

Career Exploration & Experience

Association of American Indian Physicians Pre-Admission Workshop

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405-946-7072 http://www.aaip.org/about/student_information.htm

The two-day Pre-Admission Workshop includes lectures by Native American physicians, University faculty, other health care professionals, and current medical students. This workshop addresses common challenges encountered by students in the application process and assists students with the selection of a professional school, entrance exams, e.g., MCAT, the AMCAS application and personal statements, support services, financial aid, and preparation for interviewing with admissions committees. There are also a physician/medical student discussion panel and “mock interviews” for each student participant. This pre-admission workshop is hosted in a different location each year. In 2006, UCDHSC at Fitzsimons in Aurora hosted the workshop. Funded by: Federal Health Careers Opportunity Program (HCOP)

Auraria Emerging Technologies Prototyping Lab

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AETPL is a growing collaboration of students, staff, & faculty on the Auraria campus to convert new scientific findings and technical advancements into viable technologies and products. This collaboration extends to the CU Health Sciences campus and many of the projects are oriented towards biomedical innovations. Active involvement of regional industries and other research institutions in Colorado is sought out, as well as the invitation for participation of Secondary school students and teachers.

<http://carbon.cudenver.edu/~rtagg/Research/AETPL.html>

Brain Awareness Week

Diego Restrepo, PhD, Associate Professor, Cell and Developmental Biology,
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As a part of Brain Awareness Week sponsored by the Society for Neuroscience, several faculty members have gone out to local schools to show students a human brain and discuss how the nervous system works. Additionally, one Cell and Developmental Biology lab (PI: Diego Restrepo, Ph.D.) hosted a group of students from DPS Montbello High School this past spring. Students learned how to pour and run a gel as well as the basic concepts of PCR and mouse genotyping.

Cell & Developmental Biology - Open House for Local Public High School Students

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Since 2004, the Department of Cell and Developmental Biology in the CU School of Medicine has sponsored a one-day open house for our public schools either in the fall or the spring. About 80 high school students, along with their teachers and a few parents

participate in either a morning or an afternoon session that includes a number of hands-on science demos. The demos are run by faculty, graduate students and postdoctoral fellows and include worksheets that provide the scientific background and the demo description, activities that teachers/students can do at their own school, reference websites and contact people who can provide additional resources, lab supplies, personnel, etc. Recently, two outreach students, Mike Polmear and Lalith Polepeddi, participated in a research program with Dr. Brian Tseng. They placed in both our state and national science fairs for their research investigating novel treatments for muscular dystrophy, as well as appeared on the TV show Good Morning America to discuss their results. The next open house will be held Spring 2008.

Chesapeake Bay Project

Bruce Nash, Christine Johnson, Anita Davis, Eddie Gonzalez, Anne O'Neill, Becca Rennard, Kirstin Lucke, Erica Mateo, Deborah Thomas, Michael Marlow- Associate Professor Education & Human Development 303-556-8111 Mike.Marlow@cudenver.edu
This project is a collaboration between the NPS (Bruce Nash), NASA (Christine Johnson, Anita Davis), National Park Foundation (Eddie Gonzalez, Anne O'Neill, Becca Rennard), UCDHSC-SEHD (Michael Marlow, Kirstin Lucke, Erica Mateo), and CLAS (Deborah Thomas) to develop educational materials for middle school classrooms with a natural hazards component.

Colorado Microenterprise Technology Center

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CMTC is a joint project between AETPL (University of Colorado at Denver and Health Sciences Center) and the Microbusiness Development Corporation. Its function is to engage students in providing technical assistance and prototyping for small businesses. A laboratory and technology development area called the Snarkworks provides access to advanced prototyping equipment, scientific instruments, materials, and technical components. In addition to serving regional small business clients, a goal is to engage youth in early activities that connect science, technology, and entrepreneurship. (Website under construction)

Colorado Rural Health Scholars Program (CoRHSP)

School of Medicine, Office of Student Affairs

<http://www.uchsc.edu/sm/sm/COLOSCHOLAR.htm>

This four-week residential program, started in 1992, is designed to provide rural high school students with experiences directly related to science and medicine. Special attention is given to students who are members of ethnic minority groups and to students with disadvantaged backgrounds. Participants attend classes with topics related to medicine and science, conduct work in laboratories, and attend seminars with speakers from all facets of the health professions. Current medical students are responsible for the program's direction and serve as counselors.

