciences.unlv.edu/mojaveMax.html>

The Mojave Max Education Project is an enhanced educational experience coordinated by the Red Rock Canyon National Conservation Area. College interns and volunteers from the community are trained and placed in Clark County schools to teach students about the endangered desert tortoise. UNLV students are eligible to receive one to three credits (BIO 492), or participate as a volunteer. Graduate credit (BIO 730A) is also possible.

### **UNLV Rebel Registration**

<http://register.unlv.edu/>

College of Sciences advisors and the associate dean for academic affairs collaborate with working with UNLV and CCSD staff to invite new UNLV students to visit campus, meet with advisors, and register for classes.

### **Washoe County Science Fair**

<http://sciences.unlv.edu/washoecountyfair.html>

Prospective students and parents are invited to meet with representatives from more than 100 colleges and universities at the annual Washoe County College Fair at the University of Nevada, Reno. The fair offers students and parents the opportunity to explore the academic offerings of UNR, UNLV, Truckee Meadows Community College, and Western Nevada Community College, as well as many out-of-state colleges. In addition, officials from the U.S Air Force, Army, and Navy are available to discuss entrance requirements, and programs at the military academies. Seminars offered at the fair provide parents and students information on financial aid, college selection, and admission procedures. Students and parents may also use the Nevada Career Information System, a career and educational planning program. Washoe County School District seniors who attend the fair, which is sponsored the WCSD high school counselors, will

be eligible for a College Fair Scholarship and application forms must be picked up at the fair.

### **High School Recruiting Kiosks**

College of Sciences advisors staff recruiting kiosks located in two area high schools during student lunch hours to provide detailed information on our entrance requirements, curriculum, and academic programs.

### **High School Recruiting Visits**

College of Sciences advisors and staff visit area high schools on a regular basis hours to provide detailed information on our entrance requirements, curriculum, and academic programs

### **CCSD Science and Mathematics Department Chairpersons Seminar**

UNLV sponsor an annual meeting of CCSD science and mathematics department chairs for all high school and junior high school mathematics in Clark County. The chairpersons engage on a full day of workshops, information sessions, tours on College of Sciences laboratories and facilities.

### **CCSD Student Counselors Seminar**

College of Sciences advisors and faculty present seminars to all CCSD junior and senior high school guidance counselors to provide detailed information on our entrance requirements, curriculum, and academic programs

### **New Student Orientation**

College of Sciences advisors, faculty, and administrators host a new student orientation for incoming freshman and transfer students to provide detailed information on our curriculum, student policies, student organizations, and academic programs.

### **Junior Night**

At this event college-bound high school juniors and parents have the opportunity to meet with representatives from our academic programs, learn about student activities and services, take a housing tour, and attend an admission and financial aid presentation.

### **Senior Night**

UNLV and the College of Sciences in collaboration with CCSD invite the selected high school seniors, including those who have demonstrated outstanding academic accomplishments, to campus for tours, meet with faculty, and to showcase our teaching and research programs.

## **Nevada Scholars Day**

Nevada high school students with outstanding academic achievement tour campus, meet with faculty members and advisors, and visit our laboratories and facilities.

## **Internship Programs**

UNLV faculty members work with CCSD administrators to host student interns in College of Sciences research laboratories and to develop internship programs with other community businesses and organizations. High school students engage in state-of-the-art research projects and engage with UNLV faculty, graduate students, and undergraduates.

## **CCSD School Board Presentations**

UNLV Faculty and staff offer tours and presentations of our research laboratories and facilities to CCSD board members, administrators, teachers, and staff, including such diverse operations as the Science and Engineering Building, the UNLV Genomics Center, and the Bioinformatics Center.

## **Curriculum Development**

College of Sciences faculty provide input to CCSD colleagues to further the development of high school science curriculum, to ensure that students are prepared for the rigors of a university science curriculum. Enhancements to the geoscience track within the CCSD curriculum represents one example.

## **Nevada NIH INBRE Bridges**

**Program** <http://www.unr.edu/INBRE/pipeline/summer1.asp>

Students attend 5-week workshop at either TMCC or CSN (GBC and WNC students see below\*) the summer before their college freshman year. Students are awarded \$1,200 each for successfully completing the workshop. All workshop materials, books, etc. are paid for by the program. The workshop will help students improve their critical thinking, reading, and analysis skills while learning about current biomedical topics, such as genetic engineering, cloning, gene therapy, and the study of various human diseases. The workshop will improve students' college readiness, broaden students' understanding of the careers available in the fields of medical science and biotechnology, and will include field trips to research laboratories. *\*GBC students accepted into the program are eligible for free on-campus housing at UNR while attending workshops at TMCC. WNC students are eligible for free tutoring at the TMCC Redfield campus*

## **West Career and Technical Academy (Expected opening: 2010)**

College of Sciences faculty and staff regularly consult with CCSD colleagues to provide advice and recommendations on the design, equipment, and academic programs planned for the West Career and Technical Academy, currently under construction in the Red

Rock area of Summerlin. The Academy will focus on biotechnology, environmental sciences, and engineering.

### **Desert Survivors**

<http://sciences.unlv.edu/desertSurvivors.html>

"Desert Survivors" is a science education television show designed to promote scientific literacy in the local elementary schools of Southern Nevada. Each episode, shown on UNLV-TV on Cox Cable, Channels 70 and 71, spotlights a "survivor" native to the Mojave Desert and features an expert on that organism. During the show, the expert answers questions poised by local elementary school children. This project is funded by the National Science Foundation as part of a prestigious Faculty Early Career Development Award presented to Frank van Breukelen Ph.D. for \$745,000 to support a project, entitled "Protein Metabolism During Mammalian Hibernation." The proposed research will further elucidate our understanding of how hibernators depress basic biochemical pathways used to maintain cellular integrity and how these animals are able to withstand this phenomenon. A better understanding of hibernation may have profound implications for designing therapies for cardiac dysfunction, muscle disuse atrophy, and kidney failure. In addition to the outreach efforts of Desert Survivors, education at both undergraduate and graduate levels will be an integral part of this project.

### **Mathematics and Science Education Achievement Award**

The UNLV College of Sciences Math and Science Education Achievement Award honors an individual who has demonstrated a significant impact on mathematics and science education in Southern Nevada. Nominations and recipients are often individuals

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