GEMS (Graduate Experiences for Multicultural Students)

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<http://www.uchsc.edu/gems/>

GEMS introduces undergraduate students from diverse and traditionally under-represented groups to the biomedical research career opportunities offered at the graduate level of a major health sciences center. Students enroll in a ten-week summer research internship course. The course is conducted by distinguished science faculty and consists of lectures, demonstrations, and laboratory research assignments. Participating basic science programs at UCDHSC include biochemistry and molecular genetics, cell biology, experimental pathology, human medical genetics, immunology, microbiology, molecular biology, neuroscience, pharmacology, and physiology. The director and sub-directors of this program are under-represented minorities and are therefore good role models for the participating students. Funded by: NIH/NHLBI

Health Career Pre-Collegiate Program

*School of Medicine & HSC Office of Diversity – College of Liberal Arts and Sciences
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This is an academic enhancement program. The program is designed to motivate first-generation high school students to successfully complete a college preparatory high school curriculum and matriculate to the post-secondary institution of their choice with the necessary academic skills to succeed and graduate from that institution.

The primary goal of the Health Careers Pre-Collegiate Program is to adequately prepare 80 potential first-generation college students for a successful high school career and eventually a successful professional career by exposing them to specific areas of interest in the healthcare field, complemented with the essential academic advising of high school course selections (in cooperation with their parents and guidance counselors). In addition, during the academic year the students are offered Saturday Academies in Basic Study Skills, Academic Skills Enhancement, Interpersonal Skills Development, and Health Career options. Parents of participating students are also offered workshops during Saturday Academy sessions which include Effective Parenting Strategies, as well as strategies on how to prepare financially for their student's college education.

Students also participate in a summer program. Sophomores attend a two-week summer program and juniors attend a five-week summer program where they are exposed to the rigors of college life. Application necessary for program.

Health Profession Opportunity Day

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HPOD is a day-long pre-health profession seminar which is open to all undergraduate and high school students. The seminar unites 100 diverse middle school, high school and college students from around the state for an in-depth look at the different health professions.

Activities will include workshops, speakers, and hands-on activities that will introduce students to different health care professions and opportunities in higher education. Students are presented with the opportunity to explore the many possibilities in the health careers and learn about the educational path one must take to reach his or her ultimate goal of becoming a health care professional.

HOMES program

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The HOMES program gives DPS high school students the opportunity to find out about career opportunities through interaction with Oyate (student organization of UCD healthcare students) CU health science center and career mentoring. HOMES also provides hands on science activities that highlight different career options. Through these activities and interactions HOMES aims to give students a better idea of future career options. Some of their activities include: a career panel with students from the different schools at the CU Health Science Center; a cow eye dissection where students learn about the anatomy and function of the eye; a cardiovascular lab where students learn about the heart and it's diseases by looking at normal and diseased human hearts; a dental plaque assay where students learn about dental health; and a day when students come to the health science campus and meet students from other DPS high schools that have participated in the HOMES program. There is a panel on preparing for college, a hands on science activity, and opportunities to meet professionals such as pharmacists, dentists, doctors, etc.

Lunch Readers at DPS Steck Elementary

Debbie Heinz, Steck teacher, 303-355-7314

Over 30 medical and nursing students volunteer weekly at a neighboring elementary school to help encourage literacy and the importance of education for the students of Steck Elementary. By sharing lunch and a book weekly, medical and nursing students help at-risk students learn to set goals and share special time with a caring adult.

Minority Summer Undergraduate Research Fellowship Program

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<http://www.uchsc.edu/pharmacology/summerprog/>

Since 1988, the Department of Pharmacology and former Alcohol Research Center (ARC) have recruited three to six underrepresented minority students to carry out research with our faculty over a ten-week period during the summer. Since the inception of this program ninety-four students have been recruited. This program provides undergraduate students with the opportunity to conduct research; present their results; attend seminars; and interact with fellow students, lab members, and faculty. Training in cellular and molecular pharmacology, signal transduction, neuro-pharmacology, biochemistry, and molecular structure, as well as opportunities in the blossoming field of bioinformatics, is available. Specific questions being researched focus on many areas including cancer biology, cell biology, alcohol and drugs of abuse, learning and memory, genomics, proteomics, lipid maps, and structural biology. A variety of state-of-the-art

laboratory techniques including fluorescence microscopy, transgenics, gene chip arrays, NMR, mass spectrometry, computational pharmacology, and x-ray crystallography are used.

NPS Diversity Task Force

Bill Gwaltney, Bruce Nash, Shelly Zion, Deborah Thomas, Michael Marlow- Associate Professor Education & Human Development 303-556-8111 Mike.Marlow@cudenver.edu

A NPS (Bill Gwaltney, Bruce Nash)/UCD SEHD team (Michael Marlow, Shelly Zion, Deborah Thomas) supports the initiative to develop materials to encourage diverse populations access to the national parks, including materials for K-12 classrooms. NPS funded.

Partnership with the DSST (DPS Denver School of Science and Technology)

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UCDHSC Fitzsimons campus has established a partnership with the DSST, a DPS charter school located in the Stapleton neighborhood of northeast Denver. Dr. Simon Levinson initiated the partnership and the first junior class began their internships on September 11, 2006. Students with an interest in health and research related careers are paired with a faculty mentor for a 10 week internship (with three 10 week trimesters per academic year), providing them with exposure to a real-world professional experience. Fourteen faculty representing UCDHSC graduate and professional programs (School of Medicine, School of Pharmacy and School of Dentistry) at the Fitzsimons campus, the VA Hospital and National Jewish Hospital are currently serving as faculty mentors.

Pre-Collegiate Middle School Academic Program

Larry Armenta; Director of Pre-Collegiate and Pipeline Programs UCDHSC; 303-556-2322 larry.armenta@cudenver.edu

The Pre-Collegiate Middle School Academic Program (PCMSAP) at the University of Colorado at Denver is an academic enhancement program. The program is designed to adequately prepare potential first-generation college students in grades seven to eight to successfully complete their pre-secondary school career, enroll in a college preparatory high school curriculum, and ultimately enroll to their choice college/university with the necessary skills and academic preparation to succeed at and graduate from that institution. The Pre-Collegiate Middle School Academic Program serves as a precursor to the Pre-Collegiate Development Program (high school). Students who successfully complete the Pre-Collegiate Middle School Academic Program with a cumulative G.P.A. of 2.75 or better will then be admitted to the Pre-Collegiate Development Program at the end of their 8th grade year.

During the academic year the students are provided relevant Saturday Academies in areas such as: Basic Study Skills, Academic Skills Enhancement, leadership, and Interpersonal Skills Development. Parents of the participating students are offered relevant workshops during the Saturday Academy sessions which will include Effective Parenting Strategies, as well as strategies on how to prepare financially for their student's college education. Tutoring services are also provided on an ongoing basis

during the academic year at their middle school. The academic year Saturday Academies are designed to augment middle school curriculums (e.g., mathematics, writing, sciences, computer skills, etc.) and enhance parenting skills and strategies designed to more fully support their student. Minimum Academic Preparation Standards (MAPS) are introduced to our eighth graders so that when they are matriculating into high school they will know which classes and how many semesters of each class is needed to prevent deficiencies in a college/university.

School of Education and Human Development (SEHD) Internship Program

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This project places education interns into the National Park Service 'Views of the National Parks' directed by Bruce Nash. Existing on-line modules- (1) Caves and Karst and (2) Glaciers (SEHD- Michael Marlow, Kristin Lucke). Funded by NPS grants.

Summer Cancer Fellowships

*Connie Bair; connie.bair@uchsc.edu
www.uccc.info/ccfellowship*

Summer Cancer Fellowships provide numerous opportunities for nearly 100 high school students and college undergraduates who are interested in exploring careers in medical research related to cancer. The program is supported in part by the University of Colorado Cancer Center and the Cancer League of Colorado. The 6 to 8-week fellowships pair students with preceptors from a variety of laboratories and clinics at the University of Colorado Denver, University of Colorado-Boulder campus, and other Denver area healthcare institutions. The fellowships are open to college undergraduates, as well as medical, dental, nursing, and other students in the health professions. Minority students are urged to apply.

Summer Enrichment Program

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The mission of the Summer Enrichment Program is to recruit and prepare students for success in the Pharm.D. degree program. The program is targeted at students who contribute to the cultural and ethnic diversity of the school, are educationally or economically disadvantaged or are first generation college students to the School of Pharmacy.

The Summer Enrichment Program is a unique experience that has proven effective in equipping new students with skills, knowledge and a group of friends who remain supportive throughout their pharmacy education. The program offers academic preparation, learning skills preparation and practical experience through an eight-week summer program worth six credit hours. The program has a number of components.

Summer Institute for Health Careers

*Central Colorado AHEC; Kris Wenzel, RN, MBA, Executive Director- 303-724-0335
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SIHC is a two-week program for high school students recruited from across the state of Colorado. Each regional AHEC Center (Greeley, Clifton, Alamosa, Pueblo and Denver) runs a weeklong program in their region. The students are then transported to Denver to continue the program at the Health Sciences Center. The capstone of the project is a shadowing experience with the health profession of their choice. The curriculum varies from year to year and region to region, but the main theme remains constant-an exploration of health careers that goes beyond the surface discussion.

Undergraduate Pre-Health Program (UPP)

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The UCD Anschutz Medical Campus- Undergraduate Pre-Health Program (UPP) is modeled after the highly effective and successful Health Careers Pre-Collegiate Program. Students selected for this program must be first-generation, low income and or underrepresented in the health professions, have a minimum of 24 credit hours from an accredited undergraduate institution and 3.0 GPA. Participants spend 8 weeks on campus where they shadow medical professionals, conduct research and participate in workshops on health disparities and cultural competence. The participants in UPP also meet monthly throughout the academic year for Saturday Academy sessions on topics ranging from health disparities to study skills. All participants are required to take the one of the test and prep-courses necessary to apply to medical, pharmacy, nursing, dental or other health profession school (i.e.: DAT, MCAT or GRE). Application necessary for program. <http://www.uchsc.edu/diversity/Undergraduate-Pre-Health-Applicaiton.doc>

Upward Bound-Power Up Program

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The Upward Bound Power Up Program (UBPUP) at the University of Colorado Denver, a federally funded TRIO program, is an educationally pre-college program for selected students from Sheridan and Jefferson High Schools. Upward Bound's mission is to prepare and help motivate students with potential for success in post-secondary education. Participants are selected base on their academic performance, motivations for success, recommendations from teachers and counselors and additional criteria.

Upward Bound aims to provide program participants with the necessary skills needed to successfully graduate from high school and complete a 4-year college degree. Students participate in after-school and weekend programs which include supplemental education, academic themed workshops, field trips and college campus tours. Every student also participates in a 6-week summer program designed to prepare them for high school classes and the college application process. Additionally, all students participate in a shadowing program with current college students and working professionals in the Denver-Metro area.

Virginia Tech project PREP: Partnership for Research and Education in Plants

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PREP is a collaborative effort with high school classes to do inquiry based science. Information is presented by Lisa Johansen, DDC Biology Assistant Professor, on her research on Arabidopsis (genetic model organism in plants) to the students. They design experiments to look for phenotypes in mutant plant lines that are caused by environmental stress. The fascinating part of this project is that the students are doing real science. They are working on mutant plant lines that Johansen works on in her research lab. They are designing and analyzing their own experiments. The students then get together with Johansen and discuss their results and try and put it into the big picture of current research on plant biology. USCHSC has just become an official dissemination site, with the like of Univ. of Wisconsin, Iowa State, and Cornell.

<http://www.biotech.vt.edu/outreach/partnerships.html>

<http://www.prep.biotech.vt.edu/index.html>

Virtual Student Fellowship

<http://mama.uchsc.edu/vc/cancer/welcome.cfm>

This site, funded by the National Cancer Institute, introduces high school and college students to the biology underpinning cancer research. Students may use these modules to prepare for actual participation in the Student Cancer Research Fellowship Program at the University of Colorado Health Sciences Center.